

22nd edition  
**1958**

**The**

*Radio-Electronic*

**MASTER**

formerly *Radio's* MASTER®

OFFICIAL

**BUYING GUIDE**

OF THE INDUSTRY

RADIO — TV PARTS AND EQUIPMENT

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**OFFICIAL**  
**PARTS and EQUIPMENT CATALOG**  
**OF THE**  
**RADIO, TELEVISION &**  
**ELECTRONIC INDUSTRY**  
**for products**  
**sold by distributors**

- DESCRIPTIONS
- SPECIFICATIONS
- ILLUSTRATIONS
- PRICES



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# The *Radio-Electronic* MASTER

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## GUIDE TO PRODUCT SECTIONS

The following list of the 18 Product Sections in The Radio-Electronic MASTER is intended for secondary reference only. You may use it to familiarize yourself with this volume's general contents. For specific information on products and manufacturers, refer to the GENERAL INDEX on the following pages.

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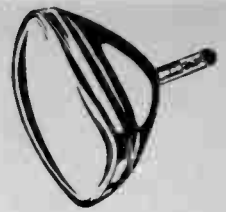
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# TELEVISION PICTURE TUBES



ALL PRICES LISTED ARE SUBJECT TO CHANGE WITHOUT NOTICE

Type	List Price	Description	
		Envelope	Faceplate
5TP4	\$78.25	Round, Glass	Clear
7JP4	29.50	Round, Glass	Clear
8AP4-A	27.75	Round, Metal	Filter, Spherical
9QP4	21.50	Rectangular, Glass	Filter, Spherical
10BP4-A	22.50	Round, Glass	Filter, Spherical
*10FP4-A	27.00	Round, Glass	Filter, Spherical, Aluminized
*12KP4-A	31.75	Round, Glass	Filter, Spherical, Aluminized
12LP4-A	27.25	Round, Glass	Filter, Spherical
12UP4-B	40.50	Rectangular, Glass	Filter, Etched, Spherical
*14AJP4	42.90	Rectangular, Glass	Aluminized
†14CP4	29.25	Rectangular, Glass	Filter, Spherical
†14QP4	31.50	Rectangular, Glass	Filter, Spherical
14QP4A	38.00	Round, Glass	Filter, Spherical, Aluminized
15GP22	265.00	Round, Metal	Clear, Spherical, Color
16AP4-A	48.25	Round, Glass	Filter, Spherical
16DP4-A	45.75	Round, Metal	Filter, Spherical
16GP4	48.25	Round, Metal	Filter, Spherical
16GP4-B	48.25	Rectangular, Glass	Filter, Etched, Spherical
16KP4	33.25	Rectangular, Glass	Filter, Spherical
*16KP4-A 16RP4A	40.50	Round, Glass	Filter, Spherical, Aluminized
16LP4-A	44.50	Rectangular, Glass	Filter, Spherical
16RP4	33.25	Rectangular, Glass	Filter, Spherical
16TP4	33.25	Round, Glass	Filter, Spherical
16WP4-A	44.50	Rectangular, Glass	Filter, Spherical
†17AVP4A/ATP4A	42.50	Rectangular, Glass	Filter, Spherical, Aluminized
17BP4-A	33.25	Rectangular, Glass	Filter, Spherical
*17BP4-B	38.75	Rectangular, Glass	Filter, Spherical, Aluminized
*17BRP4	47.75	Rectangular, Metal	Filter, Spherical, Aluminized
17CP4	43.75	Rectangular, Glass	Filter, Etched, Spherical
†17FP4-A	37.25	Rectangular, Metal	Filter, Spherical
†17GP4	48.25	Rectangular, Glass	Filter, Etched, Spherical
*17HP4B	42.50	Rectangular, Glass	Filter, Spherical, Aluminized
*17LP4-A	42.50	Rectangular, Glass	Filter, Spherical, Aluminized
17QP4	33.25	Rectangular, Glass	Filter, Cylindrical Face
†17RP4 17HP4	35.25	Rectangular, Metal	Filter, Spherical
†17TP4	43.75	Rectangular, Glass	Filter, Etched, Spherical
†17VP4/17LP4	35.25	Rectangular, Glass	Filter, Cylindrical Face
19AP4-A	52.50	Round, Metal	Filter, Spherical
19AP4-B	52.50	Round, Metal	Filter, Etched, Spherical
20CP4	40.25	Rectangular, Glass	Filter, Spherical
20CP4-A	40.25	Rectangular, Glass	Filter, Spherical
*20CP4B	48.00	Rectangular, Glass	Filter, Spherical, Aluminized
*20CP4D	48.00	Rectangular, Glass	Filter, Spherical, Aluminized
20DP4-A	40.25	Rectangular, Glass	Filter, Spherical
*20DP4B	48.00	Rectangular, Glass	Filter, Spherical, Aluminized
*20DP4C	48.00	Rectangular, Glass	Filter, Spherical, Aluminized
†20HP4-A/20LP4	42.00	Rectangular, Glass	Filter, Spherical
*20HP4C	49.75	Rectangular, Glass	Filter, Spherical, Aluminized
*20HP4D	49.75	Rectangular, Glass	Filter, Spherical, Aluminized
21ACP4/21AMP4-A	48.00	Rectangular, Glass	Filter, Spherical, Aluminized
†21ALP4	42.00	Rectangular, Glass	Filter, Spherical
*21ALP4B/A	49.75	Rectangular, Glass	Filter, Spherical, Aluminized
21AP4	56.75	Rectangular, Metal	Filter, Etched, Spherical
*21ATP4	49.75	Rectangular, Glass	Filter, Spherical, Aluminized
*21AUP4B/A	49.75	Rectangular, Glass	Filter, Spherical, Aluminized
*21AVP4B/A	49.75	Rectangular, Glass	Filter, Spherical, Aluminized
*21AWP4	48.00	Rectangular, Glass	Filter, Spherical, Aluminized
21EP4-A	42.00	Rectangular, Glass	Filter, Cylindrical Face
*21EP4-B	49.75	Rectangular, Glass	Filter, Cyl. Face, Aluminized
†21FP4-A	43.75	Rectangular, Glass	Filter, Cylindrical Face
*21FP4-C	51.50	Rectangular, Glass	Filter, Cyl. Face, Aluminized
†21MP4	52.50	Rectangular, Metal	Filter, Etched, Spherical
*21WP4A	48.00	Rectangular, Glass	Filter, Spherical, Aluminized
21XP4	42.00	Rectangular, Glass	Filter, Spherical, Aluminized
*21XP4-A	49.75	Rectangular, Glass	Filter, Spherical, Aluminized
†21YP4	42.00	Rectangular, Glass	Filter, Spherical
*21YP4-A	49.75	Rectangular, Glass	Filter, Spherical, Aluminized
21ZP4-A	40.25	Rectangular, Glass	Filter, Spherical
*21ZP4-B	48.00	Rectangular, Glass	Filter, Spherical, Aluminized
*24ALP4	73.00	Rectangular, Glass	Filter, Aluminized
24AP4	132.29	Round, Metal	Filter, Spherical
*24CP4-A	69.00	Rectangular, Glass	Filter, Spherical, Aluminized
*24CZP4	53.30	Rectangular, Glass	Filter, Spherical, Aluminized
*24DP4A	71.25	Rectangular, Glass	Filter, Spherical, Aluminized
*27EP4	118.75	Rectangular, Glass	Filter, Spherical, Aluminized
*27RP4	118.75	Rectangular, Glass	Filter, Spherical, Aluminized

†Electrostatic Focus

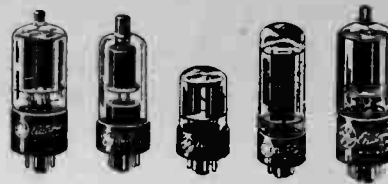
‡Electrostatic Focus and Deflection

\*Aluminized

All unmarked types Electromagnetic Focus



# RECEIVING TUBES



Type	List Price	Type	List Price	Type	List Price	Type	List Price	Type	List Price
OZ4	\$1.50	58B	3.20	68K7B	3.10	6SS7	2.70	12BD6	1.95
OZ4A	2.00	58EB	2.90	68L7GT	3.45	6SV7	3.65	12BE6	2.00
OZ4G	1.85	58K7A	3.20	68N4	2.20	6T4	3.60	12BF6	1.65
1A5GT	2.55	58R8	3.05	68N6	2.70	6T8	3.10	12BK5	3.05
1A7GT	2.95	58T8	3.10	68N8	2.55	6T8A	3.10	12BL6	1.95
1AG4	3.25	5CG8	2.90	68Q6GA/6CU6	3.90	6U5(N)	2.50	12BQ6GA/12CU6	3.95
1AH4	2.90	5CL8	2.85	68Q6GT	3.90	6UB	2.95	12BR7	2.30
1AJ5	2.90	5CZ5	2.60	68Q7A	3.50	6UBA	2.95	12BV7	2.70
1AX2	2.70	5DH8	3.20	58R8	2.95	6V3A	3.90	12BY7A	2.75
1B3GT	2.60	5J6	2.50	58S8	3.45	6V6	3.90	12BZ7	2.55
1DN5	1.95	5T8	3.10	58V8	2.75	6V6GT	2.00	12C5/12CU5	2.10
1H5GT	2.45	5U4G	1.90	58U8	2.55	6W4GT	2.15	12CA5	2.20
1J3	2.65	5U4GA/5U4GB	1.90	68W8	2.90	6W6GT	2.60	12CN5	2.10
1L4	2.35	5UB	2.95	68X7GT	3.55	6X4	1.50	12CR6	2.05
1L6	2.90	5V3	2.90	68Y5G	3.30	6X5GT	1.75	12CT8	3.40
1LA6	3.30	5V4G	2.80	68Y5GA	3.30	6X8	2.90	12D4	2.55
1LC5	3.15	5V4GA	2.80	68Y6	2.05	6X8A	2.90	12DE8	2.75
1LC6	3.30	5V6GT	2.05	68Y8	2.45	6Y6G	2.95	12DQ6A	3.85
1LE3	3.15	5X4G	2.25	68Z6	2.10	6Y6GT	2.95	12DV8	3.45
1LH4	3.15	5X8	2.85	68Z7	3.60	7A4	2.60	12Z6	2.05
1LN5	3.15	5Y3GT	1.55	68Z8	3.85	7A6	2.55	12EA6	2.05
1N5GT	2.90	5Y4GT	2.05	6C4	1.65	7A7	2.45	12F8	2.35
1R5	2.30	5Z3	2.60	6C5	2.35	7A8	3.10	12G8	2.40
1S4	2.85	6A7	3.40	6C6	3.15	7AF7	2.95	12J5	2.15
1S5	2.05	6A8	3.30	6C8G	4.30	7AG7	3.10	12H6	2.40
1T4	2.20	6AB4	1.85	6CB6	2.10	7AU7	2.30	12J7GT	2.80
1U4	2.15	6AC7	3.45	6CB6A	2.10	7B4	2.40	12J8	3.15
1U5	1.90	6AD7G	4.65	6CD6GA	5.20	7B5	2.40	12K5	2.50
1V	2.90	6AF4	3.60	6CE5 6BC5	2.10	7B6	2.65	12K7GT	2.70
1V2	1.80	6AF4A	3.60	6CF6	2.20	7B7	2.65	12K8	3.30
1V6	3.70	6AF6G(N)	3.10	6CG7	2.30	7B8	2.85	12L6GT	2.20
1X2A	2.65	6AG5	2.20	6CG8A	2.90	7C5	2.55	12Q7GT	2.55
1X2B	2.65	6AG7	3.85	6CH8	3.25	7C6	2.65	12R5	2.20
2A3	5.10	6AH4GT	2.75	6CL6	3.25	7C7	2.55	12SA7	2.60
2AF4	3.55	6AH6	4.10	6CL8	2.85	7F7	2.95	12SC7	2.70
2AF4A	3.55	6AJ4	4.45	6CM6	2.25	7F8	3.65	12SF5	2.35
2B3	2.55	6AK5	4.05	6CM7	2.50	7G7	3.00	12SF7	3.05
2BN4	2.25	6AK6	2.55	6CN7	2.25	7H7	3.30	12SG8	2.85
2CY5	2.50	6AL5	1.65	6CR6	2.00	7H7	3.30	12SH7	3.05
3A2	3.15	6A17GT(N)	5.00	6CS6	2.15	7J7	4.05	12SJ7	2.45
3A3	3.05	6AM4	5.25	6CS7	2.55	7K7	3.55	12SK7	2.40
3AF4A	3.55	6AM8	2.90	6CU5	2.10	7N7	2.70	12SL7GT	2.90
3AL5	1.65	6AN8	3.15	6CX8	3.25	7Q7	3.30	12SN7GTA	2.40
3AU6	1.90	6AQ5	2.00	6CY7	2.60	7S7	3.65	12SQ7	2.10
3B2	4.85	6AQ5A	2.00	6D6	3.15	7V7	3.75	12SR7	2.40
3BE6	2.10	6AQ6	1.85	6DB5	2.60	7X7	2.95	12V6GT	2.00
3BN6	2.75	6AQ7GT	3.05	6DE6	2.20	7Y4	2.20	12W6GT	2.60
3BU8	2.55	6AR5	2.05	6DG6GT	2.20	7Z4	2.20	12X4	1.50
3BY6	2.05	6AR8	3.55	6DQ6A	3.80	8AU8	3.10	14A7	2.65
3BZ6	2.05	6AS5	2.15	6DT6	1.95	8AU8A	3.35	14AF7	2.95
3C2	4.50	6AT6	1.65	6E5(N)	2.50	8CG7	2.35	14B6	2.65
3CB6	2.05	6AT6	1.65	6F6GT	2.45	8CM7	2.55	14G7	3.30
3CE5-3BC5	2.05	6AT8	2.90	6F6	3.05	8CN7	2.30	17AX4GT	2.50
3CF6	2.30	6AU4GTA	3.05	6F7	4.65	8CX8	3.35	17DQ6A	3.90
3CS6	2.20	6AU5GT	3.65	6F8G	4.30	9CL18	2.90	17H3	1.80
3DK6	2.20	6AU6	1.90	6G6G	3.35	9UBA	2.90	18A5	3.45
3DT6	1.95	6AU6A	1.90	6H6	2.40	10C8	3.55	19AU4GTA	3.05
3LF4	3.55	6AU8	3.10	6J5	2.15	10DE7	2.65	198G6GA	5.45
3Q4	2.35	6AU8A	3.10	6J6	2.50	12A4	2.45	19J6	2.50
3Q5GT	2.10	6AV5GA	3.50	6J7	3.05	12AB5	2.10	19T8	3.10
3S4	2.30	6AV6	1.60	6K6GT	2.00	12AC6	2.05	25AV5GA	3.50
3V4	2.20	6AW8A	3.20	6K7	3.05	12AD6	2.00	25AX4GT	2.75
48C8	3.65	6AX4GT	2.45	6K8	3.65	12AE6	1.70	25BK5	3.05
48N6	2.75	6AX5GT	2.55	6L6	5.15	12AF6	1.95	25BQ6GA/CU6	4.05
48Q7A	3.50	6AZ8	3.55	6L6GB	3.90	12AG6	1.90	25C5	1.95
48S5	3.55	6B8	3.90	6L7G	3.40	12AJ6	1.60	25CA5	2.20
48UB	2.60	6BA6	1.90	6N7	3.40	12AL5	1.70	25CD6GB	5.20
4CB6	2.10	6BA7	3.15	6Q7	2.90	12AG5	2.00	25DN6	5.15
4CY5	2.50	58ABA	3.25	6S4A	1.85	12AT6	1.65	25DQ6	3.85
4DT6	1.95	6BC7	3.20	6S7G	3.50	12AT7	2.85	25EC6	4.95
5AM8	2.95	6BC8	3.60	6S8GT	2.75	12AU6	1.90	25L6GT	2.15
5AN8	3.20	6BD6	1.95	6SA7	2.60	12AU7A	2.30	25W4GT	2.30
5AQ5	2.00	6BE6	2.10	6SB7Y	3.85	12AV5GA	3.55	25W6GT	2.75
5AS4	1.90	6BF5	2.25	6SC7	2.70	12AV6	1.55	25Z5	2.45
5AS8	3.05	6BF6	1.65	6SF5	2.25	12AV7	2.90	25Z6GT	2.45
5AT8	2.90	6BG6GA	5.55	6SF7	3.05	12AW6	2.60	26	2.30
5AU4	3.10	6BH8	5.15	6SG7	2.95	12AX4GTA	2.45	27	2.25
5AV8	3.20	6BJ6	2.35	6SH7	3.05	12AX7	2.30	35A5	2.80
5AW4	2.50	6BJ7	2.50	6SJ7	2.45	12AZ7	2.60	35B5	2.25
		6BK4	4.35	6SK7	2.40	12BA4	2.50	35C5	2.00
		6BJ8	2.55	6SL7GT	2.90	12BA6	1.90	35L6GT	2.15
		6BK5	2.95	6SN7GTB	2.35	12BA7	3.15		
		6BK7A	3.10	6SQ7	2.10				
				6SR7	2.35				



# G-E RECEIVING TUBES — continued

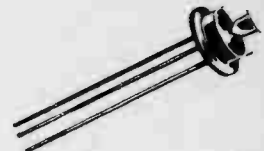
Type	List Price	Type	List Price	Type	List Price	Type	List Price	Type	List Price
35W4	1.35	42	2.40	50C5	2.00	75	2.60	117N7GT	7.30
35Y4	2.20	43	2.60	50L6GT	2.15	78	2.70	117P7GT	7.30
35Z3	2.20	45	2.25	50X6	2.60	80	1.90	117Z3	2.10
35Z5GT	1.60	50A5	2.80	50Y6GT	2.35	83(N)	2.60	117Z6GT	3.55
41	2.55	50B5	2.25	50Y7GT	2.25	84/6Z4	2.05		



## SEMICONDUCTOR PRODUCTS

GERMANIUM • SILICONE

DIODES • TRANSISTORS • RECTIFIERS



Type	Suggested User Price	Type	Suggested User Price	Type	Suggested User Price	Type	Suggested User Price	Type	Suggested User Price		
<b>DIODES</b>		<b>TV Rectifiers</b>		<b>Stud Mounted</b>		<b>GERMANIUM TRANSISTORS</b>		2N191 1.82			
<b>Low Frequency</b>		1N573	1.55	1N1115	2.90	<b>Waivered</b>		2N192 1.95			
1N34A	\$ .84	1N575	1.95	1N1116	3.30	USAF 2N43A		2N241 1.96			
1N48	.68	1N581	3.05	1N1117	4.15	4JD1A17	6.02	2N241A 2.10			
1N48 MP	1.80	1N1005	1.55	1N1118	5.80	2N43	4.90	2N241A 2.10			
1N51	.47	1N1007	1.95	<b>High Current</b>		2N44	3.22	2N265 1.91			
1N63	2.80	1N1008	2.20	4JA60-A	} Series	2N45	3.05	2N292 1.86			
1N63 MP	6.00	1N1013	3.05	4JA60-B		2N78	3.71	2N293 2.14			
1N64	.43	1N1022	1.55	4JA60-C		2N107	1.07	2N394 4.45			
1N65	.68	<b>Stacked Rectifiers</b>		4JA60-F		2N123	5.80	2N395 6.18			
<b>Quads</b>		4JA211A	} Prices for these series of rectifiers available upon request	4JA61-A,B,C		2N135	2.14	2N396 6.43			
1N74	12.35	4JA211B		<b>Medium Power</b>	4JA61-F	2N136	2.56	2N397 7.43			
1N314	15.85	4JA211C			4JA3011	2N137	6.19	4JD1B3 6.60			
<b>UHF</b>		4JA211F			<b>Single-phase Single cells Stack</b>	<b>Prices for these series of rectifiers available upon request</b>		2N138	2.06	4JD1B4 7.01	
1N72	.87	<b>Multi-phase Single cells Stack</b>				<b>Stacked Rectifiers</b>		2N165	2.23	4JD3A1 16.10	
G7A	.87	<b>SILICON RECTIFIERS</b>				<b>Hi Current 4JA6011 Series</b>		2N166	1.29	4JD3A2 28.80	
G7B	1.07	<b>Low Current</b>		<b>Lo Current 4JA411 Series</b>		2N167	6.44	4JD3A3 6.45			
G7C	1.07	1N536	2.00	<b>Prices available upon request</b>		2N168	2.14				
1N285	1.19	1N537	2.05			2N168A	2.23				
<b>GERMANIUM RECTIFIERS</b>		1N538	2.50			2N169	2.06				
<b>Alloy Junction</b>		1N539	3.30			2N170	1.29				
1N91	.82	1N540	5.00			2N186	1.82				
1N92	1.90	1N1095	7.50			2N186A	1.96				
1N93	2.64					2N187	1.85				
USN 1N93	3.46					2N187A	2.00				
1N151	2.15					2N188	1.90				
1N152	2.72					2N188A	2.06				
1N153	3.55					2N189	1.77				
1N158	5.45					2N190	1.78				
1N315	2.97					<b>SILICON TRANSISTORS</b>		4JD4A2 57.75			
USAF 1N315	3.88							4JD4A4 24.80			
1N368	2.56							4JD4A3 41.30			
								4JD4A5 28.90			
								4JD5A1 16.10			



# POWER tubes



## for Communications and Industry

Type	Suggested User Price	Type	Suggested User Price	Type	Suggested User Price
OA2	\$1.26	GL-7C29	\$189.50	GL-845	\$15.95
OA3/VR-75	1.27	GL-7D21	511.00	GL-851	590.00
OA4G	1.68	7UP7	49.50	GL-857B	218.50
OB2	1.34	7UP25	70.00	GL-862A	1713.25
OB3/VR-90	1.65	7VP1	24.00	GL-866A	2.65
OC3/VR-105	1.27	PJ-8	GL-5556	GL-868/PJ-23	3.15
OD3/VR-150	1.27	10KP7	55.00	GL-869B	138.00
KC-1	685.00	10SP4	65.00	GL-870A	1982.00
GL-1L21	25.00	10UP14	49.60	GL-872A/872	10.31
GL-1L22	39.00	12AT7WA	4.85	GL-880	545.00
GL-1L23	39.00	12AY7	2.55	884	1.85
GL-1L24	55.00	12DP7A	61.85	GL-889A	244.50
GL-1L25	21.00	12SP7	47.40	GL-889RA	352.30
GL-1L31	26.50	12SP7B	49.50	GL-891R	410.00
GL-1L32	25.00	FA-13	GL-562B/FA-13	GL-892	255.00
GL-1L33	46.00	FA-14	GL-5629/FA-41	GL-892R	405.00
GL-1L36	18.50	FA-15	GL-5626/FA-15	GL-893A	710.00
GL-1L38	33.25	FG-17	GL-5557/FG-17	GL-893AR	1260.00
GL-1P21	50.00	17ADP7	160.00	GL-895	1095.00
GL-1P39	2.90	PJ-23	GL-686/PJ-23	GL-898A	1713.25
GL-1P40	2.85	FG-27A	40.25	GL-918	3.80
2AP1-A	10.85	FG-32	GL-5558/FG-32	GL-919	4.95
GL-2B22	21.00	FG-23	GL-5720/FG-33	GL-920	5.30
GL-2B23	31.50	FG-41	GL-5830/FG-41	GL-921	3.00
2BP1	11.00	B-46	GL-5624/B-46	GL-922	2.65
GL-2C39B	32.15	B-47	GL-5623/B-47	GL-923	2.65
GL-2C40	27.50	FB-50	GL-5620/FB-50	GL-927	1.60
GL-2C42	23.45	FP-54	GL-5740/FP-54	GL-929	2.65
GL-2C43	24.55	FG-57	GL-5559/FG-57	GL-930	9.15
GL-2C46	23.90	FP-62	GL-5739/FP-62	GL-931A	137.50
2D21	2.04	FG-67	GL-5728/FG-67	GL-1000T	3.20
2E24	4.65	FG-81A	27.77	1612	3.20
2E26	3.85	FG-95	GL-5560/FG-95	1614	2.72
2E30	2.95	FG-97	56.50	GL-1616	8.65
GL-2H21	253.00	FG-98A	71.43	1619	3.30
2X2A	2.20	GL-100TH	18.25	1620	6.36
KC-3	565.00	FG-104	GL-5561/FG-104	2050	1.85
3AP1A	22.00	FG-105	53.33	GL-5513	467.25
GL-3B24W	10.55	FG-154	88.75	GL-5516	7.95
3BP1A	16.50	FG-235A	GL-5552/FG-235A	GL-5518	890.00
GL-3C23	11.98	FG-172	71.75	GL-5544	38.41
3KP1	16.70	GL-207	240.00	GL-5549	653.50
3MP1	22.50	FG-238B	GL-5555/238B	GL-5550/GL-415	41.00
3UP1	27.00	GL-242C	15.50	GL-5551A	65.00
GL-3X2500A3	198.00	FG-259B	GL-55554/FG-259B	GL-5551A/P	67.00
KC-4	GL5625/KC-4	FP-265	58.00	GL-5552A	99.00
GL-4B32	12.00	FG-271	GL-5551/FG-271	GL-5552A/P	101.25
GL-4-1000A	135.00	FG-280	69.00	GL-5553B	216.00
GL-4D21/4-125A	30.25	GL-393A	13.25	GL-5553B/P	218.75
GL-4X150A	38.95	FP-400	55.75	GL-5554/FG-259B	206.50
GL-4-250A/5D22	41.25	GL-411	478.75	GL-5555/FG-238B	316.00
5AHP4	33.40	GL-414	135.00	GL-5556/PJ-8	21.00
5AHP4A	40.80	GL-415	GL-5550/GL-415	GL-5557/FG-17	9.50
5AHP7	33.40	GL-441	4.50	GL-5558/FG-32	17.50
5AHP7A	40.80	502A	2.03	GL-5559/FG-57	23.00
5AHP14	37.75	GL-506	GL-6228/GL-506	GL-5560/FG-95	28.00
5AHP14A	45.50	GL-575A	20.00	GL-5561/FG-104	45.75
5AHP19	42.00	GL-592	30.25	GL-5564/GL-507	1025.00
5AHP19A	50.00	GL-627	27.00	GL-5581	2.60
5AUP24	93.00	GL-672A	38.00	GL-5588	150.00
5BP1-A	22.50	GL-673	21.00	GL-5593	253.00
GL-5C21/C6J	28.90	GL-678	47.00	GL-5620/FB-50	22.25
GL-5C24	45.00	GL-801A	7.85	GL-5621/B-6	25.50
SCP1-A	27.00	GL-802	7.55	GL-5623/B-47	25.00
SCP7-A	31.40	GL-803	31.00	GL-5625/KC-4	225.00
5FP7-A	27.50	GL-805	15.90	GL-5626/FA-15	76.75
5FP14	29.50	807	2.95	GL-5627/FA-16	72.50
5FP14A	28.80	GL-809	5.65	GL-5628/FA-13	56.50
5QP4	49.50	GL-810	19.50	GL-5629/FA-14	45.50
5R4GY	1.90	GL-811A	5.65	GL-5630	1620.00
5R4GYA	1.90	GL-812A	5.65	GL-5632/C3J	13.90
5UP1	19.65	GL-813	19.65	5636	9.15
5Y3WGTB	6.40	GL-814	18.70	5642	2.60
B-6	GL-5621/B-6	GL-815	18.75	5651	1.78
FA-6	GL-5627/FA-6	GL-816	2.15	5654	3.60
6AN5	3.65	GL-828	20.95	5654/6AK5W	3.60
6AS6	3.46	GL-829B	16.25	5654/6AK5W/6096	6.00
6AU6WA	3.70	GL-832A	14.20	5662	1.45
6D4	2.85	GL-833A	49.00	5663	2.10
6J4	4.33	GL-836	9.00	GL-5665/C16J	57.90
6X4WA	3.70	GL-837	6.30	5670*	5.05
7ABP7A	41.75	GL-838	15.15	5670WA	5.80
78P7-A	40.00	842	3.65	GL-5674	164.75

continued



# POWER tubes

for Communications and Industry

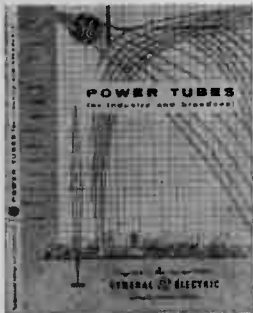
- FIVE STAR
- THYRATRON
- CATHODE RAY
- PHOTOTUBE
- IGNITRON
- RECTIFIER
- KLYSTRON
- COMMUNICATION
- INDUSTRIAL RECEIVING

Type	Suggested User Price	Type	Suggested User Price	Type	Suggested User Price
GL-5681	\$1780.00	5902*	7.50	6463	2.15
5686*	3.85	5915A	1.55	6485	1.65
5687	4.50	GL-5921	40.00	GL-6504	2642.00
5691	8.45	GL-5922	40.00	GL-6509	486.25
5692	8.15	5693	1.40	GL-6511	156.90
5693	6.40	5964	1.40	GL-6512	259.80
5696	1.90	5965	2.40	GL-6513	347.00
5718*	4.60	GL-5973	400.00	GL-6514	451.00
5719*	3.95	6005*	4.60	GL-6515	1091.50
GL-5720-FG-33	34.75	6005/6AQ5W	4.60	6525	\$2.15
5725*	3.80	6005/6AQ5W/6095	7.35	6660/68A6▲	2.05
5725/6AS6W	3.80	GL-6011	13.00	6661/68H6▲	2.60
5725/6AS6W/6187	6.90	GL-6014/C1K	12.90	6662/68J6▲	2.50
5726*	2.10	GL-6017	340.00	6663/6AL5▲	1.80
5726/6AL5W	2.10	GL-6019	751.75	6669*	2.20
5726/6AL5W/6097	3.45	6021*	5.85	6677▲	3.50
5727*	2.90	GL-6039	1117.50	6678▲	3.15
5727/2D21W	2.90	GL-6044	56.00	6679/12AT7▲	3.00
GL-5728/FG-67	53.50	6046	1.55	6680/12AU7▲	2.50
GL-5736	160.00	6072*	4.80	6681/12AX7▲	2.55
GL-5740/FP-54	163.50	6087*	6.40	GL-6807	29.30
5749*	2.80	6100/6C4WA	2.90	GL-6808	29.40
5749/68A6W	2.80	6111*	6.70	GL-6809	29.80
5750/68E6W	3.90	6112*	6.70	6829	7.10
5750*	3.90	6136*	3.70	GL-6855/716	9.60
5751*	3.80	6146	4.90	GL-6856/740	\$19.40
5751WA	5.55	GL-6181	925.50	GL-6857/740P	20.10
GL-5762/7C24	215.00	GL-6182	2100.00	GL-6858/760	28.90
5763	2.37	GL-6183	680.00	GL-6859/760P	29.40
GL-5779	135.25	6189/12AU7WA	4.80	GL-6860/C6J/F	30.10
GL-5788	476.25	GL-6198A	255.00	GL-6930/635P	13.60
5797*	14.10	6201*	4.85	GL-8000	21.15
5814A	3.85	6202*	3.70	GL-8002	245.22
5814WA	5.05	6203*	4.60	GL-8002R	320.38
GL-5820	1200.00	6205	7.50	GL-8005	12.65
GL-5822A	116.00	6211	2.40	GL-8008	10.31
5824	3.70	GL-6228/GL-506	3696.25	GL-8013A	11.45
GL-5830/FG-41	320.00	GL-6251	\$2300.00	GL-8020	24.00
5840*	7.10	6265*	4.60	GL-8025A	12.35
5844	2.40	GL-6299	56.00	9001	4.60
GL-5855	70.00	GL-6346	88.00	9002	3.10
5879	1.75	GL-6347	125.00	9003	4.60
5881	3.50	GL-6348	251.00		
GL-5894	22.00	6386*	8.25		
5896*	5.05	GL-6442	37.50		
5899*	7.50	GL-6452	106.00		

\* Five-Star Types  
▲ Communication Types

**THERMOSTAT KITS FOR IGNITRONS**

KIT NUMBER	SUGG. USER PRICE	KIT NUMBER	SUGG. USER PRICE	KIT NUMBER	SUGG. USER PRICE	KIT NUMBER	SUGG. USER PRICE
N15272AA	\$5.35	N15273AA	\$5.15	N15286AA	\$5.65	N15287AA	\$5.35



## There's a G-E Electronic Tube for Every Purpose:

Ask for — ETX-10J For Complete Descriptions and Ratings

- PLIOTRONS
- PHOTOTUBES
- CATHODE-RAY TUBES
- IGNITRONS
- BALLAST TUBES
- MICROWAVE RADAR
- PHASITRON
- HIGH ALTITUDE DEVICES
- DEVICES
- GLOW TUBES
- PHANOTRONS
- KENOTRONS
- THYRATRONS
- LIGHTHOUSE TUBES
- TV CAMERA TUBES

Prices and other data subject to change without notice.



# RCA ELECTRON TUBES

## ENTERTAINMENT RECEIVING TYPES

LIST PRICE SCHEDULE • SEPT. 15, 1957

RCA TYPE	LIST PRICE*	RCA TYPE	LIST PRICE*	RCA TYPE	LIST PRICE*	RCA TYPE	LIST PRICE*	RCA TYPE	LIST PRICE*	RCA TYPE	LIST PRICE*
OZ4	\$1.55	5T4	5.45	6BR8	2.95	6SQ7GT	2.10	12BR7	2.35	50L6GT	2.15
OZ4G	1.90	5T8	3.15	6BS8	3.60	6SR7	2.35	12BV7	2.70	50X6	2.60
1A3	2.70	5U4GB	1.90	6BU8	2.60	6SS7	2.70	12BY7A	2.80	50Y6GT	2.55
1A5GT	2.55	5U8	3.05	6BX7GT	3.60	6SZ7	2.70	12BZ7	2.80	50Y7GT	2.25
1A7GT	2.95	5V4G	2.80	6BY5GA	3.35	6T4	3.60	12C8	4.40	70L7GT	6.95
1AD5	3.90	5X4G	2.25	6BY6	2.10	6T8	3.15	12CA5	2.20	75	2.60
1AX2	2.70	5X8	2.90	6BZ6	2.10	6U5	2.50	12CR6	2.05	78	2.70
1B3GT	2.60	5Y3GT	1.55	6BZ7	3.60	6UBA	2.95	12CU5	2.10	80	1.90
1C5GT	2.90	5Y4GT	2.05	6C4	1.65	6V3A	3.95	12DL8	3.15	83V	3.80
1DN5	2.10	5Z3	2.60	6C5	2.35	6V6	3.90	12DQ6A	3.90	84/6Z4	2.05
1E8	4.30	5Z4	3.90	6CSGT	2.15	6V6GT	2.00	12DT8	3.10	117L7GT/	
1G3GT/1B3GT	2.60	6A7	3.40	6C6	3.15	6W4GT	2.15	12F8	2.45	117M7GT	6.95
1H5GT	2.45	6A8	3.30	6C8G	4.30	6W6GT	2.60	12H6	2.40	117N7GT	7.30
1L4	2.35	6A8B	3.30	6CB5A	6.15	6X4	1.50	12J5GT	2.15	117P7GT	7.30
1L6	2.90	6A8GT	3.30	6CB6	2.10	6X5GT	1.75	12J7GT	3.05	117Z3	2.10
1LA6	3.30	6A8A	1.85	6CD6GA	5.20	6X8	2.90	12K5	2.55	117Z6GT	3.55
1LB4	3.55	6A85/6N5	3.15	6CF6	2.25	6Y6G	2.95	12K7GT	2.70		
1LC5	3.15	6A87	3.95	6CG7	2.30	7A4	2.60	12K8	3.65		
1LC6	3.30	6AC5GT	3.45	6CG8	2.90	7A5	2.95	12L6GT	2.20		
1LD5	3.30	6AC7	3.50	6CH8	3.25	7A6	2.55	12Q7GT	2.55		
1LE3	3.30	6AD7G	4.65	6CL6	3.25	7A7	2.80	12SA7	2.60		
1LG5	3.15	6AF4	3.60	6CM7	2.55	7A8	3.55	12SA7GT	2.60		
1LH4	3.15	6AF4A	3.60	6CN7	2.30	7AD7	4.95	12SC7	2.70		
1LN5	3.15	6AF6G	3.10	6CQ8	2.95	7AF7	2.95	12SF5	2.35		
1NSGT	2.90	6AG5	2.20	6CS6	2.15	7AG7	3.10	12SF7	3.05		
1R5	2.35	6AG7	3.90	6CU5	2.10	7AH7	2.95	12SG7	2.85	OA2	1.75
1S4	2.85	6AH4GT	2.80	6CU8	3.30	7AU7	2.35	12SH7	3.05	OA3	1.80
1S5	2.05	6AH6	4.20	6CZ5	2.55	7B4	2.40	12SJ7	2.45	OA4-G	2.40
1T4	2.20	6AK5	4.05	6D6	3.15	7B5	3.75	12SK7	2.40	OB2	1.90
1U4	2.20	6AK6	2.55	6DC6	2.55	7B6	2.65	12SK7GT	2.40	OC3	1.80
1U5	1.95	6AL5	1.65	6DE6	2.20	7B7	2.65	12SL7GT	2.95	OD3	1.80
1V	2.90	6AL7GT	5.00	6DG6GT	2.20	7B8	2.85	12SN7GT	2.40	2D21	2.65
1V2	1.80	6AM4	5.35	6DQ5	4.15	7C5	2.80	12SQ7	2.10	2E24	5.45
1X2A	2.70	6AM8A	2.90	6DQ6A	3.90	7C6	2.65	12SQ7GT	2.10	2E26	4.55
1X2B	2.70	6AN4	4.55	6DS5	2.35	7C7	2.55	12SR7	2.40	2X2A	2.60
2A3	5.10	6AN8	3.15	6DT6	1.95	7E7	3.55	12V6GT	2.00	3A5	1.85
2AF4A	3.65	6AQ5A	2.00	6DT8	3.10	7F7	2.95	12W6GT	2.60	3B28	7.60
2BN4	2.25	6AQ6	1.85	6E5	2.55	7F8	3.65	12X4	1.50	3KP4	28.55
2CY5	2.60	6AQ7GT	3.05	6F5	2.65	7G7	3.20	14A7	2.80	5R4-GY	2.70
3A2	3.15	6AR5	2.10	6F5GT	2.60	7H7	3.30	14AF7	2.95	6A56	4.85
3A3	3.05	6AS5	2.15	6F6	3.05	7J7	4.05	14B6	2.65	6A57-G	6.25
3AF4A	3.65	6AS8	3.05	6F6G	2.70	7K7	3.55	14C7	2.65	6J4	6.10
3AL5	1.70	6AT6	1.65	6F6GT	2.45	7N7	2.70	14F7	2.95	10Y	7.40
3AU6	1.95	6AT8	2.90	6F7	4.65	7Q7	3.30	14F8	3.65	12A6	2.95
3AV6	1.60	6AU4GTA	3.05	6F8G	4.30	7R7	4.05	14Q7	3.30	12AY7	3.55
3B2	4.85	6AU5GT	3.65	6G6G	3.35	7V7	3.90	14R7	4.05	83	1.85
3BC5	2.10	6AU6	1.90	6H6	2.40	7W7	3.75	17AX4GT	2.55	502-A	2.85
3BN6	2.75	6AU8	3.15	6J5	2.15	7X7	4.70	17BQ6GTB	4.05	807	3.40
3BU8	2.60	6AV5GA	3.55	6J5GT	2.15	7Y4	2.20	17DQ6A	3.90	809	6.65
3BY6	2.10	6AV6	1.60	6J6	2.55	7Z4	2.20	19AU4	3.10	811A	6.65
3BZ6	2.10	6AW8A	3.30	6J7	3.05	8AW8A	3.35	19B6GA	6.00	812A	6.65
3CB6	2.10	6AX4GT	2.45	6J7GT	3.05	8CG7	2.35	19J6	2.70	816	2.15
3CF6	2.30	6AX5GT	2.55	6K6GT	2.00	8CM7	2.55	19T8	3.15	866A	3.10
3CS6	2.20	6AZ8	3.55	6K7	3.10	10DE7	2.65	19X8	3.35	884	2.55
3DT6	1.95	6B4G	4.55	6K7GT	2.70	12A8GT	3.30	24A	3.05	885	2.75
3LF4	3.55	6B8	3.90	6K8	3.65	12A85	2.10	25AX4GT	2.80	921	3.55
3Q4	2.35	6BA6	1.90	6L6	5.15	12AD6	2.05	25BQ6GTB/		927	3.85
3Q5GT	3.10	6BA7	3.15	6L6GB	3.90	12AE6	1.70	25CU6	4.10	991	1.20
3S4	2.30	6BA8A	3.30	6L7	3.55	12AF6	2.00	25CD6G8	5.20	1614	3.85
3V4	2.20	6BC4	4.45	6N7	3.40	12AH7GT	3.40	25DN6	5.15	1620	8.95
4AU6	1.95	6BC5	2.10	6N7GT	3.30	12AJ6	1.60	25L6	4.60	1623	4.75
4BC8	3.65	6BC7	3.20	6Q7	2.90	12AL5	1.70	25L6GT	2.05	1624	4.70
4BQ7A	3.55	6BC8	3.60	6Q7GT	2.55	12AQ5	2.00	25W4GT	2.35	1625	3.50
4B58	3.65	6BD4A	21.50	6R7	3.10	12AT6	1.65	25Z5	2.45	1635	2.75
4BZ7	3.65	6BD6	1.95	6S4A	1.85	12AT7	2.85	25Z6GT	2.45	2050	2.55
4CB6	2.10	6BE6	2.10	6S7	3.60	12AU6	1.90	27	2.25	5618	6.95
4DT6	1.95	6BF5	2.25	6S8GT	2.75	12AU7A	2.30	35A5	2.80	5642	2.70
5AM8	2.95	6BF6	1.70	6SA7	2.60	12AV6	1.60	35B5	2.25	5651	2.50
5AN8	3.20	6BG6GA	5.55	6SA7GT	2.60	12AV7	3.05	35C5	2.00	5653	1.75
5AQ5	2.05	6BH6	2.45	6SB7Y	3.85	12AW6	2.60	35L6GT	2.15	5696	2.60
5AS4A	1.90	6BH8	3.15	6SC7	2.70	12AX4GTA	2.45	35W4	1.35	5763	3.35
5AS8	3.05	6BJ6	2.35	6SF5	2.30	12AX7	2.30	35Y4	2.20	5823	2.20
5AT8	2.90	6BK4	6.35	6SF5GT	2.30	12AZ7	2.60	35Z3	2.20	5879	2.50
5AV8	3.20	6BK5	2.95	6SF7	3.05	12B4A	2.55	35Z4GT	1.70	5881	4.90
5AZ4	2.15	6BK78	3.15	6SG7	2.95	12BA6	1.90	35Z5GT	1.60	6146	5.75
5BK7A	3.20	6BL4	5.60	6SH7	3.05	12B7A	3.15	41	2.55	6159	5.75
5BQ7A	3.55	6BL7GT	3.55	6SJ7	2.45	12BD6	1.95	42	2.40	6293	7.00
5BR8	3.05	6BN4	2.20	6SJ7GT	2.35	12BE6	2.00	43	2.60	6328	11.40
5BT8	3.10	6BN6	2.70	6SK7	2.40	12BF6	1.70	47	5.85	6417	3.35
5CG8	2.90	6BN8	2.55	6SK7GT	2.40	12BH7A	2.70	50A5	3.15	6472	12.00
5CQ8	3.05	6BQ6GTB/		6SL7GT	2.95	12BL6	2.00	50B5	2.25	6883	5.75
5CZ5	2.60	6CU6	3.90	6SN7GT8	2.35	12BQ6GTB/		50C5	2.00	6893	4.55
5J6	2.55	6BQ7A	3.55	6SQ7	2.10	12CU6	4.05	50C6G	3.35	6973	2.60

**INDUSTRIAL  
TYPES FOR THE  
ENTERTAINMENT  
MARKET**

OA2	1.75
OA3	1.80
OA4-G	2.40
OB2	1.90
OC3	1.80
OD3	1.80
2D21	2.65
2E24	5.45
2E26	4.55
2X2A	2.60
3A5	1.85
3B28	7.60
3KP4	28.55
5R4-GY	2.70
6A56	4.85
6A57-G	6.25
6J4	6.10
10Y	7.40
12A6	2.95
12AY7	3.55
83	1.85
502-A	2.85
807	3.40
809	6.65
811A	6.65
812A	6.65
816	2.15
866A	3.10
884	2.55
885	2.75
921	3.55
927	3.85
991	1.20
1614	3.85
1620	8.95
1623	4.75
1624	4.70
1625	3.50
1635	2.75
2050	2.55
5618	6.95
5642	2.70
5651	2.50
5653	1.75
5696	2.60
5763	3.35
5823	2.20
5879	2.50
5881	4.90
6146	5.75
6159	5.75
6293	7.00
6328	11.40
6417	3.35
6472	12.00
6883	5.75
6893	4.55
6973	2.60

List prices\* include Federal Excise tax where applicable. All prices subject to change or withdrawal without notice.  
\*Optional. Prices higher in Hawaii and Alaska.



# RCA ELECTRON TUBES

FOR INDUSTRY AND COMMUNICATIONS

## DIRECT REPLACEMENT TYPES

RCA types shown below are direct replacements under all circumstances for corresponding types to be replaced. Tube types covered include: Vacuum

Power Tubes, Rectifier Tubes, Thyratrons, Ignitrons, Voltage Regulators, Phototubes, Cathode-Ray Tubes, and Special Types.

Type to be Replaced	Replace by RCA Type	Type to be Replaced	Replace by RCA Type	Type to be Replaced	Replace by RCA Type	Type to be Replaced	Replace by RCA Type
OA3/VR75	OA3	CE-59	5581	WT-246	2050	905	905-A
OC3/VR105	OC3	R59A	868	HK-257(B)	4E27/8001	906-P1	3AP1-A
OD3/VR150	OD3	R60A	920	FG-258-A	5553	908	908-A
CE-1(A-D)	868, 918	HY-61/807	807	FG-259B	5554	914	914-A
1P29/FJ-401	1P29	R61A	930	WT-261	6H6	931	931-A
1P32	927	CE-64	5583	WT-262	866-A	UE-938	838
2AP1	2AP1-A	FG-67	5728/F6-G7	WT-263	84/6Z4	UE-945	845
2B4	8B5	VR75-30	OA3	WT-269	OC3	UE-949	849
2C38	2C39-A	CE-91R	1P37	WT-270	80	UE-966	866-A
2C39	2C39-A	FG-95	5560	WT-270X	5Z3	UE-967A	866-A
ML-381	2C39-A	CE-98	5582	FG-271	5551	UE-967	5557
3X100A11	2C39-A	100R	8020	WT-272	5557	UE-972A	872-A
ZP572	2C39-A	FG-104	5561	WT-274	5R4-GY	UE-975A	575-A
2X2/879	2X2-A	WL-104	5561	WT-274B	5R4-GY	1640	6405/1640
3-50G2	834	VR105-30	OC3	WT-294	OD3	1701	5557
3AP1	3AP1-A	VR150-30	OD3	WT-301	83	1802-P1	58P1-A
3BP1	3BP1-A	WT-210-0001	2D21	UE-303A	203-A	1811-P1	7CP1
3C45	6130/3C45	WT-210-0003	884	WE-304B	834	1849	1850-A
3D22	3D22A	WT-210-0004	2050	F-307A	207	1850	1850-A
4D21	4-125A/4D21	WT-210-0006	6H6	WT-308	6X5-GT	1851	6AC7
4-250A	4-250A/5D22	WT-210-0008	866-A	CE-309	5557	1853	6AB7
5BP1	5BP1-A	WT-210-0009	84/6Z4	CE-311	3C23	1854	6474/1854
5CP1	5CP1-A	WT-210-0011	OC3	UE-317C	217-C	1904	5728/FG-67
5CP7	5CP7-A	WT-210-0012	80	ML-322A	803	2051	2050
5D22	4-250A/5D22	WT-210-0013	5Z3	NL-331A	805	2525A5	58P1-A
5FP7	5FP7-A	WT-210-0015	5557	350A	807	5553	5553-A
5HP1-A	5HP1-A‡	WT-210-0018	OD3	366-A	866-A	5563	5563-A
WT-6	616	WT-210-0019	83	WT-377	117Z6-GT	5604	5604-A
6Q5-G	884	WT-210-0021	6X5-GT	ML-381	2C39-A	5814	5814-A
7BP7	7BP7-A	WT-210-0025	117Z6-GT	WT-389	3Q5-GT	ML-5897	5718
7C24	5762/7C24	WT-210-0027	872-A	WT-390	6C5, 6C5-GT	ML-5898	5719
7JP1	7VP1	WT-210-0028	3Q5-GT	FJ-401	1P29	8001	4E27/8001
PJ-8	5556	WT-210-0029	6C5	403A	6AK5	8012	8012-A
BW-11	834	WT-210-0031	902-A	GL-415	5550	8016	183-GT
CE-5(A-D)	927	WT-210-0037	117L7/M7-GT	GL-451	8020	AX-9903	5894
7JP1	7VP1	WT-210-0038	172	ZP-522	2C39-A	WTT-100	6X4
CE-11(A-D)	917	WT-210-0040	6X4	WT-606	2D21	WTT-102	5Y3-GT
RK-11	1623	WT-210-0042	5Y3-GT	WL-630, WL-630A	2050	WTT-103	6H6
12DP7	12DP7-A	WT-210-0044	575-A	WL-631	5559	WTT-104	575-A
FG-17	5557	WT-210-0045	892	KU-634	677	WTT-105	892
WL-17	5557	WT-210-0048	5U4-G, 5U4-GB	WL-651/656	5552	WTT-111	5559
CE-20	927	WT-210-0052	2AP1-A	WL-652/657	5551	WTT-112	5560
RK-20A	804	WT-210-0053	3AP1-A	WL-653B	5555	WTT-113	676
CE-21(A-D)	920	WT-210-0055	5559	WL-655/658	5553	WTT-114	0Z4
CE-23(A-D)	923	WT-210-0057	5560	672	672-A	WTT-115	117N7-GT
PJ-23	868	WT-210-0058	676	WL-679	5554	WTT-117	5557
CE-25(A-D)	927	WT-210-0060	OZ4	WL-681/686	5550	WTT-118	105
RK-25	802	WT-210-0062	5557	WT-699	5550	WTT-119	172
RK-25B	802	WT-210-0069	5557	NL-715	5557	WTT-122	65J7, 65J7-GT
CE-28(A-D)	928	WT-210-0070	5550	ML-728	5557	WTT-123	6V6
RK-28	803	WT-210-0071	5551	WL-735	868	WTT-124	7K7
RK-28A	803	WT-210-0072	5552	801	801A	WTT-125	6N7-GT
CE-29(A-D)	929, 1P39	WT-210-0074	105	811	811-A	WTT-126	50B5
CE-30(A-D)	930, 1P40	WT-210-0077	5553	812	812-A	WTT-127	833-A
CE-30V	925	WT-210-0078	172	829	829-B	WTT-128	6K8
RK-30	800	WT-210-0079	105	829-A	829-B	WTT-129	6J5-GT, 6J5
FG-32	5558	WT-210-0081	65J7-65J7GT	UE-830	830-B	WTT-130	6G6-G
WL-32	5558	WT-210-0082	6V6	832	832-A	WTT-131	6C6
RK-33	2C21/1642	WT-210-0084	6N7-GT, 6N7	833	833-A	WTT-132	OA4-G
CE-34	934	WT-210-0085	50B5	857	857-B	WTT-135	5U4-G, 5U4-GB
RK-39	807	WT-210-0086	833-A	862	862-A	WTT-136	2AP1-A
CE-41	921	WT-210-0087	6K8	866	866-A	WTT-137	3AP1-A
CE-42	922	WT-210-0088	6J5-GT, 6J5	866-A/866	866-A	WTT-149	172
KU-42	6130/3C45	WT-210-0089	6G6-G	869-A	869-B		
RK-44	837	WT-210-0090	6C6	872	872-A		
RK-47	814	WT-210-0091	OA4-G	872-A/872	872-A		
UH-50	834	211-D	211	879	2X2-A		
CE-55	924	FG-235A	5552	889	889-A		
FG-57	5559	FG-238B	5555	889-R	889-R		
RK-57	805	WT-245	884	893	893-A		
WL-57	5559			902	902-A		
RK-58	838			UE-905	805		

See next page for a complete listing and suggested user's prices of more than 340 RCA Non-Receiving Tube Types.

‡ Except in high-altitude service.  
NOTE: For additional replacement data on RCA Tubes for Industry and Communications, refer to the 20-page RCA Interchangeability Directory (Form ID-1020A) which lists 2000 tube type numbers used by 26 manufacturers.

For complete technical information on RCA Tubes, see your RCA Distributor or write: Commercial Engineering, RCA Tube Division, Harrison, New Jersey.



# RCA ELECTRON TUBES

FOR INDUSTRY AND COMMUNICATIONS

## INDUSTRIAL RECEIVING/POWER/CATHODE RAY/PHOTO

RCA Type	Dist Resale Price Schedule*	RCA Type	Dist Resale Price Schedule*	RCA Type	Dist Resale Price Schedule*	RCA Type	Dist Resale Price Schedule*	RCA Type	Dist Resale Price Schedule*
C16J/5665	\$56.90	5CP1-A	31.65	826	23.55	2020	92.00	5894	---
C1K/6014	12.90	5CP7-A	38.35	827-R	260.00	2022	3.45	5915	1.30
C3J/5632	15.50	5CP11-A	37.85	828	27.50	2050	1.85	5946	115.00
C3JA/5684	19.80	5CP12	38.35	829-8	16.25	5550	41.00	5963	1.40
C6J/5C21	28.90	5FP4-A	45.70	830-8	15.70	5551-A	65.00	5964	1.40
C6JA/5685	29.30	5FP7-A	28.90	832-A	14.20	5552-A	99.00	5965	2.40
C16J/5665	57.90	5FP14	29.00	833-A	55.00	5553	216.00	6005	4.60
OA2	1.26	5FP15-A	29.90	834	19.30	5553-B	216.00	6012	6.25
OA2-WA	3.80	5R4-GY	36.50	836	9.00	5554	163.00	6014	see
OA3	1.27	5UP1	1.90	837	7.85	5555	316.00	type C1K/6014	
OA4-G	1.68	5UP7	22.65	838	20.00	5556	21.00	6072	4.80
O82	1.32	5UP11	32.00	841	4.85	5557	9.50	6073/OA2	3.00
O82-WA	4.20	5WP11	33.25	845	20.85	5558	17.50	6074/O82	3.45
OC3	1.27	5WP15	125.00	857-B	235.00	5559	23.00	6080	6.00
OD3	1.27	5ZP16	125.00	860	36.65	5560	28.00	6080-WA	10.50
IC21	3.85	6AC7-W	115.00	861	245.00	5561	45.75	6082	5.30
1EP1	19.05	6AC7-Y	4.20	865	14.70	5563-A	47.00	6101	7.25
1EP2	23.95	6AS6	2.35	866-A	2.65	5581	2.70	6101/6J6-WA	7.25
1EP11	23.95	6AS6	3.46	868	3.75	5582	4.95	6130/3C45	17.80
1P21	50.00	6AS7-G	4.45	869-B	155.00	5583	4.30	6136	3.70
1P22	15.25	6FA	7.00	872-A	9.35	5584	5.20	6146	4.90
1P28	28.95	6J4	4.33	878	15.95	5588	190.00	6155/4-125A	27.50
1P29	3.80	6J4-WA	6.00	880	645.00	5592	1350.00	6156/4-250A	37.50
1P37	3.45	6L4	7.35	884	1.85	5604-A	570.00	6159	4.90
1P39	2.15	6SJ7-Y	1.45	885	2.00	5618	4.93	6173	12.10
1P40	3.00	78P7-A	41.55	889-A	230.00	5632		6181	925.00
1P41	3.45	7C24		889R-A	360.00	5636	9.15	6186/6AG5-WA	4.00
1P42	11.65	7CP1	45.40	891	285.00	5636A	9.15	6189/12AU7-WA	4.80
2AP1-A	13.65	7CP4	51.50	891-R	440.00	5642	1.36	6197	2.55
28P1	13.80	7MP7	39.40	892	265.00	5651	1.78	6199	52.50
28P11	15.70	7MP14	41.75	892-R	425.00	5652	6.65	6201	4.85
2C39-A	22.50	7NP4	825.00	893-A	710.00	5653	1.60	6205	7.50
2C40	26.00	7QP4	45.50	893A-R	1260.00	5654	3.90	6211	2.45
2C43	23.50	7TP4	68.50	898-A	1322.00	5654/6AK5-W	6.00	6217	72.00
2D21	1.89	7VP1	35.00	902-A	18.00	5654/6AK5-W	3.90	6263	18.00
2D21-W	2.90	7WP4	900.00	908-A	25.50	5654/6AK5-W/6096	6.00	6263-A	22.00
2E24	5.25	9C21	1110.00	912	155.00	5665		6264	18.00
2E26	3.85	9C22	1570.00	917	4.95	5670	5.05	6264-A	22.40
2K26	48.20	9C25	1350.00	918	3.80	5671	1375.00	6293	6.00
2X2-A	2.55	10KP7	57.50	919	4.95	5675	13.20	6328	12.15
3A4	1.20	10SP4	82.25	920	5.70	5684		6342	72.00
3A5	1.30	10-Y	6.30	921	3.30	5685		6350	2.40
3AP1-A	25.50	12A17-WA	4.85	922	2.85	5686	3.85	6372	365.00
3825	6.30	12A6	2.09	923	2.85	5687	4.25	6383	122.00
3828	6.45	12AY7	2.53	924	3.60	5690	9.65	6405/1640	7.30
38P1-A	23.25	12DP7-A	82.65	925	3.20	5691	8.45	6417	2.37
3C23	11.98	12SW7	1.55	926	3.30	5692	8.15	6472	12.30
3C33	21.25	12SX7-GT	1.75	927	3.75	5693	6.40	6521	325.00
3C45		12SY7	1.70	928	4.60	5696	1.90	6524	15.75
See Type 6130/3C45		16ADP7	100.00	929	2.00	5713	215.00	6570	7.85
3D22-A	21.20	26A6	3.20	930	2.85	5718	4.60	6571	59.65
3E22	8.30	26A7-GT	7.25	931-A	10.45	5718-A	4.60	SPECIAL MARKET TYPES	
3E29	20.25	26C6	2.35	934	3.65	5719	3.95	6655	56.25
3FP7-A	29.30	26D6	3.00	935	9.95	5719-A	3.95	6694-A	5.60
3JP1	27.50	83	1.32	954	7.40	5725	3.80	6810-A	275.00
3JP7	28.75	105	53.33	955	4.00	5726	2.10	6816	60.00
3KP1	24.75	172	71.75	956	8.25	5726/6AL5-W	2.10	6850	15.75
3KP4	25.75	207	275.00	957	5.35	5726/6AL5-W/6097	3.40	6861	915.00
3KP7	28.15	217-C	21.17	958-A	8.70	5727/2D21-W	2.90	6866	1550.00
3KP11	27.60	502-A	2.03	991	.87	5728/FG-67	53.50	6883	4.90
3RP1	17.65	575-A	22.15	1609	14.50	5734	18.00	6884	60.00
3RP1-A	26.20	579-8	18.00	1612	3.20	5749	2.80	6887	1.25
3RP4	24.25	627	27.00	1613	2.45	5750	3.90	6893	3.85
3WP1	31.65	632-B	28.00	1614	2.72	5751	3.80	6894	25.00
3WP2	32.45	672-A	38.00	1616	11.35	5751-WA	5.55	6895	25.00
3WP11	32.45	673	22.15	1619	6.36	5762/7C24	215.00	6903	385.00
4-65A	20.00	676	58.00	1620	1.95	5770	1200.00	6953	3.30
4-125A/4D21	30.25	677	58.00	1622	2.70	5771	660.00	6957	3.70
4-250A/5D22	41.25	800	11.50	1623	4.05	5786	150.00	7034/4X150A	46.75
4-1000A	132.00	801-A	9.85	1624	4.00	5814-A	4.15	7035/4X150D	46.75
4C33	235.00	802	9.85	1625	2.95	5814-WA	5.10	7043	4.45
4E27/8001	26.00	803	35.50	1626	1.85	5819	56.90	7046	625.00
4E27A/5-1258	40.00	804	27.15	1629	1.40	5822	116.00	7086	180.00
4X150A	38.95	805	20.00	1631	3.20	5822-A	116.00	8000	26.40
4X150D	38.95	806	34.25	1632	3.35	5823	1.57	8003	14.00
4X500A	121.00	807	2.90	1634	1.55	5825	20.85	8005	16.20
5A8P1	29.50	808	22.75	1635	2.00	5840	7.10	8008	9.35
5A8P4	43.25	809	5.65	1818-P1	695.00	5840-A	7.10	8012-A	19.30
5A8P7	42.65	810	25.55	1818-P11	1190.00	5876	13.55	8013-A	14.45
5A8P11	43.80	811-A	5.65	1818-P27	695.00	5876-A	19.10	8020	24.00
5ADP1	38.25	812-A	5.65	1904		5879	1.75	8025-A	21.95
5AHP7	41.95	813	22.65	1946	10.90	5881	3.50	9001	4.60
5AHP7-A	49.65	814	23.55	1947	13.15	5890	44.00	9002	3.10
5AUP24	125.00	815	23.55	1949	11.30	5983	19.40	9003	4.60
5AYP4	55.00	816	2.15	1950	8.35			9004	3.70
5AZP4	110.00							9005	4.40
58P1-A	32.75							9006	2.15
5C21									

Prices shown include Federal Excise Tax where applicable. All prices subject to change or withdrawal without notice. Prices in effect August 1, 1957.

\* Optional. Prices Higher in Hawaii and Alaska.  
 †† Quotations supplied on request.





# RCA PICTURE TUBES

LIST PRICE \* SCHEDULE SEPTEMBER 1, 1957

SILVERAMA ALUMINIZED PICTURE TUBES — BRING OUT THE BEST IN ANY SET!

## BLACK & WHITE PICTURE TUBES

RCA TYPE	List Price*	Shape	Envelope	Faceplate	Focus	Deflection	Deflection Angle†
• 5TP4	\$78.25	Round	Glass	Clear	Electrostatic	Magnetic	50
7DP4	39.75	Round	Glass	Clear	Electrostatic	Magnetic	50
7JP4	29.50	Round	Glass	Clear	Electrostatic	Electrostatic	—
8DP4	21.35	Rectangular	Glass	Filterglass	Electrostatic	Magnetic	90
10BP4-A	22.50	Round	Glass	Filterglass	Magnetic	Magnetic	52
• 10FP4-A	27.50	Round	Glass	Filterglass	Magnetic	Magnetic	50
• 12KP4-A	31.75	Round	Glass	Filterglass	Magnetic	Magnetic	54
12LP4-A	27.25	Round	Glass	Filterglass	Magnetic	Magnetic	57
14EP4/14CP4/14BP4	29.25	Rectangular	Glass	Filterglass	Magnetic	Magnetic	70
14HP4	29.25	Rectangular	Glass	Filterglass	Electrostatic**	Magnetic	70
14RP4	29.25	Rectangular	Glass	Filterglass	Electrostatic**	Magnetic	90
• 14RP4-A	36.00	Rectangular	Glass	Filterglass	Electrostatic**	Magnetic	90
• 16AP4-A	48.25	Round	Metal	Filterglass	Magnetic	Magnetic	53
• 16DP4-A	45.75	Round	Glass	Filterglass	Magnetic	Magnetic	60
• 16GP4-B	48.25	Round	Metal	Frosted Filterglass	Magnetic	Magnetic	70
16LP4-A	44.50	Round	Glass	Filterglass	Magnetic	Magnetic	52
• 16RP4/16KP4	33.25	Rectangular	Glass	Filterglass	Magnetic	Magnetic	70
• 16RP4-A/16KP4-A	40.50	Rectangular	Glass	Filterglass	Magnetic	Magnetic	70
• 16TP4	33.25	Rectangular	Glass	Filterglass	Magnetic	Magnetic	70
• 16WP4-A	44.50	Round	Glass	Filterglass	Magnetic	Magnetic	70
• 17AP4/17ATP4	35.25	Rectangular	Glass	Filterglass	Electrostatic**	Magnetic	90
• 17AVP4-A/17ATP4-A	42.50	Rectangular	Glass	Filterglass	Electrostatic**	Magnetic	90
• 17BP4-A	33.25	Rectangular	Glass	Filterglass	Magnetic	Magnetic	70
• 17BP4-B	40.50	Rectangular	Glass	Filterglass	Magnetic	Magnetic	70
• 17BP4-C	47.75	Rectangular	Glass	Filterglass	Electrostatic**	Magnetic	110
• 17BP4-D	47.75	Rectangular	Glass	Filterglass	Electrostatic**	Magnetic	110
• 17CP4	47.75	Rectangular	Glass	Filterglass	Electrostatic**	Magnetic	110
• 17CP4	43.75	Rectangular	Metal	Frosted Filterglass	Magnetic	Magnetic	70
17GP4	48.25	Rectangular	Metal	Frosted Filterglass	Electrostatic	Magnetic	70
17HP4/17RP4	35.25	Rectangular	Glass	Filterglass	Electrostatic**	Magnetic	70
• 17HP4-B/17RP4-C	42.50	Rectangular	Glass	Filterglass	Electrostatic**	Magnetic	70
• 17LP4/17VP4	35.25	Rectangular	Glass	Filterglass	Electrostatic**	Magnetic	70
• 17LP4-A/17VP4-B	42.50	Rectangular	Glass	Filterglass	Electrostatic**	Magnetic	70
• 17QP4	33.25	Rectangular	Glass	Filterglass	Magnetic	Magnetic	70
• 17QP4-A	40.50	Rectangular	Glass	Filterglass	Magnetic	Magnetic	70
• 17TP4	43.75	Rectangular	Metal	Frosted Filterglass	Electrostatic**	Magnetic	70
19AP4-B	52.50	Round	Metal	Frosted Filterglass	Magnetic	Magnetic	66
20DP4-A/20CP4-A	40.25	Rectangular	Glass	Filterglass	Magnetic	Magnetic	70
• 20DP4-C/20CP4-D	48.00	Rectangular	Glass	Filterglass	Magnetic	Magnetic	70
• 20HP4-A/20MP4	42.00	Rectangular	Glass	Filterglass	Electrostatic**	Magnetic	70
• 20HP4-D	49.75	Rectangular	Glass	Filterglass	Electrostatic**	Magnetic	70
• 21ACP4-A/21BSP4	48.00	Rectangular	Glass	Filterglass	Magnetic	Magnetic	90
• 21ALP4-A	49.75	Rectangular	Glass	Filterglass	Electrostatic**	Magnetic	90
• 21ALP4-B	49.75	Rectangular	Glass	Filterglass	Electrostatic**	Magnetic	90
• 21AMP4-A	48.00	Rectangular	Glass	Filterglass	Magnetic	Magnetic	90
• 21AP4	50.75	Rectangular	Metal	Frosted Filterglass	Magnetic	Magnetic	70
• 21ATP4	49.75	Rectangular	Glass	Filterglass	Electrostatic**	Magnetic	90
• 21ATP4-A	49.75	Rectangular	Glass	Filterglass	Electrostatic**	Magnetic	90
• 21AVP4/21AUP4	42.00	Rectangular	Glass	Filterglass	Electrostatic**	Magnetic	72
• 21AVP4B/21AUP4-B	49.75	Rectangular	Glass	Filterglass	Electrostatic**	Magnetic	72
• 21AVP4-A/21AUP4-A	48.00	Rectangular	Glass	Filterglass	Magnetic	Magnetic	72
• 21AWP4	49.75	Rectangular	Glass	Filterglass	Magnetic	Magnetic	90
• 21BTP4	49.75	Rectangular	Glass	Filterglass	Electrostatic**	Magnetic	110
• 21CEP4	55.00	Rectangular	Glass	Filterglass	Electrostatic**	Magnetic	70
• 21EP4-A	42.00	Rectangular	Glass	Filterglass	Magnetic	Magnetic	70
• 21EP4-B	49.75	Rectangular	Glass	Filterglass	Magnetic	Magnetic	70
• 21FP4-A	43.75	Rectangular	Glass	Filterglass	Electrostatic**	Magnetic	70
• 21FP4-C	51.50	Rectangular	Glass	Filterglass	Electrostatic**	Magnetic	70
• 21MP4	52.50	Rectangular	Metal	Frosted Filterglass	Electrostatic**	Magnetic	70
21YP4	42.00	Rectangular	Glass	Filterglass	Electrostatic**	Magnetic	70
• 21YP4-A	49.75	Rectangular	Glass	Filterglass	Electrostatic**	Magnetic	70
• 21ZP4-A	40.25	Rectangular	Glass	Filterglass	Magnetic	Magnetic	70
• 21ZP4-B	48.00	Rectangular	Glass	Filterglass	Magnetic	Magnetic	70
• 24CP4-A	69.00	Rectangular	Glass	Filterglass	Magnetic	Magnetic	90
• 24DP4-A/24YP4	71.25	Rectangular	Glass	Filterglass	Electrostatic**	Magnetic	90
• 24VP4-A	69.00	Rectangular	Glass	Filterglass	Magnetic	Magnetic	90
• 24YP4	68.50	Rectangular	Glass	Filterglass	Electrostatic**	Magnetic	90
• 27MP4	163.50	Rectangular	Metal	Frosted Filterglass	Magnetic	Magnetic	90

## COLOR PICTURE TUBES

RCA TYPE	List Price*	Shape	Envelope	Faceplate	Focus	Deflection	Deflection Angle†
•• 15GP22	\$265.00	Round	Glass	Clear‡	Electrostatic	Magnetic	45
•• 21AXP22	160.00	Round	Metal	Filterglass	Electrostatic	Magnetic	70
•• 21AXP22-A	160.00	Round	Metal	Filterglass	Electrostatic	Magnetic	70

‡ New Type  
\* Optional. Prices higher in Hawaii and Alaska  
• Aluminized Silverama

•• Aluminized  
† Angle in degrees is horizontal for round tubes and diagonal for rectangular tubes.  
List Prices\* include Federal Excise Tax.

‡ Flat Filterglass screen plate.

ALL PRICES SUBJECT TO CHANGE WITHOUT NOTICE.

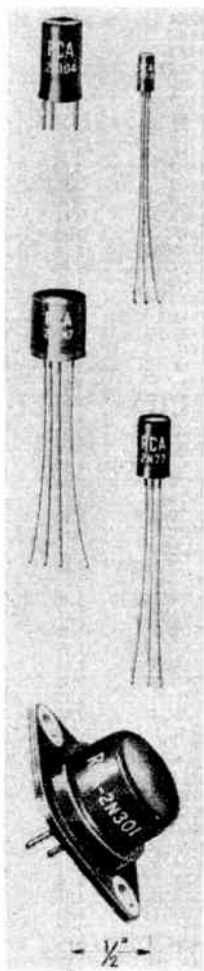




# TRANSISTORS AND SEMICONDUCTOR DIODES

## RCA TRANSISTORS p-n-p Germanium-Alloy Types

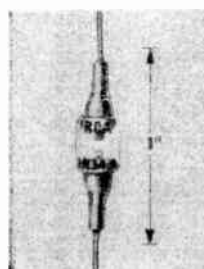
- Hermetically Sealed
- Insulated Metal Envelopes
- Excellent Uniformity of Characteristics
- Extreme Envelopes



TYPE	DESCRIPTION	LIST PRICE*	DIST. RESALE PRICE
2N77	Class A AF Amplifier	\$ 2.90	\$ 1.86
2N104	Class A AF Amplifier	5.00	3.22
2N105	Class A AF Amplifier	4.50	2.90
2N109	Push-pull class B AF Amplifier	2.90	1.86
2N139	Class A 455-Kc IF Amplifier	3.25	2.09
2N140	Converter in 540-1640-Kc Band	3.45	2.22
2N175	Class A low-noise AF Amplifier	5.00	3.22
2N206	Class A AF Amplifier—(Meets MIL-T-19500A Specs.)	8.50	5.47
2N215	Flexible-lead version of 2N104	5.40	3.47
2N217	Flexible-lead version of 2N109	2.90	1.86
2N218	Flexible-lead version of 2N139	3.25	2.09
2N219	Flexible-lead version of 2N140	3.45	2.22
2N220	Flexible-lead version of 2N175	5.00	3.22
2N247	"Drift" Transistor RF Amplifier	5.00	3.22
2N269	Computer Switching Transistor	7.35	4.74
2N270	Large Signal AF Amplifier—(Class A or Class B) Type	3.20	2.04
2N274	"Drift" Transistor RF Amplifier	5.00	3.22
2N301	AF Power Transistor	7.35	4.74
2N301A	AF Power Transistor (peak collector voltage to 60 v)	10.00	6.44
2N370	"Drift" Transistor RF Amplifier	5.00	3.22
2N371	"Drift" Transistor Oscillator	5.00	3.22
2N372	"Drift" Transistor Mixer	5.00	3.22
2N384	VHF "Drift" Transistor	25.00	16.10
2N398	High-Voltage Computer Switching Transistor (JETEC 30 Case)	3.80	2.42
2N404	Computer Switching Transistor (JETEC 30 Case)	8.75	5.64
2N405	Class A AF Amplifier	2.25	1.45
2N406	Flexible-lead version of 2N405	2.25	1.45
2N407	Class A AF Amplifier	2.50	1.61
2N408	Flexible-lead version of 2N407	2.50	1.61
2N409	Class A 455-Kc IF Amplifier	3.00	1.93
2N410	Flexible-lead version of 2N409	3.00	1.93
2N411	Converter in 540-1640-Kc Band	3.15	2.02
2N412	Flexible-lead version of 2N411	3.15	2.02

## RCA SEMICONDUCTOR DIODES

- Germanium Point-Contact Types
- Sealed-In-Glass Construction
- Low Shunt and Series Capacitances



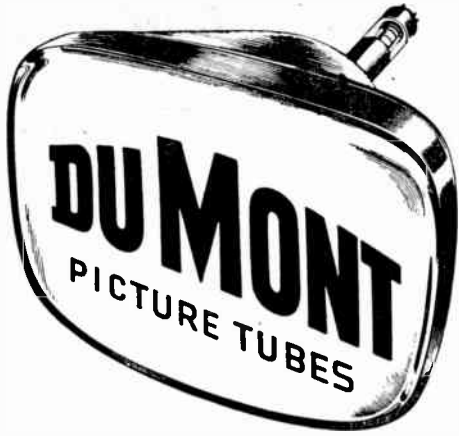
TYPE	DESCRIPTION	LIST PRICE*	DIST. RESALE PRICE
1N34-A	General-Purpose Type	\$ .48	\$ .75
1N38-A	Large-Signal Type	.97	
1N54-A	High-Back Resistance Type	.97	
1N58-A	Large-Signal Type	1.36	

See Page J-580 for new 24-page booklet — "RCA Transistors and Semiconductor Diodes" — includes practical circuit diagrams, extensive technical data and other valuable information.

\* Optional. Prices higher in Hawaii and Alaska. Prices shown do not include any state or local sales and similar taxes. All prices subject to change or withdrawal without notice.







# ALLEN B. DUMONT LABORATORIES, INC.

Television Tube Division  
CLIFTON, N. J.

## ORIGINAL TELEVISION PARTS

EFFECTIVE MAY 20, 1957

Supersedes February 1, 1957

Dumont Type	Aluminized	Sugg. List	Dumont Type	Aluminized	Sugg. List	Dumont Type	Aluminized	Sugg. List
I2LP4A		27.25	I7CP4		43.75	21AUP4A/B	Yes	47.50
I2QP4A/B1034		33.50	I7HP4/17RP4		35.25	21AYP4A	Yes	47.50
I4EP4/14CP4/14BP4 ■		29.25	I7HP4B	Yes	40.50	21AWP4	Yes	45.50
I4HP4		29.25	I7KP4		35.75	21BTP4 □	Yes	47.50
I4RP4A	Yes	34.75	I7KP4A	Yes	40.75	21CBP4A □	Yes	47.50
I4SP4	Yes	34.75	I7LP4/17VP4		35.25	21EP4A		42.00
I4WP4 □	Yes	34.75	I7LP4A	Yes	40.50	21EP4B	Yes	47.50
I5DP4A ▲		45.75	I7AYP4A/17ATP4A	Yes	40.50	21FP4A		43.75
I6DP4A		45.75	I9AP4A		51.50	21FP4C	Yes	49.25
I6GP4		47.25	20CP4/20DP4		40.25	21KP4A		54.75
I6FP4		35.75	20CP4A/20DP4A		40.25	21MP4		52.50
I6KP4/16RP4		33.25	20CP4D/20DP4C	Yes	45.50	21XP4A	Yes	47.50
I6KP4A/16RP4A	Yes	38.75	20JP4		44.75	21YP4		42.00
I6LP4A/16ZP4		44.50	20LP4A/20HP4A		42.00	21YP4A	Yes	47.50
I6TP4		33.25	21AP4		50.75	21ZP4A		40.25
I6WP4A		44.50	21ACP4A/21AMP4A	Yes	45.50	21ZP4B	Yes	45.50
I7AP4		33.25	21ALP4A/B	Yes	47.50	24CP4A	Yes	66.25
I7BP4A		33.25	21ATP4/21ATP4A	Yes	47.50	24DP4A	Yes	68.50
I7BP4B	Yes	38.75	21AUP4		42.00	24YP4	Yes	68.50

## RECEIVING TUBES

Type	List Price	Type	List Price	Type	List Price	Type	List Price	Type	List Price
OZ4	\$1.50	IT4	2.20	3C2	4.50	5AU4	3.10	6A8	3.30
OZ4A	2.00	IU4	2.15	3CB6	2.05	5AV8	3.20	6AB4	1.85
OZ4G	1.85	IU5	1.90	3CE5/3BC5	2.05	5AW4	2.50	6AC7	3.45
IA5GT	2.55	IV	2.90	3CF6	2.30	5B8	3.20	6AD7G	4.65
IA7GT	2.95	IV2	1.80	3CS6	2.20	5BE8	2.90	6AF4	3.60
IAG4	2.85	IV6	3.70	3DT6	1.95	5BK7A	3.20	6AF4A	3.60
IAH4	3.05	IX2A	2.65	3FL4	3.55	5BR8	3.05	6AF6G (N)	3.10
IAJ5	2.90	IX2B	2.65	3Q4	2.35	5BT8	3.10	6AG5	2.20
IAX2	2.70	2A3	5.10	3Q5GT	2.10	5CG8	2.90	6AG7	3.85
IB3GT	2.60	2AF4	3.55	3S4	2.30	5CL8	2.85	6AH4GT	2.75
IDN5	1.95	2AF4A	3.55	3V4	2.20	5DH8	3.20	6AH6	4.10
IH5GT	2.45	2B3	2.55	4BC8	3.65	5J6	2.50	6AJ4	4.45
IJ3	2.65	2BN4	2.25	4BN6	2.75	5T8	3.10	6AK5	4.05
IL4	2.35	2CY5	2.50	4BQ7A	3.50	5U4G	1.90	6AK6	2.55
IL6	2.90	3A2	3.15	4BS8	3.50	5U4GA/5U4GB	1.90	6AL5	1.65
ILA6	3.30	3A3	3.05	4BU8	2.60	5U8	2.95	6AL7GT (N)	5.00
ILC5	3.15	3AF4A	3.55	4CB6	2.10	5V4G	2.80	6AM4	5.25
ILC6	3.30	3AL5	1.65	4CY5	2.50	5V4GA	2.80	6AMB	2.90
ILE3	3.15	3AU6	1.90	4DT6	1.95	5V6GT	2.20	6AN8	3.15
ILH4	3.15	3B2	4.85	5AM8	2.95	5X4G	2.25	6AQ5*	2.00
ILN5	3.15	3BE6	2.10	5AN8	3.20	5X8	2.85	6AQ5A	2.00
IN5GT	2.90	3BN6	2.75	5AQ5	2.00	5Y3GT	1.55	6AQ6	1.85
IR5	2.30	3BU8	2.55	5AS4	1.90	5Y4GT	2.05	6AQ7GT	3.05
IS4	2.85	3BY6	2.05	5AS8	3.05	5Z3	2.60	6AR5	2.05
IS5	2.05	3BZ6	2.05	5AT8	2.90	6A7	3.40	6AR8	3.55



# RECEIVING TUBES

Type	List Price	Type	List Price	Type	List Price	Type	List Price	Type	List Price
6AS5	2.15	6CBG	4.30	6SS7	2.70	12AE6	1.70	12SQ7	2.10
6AS8	3.05	6CB6 *	2.10	6SV7	3.65	12AF6	1.80	12SR7	2.40
6AT6	1.65	6CB6A	2.10	6T4	3.60	12AG6	1.90	12V6GT	2.00
6AT8	2.90	6CD6GA	5.20	6T8 *	3.10	12AJ6	1.60	12W6GT	2.60
6AU4GTA	3.05	6CE5/6BC5	2.10	6T8A	3.10	12AL5	1.70	12X4	1.50
6AU5GT	3.65	6CF6	2.20	6U5 (N)	2.50	12AQ5	2.00	14A7	2.65
6AU6 *	1.90	6CG7	2.30	6U8 *	2.95	12AT6	1.65	14AF7	2.95
6AU6A	1.90	6CG8A	2.90	6U8A	2.95	12AT7	2.85	14B6	2.65
6AU8	3.10	6CH8	3.25	6V3A	3.90	12AU6	1.90	14Q7	3.30
6AU8A	3.10	6CL6	3.25	6V6	3.90	12AU7A	2.30	17AX4GT	2.50
6AV5GA	3.50	6CL8	2.85	6V6GT	2.00	12AV5GA	3.55	17DQ6A	3.90
6AV6	1.60	6CM6	2.25	6W4GT	2.15	12AV6	1.55	17H3	1.80
6AW8A	3.30	6CM7	2.50	6W6GT	2.60	12AV7	2.90	18A5	3.45
6AX4GT	2.45	6CN7	2.25	6X4	1.50	12AW6	2.60	19AU4GTA	3.05
6AX5GT	2.55	6CR6	2.00	6X5GT	1.75	12AX4GTA	2.45	19BG6GA	5.45
6AZ8	3.55	6CS6	2.15	6X8 *	2.90	12AX7	2.30	19J6	2.50
6B4G	4.50	6CS7	2.55	6X8A	2.90	12AZ7	2.60	19T8	3.10
6B8	3.90	6CU5	2.10	6Y6G	2.95	12B4A	2.50	25AV5GA	3.50
6BA6	1.90	6CX8	3.25	6Y6GT	2.95	12BA6	1.90	25AX4GT	2.75
6BA7	3.15	6CY7	2.60	7A4	2.60	12BA7	3.15	25BK5	3.05
6BA8A	3.25	6D6	3.15	7A6	2.55	12BD6	1.95	25BQ6GA/CU6	4.05
6BC7	3.20	6DE6	2.20	7A7	2.65	12BE6	2.00	25C5	1.95
6BC8	3.60	6DG6GT	2.20	7A8	3.10	12BF6	1.65	25CA5	2.20
6BD6	1.95	6DQ6A	3.80	7AF7	2.95	12BH7A	2.70	25CD6G8	5.20
6BE6	2.10	6DT6	1.95	7AG7	3.10	12BK5	3.05	25DN6	5.15
6BF5	2.25	6E5 (N)	2.50	7AU7	2.30	12BL6	1.80	25DQ6	3.85
6BF6	1.65	6F5	2.60	7B4	2.40	12BQ6GA/12CU6	3.95	25EC6	4.95
6BG6GA	5.55	6F6	3.05	7B5	2.40	12BR7	2.30	25L6GT	2.15
6BH6	2.40	6F6GT	2.45	7B6	2.65	12BV7	2.70	25W4GT	2.30
6BH8	3.10	6F7	4.65	7B7	2.65	12BY7A	2.75	25W6GT	2.75
6BJ6	2.35	6F8G	4.30	7B8	2.85	12BZ7	2.55	25Z5	2.45
6BJ7	2.50	6G6G	3.35	7C5	2.55	12C5/12CU5	2.10	25Z6GT	2.45
6BJ8	2.55	6H6	2.40	7C6	2.65	12CA5	2.20	26	2.30
6BK4	6.35	6J5	2.15	7C7	2.55	12CN5	2.10	27	2.25
6BK5	2.95	6J6	2.50	7F7	2.95	12CR6	2.05	35A5	2.80
6BK7A	3.10	6J7	3.05	7F8	3.65	12CT8	3.40	35B5	2.25
6BK7B	3.10	6K6GT	2.00	7G7	3.00	12CT8	3.40	35C5	2.00
6BL7GT	3.45	6K7	3.05	7H7	3.00	12DE8	2.75	35L6GT	2.15
6BN4	2.20	6K8	3.65	7J7	4.05	12DQ6A	3.85	35W4	1.35
6BN6	2.70	6L6	5.15	7K7	3.55	12F8	2.35	35Y4	2.20
6BN8	2.55	6L6GB	3.90	7N7	2.70	12G8	2.40	35Z3	2.20
6BQ6GA/6CU6	3.90	6L7G	3.40	7Q7	3.30	12H6	2.40	35Z5GT	1.60
6BQ6GT	3.90	6N7	3.40	7S7	3.65	12J5	2.15	41	2.55
6BQ7A	3.50	6Q7	2.90	7V7	3.75	12J7GT	2.80	42	2.40
6BR8	2.95	6S4A	1.85	7X7	2.95	12J8	3.15	43	2.60
6BS8	3.45	6S7G	3.50	7Y4	2.20	12K5	2.40	45	2.25
6BU8	2.55	6S8GT	2.75	7Z4	2.20	12K7GT	2.70	50A5	2.80
6BV8	2.75	6SA7	2.60	8AU8	3.10	12K8	3.30	50B5	2.25
6BW8	2.90	6SB7Y	3.85	8AW8A	3.35	12L6GT	2.20	50C5	2.00
6BX7GT	3.55	6SC7	2.70	8CG7	2.35	12Q7GT	2.55	50L6GT	2.15
6BY5G	3.30	6SF5	2.25	8CM7	2.55	12R5	2.20	50X6	2.60
6BY5GA	3.30	6SF7	3.05	8CN7	2.30	12SA7	2.60	50Y6GT	2.35
6BY6	2.05	6SG7	2.95	8CX8	3.35	12SC7	2.70	50Y7GT	2.25
6BY8	2.45	6SH7	3.05	9CL8	2.75	12SF5	2.35	75	2.60
6BZ6	2.10	6SJ7	2.45	9UBA	2.90	12SF7	3.05	78	2.70
6BZ7	3.60	6SK7	2.40	10C8	3.55	12SG7	2.85	80	1.90
6BZ8	3.85	6SL7GT	2.90	12A4	2.45	12SH7	3.05	83 (N)	2.60
6C4	1.65	6SN7GT8	2.35	12AB5	2.10	12SJ7	2.45	84/6Z4	2.05
6C5	2.35	6SQ7	2.10	12AC6	2.05	12SK7	2.40	117N7GT	6.20
6C6	3.15	6SR7	2.35	12AD6	1.90	12SL7GT	2.90	117P7GT	6.20
						12SN7GTA	2.40	117Z3	2.10
								117Z6GT	3.55

\* Will drop from line in favor of A version  
 (N) Indicates types not taxable  
 Prices subject to change without notice.

☐ Additions to the DuMont Line  
 ▲ Denotes Price Increase

■ Change in Code Designation  
 ▼ Denotes Price Decrease

## ALLEN B. DU MONT LABS., INC. TELEVISION TUBE DIVISION CLIFTON, N. J.

Specify



For Finest Quality RECEIVING TUBES  
PICTURE TUBES • SEMICONDUCTOR DIODES  
& TRANSISTORS • INDUSTRIAL TUBES

TV AND RADIO RECEIVING TUBES  
SUGGESTED LIST PRICES—Effective June 25, 1957

Prices subject to change or withdrawal without notice.

Table with 13 columns: Type, Price, Type, Price, Type, Price, Type, Price, Type, Price, Type, Price, Type, Price. It lists various vacuum tube types and their corresponding suggested list prices, organized in columns.

Prices include all manufacturers' Federal Excise Taxes as set forth in the Internal Revenue Code Chap. 29, Sub Chap. A. Tube prices listed above are for your convenience and do not necessarily indicate type availability.



Specify



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**PICTURE TUBES · SEMICONDUCTOR DIODES**  
**& TRANSISTORS · INDUSTRIAL TUBES**

**TV AND RADIO RECEIVING TUBES** *Continued*

Type	Price	Type	Price	Type	Price	Type	Price	Type	Price	Type	Price	Type	Price
I2DQ6	\$3.90	I2SG7	\$2.85	I4C5	\$3.20	I9C8	\$3.35	26	\$2.25	41	\$2.55	71A	\$2.40
I2EM6	2.70	I2SH7	3.05	I4C7	2.65	I9J6	2.70	27	2.25	42	2.40	75	2.60
I2F5GT	2.65	I2SJ7	2.45	I4E6	3.15	I9T8	3.15	30	2.30	43	2.60	76	1.70
I2F8	2.30	I2SJ7GT	2.35	I4E7	3.55	I9X8	3.35	31	2.85	45Z3	1.80	77	2.20
I2H6	2.40	I2SK7	2.40	I4F7	2.95	22	3.35	32	3.80	46	2.90	78	2.70
I2J5GT	2.15	I2SK7GT	2.40	I4F8	3.65	24A	3.05	32L7GT	3.35	47	5.85	79	2.90
I2J7GT	3.05	I2SL7GT	2.95	I4H7	3.30	25A6G	2.85	33	3.50	49	2.85	80	1.90
I2J8	3.15	I2SN7GT	2.40	I4J7	4.05	25AV5GA	3.55	34	3.60	50	5.25	81	4.80
I2K5	2.45	I2SN7GTA	2.40	I4N7	2.95	25AX4GT	2.75	35/51	2.40	50A5	2.80	83	2.65
I2K7GT	2.70	I2SQ7	2.10	I4Q7	3.30	25BK5	3.05	35A5	2.80	50B5	2.25	83V	3.80
I2K8	3.65	I2SQ7GT	2.10	I4R7	4.05	25BQ6GT	4.10	35B5	2.25	50C5	2.00	84/6Z4	2.05
I2K8GT	2.90	I2SR7	2.40	I4S7	3.65	25C5	2.00	35C5	2.00	50C6G	3.30	85	2.30
I2L6GT	2.20	I2V6GT	2.00	I4W7	3.75	25D6GA	5.20	35L6GT	2.15	50CD6G	6.60	89Y	2.30
I2Q7GT	2.55	I2W6GT	2.60	I4X7	2.95	25CD6CB	5.20	35W4	1.35	50L6GT	2.15	I17L/M7GT	6.60
I2R5	2.20	I2X4	1.50	I4Y4	2.80	25CU6	4.10	35Y4	2.20	50X6	2.60	I17N7GT	6.20
I2S8GT	2.75	I2Z3	2.65	I7AX4GT	2.45	25DN6	5.15	35Z3	2.20	50Y6GT	2.40	I17P7GT	6.20
I2SA7	2.60	I4A4	3.15	I7C5	2.05	25DQ6	3.90	35Z4GT	1.70	50Y7GT	2.25	I17Z3	2.10
I2SA7GT	2.60	I4A5	4.70	I7DQ6	3.90	25L6GT	2.05	35Z5GT	1.60	55	2.30	I17Z6GT	3.55
I2SC7	2.70	I4A7/I2B7	2.65	I7H3	1.85	25W4GT	2.35	36	2.85	56	1.90	5642	2.65
I2SF5	2.35	I4AF7/XXD	2.95	I9	3.50	25Y5	3.10	37	1.85	57	2.10	V99	3.35
I2SF5GT	2.15	I4B6	2.65	I9AU4GT	3.10	25Z5	2.45	38	2.30	58	2.10	X99	3.35
I2SF7	3.05	I4B8	2.85	I9BG6GA	6.00	25Z6GT	2.45	39/44	2.85	70L7GT	6.60	X155/6BZ8	4.25

Prices include all manufacturers' Federal Excise Taxes as set forth in the Internal Revenue Code Chap. 29, Sub Chap. A. Tube prices listed above are for your convenience and do not necessarily indicate type availability.

**RAYTHEON TELEVISION PICTURE TUBES**  
**SUGGESTED LIST PRICES—Effective July 1, 1957**

Black And White Tube Type	Aluminized Screen	Envelope	Face	Type Of Focus	Type Of Deflection	External Conductive Coating	Suggested List Price
7JP4	No	Glass	Clear	Elect.	Elect.	No	\$29.50
8DP4	No	Glass	Filter	Elect.	Mag.	Yes	21.65
10ABP4B	No	Glass	Filter	Elect.	Mag.	Yes	23.35
10BP4A	No	Glass	Filter	Mag.	Mag.	Yes	22.50
10FP4A	Yes	Glass	Filter	Mag.	Mag.	Yes	25.25
I2KP4A	Yes	Glass	Filter	Mag.	Mag.	Yes	30.25
I2LP4A	No	Glass	Filter	Mag.	Mag.	Yes	27.25
I4ASP4	Yes	Glass	Filter	Elect.	Mag.	Yes	42.00
I4BP4/CP4	No	Glass	Filter	Mag.	Mag.	Yes	29.25
I4QP4	No	Glass	Filter	Elect.	Mag.	Yes	31.25
I4RP4	No	Glass	Filter	Elect.	Mag.	Yes	33.25
I4RP4A	Yes	Glass	Filter	Elect.	Mag.	Yes	38.75
I6AP4A	No	Metal	Filter	Mag.	Mag.	—	48.25
I6DP4A	No	Glass	Filter	Mag.	Mag.	No	46.40
I6GP4B	No	Metal	Filter	Mag.	Mag.	—	48.25
I6KP4/RP4	No	Glass	Filter	Mag.	Mag.	Yes	33.25
I6KP4A/RP4A	Yes	Glass	Filter	Mag.	Mag.	Yes	38.75
I6TP4	No	Glass	Filter	Mag.	Mag.	Yes	33.25
I6ZP4	No	Glass	Filter	Mag.	Mag.	Yes	44.50
I7ATP4/AVP4	No	Glass	Filter	Elect.	Mag.	Yes	35.25
I7ATP4A/AVP4A	Yes	Glass	Filter	Elect.	Mag.	Yes	40.50
I7BJP4	Yes	Glass	Filter	Elect.	Mag.	Yes	40.50
I7BP4A	No	Glass	Filter	Mag.	Mag.	Yes	33.25
I7BP4B	Yes	Glass	Filter	Mag.	Mag.	Yes	38.75
I7BZP4	Yes	Glass	Filter	Elect.	Mag.	Yes	45.50
I7CP4	No	Metal	Filter	Mag.	Mag.	—	43.75
I7GP4	No	Metal	Filter	Elect.	Mag.	—	48.25
I7HP4/RP4	No	Glass	Filter	Elect.	Mag.	Yes	35.25
I7HP4B/RP4C	Yes	Glass	Filter	Elect.	Mag.	Yes	40.50
I7JP4	No	Glass	Filter	Mag.	Mag.	Yes	35.00

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**RAYTHEON TELEVISION PICTURE TUBES** *Continued*

Black And White Tube Type	Aluminized Screen	Envelope	Face	Type Of Focus	Type Of Deflection	External Conductive Coating	Suggested List Price
17LP4/VP4	No	Glass	Filter	Elect.	Mag.	Yes	\$35.25
17LP4A/VP4B	Yes	Glass	Filter	Elect.	Mag.	Yes	40.50
17QP4	No	Glass	Filter	Mag.	Mag.	Yes	33.25
19AP4B	No	Metal	Filter	Mag.	Mag.	—	52.50
20CP4/DP4	No	Glass	Filter	Mag.	Mag.	No	40.25
20CP4A/DP4A	No	Glass	Filter	Mag.	Mag.	Yes	40.25
20CP4B/DP4B	Yes	Glass	Filter	Mag.	Mag.	No	45.50
20CP4D/DP4C	Yes	Glass	Filter	Mag.	Mag.	Yes	46.00
20HP4A	No	Glass	Filter	Elect.	Mag.	Yes	42.00
21ALP4	No	Glass	Filter	Elect.	Mag.	Yes	42.00
21ALP4A/B	Yes	Glass	Filter	Elect.	Mag.	Yes	47.50
21AMP4A/ACP4A	Yes	Glass	Filter	Mag.	Mag.	Yes	45.50
21AP4	No	Metal	Filter	Mag.	Mag.	—	50.75
21ATP4/A	Yes	Glass	Filter	Elect.	Mag.	Yes	47.50
21AUP4A/B	Yes	Glass	Filter	Elect.	Mag.	Yes	47.50
21AVP4	No	Glass	Filter	Elect.	Mag.	Yes	42.25
21AVP4A/B	Yes	Glass	Filter	Elect.	Mag.	Yes	47.50
21AWP4	Yes	Glass	Filter	Mag.	Mag.	Yes	45.50
21CBP4A	Yes	Glass	Filter	Elect.	Mag.	Yes	47.50
21CEP4	Yes	Glass	Filter	Elect.	Mag.	Yes	52.50
21EP4A	No	Glass	Filter	Mag.	Mag.	Yes	42.00
21EP4B	Yes	Glass	Filter	Elect.	Mag.	Yes	47.50
21FP4A	No	Glass	Filter	Elect.	Mag.	Yes	43.75
21FP4C	Yes	Glass	Filter	Mag.	Mag.	Yes	49.25
21MP4	No	Metal	Filter	Elect.	Mag.	—	52.50
21WP4	Yes	Glass	Filter	Mag.	Mag.	Yes	40.25
21WP4A	Yes	Glass	Filter	Mag.	Mag.	Yes	45.50
21YP4	No	Glass	Filter	Elect.	Mag.	Yes	42.00
21YP4A	Yes	Glass	Filter	Elect.	Mag.	Yes	47.50
21ZP4A	No	Glass	Filter	Mag.	Mag.	Yes	40.25
21ZP4B	Yes	Glass	Filter	Mag.	Mag.	Yes	45.50
24CP4	No	Glass	Filter	Mag.	Mag.	Yes	64.50
24CP4A	Yes	Glass	Filter	Mag.	Mag.	Yes	66.25
24DP4	No	Glass	Filter	Elect.	Mag.	Yes	66.50
24DP4A/YP4	Yes	Glass	Filter	Elect.	Mag.	Yes	68.50
27EP4	Yes	Glass	Filter	Mag.	Mag.	No	118.75
27RP4	Yes	Glass	Filter	Mag.	Mag.	Yes	118.75
Color Tube Type	Aluminized Screen	Envelope	Face	Type Of Focus	Type Of Deflection	External Conductive Coating	Suggested List Price
21AXP22A	Yes	Metal	Filter	Elect.	Mag.	No	\$160.00

**SEMICONDUCTOR DIODES AND TRANSISTORS**

**SUGGESTED RESALE AND LIST PRICES—Effective July 1, 1957**

TYPE		SUGG. RESALE PRICE	SUGG. LIST PRICE	TYPE		SUGG. RESALE PRICE	SUGG. LIST PRICE	TYPE		SUGG. RESALE PRICE	SUGG. LIST PRICE
IN34	DIODE	\$ .49	\$ .85	IN295	DIODE	\$ .36	\$ .60	IN302A	DIODE	\$ 7.95	—
IN38	DIODE	.95	—	IN297	DIODE	.93	—	IN303	DIODE	5.55	—
IN60	DIODE	.36	—	IN298	DIODE	.93	1.55	IN303A	DIODE	6.35	—
IN66	DIODE	.49	.85	IN300	DIODE	5.55	—	IN305	DIODE	3.16	—
IN67	DIODE	1.35	—	IN300A	DIODE	6.35	—	IN306	DIODE	3.16	—
IN68	DIODE	.95	—	IN301	DIODE	5.55	—	IN307	DIODE	3.16	—
IN82A	DIODE	.98	—	IN301A	DIODE	6.35	—	IN432	DIODE	5.55	—
IN294	DIODE	.56	.95	IN302	DIODE	6.35	—	IN432A	DIODE	6.35	—

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For Finest Quality **RECEIVING TUBES**  
**PICTURE TUBES · SEMICONDUCTOR DIODES**  
**& TRANSISTORS · INDUSTRIAL TUBES**

**SEMICONDUCTOR DIODES AND TRANSISTORS Continued**  
**SUGGESTED RESALE AND LIST PRICES—Effective July 1, 1957**

TYPE		SUGG. RESALE PRICE	SUGG. LIST PRICE	TYPE		SUGG. RESALE PRICE	SUGG. LIST PRICE	TYPE		SUGG. RESALE PRICE	SUGG. LIST PRICE
1N433	DIODE	5.55	—	2N328 (NOTE 2)	TRANSISTOR	36.20	—	CK766A	TRANSISTOR	Use 2N271A/CK766A	—
1N433A	DIODE	7.15	—	2N329 (NOTE 2)	TRANSISTOR	58.00	—	CK768	TRANSISTOR	1.50	—
1N434	DIODE	5.55	—	2N330 (NOTE 2)	TRANSISTOR	43.60	—	CK772	DIODE	.69	—
1N434A	DIODE	7.15	—					CK774	DIODE	7.95	—
1N460	DIODE	5.55	—	CK705	DIODE	Use 1N66	—	CK775	DIODE	9.53	—
1N460A	DIODE	6.35	—	CK705A	DIODE	Use 1N294	—	CK775-1	DIODE	12.70	—
1N537	DIODE	2.60	—	CK706A	DIODE	Use 1N295	—	CK776	DIODE	28.60	—
1N538	DIODE	3.30	—	CK707	DIODE	Use 1N297	—	CK777	DIODE	37.80	—
1N539	DIODE	5.00	—	CK708	DIODE	Use 1N68	—	CK790	TRANSISTOR	Use 2N327	—
1N540	DIODE	6.70	—					CK791	TRANSISTOR	Use 2N328	—
2N63	TRANSISTOR	3.56	—	CK709	DIODE	15.85	—	CK793	TRANSISTOR	Use 2N330	—
2N64	TRANSISTOR	3.97	—	CK710	DIODE	.87	1.45	CK840	DIODE	Use 1N537	—
2N64 (NOTE 1)	TRANSISTOR	7.70	—	CK711	DIODE	15.85	—	CK841	DIODE	Use 1N538	—
2N65	TRANSISTOR	4.35	—	CK713A	DIODE	Use 1N298	—	CK842	DIODE	Use 1N539	—
2N65 (NOTE 1)	TRANSISTOR	8.35	—	CK715	DIODE	.63	1.05	CK843	DIODE	Use 1N540	—
2N106	TRANSISTOR	4.35	—	CK717	DIODE	15.85	—	CK844	DIODE	27.80	—
2N111	TRANSISTOR	1.98	—	CK719	DIODE	15.85	—	CK845	DIODE	32.60	—
2N111A	TRANSISTOR	1.98	3.30	CK721	TRANSISTOR	2.40	—	CK846	DIODE	5.87	—
2N112	TRANSISTOR	2.20	3.70	CK722	TRANSISTOR	.99	—	CK847	DIODE	7.95	—
2N112A	TRANSISTOR	2.05	3.45	CK725	TRANSISTOR	2.80	—	CK848	DIODE	11.51	—
2N113	TRANSISTOR	6.20	—					CK849	DIODE	15.09	—
2N114	TRANSISTOR	7.95	—	CK735	DIODE	Use 1N300	—	CK850	DIODE	30.15	—
2N130	TRANSISTOR	1.82	—	CK735A	DIODE	Use 1N300A	—	CK851	DIODE	34.90	—
2N130A	TRANSISTOR	2.15	—	CK736	DIODE	Use 1N301	—	CK856	DIODE	Use 1N432	—
2N131	TRANSISTOR	1.82	—	CK736A	DIODE	Use 1N301A	—	CK856A	DIODE	Use 1N432A	—
2N131A	TRANSISTOR	2.70	—	CK737	DIODE	Use 1N302	—	CK858	DIODE	Use 1N460	—
2N132	TRANSISTOR	1.82	—					CK858A	DIODE	Use 1N460A	—
2N132A	TRANSISTOR	2.70	—	CK737A	DIODE	Use 1N302A	—	CK860	DIODE	Use 1N433	—
2N133	TRANSISTOR	2.05	—	CK738	DIODE	Use 1N303	—	CK860A	DIODE	Use 1N433A	—
2N133A	TRANSISTOR	2.85	—	CK738A	DIODE	Use 1N303A	—	CK861	DIODE	Use 1N434	—
2N138	TRANSISTOR	1.82	3.05	CK739	DIODE	Use 1N305	—	CK861A	DIODE	Use 1N434A	—
2N138A	TRANSISTOR	1.82	3.05	CK740	DIODE	Use 1N306	—				
2N138AA	TRANSISTOR	2.70	—					CK863	DIODE	9.53	—
2N271/CK766	TRANSISTOR	2.18	—	CK742	DIODE	Use 1N307	—	CK863A	DIODE	11.10	—
2N271A/CK766A	TRANSISTOR	2.05	—	CK751	TRANSISTOR	1.90	—	CK870	TRANSISTOR	6.35	—
2N327 (NOTE 2)	TRANSISTOR	23.90	—	CK754	TRANSISTOR	3.20	—	CK871	TRANSISTOR	11.85	—
				CK766	TRANSISTOR	Use 2N271/CK766	—				

*All Prices Subject to Change or Withdrawal Without Notice.*  
 1. Price To Signal Corps Specification. No Extra Charge For Source Inspection.  
 2. No Extra Charge For Source Inspection.

**INDUSTRIAL TUBES**  
**SUGGESTED USER AND LIST PRICES—Effective July 1, 1957**

Type	Sugg. Resale Price	Sugg. List Price
0A2	\$ 1.26	\$ 1.75
0A2WA	3.80	—
0A3	1.27	1.80
0A4G	1.68	2.40
0B2	1.32	1.90
0B2WA	4.20	—
0B3/V R90	1.65	2.45
0C3/V R105	1.27	1.80
0D3/V R150	1.27	1.80
†0Z4A CK1003	.95	—
†1AD4	3.05	4.25
†1AE4	4.50	—
†1AG4	3.25	—
†1AG5	2.05	2.85
1B90	14.10	—
2D21	2.04	2.90
2E24	4.65	5.45
2E26	3.85	4.55
2E30	2.60	—
†2E31	2.25	3.10
†2E32	2.25	3.10
†2E35	6.23	8.55
†2E36	6.23	8.55
2E41 (Use 1AG5)	—	—
2E42 (Use 1AG5)	—	—
†2G21	4.38	6.00
†2G22	4.38	6.00
RK2J25	225.00	247.00
RK2J26	225.00	247.00
RK2J27	225.00	247.00
RK2J28	225.00	247.00
RK2J29	225.00	247.00
RK2J30	151.50	166.00
RK2J31	151.50	166.00
RK2J32	151.50	166.00
RK2J33	151.50	166.00
RK2J34	151.50	166.00
RK2J42H	112.00	123.00
RK2J49	138.00	152.00
RK2J50	138.00	152.00

Type	Sugg. Resale Price	Sugg. List Price
RK2J51	\$257.00	\$282.00
RK2J51A	417.00	458.00
RK2J55	151.50	166.00
RK2J56	126.00	138.60
RK2J56A	151.50	166.00
RK2J66	609.00	670.00
RK2J67	609.00	670.00
RK2J70	163.00	179.00
RK2J71	320.00	353.00
RK2K22	56.50	62.00
RK2K25	30.60	33.70
RK2K26	48.20	53.10
RK2K28	55.00	60.90
RK2K28A	55.00	60.90
RK2K29	61.00	66.90
RK2K33	384.00	423.00
RK2K45	89.65	98.60
RK2K48	78.50	86.40
RK2K56	107.00	118.00
2X2A	2.20	2.60
3A4	1.20	—
3A5	1.30	1.85
3B4	2.75	—
RK3B24W	10.50	—
RK3B26	16.00	17.75
RK3B29	10.40	11.50
RK4B31	35.25	38.70
4C35	24.40	—
RK4D22	30.95	34.00
RK4D32	30.95	34.00
RK4J30	225.00	247.00
RK4J31	225.00	247.00
RK4J32	225.00	247.00
RK4J33	225.00	247.00
RK4J34	225.00	247.00
RK4J35	225.00	247.00
RK4J36	353.00	388.00
RK4J37	353.00	388.00
RK4J39	353.00	388.00
RK4J40	353.00	388.00

†Types subject to 10% Federal Excise Tax, which has been included.

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PICTURE TUBES · SEMICONDUCTOR DIODES  
& TRANSISTORS · INDUSTRIAL TUBES

INDUSTRIAL TUBES Cont'd. SUGGESTED USER AND LIST PRICES—Effective July 1, 1957

Type	Price Resale Sugg.	Sugg. List Price
RK4J41	\$353.00	\$388.00
RK4J43	353.00	388.00
RK4J44	353.00	388.00
RK4J53	256.00	282.00
RK4J57	225.00	247.00
RK4J58	225.00	247.00
RK4J59	225.00	247.00
RK4J61	385.00	423.00
RK4J63	385.00	423.00
5ABP7	39.15	.....
5AHP7	36.60	.....
5AHP7A	44.80	.....
5D23/RK65	85.70	94.30
5FP7A	28.90	.....
5FP14A	29.90	.....
RK5J26	449.00	494.00
5R4GY	1.90	2.70
5R4WGY	7.25	.....
6AJ5	3.50	.....
6AK5W (Use CK5654/6AK5W)	.....	.....
6AN5	3.75	.....
6AN5WA	10.80	.....
6AR6	5.75	.....
6AS6	3.46	4.85
6AS7G	4.45	6.25
6BL6	41.00	44.80
6C4W	8.90	.....
6J4	4.33	6.10
6J5WGT	5.35	.....
6SN7WGT	2.60	.....
6X4W	2.00	.....
6X5WGT	2.00	.....
7ABP7	49.50	.....
7ABP7A	57.50	.....
7AK7	7.45	.....
7BP7A	41.55	.....
7MP7	39.40	.....
7MP14	41.75	.....
10KP7A	55.00	.....
10WP7	61.85	.....
12DP7	61.85	.....
12J5WGT	5.35	.....
12SP7	61.85	.....
16ADP7	94.75	.....
RK61	3.70	.....
RK65 (Use 5D23, RK65)	.....	.....
RX120	30.30	43.30
RX120A	40.35	44.40
QK140 (Use QK290)	.....	.....
QK172	1,763.00	1,930.00
RX212	50.00	55.00
QK226 (Use QK293)	.....	.....
QK227 (Use QK294)	.....	.....
QK241	2,310.00	2,538.00
QK253 (Use RK6693)	.....	.....
QK264	3,846.00	4,230.00
QK288	513.00	564.00
QK289	384.00	423.00
QK290	384.00	423.00
QK291	384.00	423.00
QK292	384.00	423.00
QK293	384.00	423.00
QK294	384.00	423.00
QK295	513.00	564.00
QK306	384.00	423.00
QK313	1,635.00	1,798.00
QK329	320.00	352.60
QK362	1,795.00	1,975.00
QK366	586.00	650.00
QK367	160.00	176.00
QK381	151.50	166.00
QK390	257.00	282.00
QK404	74.00	81.50
BM411	107.00	117.80
QK411A	1,026.00	1,128.00
QK412	256.00	282.00
QK422	256.00	282.00
QK436 (Use RK6316)	.....	.....
QK448	377.00	433.00
QK456	378.00	416.00
QK461	107.00	117.80
QK463	384.00	423.00
QK464 (Use RK6835)	.....	.....
QK470	4,870.00	5,359.00
CK501AX	8.30	11.65
CK502AX	5.82	8.15
CK503AX (Use CK5854)	.....	.....
CK506AX	2.30	.....
CK510AX	2.95	.....
CK512AX	2.55	.....
QK518	962.00	1,058.00
CK522AX (Use CK6088)	.....	.....
QK522	1,642.00	1,807.00
CK526AX	2.76	3.90
CK527AX	2.69	3.80
QK528	2,115.00	2,327.00
CK529AX	6.00	8.40
QK529	2,264.00	2,491.00
CK531DX	5.82	8.15
QK531	74.00	81.50

Type	Sugg. Resale Price	Sugg. Price List
CK532DX	\$ 5.82	\$ 8.15
QK532	74.00	81.50
CK533AX	2.52	3.55
CK534AX	2.59	3.65
CK535AX	2.26	3.20
CK536AX	2.69	3.80
CK539DX	5.82	8.15
CK542DX	5.82	8.15
CK542DXS	5.82	8.15
QK543	1,808.00	1,989.00
CK544	1,808.00	1,989.00
QK545	225.00	247.00
CK546DX (Use CK6519)	.....	.....
QK546	2,089.00	2,297.00
CK547DX	2.97	4.20
CK548DX (Use CK6418)	.....	.....
CK549DX (Use CK6419)	.....	.....
QK549	74.00	81.50
CK556AX (Use CK5676)	.....	.....
CK569AX (Use CK5678)	.....	.....
CK571AX (Use CK5886)	.....	.....
CK573AX (Use CK6029)	.....	.....
CK574AX (Use CK6281)	.....	.....
CK628 (Use CK6247)	.....	.....
QK832	2,564.00	2,821.00
RK707B	67.85	74.70
RK715C	63.00	.....
RK725A	145.00	159.00
RK726C	42.00	46.40
RK730A	151.50	166.00
RK807	2.90	3.40
RK811A	5.00	5.90
RK812A	5.00	5.90
RK813	18.00	.....
RK814	14.25	.....
RK816	2.15	2.55
RK829B	16.25	.....
RK832A	12.90	.....
RK837	5.80	.....
RK866A	2.45	2.90
RK872A	8.20	.....
884	1.85	2.55
885	2.00	2.75
954	7.40	.....
955	4.00	.....
956	8.00	.....
957	5.35	.....
†CK1005	1.06	1.45
†CK1006	6.50	.....
†CK1007	1.20	.....
CK1018	15.85	.....
CK1019	24.85	.....
CK1020	10.80	.....
CK1021	10.80	.....
CK1022	13.25	.....
CK1023	10.80	.....
CK1024	4.00	.....
CK1025	3.50	.....
CK1027 (Use CK6174)	.....	.....
CK1030	33.10	.....
CK1031	33.10	.....
CK1032 (Use CK1026)	.....	.....
CK1033	33.10	.....
CK1034	8.30	.....
CK1036 (Use CK6436)	.....	.....
CK1037 (Use CK6437)	.....	.....
CK1038	8.30	.....
CK1039 (Use CK6438)	.....	.....
CK1042 (Use CK6859)	.....	.....
CK1045 (Use CK6542)	.....	.....
CK1047	4.45	.....
CK1049	5.85	.....
CK1050	8.30	.....
1614	2.72	3.85
RK1625	2.65	3.15
2050	1.85	2.55
2051	1.80	.....
CK5517	3.80	.....
RK551A	65.00	.....
RK552A	99.00	.....
RK5586	352.00	388.00
RK5609	132.00	145.00
CK5639	9.30	.....
CK5639A	9.30	.....
CK5643	10.00	.....
CK5651	1.78	2.50
CK5651WA	4.20	.....
†CK5654	3.60	.....
†CK5654/6AK5W	3.60	.....
†CK5654/6AK5W (MII-E-1/4A)	6.00	.....
†CK5654/6AK5W/6096	6.00	.....
†CK5656	22.39	.....
†CK5657	352.00	388.00
†CK5670	5.05	.....
†CK5670 (MII-E-1/5A)	5.75	.....
†CK5670WA	5.75	.....
†CK5672	2.45	.....
CK5675	13.20	.....
CK5676	3.05	.....
†CK5678	2.45	.....

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**INDUSTRIAL TUBES Cont'd. SUGGESTED USER AND LIST PRICES—Effective July 1, 1957**

Type	Price Resale Sugg.	Sugg. List Price
†CK5686	\$ 3.85	.....
CK5687	4.25	.....
CK5691	8.45	.....
CK5692	8.16	.....
CK5693	6.40	.....
CK5702	4.20	.....
CK5702WA	8.25	.....
CK5702WB	13.70	.....
CK5703	2.35	.....
CK5703WA	7.50	.....
CK5703WB	13.00	.....
CK5704	3.05	.....
CK5704WA	6.65	.....
RK5721	170.00	187.00
†CK5725	3.80	.....
†CK5726	2.10	.....
CK5744	2.65	.....
CK5744WA	7.05	.....
CK5744WB	13.00	.....
†CK5749	2.80	.....
†CK5750	3.90	.....
†CK5751	3.78	.....
CK5755	10.40	.....
CK5763	2.37	3.35
RK5777	208.00	230.00
RK5778	208.00	230.00
CK5783	4.20	.....
CK5783WA	8.30	.....
CK5783WB	8.30	.....
CK5784	5.00	.....
CK5784WA	9.95	.....
CK5784WB	16.60	.....
CK5785	5.85	.....
CK5787	5.00	.....
CK5787WA	10.80	.....
CK5787WB	10.80	.....
CK5794A	7.50	.....
CK5814 (Use CK5814A)	.....	.....
†CK5814A	3.65	.....
†CK5814A (MII-E-1/12A)	5.10	.....
†CK5814WA	5.10	.....
CK5829	4.20	.....
CK5829WA	7.90	.....
RK5836	89.00	96.25
RK5837	89.00	96.25
CK5851 (Use CK6397)	.....	.....
CK5854	5.85	.....
CK5875	3.05	.....
CK5876	13.55	.....
CK5879	1.75	2.50
CK5881	3.50	4.90
CK5886	5.00	.....
CK5889	12.45	.....
CK5893	19.40	.....
CK5910	.95	.....
CK5962	12.45	.....
CK5963	1.40	.....
CK5965	2.15	.....
CK5971	5.85	.....
CK5972	5.85	.....
CK5975	4.20	.....
RK5976	74.00	81.50
RK5981	112.00	123.00
RK6002	705.00	776.00
†CK6005	4.60	.....
CK6021	5.85	.....
CK6029	5.00	.....
RK6037	340.00	374.00
RK6043	71.50	78.60
CK6050	3.05	.....
CK6080	6.00	.....
†CK6087	6.40	.....
CK6088	2.75	.....
†CK6096	6.00	.....
CK6110	9.15	.....

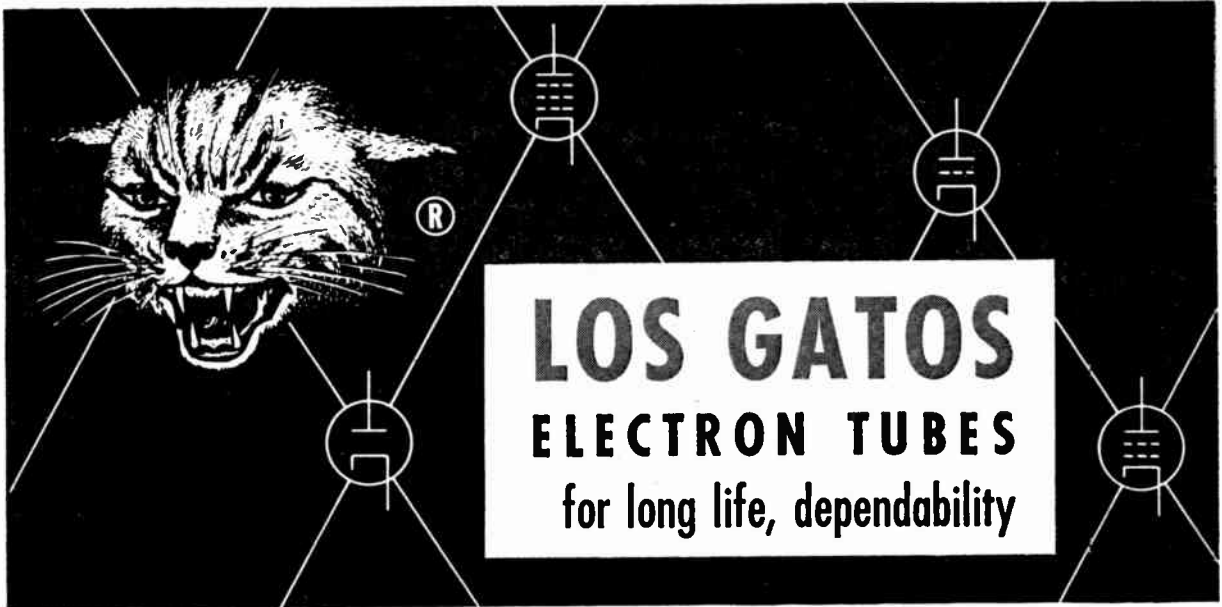
Type	Price Resale Sugg.	Sugg. List Price
CK6111	\$ 6.70	.....
CK6112	6.70	.....
RK6115A	97.00	107.00
RK6116	209.00	229.00
RK6133 (Use 2K28A)	.....	.....
†CK6135	2.60	.....
†CK6136	3.70	.....
CK6146	4.90	5.75
CK6148 (Use CK5702WA)	.....	.....
CK6149 (Use CK5703WA)	.....	.....
CK6150 (Use CK5704WA)	.....	.....
CK6151 (Use CK5744WA)	.....	.....
CK6152	9.15	.....
CK6174	3.80	.....
RK6177	321.00	333.00
RK6178	449.00	494.00
†CK6201	4.85	.....
CK6213	5.00	.....
RK6229	449.00	494.00
RK6230	548.00	599.00
RK6238	209.00	229.00
CK6245	12.45	.....
CK6247	12.45	.....
CK6247WA	21.55	.....
RK6249A	833.00	917.00
RK6253	384.00	423.00
RK6254	384.00	423.00
†CK6265	4.60	.....
CK6281	2.70	.....
†CK6286	3.35	.....
RK6310	215.00	236.00
RK6312	215.00	236.00
RK6316	152.00	167.00
RK6344	1,090.00	1,199.00
RK6390	209.00	229.00
CK6397	8.30	.....
RK6402	2,756.00	3,032.00
RK6406	1,803.00	1,763.00
RK6410	1,603.00	1,763.00
CK6418	3.05	.....
CK6419	2.20	.....
CK6436	8.30	.....
CK6437	8.30	.....
CK6438	8.30	.....
†CK6485	2.05	.....
RK6517	1,660.00	1,826.00
RK6518	1,665.00	1,833.00
CK6519	3.05	.....
CK6528	6.60	.....
CK6533	13.25	.....
CK6533WA	21.55	.....
CK6540	10.80	.....
CK6542	12.45	.....
RK6573	513.00	564.00
CK6611	9.95	.....
CK6612	12.45	.....
CK6659	9.95	.....
RK6695	737.00	811.00
CK6763	4.45	.....
CK6832	24.85	.....
RK6835	866.00	952.00
RK6841	2,128.00	2,341.00
RK6843	2,564.00	2,821.00
CK6872	9.55	.....
CK6932	12.45	.....
RK6940	209.00	229.00
† 9001	4.50	.....
† 9002	3.10	.....
† 9003	4.60	.....
† 9005	4.40	.....
† 9006	2.15	.....
Subminiature Tube Test Adapters	.....	.....
5AX51	8.30	.....
7AX51	10.80	.....
8CV50	10.80	.....

†Types subject to 10% Federal Excise Tax, which has been included.

**TRANSISTOR REPLACEMENT GUIDE**

Following is a listing of suggested Raytheon replacements for various transistor types encountered in servicing transistor radios. Although not all suggested replacements have the exact characteristics of the original types, the similarity should be sufficient to give comparable performance.

TYPE	REPLACE WITH RAYTHEON TYPE	TYPE	REPLACE WITH RAYTHEON TYPE	TYPE	REPLACE WITH RAYTHEON TYPE	TYPE	REPLACE WITH RAYTHEON TYPE
2N34	2N131	2N138	2N138	2N215	2N132	223	None
2N35	None	2N138A	2N138A	2N217	2N138A	234	None
2N44	2N63	2N139	2N111A	2N218	2N111A	235	2N111
2N78	None	2N140	2N112	2N219	2N112	310	2N132
2N94	None					353	2N138A
2N104	2N132	2N145	None	2N220	2N133	354	2N138
2N107	CK722	2N146	None	2T12	2N130	CK721	CK721
2N109	2N138A	2N147	None	2T51	None	CK722	CK722
2N112	2N112	2N172	None	2T52	None	GT760	2N112
2N112A	2N112A	2N173	None			GT761	2N113
2N132	2N132	2N174	None	2T53	None	L5021	2N131
2N135	2N111	2N175	2N133	R26-2	None	L5021L	2N131
2N136	2N112	2N185	2N131	R35	2N132	L5022	2N132
2N137	2N113	2N189	2N138	210	None	L5028	2N138
		2N192	None	222	None		



# LOS GATOS

## ELECTRON TUBES

for long life, dependability

LOS GATOS TYPE NUMBER	TUBE TYPE	USER PRICE	LOS GATOS TYPE NUMBER	TUBE TYPE	USER PRICE
<b>3B24W</b>	Rectifier	\$11.80	<b>250R</b>	Rectifier	\$22.00
<b>3C24/24G</b>	Triode	12.00	<b>250TH</b>	Triode	33.00
<b>4D21/4-125A</b>	Tetrode	30.25	<b>250TL</b>	Triode	33.00
<b>4E27/8001</b>	Pentode	26.00	<b>254</b>	Triode	23.35
<b>UH50</b>	Triode	22.00	<b>705A</b>	Rectifier	19.92
<b>100R</b>	Rectifier	14.93	<b>715C</b>	Tetrode	63.00
<b>100TH</b>	Triode	18.25	<b>719A</b>	Clipper Diode	40.00
<b>100TL</b>	Triode	18.25	<b>8020</b>	Rectifier	14.93

Los Gatos Brand Tubes in both JAN and commercial types are setting new performance records throughout the electronic field. Exclusive new SINTERCOTE® black-body surface on molybdenum anodes improves

heat dissipation, keeps tubes hard during operation. Send for technical data bulletins. Inquiries are welcomed for special tubes designed to your specifications.

# LEWIS and KAUFMAN, Ltd.

LOS GATOS 3      CALIFORNIA



Export Representatives: MINTHORNE INTERNATIONAL CO., INC.  
15 Moore Street, New York 4, N. Y. Cable Address "Mintthorne"

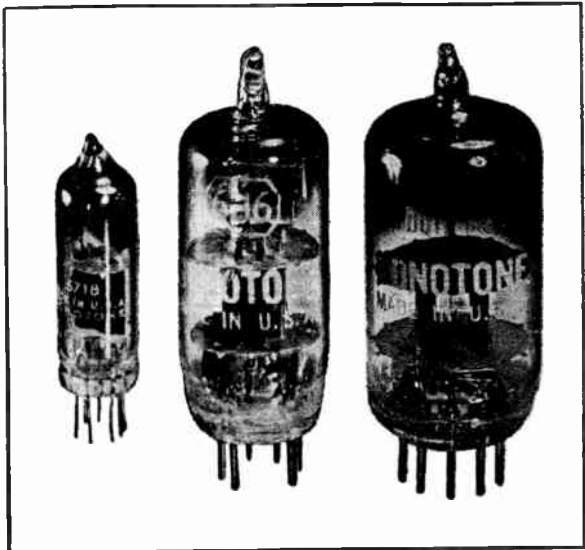
In Canada: RADIO VALVE COMPANY, LIMITED.  
189 Dufferin Street, Toronto 1, Ontario, Canada

# SONOTONE MINIATURE AND SUBMINIATURE TUBES

FOR PERFORMANCE WITHOUT PROBLEMS

Because of our extensive experience in the techniques of extreme miniaturization, Sonotone has become a major supplier of miniature and subminiature tubes to industry and the military.

These tubes are now available in individually packaged form through leading electronic distributors.



## Reliable-type Subminiature Tubes

5639	5977	6221
5718	6021	6222
5719	6111	6223
5840	6112	6224
5899	6205	6225
5902	6206	

## Reliable-type Miniature Tubes

6J4WA	6J6WA
6J6W	6101/6J6WA

## Sonotone Commercial Tubes

2AF4A	6AF4A
5J6	6J4
	6J6

*Electronic  
Applications  
Division*

**SONOTONE** CORPORATION

ELMSFORD, NEW YORK

# PENTA

high-efficiency

## POWER TUBES

Major electronic equipment manufacturers specify Penta high vacuum and hydrogen thyratron tubes where long life, uniform high quality, and adherence to specifications are strict requirements. Thorough quality control and life testing under conditions simulating actual use assures maximum durability.

Whether your requirements are for the new beam pentodes — for applications where superior linearity and low distortion at high efficiency are critical requirements — the new miniaturized hydrogen thyratrons — or the older conventional types — Penta is your logical source.

Type	Fil. Volts	Fil. Current Amps.	Plate Diss. Max. W.	Plate Volt Max.	Plate Current Ma., Max.	Screen Volt. Max.	List Price
<b>BEAM PENTODES</b>							
PL-172*†	6.0	7.5	1000	3,000	1000	600	\$135.00
PL-175*	5.0	14.5	400	4,000	350	800	55.00
PL-177*	6.0	3.3	75	2,000	175	600	21.50
PL-6549	6.0	3.3	75	2,000	175	600	21.50
<b>TETRODES</b>							
PL-4D21 (4-125A)	5.0	6.5	125	3,000	225	600	30.25
PL-4D21A	5.0	6.5	175	3,000	225	600	32.75
PL-5D22 (4-250A)	5.0	14.5	250	4,000	350	800	41.25
PL-4-400A	5.0	14.5	400	4,000	350	800	50.00
<b>TRIODES (Grounded-Grid Types)</b>							
PL-6569	5.0	14.5	250	4,000	300	$\mu=45$	32.50
PL-6580	5.0	14.5	400	4,000	300	$\mu=45$	40.00
<b>HIGH-VOLTAGE RECTIFIER</b>							
PL-250R	5.0	10.5	.....	60,000**	250	.....	22.00
<b>HYDROGEN THYRATRONS (Low-jitter Types)</b>							
PL-5C22/HT-415	6.3	10.5	.....	16,000	325 amp.	.....	36.00
PL-161	6.3	10.5	.....	16,000	325 amp.	.....	56.00
PL-165A	6.3	7.8	.....	12,000	225 amp.	.....	56.00

\* Zero-Suppressor Voltage Type  
 \*\* Peak Inverse Voltage Rating  
 † External Anode Type



PL-169A Vacuum Switch

### VACUUM SWITCHES

PL-R1	S.P.D.T. 21 Kv. Max. Volt. 6-A avg., 150-A peak current, Max.	33.00
PL-169A	S.P.D.T. 21 Kv. Max. Volt. 30-A avg., 500-A peak current, Max.	40.00

### PL-184 SOCKET (FOR PL-172 PENTODE)

Provides electrical connections and air-flow directing means for the PL-172 beam pentode. Includes contact provisions for all base pins and the screen-grid and suppressor-grid ring terminals. Radio-frequency by-pass capacitors for both screen and suppressor grids are included.

36.00



## PENTA LABORATORIES, INC.

SANTA BARBARA 2, CALIFORNIA

Sales Representatives in Principal Cities





# TUNG-SOL ELECTRON TUBES

EFFECTIVE APRIL 26, 1957

This Price List Is Supplied For Your Convenience By Tung-Sol Electric Inc.

All prices are subject to change without notice. The listing of price for any tubes does not necessarily indicate availability.  
(TAX INCLUDED)

TYPE	LIST	TYPE	LIST	TYPE	LIST	TYPE	LIST
<b>OZ4</b>	<b>\$1.55</b>	2AF4A	3.65	6AB4	1.85	6BV8	2.80
<b>OZ4G</b>	<b>1.90</b>	2B7	3.40	6AC5GT	3.45	6BX7GT	3.60
<b>1A4P</b>	<b>4.25</b>	2BN4	2.25	6AC7/1852	3.50	5BY5G	3.30
<b>1A5GT</b>	<b>2.55</b>	2G5	2.35	6AE5GT	1.80	6BY5GA	3.30
<b>1A6</b>	<b>3.65</b>	3A8GT	5.00	6AE6G	1.80	6BY6	2.10
<b>1A7GT</b>	<b>2.95</b>	3AL5	1.70	6AF4	3.60	6BY8	2.55
<b>1AB5</b>	<b>5.70</b>	3AU6	1.95	6AF4A	3.60	6BZ6	2.10
<b>1AF4</b>	<b>3.65</b>	3AV6	1.60	6AF5G	1.80	6BZ7	3.60
<b>1AG4</b>	<b>2.90</b>	3B7	5.70	6AG5	2.20	6BZ8/X155	3.90
<b>1AH4</b>	<b>2.90</b>	3BA6	1.95	6AG7	3.90	6C4	1.65
<b>1AJ5</b>	<b>3.00</b>	3BC5	2.10	6AH4GT	2.80	6C5	2.35
<b>1AK4</b>	<b>4.55</b>	3BE6	1.90	6AH6	4.20	6C5GT	2.10
<b>1AK5</b>	<b>4.55</b>	3BN6	2.85	6AH6V	3.95	6C6	3.15
<b>1AX2</b>	<b>2.70</b>	3BU8	2.60	6AK5	4.05	6CB6	2.10
<b>1A6</b>	<b>3.65</b>	3BY6	2.10	6AK6	2.55	6CB5A	6.15
<b>1B3GT</b>	<b>2.60</b>	3BZ6	2.10	6AL5	1.65	6CD6G	5.20
<b>1B4P</b>	<b>4.05</b>	3C6	3.75	6AL7GT <sup>3</sup>	5.00	6CD6GA	5.20
<b>1B5</b>	<b>3.50</b>	3CB6	2.10	6AM8	2.90	6CF6	2.25
<b>1B7GT</b>	<b>3.50</b>	3CF6	2.30	6AN8	3.15	6CG7	2.30
<b>1C5GT</b>	<b>2.90</b>	3CS6	2.20	6AQ5	2.00	6CG8	2.90
<b>1C6</b>	<b>3.50</b>	3D6/1299	4.65	6AQ5A	2.00	6CG8A	2.90
<b>1C7G</b>	<b>3.50</b>	3DT6	1.95	6AQ6	1.85	6CL6	3.10
<b>1D5GP</b>	<b>4.05</b>	3LF4	3.55	5AQ7GT	3.10	6CM6	2.30
<b>1D7G</b>	<b>3.65</b>	3Q4	2.35	6AR5	2.05	6CM7	2.55
<b>1D8GT</b>	<b>4.55</b>	3Q5GT	3.10	6AS5	2.15	6CN7	2.25
<b>1E5GP</b>	<b>4.25</b>	3S4	2.30	6AS8	3.05	6CR6	2.05
<b>1E7GT</b>	<b>4.25</b>	3V4	2.20	6AT6	1.45	6CS6	2.15
<b>1F4</b>	<b>2.75</b>	4BC8	3.65	6AT8	2.95	6CS7	2.50
<b>1F5G</b>	<b>2.85</b>	4BE6	2.10	6AU4GT	2.90	6CU6	3.90
<b>1G4GT</b>	<b>2.60</b>	4BN6	2.80	6AU5GT	3.65	6D6	3.15
<b>1G5GT</b>	<b>3.25</b>	4BQ7A	3.55	6AU6	1.90	6D8G	3.50
<b>1G6GT</b>	<b>3.00</b>	4BU8	2.60	6AU7	2.20	6DE6	2.20
<b>1H4G</b>	<b>2.35</b>	4BZ7	3.65	6AU8	3.25	6DG6GT	1.85
<b>1H5G</b>	<b>2.15</b>	4CB6	2.10	6AV5GA	3.55	6DQ6	3.90
<b>1H5GT</b>	<b>2.15</b>	5AM8	2.95	6AV5GT	3.55	6DT6	1.95
<b>1H6G</b>	<b>3.50</b>	5AN8	3.20	6AV6	1.60	6E5 <sup>3</sup>	2.55
<b>1J6G</b>	<b>3.50</b>	5AQ5	2.05	6AW8	3.30	6F5	2.65
<b>1J6GT</b>	<b>3.50</b>	5AS4	1.90	6AW8A	3.30	6F5GT	2.60
<b>1L4</b>	<b>2.35</b>	5AS8	3.05	6AX4GT	2.45	6F6	3.05
<b>1L6</b>	<b>2.90</b>	5AT8	2.95	6AX5GT	2.55	6F6G	2.45
<b>1LA4</b>	<b>3.35</b>	5AU4	2.90	6B4G	4.55	6F6GT	2.45
<b>1LA6</b>	<b>3.30</b>	5AV8	3.20	5B5	3.45	6F7	4.25
<b>1LB4</b>	<b>3.55</b>	5AW4	2.50	6B8G	3.65	6F8G	3.85
<b>1LC5</b>	<b>3.15</b>	5AZ4	2.15	6BA6	1.90	6G6G	3.05
<b>1LC6</b>	<b>3.30</b>	5BE8	2.90	6BA7	3.15	6H6	2.40
<b>1LD5</b>	<b>3.30</b>	5BK7A	3.20	6BA8A	3.20	6H6GT	2.30
<b>1LE3</b>	<b>3.30</b>	5BR8	2.90	6BC5	2.10	6J5	2.15
<b>1LG5</b>	<b>3.15</b>	5BT8	3.10	6BC7	3.20	6J5GT	2.15
<b>1LH4</b>	<b>3.15</b>	5CG8	2.90	6BC8	3.60	6J6	2.55
<b>1LN5</b>	<b>3.15</b>	5CL8	2.90	6BD6	1.95	6J7	3.05
<b>1N5GT</b>	<b>2.90</b>	5J6	2.55	6BE6	2.10	6J7GT	3.05
<b>1N6G</b>	<b>1.80</b>	5T8	3.15	6BF5	2.25	6J8C	3.85
<b>1P5GT</b>	<b>2.90</b>	5U4GB	1.90	6BF6	1.70	6K5GT	2.45
<b>1Q5GT</b>	<b>3.05</b>	5U8	3.05	6BG6G	5.55	6K6GT	2.00
<b>1R5</b>	<b>2.35</b>	5V4G	2.80	6BH6	2.45	6K7	3.10
<b>1S4</b>	<b>2.85</b>	5V4GA	2.80	6BH8	3.25	6K7G	2.40
<b>1S5</b>	<b>2.05</b>	5V6GT	1.90	6BJ6	2.35	6K7GT	2.70
<b>1T4</b>	<b>2.20</b>	5W4GT	1.75	6BK5	2.75	6K8	3.65
<b>1U4</b>	<b>2.20</b>	5X4G	2.25	6BK7A	3.15	6K8GT	2.75
<b>1U5</b>	<b>1.95</b>	5X8	2.90	6BK7B	3.15	6L5G	2.90
<b>1V</b>	<b>2.55</b>	5Y3G	1.55	6BL7GT	3.55	6L6	5.15
<b>1V2</b>	<b>1.80</b>	5Y3GT	1.55	6BN4	2.20	6L6G	3.65
<b>1V6</b>	<b>3.70</b>	5Y4G	1.85	6BN6	2.70	6L6GB	3.90
<b>1X2A</b>	<b>2.70</b>	5Z3	2.60	6BN8	2.50	6L7	3.55
<b>1X2A/1X2B</b>	<b>2.70</b>	5Z4	3.90	6BQ6GA/6CU6	3.90	6L7G	3.30
<b>2A3</b>	<b>5.10</b>	6A3	3.90	6BQ6GTA	3.90	6N6G	3.90
<b>2A4G</b>	<b>4.80</b>	6A7	3.40	6BQ7A	3.55	6N7	3.40
<b>2A5</b>	<b>2.35</b>	6A8	3.30	6BR8	2.45	6N7GT	3.30
<b>2A6</b>	<b>2.85</b>	6AB8	3.30	6BS8	3.50	6P5GT	2.50
<b>2AF4</b>	<b>3.45</b>	6AB8GT	3.30	6BU8	2.55	6Q7	2.90

Bold Face Type—represents 90% of Demand.  
\* Non-Taxable

# TUNG-SOL ELECTRON TUBES -(cont.)

TYPE	LIST	TYPE	LIST	TYPE	LIST	TYPE	LIST
6Q7G	2.10	7J7	3.65	12K5	2.55	30	2.30
6Q7GT	2.55	7K7	3.55	12K7GT	2.70	31	2.75
6S4A	1.85	7L7	3.35	12K8GT	2.95	32	3.70
6S7	3.60	7N7	2.70	12L6GT	2.20	32L7GT	3.20
6S7G	3.50	7Q7	3.30	12Q7GT	2.55	33	3.50
6S8GT	2.75	7R7	4.05	12S8GT	2.75	34	3.65
6SA7	2.60	7S7	3.25	12SA7	2.60	35/51	2.40
6SA7GT	2.60	7V7	3.75	12SA7GT	2.60	35A5	2.80
6SB7Y	3.85	7W7	3.75	12SC7	2.70	35B5	2.25
6SC7	2.70	7X6	2.65	12SF5GT	2.15	35C5	2.00
6SD7GT	3.35	7X7	2.95	12SF7	3.05	35L6GT	2.15
6SF5	2.30	7Y4	2.20	12SG7	2.85	35W4	1.35
6SF5GT	2.30	7Z4	2.20	12SM7	3.05	35Y4	2.20
6SF7	3.05	8AU8	3.10	12SJ7	2.45	35Z3	2.20
6SG7	2.95	8C7	2.35	12SJ7GT	2.15	35Z5GT	1.60
6SH7	3.05	8CM7	2.55	12SK7	2.40	36	2.90
6SJ7	2.45	8CN7	2.35	12SK7GT	2.40	37	1.85
6SJ7GT	2.35	9U8	3.00	12SL7GT	2.95	38	2.30
6SK7	2.40	12A8GT	3.30	12SN7GT	2.40	39/44	2.75
6SK7GT	2.40	12AB5	2.10	12SQ7	2.10	40	2.20
6SL7GT	2.95	12AC6	2.10	12SQ7GT	2.10	41	2.55
6SN7GTA	2.15	12AD6	2.10	12SR7	2.40	42	2.40
6SN7GTB	2.35	12AE6	1.70	12SR7GT	2.00	43	2.60
6SQ7	2.10	12AF6	2.20	12V6GT	2.00	45	2.15
6SQ7GT	2.10	12AH7GT	3.40	12W6GT	2.60	45Z3	1.80
6SR7	2.35	12AJ6	1.60	12X4	1.50	46	3.05
6SS7	2.70	12AL5	1.70	12Z3	2.60	47	5.85
6T4	3.60	12AL8	3.55	14A4	3.15	50	5.15
6T7G	3.35	12AQ5	2.00	14A5	4.70	50A5	2.80
6T8	3.15	12AT6	1.65	14A7/12B7	2.65	50B5	2.25
6U5/6G5*	2.50	12AT7	2.85	14A8	2.10	50C5	2.00
6U7G	2.40	12AU6	1.90	14AF7	2.95	50L6GT	2.15
6U8	2.90	12AU7	2.30	14B6	2.65	50X6	2.60
6U8A	2.95	12AU7A	2.30	14B8	2.85	50Y6GT	2.30
6V3	3.70	12AV6	1.60	14C5	3.20	50Y7GT	2.25
6V3A	3.95	12AV7	3.05	14C7	2.65	55	2.30
6V6	3.90	12AX4GTA	2.45	14E6	3.15	56	1.90
6V6GT	2.00	12AX7	2.30	14E7	3.55	57	2.10
6V6GTA	2.00	12AX7	2.60	14F7	2.95	58	2.10
6V7G	1.80	12BA4A	2.55	14F8	3.65	59	3.70
6W4GT	2.15	12BA6	1.90	14H7	3.30	70L7GT	6.95
6W6GT	2.60	12BA7	3.15	14J7	4.05	71A	2.40
6X4	1.50	12BD6	1.95	14N7	2.95	75	2.60
6X5GT	1.75	12BE6	2.10	14Q7	3.30	76	1.70
6X8	2.90	12BF6	1.70	14R7	4.05	77	2.20
6Y6G	2.95	12BH7	2.55	14S7	3.65	78	2.70
6Z7G	4.05	12BH7A	2.70	14W7	3.75	79	2.70
7A4	2.05	12BH7B	2.55	14Y4	2.80	80	1.90
7A5	2.95	12BL6	2.10	17AX4GT	2.50	81	4.85
7A6	2.55	12BQ6GA/12CU6	4.05	17DQ6	3.90	82	2.65
7A7	2.65	12BQ6GT	3.85	17L6GT	2.30	83	2.65
7A8	3.10	12BQ6GTA	3.80	17W6GT	2.85	84/6Z4	2.05
7AD7	4.95	12BQ6GTB	4.05	19	3.50	85	2.30
7AF7	2.95	12BR7	2.30	19A4	3.10	117L7/M7GT	6.95
7AG7	3.10	12BV7	2.65	19B6GG	6.00	117LM7GT	6.95
7AH7	2.95	12BY7A	2.65	19J6	2.70	117P7GT	7.30
7AU7	2.35	12BZ7	2.80	19T8	3.15	117Z3	2.10
7B4	2.40	12C5	1.80	24A	3.05	117Z4GT	3.00
7B5	2.40	12CA5	2.00	25AX4GT	2.75	117Z6GT	3.55
7B6	2.65	12CR6	2.05	25BQ6GA/25CU6	4.10		
7B7	2.65	12CU5	1.95	25BQ6GT	4.10		
7B8	2.85	12CU6	4.05	25BQ6GTA	4.10		
7C5	2.55	12DE8	2.70	25CD6GA	4.95		
7C6	2.65	12DQ6	3.90	25DN6	5.20		
7C7	2.55	12E5GT	2.20	25L6GT	2.05		
7E5	2.80	12F5GT	2.40	25W4GT	2.35		
7F7	2.95	12F8	2.55	25Z5	2.25		
7F8	3.65	12J5GT	2.15	25Z6GT	2.25		
7G7	3.20	12J7GT	3.05	26	2.30		
7H7	3.30	12J8	3.15	27	2.10		

Bold Face Type—represents 90% of Demand.  
\* Non-Taxable

## DIAL LAMPS

Tung-Sol Lamp No.	Bulb	Base	Volts	Amps.	List Price	Tung-Sol Lamp No.	Bulb	Base	Volts	Amps.	List Price
40	T-3/4	Min. Sc.	6.3	.15	\$.15	†57X	G-4/2	Min. Bay.	14.0	.23	\$.15
41	T-3/4	Min. Sc.	2.5	.50	.15	†63	G-6	S. C.	7.0	.63	.15
42	T-3/4	Min. Sc.	3.2	.30	.15	291	T-3/4	Min. Bay.	2.9	.18	.25
43	T-3/4	Min. Bay.	2.5	.50	.15	292	T-3/4	Min. Sc.	2.9	.18	.25
44	T-3/4	Min. Bay.	6.3	.25	.15	313	T-3/4	Min. Bay.	28	.07	.30
45	T-3/4	Min. Bay.	3.2	.35	.15	1446	G-3/2	Min. Sc.	12	.20	.15
46	T-3/4	Min. Sc.	6.3	.25	.15	1447	G-3/2	Min. Sc.	18	.15	.20
47	T-3/4	Min. Bay.	6.3	.15	.15	1458	G-5	Min. Bay.	20	.15	.25
48	T-3/4	Min. Sc.	2.0	.06	.15	1481	T-3/4	Min. Bay.	14	.15	.25
49	T-3/4	Min. Bay.	2.0	.06	.15	1490	T-3/4	Min. Sc.	3.2	.16	.15
50	G-3/2	Min. Sc.	7.5	.20	.15	1813	T-3/4	Min. Bay.	14.4	.10	.25
†51	G-3/2	Min. Bay.	7.5	.40	.12	1814	T-3/4	Min. Sc.	14.4	.10	.40
52	G-3/2	Min. Sc.	14.4	.12	.20	1815	T-3/4	Min. Bay.	14.0	.20	.20
†53	G-3/2	Min. Bay.	14.4	.10	.12	1847	T-3/4	Min. Bay.	6.3	.15	.20
†55	G-4/2	Min. Bay.	7.0	.40	.14	1891	T-3/4	Min. Bay.	14	.23	.15
†57	G-4/2	Min. Bay.	14.0	.23	.15	1892	T-3/4	S. C.	14	.10	.15



# TUNG-SOL

## PICTURE TUBES



EFFECTIVE OCTOBER 1, 1956

TYPE	SUGGESTED DEALER PRICE	SUGGESTED LIST PRICE	TYPE	SUGGESTED DEALER PRICE	SUGGESTED LIST PRICE
7JP4	\$22.15	\$29.50	●20CP4B/20DP4B	\$34.20	\$45.50
10BP4A	16.85	22.50	●20CP4D/20DP4C	34.20	45.50
10HP4	28.00	37.25	20DP4	See 20CP4/20DP4	
10MP4	22.00	29.25	20DP4A	See 20CP4A/20DP4A	
12KP4A	22.65	30.25	●20DP4B	See 20CP4B/20DP4B	
12LP4A	20.35	27.25	●20DP4C	See 20CP4D/20DP4C	
12UP4A (M)	20.35	30.25	20HP4	See 20HP4A/20MP4	42.00
12UP4B (M)	20.35	30.25	●20HP4C	31.55	42.00
12VP4A	25.35	33.75	●20HP4D	35.55	47.50
14BP4/14CP4	22.00	29.25	20MP4	35.55	47.50
14CP4	See 14BP4/14CP4		●21ACP4A	See 21AMP4A/21ACP4A	
14QP4	23.35	31.25	●21ALP4A/21ALP4B	35.55	47.50
●14QP4A	27.35	36.50	●21ALP4B	See 21ALP4A/21ALP4B	
16AP4A (M)	36.15	48.25	●21AMP4A/21ACP4A	34.20	45.50
16EP4A (M)	40.00	53.00	21AP4 (M)	38.00	50.75
16GP4B (M)	36.15	48.25	●21ATP4A/21ATP4A	35.55	47.50
16JP4A	33.35	44.50	●21ATP4A	See 21ATP4/21ATP4A	
16KP4/16RP4	25.00	33.25	●21AUP4A/21AUP4B	35.55	47.50
●16KP4A/16RP4A	29.00	38.75	●21AUP4B	See 21AUP4A/21AUP4B	
16LP4A/16ZP4	33.35	44.50	●21AVP4A/21AVP4B	35.55	47.50
16RP4	See 16KP4/16RP4		●21AVP4B	See 21AVP4A/21AVP4B	
●16RP4A	See 16KP4A/16RP4A		●21AWP4	34.20	45.50
16TP4	25.00	33.25	21EP4	31.55	42.00
16WP4A	33.35	44.50	21EP4A	31.55	42.00
16ZP4	See 16LP4A/16ZP4		●21EP4B	35.55	47.50
17ATP4/17AVP4	26.35	35.25	21FP4	32.85	43.75
●17ATP4A/17AVP4A	30.35	40.50	21FP4A	32.85	43.75
17AVP4	See 17ATP4/17AVP4		●21FP4C	36.85	49.25
●17AVP4A	See 17ATP4A/17AVP4A		21MP4 (M)	39.45	52.50
17BP4A/17JP4	25.00	33.25	21WP4	30.20	40.25
●17BP4B	29.00	38.75	●21WP4A	34.20	45.50
17CP4 (M)	32.80	43.75	21XP4/21AYP4	31.55	42.00
17GP4 (M)	36.15	48.25	●21XP4A	35.55	47.50
17HP4/17RP4	26.35	35.25	21YP4	31.55	42.00
●17HP4B	30.35	40.50	●21YP4A	35.55	47.50
17JP4	See 17BP4A/17JP4		21ZP4	30.20	40.25
17LP4A/17YP4	26.35	35.25	●21ZP4A	30.20	40.25
●17LP4A	30.35	40.50	●21ZP4B	34.20	45.50
17RP4	See 17HP4/17RP4		●24CP4A	49.65	66.25
17QP4/17UP4/17YP4	25.00	33.25	●24DP4A	51.35	68.50
17TP4 (M)	32.80	43.75	●24VP4A	49.65	66.25
17VP4	See 17LP4/17VP4		●24YP4	51.35	68.50
17YP4	See 17QP4/17YP4		●27EP4	89.00	118.75
19AP4B (M)	39.45	52.50	●27RP4	89.00	118.75
20CP4/20DP4	30.20	40.25			
20CP4A/20DP4A	30.20	40.25			

(M)—METAL TYPE ●—ALUMINIZED SCREEN

NET PRICES to distributors are F.O.B. Factory, freight allowed to destination on shipments of 5 tubes or more; transportation at expense of purchasers on shipments of less than 5 tubes. Prices are inclusive of Federal Excise Tax. The listing of same types does not necessarily indicate availability at all times.

Type	Description	Tax Included Sug. Dist. Resale Price	Type	Description	Tax Included Sug. Dist. Resale Price
1AD4	Subminiature Sharp-Cutoff Pentode	3.05	5654/6AK5W/		
2C51	Miniature Double Triode	4.15	6096	Miniature Sharp-Cutoff RF Pentode	6.40
★2E22	Pentode Power Amplifier Oscillator	7.25	5670	Miniature Double Triode	5.05
★3A4	Miniature Pentode Power Amplifier	1.20	5670WA	Miniature HF Double Triode	5.75
★5A6	Miniature Beam Pentode Power Amplifier	6.35	5672	Subminiature Pentode Power Amplifier	1.55
5R4GY	Full-Wave Hi-Vacuum Rectifier	1.90	★5676	Subminiature HF Oscillator Triode	1.90
6AJ5	Miniature Pentode	3.50	5678	Subminiature Pentode	1.55
6AK5WB	Miniature Sharp-Cutoff R.F. Pentode	5.25	★5687	Miniature Medium Mu Double Triode	4.25
★6AR6	Beam Pentode Power Amplifier	5.75	★5687WA	Miniature Medium Mu Double Triode	7.75
6AS6	Dual Control Sharp-Cutoff RF Pentode	3.45	5725/6AS6W	Miniature Semi-Remote Cutoff Pentode	3.25
6AS7G	Low Mu Twin Power Triode	4.45	5725/6AS6W/		
6AU6WA	Miniature Sharp-Cutoff RF Pentode	3.70	6187	Min. Semi-Remote Cutoff R.F. Pentode	6.00
6L6WGB	Beam Pentode Power Amplifier	5.75	5726/6AL5W	Miniature Double Triode	2.10
★6SC7GT	Double Triode Amplifier	3.25	5726/6AL5W/		
6SN7WGT	Twin Triode Medium Mu Amplifier	2.70	6097	Miniature Double Diode	3.45
6SN7WGTA	Twin Triode Medium Mu Amplifier	6.45	5749/6BA6W	Min. Remote-Cutoff Amplifier Pentode	2.80
★6SU7GT	Hi-Mu Double Triode Amplifier	4.25	5751	Miniature Hi-Mu Double Triode	3.80
6X4W	Miniature Double Diode Full-Wave Rectifier	1.80	5751WA	Miniature Hi-Mu Double Triode	5.55
12AY7	Medium Mu Twin Triode	2.53	5814A	Miniature Twin Triode	4.15
12AT7WA	Miniature Twin Triode	4.85	5814WA	Miniature Twin Triode	5.05
26E6WG	Beam Power Amplifier	8.25	★5829WA	Subminiature UHF Double Diode	7.90
26Z5W	Miniature Double Diode Rectifier	2.45	★5875	Subminiature Pentode	1.80
★53	Twin Triode Power Amplifier	3.75	★5881	Beam Pentode Power Amplifier	3.00
★5636	Subminiature Mixer UHF Pentode	10.00	★5998	Double Triode	11.85
★5636A	Dual Control Subminiature UHF Pentode	10.00	★6021	Medium Mu Subminiature Twin Triode	8.35
5639	Subminiature Video Pentode	9.80	★6098/6AR6WA	Beam Power Amplifier	12.85
●5654/6AK5W	Min. Sharp-Cutoff RF Pentode (Per MIL-E-1/4)	3.90	★6188/6SU7WGT	Medium Mu Twin Triode	8.00
+5654/6AK5W	Min. Sharp-Cutoff RF Pentode (Per MIL-E-1/4A)	6.40	★6550	Pentode Power Amplifier	4.35

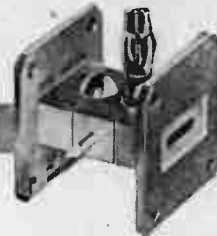
Standard Terms—2%—10th Prox. All prices subject to change without notice.  
Net prices to distributors are F.O.B. factory, freight allowed to destination on shipments of 200 tubes or more; transportation at expense of purchasers on shipments of less than 200 tubes.  
The listing of a type does not necessarily indicate availability.

● PER MIL-E-1/4  
+ PER MIL-E-1/4A  
★ NON-TAXABLE



# High Quality

## from Crystal Diodes to



### MICROWAVE CRYSTAL DIODES

1N21B	Mixer
1N21C	Mixer
1N21D	Mixer
1N21E	Mixer
1N23B	Mixer
1N23C	Mixer
1N23D	Mixer
1N23E	Mixer
1N25	Mixer
1N25A	Mixer
1N26	Mixer
1N53	Mixer
D938	Mixer
1N78	Mixer
1N78A	Mixer
1N79	Instrument Rectifier
1N286	Mixer
1N1132	Tripolar Mixer
1N31	Video Detector
1N32	Video Detector
1N76	Video Detector
1N358	Tripolar Video Det.
1N369	Tripolar Video Det.
1N369A	Tripolar Video Det.
1N446	Video Detector

### CRYSTAL DIODES

1N34A	60 volt
1N35	Matched Pair
1N38A	100 volt
1N38B	100 volt
1N39A	200 volt
1N40	Plug-in Varistor
1N54A	High Back Resistance
1N55A	150 volt
1N56A	High Conduction
1N58A	100 volt
1N60	Video Detector
1N63	High Back Resistance
1N65	70 volt
1N67A	Miniature—High Back
1N69	60 volt
1N69A	60 volt
1N70	100 volt
1N70A	100 volt
1N71	Low Impedance Varistor
1N77B	Photodiode
1N81	Low Voltage
1N81A	Low Voltage
1N82	UHF Mixer
1N82A	UHF Mixer
1N90	Miniature—General Purpose
1N98	Miniature—High Back

### CRYSTAL DIODES (Continued)

1N100	Miniature—High Back
1N112	60 volt Computer
1N115	60 volt Computer
1N118	Miniature—High Conduction
1N119	60 volt—Computer
1N120	60 volt—Computer
1N126	Miniature—60 volt
1N127	Miniature—100 volt
1N128	Miniature—High Back
1N191	Miniature—Computer
1N193	High Temperature
1N194	High Temperature
1N194A	High Temperature
1N195	High Temperature
1N196	High Temperature
1N198	Miniature—75° C
1N417	Computer
1N418	Computer
1N419	Computer
1N447	VLI (Very Low Impedance)
1N448	VLI
1N449	VLI
1N450	VLI
1N451	VLI
1N452	VLI
1N453	VLI
1N454	VLI
1N455	VLI
1N631	Miniature—Computer
1N632	Miniature—Computer
1N633	Miniature—Computer
1N634	Miniature—VLI
1N635	Miniature—VLI
1N1093	Computer

### TRANSISTORS

#### AUDIO TYPES

2N34	PNP	High Gain
2N35	NPN	High Gain
2N213	NPN	Very High Gain
2N228	NPN	High Gain
2N214	NPN	High Gain
2N229	NPN	High Gain
2N306	NPN	High Gain

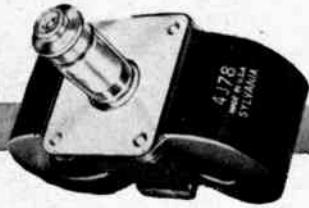
#### RF/IF TYPES

2N94	NPN	IF
2N94A	NPN	RF
2N193	NPN	Oscillator
2N194	NPN	Converter
2N211	NPN	Oscillator
2N212	NPN	Converter
2N216	NPN	IF
2N233	NPN	General Purpose

**LIGHTING • RADIO • ELECTRONICS**

# Electronic Products

## Magnetrons to Transistors



### TRANSISTORS (Continued)

#### POWER TYPES

2N68	PNP	Power Transistors
2N95	NPN	Power Transistors
2N101	PNP	Power Transistors
2N102	NPN	Power Transistors
2N141	PNP	Power Transistors
2N142	NPN	Power Transistors
2N143	PNP	Power Transistors
2N144	NPN	Power Transistors
2N242	PNP	Power Transistors
2N307	PNP	Power Transistors

#### COMPUTER TYPES

2N377	NPN	High Gain—Fast Switching
2N385	NPN	High Gain—Fast Switching
2N388	NPN	High Gain—Fast Switching

#### TRAVELING WAVE TUBES

6493	Wide Band Low Power TWT Amplifier
6494	Dispersive Amplifier
6495	Broadband Low Noise Amplifier
6496	Backward Wave Oscillator
6559	TWT C.W. or Pulsed Amplifier
6698	Hi Power Pulsed Amplifier
6699	Backward Wave Oscillator
6752	Medium Power Amplifier
6753	Low Level Amplifier
8W623	Backward Wave Oscillator
TW612	Low Level Amplifier
TW613	Low Level Amplifier

#### ROCKET TUBES

2C36	Pulse-Modulated and C.W. Oscillator
2C37	C.W. Oscillator, Amplifier and Multiplier
5764	Pulse-Modulated Oscillator
5765	Broad Band C.W. Oscillator
5767	C.W. Oscillator
5768	C.W. Amplifier
6503	C.W. Oscillator
RT-434	C.W. Oscillator, Amplifier and Multiplier
6018	C.W. Amplifier-Multiplier
68A4	High gain, low noise, UHF television amplifier

#### TR & ATR TUBES

1B58	Broadband TR
1B58A	Broadband TR
5865	Broadband TR

### TR & ATR TUBES (Continued)

6624	Broadband TR
1B63A	Broadband TR
5863	Broadband TR
6164	Broadband TR
6232	Broadband TR
1B24A	Tunable TR
6795	Bantam TR
6334	Dual TR
5790	Tunable TR
6545	Tunable TR
1B44	ATR
1B56	ATR
6081	ATR
6591	ATR
1B35A	ATR
1B37A	ATR
6163	ATR
6214	Quick-firing ATR
5791	ATR
6546	ATR

#### MAGNETRONS

2J42	9375 Fixed
2J42H	9375 Fixed
6027	9375 Fixed
6874	8800-9400 Tunable
57B9	34800 Fixed
6799	34800 Fixed

#### KLYSTRONS

68L6	Broad Band, 1600-6500 mc
68M6	Broad Band, 550-3800 mc
68M6A	Broad Band Pulse Type, 550-3800 mc
5836	Broad Band Pulse Type, 1600-6500 mc
5837	Broad Band Pulse Type, 1600-3000 mc
6468	Reflex Oscillators for Microwave Relay
6469	Reflex Oscillators for Microwave Relay
6470	Reflex Oscillators for Microwave Relay
K525	Reflex Oscillators for Microwave Relay
6465	Amplifiers for Microwave Relay
6466	Amplifiers for Microwave Relay

Sylvania Electric Products Inc.  
1740 Broadway, New York 19, N. Y.  
In Canada: Sylvania Electric (Canada) Ltd.  
Shell Tower Bldg., Montreal

# SYLVANIA

## TELEVISION • ATOMIC ENERGY

# LM ERICSSON

## LOGLIFE ELECTRON TUBES

### Resale Price

2C51/396A .....	6.40
2C51L .....	Use 2C51/396A
6AQ5L .....	Use 6928/6AQ5L
6J6L .....	Use 6927/6J6L
18AK5 .....	4.70
18AQ5 .....	7.00
18C51 .....	6.40
18J6 .....	7.00
396A .....	Use 2C51/396A
401A .....	Use 5590/401A
403B .....	Use 5591/403B
404A .....	Use 5847/404A
407A .....	7.95
408A .....	Use 6028/408A
409A .....	Query
417A .....	Use 5842/417A
436A .....	Query
5590/401A .....	Query
5591/403B .....	4.70
5670 .....	5.40
5842/417A .....	20.00
5847/404A .....	20.00
6028/408A .....	4.25
6760 .....	8.00
6761 .....	8.00
6927/6J6L .....	7.00
6928/6AQ5L .....	7.00

Since 1876, the LM Ericsson organization has pioneered in telephony. Ericsson engineers developed this line of miniature electronic tubes primarily for Ericsson telephone installations throughout the world. Now, for the first time, these Longlife tubes manufactured by AB SVENSKA ELEKTRONROR, the LM Ericsson electronic tube subsidiary, are being offered in production quantities to manufacturers, and for replacement use in all types of equipment. LM Ericsson is a licensee of Western Electric.

Dependable Longlife tubes produced by LM Ericsson answer to the highest demands of continuous long service life. The use of Longlife tubes is an advantage from both the engineering and economical aspects. Longlife tubes are recommended for application where dependable long service is required, and where heater voltages show small variations.

All prices and availabilities are subject to change without notice. We will be pleased to quote on your production requirements, and are prepared to contract for your yearly requirements.

## See Ready Reference Chart on facing page.

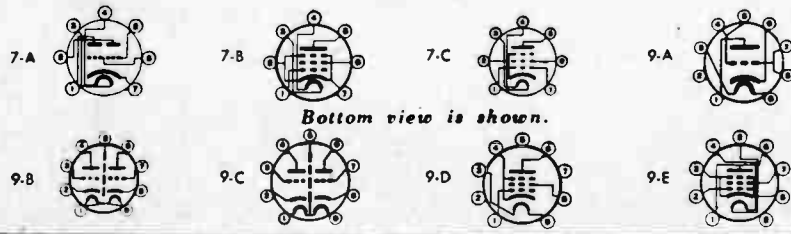
UNITED STATES SALES AGENCY

### State Labs inc.

NEW YORK, N. Y.

CABLE ADDRESS: STATELABS

TUBE SPECIFICATIONS					HEATER RATINGS		MAXIMUM RATINGS DESIGN CENTER VALUES							CHARACTERISTICS-CLASS A <sub>1</sub> AMPLIFIER											TYPE OF SERVICE						
TUBE CLASS	Type Number	Proto-type	Bulb RETMA	Pin Conn	Voltage	Current	E <sub>b1</sub>	E <sub>b2</sub>	I <sub>b1</sub>	P <sub>b1</sub>	P <sub>b2</sub>	E <sub>ck</sub>	BULB TEMP	E <sub>c</sub>	E <sub>p</sub>	R <sub>i</sub>	I <sub>a</sub>	I <sub>c</sub>	g <sub>m</sub>	P <sub>out</sub>	μ <sub>mhos</sub>	Capacitances (pF)				A	B	M	O	P	V
					Volts	Amps	V	V	MA	W	W	V	°C	V	V	Ω	MA	MA	μmhos	W	W	C <sub>in</sub>	C <sub>out</sub>	C <sub>Grid Plate</sub>	Note						
TWIN TRIODES (each section)	5842 417A	—	T6½	9-A	6.3	.30	180	—	35	4.0	—	50	120	150	—	60	25.0	—	25,000	—	43	9.0	1.8	.55	1	•					
	2C51 396A	2C51	T6½	9-B	6.3	.30	300	—	18	1.5	—	90	150	150	—	240	8.2	—	5500	—	35	2.2	1.0	1.3	—	•	•	•	•		
	18C51	2C51	T6½	9-B	18.0	.105	300	—	18	1.5	—	90	150	150	—	240	8.2	—	5500	—	35	2.2	1.0	1.3	—	•	•	•	•		
	18J6	6J6	T5½	7-A	18.0	.115	200	—	15	1.3	—	90	150	100	—	68	6.5	—	5000	—	38	2.0	.4	1.5	—	•	•	•			
	407A	2C51	T6½	9-C	20.0 or 40.0	.10 or .05	300	—	18	1.5	—	90	150	150	—	240	8.2	—	5500	—	35	2.2	1.0	1.3	—	•	•	•	•		
	5670	2C51	T6½	9-B	6.3	.35	300	—	18	1.5	—	90	150	150	—	240	8.2	—	5500	—	35	2.2	1.0	1.3	—	•	•	•	•		
	6927 6J6L	6J6	T5½	7-A	6.3	.33	200	—	15	1.3	—	90	150	100	—	68	6.5	—	5000	—	38	2.0	.4	1.5	—	•	•	•			
	18AK5	6AK5	T5½	7-B	18.0	.053	180	140	18	1.7	.50	90	120	120	120	200	7.5	1.9	5000	—	300K	4.0	2.8	Max. .02	2	•	•	•	•		
	18AQ5	6AQ5	T5½	7-C	18.0	.125	200	200	50	8.0	1.0	90	200	130	130	200	23.0	2.0	3400	1.0	80K	7.6	6.0	.35	—	•	•	•			
	5591 403B	6AK5	T5½	7-B	6.3	.15	180	140	18	1.7	.50	90	120	120	120	200	7.5	1.9	5000	—	300K	4.0	2.8	Max. .02	2	•	•	•	•		
5847 404A	—	T6½	9-D	6.3	.30	180	180	35	3.0	.75	50	150	150	150	110	13.5	4.0	13,000	—	200K	7.0	2.5	Max. .05	—	•	•	•	•			
6028 408A	6AK5	T5½	7-B	20.0	.05	180	140	18	1.7	.50	90	120	120	120	200	7.5	1.9	5000	—	300K	4.0	2.8	Max. .02	2	•	•	•	•			
6760	6216	T6½	9-E	18.0	.35	250	200	100	10.0	1.5	100	200	130	130	100	70.0	3.5	12,000	3.0	26K	11.0	5.0	.4	—	•	•	•	•			
6761	6216	T6½	9-E	6.3	1.0	250	200	100	10.0	1.5	100	200	130	130	100	70.0	3.5	12,000	3.0	26K	11.0	5.0	.4	—	•	•	•	•			
6928 6AQ5L	6AQ5	T5½	7-C	6.3	.36	200	200	50	8.0	1.0	90	200	130	130	200	23.0	2.0	3400	1.0	80K	7.6	6.0	.35	—	•	•	•				



**NOTES FOR LMERICSSON  
READY REFERENCE CHART**

NOTE 1: For grounded grid operation, value under "Grid to Plate" should be understood "Cathode to Plate".

NOTE 2: External shield connected to Cathode pins.

\*Pins gold plated for better High Frequency performance.

KEY TO SERVICE ABBREVIATIONS:  
A - Amplifier  
B - Broadband Amplifier  
M - Mixer  
O - Oscillator  
P - Power Amplifier  
V - Multivibrator



# Amperex®



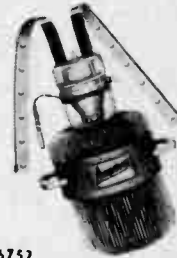
AX5868



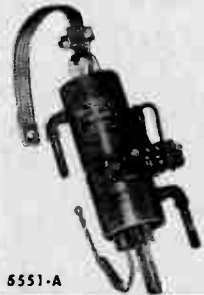
DX151



6961

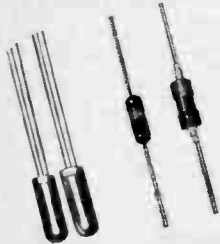


6757



6551-A

## RADIATION DETECTION • SPECIAL PURPOSE



2N282's



1N478,9



5894



063/85A2

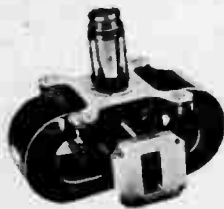


5870



6252

## SEMICONDUCTORS • INDUSTRIAL • ELECTRO-MEDICAL



6507



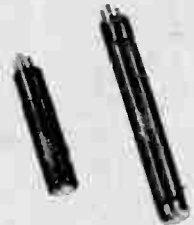
6360



6800



6939



230N-240N

## COMMUNICATION • RECTIFICATION • AMATEUR



6977



6155



EL84



6693

### HELPFUL CHARTS & LITERATURE FREE:

Write for CONDENSED TUBE CATALOG, information at a glance, rapid tube data reference tables, 28 pages of condensed information arranged for quick reference. Address your distributor or Amperex direct.

# Amperex ELECTRONIC CORPORATION

HICKSVILLE, LONG ISLAND, N. Y.

In Canada: Rogers Electronic Tubes & Components, 11-19 Brentcliffe Road, Leaside, Toronto 17.



# ELECTRON TUBES

Detailed  
Data Sheets  
Available

Type No.	Price	Type No.	Price	Type No.	Price	Type No.	Price
<b>BEAM POWER TUBES</b>		<b>INDICATOR TUBES</b>		<b>HI-FI VACUUM RECTIFIERS</b>		<b>THYRATRONS</b>	
813	\$18.00	EM34	\$1.55	GZ34/5AR4	\$3.50	3C23	\$11.98
829B	16.25	DM70/1M3	.95	EZ80	1.50	AX260	150.00
6146	5.75	EM80	2.45	EZ81/6CA4	1.60	632B	28.00
<b>VACUUM CONDENSERS</b>		<b>INDICATOR TRIODE</b>		<b>MERCURY RECTIFIERS</b>		<b>TRIODES (cont'd)</b>	
VC25/20	20.00	6977	3.50	575A	20.00	880	\$545.00
VC25/32	23.25	<b>REFLEX KLYSTRON</b>		673	20.00	889A	210.00
VC50/20	24.25	2K25	39.50	857B	218.50	889RA	330.00
VC50/32	27.50	<b>KLYSTRONS</b>		866AX	2.65	891	260.00
VC100/20	30.00	DX122	**	859B	138.00	891R	410.00
VC100/32	33.00	DX123	**	872AX	8.20	892	255.00
VC250/32	70.00	DX124	**	6508	80.00	892R	405.00
<b>DECADE COUNTER</b>		<b>MAGNETRONS</b>		6693	30.00	Z83200	350.00
E17/6370	16.50	2J42	160.00	8308	8.20	5604	570.00
<b>GEIGER COUNTERS</b>		2J48	250.00	<b>VACUUM RECTIFIERS</b>		5619	410.00
75N	10.00	2J55	165.00	5R4GY	2.65	5658	\$45.00
75NB3	10.00	2J56	165.00	8020AX	15.00	5666	250.00
90NB	20.00	4J47	500.00	<b>XENON RECTIFIERS</b>		5667	330.00
100C	35.00	4J57	270.00	3B28	7.60	5736	160.00
100N	35.00	4J58	270.00	4B32	12.00	5771	540.00
100NB	37.50	4J59	270.00	<b>VOLTAGE REFERENCE TUBES</b>		5866/AX9900	20.00
120C	75.00	5586	417.00	OE3/85A1	2.50	5867/AX9901	30.00
120N	75.00	5657	417.00	OG3/85A2	2.50	5868/AX9902	50.00
120NB	77.50	5780A	**	5651	2.30	5923/AX9904	150.00
150N	50.00	6507	**	<b>VOLTAGE REGULATORS</b>		5924/AX9904R	210.00
150NB	52.50	6589	**	OA2	1.75	5924A	240.00
153C	65.00	6823	**	OB2	1.90	6077/AX9906	1675.00
200C	45.00	6824	**	90C1	2.50	6078	1900.00
200CB	47.50	<b>PENTODES</b>		6354/150B2	3.00	6333	245.00
200N	45.00	‡E81L/6686	5.00	<b>TETRODES</b>		6445	390.00
200NB	47.50	‡E83F/6689	4.50	4X150A	38.95	6446	290.00
230N	30.00	‡E180F/6688	8.00	4X250B	42.50	6447	430.00
240C	35.00	828	20.95	4X500A	121.00	6617	360.00
240N	35.00	5654	3.00	807	2.90	6618	495.00
912NB	35.00	6083	14.25	6075/AX9907	225.00	6756	535.00
<b>CLIPPER DIODE</b>		‡6084	3.75	6076/AX9907R	275.00	6758	173.00
6339	35.00	‡6227	3.75	6079/AX9908	60.00	6800	350.00
<b>TWIN DIODE</b>		‡6228	14.25	6155/AX4-125A	27.50	6960	150.00
5726	2.00	6083	14.25	‡E156/AX4-250A	37.50	6961	210.00
<b>HEPTODE</b>		<b>PENTODES—HI-FI</b>		6979	42.50	<b>GLOW DISCHARGE TRIODE—Miniature</b>	
E91H/6687	1.45	6CA7	4.35	<b>TWIN TETRODES</b>		5823	2.50
<b>IGNITRONS</b>		EL84	2.40	832A	14.26	<b>HI-FI TWIN TRIODES</b>	
5550	41.00	EF86	2.75	5804/AX9903	22.00	ECC81/12AT7	2.85
5551-A/652	65.00	<b>PENTODES Secondary Emission</b>		6360	4.00	ECC82/12AU7	2.30
5551-A/P	67.00	EF960	8.75	6907	22.00	ECC83/12AX7	2.30
5552-A/P	101.25	<b>PENTODES—Subminiature</b>		6252/AX9910	22.00	<b>TWIN TRIODES</b>	
5552-B	216.00	6007/5013	1.50	<b>TRIGGER TUBE</b>		ECC85/6AQ8	2.60
5553/P	218.75	6008/5911	1.50	Z804U	4.30	‡E88CC/6922	4.75
5554/679	163.00	<b>TWIN TRIODES</b>		<b>RADIATOR CREDIT FOR FORCED AIR-COOLED TUBES</b>		‡E92CC	1.75
555/653B	316.00	811A	5.65	TUBE TYPE	USERS ALLOWANCE	‡5920	2.00
5822	116.00	812A	5.65	889RA	\$20.00	‡6085	3.75
5822/P	118.25	833A	49.00	891R, 892R	20.00	<b>TRIGGER TUBE</b>	
		834	14.50	5604	75.00	Z804U	4.30
		838	16.00	5667	20.00	<b>FORCED AIR-COOLED TUBES</b>	
		845	15.95	6445	30.00	TUBE TYPE	USERS ALLOWANCE
		849	145.00	6447	30.00	889RA	\$20.00
		849A	145.00	6757	75.00	891R, 892R	20.00

† The Amperex types 6268/AX-9911 and 6279/AX-9912 are improved versions but completely interchangeable in every respect with the standard types 4C35 and 5C22 respectively. They have a minimum guaranteed life of 1000 hours due to the self-contained, self-regulating source of hydrogen.

\*\* Price on request. ‡ 10,000 hour life tubes. Prices subject to change without notice.



ask **Amperex**

about electronic tubes and semiconductors for every industrial and communications application.

TUBE TYPE	USERS ALLOWANCE
889RA	\$20.00
891R, 892R	20.00
5604	75.00
5667	20.00
6445	30.00
6447	30.00
6757	75.00



# Reliability in power electron tubes

Continuing research and development adds constantly to the Eimac products list.  
For latest information, contact our Technical Services Department.

RECTIFIERS		HIGH VACUUM TYPES				
TYPE	PRICE	FILAMENT VOLTAGE	FILAMENT CURRENT AMPS.	PEAK INVERSE VOLTAGE	PEAK PLATE CURRENT AMPS.	AVERAGE PLATE CURRENT MA
2-01C	\$ 15.25	5.3	0.4	1,000	0.010	1
2-25A	12.50	6.3	3.0	25,000	1.0	50
2-50A	15.00	5.0	4.0	30,000	1.0	75
2-150D	25.00	5.0	13.0	30,000	3.0	250
2-240A	40.00	7.5	12.0	40,000	4.0	500
2-450A	94.00	7.5	26.5	25,000	8.0	1000
2-2000A	214.50	10.0	25.0	75,000	12.0	750
250R	28.00	5.0	10.5	60,000	2.5	250
253	20.50	5.0	10.0	15,000	2.5	350
8020(100R)	15.00	5.0	6.5	40,000	1.5	100
2CL40A	32.00	6.0	2.1	8,000 or 16,000+	10.0	120+
2X1000A*	120.00	26.5	2.25	25,000	25.0 <sup>1</sup>	1250
2X3000F	140.00	7.5	51.0	25,000	12.0	3000

### MERCURY VAPOUR TYPES

KY21A****	25.00	2.5	10.0	11,000	3.0	750
RX21A	24.00	2.5	10.0	11,000	3.0	750

### AIR SYSTEM SOCKETS & CHIMNEYS

#### SOCKETS (WITHOUT CHIMNEY) Price

SK-100 For Klystrons with oxide coated cathodes such as the 3K3000LQ, \$	123.00
SK-110 For Klystrons with bombardment heated cathodes such as the 3K5000LQ and 4K5000LQ	123.00
SK-200 Cathode end socket for klystrons such as the 3K2500SG	130.00
SK-300 4CX5000A (No Screen By-pass Capacitor)	47.50
SK-400 4-409A, 4-250A, 4-125A	12.00
SK-500 4-1000A	17.00
SK-600 4X150A, 4X150D, 4X250B, 4X250F, 4W300B (Cathode Terminals Not Grounded)	15.25
SK-602 4X150A, 4X150D, 4X250B, 4X250F, 4W300B (Modification of SK-600 - Shield slotted between pins 1 & 2)	15.25
SK-610 4X150A, 4X150D, 4X250B, 4X250F, 4W300B (Cathode Terminals Grounded)	17.10

SK-620 4X150A, 4X150D, 4X250B, 4X250F, 4W300B (Cathode Terminals Not Grounded—Screen By-pass Capacitor Plastic Sealed) \$ 15.75

SK-630 4X150A, 4X150D, 4X250B, 4X250F, 4W300B (Cathode Terminals Grounded—Screen By-pass Capacitor Plastic Sealed). 17.60

SK-640 4X150A, 4X150D, 4X250B, 4X250F, 4W300B (Cathode Terminals Not Grounded—No Screen By-pass Capacitor)..... 5.00

SK-700 4CX300A (Cathode Terminal Not Grounded)..... 20.00

SK-710 4CX300A (Cathode & One Heater Terminal Grounded)..... 20.00

**CHIMNEYS**  
SK-406 (For use with SK400 Air System Socket)..... 6.00  
SK-506 (For use with SK-500 Air System Socket)..... 7.50  
SK-606 (For use with SK-600 series and SK-700 series Air System Sockets)..... .45

### HEAT DISSIPATING CONNECTORS

TYPE	PRICE	HOLE DIA.
HR-1	\$0.60	.052
HR-2	.60	.062
HR-3	.60	.070
HR-4	.80	.102
HR-5	.80	.125
HR-6	.80	.359
HR-7	1.60	.125
HR-8	1.60	.570
HR-9	3.00	.570
HR-10	1.60	.510

### SK 601 TUBE EXTRACTOR

SK-601 Price \$0.55  
A spring steel extractor for use with the 4X150 series and 4X250 series.

### VACUUM SWITCH

Single pole double throw switch within a high vacuum adaptable for high voltage switching. Contact spacing .015". Switch will handle R-F potentials as high as 20 Kv. In DC switching will handle approximately 1.5 Amps. at 5 Kv.

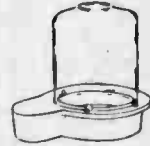
Type	PRICE
VS-2	\$18.00
VS-5	24.00
VS-6	32.00
Coils	
12V	7.50
24V	8.50

### PREFORMED CONTACT FINGER STOCK

A prepared strip of spring material slotted and formed into a series of fingers designed to make sliding contact.

Single Edge	Width	Price	Double Edge	Width	Price
CF-100	17/32	1.65/ft.	CF-200	13/16	2.10/ft.
CF-300	31/32	1.80/ft.	CF-400	1-17/32	2.55/ft.
CF-500	1-3/8	2.00/ft.	CF-600	2-1/4	2.95/ft.
Klystron Types	Width	Price			
CF-700	17/32	1.90/ft.			
CF-800	13/32 x 5/16	1.85/ft.			

Used as contact between klystrons and klystron amplifier circuit assemblies.

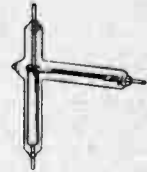


### AIR SYSTEM SOCKETS

SK-100	SK-600	SK-700
SK-110	SK-602	SK-710
SK-200	SK-610	SK-408
SK-300	SK-620	SK-506
SK-400	SK-630	SK-608
SK-500	SK-640	



### HR HEAT DISSIPATING CONNECTORS



### VACUUM SWITCH

VS-2, 5, 6



17/32	13/16
31/32	1-17/32
1-3/8	2-1/4

### TUBE EXTRACTOR

SK-601

\*Grid Controlled



**EITEL-McCULLOUGH, INC.**  
SAN BRUNO, CALIFORNIA

# CETRON-TAYLOR TUBES



## THYRATRONS

TUBE	Type	Peak Inverse Voltage	AMPERES		FILAMENT	
			Peak	Average	Volts	Amps.
CR5	Hg	175	18.0	5.0	2.0	12.0
C3J	XE	1250	30.0	2.5	2.5	9.0
C3P14	XE	1250	30.0	3.0	14.0	2.55
C3R14	XE	500	30.0	3.0	14.0	2.55
C5F14	XE	500	60.0	5.0	14.0	2.5
C6A	XE	600	77.0	6.4	2.5	18.0
C6J	XE	1250	77.0	6.4	2.5	20.0

TUBE	Type	Peak Inverse Voltage	AMPERES		FILAMENT	
			Peak	Average	Volts	Amps.
C6J/A	XE	1250	77.0	6.4	2.5	20.0
C6J/F	XE	1250	77.0	6.4	2.5	20.0
C6L	XE	500	77.0	6.4	2.5	20.0
C6M	XE	1250	77.0	6.4	2.5	20.0
CE-302	Hg	2500	2.5	.64	2.5	7.0
CE-304	Hg	1000	75.0	12.5	2.5	22.5
CE-311/3C23	HgA	1250	6.0	1.5	2.5	7.0
CE-320A	HgA	1500	30.0	2.5	2.5	9.0
CE-323B	HgA	1250	6.0	1.5	2.5	7.0
CE-393A	HgA	1250	6.0	1.5	2.5	7.0
CE-627	Hg	2500	2.5	0.64	2.5	5.0
CE-873	Hg	3000	10.0	2.5	5.0	6.75
CE-5528/C6L	XE	500	77.0	6.4	2.5	20.0
CE-5557	Hg	2500	2.0	0.5	2.5	5.0
CE-5684/C3J/A	XE	1250	30.0	2.5	2.5	9.0
CE-5685/C6J	XE	1250	77.0	6.4	2.5	20.0
CE-6044	XE	500	77.0	6.4	2.5	17.0
CE-6278	XE	500	60.0	5.0	14.0	2.5
CE-6478	XE	2200	20.0	1.5	2.5	7.5

## MERCURY RECTIFIERS

TUBE	Type	Peak Inverse Voltage	AMPERES		FILAMENT	
			Peak	Average	Volts	Amps.
CE-200A	FW	900	4.0	2.0	2.5	6.5
CE-201A	FW	900	4.0	2.0	2.5	6.5
CE-202B-207	HW	900	45.0	15.0	2.5	20.0
CE-203	HW	500	45.0	15.0	2.5	20.0
CE-205	HW	900	15.0	5.0	2.0	11.5
CE-206	HW	300	18.0	6.0	2.0	11.5
CE-210A	FWA	800	4.0	2.0	2.5	6.5

TUBE	Type	Peak Inverse Voltage	AMPERES		FILAMENT	
			Peak	Average	Volts	Amps.
CE-213A-214A	HW	5000	10.0	2.5	2.5	7.0
CE-249C	HW	7500	.64	2.5	2.5	7.5
CE-866A	HW	10000	0.5	.25	2.5	5.0
CE-866JR	HW	5000	0.5	.125	2.5	2.5
CE-872A	HW	10000	5.0	1.25	5.0	6.75
CE-875A	HW	15000	6.0	1.50	5.0	10.0
CE-8008	HW	10000	5.0	1.25	5.0	6.75



## XENON RECTIFIERS

TUBE	Type	Peak Inverse Voltage	AMPERES		FILAMENT	
			Peak	Average	Volts	Amps.
CE-3B	HW	1000	25.0	3.0	2.5	9.0
CE-3B22	FW	725	4.0	1.0	2.5	6.25
CE-3B28	HW	10000	1.0	.25	2.5	5.0
CE-6B	HW	920	40.0	6.40	2.5	21.0
CE-6C	FW	725	25.6	6.40	2.5	18.0
CE-6CF	FW	725	25.6	6.40	2.5	18.0
CE-6484	FW	850	10.0	3.0	2.5	11.5

## TUNGAR ARGON RECTIFIERS

TUBE	Type	Peak Inverse Voltage	AMPERES		FILAMENT	
			Peak	Average	Volts	Amps.
CE-4B28/225	HW	300	18.0	6.0	2.2	18.0
CE-4B26	HW	375	18.0	6.0	2.2	18.0
CE-5B21	HW	225	90.0	15.0	2.5	25.0
CE-226	HW	375	18.0	6.0	2.2	18.0
CE-235-235A	HW	230	45.0	15.0	2.5	25.0

## VACUUM RECTIFIERS

CE-220/72N	HW	20000	.10	.02	2.5	3.0
CE-8013A	HW	40000	.15	.02	2.5	5.0
CE-8020	HW	40000	.75	.10	5.0	6.0
CE-4B31	HW	16000	12.0	.60	(K)5.0	5.0
CE-TR40M	HW	60000	1.0	.25	5.0	10.5

# CONTINENTAL ELECTRIC CO.

**TAYLOR TUBES, INC. CHICAGO 2, ILLINOIS**

# CETRON-TAYLOR TUBES



## PHOTOTUBES

Type No.	Gas Filled or Vacuum	Spectral Response	Usable Cathode Area — Sq. In.	Maximum Gas Application Factor	Max. Anode Supply D.C. or Peak A.C. Volts	D.C. Testing Voltage	Dark Current at Test Voltage (Ua)	SENSITIVITY RANGE	
								Minimum Ua/LUM	Maximum Ua/LUM
CE-1	GAS	S1	0.95	10	90	90	0.1	125	250
CE-IV	VAC	S1	0.95		500	250	0.1	22	30
CE-2	GAS	S1	1.20	10	110	110	0.1	125	200
CE-2V	VAC	S1	1.20		250	250	0.1	22	30
CE-3	GAS	S1	1.64	10	110	110	0.1	55	200
CE-4	GAS	S1	0.53	10	90	90	0.1	125	200
CE-4V	VAC	S1	0.53		250	250	0.1	22	30
CE-5	GAS	S1	0.45	10	90	90	0.1	75	200
CE-11V	VAC	S1	0.95		500	250	0.1	22	30
CE-12	GAS	S1	1.00	10	90	90	0.1	125	200
CE-21	GAS	S1	0.51 Each	10	90	90	0.1	50	175
CE-22	GAS	S1	0.26	10	90	90	0.1	55	140
CE-22V	VAC	S1	0.26		250	250	0.1	10	21
CE-B22	GAS	S1	0.26	10	90	90	0.1	55	140
CE-B22V	VAC	S1	0.26		250	250	0.1	10	20
CE-23	GAS	S1	0.51	10	90	90	0.1	125	200
CE-25	GAS	S1	0.34	10	90	90	0.1	90	175
CE-25V	VAC	S1	0.34		500	250	0.1	16	26
CE-B25	GAS	S1	0.34	10	90	90	0.1	90	175
CE-26	GAS	S1	1.20	10	95	95	0.1	10.4*	16.6*
CE-A26	GAS	S1	1.20	10	95	95	0.1	10.4*	16.6*
CE-29	VAC	S4	0.51		250	250	0.1	25	70
CE-30	GAS	S1	0.51	10	90	90	0.1	125	200

\* Tested under special conditions.

Type No.	Gas Filled or Vacuum	Spectral Response	Usable Cathode Area — Sq. In.	Maximum Gas Application Factor	Max. Anode Supply D.C. or Peak A.C. Volts	D.C. Testing Voltage	Dark Current at Test Voltage (Ua)	SENSITIVITY RANGE		
								Minimum Ua/LUM	Maximum Ua/LUM	
CE-A30	GAS	S1	0.51	10	90	90	0.1	90	200	
CE-30V	VAC	S1	0.51		500	250	0.1	22	30	
CE-31V	VAC	S1	0.95		500	250	0.1	22	30	
CE-34	VAC	S4	0.34		250	250	0.1	17	70	
CE-36	GAS	S1	0.34	10	90	90	0.1	90	175	
CE-36V	VAC	S1	0.34		250	250	0.1	16	26	
CE-B36	GAS	S1	0.34	10	90	90	0.1	90	175	
CE-52V	VAC	S1	1.20		250	250	0.1	22	30	
CE-59	GAS	S4	0.51	5.5	100	90	0.1	75	155	
CE-64	GAS	S4	0.34	5.5	100	90	0.1	65	130	
CE-75V	VAC	S1	0.51		250	250	.00005	20	40	
CE-77	GAS	S4	4.68	5.5	90	90	0.1	75	200	
CE-84	VAC	S4	0.34		250	250	0.1	17	70	
CE-86	GAS	S1	0.36	10	90	90	0.1	90	175	
CE-91	GAS	S4	0.95	5.5	100	90	.05	75	205	
868	GAS	S1	0.95	8.0	100	90	0.1	50	145	
917	VAC	S1	0.95		500	250	.005	22	30	
918	GAS	S1	0.95	10	90	90	0.1	125	250	
919	VAC	S1	0.95		500	250	.005	22	30	
920	GAS	S1	0.51							
923	GAS	S1	0.51	Each	10	90	90	0.1	50	175
927	GAS	S1	0.34	10	90	90	0.1	90	175	
929	VAC	S4	0.51		250	250	.0125	25	70	
930	GAS	S1	0.51	10	90	90	0.1	75	200	
934	GAS	S4	0.34		250	250	.005	17	70	
5581	GAS	S4	0.51	5.5	100	90	.05	75	205	
5583	GAS	S4	0.38	5.5	100	90	.05	70	205	
5653	VAC	S4	0.51		250	250	.25	20	100	
1P30	GAS	S1	1.20	10	110	90	0.1	95	200	
1P31	GAS	S1	1.64	10	110	110	0.1	55	200	
1P32	GAS	S1	0.34	10	90	90	0.1	95*	175*	
1P33	GAS	S1	1.20	10	95	95	0.1	10.4*	16.6*	
1P35	GAS	S1	0.45	10	90	90	0.1	75	200	
1P36	GAS	S1	0.53	10	90	90	0.1	100	200	
1P37	GAS	S4	0.95	5.5	100	90	.05	75	205	
1P39	VAC	S4	0.51		250	250	.005	25	70	
1P40	GAS	S1	0.51	10	90	90	.005	75	200	
1P41	GAS	S1	0.26	8.5	90	90	0.1	50	145	

## LEAD SULFIDE CELLS



Type	SENSITIVITY CLASS			Grid Sizes
	A	C	D	
CE-701	630 and up	190 to 630	67 to 190	A, C, E, G, H
CE-702	630 and up	190 to 630	67 to 190	A, E, H
CE-705	540 and up	190 to 540	67 to 190	$\frac{1}{32}$ " x $\frac{1}{32}$ "
CE-706	630 and up	190 to 630	67 to 190	E
CE-711	630 and up	190 to 630	67 to 190	A, C, E
CE-704	630 and up	190 to 540	67 to 190	A, C, E

### LEAD SULPHIDE GRID SIZES

A	$\frac{1}{8}$ " x $\frac{1}{8}$ "	G	$\frac{1}{16}$ " x $\frac{1}{8}$ "
C	$\frac{3}{16}$ " x $\frac{1}{8}$ "	H	$\frac{1}{16}$ " x $\frac{3}{8}$ "
E	$\frac{1}{8}$ " x $\frac{1}{8}$ "	(CE-705 only)	$\frac{1}{32}$ " x $\frac{1}{32}$ "

### ENGINEERING AND RESEARCH SERVICE

CETRON-TAYLOR maintains an experienced, fully staffed engineering department to help you fill your requirements, as well as to develop new tubes for special needs. There's no obligation for this service.

## TRIODE TRANSMITTING TUBES

TYPICAL OPERATION, CLASS C TELEGRAPHY (ICAS)

Tube Type	Filament Volts	Filament Amps.	Amplification Factor	Freq. Mc. Full Ratings	Plate Voltage	Plate Ma.	Grid Voltage	Grid D.C.-Ma.	Approx. Power Output - Watts
UX-CV11	10.0	2.5	14	30	1500	165	—140	35	180
T-40	7.5	3.0	25	60	1500	150	—140	28	158
TZ-40	7.5	3.0	62	60	1500	150	—90	38	165
T-55	7.5	3.0	20	60	1500	165	—140	20	185
HF-60	10.0	3.0	20	60	1500	150	—175	50	200
T-60	10.0	3.0	20	60	1500	150	—175	50	200
T-200	10.0	5.75	17	30	2500	350	—280	54	685
211-D	10.0	3.25	25	15	1250	175	—260	35	150
T-218	10.0	3.25	14.5	30	1250	175	—140	50	150
T-300	11.0	6.0	23	30	3000	430	—305	65	1000
460	10.0	4.5	18	30	2500	200	—350	30	450
468	10.0	4.5	18	30	2500	200	—200	30	450
805	10.0	3.25	40/60	30	1500	200	—105	40	215
810	10.0	4.5	36	30	2500	300	—180	60	575
822	10.0	4.0	30	8	2500	300	—190	51	600
845	10.0	3.25	5.3	AF	1250	80	—195	Class A <sub>1</sub>	30
8000	10.0	4.5	16.5	30	2500	300	—240	40	575

# CONTINENTAL ELECTRIC COMPANY

TAYLOR TUBES, INC.  
CHICAGO 2, ILLINOIS

# NATIONAL ELECTRONICS, INC.

GENEVA • ILLINOIS • U.S.A.

## ELECTRONIC TUBES FOR INDUSTRY



NL-1051 IGNITRON



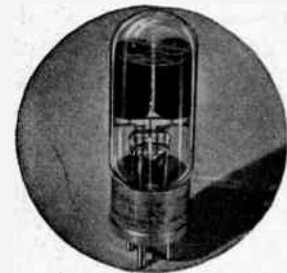
NL-1052 IGNITRON



NL-3C23 THYRATRON



NL-740 THYRATRON



NL-604 RECTIFIER

WRITE FOR INDIVIDUAL TUBE DATA SHEETS FOR FULL DETAILS.

### IGNITRONS

TYPE NUMBER	VOLTS	MAXIMUM RATINGS				TYPE OF COOLING
		Maximum Demand	Corresponding Current DC-Amps	Maximum Current DC-Amps	Corresponding Demand	
NL-1001	250 - 600	150 Kva	4.9	9.0	50 Kva	Convection
NL-1005	250 - 600	600 Kva	30.2	56	200 Kva	Forced air
NL-1022	1500 peak	1200 peak	16	56	336 peak	Water
NL-1051	250 - 600	600 Kva	30.2	56	200 Kva	Water
NL-1052	250 - 600	1200 Kva	75.6	140	400 Kva	Water
NL-1053	250 - 600	2400 Kva	192	355	800 Kva	Water
NL-1054	250 - 600	4800 Kva	486	900	1600 Kva	Water
NL-5550	250 - 600	300 Kva	12.1	22.4	100 Kva	Water clamp

### THYRATRONS

TYPE NUMBER	GAS FILLING	DC OUTPUT AMPS.	PEAK RATING AMPS	PEAK INVERSE VOLTS	FILAMENT VOLTS	FILAMENT AMPS	TYPE OF COOLING
NL-3C23	Arg & Merc.	1.5	6	1250	2.5	7	Convection
NL-323B	Arg & Merc.	1.5	6	1250	2.5	7	Convection
NL-393A	Arg & Merc.	1.5	6	1250	2.5	7	Convection
NL-632B	Mercury	2.5	30	1500	5.0	5	Convection
NL-710/6011	Arg & Merc.	2.5	30	1500	2.5	9	Convection
NL-714	Arg & Merc.	1	3	1250	2.5	5	Convection
NL-715/5557	Mercury	1	3	5000	2.5	5	Convection
NL-716	Arg & Merc.	1	8	1250	2.5	6.3	Convection
NL-732	Arg & Merc.	30	225	1500	2.5	55	Convection
NL-740,L,P	Arg & Merc.	4	50	1500	2.5	16	Convection
NL-741	Mercury	4	50	5000	2.5	16	Convection
NL-760,L,P	Arg & Merc.	6.4	77	1500	2.5	21	Convection
NL-761	Mercury	6.4	77	5000	2.5	21	Convection
NL-5559/FG57	Mercury	2.5	15	1000	5.0	4.6	Convection
NL-5560/FG95	Mercury	2.5	15	1000	5.0	4.6	Convection
NL-5720/FG33	Mercury	2.5	15	1000	5.0	4.6	Convection
NL-6014/C1K	Xenon	1	8	1250	2.5	6.3	Convection

### HALF WAVE RECTIFIERS

NL-614	Xenon	2.5	15	900	2.5	8.5	Convection
NL-615	Mercury	2.5	10	2000	2.5	7	Convection
NL-617	Mercury	5	20	1000	2	12	Convection
NL-618,L,P	Xenon	6.4	40	900	2.5	18	Convection
NL-619	Mercury	6	20	300	2	12	Convection
NL-623	Mercury	15	45	500	2.5	20	Convection
NL-635,L,P	Arg & Merc.	6.4	77	1000	2.5	18	Convection
NL-643	Mercury	15	90	700	2.5	23	Convection
NL-649/5834	Mercury	2	10	900	2.5	7	Convection
NL-653/5835	Mercury	3	12	900	2.5	10	Convection
NL-5558/FG32	Mercury	2.5	15	5000	5	4.5	Convection

### FULL WAVE RECTIFIERS

NL-604,L	Arg & Merc.	2.5	10	900	2.5	11.5	Convection
NL-606,L	Arg & Merc.	6.4	25.6	900	2.5	17	Convection

# Tube Selection Guide

## EL THYRATRON AND EL RECTIFIER TUBES

This brief summary of important ratings is intended as a guide to tube types available within given broad requirements. The Engineering Manual and Catalog should be consulted for complete information before commencing the design of equipment.

TUBE TYPE	MAX. CONT. AVERAGE OUTPUT CURRENT (Amps. D.C.)	MAX. INST. PEAK ANODE CURRENT (Amps. Inst.)	MAX. INST. PEAK FORWARD VOLTAGE	MAX. INST. PEAK INVERSE VOLTAGE	MAX. OVERALL LENGTH (Inches)	HEATER OR FILAMENT VOLTAGE	NOMINAL HEATER OR FILAMENT CURRENT (Amps.)	USER PRICE
<b>RECTIFIERS</b>								
EL 1C	1.0	4.0	.....	725	6	2.5	6.0	\$ 9.30
EL 3B	2.5	20.0	.....	920	5½	2.5	9.0	9.90
EL 3C	2.5	10.0	.....	725	7½	2.5	11.5	10.20
EL 3C/L	2.5	10.0	.....	725	7¾	2.5	11.5	11.50
EL 6B	6.4	40.0	.....	920	9	2.5	21.0	12.20
EL 6B/L	6.4	40.0	.....	920	9¼	2.5	21.0	13.60
EL 6C	6.4	25.6	.....	725	8	2.5	17.0	19.80
EL 6F	6.4	40.0	.....	920	8¼	2.5	21.0	13.60
EL 16F	16.0	96.0	.....	620	15¾	2.5	36.0	29.90
<b>THYRATRONS</b>								
EL C18/A	1.0	8.0	750	1250	4¾	2.5	6.3	14.30
EL C1K	1.0	8.0	1000	1250	4¼	2.5	6.3	12.90
EL C1K/B	1.0	8.0	2000	2000	4¾	2.5	6.3	16.00
EL C3J	2.5	30.0	900	1250	6	2.5	9.0	15.50
EL C3J/A	2.5	30.0	1000	1250	6	2.5	9.0	17.30
EL C3H	2.8	20.0	1100	1250	6¼	2.5	9.0	20.40
EL C4J	4.0	40.0	900	900	9½	2.5	21.0	19.40
EL C4J/F	4.0	40.0	900	900	8¾	2.5	21.0	20.10
EL C6J	6.4	77.0	750	1250	9½	2.5	21.0	28.90
EL C6J/A	6.4	77.0	1000	1250	9½	2.5	21.0	29.30
EL C6J/F	6.4	77.0	1000	1250	8¾	2.5	21.0	29.40
EL C6J/K	6.4	77.0	1000	1250	8¾	2.5	21.0	29.30
EL C6J/KF	6.4	77.0	1000	1250	8	2.5	21.0	29.40
EL C6J/KL	6.4	77.0	1000	1250	9¼	2.5	21.0	32.10
EL C6P	6.4	77.0	1000	1250	9½	2.5	21.0	32.20
EL C6C	6.4	77.0	2000	4000	11½	2.5	24.0	46.50
EL C16J	{ 16.0 18.0 }	{ 160.0 100.0 }	1000	1250	10½	2.5	31.0	57.90
EL C16J/A	{ 16.0 18.0 }	{ 160.0 100.0 }	1250	1250	10½	2.5	31.0	63.70

Write for complete Engineering Manual and Catalog or for Applications Engineering information.

**ELECTRONS, INCORPORATED**  
NEWARK 3, NEW JERSEY

# Mullard HIGH FIDELITY TUBES



MADE FOR MUSIC

MADE FOR MUSIC



EL34/6CA7



GZ34/5AR4



EL84/6BQ5



ECC83/12AX7

MULLARD TYPE	RETMA EQUIVALENT	DESCRIPTION	NET PRICE
EL34	6CA7	Output Pentode	\$4.35
*EL37	6L6-5881 KT66-1614	Output Pentode	9.75
EL84	6BQ5	Output Pentode, Miniature	2.40
†*EF86	6267-2729	Low Noise, AF Pentode	2.75
†*ECC81	12AT7	RF Double Triode	2.60
†*ECC82	12AU7	Low- $\mu$ AF Double Triode	2.30
†*ECC83	12AX7	High- $\mu$ AF Double Triode	2.50
ECC85	6AQ8	RF Double Triode	2.90
EZ80	6V4	Indirectly Heated Full Wave Rectifier, 90MA	1.80
EZ81	6CA4	Indirectly Heated, Full Wave Rectifier, 150 MA	2.20
GZ32	5V4G	Indirectly Heated, Full Wave Rectifier, 300 MA	2.95
*GZ34	5AR4	Bantam Indirectly Heated Full Wave Rectifier 250 MA	3.50
ECC91	6J6	RF Double Triode with Common Cathode	2.70
EB91	6AL5	Miniature Double Diode with Separate Cathodes	1.80
EC90	6C4	Miniature RF Power Triode	3.50
EZ90	6X4	Indirectly Heated Full Wave Rectifier, 70 MA	1.70
EF94	6AU6	Sharp cut-off RF or AF Pentode	2.15
EM81		Electron Beam Tuning Indicator	3.90
DM70	1M3	Miniature Electron Beam Tuning Indicator	1.70

## OTHER MULLARD PREFERRED REPLACEMENT TYPES

Mullard Type	Retma Equivalent	List Price	Mullard Type	Retma Equivalent	List Price
EBC90	6AT6	1.75	HBC90	12AT6	1.75
EBC91	6AV6	1.75	HBC91	12AV6	1.70
EF93	6BA6	2.10	HF93	12BA6	2.10
EF95	6AK5	4.90	HK90	12BE6	2.20
EK90	6BE6	2.20	HL92	50C5	2.25
EL90	6AQ5	2.25	HY90	35W4	1.45

† Especially designed and constructed for lowest hum, noise and microphonics

\* Maximum levels specified and guaranteed.



## INTERNATIONAL ELECTRONICS CORP.

REPRESENTATIVES IN USA

NEW YORK, N. Y.

TRADE MARK MULLARD, LTD.



# Mullard ELECTRON TUBES

## SUBMINIATURES

EA76/5647 DF60/5678  
5636 DF61  
5718 DF62/1A04  
5840 DL69  
5899 DL70/6373  
5902 DL73  
6021 DL620/5672  
DC70/6375

## MICROWAVE TUBES

JP9-7/2J42 KS9-20A/2K25  
JP9-15/2J42A KT9-150W  
JP9-80/4J52 TD03-5  
JP9-250/4J50 TD03-10/5861  
JP9-250A/4J78 TD04-20  
JPT9-01 TD1-100A/2C39F  
KS9-20/723A/B

## POWER TUBES

QQV03-10/6360  
QQV03-20A/6252  
QQV06-40A/5894A  
QV03-12/5763  
QV06-20/6146  
QV1-150A/4X150A  
QY3-65/4-65A  
QY3-125/6155/4-125A  
QY4-250/6156/4-250A  
QY4-500A/4X500A  
QY5-3000A/6076  
TY2-125/5866  
TY4-350/833A  
TY6-5000A/592

## PHOTOSENSITIVE DEVICES

OCP71 61RV  
20CG 61SV  
20CV 63TV  
53CG 90AG  
53CV 90AV  
58CG 90CG  
58CV 90CV

## CATHODE RAY TUBES

DB7-36/3WP11  
DG7-36/3WP1  
DG13-2/5CP1A  
DG13-34/5ADP1  
DG16-22/7AMP1  
MF13-1/5FP7A  
MW13-35/5FP4A

## GERMANIUM DIODES AND TRANSISTORS

0A10 0C71  
0A71 0C72  
0A73 0C73  
0A86 0C76  
0C44 0C45  
0C70

## MISCELLANEOUS TUBES

E88CC E1T  
E180F/6688 EF37A  
E90CC/5920 EL38/6CN6  
EF91/6AM6 6080  
EL91/6AM5 ECF80

## GEIGER-MULLER TUBES

MX112 MX118  
MX115 MX122  
MX120 MX119  
MX108 MX124  
MX113 MX124/01  
MX123

## VOLTAGE REFERENCE AND STABILIZER TUBES

75C1  
85A2/OG3  
85A3/5783  
90C1  
108C1/OB2  
150B2  
150C2/OA2  
5651W

## ELECTROMETERS

ME1400  
ME1401/5802  
ME1403/5889

## THYRATRONS

EN32/6574  
EN70/5643  
EN91/2D21  
EN92/5696  
EN93/6D4  
MT5545/5545  
XG1-2500/MT57/5559  
XG2-12  
XG2-25  
XG2-6400  
XG5-500/MT17/5557  
XG15-12  
XR1-1600/5796  
XR1-3200/5544  
XR1-6400

## PULSE MODULATORS

QQV5-P10/3E29  
QV20-P18/4PR60A  
XH3-045/3C45  
XH8-100/4C35  
XH16-200/5C22  
5949

## COLD CATHODE TUBES

Z300T/1267/OA4G  
Z803U/6779  
Z900T/5823

## IMAGE CONVERTERS

ME1200AA  
ME1201AA

\*Preferred Replacement Tubes For Equipment Manufactured By Leading British and European Firms:

TYPE NO.	PRICE	TYPE NO.	PRICE	TYPE NO.	PRICE
AZ31	\$2.70	*ECC85	\$2.90	*EZ90	\$1.70
DA90	2.60	ECC91	2.70	GZ33	3.40
*DAF91	2.15	ECF80	3.10	*HBC90	2.35
*DAF96/1AH5	2.35	ECH42	2.75	HF93	2.15
DC70	7.00	*ECH81/6AJ8	2.75	HK90	2.45
DCC90	3.65	*ECL80/6AB8	3.05	*HL92	2.25
DF64	2.80	ECL82	2.75	HY90	1.45
*DF91	2.30	EF22	4.20	PABC80	4.80
DF 92	2.30	EF36	4.40	PCC84	3.20
*DF96/1AJ4	2.50	EF37A	4.75	PCF80	3.45
DF97	2.50	EF39	4.20	PCL82	3.45
*DK40	4.40	*EF40	3.40	PL36	4.40
*DK92/1AC6	2.80	*EF41	2.35	PL81	4.20
*DK96/1AB6	2.80	EF42	3.45	PL82	2.50
DL64	2.80	EF50	4.35	PL83	2.90
DL92	2.45	EF55	5.20	PL820	3.00
DL93	2.40	EF80	2.50	PY32	2.60
*DL94	2.45	EF85	2.50	PY81	2.65
DL96	2.70	*EF89	2.35	PY82	2.15
DM70/1M3	1.70	*EF91/6AM6	2.50	UABC80	2.90
EA50	2.60	*EF93	2.15	UBC41	2.15
*EABC80/6AK8	2.90	*EF94	2.15	UBC81	2.90
EAF42	2.50	EF95	4.10	UBF80	2.70
*EB91	1.80	*EK90	2.80	UBF89	2.50
*EBC33/1639	4.20	*EL38/6CN6	5.55	UC92	3.20
*EBC41	2.15	*EL41	2.50	UCC84	2.75
EBC81	2.70	EL42	2.50	UCC85	2.90
EBC90	2.35	EL85	4.40	UCF80	2.75
*EBF80/6N8	2.70	EL90	2.25	UCH42	2.80
EBF89	2.60	*EL91/6AM5	2.45	UCH81	2.80
EC70	6.10	EL821	5.35	UCL82	3.45
*EC90	3.50	*EM34/6CD7	3.15	UF41	2.35
EC91	3.00	*EM81	3.90	UF80	2.30
*EC92/6AB4	1.90	EQ80	3.90	UF85	2.50
*ECC32	4.60	EY51	3.20	UF89	2.35
*ECC33/6SN7	4.60	EY86	3.15	UL41	2.50
*ECC34	4.60	EY91	2.25	UL84	2.20
ECC35	4.60	EZ35	1.95	UM4	3.15
*ECC40	3.50	EZ40	1.85	UY41	1.45
ECC84	3.10	EZ41	2.45	UY85	1.45



# INTERNATIONAL ELECTRONICS CORP.

REPRESENTATIVES IN USA

NEW YORK, N. Y.

TRADE MARK MULLARD, LTD.

# CHATHAM ELECTRONICS

TUBES, SELENIUM RECTIFIERS,  
POWER SUPPLIES,  
CUSTOM-DESIGNED EQUIPMENT

The dependable Chatham Tubes listed are available from stock. Other types can be supplied on order for immediate delivery. Design and engineering service is available for the manufacture of special tubes to specifications. Write for catalog or recommendations on specific requirements.



• **THYRATRONS**

2D21W	5594	395-A
3C23	2050W	5696
323B	884	6D4

• **TWIN POWER TRIODES**

6336	6520	6080WA
6AS7G	5998	6080
6528		



• **HYDROGEN THYRATRONS**

VC-1257	5948/1754	
	5949/1907	1258

• **RECTIFIERS**

1Z2	3B28	5R4WGA
3B25	4B32	5R4WGB
		6H6WGT

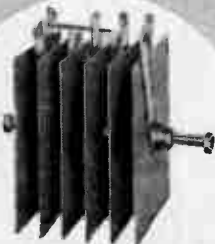


• **VOLTAGE REGULATOR and REFERENCE TUBES**

OC3W	5651WA	6542
OD3W	6626/OA2WA	
5651	6627/OB2WA	

• **SPECIAL PURPOSE TUBES**

719-A and 583 Clipper Diodes  
High Voltage Vacuum Fuses  
High Voltage Vacuum Switches



**LIGHTWEIGHT SELENIUM RECTIFIERS**

Both electrically and mechanically, Chatham Selenium Rectifiers offer important design advantages. Combine lighter weight with smallest efficient size, and built rugged to last longer. Improved design assures longer short circuit loads, twice the voltage surge of ordinary rectifiers.



**ADVANCE DESIGNED AIRBORNE CONVERSION EQUIPMENT**

Type 28V100 Power Supply illustrated provides substantial weight savings, reduced size, greater reliability and improved electrical characteristics. Ruggedized throughout. Type 28V100 exceeds MIL-P-7212 requirements. Weight under 17 lbs.



**CUSTOM-DESIGNED EQUIPMENT**

CHATHAM specializes in the development, design and production of equipment built to customers' needs. Our engineers will supply estimates on receipt of your drawings and specifications. Illustrated: High power Radar Modulator built to government specifications.



**Chatham Electronics**

Division of Tung-Sol Electric, Inc.

LIVINGSTON, NEW JERSEY, U.S.A.

**GOLD BONDED**

# RADIO RECEPTOR

# GERMANIUM DIODES

### DIMENSIONS

Diameter: .105" max.  
Length: .270" max.  
Lead diameter: .020"  
Lead length: 1.25"



Actual Size

## GERMANIUM GOLD BONDED GLASS DIODE CHARACTERISTICS

All ratings and characteristics listed are at 25°C unless otherwise specified

### GENERAL PURPOSE TYPES

Code No.	Minimum Forward DC Current @ + 1V (MA)	Maximum Inverse Operating Voltage	Peak Inverse Voltage	Max. Reverse DC Current in UA & Corresponding Resistance (Dhms) at Indicated Voltages	Max. Continuous DC Forward Current (MA)
IN67A	4	80	100	5 (1meg) @ 5V; 50 (1meg) @ 50V	
IN68A	3	100	130	625 (160K) @ 100V	
IN69	3.5	80	100	8 (625K) @ 5V; 100 (500K) @ 50V	
IN90	5	60	75	500 (100K) @ 50V	
IN95	10	60	75	500 (100K) @ 50V	
IN96	20	60	75	500 (100K) @ 50V	
IN97A	20	80	100	8 (625K) @ 5V; 100 (500K) @ 50V	
IN98A	40	80	100	8 (625K) @ 5V; 100 (500K) @ 50V	
IN99A	20	80	100	5 (1meg) @ 5V; 50 (1meg) @ 50V	
IN100A	40	80	100	5 (1meg) @ 5V; 50 (1meg) @ 50V	
IN116A	10	60	75	100 (500K) @ 50V	
IN117A	20	60	75	100 (500K) @ 50V	
IN118A	40	60	75	100 (500K) @ 50V	
IN126*	5	60	75	50 (200K) @ 10V; 850 (59K) @ 50V	
IN127*	3	100	125	25 (400K) @ 10V; 300 (167K) @ 50V	
IN128*	3	40	50	10 (1meg) @ 10V	
IN198*	4	80	100	75 (133K) @ 10V; 250 (200K) @ 50V; at 75° C	
DR315	50	120	150	50 (2meg) @ 100V	
DR316	50	100	125	100 (1meg) @ 100V	
DR317	50	80	100	50 (1meg) @ 50V	
DR318	50	60	75	2 (5meg) @ 10V	
DR319	50	60	75	5 (2meg) @ 10V	

### HIGH TEMPERATURE TYPES (rated at 75° C)

IN198*	5	50		75 (133K) @ 10V; 250 (200K) @ 50V	—
DR321	200	50		125 (400K) @ 50V	45
DR323	100	50		200 (250K) @ 50V	40
DR324	100	50		500 (100K) @ 50V	40
DR325	100	50		75 (133K) @ 10V; 250 (200K) @ 50V	40

### HIGH CONDUCTANCE TYPES

DR301	400	100	125	100 (500K) @ 50V	100
DR302	400	80	100	100 (500K) @ 50V	100
DR303	400	60	75	50 (400K) @ 20V	100
DR309	400	80	100	10 (1meg) @ 10V; 50 (1meg) @ 50V	100
DR327	300	100	125	100 (500K) @ 50V	100
DR328	300	80	100	100 (500K) @ 50V	100
DR329	300	60	75	50 (400K) @ 20V	100
DR330	300	80	100	10 (1meg) @ 10V; 50 (1meg) @ 50V	100
DR305	200	100	125	100 (500K) @ 50V	100
DR306	200	80	100	100 (500K) @ 50V	100
DR307	200	60	75	50 (400K) @ 20V	100
DR308	200	80	100	10 (1meg) @ 10V; 50 (1meg) @ 50V	100
IN281	100	60	75	30 (333K) @ 10V; 500 (100K) @ 50V	80
DR310	100	120	150	50 (2meg) @ 100V	80
DR311	100	120	150	100 (1meg) @ 100V	80
DR312	100	100	125	5 (2meg) @ 10V; 20 (5meg) @ 100V	80
DR313	100	80	100	2 (5meg) @ 10V; 20 (2.5meg) @ 50V	80
DR314	100	80	100	50 (1meg) @ 50V	80
DR326	100	60	75	250 (200K) @ 50V	80

### COMPUTER TYPES

Code No.	Min. Forward DC Current at Specified Voltage (MA)	Maximum Inverse Operating Voltage	Reverse Resistance Characteristics (Min) <sup>†</sup>	Reverse Recovery Characteristics (Min)
DR401	20 @ 0.5V	60	400K between 10 & 50V @ 55° C	50K in 0.5 usec; 400K in 2.0 usec
IN191	5 @ 1.0V	60	400K between 10 & 50V @ 55° C	50K in 0.5 usec; 400K in 3.5 usec
DR402	20 @ 0.5V	60	200K between 10 & 50V @ 55° C	50K in 0.5 usec; 200K in 2 usec
IN192	5 @ 1.0V	60	200K between 10 & 50V @ 55° C	50K in 0.5 usec; 200K in 3.5 usec
DR403	20 @ 0.5V	60	500K between 10 & 50V	80K in 0.3 usec
DR404	20 @ 0.5V	60	500K between 10 & 50V	50K in 0.3 usec

\* Jan type

† Test voltage is a continuous 60 CPS sine wave.

‡ Switching from a forward current of 30 MA to a reverse of 35 volts.

§ Switching from a forward current of 5 MA to a reverse of 40 volts.

The electrical characteristics of the following types and many others are also available: IN34, IN34A, IN38, IN38A, IN48, IN51, IN52, IN54, IN54A, IN55, IN55A, IN55B, IN56, IN56A, IN63, IN69, IN70, IN81

Semiconductor Division

**RADIO RECEPTOR COMPANY, INC.**

Subsidiary of General Instrument Corporation



Radio and  
Electronic  
Products  
Since 1922



# International Rectifier

C O R P O R A T I O N

## • SELENIUM DIODES



These subminiature selenium diodes, small and compact, are provided with pigtail leads for easy wiring into crowded chassis. Stable operation in ambient temperature range of:  $-50^{\circ}\text{C}$  to  $+100^{\circ}\text{C}$ .

**SELENIUM DIODE KITS:** An assortment of over \$18.00 worth of selenium diodes packaged in a 6 compartment plastic case. Types available  
Type SOK-1 consists of:  
10-1T1, 2-2T1, 5-1U1, 2-2U1, 2-3U1, 2-4U1.  
Type SOK-2 consists of 2 each 1T1, 2T1, 1U1, 2U1, 3U1, 4U1, 5U1, 1Y1.  
Type SOK-3 consists of 2 each 6U1, 7U1, 8U1, 4V1, 5V1, 3Y1.

Type	DC Output*		Max. Input Volts (RMS)	Max. Freq.	Dimensions (Inches) Tolerance: $\pm .015$		Color Coding	
	Volts	Ma			W	L	Body	Tip
1S1	20	0.1	26	200Kc	0.120"	0.210"	Yellow	Brown
2S1	40	0.1	52	200Kc	0.150"	0.210"	Yellow	Red
1T1	20	0.2	26	200Kc	0.120"	0.210"	Green	Brown
2T1	40	0.2	52	200Kc	0.150"	0.210"	Green	Red
1U1	20	1.5	26	100Kc	0.160"	0.250"	Gray	Brown
2U1	40	1.5	52	100Kc	0.175"	0.250"	Gray	Red Orange
3U1	60	1.5	78	100Kc	0.175"	0.250"	Gray	Orange
4U1	80	1.5	104	100Kc	0.250"	0.250"	Gray	Yellow
5U1	100	1.5	130	100Kc	0.250"	0.250"	Gray	Green
6U1	120	1.5	156	100Kc	0.330"	0.250"	Gray	Blue
7U1	140	1.5	182	100Kc	0.330"	0.250"	Gray	Violet
8U1	160	1.5	208	100Kc	0.330"	0.250"	Gray	Gray
1V1	20	5.0	26	25Kc	0.300"	0.320"	Gray	**
2V1	40	5.0	52	25Kc	0.305"	0.325"	Gray	**
3V1	60	5.0	78	25Kc	0.305"	0.325"	Gray	**
4V1	80	5.0	104	25Kc	0.345"	0.360"	Gray	**
5V1	100	5.0	130	25Kc	0.380"	0.380"	Gray	**
1Y1	20	11.0	26	10Kc	0.415"	0.460"	Gray	**
2Y1	40	11.0	52	10Kc	0.445"	0.450"	Gray	**
3Y1	60	11.0	78	10Kc	0.450"	0.450"	Gray	**

\* Into Capacitive Load.  
\*\* Part Number is Stamped on Body.

## • GERMANIUM DIODES



These point-contact germanium diodes are made from high quality crystals to assure maximum uniformity. They are designed for long life, dependability and for superior resistance to humidity, shock and temperature-cycling.

TYPE	DESCRIPTION	TYPE	DESCRIPTION
1N34	Low Back Voltage	1N64	Video Detector
1N34A	Low Back Voltage	1N65	D.C. Restorer
1N48	General Purpose	1N69	General Purpose
1N51	General Purpose	1N70	High Back Resistance
1N52	High Back Resistance	1N75	High Back Resistance
1N54	High Back Resistance	1N81	Discriminator Diode
1N54A	High Back Resistance	1N87	Video Detector
1N57	General Purpose	1N91	Power Junction Diode
1N60	Video Detector	1N92	Power Junction Diode
1N63	High Back Resistance	1N93	Power Junction Diode

A WORLD OF DIFFERENCE

THROUGH RESEARCH

# International Rectifier

C O R P O R A T I O N

El Segundo, California • In Canada: Atlas Radio Corp., Ltd., Toronto, Ontario

Descriptive literature available on request. Write Product Information Department on your letterhead.

THE WORLD'S LARGEST SUPPLIER OF INDUSTRIAL METALLIC RECTIFIERS

## • SILICON POWER DIODES

### PIGTAIL MOUNTED—STYLE S

These diodes are designed for pigtail lead connection by hand solder or dip solder. Also for clip-in applications. Recommended for applications requiring high efficiency, high temperature and miniaturization.



Absolute Maximum Ratings at 100° C ambient							Characteristics at 25° C	
IETEC Diode Type	Int'l. Diode Type	Peak Inverse Voltage <sup>1</sup> volts	Max. RMS Input Voltage <sup>3</sup> volts	Max. Rectified DC Output Current <sup>2,3</sup> ma.	Max. Continuous D.C. Current <sup>2,4,5</sup> ma.	Max. Surge Current (0.1 Sec.) <sup>4</sup> ma.	Max. D.C. Volt Drop at 200 ma. DC Output Current volts	Max. D.C. Reverse Current at Rated P.I.V. ma.
IN599	3AS1	50	35	300	400	2000	1.5	.025
IN600	3BS1	100	70	300	400	2000	1.5	.025
IN601	3CS1	150	105	300	400	2000	1.5	.025
IN602	3DS1	200	140	300	400	2000	1.5	.025
IN603	3ES1	300	210	300	400	2000	1.5	.025
IN604	3FS1	400	280	300	400	2000	1.5	.025
IN605	3GS1	500	350	300	400	2000	1.5	.025

Absolute Maximum Ratings at 100° C ambient							Characteristics at 25° C	
IETEC Diode Type	Int'l. Diode Type	Peak Inverse Voltage <sup>1</sup> volts	Max. RMS Input Voltage <sup>3</sup> volts	Max. Rectified DC Output Current <sup>2,3</sup> ma.	Max. Continuous D.C. Current <sup>2,4,5</sup> ma.	Max. Surge Current (0.1 Sec.) <sup>4</sup> ma.	Max. D.C. Volt Drop at 400 ma. DC Output Current volts	Max. D.C. Reverse Current at Rated P.I.V. ma.
IN599A	3AS2	50	35	300	400	2000	1.5	.001
IN600A	3BS2	100	70	300	400	2000	1.5	.001
IN601A	3CS2	150	105	300	400	2000	1.5	.001
IN602A	3DS2	200	140	300	400	2000	1.5	.001
IN603A	3ES2	300	210	300	400	2000	1.5	.001
IN604A	3FS2	400	280	300	400	2000	1.5	.0015
IN605A	3GS2	500	350	300	400	2000	1.5	.002

## • SILICON POWER DIODES

INSULATED MOUNTING HARDWARE SUPPLIED



### STUD MOUNTED—STYLE T

These diodes are designed for conduction cooling by mounting directly onto the chassis or through electrical insulating mica washers. Full mounting hardware supplied.

Absolute Maximum Ratings at 100° C ambient							Characteristics at 25° C	
IETEC Type	Int'l. Diode Type	Peak Inverse Voltage <sup>1</sup> volts	Max. RMS Input Voltage <sup>3</sup> volts	Max. Rectified DC Output Current <sup>2,3</sup> ma.	Max. Continuous D.C. Current <sup>2,4,5</sup> ma.	Max. Surge Current (0.1 Sec.) <sup>4</sup> ma.	Max. D.C. Volt Drop at 200 ma. DC Output Current volts	Max. D.C. Reverse Current at Rated P.I.V. ma.
IN607	3AT1	50	35	800	1000	2000	1.5	.025
IN608	3BT1	100	70	800	1000	2000	1.5	.025
IN609	3CT1	150	105	800	1000	2000	1.5	.025
IN610	3OT1	200	140	800	1000	2000	1.5	.025
IN611	3ET1	300	210	800	1000	2000	1.5	.025
IN612	3FT1	400	280	800	1000	2000	1.5	.025

Absolute Maximum Ratings at 100° C ambient							Characteristics at 25° C	
IETEC Type	Int'l. Diode Type	Peak Inverse Voltage <sup>1</sup> volts	Max. RMS Input Voltage <sup>3</sup> volts	Max. Rectified DC Output Current <sup>2,3</sup> ma.	Max. Continuous D.C. Current <sup>2,4,5</sup> ma.	Max. Surge Current (0.1 Sec.) <sup>4</sup> ma.	Max. D.C. Volt Drop at 400 ma. DC Output Current volts	Max. D.C. Reverse Current at Rated P.I.V. ma.
IN607A	3AT2	50	35	800	1000	2000	1.5	.001
IN608A	3BT2	100	70	800	1000	2000	1.5	.001
IN609A	3CT2	150	105	800	1000	2000	1.5	.001
IN610A	3OT2	200	140	800	1000	2000	1.5	.001
IN611A	3ET2	300	210	800	1000	2000	1.5	.001
IN612A	3FT2	400	280	800	1000	2000	1.5	.0015

1. Maximum Continuous D.C. Voltage for Blocking Applications. 2. Derate Output Current 2% per degree C above 100° C ambient. 3. Resistive or Inductive Loads. 4. For blocking valve applications up to 100% duty cycle. 5. For diode mounted directly on copper fin 2.0" x 2.0" x .025", convection cooled.

# GENERAL TRANSISTOR

MAXIMUM RATINGS AT 25°C

TYPICAL CHARACTERISTICS AT 25°C

General Transistor Type	Polarity	Transistor Dissipation (mW)	Collector to Base Voltage (Emitter Open) (VDC)	DC Collector Current (ma)	Peak Collector Current (ma)	Storage Temperature (°C)	DC Current Gain (Common Emitter) (β)	DC Current Gain (β)		Power Gain (DB)	Noise Figure (DB)	Collector Cutoff Current		Alpha Cutoff Frequency (mc)	Emitter Current (ma)	Collector Voltage (Volts)	Applications
								Conditions	Gain			Conditions	( $I_C$ )				
GT-14	PNP	125	25	100	85	28	28		36	16	VCB = 10V	6	4.5	1	Audio, Gen. purpose		
GT-20	PNP	125	25	100	85	42	42		40	16	VCB = 10V	6	4.5	1	Audio, Gen. purpose		
GT-34	PNP	125	25	100	85	15	15		32	16	VCB = 10V	6	4.5	1	Audio, Gen. purpose		
GT-74	PNP	125	25	100	85	75	75		42	<12	VCB = 10V	6	4.5	1	Audio, Gen. purpose		
GT-75	PNP	125	25	100	85	150	150		44	<12	VCB = 10V	6	4.5	1	Audio, Gen. purpose		
GT-81	PNP	125	25	100	85	75	75		42	16	VCB = 10V	6	4.5	1	Audio, Gen. purpose		
GT-81 HS*	PNP	150	25	200	85	120	120		44	16	VCB = 10V	6	4.5	1	Audio, Gen. purpose		
GT-82	PNP	125	25	100	85	150	150		46	16	VCB = 10V	6	4.5	1	Audio, Gen. purpose		
GT-109	PNP	125	25	100	85	120	120		44	16	VCB = 10V	6	4.5	1	Audio, matched pair		
GT-222	PNP	125	12	100	85	20	20		30	30	VCB = 10V	6	4.5	1	Audio, Gen. purpose		
GT-14 H	PNP	90	12	50	75	28	28		36	12	VCB = 10V	6	4.5	1	Hearing Aid		
GT-20 H	PNP	90	12	50	75	42	42		40	12	VCB = 10V	6	4.5	1	Hearing Aid		
GT-81 H	PNP	90	12	50	75	80	80		42	12	VCB = 10V	6	4.5	1	Hearing Aid		
GT-210 H	PNP	90	12	50	75	15-250	15-250		>34	>29	VCB = 10V	<25	4.5	1	Hearing Aid		
GT-759 R	PNP	90	12	100	75	25	25		24φ			6	2.5	4.5	1	R.F. & I.F.	
GT-760 R	PNP	90	10	100	75	40	40		28φ			6	5	4.5	1	R.F. & I.F.	
GT-761 R	PNP	90	10	100	75	70	70		32φ			6	11	4.5	1	R.F. & I.F.	
GT-762 R	PNP	90	6	100	75	120	120		34φ			6	17	4.5	1	R.F. & I.F.	
GT-83φ	PNP	125	25	200	500	85	35-49		40	16		10	<7	4.5	1	Low Speed Computer	
GT-87	PNP	125	25	200	500	85	38		36	16		10	5	4.5	1	Low Speed Computer	
GT-88	PNP	125	25	200	500	85	80		42	16		10				Low Speed Computer	
GT-122	PNP	125	25	200	500	85	80		42	16		10	1.5	4.5	1	Low Speed Computer	
2N311φ	PNP	100	15	↓	85	-55 to +85		IC = 10ma VCE = 5V	25-75		VCB = 15V	<60				Low Speed Computer	
GT-758φ	PNP	100	>20	200	500	-55 to +85	15		20φ	16	VCB = 15V	<5	<5	4.5	1	Low Speed Computer	
GT-123φ	PNP	100	>20	200	500	-55 to +85	30-150				VCB = 20V	<6	>5	4.5	1	High Speed Computer	
GT-153φ	PNP	100	>30	200	500	-55 to +85	20				VCB = 20V	<5				High Speed Computer	
GT-269φ	PNP	100	25	200	500	-55 to +85					VCB = 12V	<4	>4	4.5	1	High Speed Computer	
GT-759φ	PNP	100	>20	200	500	-55 to +85	20		24φ	16	VCB = 15V	<5	.5 to 3	4.5	1	High Speed Computer	
GT-760	PNP	100	15	50	55 to +85	40			28φ	16		1	5	4.5	1	High Speed Computer	
GT-761	PNP	100	15	50	55 to +85	75			32φ	16		1	10	4.5	1	High Speed Computer	
GT-762	PNP	100	6	50	55 to +85	100			34φ	16		1	20	4.5	1	High Speed Computer	
GT-763	PNP	100	6	50	55 to +85	120			35φ	16		1	30	4.5	1	High Speed Computer	
GT-764φ	PNP	100	>20	200	500	-55 to +85	200			16	VCB = 15V	<5	>25	4.5	1	High Speed Computer	
2N43A	PNP	150	45	50	55 to +85	32-65			>12	<20	VCB = 45V	16	>4	5	1	Military-Type	
2N44	PNP	150	45	50	55 to +85	16-32			34.43	<33	VCB = 45V	15	>4	5	1	Military-Type	
2N315	PNP	100	20	200	500	-55 to +85		IC = 100ma VCE = 2V	20		VCB = 5V	1	5	5	1	Switching computer	
2N316	PNP	100	20	200	500	-55 to +85		IC = 200ma VCE = 2V	30		VCB = 5V	1	12	5	1	Switching computer	
2N317	PNP	100	20	200	500	-55 to +85		IC = 400ma VCE = 2V	30		VCB = 5V	1	20	5	1	Switching computer	
2N356	NPN	100	>30	200	500	-55 to +85		IC = 100ma VCE = 2.5V	30		VCB = 5V	<5	3	5	1	Switching computer	
2N357	NPN	100	>30	200	500	-55 to +85		IC = 200ma VCE = 2.5V	30		VCB = 5V	<5	6	5	1	Switching computer	
2N358	NPN	100	>30	200	500	-55 to +85		IC = 300ma VCE = 2.5V	30		VCB = 5V	<5	9	5	1	Switching computer	
2N318 (GT-66)	PNP	50	12	20	85		100		42	20		10		4.5	1	Phototransistor	
GT-34HV	PNP	150	50	↓	85		10		32	16		10		4.5	1	High Voltage	
GT-34Nφ	PNP	125	100	200	500	85	18				VCB = 100V	<450		4.5	1	Neon light	
GT-34Sφ	PNP	125	40	200	500	-55 to +85	15		32	24	VCB = 15V	15		4.5	1	Bi-directional	
GT-35 (2N35)φ	NPN	100	25	100	200	-40 to +75	40		40	16	VCB = 12V	12		5	1	Audio, Gen. purpose	
GT-225φ	NPN	100	>10	200	500	-55 to +85	>10			30	VCB = 10V	<10		5	1	Experimental Amateur	
GT-167φ	NPN	100	25	200	500	85	>> 25				VCB = 15V	<10	>5	5	1	High speed switching computer	
2N312φ	NPN	100	15	↓	-55 to +85			IC = 10ma VCE = 5V	25-75		VCB = 15V	<60				High medium speed switching computer	
GT-792φ	NPN	100	20	100	200	-55 to +85		IC = 5ma VCE = 5V	37-160		VCB = 5V	6	4.8	5	3	Switching computer	
GT-903φ	NPN	100	20	200	500	-55 to +85		IB = 1ma VCE = 2V	35-70		VCB = 20V	<25				High & med. speed switching computer	
GT-904φ	NPN	100	20	200	500	-40 to +75		IB = 1ma VCE = 2V	>30		VCB = 20V	<25	>4	5	1	High speed switching computer	
GT-905φ	NPN	100	20	200	500	-55 to +85		IB = 1ma VCE = 2V	20-40		VCB = 20V	<25				High & med. speed switching computer	
GT-947φ	NPN	100	15	200	500	-55 to +85		IB = 1ma VCE = 2V	>40		VCB = 10V	<25				High & med. speed switching computer	
GT-948φ	NPN	100	20	200	500	-55 to +85		IB = 1ma VCE = 3.5V	>30		VCB = 20V	<20	>4	5	3	High & med. speed switching computer	
GT-949φ	NPN	100	30	200	500	-55 to +85		IB = 1ma VCE = 3.5V	>30		VCB = 30V	<25	>7	5	3	High & med. speed switching computer	

\* Supplied with Heat Sink † Limited only by Collector Dissipation φ Frequency = 455KC † Preliminary Specifications — Subject to Revision at any Time by General Transistor Corp.  
For More Complete Information on any of the Above Types, Write for Particular Specification Sheet

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**MASTER**

# NEWCOMB

AMPLIFIERS • CUSTOM SERIES



KX-25



KX-50



KX-6A



K-50B

Without equal at any price. The best examples why the name Newcomb is so revered by Engineers and Owners alike. Will improve any system. A must when using the new 2-way wide range speakers. Check these important features and specifications.

- 20-20,000 cycles  $\pm$  1 db
- Less than 3% distortion
- 90% of rating at less than 1%
- Full power any output tap
- Audio bandwidth selectors
- Hum and noise level — 80 db.
- Remote control provision — all inputs
- U/L Approved
- Continuous duty — longer life parts
- Key locked control cover
- Sensitive volume and overload indicators
- Wired for plug-in input transformers

Full audio power, 50 to 5000 cycles (region of all major power requirements) with  $\pm$  1/4 db. less than 5% distortion. Separate tone controls for Bass and Treble Boost or Attenuation of advanced design for better curve shape, greater range. Feedback controlled, 2 stage mike pre-amplifiers. Hum balancing control, all models but booster. Linear mixer frequency response. All but Pre-Amplifier have output impedance of 4, 8, 16, 250, 500 ohms, PLUS a 70 volt "constant voltage" tap, with convenient simple, impedance selector. Multistage inverse feedback. Large, heavy duty power and output transformers thoroughly impregnated against moisture. Rear connections avoid unsightly wires, simplify rack installation. A. C. convenience outlet in rear, all models except booster. CABINETS: Heavy gauge welded steel beautifully styled. FINISH: Silver Grey Hammetone Baked Enamel. PANELS: Etched metal, illuminated. KNOBS: Round, large, skirted type, for easy operation. Additional specifications given under specific model numbers.

**KX-25:** 25 watts power output design center, rating, 30 watts max. at less than 3% distortion any output tap. **PEAK POWER:** 40 watts design center, 48 watts max. **INPUTS (6):** 5 mike (2 meg.), gain 123 db; 1 phono either Magnetic input gain 99 db based on 27000 ohm input, bass equalization +10 db or Crystal input 1/2 meg. gain 90 db. **REMOTE CONTROL:** Use RC-6 remote control unit. **BASS TONE CONTROL:** Range — 16 to +25 db. **TREBLE TONE CONTROL:** Range —30 to +20 db. **HUM:** —80 db controls off, —75

db crystal phono. —65 db mike and magnetic pickup inputs (Referred to rated output). **CONTROLS (15):** 5 mike, 1 phono, 1 bass, 1 treble, 4 bandwidth, 1 master, 1 volume indicator (all under keylocked control cover) A.C. power switch. **TUBES (15):** 6-6SC7, 2-6J5, 1-6J7, 1-6SQ7, 1-6SN7, 2-6L6G, 1-6AF6G, 1-5U4G. **POWER CONSUMPTION:** 135 watts, 117 volts 60 cycles A.C. Max. Input 129 volts. **DIMENSIONS:** 9 3/8" x 17 3/4" x 14 3/4" **WEIGHT:** 38 1/2 lbs. **LIST:** (with tubes) \$456.92. Use Cannon XL13-11 type microphone connectors.

**KX-50:** 50 watts power output design center rating, 60 watts max. at less than 3% distortion any output tap. **PEAK POWER:** 80 watts design center, 90 watts, max. **BOOSTER COUPLING JACK** for connecting K50B Boosters for 100 watts or more. All other characteristics identical with KX-25 except gains, which are all

3 db higher than KX-25. **TUBES (18):** 6-6SC7, 2-6J5, 1-6SQ7, 1-6J7, 1-6SN7, 4-6L6G, 1-6AF6G, 2-5U4G. **POWER CONSUMPTION:** 235 watts, 117 volts 60 cycles A.C. Max. Input 129 volts. **DIMENSIONS:** 9 3/8" x 17 3/4" x 14 3/4" **WEIGHT:** 46 lbs. **LIST:** (with tubes) \$532.03. Use Cannon XL13-11 type microphone connectors.

**KX-6A:** A 6 channel mixer pre-amplifier designed to feed broadcast lines or boosters for finest quality. **OUTPUT:** +31 VU, less than 3% distortion, +30 VU at less than 1%. Has built in power supply and genuine VU meter with meter range extension switch. **INPUTS:** for 5 mikes (2 meg.) gain 97 db and 1 phono either crystal (1/2 meg.) gain 64 db or magnetic (27,000 ohms) gain 73 db. Use RC-6 Unit for remote control. Includes Master Volume Control and same fine Dual Tone Controls and Audio Bandwidth Selectors as in KX-25 and KX-50. **BASS TONE CON-**

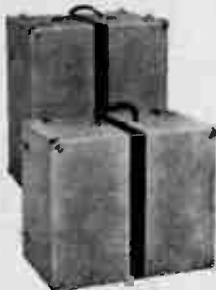
**TROL:** Range —16 to +25 db. **TREBLE TONE CONTROL:** Range —30 to +20 db. **HUM:** —80 db controls off, —80 db crystal —75 db mike and magnetic. **CONTROLS (12):** 5 mike, 1 phono, 1 bass, 1 treble, 1 master, 1 four position bandwidth (all under key locked cover), 1 A.C. power switch, 1 VU meter range switch (in rear). **TUBES (12):** 6-6SC7, 4-6J5, 1-6J7, 1-6X5. **POWER CONSUMPTION 35 WATTS,** 117 volts 60 cycles A.C. **MAX. Input 129 volts.** **DIMENSIONS:** 9 3/8" x 17 3/4" x 14 3/4" **WEIGHT:** 30 lbs. **LIST:** (with tubes) \$400.29. Use Cannon XL13-11 type microphone connectors.

**K50B:** Booster Amplifier. Performance, power and output impedance same as KX-50 with but one input of 1/2 meg. impedance, gain 71 db. Provision for plug-in bridging or low impedance transformer. Built for continuous duty with long life parts, separate plate, and filament power transformers, individually fused, permits dependable plate power switching. Includes volume and overload

indicators as in KX-50. Ample multistage feedback to minimize effects of speaker load variations. Etched metal panel. **TUBES (10):** 1-6SJ7, 1-6SN7, 1-6SQ7, 5-6L6G, 1-6AF6G, 2-5U4G. **POWER CONSUMPTION:** 230 watts 117 volts 60 cycles. 129 volts max. **DIMENSIONS:** 9 3/8" x 17 3/4" x 12 1/4" **WEIGHT:** 41 lbs. **LIST:** (with tubes) \$225.00. **PLUG KIT:** \$2.50.

# NEWCOMB

PORTABLE SYSTEMS • CUSTOM SERIES



**KX-2512X:** Portable system with KX-25 amplifier and two heavy duty, extremely efficient speakers, each with 50' cable. System is carried in two cases: Model KA for the amplifier, size 19" x 11 3/4" x 16 7/8"; Model K-212X for two speakers, size 18 1/2" x 12 1/2" x 22 1/2". Speakers face inside for maximum protection when split case is closed. Mikes and mountings not included as requirements vary. **LIST:** (less mikes and stands) \$645.57.

**KA:** Amplifier case fits all model K amplifiers. **LIST:** \$35.00.

**KX-25R12X:** Portable system identical to KX-2512X but with each speaker mounted in an individual portable reflex baffle. Model KR-112X, for utmost tone quality. Speaker cases size, 18 1/2" x 12 1/2" x 24 1/2". Mikes and mountings not included as requirements vary. **LIST:** (less mikes and stands) \$716.82.

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# NEWCOMB

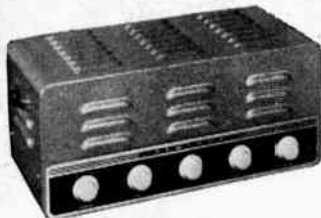
AMPLIFIERS • DELUXE SERIES



For Performance, Dependability and Value check these features and specifications:

- 20-20,000 cycles  $\pm$  2 db
- Full Power any output tap
- Less than 5% distortion
- 90% of rated power at less than 2%
- Remote Control provision — all mikes
- U/L Approved
- Continuous duty—longer life parts
- Wired for plug-in input transformers

Full Audio Power, 50 to 5000 cycles (region of all major power requirements) within  $\pm$  1/2 db. less than 5% distortion. Individual boost and attenuate type bass and treble tone control in new distortion free circuit. Linear mixer frequency response. All models but pre-amplifier have output impedances of 4, 8, 16, 250, and 500 ohms PLUS a 70 volt "constant voltage" tap, with easily-operated impedance selector. Multi-stage inverse feedback. Large heavy duty power and output transformers thoroughly impregnated against moisture. Rear connections avoid unsightly wires, simplify rack installations. A. C. convenience outlet in rear, all models except boosters. CABINETS: Heavy gauge welded steel beautifully styled in modern functional simplicity that endures. FINISH: Silver Grey Hammertone Baked Enamel. PANEL: Etched metal, illuminated. KNOBS: Large, round, skirted type, for ease of operation. Additional specifications under specific model numbers.



H-15



H-25



H-50



H-4VU



H-25B

**H-15:** 17 watts power output design center rating, 20 watts max. at less than 5% distortion, any output tap. PEAK POWER: 26 watts design center, 31 watts max. INPUTS (3): 2 mike (2 meg.), gain 120 db; 1 phonograph (1/2 meg.), gain 80 db. BASE TONE CONTROL: Range -16 to +14 db. TREBLE TONE CONTROL: -34 to +13 db. HUM: -72 db phono input, -62 db mike inputs (referred to rated

output). CONTROLS (5): 1 mike-phono, 1 mike, 1 bass, 1 treble, 1 A.C. power switch. REMOTE CONTROL: Use RC-2 remote control unit. TUBES (7): 2-6SF5, 1-6SJ7, 1-6SN7, 2-6L6G, 1-5Z4. POWER CONSUMPTION: 85 watts, 117 volts 60 cycles. A.C. Max. input 129 volts. DIMENSIONS: 8 1/2" x 19" x 10 1/4". WEIGHT: 20 lbs. LIST: (with tubes) \$179.50. PLUG KIT: \$4.09.

**H-25:** 25 watts power output design rating, 30 watts max. at less than 5% distortion, any output tap. PEAK POWER: 40 watts design center, 48 watts maximum. INPUTS (4): 3 mike (2 meg.), gain 124 db; 1 phonograph (1/2 meg.), gain 80 db. BASS TONE CONTROL: -18 to +15 db. TREBLE TONE CONTROL: Range -27 to +10 db. HUM: -72 db phono input, -62 db mike inputs (referred to

rated output). CONTROLS (6): 2 mike, 1-mike-phono, 1 bass, 1 treble, 1 A.C. power switch. REMOTE CONTROL: Use RC-3 remote control unit. TUBES (8): 3-6SF5, 1-6SJ7, 1-6SN7, 2-6L6G, 1-5U6G. POWER CONSUMPTION: 125 watts, 117 volts, 60 cycles A.C. Max. Input 129 volts. DIMENSIONS: 8 1/2" x 19" x 10 1/4". WEIGHT: 24 lbs. LIST: (with tubes) \$210.00. PLUG KIT: \$5.03.

**H-50:** 50 watts power output design center rating, 60 watts max. at less than 5% distortion, any output tap. PEAK POWER: 80 watts design center, 90 watts max. INPUTS (5): 4 mike (2 meg.), gain 124 db. 1 phono (1/2 meg.), gain 81 db. BOOSTER COUPLING JACK for connecting H-25B or H-50B Boosters for 75 to 100 watts or more. BASS TONE CONTROL: Range -21 to +16 db. TREBLE-TONE CONTROL: Range -27 to +10 db.

**H-4VU:** Mixer Pre-Amp. with built-in power supply. Extremely low hum. Suitable for feeding telephone lines or booster amplifiers such as the H-25B or H-50B. Output +22 db at less than 5% distortion. +21 db at less than 2%. INPUTS for three mikes (2 meg.), gain 90 db, 1 phono (1/2 meg.), gain 51 db. HUM: Better than, -80 db from phono input or -75 db, mike inputs. Use RC-3 Unit for remote control. Includes master control and genuine VU meter with meter range extension switch. BASS TONE CONTROL: Range -16 to +14 db. TREBLE TONE CONTROL: Range -27 to +13 db. TUBES (7): 3-6SF5, 1-6SJ7, 1-6SN7, 1-6J5, 1-6X5, POWER CONSUMPTION: 30 watts, 117 volts, 60 cycles A.C. Max Input 129 volts. DIMENSIONS: 8 1/2" x 19" x 10 1/4". WEIGHT: 17 1/2 lbs. LIST: (with tubes) \$225.00. Without VU meter: \$179.50. PLUG KIT: \$3.44.

**H-25B:** Booster Amplifier — Performance Power and Output Impedances same as H-25 with but one input of 1/2 meg. impedance, gain 68 db. Provision for plug-in bridging or low impedance transformer. Etched metal panel with pilot light, A.C. power switch and volume control. Ideal for use with H-4 Pre-amplifier.

**H-50B:** Booster Amplifier — Performance, Power and Output Impedances are same as H-50 with but one input of 1/2 meg. impedance, gain 71 db. Provision for plug-in bridging or low impedance transformer. Etched metal panel with pilot light, A.C. switch and volume control.

control and genuine VU meter with meter range extension switch. BASS TONE CONTROL: Range -16 to +14 db. TREBLE TONE CONTROL: Range -27 to +13 db. TUBES (7): 3-6SF5, 1-6SJ7, 1-6SN7, 1-6J5, 1-6X5, POWER CONSUMPTION: 30 watts, 117 volts, 60 cycles A.C. Max Input 129 volts. DIMENSIONS: 8 1/2" x 19" x 10 1/4". WEIGHT: 17 1/2 lbs. LIST: (with tubes) \$225.00. Without VU meter: \$179.50. PLUG KIT: \$3.44.

Built for long life. TUBES (5): 1-6SJ7, 1-6J5, 2-6L6G, 1-5U4G. POWER CONSUMPTION: 120 watts, 117 volts, 60 cycles A.C. Max. Input 129 volts. DIMENSIONS: 8 1/2" x 19" x 10 1/4". WEIGHT: 22 lbs. LIST: (with tubes) \$149.50. PLUG KIT: \$1.69.

Built for long life. Ideal for use with H-4 Pre-Amp. TUBES (8): 1-6SJ7, 1-6J5, 4-6L6G, 2-5U4G. POWER CONSUMPTION: 220 watts, 117 volts, 60 cycles A.C. Max. Input 129 volts. DIMENSIONS: 9 1/4" x 19" x 12 1/2". WEIGHT: 33 1/2 lbs. LIST: (with tubes) \$189.50. PLUG KIT: \$1.69.

# NEWCOMB

DELUXE PORTABLE SYSTEMS



H-50B

**H-1512R:** Portable system with H-15 amp. and two 12" speakers, each with 25' cable, in split case Model EH-212R, size 11 1/4" x 20 1/2" x 21", covered in washable fabricoid. Kickproof metal grills protect speakers. Mikes and mountings not included as requirements vary. LIST: (less mikes and stands) \$283.09.

**H-2512R:** Portable system with H-25 amp. and two 12" speakers, each with 25' cable in split case, Model EH-212R. Size, 20 1/2" x 11 1/4" x 21". Mikes and mountings not included as requirements vary. LIST: (less mikes and stands) \$314.53.

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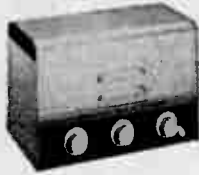


# NEWCOMB

AMPLIFIERS • SPECIAL SERIES

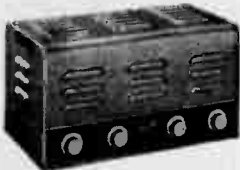


The same fine workmanship and materials as the incomparable KX- and H-Series. Designed to lead the low-price field. For performance, dependability and economy the E-Series is today's best combination of high quality and low cost. All models U/L Approved.



**E-10A:** Delivers 10 watts from push-pull 6V6 tubes. Separate mike and phono controls. Multistage inverse feedback circuit. **POWER OUTPUT:** 10 watts at less than 5%. **FREQUENCY RESPONSE:** 40 to 15,000 cycles  $\pm$  2 db. **INPUTS:** (2) 1 mike (2 meg.) gain 116 db. Wired for plug-in input transformers. 1 phono ( $\frac{1}{2}$  meg.) gain 77 db. **TONE CONTROL:** Range 0 to -24 db. **OUTPUT**

**IMPEDANCES:** 4, 8, 16 and 500 (70 Volt Tap) ohms to octal socket. **TUBES:** (5) 1-6SC7, 1-6SJ7, 2-6V6GT, 1-6X5GT. **FINISH:** Silvergrey hammertone baked enamel. **PANEL:** Genuine etched enamel. **POWER CONSUMPTION:** 60 watts at 117 volts, 60 cycles A.C. **SIZE:** 5 $\frac{3}{8}$ " x 10 $\frac{3}{4}$ " x 6 $\frac{3}{4}$ ". **WEIGHT:** 9 $\frac{1}{2}$  lbs. Less cover, 7 $\frac{1}{2}$  lbs. **LIST:** (with tubes, without cover) \$69.50. **Cover \$7.21. PLUG KIT:** \$1.71.



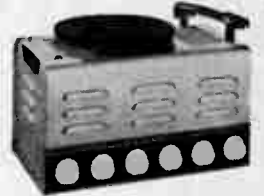
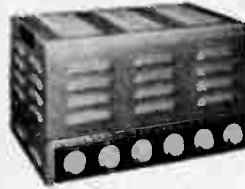
**E-17P3:** A conservative 17 watt model with 3 speed phono. Separate bass and treble controls, phono bass boost, multi-stage inverse feedback circuit. Input controls for mike and phono. **POWER OUTPUT:** 17 watts at less than 5%. **FREQUENCY RESPONSE:**  $\pm$  2 db. 40 to 15,000 cycles. **INPUTS:** 1 mike (2 meg.) gain 115 db. Wired for plug-in input transformers. 1 phono ( $\frac{1}{2}$  meg.) gain 77 db. **OUTPUT IMPEDANCES:** 4, 8, 16, 290 (70 Volt Tap) and 500 ohms. **TUBES:** (5) 1-12AX7, 1-6SJ7, 2-6L6G, 1-5V4G. **FINISH:** Silvergrey hammertone baked enamel. **PANEL:** Etched metal, lighted. **POWER CONSUMPTION:** 75 watts at 117 volts, 60 cycles A.C. **SIZE:** 8 $\frac{3}{8}$ " x 14 $\frac{1}{8}$ " x 8". **WEIGHT:** 15 $\frac{1}{2}$  lbs. **LIST:** (with tubes) \$151.55. **PLUG KIT:** \$2.28.

**E-17:** A 17 watt amplifier without 3 speed phono. Otherwise identical to model E-17P3. **LIST:** (with tubes and cover) \$107.50. **PLUG KIT:** \$2.28.



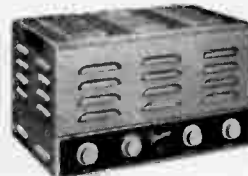
**E-25:** A dependable, full 25 watts with inputs for 2 mikes and 1 phono, separate bass and treble controls, phono bass boost, multi-stage inverse feedback circuit. **POWER OUTPUT:** 25 watts at less than 5%. **FREQUENCY RESPONSE:**  $\pm$  2 db. 40 to 15,000 cycles. **INPUTS:** (3) 2 mike (2 meg.) gain 117 db. Wired for plug-in input transformers. 1 phono ( $\frac{1}{2}$  meg.) gain 77 db. **OUTPUT IMPEDANCES:** 4, 8, 16, 196 (70 Volt Tap) and 500 ohms. **TUBES:** (6) 1-12AX7, 1-6SC7, 1-6J5, 2-6L6G, 1-5V4G. **FINISH:** Silvergrey hammertone baked enamel. **PANEL:** Etched metal, lighted. **POWER CONSUMPTION:** 90 watts, 117 volts, 60 cycles A.C. **SIZE:** 8 $\frac{3}{8}$ " x 14 $\frac{1}{8}$ " x 8". **WEIGHT:** 18 $\frac{1}{2}$  lbs. **LIST:** (with tubes and cover) \$139.50. **PLUG KIT:** \$3.24.

**E-25P3:** A 25 watt amplifier with 3 speed phono. Otherwise identical to model E-25. **LIST:** (with tubes) \$183.18. **PLUG KIT:** \$3.24.



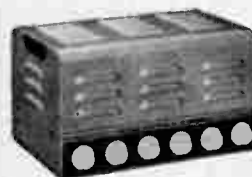
**E-254P3:** A highly versatile, yet economical 4 channel, 25 watt amplifier with 3 speed phono. **FEATURES:** High gain, inputs for 3 mikes and 1 phono, separate bass and treble tone controls, phono bass boost, multi-stage inverse feedback circuit. Pickup is high-grade turnover crystal. **POWER OUTPUT:** 25 watts at less than 5% distortion. **FREQUENCY RESPONSE:**  $\pm$  2 db, 40 to 15,000 cycles. **3 MIKE INPUTS:** 2 meg., gain 123 db. Wired for plug-in input transformers. **PHONO INPUT:**  $\frac{1}{2}$  meg., gain 83 db. **OUTPUT IMPEDANCES:** 4, 8, 16, 196 (70 Volt Tap) and 500 ohms. **TUBES:** (8) 3-6SF5, 1-6SJ7, 1-6SN7, 2-6L6G, 1-5V4G. **FINISH:** Silvergrey hammertone baked enamel. **PANEL:** Etched metal illuminated. **CONTROLS:** 3 mike, 1 phono, 1 bass, 1 treble and power switch. **POWER CONSUMPTION:** 105 watts at 117 volts, 60 cycles A.C. **SIZE:** 8 $\frac{3}{8}$ " x 14 $\frac{1}{8}$ " x 8". **WEIGHT:** 18 $\frac{1}{4}$  lbs. **LIST:** (with tubes) \$213.18. **PLUG KIT:** \$3.90.

**E-254:** A 25 watt amplifier without 3 speed phono. Otherwise identical to model E-254P3. **LIST:** (with tubes and cover) \$169.50. **PLUG KIT:** \$3.90.



**E-50:** A distortion-free, conservatively rated 50 watts using push-pull parallel 6L6 tubes and multi-stage inverse feedback circuit. Has inputs for 2 mikes, 1 phono, separate bass and treble controls, phono bass boost. Same as

E-25 except as follows: **POWER OUTPUT:** 50 watts at less than 5%. Mike gain 120 db. Wired for plug-in input transformer Phono gain 79 db. **OUTPUT IMPEDANCES:** 4, 8, 16, 98 (70 Volt Tap) and 250 ohms. **TUBES:** (9) 1-6SJ7, 1-12AX7, 1-6J5, 4-6L6G, 2-5V4G. **POWER CONSUMPTION:** 170 watts at 117 volts, 60 cycles A.C. **SIZE:** 11 $\frac{1}{4}$ " x 14 $\frac{3}{4}$ " x 8 $\frac{1}{2}$ ". **WEIGHT:** 29 lbs. **LIST:** (with tubes and cover) \$196.50. **PLUG KIT:** \$3.24.



**E-504:** A 4 channel 50 watt amplifier featuring: high gain, inputs for 3 mikes and 1 phono, separate bass and treble tone controls, phono bass boost, multi-stage inverse feedback, push pull parallel output system for lowest distortion at all power levels. **POWER OUTPUT:** 50

watts at less than 5% distortion. **FREQUENCY RESPONSE:**  $\pm$  2 db, 40 to 15,000 cycles. **THREE MIKE INPUTS:** 2 meg., gain 126 db. Wired for plug-in input transformers. **PHONO INPUT:**  $\frac{1}{2}$  meg., gain 86 db. **OUTPUT IMPEDANCES:** 4, 8, 16, 98 (70 Volt Tap) and 250 ohms. **TUBES:** (11) 3-6SF5, 1-6SJ7, 1-6SN7, 4-6L6G, 2-5V4G. **FINISH:** Silvergrey hammertone baked enamel. **PANEL:** Etched metal, illuminated. **CONTROLS:** 3 mike, 1 phono, 1 bass, 1 treble and power switch. **POWER CONSUMPTION:** 180 watts, 117 volts, 60 cycles A.C. **SIZE:** 11 $\frac{1}{4}$ " x 14 $\frac{3}{4}$ " x 8 $\frac{1}{2}$ ". **WEIGHT:** 30 lbs. **LIST:** (with tubes and cover) \$239.50. **PLUG KIT:** \$3.90.

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The MASTER — 22nd Edition

TRADE DISCOUNT APPLIES TO LIST PRICES ONLY

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# NEWCOMB

PORTABLE AMPLIFIERS



SERIES



**E-1010S:** A 10 watt basic portable consisting of one E-10 amplifier with plugs and one E-110S case assembly with efficient 10" P.M. speaker protected by a kick-proof metal grill. Speaker cable 25'. Overall size: 12 $\frac{1}{4}$  x 15 $\frac{3}{4}$  x 8 $\frac{3}{4}$ ".

Weight: 19 lbs. LIST: (less mike and stand) \$126.82.



**E-1712R:** A 17 watt dual speaker portable system consisting of one EH-212R split speaker and amplifier case assembly with two 12" high quality P.M. speakers, each with 25' cable, protected by kick-proof grills, and one E-17 amplifier with plugs. Size: 11 $\frac{1}{4}$  x 20 $\frac{1}{2}$  x 21". Weight: 40 lbs. LIST: (less mike and stand) \$209.28.

**E-2512R:** A 25 watt dual speaker portable system with model E-25 amplifier. Weight 42 $\frac{1}{2}$  lbs.

LIST: (less mikes and stands) \$242.24.

**E-25412R:** A 25 watt dual speaker portable system consisting of one EH-212R split case assembly with two 12" P.M. speakers each with 25' cable, and model E-254 four channel amplifier. LIST: (less mikes and stands) \$272.90.



**E-17P312R:** A 17 watt dual speaker portable system with 3 speed phono. Consists of model E-17P3 amplifier in EH-212R split case assembly. LIST: (less mike and stand) \$252.96.

**E-25P312R:** A 25 watt dual speaker portable system with 3 speed phono. Model E-25P3 amplifier in EH-212R split case assembly. LIST: (less mikes and stands) \$285.92.

**E-254P312R:** A 25 watt dual speaker portable system with 3 speed phono. Same as E-25412R but with 3 speed phono top amplifier model E-254P3. LIST: (less mikes and stands) \$316.58.

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and sound systems are  
U/L APPROVED**

# NEWCOMB

MOBILE AMPLIFIERS



SERIES

## 6-VOLT

**E-25MP3:** A 25 watt mobile amplifier with 3 speed phono. For use on 6 V. storage battery or 117 V.A.C. Consumes minimum current per watt output. Has standby switch, separate power and turntable switches, heavy duty Jones plugs and receptacles for dependable connections to battery or A.C. power, POWER OUTPUT: 25 watts at less than 5%. RESPONSE:  $\pm$  2 db, 50 to 15,000 cycles. INPUTS: 2 mikes (2 meg.) gain 119 db. wired for plug-in input transformers, 1 phono ( $\frac{1}{2}$  meg.) gain 78 db. HIGH FREQ. ATTENUATOR: Range 28 db. CIRCUIT: Multi-stage inverse feed-back, resistance capacity coupling, phase correction for phono motor, 2000 V. hermetically sealed oil buffer condenser. OUTPUT IMPEDANCES: 4, 8, 16, and 500 ohms plus 70V. tap to 2 octal speaker sockets and impedance selector. PHONO: Constant speed 78 rpm. PICKUP: Crystal. TUBES: (7) 1-12AX7, 1-6SJ7, 1-6J5, 2-6L6, 2-6X5GT. POWER CONSUMPTION: 107 watts, 117 volts, 60 cycles A.C. or 20.5 amps, including phono from 6V. battery. FINISH: Silvergrey hammertone baked enamel; PANEL: Etched metal, lighted. SIZE: 8 $\frac{3}{4}$  x 14 $\frac{1}{8}$  x 10". WEIGHT: 26 lbs. LIST: (with tubes) \$239.43. Plug Kit \$3.24.

**E-25M:** Same as E-25MP without phono. POWER CONSUMPTION: 91 watts A.C. or 17 amps. from 6 V.D.C. SIZE: 8 $\frac{3}{4}$  x 14 $\frac{1}{8}$  x 8". WEIGHT: 23 lbs. LIST: (with tubes) \$195.75. Plug Kit: \$3.24.

**E-10M:** A 10 watt mobile amplifier. For use on 6 V.D.C. or 117 V.60 cycles A.C. Features push-pull beam power output tubes with inverse feedback for low distortion, standby, battery saver switch, new freedom from vibrator hash, special mounting for easy removal of chassis, inputs for mike and phono, sturdy Jones connectors for battery and A.C. cables. POWER OUTPUT: 10 watts at less than 5%. FREQUENCY RESPONSE:  $\pm$  2 db. 50 to 15,000 cycles. INPUTS: Mike (2 meg.) gain 115 db. phono ( $\frac{1}{2}$  meg.) gain 75 db. OUTPUT IMPEDANCES: 4, 8, 16 ohms. TUBES: (5) 1-6SC7, 1-6SF5, 2-6V6GT, 1-6X5GT. POWER CONSUMPTION: 60 watts, 117 volts, 8 amps. at 6 V.D.C. FINISH: Silvergrey hammertone baked enamel. PANEL: Etched metal with pilot lamp. SIZE: 6 $\frac{1}{4}$  x 6 $\frac{3}{4}$  x 8 $\frac{1}{4}$ ". WEIGHT: 9 $\frac{3}{4}$  lbs. LIST: (with tubes) \$99.75. Plug Kit \$1.39.

All Newcomb equipment U/L approved. Prices and specifications subject to change without notice.

## 12-VOLT

Newly developed E-253M Series Newcomb Amplifier designed for use anywhere. Ultra modern 25 watt unit available in several styles with and without turntable (see below). May be used on either 12-volt storage battery or 117 volt 60 cycle AC power source with equal effectiveness. Consumes as much as 20% less battery current, weighs up to 30% less. Separate bass and treble tone controls; two microphone channels each with the new standard broadcast type connectors and convertible to low impedance with Newcomb humless plug-in input transformers; high gain separate phono channel for ceramic pickups; extra input for tape; standby switch to reduce idle battery consumption more than 70%; new freedom from vibrator hash; heat resistant ceramic pickup and turret type motor in 3-speed phono top; completely U/L Approved.

POWER OUTPUT: 25 watts at less than 3% total harmonic distortion, peak power 40 watts. FREQUENCY RESPONSE: 30 - 20,000 cycles  $\pm$  2 db. HUM LEVEL: 70 db below 25 watts. INPUTS: Two mike (2 meg.) gain 122 db; one phono (2 meg.) gain 90 db; and one tape (2 meg.) gain 90 db. Mike inputs convertible to low impedance using Newcomb plug-in transformers. CONTROLS: One stand-by switch, one power switch and treble tone control, one bass tone, one phono, two microphone, one phono motor control (on phono top models), and one hum balance control. OUTPUT IMPEDANCE: 4, 8, 16, and 500 ohms and a 70 volt tap to impedance selector and two output sockets. POWER CONSUMPTION: On 117 volts 60 cycles AC, 100 watts. On 12 volts DC, 8.85 amps (with phono top, 10.3 amps.). Stand-by current less than 3 amps. SIZE: 14 $\frac{1}{4}$  x 9 $\frac{1}{2}$  x 8" high (with cover height 10 $\frac{1}{4}$ "). TUBES: 1-12AX7, 1-12AU6, 2-6L6G, 2-6X5GT, 1-12AV7. E-253M - plain top model, list price \$214.50. (Weight, 24 lbs.). E-253M3 - 3-speed phono-top model, list price \$249.50. (Weight, 28 $\frac{1}{4}$  lbs.). PC - Protective turntable cover with "king-sized" handle for use on Model E-253M3 only, list price \$15.00. (Weight, 2 $\frac{3}{4}$  lbs.). Above prices include both battery and AC power cables.

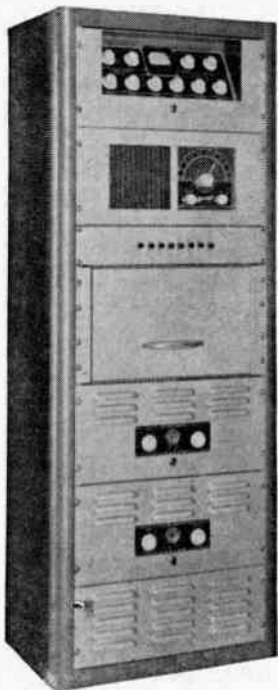


# NEWCOMB

AUDIO PRODUCTS CO. • HOLLYWOOD 38, CALIFORNIA

# NEWCOMB

## RACK AND PANEL ASSEMBLIES



Any standard Newcomb amplifier may be obtained panel mounted on special order in 19" x 8 $\frac{3}{4}$ " panels, thus giving the custom designer a wide choice of equipment to meet any need.

**MODEL 595-19 CABINET:** (illustrated) Supplies a demand for a beautifully finished housing that is fully in keeping with the Newcomb tradition and reputation for quality. Panel space is 56". Design accepts standard 19" wide panels. Mounting holes are RMA standard 1 $\frac{1}{4}$ " and 1 $\frac{1}{2}$ " spacings. Panel mounting holes are tapped in 1 $\frac{1}{8}$ " stock. Fully ventilated rear door provides easy accessibility. Entire cabinet is a complete welded assembly ready for use as you receive it. Finish is dark grey hammertone. Provision is made in the rear for nine 1 $\frac{1}{2}$ " conduits. Included is a removable terminal strip mounting plate located near conduit inlets. **OVERALL DIMENSIONS:** 59 $\frac{1}{2}$ " x 23" wide x 16" deep. **SHIPPING WEIGHT:** 92 lbs. **LIST:** \$189.50.

**MODEL 385-19 CABINET:** Provides 35" of panel space for standard 19" panels. **OVERALL DIMENSIONS:** 38 $\frac{1}{2}$ " x 23" wide x 16" deep. **SHIPPING WEIGHT:** 72 lbs. **LIST:** \$149.50.

In addition to the panel mounted amplifiers Newcomb also provides a wide selection of other equipment designed for custom rack installations.

**MODEL 1050-C PHONOGRAPH CHANGER PANEL** is a practical solution to mounting a phono changer in cabinet 595-19. Ball bearing drawer with wood motor board is adaptable for mounting most popular changers. Panel size 19" x 10 $\frac{1}{2}$ ". All panels are finished in silver-grey hammertone baked enamel. **MODEL E2-525 PRE-AMPLIFIER** answers the need for a simple, dependable but economical pre-amp for rack use. **MODEL T82-525 INTERCOM AMPLIFIER** has built-in power supply, speaker, talk-listen switch and separate talk and listen volume controls.

**MODEL B-100-875 AM RADIO** is the Newcomb B-100 radio mounted on an 8 $\frac{3}{4}$ " panel. (See listing page B-7.) **MODEL 700-MP MONITOR** is available for installation of any 6" speaker. **LEVER KEY PANELS** are provided for use with CRL keys, 3 $\frac{1}{2}$ " deep with slots for 6, 8, 10 or 12 keys. **LOUVERED PANELS** for additional ventilation and **BLANK PANELS** are made in assorted sizes.

**SPECIAL PANELS** are made to order to fit special equipment. Templates or suitable drawings must accompany order for any special sheet metal work. Full details of Newcomb rack and panel equipment available on request.

# NEWCOMB

## ACCESSORIES FOR (H) AND (K) SERIES



### REMOTE CONTROLS

For mixing and fading all H Series mike inputs. With K Series amplifiers all mikes and phono may be controlled. Up to 2000 feet of cable may be used. No inductive pickup.

**RC-2** for H-15 amp. Requires ordinary 3 wire cable, 2 $\frac{3}{4}$ " x 6" x 2 $\frac{1}{8}$ ". **WEIGHT:** 1 lb. **LIST:** (less cable) \$10.50.

**RC-3** for H-25 or H-4 amps. Requires ordinary 4 wire cable. 2 $\frac{3}{4}$ " x 6" x 2 $\frac{1}{8}$ ". **WEIGHT:** 1 lb. **LIST:** (less cable) \$15.50.

**RC-4** for H-50 amp. Requires ordinary 5 wire cable. 2 $\frac{3}{4}$ " x 7 $\frac{3}{8}$ " x 2 $\frac{1}{8}$ ". **WEIGHT:** 1 $\frac{1}{4}$  lbs. **LIST:** (less cable) \$19.50.

**RC-6** for KX-25, KX-50, KX-6 amps. Requires ordinary 7 wire cable. 2 $\frac{3}{4}$ " x 11 $\frac{1}{4}$ " x 2 $\frac{1}{8}$ ". **WEIGHT:** 2 lbs. **LIST:** (less cable) \$27.50.



### PLUG-IN TRANSFORMERS

**TR-91:** Features sextuple alloy and copper shielding for quiet operation right in amp. proper. Alloy core and specially designed windings for extended frequency response from 20 to 20,000 cycles. Plug base for easy installation. For use between 30-50 or 200-250 ohm mikes and grid. **WEIGHT:** 1 $\frac{1}{4}$  lbs. **LIST:** \$32.50.

**TR-92:** Input impedance 5,000 ohms to grid for bridging a 500-600 ohm line. When plugged into sockets on K50B, H50B, H25B it converts for use as bridging amps. **WEIGHT:** 1 $\frac{1}{4}$  lbs. **LIST:** \$29.50.

**TR-100:** Identical to TR-91 but for use between 125-150 or 500-600 ohm mikes and grid. **LIST:** \$32.50.

All prices and specifications subject to change without notice.

## COMPLETE BID SPECIFICATIONS AVAILABLE

Available from Newcomb are complete bid specifications for public address amplifiers, phonographs, transcription players, and radios. A must for schools, states, or federal governments as well as commercial institutions requiring specifications to be shown. These Newcomb bid specifications spell out the proper details and may be included directly on prints or purchase orders.

All Newcomb equipment approved by Underwriters Laboratory.

# NEWCOMB

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The MASTER — 22nd Edition

TRADE DISCOUNT APPLIES TO LIST PRICES ONLY

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# NEWCOMB

## COMBINATION TRANSCRIPTION PLAYER / P.A. SYSTEMS



### MODEL TR-25AM

25-watt, two-speaker, 3-speed player and p.a. system for all records up to 17 $\frac{1}{4}$ ". G. E. variable reluctance pickup with dual jewelled needles. Scratch suppressor. New Speed-O-Scope speed indicator and patented Newcomb variable speed motor. Two mike inputs with separate tone and volume controls independent of record player. "Floating sound" mounting.

Two heavy-duty 12-inch speakers, each with 25-foot cable. Newcomb Phono-Monitor jack provides voice-free music for connection to an external amplifier and speaker (M-5). Frequency response  $\pm 2$  db 40 to 15,000 cycles. U/L Approved. Packs in two cases. Main case 16 $\frac{3}{4}$ " x 16 $\frac{3}{4}$ " x 8 $\frac{3}{4}$ ", weight 36 pounds. Dual speaker case 14 $\frac{3}{4}$ " x 15 $\frac{3}{4}$ " x 11 $\frac{3}{4}$ ", weight 19 pounds. LIST: \$382.50.



### TR-25AM-4

25 watt four speaker transcription player and p.a. system. Gives added coverage for large or difficult halls. A three case system consisting of standard TR-25AM plus a matching set of Model T-212E dual extension speakers. The choice of the advanced professional square dance caller. All other features identical to TR-25AM. LIST: \$482.00.

### ADDITIONAL SPEAKERS

#### T-212E

Dual extension speakers for use with any TR-25AM to give a total of four speakers where needed. Includes 2 identical 12" Alnico 5 PM high-frequency speakers in a matching case. Each has 25-foot cable, and plug. WEIGHT: 19 pounds. LIST: \$99.50.

#### T-112R

Additional speaker for use with TR-16 systems. Consists of a matching 12" Alnico 5 PM dynamic speaker with 25-foot cable. WEIGHT: 12 pounds. LIST: \$65.85.

#### MICROPHONE CR-11

Hand or desk microphone for use with all Newcomb TR models and R-16 series. Operates on a new controlled reluctance principle that combines good voice reproduction with extreme ruggedness. Not affected by humidity or temperature variation. Convenient on-off switch. Complete with 7-foot cable shielded plug and unique mounting bracket for carrying in system case. LIST: \$23.75.

All Newcomb equipment U/L Approved.



### MODEL TR-16AM

Versatile single speaker transcription player and p.a. system combined, packs into one case. Plays records to 17 $\frac{1}{4}$ " at all three speeds. Variable speed control with Newcomb Speed-O-Scope for easy setting to exact speed setting or slawing to speed required by instructor, with no

wows. Heavy 10-inch turntable. G.E. variable reluctance pickup with twist-type dual needles in a 12" cast metal tone arm and needle pressure adjustment. Scratch suppressor. Individual bass and treble controls. Microphone input unaffected by record bass control. Large 12" Alnico 5 PM speaker built into removable lid with 25-foot cable. Exclusive Newcomb "floating sound". Fabricoid covered case. 10 watt 100% AC operated amplifier. WEIGHT: 33 pounds. SIZE: 14 $\frac{3}{4}$ " x 15 $\frac{3}{4}$ " x 11 $\frac{3}{4}$ ". LIST: \$257.50.

### MODEL TR-16C

Similar to the TR-16AM (above) except without the scratch suppressor switch and the pickup cartridge is a heat and humidity resistant ceramic type encased in a sturdy metal arm. LIST: \$233.25.



### MODEL TR-16AM-2

A two-case, two-speaker version of the TR-16AM. The division of the system into two cases gives best weight distribution for easiest handling. Amplifier and turntable case assembly, 16 $\frac{1}{4}$ " x 16 $\frac{1}{4}$ " x 7-7/7" in size, and weighs 27 pounds. The

two 12" speakers fit into one case 16 $\frac{1}{4}$ " x 16 $\frac{1}{4}$ " x 12", and weighs 19 pounds (25-foot cable with each). LIST \$315.85.

### New MUSIC MONITOR

#### MODEL M-5

Designed for use by callers of square or round dancing, with the Newcomb TR-25 series systems only. Provides clear monitoring of the music only, without the voice to confuse the caller. Self-contained 5 watt amplifier

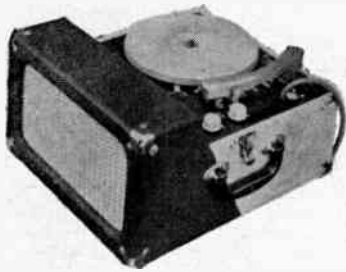


system complete with built-in 9" oval speaker designed specifically for connection to the special Phono-Monitor jack of the TR-25 series. Has its own volume and tone control conveniently located on the front. Portable unit, in sturdy case covered with fabricoid. WEIGHT: 10 pounds. SIZE: 12" x 9 $\frac{1}{2}$ " x 5 $\frac{1}{2}$ ". U/L Approved. LIST: \$99.50.

Prices and specifications subject to change without notice. Only American-made parts are used in Newcomb Players.

# NEWCOMB

AUDIO PRODUCTS CO. • HOLLYWOOD 38, CALIFORNIA



### THE *Ballerina*

#### MODEL C-12V

High fidelity portable phonograph, plays 33-1/3, 45, 78 RPM records, with Newcomb variable speed control to permit slowing any record to the exact speed desired for dance instruction. Big 11-inch extended range speaker. Heat and humidity resistant ceramic pick-up

corridge in cast metal arm with dual needles, protective drop pad and screw type hold down clamp. Exclusive Newcomb "floating sound" vibration absorbing feet protect against needle skipping. Compensated volume control, wide range tone control. 5-watt transformer powered inverse feedback circuit amplifier. Sturdy 3/8" plywood carrying case covered with washable maroon and grey fabricoid. U/L Approved. WEIGHT: 21 pounds. SIZE: 16" x 14 1/8" x 8". LIST: \$126.75 (plus excise tax).



### *the "Pacemaker"*

#### MODEL P-12C

The lowest price ever for a Newcomb portable phonograph. Plays 33-1/3, 45 and 78 RPM records to 12".

FEATURES: Big 7" oval speaker, inverse feedback controlled beam powered amplifier, humidity protected output transformer, com-

pensated volume control, wide range tone control, pilot light to indicate when on. Heat and humidity resistant ceramic cartridge encased in a sturdy cast metal arm with positive screw-type hold down clamp. Dual sapphire needle points give long life to records. Rubber crash pad. Maroon and grey fabricoid cover over 3/8" plywood case. U/L Approved. WEIGHT: 16 pounds. SIZE: 14 1/8" x 14 1/8" x 8". LIST: \$74.95 (plus excise tax).

### THE *Coloratura* MODEL C-12

3-speed high fidelity phonograph the same as above but without variable speed feature. Plays all 33-1/3, 45, and 78 RPM records with lifelike tone. Big 11-inch speaker and other features as listed above. LIST: \$104.50 (plus excise tax).

### COMBINATION TRANSCRIPTION PLAYER / P.A. SYSTEM WITH VARIABLE SPEED (Model R-16CV)



A complete portable system for playing transcriptions or records up to 17 1/4", with microphone input and separate volume control to permit mixing microphone with recorded music. Dependable continuously variable control of speed at all three settings (33-1/3, 45 and 78 RPM). Full starting torque at any speed. Sturdy 12" cast metal transcription type pick-up arm with adjustable needle pressure. Heat and humidity resistant

ceramic cartridge, with jewelled, easy-to-replace needles. Protective pad for needle drop. Screw-type hold-down clamp for arm in transit. Newcomb "floating sound" vibration absorbing feet protect against needle skipping. Balanced-design 5-watt inverse-feedback-controlled, transformer-powered amplifier, humidity protected output transformer. Removable 10" speaker has a 25-foot cable for use at a distance from amplifier. Compensated record volume control and wide range tone control. Fabricoid covered 3/8" plywood carrying case, with metal corners, kickproof metal speaker grill. U/L Approved. WEIGHT: 22 pounds. SIZE: 14" x 13" x 8 5/8". LIST: \$149.50 (plus excise tax).

#### MODEL R-16C

Same as above but without variable speed feature. Has 3-speed turntable motor. Ceramic pick-up, heat and humidity resistant. LIST: \$126.75 (plus excise tax).

All prices and specifications subject to change without notice



### *the "Soloist"*

#### MODEL R-12

High fidelity portable three speed phonograph with big 9-inch extended range speaker and 5-watt amplifier. Newcomb "floating sound" vibration absorbing feet protect against skipping. Turn-

over-type, two-needle, wide-range crystal pick-up. Cast metal pick-up arm with positive screw-type hold down clamp. Fine transformer powered 5-watt inverse feedback controlled amplifier. Wide-range tone control. Compensated volume control. Sturdy 3/8" plywood case covered with washable fabricoid U/L Approved. WEIGHT: 20 pounds. SIZE: 14 1/8" x 14 1/8" x 8". LIST: \$89.95 (plus excise tax).

#### MODEL R-12C

A ceramic pick-up version of the famous R-12 (above) for use in areas of exceptionally high heat and humidity. LIST: \$94.50 (plus excise tax).



### SCHOOL AM RADIO

#### MODEL B-100

Rugged long-range AM radio for schools, etc.

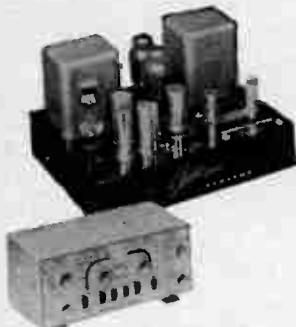
Big 6-inch extended range speaker. Transformer powered AC construction. Extreme sensitivity designed for fringe areas. Amplifier utilizes inverse feedback circuit and beam powered output. Output jack for headset, or for use in supplying AM radio to public address system. Twist proof stringless full-vision dial. Unbreakable plexiglass dial cover. Heavy metal grill protects speaker. Covered in two-tone fabricoid material. WEIGHT: 13 1/4 pounds. SIZE: 7 5/8" x 14 1/4" x 8". LIST: \$85.95 (plus excise tax).

Only American-made parts are used in Newcomb Players.

# NEWCOMB

## HIGH FIDELITY AMPLIFIERS

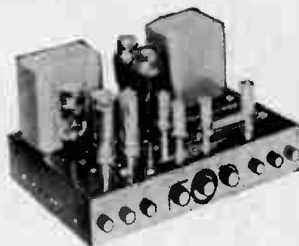
### CLASSIC SERIES



#### MODEL 2500R

Remote controlled Laboratory Standard amplifier/preamp. Satin gold finished remote chassis 33/4" x 37/8" x 9". Main chassis 15" x 10 3/4" x 7 3/4". Remote unit may be used up to 100 feet from main chassis. Response inherently excellent to 100,000 cycles. Deviates less than 1/10 db between 10 and 30,000 cycles. Distortion less than 1/100% up to 10 watts. Less than 2/10% at 20 watts and less than 1% at 25 watts. Preamp fully

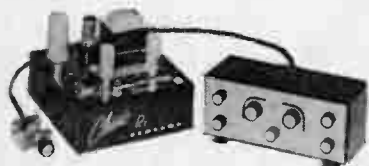
compensated, DC powered. Hum is better than 95 db below 25 watts. Exclusive "Audi-Balance" (pat. applied for) developed by Newcomb assures perfect, easily maintained, balance of output tubes year after year. Separate bass crossover and treble rolloff controls, each with six positions to permit 36 recording curves to be duplicated. Dual range bass and treble tone controls. Bass range, -16 db to +23 db. Treble range, -25 db to +23 db. Panel controlled rumble filter. Separate loudness and level controls work as



#### MODEL 2500

Laboratory Standard "Classic" 25 watt amplifier/preamp unit, built into one chassis but otherwise the same as 2500R (left). Exclusive patented "Adjusta-Panel", developed by Newcomb, allows easy installation in a cabinet, or it may be built in without additional control panel equipment. TUBES USED: 2-12AX7, 2-12AU6, 2-6L6G, 1-5U4G. SIZE: 15" x 10 3/4" x 7 3/4". WEIGHT: 30 lbs. AUDIOPHILE NET: \$249.50.

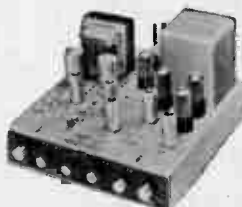
a team to bring every possible volume level without loss of frequency response. Seven inputs for radio, dynamic microphone, two magnetic pick-ups, crystal pick-up, tape recording, and aux. "Petite" no-glare pilot light. Outputs include a special jack for tape recording. Speaker output matches 8 or 16 ohm speakers. TUBES: (main chassis) 2-12AX7, 1-12AU7, 2-6L6G, 1-5U4G. (Remote control unit) 1-12AX7, 1-12AV6. WEIGHT: 33 pounds AUDIOPHILE NET: \$297.50.



#### MODEL R-7

Modernize present amplifiers with this remote controlled preamp which may be added to present equipment. Will operate as far as 50 feet from the hi-fi system. All controls necessary for operation

of equipment on the panel of this remote unit, which is only 33/4" x 37/8" x 9". Beautiful cabinet will complement the decor of any home setting. Frequency response  $\pm 1$  db at 10 to 30,000 cycles. Seven inputs including radio, dynamic microphone, two magnetic pick-ups, crystal pick-up, tape recorder, and auxiliary jack for TV. Tape output permits listening while recording. Panel controls include bass tone control, range -17 db to +20 db; treble tone control, range -20 db to +18 db; input and rumble filter selector; six position bass crossover selector; six position treble selector; level control; loudness control, "Petite" pilot light on front panel of remote unit. MAIN CHASSIS SIZE: 9" x 8" x 5 1/2". WEIGHT: 9 3/4 pounds complete. TUBES: 2-12AX7, 2-6AU6, 1-6X5GT. AUDIOPHILE NET: \$149.50.



#### MODEL 3-D12

Two-channel stereophonic amplifier, for use in reproducing either stereo or monaural programs from records, radio, or tape. Separate bass and treble controls in distortion-free circuitry provide for control of both channels simultaneously. Channel selector provides choice of stereo or "enhanced" monaural reproduction, reverses channels to put "violins"

on left, choice of channel A or B separately, base control range 0 to +18 db, treble control range -24 to +13 db. Fletcher-Munson compensated volume control for utmost low level realism. Response  $\pm 1$  db 20-20,000 cycles. Hum and noise 80 db below 12 watts. POWER OUTPUT: Each channel, 12 watts at less than 2%. 10 watts at less than 1%. Output impedance 8 and 16 ohms to speakers at each output strip. Inputs to both channels provide for crystal pickups, high level magnetics (.008 volts), low level magnetics (.025 volts), radio (1 volt), tape (1 volt). SIZE: 12 1/2" wide, 12 1/2" deep, and 7 3/8" high. WEIGHT: 19 lbs. AUDIOPHILE NET: \$179.50.

### 'D' SERIES



#### MODEL D-10

Fine quality, yet low in price. Less than 1% distortion at its 10 watt rated power output. Response is 20 to 20,000 cycles  $\pm 1$  db. Six position record crossover selector, for six basic recording curves.

Separate bass and treble tone controls in new "Interlocking" tone circuit. Built-in rumble filter. Tape recorder jack permits recording while listening. Built-in preamp for use of magnetic pick-up. SIX INPUTS INCLUDE: Radio, dynamic microphone, two magnetic pick-ups, crystal pick-up and tape recorder. Hum balance control maintains lowest hum. Hum is better than 75 db below 10 watts. Patented "adjusta-Panel" for easy installation. SIZE: 9" x 9" x 6". WEIGHT: 9 lbs. POWER CONSUMPTION: 60 watts. 117 volts, 60 cycles, A.C. only. TUBES: 1-6SC7, 1-12AX7, 2-6V6GT, 1-6AX5GT. AUDIOPHILE NET: \$69.50.



#### MODEL D-12

Here are quality features at an amazingly low price. Response of this 12 watt combination amplifier/preamp is 20 to 100,000 cycles with deviation less than  $\pm 1$  db between 20 and 20,000 cycles. Distortion at 12 watts is less than 1%. Separate dual range bass and treble tone controls. Bass control range -15 db to +18 db. Treble control range -18 to +16 db. Separate bass and treble crossover controls provide up to 36 different curves to precisely match any recording curve. Rumble filter may be cut in or out. Loudness control with special frequency compensation to correct for hearing losses at low volume. Hum balance control for magnetic pick-ups. Hum is better than 80 db below 12 watts. INPUTS INCLUDE: Radio, dynamic microphone, two magnetic pick-ups, crystal pick-up, and tape recorder jack permits monitoring programs being recorded. Patented Newcomb "Adjusta-Panel". Output impedances 8 and 16 ohms. SIZE: 10" x 10" x 6 3/4". POWER CONSUMPTION: 75 watts, 117 volts, 60 cycles. WEIGHT: 12 pounds. TUBES: 2-12AX7, 2-6V6GT, 1-5Y3. AUDIOPHILE NET: \$99.50.

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# NEWCOMB

AUDIO PRODUCTS CO. • HOLLYWOOD 38, CALIFORNIA

### COMPACT SERIES HIGH FIDELITY AMPLIFIERS

#### COMPACT 1010 AMPLIFIER



Complete 10 watt amplifier/preamp control unit only 3 1/4" high, 7 7/8" deep, and 9 1/4" wide. Response 20 to 20,000 cycles  $\pm 1$  db. Distortion below 1% at 10 watts. Panel controls include: (1) input and rumble filter selector; (2) bass control range -24 to +16 db; (3) recording curve selector providing a choice of 6 important curves;

(4) treble tone control range -27 to +14 db; (5) loudness control and power switch. Loudness compensation is removable by switch. INPUTS: Radio, microphone, 2 magnetic pick-up, crystal pick-up, and tape. "Output-to-tape" jack for recording while listening. Features removable etched panel and patented Newcomb "Adjusta-Panel" for easy installation in cabinetry where desired. Hum balance control. Hum is better than 75 db below 10 watts. Nonglare "Petite" pilot light. 8 and 16 ohm output impedances. TUBES: 2-12AX7, 2-6V6, 1-6AX5GT. WEIGHT: 8 1/2 pounds. AUDIOPHILE NET: \$89.50.

#### COMPACT 1012 AMPLIFIER



High performance 12 watt amplifier and preamp unit of unusually high gain. Only 4 1/2" high, 9 1/2" deep, and 12 1/2" wide. Response inherently good to 100,000 cycles, with performance well within the rating of  $\pm 1$  db at 20 to 20,000 cycles. Distortion less than 1% at 12 watts. Eight panel controls include: (1)

power switch; (2) 5-position input and rumble filter selector; (3) 6-position bass crossover selector; (4) 6-position treble rolloff selector; (5) bass tone control range -24 to +16 db; (6) treble tone control -27 to +16 db; (7) level control gives maximum effectiveness to loudness control compensation; (8) loudness control, frequency compensated. INPUTS: Radio, microphone, 2 magnetic pick-up; crystal pick-up, tape, and auxiliary. "Output-to-tape" for recording while listening. Features removable etched panel and patented Newcomb "Adjusta-Panel" for easy installation in cabinetry where desired. "Petite" Pilot light. Output 8 and 16 ohms. Hum balance control. Hum 80 db below 12 watts. TUBES: 2-12AX7, 1-6AU6, 2-6V6, 1-5Y3. WEIGHT: 15 1/2 pounds. AUDIOPHILE NET: \$129.50.

#### COMPACT 1020 AMPLIFIER



Combination amplifier/preamp rated at 20 watts. Engineered for the most critical of perfectionists, the design combines high power (20 watts at less than 1% distortion) with unusually low average level distortion (less than .05%). Response, inherently excellent to 100,000 cycles is within  $\pm 1$  db at 20 to 20,000 cycles.

Eight panel controls include: (1) power switch; (2) 5-position input and rumble filter selector; (3) 6-position bass crossover selector; (4) 6-position treble rolloff control; (5) bass tone control range -24 db to +16 db; (6) treble tone control range -27 db to +16 db; (7) level control gives maximum effectiveness to loudness control; (8) loudness control. INPUTS FOR: Radio, microphone, 2 magnetic pick-ups, crystal pick-up, tape, and auxiliary. "Output-to-tape" jack to permit recording while listening. Hum balance control. Hum 80 db below 20 watts. Features removable etched panel and patented Newcomb "Adjusta-Panel" for easy installation in cabinetry where desired. Output impedances 8 and 16 ohms. TUBES: 1-6AV6, 2-12AX7, 2-6L6GB, 1-5U4GA. WEIGHT: 20 1/2 pounds. AUDIOPHILE NET: \$159.50.

### COMPACT SERIES HIGH FIDELITY FM-AM TUNERS

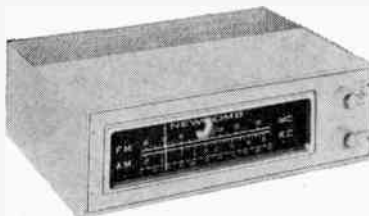
#### COMPACT 100 TUNER



An economical self-powered 2-knob FM-AM tuner of dependable high fidelity performance. For use with amplifier having its own controls. It features an important new multiplex output jack that makes it adaptable for reception of stereophonic or binaural broadcasts. Smooth fly-wheel tuning action.

Temperature controlled oscillators and snap-in automatic frequency control for FM with a defeat switch. Advanced FM detector system with double limiting action which, with other circuit advantages, decreases distortion at all modulation percentages, gives excellent adjacent channel rejection, and provides effective limiting on weak as well as strong signals. Output 2 volts at less than 1% distortion. Radiation far below minimum FCC requirements. OUTPUTS (3): One FM multiplex; one to amplifier; one to recorder. All high impedance. FM section sensitivity 5 microvolts for 30 db of quieting. Response  $\pm 1$  db 20 to 20,000 cycles. Accepts 72 or 300 ohm antennas. AM sensitivity is 25 microvolts. Bandwidth 8 KC. SIZE: 12 1/2" x 9" x 4 1/8". WEIGHT: 10 1/2 lbs. AUDIOPHILE NET: \$129.50.

#### COMPACT 200 TUNER



Deluxe 2-knob FM-AM tuner with fast-acting visual tuning eye for both FM and AM. For use with amplifier having its own controls. Superior reception even in poor signal areas. Special multiplex output jack makes it adaptable for reception of stereophonic or binaural broadcasts. Smooth acting fly-wheel tuning knob. Temperature-controlled oscillators. Snap-in auto-

matic frequency control (AFC) for FM with a defeat switch. New FM detector system with triple limiting action. Maximum output 10 volts. Audio response  $\pm 1/2$  db. 20 to 20,000 cycles. Distortion less than 2/10% at 5 volts. Hum is better than 75 db below 10 volts. Radiation far below minimum FCC requirements. OUTPUTS (3): One FM multiplex, one to amplifier, and one to tape recorder. Cathode follower allows placement up to 200 ft. from amplifier. FM section: RF stage. Sensitivity 2 microvolts for 30 db of quieting. Accepts 72 or 300 ohm antennas. AM sensitivity is 5 microvolts. Bandwidth 8 KC. SIZE: 12 1/2" x 9" x 4 1/8". WEIGHT: 11 lbs. AUDIOPHILE NET: \$169.50.

#### COMPACT 712 AMPLIFIER-TUNER



COMBINATION FM-AM tuner, 12-watt amplifier, preamp, and controls in one beautiful decorator-styled case. Edge-lighted tuning dial, velvety flywheel tuning. FM sensitivity exceeds 5 microvolts for 30 db of quieting. Radiation far below FCC requirements. Automatic frequency control (with defeat switch), temperature-

controlled oscillators for drift-free FM. Amplifier 20-20,000 cycles  $\pm 1$  db. Total harmonic distortion less than 1% at 12 watts. Multiplex level for FM multiplex reception. 6-position record response control. Level and loudness controls, 8-position program selector. Inputs for magnetic pickups, crystal, tape, and aux. Size 14 3/8" x 5 5/8" x 10". WEIGHT 20 lbs. AUDIOPHILE NET: \$249.50.

Specifications and prices subject to change without notice.

# Bogen FLEX-PAK® PUBLIC ADDRESS AMPLIFIERS,

## Features of the New FLEX-PAK® Amplifiers

A public address line that looks and operates like it was custom designed for your job. Combines superb performance, outstanding operating control and true portability. **The LX Series Features** (1) Exclusive Anti-Feedback Control minimizes acoustical feedback without compromising volume; (2) Built-in Remote Gain Control circuit for distances to 2000 ft.; (3) Plus all L Series Features: (1) Constant voltage output taps; (2) Exclusive Controlled Positive Feedback circuitry lowers distortion; (3) Power stage screen regulation for higher output, greater efficiency; (4) Special filters to improve speech clarity; (5) Equalized phono input for all cartridges; (6) Separate Bass and Treble controls;

(7) Plug-in sockets for low impedance transformers; (8) Quick maintenance: four thumbscrews remove cage, no tools needed; (9) Broadcast-type (Cannon XL Series) microphone connectors; (10) Pencil-in, erase-out identification strips for all channels; (11) Sturdy leather carrying handles; (12) Accessories available for completely flexible operation. See page 8 for a listing of FLEX-PAK accessories. **The K Series Features** (1) Separate Bass and Treble controls (Model K10 has the exclusive Select-Tone Control); (2) Sockets for plug-in, low impedance transformers; (3) Constant voltage output taps; (4) Controlled Positive Feedback circuit for low distortion on Models K130 and K1630.



### LX60 DELUXE 60-WATT AMPLIFIER

With exclusive anti-feedback control, built-in remote gain control circuit, four microphone channels (one converts to phono), plus other features listed above. **Power Output:** 60 watts at less than 2% distortion. **Peak Power:** 90 watts. **Frequency Response:** ±1.5 db, 20-20,000 cps. **Gain:** Microphone, 125 db; Tuner, 85 db; Crystal phono, 85 db; Magnetic phono, 110 db. **Hum:** (below rated output): Microphone and Magnetic phono -60 db. **Tone Controls:** Treble, +10 db to -15 db at 10,000 cps; Bass, +15 db to -15 db at 60 cps. **Output Impedances:** 4, 8, 16 and 83 ohms, balanced 25-volt line, 70-volt line. **Tubes:** (13) 4-6AV5GA; 3-5Y3GT; 1-6CM7; 2-6U8; 3-12AX7. **Overall Dimensions:** 16¼" wide, 13" deep, 5¾" high. **Shipping Weight:** 37 lbs.

Bogen Model LX60 Deluxe Amplifier—List Price..... \$259.50  
Zone 2: 266.16



### LX30 DELUXE 30-WATT AMPLIFIER

With exclusive anti-feedback control, built-in gain-control circuit, four microphone channels (one converts to phono), plus other features listed above. **Power Output:** 30 watts at less than 2% distortion. **Peak Power:** 45 watts. **Frequency Response:** ±1.5 db, 20 to 20,000 cps. **Gain:** Microphone, 130 db; Tuner, 85 db; Crystal phono, 80 db; Magnetic phono, 110 db. **Hum:** Microphone and Magnetic phono, -60 db below rated output. **Tone Controls:** Treble, +12 db to -12 db at 10,000 cps; Bass, +14 db to -14 db at 60 cps. **Output Impedances:** 4, 8, 16 and 163 ohms, balanced 25-volt line, 70-volt line. **Tubes:** (10) 2-5Y3GT; 3-12AX7; 2-6U8; 1-6CG7; 2-6AV5GA. **Overall Dimensions:** 16¼" wide, 13" deep, 5¾" high. **Shipping Weight:** 31 lbs.

Bogen Model LX30 Deluxe Amplifier—List Price..... \$209.50  
Zone 2: 215.10



### MODEL L60 60-WATT AMPLIFIER

With controlled positive feedback, three microphone channels (one converts to phono), and speech filters, as well as other features as listed at top of page. **Power Output:** 60 watts at less than 2% distortion. **Peak Power:** 90 watts. **Frequency Response:** ±2 db, 20 to 20,000 cps. **Gain:** Microphone, 120 db; Tuner, 80 db; Crystal phono, 80 db; Magnetic phono, 110 db. **Hum:** (below rated output), Microphone and Magnetic phono, -60 db. **Output Impedances:** 4, 8, 16 and 83 ohms, balanced 25-volt line, 70-volt line. **Tubes:** (12) 4-6AV5GA; 3-5Y3GT; 1-6U8; 2-12AX7; 1-6CM7; 1-6AU6. **Overall Dimensions:** 16¼" wide, 13" deep, 5¾" high. **Shipping Weight:** 37 lbs.

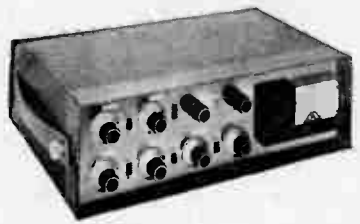
Bogen Model L60 Amplifier—List Price..... \$189.50  
Zone 2: 196.16



### MODEL L330 30-WATT AMPLIFIER

With controlled positive feedback, three microphone channels (one converts to phono) and speech filters, as well as other features as listed at top of page. **Power Output:** 30 watts at less than 2% distortion. **Peak Power:** 45 watts. **Frequency Response:** ±2 db, 20 to 20,000 cps. **Gain:** Microphone, 120 db; Tuner, 80 db; Crystal phono, 80 db; Magnetic phono, 110 db. **Hum:** Microphone and Magnetic phono, -60 db below rated output. **Output Impedances:** 4, 8, 16 and 163 ohms, balanced 25-volt line, 70-volt line. **Tubes:** (9) 2-6AV5GA; 2-5Y3GT; 2-12AX7; 1-6AU6; 1-6U8; 1-6CG7. **Overall Dimensions:** 14¼" wide, 13" deep, 5¾" high. **Shipping Weight:** 29 lbs.

Bogen Model L330 Amplifier—List Price..... \$149.50  
Zone 2: 154.70



### LOM PREAMPLIFIER CONTROL

With output level meter, five microphone channels (one converts to phono). **Output:** 30 milliwatts at less than 2% distortion; 6 milliwatts at less than 0.5% distortion. **Peak Power:** 45 milliwatts. **Frequency Response:** ±1 db, 20 to 20,000 cps. **Gain:** Microphone, 80 db; Tuner, 45 db; Crystal phono, 45 db; Magnetic phono, 65 db. **Hum:** Microphone and Phono, -60 db below rated output. **Tone Controls:** Treble, +10 db to -15 db at 10,000 cps; Bass, +12 db to -12 db at 60 cps. **Output Impedances:** High impedance (cathode follower)—600 ohms with T161 or T185 broadcast-quality accessory plug-in transformers. **Tubes:** (7) 1-6CG7; 1-6AU6; 3-12AX7; 1-6BF6; 1-6X4. **Overall Dimensions:** 16¼" wide, 13" deep, 5¾" high. **Shipping Weight:** 21 lbs.

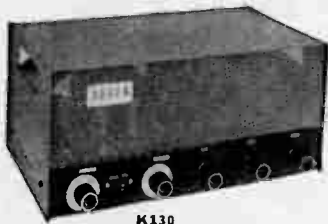
Bogen Model LOM Preamplifier Control—List Price..... \$177.50  
Zone 2: 181.28

(Schedule A)

**ZONE 2:** Includes the states of Arizona, California, Colorado, Idaho, Montana, Nevada, New Mexico, Oregon, Utah, Washington and Wyoming, and the following counties in West Texas: Brewster, Culberson, El Paso, Hudspeth, Jeff Davis, Pecos, Presidio, Reeves and Terrell.



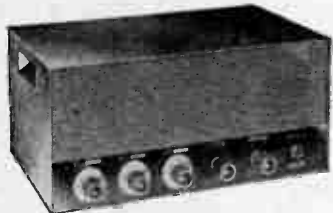
## PREAMPLIFIER, BOOSTER AND MOBILE AMPLIFIERS



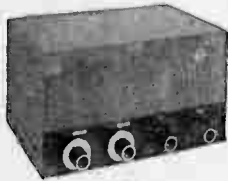
K130



K1630Y



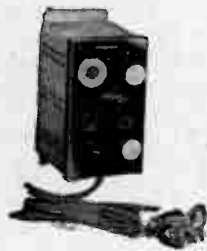
K15



K10



K0100, K060, K030



BT12

### K130 ECONOMICAL 30-WATT AMPLIFIER

With separate bass and treble controls, constant voltage output taps and socket for plug-in, low-impedance transformers. Controlled Positive Feedback circuit. One microphone input. **Power Output:** 30 watts at less than 2% distortion. **Peak Power:** 45 watts. **Frequency Response:** ± 2 db, 20 to 20,000 cps. **Gain:** Microphone, 120 db; Phono, 80 db. **Hum:** (below rated output) Microphone, -60 db; Phono, -70 db. **Output Impedances:** 4, 8, 16 and 163 ohms, balanced 25-volt line, 70-volt line. **Tubes:** (8) 2-6AV5GA; 2-5Y3GT; 1-6CG7; 1-6U8; 1-12AX7; 1-6AV6. **Overall Dimensions:** 14½" wide, 8½" deep, 6½" high. **Shipping Weight:** 30 lbs.

**Bogen Model K130 Amplifier—List Price.....\$119.50**  
Zone 2: 124.90

### K1630 UNIVERSAL 30-WATT AMPLIFIER

With controlled positive feedback. Universal operation from 6 or 12-volt DC or 117-volt AC. One phono, two microphone channels. **Power Output:** 30 watts at less than 2% distortion. **Peak Power:** 45 watts. **Frequency Response:** ± 2 db, 20 to 20,000 cps. **Gain:** Microphone, 120 db; Tuner, 80 db; Crystal Phono, 80 db. **Hum:** (Below rated output) Microphone, -60 db; Phono, -70 db. **Output Impedances:** 4, 8, 16 and 163 ohms, balanced 25-volt line, 70-volt line. **Tubes:** (9) 2-6AV5GA; 2-6AX5GT; 2-12AX7; 1-6AU6; 1-6CG7; 1-6U8. **Overall Dimensions:** 15½" wide, 10" deep, 8½" high. **Shipping Weight:** 30 lbs.

**Bogen Model K1630 Amplifier—List Price.....\$212.75**  
Zone 2: 218.75

**Bogen Model K1630Y Phono-Top Amplifier—Model K1630 Amplifier with manual three-speed phono top and Ronette crystal cartridge. List Price.....\$235.00**  
Zone 2: 242.00

### K15 ECONOMICAL 15-WATT AMPLIFIER

With separate bass and treble controls, constant voltage output taps, sockets for plug-in, low impedance transformers. Two microphone channels. **Power Output:** 15 watts at less than 2% distortion. **Peak Power:** 25 watts. **Frequency Response:** ± 2 db, 20 to 20,000 cps. **Gain:** Microphone, 125 db; Phono, 82 db. **Hum:** (Below rated output) Microphone, -55 db; Phono, -70 db. **Output Impedances:** 4, 8, 16, 42 and 326 ohms, balanced 25-volt line, 70-volt line. **Tubes:** (8) 2-6AV5GA; 1-6U8; 1-6CG7; 1-6U8; 1-6AV6; 1-6U8; 1-6U8; 1-6U8; 1-6U8. **Overall Dimensions:** 14½" wide, 8½" deep, 6½" high. **Shipping Weight:** 21 lbs.

**Bogen Model K15 Amplifier—List Price.....\$109.50**  
Zone 2: 113.28

### K10 ECONOMICAL 10-WATT AMPLIFIER

With five-position SelectTone tone control, constant voltage output taps, socket for plug-in, low impedance transformers. One microphone input. **Power Output:** 10 watts at less than 3% distortion. **Peak Power:** 15 watts. **Frequency Response:** ± 2 db, 20 to 20,000 cps. **Gain:** Microphone, 120 db; Phono, 70 db. **Hum:** (Below rated output) Microphone, -55 db; Phono, -65 db. **Tone Control:** SelectTone—Natural, Mellow, Bass, Deep Bass, Brilliant. **Output Impedances:** 4, 8, 16 and 500 ohms, 70-volt line. **Tubes:** (5) 2-6AQ5; 1-6BW4/EZ80; 1-12AX7; 1-6AU6. **Overall Dimensions:** 11" wide, 7½" deep, 6½" high. **Shipping Weight:** 15 lbs.

**Bogen Model K10 Amplifier—List Price.....\$75.00**  
Zone 2: 77.05

## NEW BOOSTER AMPLIFIERS

### K0100 100-WATT BOOSTER AMPLIFIER

With controlled positive feedback, provision for balanced low impedance line input, provision for remote control of stand-by operation. **Power Output:** 100 watts at less than 3% distortion. **Peak Power:** 150 watts. **Frequency Response:** ± 1 db, 20 to 20,000 cps. **Gain:** 71 db. **Hum:** -80 db below rated output. **Input:** (1) High impedance, ¼ megohm. With low impedance transformer (T161), 500 ohms. **Output Impedances:** 1.6, 6.25 and 49 ohms, balanced 25-volt line, 70-volt line. **Sensitivity:** High impedance, 1.7 volts; low impedance (with T161 transformer), 0.4 volt. **Tubes:** (6) 2-6CA7/EI34; 2-5R4GYA; 1-6U8; 1-EZ81. **Overall Dimensions:** 17½" wide, 6½" deep, 7¾" high. **Shipping Weight:** 31 lbs.

**Bogen Model K0100 Booster-Amplifier—List Price.....\$215.75**  
Zone 2: 221.33

### K060 60-WATT BOOSTER AMPLIFIER

With controlled positive feedback circuit, provision for balanced low impedance line input and provision for remote control of stand-by operation. **Power Output:** 60 watts at less than 2% distortion. **Peak Power:** 110 watts. **Frequency Response:** ± 1 db, 20 to 20,000 cps. **Gain:** 70 db. **Hum:** -80 db below rated output. **Input:** (1) High impedance, ½ megohm. With low impedance transformer (T161), 500 ohms. **Output Impedances:** 2.5, 10 and 82 ohms, balanced 25-volt line, 70-volt line. **Sensitivity:** High impedance, 2.1 volts; low impedance (with T161 transformer), 0.5 volt. **Tubes:** (5) 2-6CA7/EI34; 1-5U4GB; 1-6U8; 1-EZ81. **Overall Dimensions:** 17½" wide, 6½" deep, 7¾" high. **Shipping Weight:** 23 lbs.

**Bogen Model K060 Booster-Amplifier—List Price.....\$167.50**  
Zone 2: 171.64

### K030 30-WATT BOOSTER AMPLIFIER

With controlled positive feedback circuit, power stage screen regulation, provision for balanced low impedance line input. **Power Output:** 30 watts at less than 2% distortion. **Peak Power:** 45 watts. **Frequency Response:** ± 1 db, 20 to 20,000 cps. **Gain:** 67 db. **Hum:** -80 db below rated output. **Input:** (1) High impedance, ½ megohm. With low impedance transformer (T161), 500 ohms. **Output Impedances:** 4, 8, 16 and 163 ohms, balanced 25-volt line, 70-volt line. **Sensitivity:** High impedance, 1 volt; low impedance (with T161 transformer), 0.25 volt. **Tubes:** (5) 2-6AV5GA; 1-5U4GB; 1-6CG7; 1-6U8. **Overall Dimensions:** 17½" wide, 6½" deep, 7¾" high. **Shipping Weight:** 21 lbs.

**Bogen Model K030 Booster-Amplifier—List Price.....\$108.75**  
Zone 2: 112.53

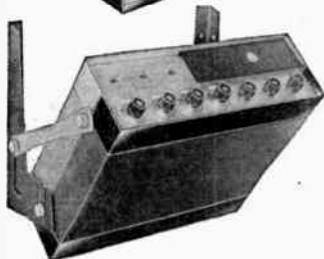
## MODEL BT12 MOBILE TRANSISTOR PA AMPLIFIER

A 4-watt mobile unit for 12-volt battery operation. No tubes or vibrator to replace; extremely low current drain. Mounts under dashboard or can be used in portable PA system with 12-volt dry cell. Hum-free. **Response:** Optimum speech. **Gain:** 100 db. **Impedance:** Input matches 200 and 500 ohm mikes directly; 8 ohm output. **Current Drain:** 50 ma. DC at 12 volts without signal; 550 ma. DC at 12 volts at rated output. **Controls:** Volume; Power On-Off. Includes mike connector, speaker socket, fuse, 6' battery cables and clamps. **Size:** 3¼" x 4¾" x 6¾". **Shipping Weight:** 6 lbs.

**Bogen Model BT12 Transistor Amplifier—List Price.....\$109.50**  
Zone 2: 110.40

(Schedule A)

# Bogen FLEX-PA® ACCESSORIES AND COMPLETE SOUND SYSTEMS



## LWM WALL-MOUNTING KIT

For all L and LX Series amplifiers. Keeps your equipment ready when you need it yet safely, neatly out of the way when not in use. Kit is complete with hardware, template and complete instructions. List Price..... \$12.50 (Zone 2: \$12.95)

## PHONOGRAPH TOPS FOR "L" SERIES AMPLIFIERS

Choice of two types of phono attachment kits for the L and LX Series, easily mounted atop the amplifier. Either can be ordered at any time.

**Model LPA-3**—Standard 3-speed manual kit for use with L330, complete with tone arm, Ronette turnover cartridge and mounting hardware. List Price. \$39.00

**Model LPB-3**—Same as LPA-3 for LX60, LX30, L60 and LOM. List Price. \$39.00

Either Model, Zone 2: 40.80

**Model LPA-4**—Deluxe 4-speed kit for L330 with variable speed control, tone arm, Ronette turnover cartridge and mounting hardware. List Price. \$62.50

**Model LPB-4**—Same as LPA-4 for LX60, LX30, L60 and LOM. List Price \$62.50

Either Model, Zone 2: 64.75

## FOR "K" SERIES AMPLIFIERS

Three-speed phono top with extended range Ronette turnover cartridge is available for Models K130, K1630 and K15.

Must be ordered at the same time as the amplifier, by adding "Y" to the Model No. For K1630Y add to List..... \$39.00

For K130Y or K15Y add to List. 30.00

## RACK PANEL MOUNTING AND KITS

Bogen offers both factory mounting and kits for rack installations. For Factory Mounting—On 19" rack panel, add suffix "R" to amplifier model number and add to List Price..... \$25.00

For K Amplifiers, add to list..... 24.25

Kits contain pre-cut and pre-drilled panel, hardware and mounting brackets. For L and LX amplifiers, add to List..... \$19.50

Zone 2: 21.00

For K amplifiers, add to List..... 14.85

Zone 2: 16.80

When ordering kits specify the Model No. of the amplifier that is to be mounted. For remote controllers, plug-in transformers, microphones, speakers, baffles and other accessories, see the complete Bogen public address catalog.



## CONTROL-GUARD LOCKING PLATE

Protect advance settings from tampering.

**Model LK-1**—For L330. List..... \$8.95

Zone 2: 7.40

**Model LK-2**—Other L and LX

Series. List..... \$7.50

Zone 2: 7.95

## FOR WALL-MOUNTED (WITH LWM)

**Model LK-3**—For L330 amp. List \$8.50

Zone 2: 8.95

**Model LK-4**—Other L and LX Series.

List..... \$9.50 (Zone 2: \$9.95)

## COMPLETE INDOOR, OUTDOOR AND PORTABLE PA SYSTEMS

NOTE: BOGEN NO. PRECEDING HYPHEN DENOTES SYSTEM AMPLIFIER

Bogen System No.	Type of System	Components Set No.*	Shpg. Wt., Lbs.	List Price		Bogen System No.	Type of System	Components Set No.*	Shpg. Wt., Lbs.	List Price	
				Zone 1	Zone 2					Zone 1	Zone 2
LX60-B	60-Watt Indoor	1	130	\$496.50	\$519.50	K130-B	30-Watt Indoor	10	64	\$211.00	\$222.50
LX60-TU	60-Watt Outdoor	2	125	\$31.75	\$54.75	K130-TU	30-Watt Outdoor	11	72	263.25	276.25
LX60-TJ	60-Watt Outdoor	3	125	509.25	533.55	K130-TJ	30-Watt Outdoor	12	72	263.25	276.25
LX30-B	30-Watt Indoor	4	80	345.50	359.90	K130-P	30-Watt Portable	15	64	223.00	234.00
LX30-TU	30-Watt Outdoor	5	100	400.25	417.25	K130Y-P	With Phono top	16	69	258.00	270.40
LX30-TJ	30-Watt Outdoor	6	100	388.25	407.25	K1630Y-B	30-Watt Indoor†	10	71	326.50	339.50
L60-B	60-Watt Indoor	7	120	421.25	442.85	K1630Y-TJ	30-Watt Outdoor†	13	66	320.00	332.00
L60-TU	60-Watt Outdoor	8	112	392.25	413.90	K1630Y-TU	30-Watt Outdoor†	14	66	320.00	332.00
L60-TJ	60-Watt Outdoor	9	112	434.50	456.10	K15-B	15-Watt Indoor	10	60	201.00	211.80
L330-B	30-Watt Indoor	10	64	241.00	252.50	K15-P	15-Watt Portable	15	60	213.00	223.80
L330-TU	30-Watt Outdoor	11	72	293.25	306.25	K15Y-P	With Phono top	16	65	248.00	259.70
L330-TJ	30-Watt Outdoor	12	72	293.25	306.25	K10-B	10-Watt Indoor	17	39	156.50	162.30
L330-P	30-Watt Portable	15	64	253.00	264.00	K10-P	10-Watt Portable	18	39	166.75	172.75
L330Y-P	With Phono top**	16	69	297.00	309.40						

\*\*3-speed manual phono top, Model LPA-3.

†K1630 Amplifier with phono top.

## \*TABLE OF SYSTEM COMPONENTS

### SYSTEM COMPONENTS SET NO. 1

Four Jensen P12P 12" Alnico V speakers (10 watts, 8 ohms impedance), each mounted in a walnut-finished 12" wall haffle (WA12), and supplied with 25' cable and plugs; one Bogen-American Microphone D4T high impedance dynamic microphone, complete with 10' cable, XL3-11 connector.

### SYSTEM COMPONENTS SET NO. 2

Three University LH Reflex Trumpets with SAHF Drivers (25 watts; 16 ohms impedance); same mike equipment as Set 1.

### SYSTEM COMPONENTS SET NO. 3

Three Jensen H240 Hypex® Projector Horns with D30 Drivers (30 watts; 16 ohms); same mike equipment as Set No. 1.

### SYSTEM COMPONENTS SET NO. 4

Same as Set No. 1 except only two speakers and baffles.

### SYSTEM COMPONENTS SET NO. 5

Same as Set No. 2 except with only two projectors and drivers.

### SYSTEM COMPONENTS SET NO. 6

Same as Set No. 3 except with only two projectors and drivers.

### SYSTEM COMPONENTS SET NO. 7

Same as Set No. 1 except with Bogen-E-V 927 crystal microphone.

### SYSTEM COMPONENTS SET NO. 8

Three University PH Trumpets with MA25 Drivers (25 watts; 15 ohms impedance); one Bogen-E-V 927 crystal microphone with 10' cable and XL3-11 connector.

### SYSTEM COMPONENTS SET NO. 9

Same as Set No. 3 except with Bogen-E-V 927 crystal microphone.

### SYSTEM COMPONENTS SET NO. 10

Two Jensen P12S 12" Alnico V speakers (10 watts; 8 ohms), mounted in WA12 walnut-finish wall baffles, each supplied with 25' cable and plugs; one Bogen-E-V Model 927 crystal microphone with 10' cable and XL3-11 connector.

### SYSTEM COMPONENTS SET NO. 11

Same as Set No. 8 except with only two projectors and drivers.

### SYSTEM COMPONENTS SET NO. 12

Two Jensen H200 Hypex® Projector Horns with D30 Drivers (30 watts; 16 ohms); same microphone equipment as Set No. 10.

### SYSTEM COMPONENTS SET NO. 13

Same as Set No. 12 except with only one projector and driver.

### SYSTEM COMPONENTS SET NO. 14

Same as Set No. 13 except with only one projector and driver.

### SYSTEM COMPONENTS SET NO. 15

Two Jensen P12S 12" Alnico V speakers (10 watts; 8 ohms) mounted with amplifier (no phono) in LK12 carrying case; two 25' cables with plugs; one Bogen-E-V 927 crystal microphone, 10' cable and XL3-11 connector.

### SYSTEM COMPONENTS SET NO. 16

Same as Set No. 15 except LK12 case replaces Model LK12, accommodates phono top.

### SYSTEM COMPONENTS SET NO. 17

Two Jensen P10S 10" Alnico V speakers (9 watts; 8 ohms) in BA12 walnut-finish wall baffles, each with 25' cable and plug; same microphone equipment that is used in Set No. 15.

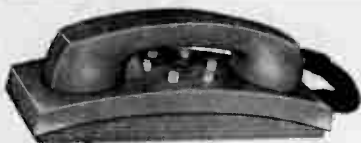
### SYSTEM COMPONENTS SET NO. 18

Same as Set No. 17 except CK10 Portable case replaces BA12 and also accommodates amplifier.

(Schedule A)

# Bogen - Phones

## INTERNAL TELEPHONE INTERCOM SYSTEMS



TP-6



TA-10



WALL-MOUNTED TA-15



TA-20



TA-30

Reach anyone you need, instantly, without leaving your desk, yet keep your outside telephone service free for incoming calls with an efficient Bogen-Phone intercom system. Bogen-Phones provide simple, push-button intercommunication that is ideal for office, plant, store or home. They save you time and energy, give you features like these: **Conference Calling**—To eliminate the usual conference delays, you can reach any number of people in your system while they are right at their desks with all their reference material handy; **Privacy**—Persons at your desk cannot overhear what is said to you, nor can other stations "listen in" to your office when your handset is not in use; **Direct Paging**—In larger systems, one line may be tied into a plant-wide paging system that puts all the personnel within the sound of your voice.

There are two types of Bogen-Phones. Models designated "TP" have **selective ringing** with a **common talk line**. (Allows only one conversation at a time.) They are handsomely styled in gray plastic, with a slim, modern design that takes very little room. Models designated by "TA" have **selective ringing** and **selective talking**. (Allows as many simultaneous conversations as there are pairs of Bogen-Phones in the system.) These models are molded of high impact black phenolic and fit in any surroundings. All Bogen-Phone handsets either incorporate provision for wall mounting or can be supplied with kit for conversion.

### TWO-STATION "TP" SYSTEM

A private line system between two parties. Ideal for store, home or executive use. Each handset has a push button that activates a buzzer on the other unit. Supplied ready for desk or for wall mounting. Handset Size:  $9\frac{1}{2}'' \times 3\frac{3}{4}'' \times 3\frac{3}{4}''$ . Supplied with 4' smart-proof cord. Uses power supply Model PRS-1. Shipping Weight: (pair), 9 lbs. **Bogen Model TP-1**—One-Button, two-station handset. Per Pair, List Price **\$49.95** Zone 2: **\$50.88**

### FOUR-STATION "TP" SYSTEM

Low cost, four party systems can be installed by using two of the Two Station Systems described above. Simple code ringing is required for any two-station conversations. Uses power supply Model PRS-1.

### SIX-STATION "TA" SYSTEM

Each handset in this system has five push buttons. The system serves up to six parties and allows up to **three simultaneous** conversations. Available with wall-mounting conversion kit. Handset Size:  $9\frac{1}{2}'' \times 10'' \times 5\frac{1}{2}''$ . Uses power supply Model PRS-2. Shipping Weight: 6 lbs. each. **Bogen Model TA-5**—Five-button, six-station handset. Each, List Price **\$93.33** Zone 2: **\$94.77**

### SEVEN-STATION "TP" SYSTEM

Relatively inexpensive seven party system with six push buttons on each handset. Common talk. Supplied ready for desk or wall mounting. Handset Size:  $9\frac{1}{2}'' \times 3\frac{3}{4}'' \times 3\frac{3}{4}''$ . Uses power supply Model PRS-1. Shipping Weight: 5 lbs. each. **Bogen Model TP-6**—Six-button, seven-station handset. Each, List Price **\$27.95** Zone 2: **\$28.35**

### ELEVEN-STATION "TA" SYSTEM

Ten push buttons on each handset provide a versatile range of intercommunication. Serves up to eleven parties, allowing up to five simultaneous conversations. Available with wall mounting conversion kit. Handset Size:  $9\frac{1}{2}'' \times 10'' \times 5\frac{1}{2}''$ . Uses power supply Model PRS-2. Shipping Weight: 7 lbs. each. **Bogen Model TA-10**—Ten-button, eleven-station handset. Each, List Price **\$114.66** Zone 2: **\$116.34**

### THIRTEEN-STATION "TP" SYSTEM

Economical telephone intercom system to serve up to thirteen stations. Each handset has twelve push buttons for selective ringing. Common talk line. Supplied ready for desk or for wall mounting. Handset Size:  $9\frac{1}{2}'' \times 3\frac{3}{4}'' \times 3\frac{3}{4}''$ . Uses power supply Model PRS-1. Shipping Weight: 5 lbs. each. **Bogen Model TP-12**—Twelve-button, thirteen-station handset. Each, List Price **\$29.95** Zone 2: **\$30.35**

### SIXTEEN-STATION "TA" SYSTEM

Enough lines to serve all the key people in a large office or small plant. Eight separate two-party conversations can be carried on simultaneously. Available with wall mounting conversion kit. Handset Size:  $9\frac{1}{2}'' \times 10'' \times 5\frac{1}{2}''$ . Uses power supply Model PRS-2. Shipping Weight: 7 lbs. each. **Bogen Model TA-15**—Fifteen-button, sixteen-station handset. Each, List Price **\$130.66** Zone 2: **\$132.34**

### TWENTY-ONE-STATION "TA" SYSTEM

Twenty push buttons on each handset with provision for ten simultaneous two-party conversations. Supplied ready for desk or for wall mounting. One button may be used to provide plant-wide paging right from your desk. Handset Size:  $10'' \times 9\frac{1}{4}'' \times 5''$ . Uses power supply Model PRS-2. Shipping Weight: 8 lbs. each. **Bogen Model TA-20**—Twenty-button, twenty-one-station handset. Each, List Price **\$157.33** Zone 2: **\$159.25**

### THIRTY-ONE-STATION "TA" SYSTEM

The ultimate in telephone intercom systems. Provides facilities for fifteen simultaneous, two-party conversations. Lets you contact virtually all key personnel instantly. Can be tied into an existing paging system. Supplied ready for desk or for wall mounting. Handset Size:  $10'' \times 9\frac{1}{4}'' \times 5''$ . Uses power supply Model PRS-2. Shipping Weight: 8 lbs. each. **Bogen Model TA-30**—Thirty-button, thirty-one-station handset. Each, List Price **\$181.33** Zone 2: **\$183.25**

### POWER SUPPLY UNITS

**Model PRS-1**—Serves all systems using TP handsets. (Only one is required for each complete system.) The power supply may be plugged into any standard electrical outlet and connected to any of the junction boxes in the system. (One junction box is provided as part of each complete handset.) Power drain is negligible when the system is inactive. Shipping Weight: 4 lbs. **Bogen Model PRS-1**—Power Supply for all TP systems. List Price **\$22.50** Zone 2: **\$22.80**

**Model PRS-2**—Serves all systems using TA handsets. (Only one is required for each complete system.) With slight adjustment this power supply will operate from 105, 115, 200, 220 or 240 volt outlets. Just plug it in and connect to any of the junction boxes. (One junction box is provided with each handset.) Power drain is negligible when system is inactive. Switch allows power to be shut off when system will be inactive for long periods. Shipping Weight: 16 lbs. **Bogen Model PRS-2**—Power Supply for all TA systems. List Price **\$86.67** Zone 2: **\$90.51**

### WALL MOUNTING CONVERSION KIT

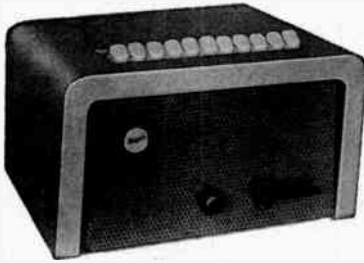
Model TWM provides all the necessary hardware and instructions for converting Model TA-5, TA-10 and TA-15 handsets to wall mounting. (Not required for other Bogen-Phone handsets.) **Bogen Model TWM**—Wall Mounting Conversion Kit. List Price **\$13.33** Zone 2: **\$13.81**

("TP" equipment, Schedule C3; "TA" equipment, Schedule C4)

# Bogen BASIC INTERCOMMUNICATION SYSTEMS

## COMMUNO-PHONE SYSTEMS

AVAILABLE IN TWO SERIES FOR ANY TYPE INSTALLATION.



X110A



RX3

## MUSIC MONITOR HOME RADIO-INTERCOM SYSTEM



MODEL R16 MASTER STATION



MODEL F2 REMOTE STATION



MODEL F3 REMOTE STATION

(Communo-Phones, Schedule A; Music Monitor, Schedule C2)

### COMMUNO-PHONE X AND C SERIES

Select your station, depress the talk-listen switch and talk. It's that easy to operate the Bogen Communo-Phones. To receive a reply, remove your finger from the switch. It automatically returns to the listen position. "X" systems incorporate discrete busy signal system. Remote stations are available as listed below. Models are housed in decorator-styled steel cabinets. Privacy within the system is a feature of both "X" and "C" masters and the addition of "UX2" or "UZ2" handset permits use of communo-phone privately, even while a visitor is present.

#### TYPE "X" DELUXE 117 V.—A/C SERIES

**Bogen Model X110A Master**—Will serve installations requiring single master, multiple remotes, all masters, or multiple masters and remotes. Ten selector push-buttons. 7-foot master cable terminating in spaced lug strip for quick solderless connection to junction box. List Price..... **\$116.00** (Zone 2: **\$118.25**)  
**Bogen Model X210A Master**—Same as X110A, but with 20 selector push-buttons. List Price..... **\$140.00** (Zone 2: **\$142.40**)  
**Bogen Model RX10 Remote**—With push-button break-in to ten masters, volume control and 7-foot master cable terminating in spaced lug strip for quick solderless connection to junction box. List Price..... **\$48.20** (Zone 2: **\$47.25**)  
**Bogen RX1 Remote**—With break-in switch to one master, volume control and 7-foot cable. List Price..... **\$25.30** (Zone 2: **\$25.75**)  
**Bogen RX3 Remote**—With break-in switch to three masters, volume control and 7-foot cable. List Price..... **\$28.80** (Zone 2: **\$29.05**)

#### TYPE "C" DUAL PURPOSE AC-DC SERIES

Models C110A and C210A will operate in systems requiring either a single master and several remote stations or several master stations only. Similar to "X" masters in most other respects.  
**Bogen Model C110A Master**—Similar to X110A. List..... **\$82.50** (Zone 2: **\$84.60**)  
**Bogen Model C210A Master**—Similar to X210A. List **\$105.00** (Zone 2: **\$107.25**)  
**Bogen RC1 Remote**—With break-in switch to one master and 7-foot cable. List Price..... **\$21.45** (Zone 2: **\$21.90**)  
**Bogen Model CCR**—Remote station in gray polystyrene—with flashing call switch. List Price..... **\$12.93** (Zone 2: **\$13.40**)

#### ACCESSORIES FOR "X" AND "C" SERIES

**Bogen Model "JU" Junction Box**—Will serve all series "X" and "C" installations X110A and C110A masters required only one junction box. X210A and C210A require two boxes. List Price..... **\$3.38** (Zone 2: **\$4.66**)  
**Bogen Model "UX2" Handset**—Plug-in handset and cradle for side of desk mounting. List Price..... **\$44.50** (Zone 2: **\$45.10**)  
**Bogen Model "UZ2" Handset**—Plug-in handset and cradle for mounting on "X" or "C" master stations. List Price..... **\$47.50** (Zone 2: **\$48.10**)

#### COMMUNO-PHONE CABLE

**Bogen Model 1401S**—One pair, twisted, stranded, unshielded. No braid. List per 100 ft..... **\$5.25** (Zone 2: **\$5.63**)  
**Bogen Model 1402S**—Two pair, each pair individually twisted, unshielded. List per 100 ft..... **\$11.15** (Zone 2: **\$11.75**)  
**Bogen Model 1403S**—Three pair, each pair individually twisted, unshielded. List per 100 ft..... **\$15.35** (Zone 2: **\$16.10**)  
**Bogen Model 1406S**—Six pair, each pair individually twisted, unshielded. List per 100 ft..... **\$26.25** (Zone 2: **\$27.30**)  
**Bogen Model 1411S**—Eleven pair, each pair individually twisted, unshielded. List per 100 ft..... **\$55.25** (Zone 2: **\$56.75**)

### MUSIC MONITOR RADIO-INTERCOM SYSTEM

The system consists of one Master Station, Model R16, and up to five remote stations, Model F2 or Model F3. Radio programs can be distributed to any or all stations by simple finger-tip selection at the master. The master can also call any combination of remote stations, receive replies from them, or monitor them. All stations are handsomely styled and finished in antique gold; mount flush in the wall. Wiring between R16 and F2 stations connects to screw terminals.

#### MODEL R16 MASTER STATION

This is the heart of the "Music-Monitor" system. Although usually installed in the kitchen, it may be placed in any room you desire. Incorporates the radio, power supply, amplifier and volume controls for the entire system; function and station selector switches. Has a pilot light that indicates when the system is "on". Function Selector switch allows you to select a radio program and then send it to whatever rooms you wish (Radio); have the radio on at the master while monitoring the other stations (Radio-Listen); use the set as an intercom (Listen, Talk). Controls: Radio Tuner; Radio Volume/Power On-Off; Intercom Volume; Function Selector (Radio, Radio-Listen, Listen, Talk); Six Station Selector (Remotes 1, 2, 3, 4, 5, and Master). Radio: Superhet AM; 530-1650 kc range. Speaker: Heavy duty, 3 1/2", 4-ohm. Power Output: 2 watts. Power Consumption: 35 watts at 117 volts, 60 cps. Tubes: 1-12BE6, 1-12BA6, 1-12AV6, 1-12AU6, 1-50C5, 1-35WA. Size: Front Panel, 15 1/2" w. x 4 1/4" h.; Box, 3 3/4" deep behind surface of wall. Weight: 7 1/2 lbs. net.  
**Bogen Model R16 Master Station**—List Price (Inc. F.E.T.)..... **\$79.95**  
 Zone 2: **\$81.00**

#### WIRING THE "MUSIC-MONITOR" SYSTEM

From R16 to each F2, run a 4-conductor cable (only 3 conductors required if either the monitor or call functions will not be needed at the F2; only 2 conductors needed if neither of these functions will be used). From R16 to each F3, run a 2-conductor cable.

#### MODEL F2 INDOOR REMOTE STATION

For use in all other rooms in which radio and intercommunication are desired. Has two controls: Function Selector (Monitor, for listening to some other remote being monitored by the master; Normal, for receiving calls from master without operating any other controls; Call, for originating calls), and Privacy Switch (Normal; Private, which disconnects the unit from the system). Speaker: Heavy duty, 3 1/2", 4-ohm. Size: Panel, 9 1/2" w. x 4 1/4" h.; Box, 2 1/2" deep behind wall surface. 2 lbs. net.  
**Bogen Model F2 Remote**—List Price (Inc. F.E.T.)..... **\$11.95**  
 Zone 2: **\$12.30**

#### MODEL F3 OUTDOOR REMOTE STATION

Weatherproofed outdoor remote station for use at entrances, on patios, in the garage or carport. Receives both radio and intercommunication from the master; can reply when called; can be monitored by the master and by indoor remotes. No controls. Speaker: Heavy duty, 3 1/2", 4-ohm. Size: Front Panel, 4 1/4" w. x 5 3/4" h.; Box, 1 1/2" deep behind wall surface. Weight: 1 1/2 lbs. net.  
**Bogen Model F3 Remote**—List Price (Inc. F.E.T.)..... **\$10.75** (Zone 2: **\$11.10**)

# FOR HOME, OFFICE AND INDUSTRIAL INSTALLATIONS,

## DELUXE HOME COMMUNO-PHONE

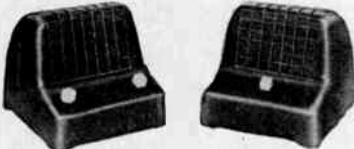


FC-1A

## BOGEN TWIN WIRELESS TWO-STATION SYSTEM



## CHALLENGER SYSTEMS



200 MASTER

REMOTE



MODEL 600 AND 1200 MASTER



U120

A new intercommunication system designed to simplify home management. Now, your home is tied together by your voice, without tedious walking, for efficient living.

### MODEL FC-1A CONTROL STATION

Mounts flush with the wall; designed for use inside the house in any room. Selector switch for calling five master and four remote stations. Size: Box, 5¼" x 6¼" x 3" deep; Front panel, 7¼" x 6" x ¼" deep. Bogen Model FC-1A Control Unit—List Price.....\$29.50 (Zone 2: \$30.10)

### MODEL FR-10 REMOTE STATION

Designed for use at front and rear doors, garage, etc., where privacy and selective origin of calls are not needed. Can be mounted flush in wall or door molding. Size: 5¼" x 1¼" x 1½" deep. Bogen Model FR-10 Remote Station—List Price.....\$14.50 (Zone 2: \$14.95)

### MODEL PS-1 POWER SUPPLY

The central source of power for the Home Communo-Phone System. Once turned on, it need never be touched! When the system is not in actual use, the power supply draws practically no current. Size: Box, 8" x 8" x 4"; front panel, 10" x 10". Bogen Model PS-1 Power Supply—List Price.....\$57.75 (Zone 2: \$59.40)

### MODEL LP-1A LUCITE CONTROL PANEL

All control markings etched in gold, permitting the plate to be mounted to the Control Station after the Station has been painted to match the decor of the room. Bogen Model LP-1A Lucite Panel—List Price.....\$3.25 (Zone 2: \$3.30)

### COMMUNO-PHONE CABLE

Bogen Model 1401S—One pair, twisted, stranded, unshielded. No braid. List per 100 ft.....\$5.25 (Zone 2: \$5.63)  
 Bogen Model 1402S—Two pair, each pair individually twisted, unshielded. List per 100 ft.....\$11.15 (Zone 2: \$11.75)  
 Bogen Model 1403S—Three pair, each pair individually twisted, unshielded. List per 100 ft.....\$15.35 (Zone 2: \$16.10)  
 Bogen Model 1406S—Six pair, each pair individually twisted, unshielded. List per 100 ft.....\$26.25 (Zone 2: \$27.30)  
 Bogen Model 1411S—Eleven pair, each pair individually twisted, unshielded. List per 100 ft.....\$55.25 (Zone 2: \$56.75)

### TWIN TWO-STATION WIRELESS SYSTEM

The Bogen Twin, a new two-station wireless system employing the power line and ground as the transmitting media, provides the most reliable and quiet wireless operation yet developed. Each station in the Twin contains a transmitter and receiver operating at 175 kc. Operation at this frequency minimizes the possibility of interference. Both stations automatically suppress line noise and thereby assure a unit which is free of noise and sound until it is in actual use. This circuit can be set for optimum performance by simple screw driver adjustment at the time of installation. The Bogen Silent Watchman is a most important feature of the new Twin. A convenient locking lever permits a station to be locked in "transmit" position for use in various applications where it is necessary to check noises and other sounds occurring in a given place.

For operation, simply plug each into a regular 117 volt AC or DC outlet, fasten the ground wire to the screw holding the power receptacle plate. Additional stations can be added to the system at any time (any number can be used).  
 Tubes: 2-50B5, 1-12AX7, 1 selenium rectifier. Power Output: 1.5 watts. Frequency: 175 kc. Power Consumption: 25 watts, 117 volts, AC-DC. Dimensions: 6" high, 6½" wide, 7½" deep. Shipping Weight 10 lbs. U/L Approved.  
 Bogen Model TWIN—Two-station system. List Price.....\$95.00 (Zone 2: \$96.50)  
 Bogen Model C-W-1—Additional station. List Price.....\$0.00 (Zone 2: \$50.95)

### MODEL 200

The Challenger "200" is a complete two-station system consisting of a master station, a remote station and 50' of cable. The stations are housed in sturdy, beautiful polystyrene cabinets. The master station is equipped with the amazing new "DUAL-DUTY" volume control. It permits you to keep the remote station "alive" so that all activity of announcements in the vicinity of the remote will be heard by you. You hold the conversation with the remote by operating your press-to-talk bar. By turning down the "DUAL-DUTY" volume control on the "200" master, you can silence the remote station. The operator of the remote calls you by operating his talk bar. This unusual versatility permits the "200" to serve practically every two-station intercom need. Challenger "200" System—Complete with 50 feet of cable. List Price...\$43.95 (Zone 2: \$45.30)

45-foot extension cable, complete with plugs. List Price.....\$3.85 (Zone 2: \$4.00)

### MODELS 600 AND 1200

Challenger 600 master is a dual purpose unit, which will operate in a system using a single master and up to five remote stations or in an all master system of six stations. Housed in a sturdy gray polystyrene cabinet. Incorporates volume control, bar type press-to-talk switch and 7-position selector switch. When used in a single master-multiple remote installation, the "mute" position silences the background noise at the remote stations. In this condition the remote can still initiate a call to the master. The "all" position permits a master station in either type system to call other stations simultaneously. Model 60R remote is housed in a matching polystyrene cabinet and is equipped with an initiating call bar. During conversation with the master, the remote does not operate any control.  
 System Type 1: One master and up to five remote stations. Master can call all remotes simultaneously. (Requires three-conductor cable between master and each remote.)  
 System Type 2: All master system. Capacity of six masters if each master must talk with every other master. (Otherwise more than six may be used.) Each master can call all others simultaneously.

Bogen Model 600 Master—List Price.....\$39.05 (Zone 2: \$39.95)  
 Bogen Model 60R Remote—List Price.....12.93 (Zone 2: \$13.40)  
 Bogen Model 1203S Cable—(For system type 1), 100 feet. List Price.....\$6.90 (Zone 2: \$7.15)  
 Bogen Model 1207S Cable—(For system type 2), 100 feet. List Price.....\$12.50 (Zone 2: \$12.95)  
 New Model 1200 master station similar in operation and appearance to Model 600 can call up to 11 other masters or remotes. No "all" position.  
 Bogen Model 1200 Master—List Price.....\$49.05 (Zone 2: \$49.95)  
 Bogen Model 1213S Cable—(For 1200 all master system), 100 feet. List Price.....\$27.00 (Zone 2: \$28.20)

### MODEL U120 MASTER

Economy model for installations requiring all masters or mixtures of masters and remotes. 45-ohm balanced line. AC-DC amplifier, 10-position rotary selector switch. 7" cable. List Price.....\$81.25 (Zone 2: \$82.60)  
 Bogen Model RS2 Remote—With break-in switch to one master. 7" cable. List Price.....\$21.25 (Zone 2: \$22.00)

(Schedule A)

# Challenger PUBLIC ADDRESS AMPLIFIERS by Bogen



CHA75



CHA33



CHA620Y



CHA20



CHA10



CO6  
CO12

## CHA75 75-WATT AMPLIFIER

A high-power public address amplifier that gives astonishing value. Features wide-range response; one phono and two mike inputs; individual controls for each microphone and for treble, bass and phono; advanced push-pull output circuit; exclusive Controlled Positive Feedback circuit; power stage screen voltage regulation for increased power output; fixed bias on power stage control grids; plug-in connector for speaker line; decorator styling. **Power Output:** 75 watts. **Response:**  $\pm 2$  db, 20-20,000 cps. **Inputs:** Two microphone, one phono. **Gain:** Microphone, 120 db; Phono, 76 db. **Hum and Noise:** Fundamental, -70 db below rated output; Microphone, -55 db and Phono, -70 db below rated output. **Tone Controls:** Bass, +12 db to -12 db at 60 cps; Treble, +6 db to -17 db at 10,000 cps. **Output Impedances:** 4, 8, 16 and 65 ohms; 70-volt and balanced 25-volt line. **Tubes:** (11) 4-6AV5GA; 3-5Y3GT; 1-6CM7; 1-6UN; 1-6AU6; 1-12AX7. **Power:** 117 volts, 60 cps. **Power Consumption:** 270 watts at full signal. **Dimensions:** 17 $\frac{1}{4}$ " wide, 12" deep, 6 $\frac{1}{2}$ " high. **Shipping Weight:** 43 lbs. **Bogen Model CHA75 Amplifier—With tubes and cage. List Price: . . . \$164.50**  
Zone 2: 172.25

## CHA33 33-WATT AMPLIFIER

Features wide-range response; two microphone inputs, individual controls for each microphone, and for treble, bass and phono. Separate boost/cut bass and treble tone controls; advanced design push-pull output circuit with negative feedback; rugged construction; plug-in connectors for speaker line; 70-volt line; decorator styling. **Power Output:** 33 watts. **Response:**  $\pm 2$  db, 30-15,000 cps. **Inputs:** Two microphone, one phono. **Gain:** Microphone, 120 db; Phono, 82 db. **Hum and Noise:** Fundamental, -75 db below rated output; Microphone -55 db and Phono -75 db below rated output. **Tone Controls:** Bass +12 db to -12 db at 60 cps; Treble +5 db to -17 db at 10,000 cps. **Output Impedances:** 4, 8, 16 and 148 ohms; 70-volt line. **Tubes:** (7) 2-6L6GB; 2-5Y3GT; 2-12AX7; 1-6AV6. **Power:** 117 volts, 60 cps. **Power Consumption:** 135 watts at full signal. **Dimensions:** CHA33, 14 $\frac{1}{2}$ " wide, 8 $\frac{1}{2}$ " deep, 6 $\frac{1}{2}$ " high; CHA33Y, 14 $\frac{1}{2}$ " wide, 8 $\frac{1}{2}$ " deep, 10 $\frac{1}{2}$ " high. **Shipping Weight:** CHA33, 27 lbs.; CHA33Y, 30 lbs.

**Bogen Model CHA33 Amplifier—With tubes and cage. List Price. . . . \$102.50**  
Zone 2: 107.35  
**Bogen Model CHA33Y Phono-Top Amplifier—With built-in three-speed phono top, Ronette turnover cartridge, tubes and cage. List Price. . . . \$132.50**  
Zone 2: 137.80

## CHA620 20-WATT UNIVERSAL MOBILE AMPLIFIER

Operates on 117 volts AC, 12 or 6 volts DC. Wide-range response, individual controls for microphone, treble, bass and phono. Separate boost/cut bass and treble controls; advanced design push-pull output circuit with negative feedback; built-in inverter provides 117 volts AC, 60 cps power to built-in or external phono for battery operation; rugged construction; plug-in connectors for speaker line; 70-volt line; decorator styling. **Power Output:** 20 watts. **Response:**  $\pm 2$  db, 30 to 15,000 cps. **Inputs:** One microphone, one phono. **Gain:** Microphone, 120 db; Phono, 76 db. **Hum and Noise:** Fundamental, -75 db below rated output; Microphone -55 db and Phono -75 db below rated output. **Tone Controls:** Bass, +12 db to -12 db at 60 cps; Treble, +8 db to -12 db at 10,000 cps. **Output Impedances:** 4, 8, 16 and 245 ohms; 70-volt line. **Tubes:** (5) 2-6V6GT; 1-6AX5GT; 2-12AX7. **Power:** 117 volts, 60 cps, 6 or 12 volts DC. **Power Consumption:** (at full signal), 80 watts at 117 volts; 88 watts with phono at 6 or 12 volts DC. **Dimensions:** CHA620, 15 $\frac{1}{2}$ " wide, 10" deep, 8 $\frac{1}{2}$ " high; CHA620Y, 15 $\frac{1}{2}$ " wide, 10" deep, 10 $\frac{1}{2}$ " high. **Shipping Weight:** CHA620, 25 lbs.; CHA620Y, 30 lbs. AC and DC cable supplied.

**Bogen Model CHA620 Amplifier—With tubes and cage. List Price. . . . \$158.00**  
Zone 2: 162.90  
**Bogen Model CHA620Y Amplifier With Phono Top—With tubes, cage, AC and DC cable, built-in three-speed phono top, Ronette turnover cartridge. List. . . \$180.25**  
Zone 2: 185.65

## CHA20 20-WATT AMPLIFIER

Wide-range response, individual controls for microphone, treble, bass and phono. Separate boost/cut bass and treble controls; advanced design push-pull output circuit with negative feedback; rugged construction; plug-in connectors for speaker line; 70-volt line; decorator styling. **Power Output:** 20 watts. **Response:**  $\pm 2$  db, 30 to 15,000 cps. **Inputs:** One microphone, one phono. **Gain:** Microphone, 120 db; Phono, 76 db. **Hum and Noise:** Fundamental, -75 db below rated output; Microphone, -55 db and Phono, -75 db below rated output. **Output Impedances:** 4, 8, 16 and 245 ohms; 70-volt line. **Tone Controls:** Bass, +12 db to -12 db at 60 cps; Treble, +8 db to -12 db at 10,000 cps. **Tubes:** (5) 2-6V6GT; 1-6AX5GT; 2-12AX7. **Power:** 117 volts AC. **Power Consumption:** 80 watts at full signal. **Dimensions:** CHA20, 14 $\frac{1}{2}$ " wide, 8 $\frac{1}{2}$ " deep, 6 $\frac{1}{2}$ " high; CHA20Y, 14 $\frac{1}{2}$ " wide, 8 $\frac{1}{2}$ " deep, 10 $\frac{1}{2}$ " high. **Shipping Weight:** CHA20, 20 lbs.; CHA20Y, 23 lbs.

**Bogen Model CHA20 Amplifier—With tubes and cage. List Price. . . . \$83.50**  
Zone 2: 87.10  
**Bogen Model CHA20Y Amplifier With Phono Top—With tubes, cage, built-in three-speed phono top, Ronette turnover cartridge. List Price. . . . \$113.50**  
Zone 2: 117.55

## CHA10 10-WATT AMPLIFIER

A champion for low-power applications. Wide-range response; SELECTONE for quick, easy tonal adjustment; individual controls for microphone, phono and tone. Advanced negative feedback circuit. Rugged construction, plug-in connectors, decorator styling. **Power Output:** 10 watts. **Response:**  $\pm 2$  db, 30 to 15,000 cps. **Inputs:** One microphone, one phono. **Gain:** Microphone, 115 db; Phono, 76 db. **Hum and Noise:** Fundamental, -70 db below rated output; Microphone, -55 db and Phono, -70 db below rated output. **Output Impedances:** 4, 8 and 16 ohms. **Tone Control:** Selectone—Deep Bass, Mellow, Crisp, Brilliant. **Tubes:** (4) 1-6L6GB; 1-6AU6; 1-6AV6; 1-6BW4. **Power:** 117 volts, 60 cps. **Power Consumption:** 70 watts at full signal. **Dimensions:** 11" wide, 7 $\frac{1}{2}$ " deep, 5 $\frac{1}{2}$ " high; with cage, 6 $\frac{1}{2}$ " high. **Shipping Weight:** 10 lbs.; with cage, 12 $\frac{1}{2}$  lbs.

**Bogen Model CHA10 Amplifier—With tubes, less cage. List Price. . . . \$57.50**  
Zone 2: 59.30  
**Bogen Model CAG10—Cage for CHA10 Amplifier. List Price. . . . 8.50**  
Zone 2: 7.05

## CD6 AND CD12 6-WATT AMPLIFIERS, 6 AND 12 VOLT OPERATION

CO6 operates from a six-volt battery, CD12 from a 12-volt battery. Universal mounting permits four alternate mounting positions. Remote control of "standby" reduces current drain. Vibrator replaceable from front without dismantling amplifier or removing cage. Complete chassis removable for service by removing four screws. Fused DC power cable built-in. Primary power circuit physically isolated from high gain circuit for minimum hum. **Power Output:** 6 watts. **Response:** Optimum speech. **Gain:** 109 db. **Output Impedances:** 4, 8 and 16 ohms. **Tubes:** (4) 2-6BF5; 1-6L6GA; 1-6X5GT. **Dimensions:** 3 $\frac{1}{4}$ " wide, 8" deep, 7" high. **Shipping Weight:** 8 lbs. With tubes, cage and DC cable.

**Bogen Model CO6 6-Volt Mobile Amplifier—List Price. . . . \$67.50**  
**Bogen Model CD12 12-Volt Mobile Amplifier—List Price. . . . 67.50**  
Zone 2: 68.90

(Schedule A)

# Challenger ACCESSORIES AND SOUND SYSTEMS



**RACK PANEL MOUNTING KITS**  
 For **CHA75 Amplifier**—19" x 8 3/4". With all hardware. Gray metallustre finish. List Price..... **\$14.85**  
 Zone 2: **16.80**  
 For **CHA33, CHA20 and CHA10 Amplifiers**—19" x 7". With all hardware. Gray metallustre finish. List Price... **\$14.85**  
 Zone 2: **16.60**

## PHONO TOPS

Phonograph tops are available with Models CHA33, CHA620 and CHA20 amplifiers as described on facing page. They must be ordered at the same time as the amplifier (add "Y" to Model No.). The phono top consists of a high quality three-speed phono with a Ronette turnover cartridge installed. Add \$30.00 to the list price of CHA33 and CHA20, \$22.25 to the list price of CHA620.



## MX6 MIXER-PREAMPLIFIER

Self-powered, provides four microphone and two radio-phonograph inputs; any four can be used at once for noiseless mixing and fading. **Output:** 6 volts. **Response:** 50-15,000 cps, ±2 db. **Gain:** Mike, 59 db; Phono, 30 db. **Hum Level:** -70 db below 6 volt input. **Output Impedance:** Less than 1000 ohms (cathode follower). **Controls:** Two mike volume, two mike or phono volume, On-Off. **Tubes:** 2-12AX7; 1-12AT7. **Size:** 8" x 4 3/4" x 6 1/4". **Power:** 10 w. 117 v. 60 cps. **Shipping Weight,** 6 lbs. **Bogen Model MX6—List Price \$60.00**  
 Zone 2: **\$60.90**

## SHOCK-MOUNTING BASE

A spring-loaded, shock isolating base for operating Models CHA620 and CHA620Y amplifiers in a car or truck. Prolongs life of components, prevents breakdown due to hard shocks and constant vibration.

**Bogen Model SV-3—List Price \$11.25**  
 Zone 2: **11.95**

## COMPLETE INDOOR, OUTDOOR AND PORTABLE PUBLIC ADDRESS SYSTEMS

Bogen System No.	Type of System	Uses Amplifier Model	Uses Microphone Model	Uses Speakers, Baffles, Horns, Drivers	List Price	
					Zone 1	Zone 2
CHA75B	75-watt Indoor	CHA75	Bogen—E-V Model 927 crystal microphone, stand, 10' cable, MC1F connector.	Four 12" Alnico V PM speakers, each with 25' cable and plug, mounted in 12" hand-finished walnut wall baffles.	\$280.50	\$296.70
CHA75T	75-watt Outdoor	CHA75	Bogen—E-V Model 927 crystal microphone with stand, 10' cable and MC1F connector.	Three University PH trumpets with MA25 driver units. (Additional trumpets and driver, List \$58.50. Zone 2: \$61.20).	357.00	375.00
CHA33P	33-watt Portable	CHA33	Bogen—E-V Model 927 crystal microphone with stand, 10' cable and MC1F connector.	Two 12" Alnico V PM speakers, each with 25' cable and plug, mounted in split, portable baffle which also carries the amplifier.	186.05	196.05
CHA33YP	Phono	CHA33Y	Same as CHA33P.	Same as CHA33P, except larger carrying case.	216.05	226.67
CHA33B	33-watt Indoor	CHA33	Bogen—E-V Model 927 crystal microphone, stand, 10' cable, MC1F connector.	Two 12" Alnico V PM speakers, each with 25' cable and plug, mounted in 12" hand-finished walnut wall baffles.	171.75	181.40
CHA33YB	Phono	CHA33Y	Same as CHA33B.	Same as CHA33B.	201.75	211.60
CHA33T	33-watt Outdoor	CHA33	Bogen—E-V Model 927 crystal microphone with stand, 10' cable, MC1F connector.	One University PH trumpet with MA25 driver unit. (Additional trumpets with driver, List Price \$58.50. Zone 2: \$61.20).	177.95	186.45
CHA33YT	Phono	CHA33Y	Same as CHA33T.	Same as CHA33T.	207.95	216.95
CHA620T	20-watt Universal	CHA620	Bogen—E-V Model 927 Crystal microphone with stand, 10' cable and MC1F connector.	One University PH trumpet with MA25 driver unit.	233.55	242.05
CHA620YT	Phono	CHA620Y	Same as CHA620T.	Same as CHA620T.	255.80	264.80
CHA20P	20-watt Portable	CHA20	Bogen—E-V Model 927 crystal microphone with stand, 10' cable and MC1F connector.	Two 12" Alnico V PM speakers, each with 25' cable and plug, mounted in split portable baffle which also carries amplifier.	168.00	177.00
CHA20YP	Phono	CHA20Y	Same as CHA20P.	Same as CHA20P except larger carrying case.	198.00	207.45
CHA20B	20-watt Indoor	CHA20	Bogen—E-V Model 927 crystal microphone with stand, 10' cable and MC1F connector.	Two 12" Alnico V PM speakers, each with 25' cable and plug, mounted in hand-finished walnut wall baffles.	153.50	161.40
CHA20YB	Phono	CHA20Y	Same as CHA20B.	Same as CHA20B.	183.50	191.90
CHA10S	10-watt 1-spr. Portable	CHA10	Bogen—E-V Model 927 crystal microphone with stand, 10' cable and MC1F connector.	One 8" Alnico PM speaker mounted in portable carrying case.	101.50	106.55
CHA10P	10-watt 2-spr. Portable	CHA10	Bogen—E-V Model 927 crystal microphone with stand, 10' cable and MC1F connector.	Two 10" Alnico PM speakers, each with 25' cable and plug, mounted in split portable carrying case.	137.25	143.75
CD6U	6-volt, 6-watt Mobile	CD6	Bogen—E-V Model 927 crystal microphone with stand, 10' cable and MC1F connector.	One University 1B8 trumpet. (Additional trumpets available, List Price \$33.50. Zone 2: \$34.40).	117.35	120.85
CD12U	12-volt	CD12	Same as CD6U.	Same as CD6U.	117.95	120.85

## BOGEN BAFFLES AND CARRYING CASES

Bogen baffles and cases are acoustically designed by audio engineers and built by experienced wood craftsmen. Bogen products have earned a reputation for high performance and beautiful styling. Each model has been engineered and built to complement—not simply to house—the speaker. All baffles are constructed of selected woods and veneers, strongly reinforced throughout. Hardware for hanging is supplied with each baffle. Bogen "W" Series Baffles are moderately priced and available in walnut, natural or blonde finish at slightly higher prices. Bogen Deluxe Baffles are longer and heavier than the standard enclosures. Reinforced throughout. Raised grille bars. Hand-rubbed finish in either walnut, natural or blonde.

Bogen Model	Description	Houses	List Price	
			Zone 1	Zone 2
WA6	Standard Wall Baffle, Walnut finish	6" speaker	\$ 5.50	\$ 5.65
WA8	Standard Wall Baffle, Walnut finish	8" speaker	6.90	7.25
WA12	Heavy Duty Wall Baffle, Walnut finish	12" speaker	13.75	14.65
BA12	Standard Wall Baffle, Walnut finish	12" speaker	10.25	10.85
BX4	Deluxe Wall Baffle, Walnut finish	8" speaker	9.38	9.75
BX12	Deluxe Wall Baffle, Walnut finish	12" speaker	18.75	20.00
BF8	BI-Face 8" Reflex Cabinet	8" speaker	16.25	17.20
BR8	Utility 8" Bass Reflex Cabinet	8" speaker	27.50	30.05
BR12	Utility 12" Bass Reflex Cabinet	12" speaker	40.00	44.80
BR15	Utility 15" Bass Reflex Cabinet	15" speaker	45.00	50.05
240	Deluxe Portable Dual 12" Speaker Case	Two 12" speakers	43.25	49.25
CK10	Carrying Case, for amp. and 2-10" spkrs.	K10 or CHA10 amplifiers	30.00	35.50
CK10S	CK10 with speakers, cables and plugs	Amplifier not included	66.00	69.00
LK12	Carrying Case, for amp. and 2-12" spkrs.	L330, K130, K15, CHA20, CHA33	37.50	41.10
LK12S	LK12 with speakers, cables and plugs	Amplifier not included	76.50	81.00
LKP12	Same as LK12 except for L330Y, K130Y, K15Y, CHA20Y, CHA33Y		42.50	46.50
BM8	Metal Wall Baffle	8" speaker	81.50	86.30
EC8	Corner Wall Baffle	8" speakers	7.25	8.90
EC12	Corner Wall Baffle	12" speakers	13.75	15.05
			14.75	16.05

(Schedule A)

# HIGH FIDELITY by

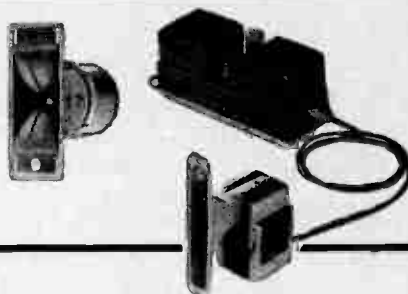
# Electro-Voice®

There is no finer choice than Electro-Voice component high fidelity . . . for here is music faithfully recreated in iridescent brilliance . . . every tantalizing nuance of mood, meaning and tone. But there's more here than superlative sound.

The flexibility inherent in the design of E-V custom components complements your musical taste, pleases your budget, integrates with the decor of your home concert hall.

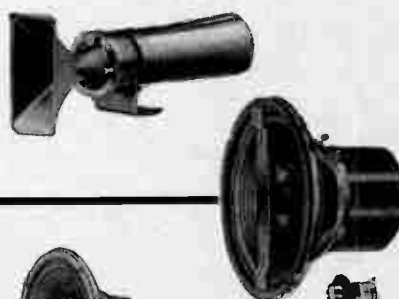
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**New!** Ultra-Sonax and Super-Sonax VHF drivers with Avedon Sonophase throat design for cleaner, extended highs . . . and Ionovac, the revolutionary ionized air tweeter, distortion free to beyond 40 kc.



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**New!** Unique mid-range assemblies with coaxial drivers. Single diaphragm, open on either side, propagates mid-bass through an exponential horn . . . treble range is dispersed to the front through a diffraction horn.



---

**New!** Improved integrated 3-way loudspeaker systems use efficient extended-range Super-Sonax VHF drivers and E-V® Radax principle for exceptional reproduction in one compact assembly.



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**New!** Phase-Loaded enclosures combine high style and functional design with new advances in enclosure acoustics. Matching equipment consoles provide a convenient and attractive addition to your music center.



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**And . . . amplifiers, preamps, fm-am tuners, drivers, multi-way systems, do-it-yourself kits**

*See your E-V high-fidelity distributor or write for descriptive literature.*

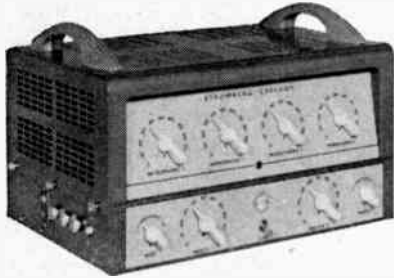
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## ELECTRO-VOICE, INCORPORATED B U C H A N A N , M I C H I G A N



# AMPLIFIERS

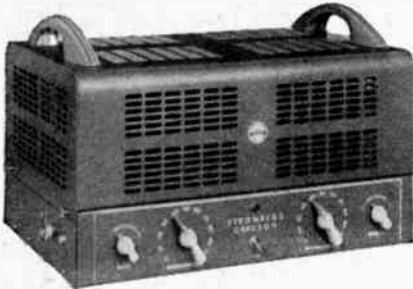
Audio perfection depends on the careful selection of the right amplifier for the job. The wide range of types, plus unsurpassed quality, dependability and economy of Stromberg-Carlson amplifiers assures the finest in audio.



## MODEL AU-35

POWER OUTPUT: 50 watts, 25 watts each output channel with less than 5% total harmonic content. FREQUENCY RESPONSE: 50 to 12,000 cps.  $\pm 0$  —3 db. OUTPUT REGULATION: Less than 5 db voltage variation from no load to full load. POWER GAIN: 118 db from 40,000 ohm micro. source; 93 db from 100,000 ohm phono. source. OUTPUT TAPS: 4, 8, 15, 250 and 500 ohms. CONTROLS: 3 micro.; 1 phono; 1 treble attenuator, 1 bass attenuator; 2 volume; on-off switch. POWER SUPPLY: 105-125 V, 50-60 cps, 250 watts. INPUTS: 3 microphone; 1 phonograph (high impedance). WEIGHT: Net 41 lbs. Shipping 50 lbs. SIZE: W—16", D—12"; H—11" (plus knobs and connectors).  
Listed under Re-examination service of Underwriter's Laboratories, Inc.

LIST PRICE: \$275.00



## MODEL AU-36B

POWER OUTPUT: 50 watts, less than 5% total harmonic content. FREQUENCY RESPONSE: 50 to 12,000 cps.  $\pm 0$  —3 db. OUTPUT REGULATION: Less than 3 db voltage variation from no load to full load. POWER GAIN: 125 db from 1 megohm micro source; 117 db from 40,000 ohm micro source; .005 volt input microphone sensitivity; .2 volt input phono sensitivity. OUTPUT TAPS: 4, 8, 16 ohms. CONTROLS: 1 micro; 1 phono; bass attenuator; treble attenuator; on-off. POWER SUPPLY: 105-125 V, 50-60 cps at 245 watts. INPUTS: 1 micro, 1 phono (high impedance). WEIGHT: Net 35 lbs. Shipping 44 lbs. SIZE: W—16"; D—12"; H—11" (plus knobs and connectors).  
Listed under Re-examination service of Underwriter's Laboratories, Inc.

LIST PRICE: \$230.00

## MODEL AV-38 PREAMPLIFIER

POWER OUTPUT:  $\pm 18$  dbm (63 mw) less than 2% harmonic content. FREQUENCY RESPONSE: 60—20,000 cps  $\pm 0$  —3 db. OUTPUT REGULATION: 6 db from no load to full load. POWER GAIN: 86 db from 38 ohm micro source. Sensitivity 121 microvolts on micro input; high-gain phono .075 v.; low-gain phono .8 v. OUTPUT TAPS: 600 ohms, center-tapped at 150 ohms. POWER SUPPLY: 40 watts; 105-125 v.; 50—60 cps. INPUTS: 3 low imp. micro. (30-50 ohms, convert to 150-500 ohms); 1 phono—high-gain input (not equalized) low-gain input (equalized for crystal pickup). CONTROLS: 3 micro. gain; phono. gain; phono. bass ( $\pm 10$  db to —5 db at 90 cps); micro. bass (0 db to —17 db, 50 cps); treble (0 db to —17 db at 10,000 cps on micro input, 0 db to —34 db on phono); on-off switch; meter range switch (0 db = 1.945 v,  $\pm 8$  dbm or 0 db = 6.15 v,  $\pm 18$  dbm). WEIGHT: 18 lbs. net, 22 lbs. shipping. SIZE: 13½" W, 11" D, 10½" H including knobs.

LIST PRICE: \$350.00

Listed under Re-examination service of Underwriter's Laboratories, Inc.



## MODEL AM-48, AM-49 — Mobile Amplifiers

POWER OUTPUT: 6 watts. Less than 5% total harmonic content. FREQUENCY RESPONSE: 100 to 10,000 cps.  $\pm 0$  —2 db. POWER GAIN: 100 db from 40,000 ohm micro; 67 db from 100,000 ohm phono. OUTPUT TAPS: 4, 8, 16 ohms. POWER SUPPLY: Model AM-48, 5.5 to 8 volts dc; 7 amps at 6.6 v.; Model AM-49, 11 to 16 v. dc; 3.5 amps at 13.2 v. INPUTS: 1 micro., 1 phono. (high impedance). CONTROLS: 1 micro. volume and combined power switch. WEIGHT: 7 lbs. net, 8 lbs. shipping. SIZE: 4½" W, 7¼" H, 5½" D (add ½" for bracket).

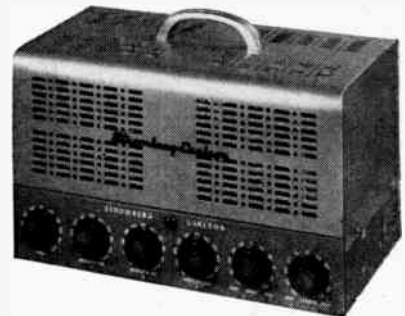
LIST PRICE: AM-48 — \$95.00

LIST PRICE: AM-49 — \$110.00

## MODEL AU-57

POWER OUTPUT: 25 watts, less than 3% total harmonic content. 48 watts peak. FREQUENCY RESPONSE: 20-20,000 cps  $\pm 2$  db; 30-15,000 cps  $\pm 0$  —1.5 db. OUTPUT REGULATION: Less than 3 db voltage variation from no load to full load. POWER GAIN: 121 db from 1 megohm micro; 109 db from 40,000 ohm. Equal to .005 volts sensitivity for rated output. OUTPUT TAPS: 4, 8, 16 ohms. 25 volts (25 ohms); 70 v. (200 ohms) 12.5 v. (25 volt center-tap); 35 v. (70 volt center-tap). CONTROLS: Micro or phono; 3 remote micros; variable treble boost and roll-off; variable bass boost and roll-off. Power switch on treble control. POWER SUPPLY: 105-125 v., 50-60 cps at 150 watts. INPUTS: 4 micro; or 3 micro and 1 phono or tuner or recorder or similar source with slotted shaft switch. WEIGHT: 25 lbs. net; shipping 29 lbs. SIZE: W—14"; D—8"; H—10" (plus knobs and connectors). Panel Kit for 19" Rack available. Listed under Re-examination service of Underwriter's Laboratories, Inc.  
Remote volume control facilities included for all inputs.

LIST PRICE: \$225.00



**STROMBERG-CARLSON, Division of General Dynamics, Electronics Center, Rochester, N. Y.**



◆ **MODEL AU-58B**

**POWER OUTPUT:** 25 watts. Less than 3% total harmonic content. **FREQUENCY RESPONSE:** 20 to 20,000 cps  $\pm 2$  db; 30 to 15,000 cps  $\pm 2$  db. **OUTPUT REGULATION:** Less than 3 db voltage variation from no load to full load. **POWER GAIN:** 121 db from 1 megohm micro source; 109 db from 40,000 ohm source; .005 volt sensitivity for rated output; crystal input sensitivity .3 volt; magnetic input sensitivity .01 volt. **OUTPUT TAPS:** 4, 8, 16 ohms; 25 V (25 ohms); 70 V (200 ohms); 12.5 V (25 V Center Tap); 35 V (70 Volt Center Tap). **CONTROLS:** Micro; Input (Micro or Phono); Treble continuously variable to 15 db cut at 10,000 cps; Bass (continuously variable to 15 db cut at 50 cps; On-Off on Treble). **POWER SUPPLY:** 105-125 V, 50-60 cps at 130 watts. **INPUTS:** Two High Imp. Micro; or 1 Micro and Reluctance Phono or Crystal Phono, Radio Tuner, Tape Recorder or Similar Source with slotted shaft switch. **WEIGHT:** 25 lbs. net; 29 lbs. shipping. **SIZE:** W—14"; D—8"; H—10" (plus 1" front, 3" slide, 2" back for knobs and connectors). Panel Kit for 19" Rack available. Listed under Re-examination service of Underwriter's Laboratories, Inc.

LIST PRICE: \$175.00

**MODEL AU-62 — High-Gain Audio-Frequency Amplifier**

**POWER OUTPUT:** Peak 13 watts; rated 8 watts. **POWER GAIN:** Micro input impedance 2.8 megohms requires less than 10 millivolts for rated output. Phono input impedance .5 megohms requires less than .5 V for rated output. **OUTPUT TAPS:** 4, 8, 16 ohms. **POWER SUPPLY:** 105-125 V; 50-60 cps; 60 watts. **INPUTS:** Two, 1 high imp. micro; 1 crystal or ceramic phono pickup. **CONTROLS:** Separate volume control for each input. Variable tone; —18 db at 10,000 cps. **WEIGHT:** 9 lbs.; **SIZE:** W—11"; D—8"; H—6".

LIST PRICE: \$59.00



**MODEL AU-63 — High-Gain Audio-Frequency Amplifier**

**POWER OUTPUT:** Peak 24 watts, Rated 16 watts. **POWER GAIN:** Micro input impedance 2.8 megohms requires less than 6 millivolts for rated output. Phono input impedance of .5 megohms requires less than .4 V for rated output. **OUTPUT TAPS:** 4, 8, 16 ohms, 70 V. **POWER SUPPLY:** 105-125 V; 50-60 cps; 80 watts. **INPUTS:** Two; 1 high imp. micro; 1 crystal or ceramic phono pickup. **CONTROLS:** Separate volume control for each input. Variable Tone —18 db at 10,000 cps.; **WEIGHT:** 11 lbs.; **SIZE:** W—13"; D—8"; H—6".

LIST PRICE: \$82.00



**MODEL AU-64 — High-Gain Audio-Frequency Amplifier**

**POWER OUTPUT:** Peak 42 watts, Rated 30 watts. **POWER GAIN:** Micro input impedance 2.8 megohms requires less than 5 millivolts for rated output. Phono input impedance .5 megohms requires less than .4 V for rated output. **OUTPUT TAPS:** 4, 8, 16 ohms, 70 V. **POWER SUPPLY:** 105-125 V; 50-60 cps; 110 watts. **INPUTS:** Three; 2 high impedance Micro; 1 crystal or ceramic phono. **CONTROLS:** Separate volume for each input. Variable tone (—18 db at 10,000 cps.) **WEIGHT:** 16 lbs.; **Size:** W—16"; D—9½"; H—6".

LIST PRICE: \$110.00



**MODEL PR-5—Phono Top**

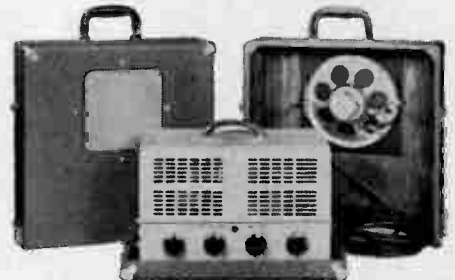
This top cover with 3-speed record player is available for the AU-63, AU-64, AU-65 Amplifiers.

LIST PRICE: \$43.75

**MODEL PC-17—Portable Case**

Equipped with 2 high-quality 8" speakers, 25 feet heavy-duty cable, and plugs wired to each speaker. Takes any amplifier not over 14" wide by 8" deep. Drilled to permit fastening AU-57 or AU-58 amplifier. Fabrikoid finish.

LIST PRICE: \$85.00



**STROMBERG-CARLSON, Division of General Dynamics, Electronics Center, Rochester, N. Y.**

# MASTER COMPONENT ASSEMBLIES

## ECONOMYMASTER I

Ideal for indoor use. The proper matching of the quality components used in assembling Economymaster I assures peak performance at low cost. These budget-priced, hard-working units will combine to serve many purposes with remarkable efficiency.

LIST PRICE \$106.00

- AU-62 — 8 watt Amplifier
- Phono Input Jack
- MCX-55 Crystal Microphone
- MS-42 — Microphone Stand
- RH-28 D-Speaker Housing in Desert Sand
- RC-27\* — High quality 8" Speaker

\* Four speakers may be employed without line-matching transformers. Up to twenty speakers with line-matching transformers.



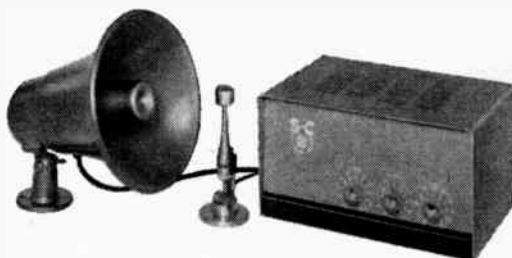
## ECONOMYMASTER II

For outdoor application, you will find Economymaster II an unbeatable matching of quality components in its price range. Its versatility and performance characteristics make this low cost, highly dependable ensemble worth many times the original cost. The Economymasters II features:

LIST PRICE \$116.00

- AU-62 — 8 watt Amplifier
- Phono Input Jack
- MCX-55 Crystal Microphone
- MS-42 — Microphone Stand
- RS-14\* — Weatherproof Re-entrant Loudspeaker with Built-in Driver Unit

\* Four speakers may be employed without line-matching transformers. Up to twenty speakers with line-matching transformers.



## MOBILMASTER

Truly mobile outdoor equipment which will provide excellent coverage over an extended area. The Mobilmaster will serve innumerable purposes with unmatched efficiency. Its rugged durability, flexibility and performance make the Mobilmaster outstanding in its field.

LIST PRICE: \$174.00

- AM-48\*\* — 6 watt Amplifier. Operates from 6 volt storage battery. The AM-49 Amplifier operates from a 12 volt storage battery.
- MD-33C Close-talking dynamic microphone
- Phono Input
- RS-14\* — 12 watt, Weatherproof Outdoor Loudspeaker with Built-in Driver Unit

\* Additional RS-14 Speakers may be used.

\*\* Specify 6 volt or 12 volt operation.



## WORKMASTER I

The Workmaster I is ideally suited for any number of indoor applications. Featuring the perfect matching of highest quality components, the Workmaster I will give years of dependable, highly efficient service. True to its name, it will prove the master of any task assigned to it. The Workmaster I includes:

LIST PRICE: \$154.00

- AU-63—16 Watt Amplifier
- Phonograph Input
- MCX-55 Crystal Microphone
- MS-42 — Microphone Stand
- RC-27\* — Two High Quality 10 Watt 8" Speakers
- RH-28D — Two Speaker Housings with Desert Sand finish

\* Will handle up to four RC-27 Speakers without Line-matching transformers. Up to 40 speakers with line-matching transformers.



**STROMBERG-CARLSON, Division of General Dynamics, Electronics Center, Rochester, N. Y.**

**For indoor and outdoor applications, these systems are the ideal choice. Proper matching of components assures peak performance and long life — at low cost — when you specify component assemblies by Stromberg-Carlson.**

#### WORKMASTER II

The careful combining of just the right high-quality components assures you that the Workmaster II will master any of the many outdoor duties assigned to it. The quality construction of the components, the rugged dependability and outstanding performance of the Workmaster II make it an indispensable asset.

LIST PRICE: \$174.00

- AU-63 — Powerful 16 watt Amplifier
- Phonograph Input
- MCX-55 Crystal Microphone
- MS-42 Microphone Stand
- RS-14\* — Two 12 watt, Weatherproof Re-entrant Loudspeakers with Built-in Driver Units

\* Handles up to 4 speakers without line-matching transformers. Up to 40 speakers with line-matching transformers.



#### BROADCASTER

Designed for true Full Fidelity indoor performance, the Broadcaster offers superior audio reproduction in the finest Stromberg-Carlson tradition. The careful matching of quality components gives the exact balance required for Full Fidelity operation. The versatile Broadcaster includes:

LIST PRICE: \$402.00

- AU-64 Amplifier — 30 watts of Power Plus
- Phono Input
- MC-41 — Broadcast-type Cardioid Microphone
- MS-12 — Microphone Floor Stand. Easily adjusted.
- RF-473 — Two 32 watt High Fidelity Coaxial Diffuser Speakers
- RH-62 — Two Speaker Enclosures



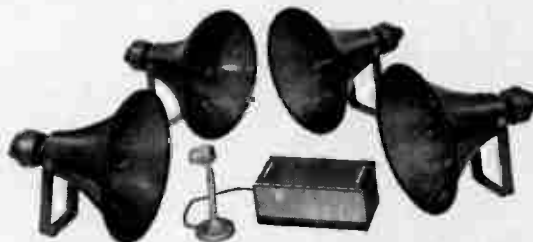
#### PERFORMER

Traditional Stromberg-Carlson quality, dependable, high-efficiency operation and functional versatility put the Performer in a class by itself for outdoor use. Perfectly matched components to assure proper balance guarantee the best performance possible. The powerful Performer features:

LIST PRICE: \$392.00

- AU-64 — 30 watt Amplifier
- Phono Input
- MD-30C — Dynamic Microphone
- RP-34\* — Four rugged outdoor Re-entrant Horns
- RD-24 — Four driver units for RP-34 Horn

\* Handles up to 40 horns using RD-21 Driver Units.



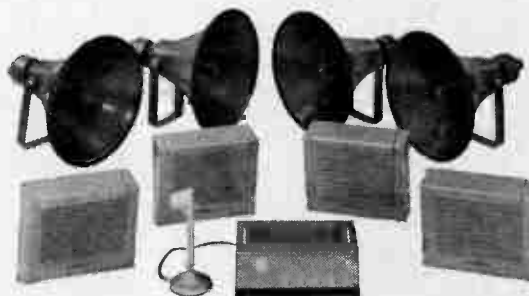
#### POWER KING

King of Kings is an apt description of the Power King. Virtually unlimited in its possible applications and with power to spare, the Power King stands alone in its field. The careful selection of the right components assures the ultimate in power plus long life and efficient performance from the Power King, which includes:

LIST PRICE: \$644.00

- AU-65 — 65 watt Amplifier with Phono Input
- MD-30C — Dynamic Microphone with Grip-to-Talk Locking Switch
- RC-28 — Four High Quality 8", 12 watt Speakers
- TR-13 — Four Line-Matching Transformers
- RH-28D — Four Speaker Housings
- RP-27 — Four Re-entrant Horns
- RD-21 — Four 30 watt Driver Units

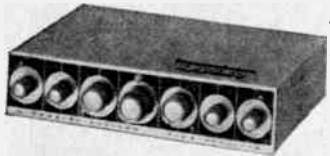
The Power King will handle up to 100 speakers.



**STROMBERG-CARLSON, Division of General Dynamics, Electronics Center, Rochester, N. Y.**

# "Custom Four Hundred"® HIGH FIDELITY EQUIPMENT

True High Fidelity performance can be achieved only with the highest quality, most skillfully engineered components designed to work together as a team. The units illustrated here are designed and made to reproduce the full range of the audio scale.



## ← PREAMPLIFIER — Model AE-426

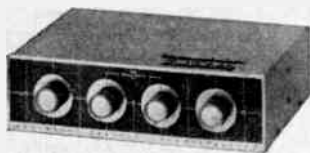
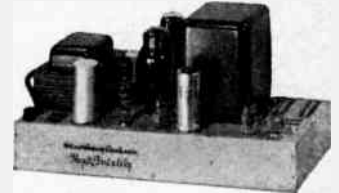
Frequency response of 10 to 100,000 cps  $\pm$  1 db. Bass control provides 15 db boost and 15 db droop at 50 cps. Treble control provides 15 db boost and 15 db cut at 10,000 cps. Brilliance control provides sharp treble cutoff. Record equalization of magnetic phono input with con-

tinuously variable turn-over and de-emphasis controls, in addition to standard equalization settings. AC operated with OC on the tube filaments. Tape output and input jacks. Size — 3" high, 14" wide, 8" deep. UL approved. Distortion considerably under 1%. CONSUMER NET: \$95.00

## POWER AMPLIFIER — Model AP-428

Peak power-handling capacity — 50 watts. Frequency response of 10 to 32,000 cps. Hum level — better than 80 db below rated output. Output voltage regulation — less than 2 db variation from no output load to full load. Fused spare

AC outlets. Distortion — well under 1% at 25 watts. Output impedances — 4, 8, 16, 150 and 600 ohms. Input sensitivity:  $\pm$  8 VU (1.95 volts) for rated output. Output taps for tape recorders. Size: 3½" high, 13" wide, 7" deep. UL approved. CONSUMER NET: \$95.00



## ← AMPLIFIER — Model AR-411

10 Watts at less than 1% total harmonic distortion. Peak power-handling capacity to 15 watts. Frequency response of 15 to 25,000 cps. Hum and noise level 80 db below rated output with controls at listening level. Bass control provides

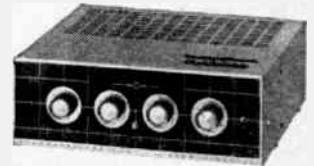
15 db boost, 15 db droop at 50 cps. Treble control provides 10 db boost, 15 db cut at 10,000 cps. Four inputs: magnetic phono, radio tuner, tape, auxiliary. Output taps for 4, 8, 16 ohms. Size: 3½" high, 13" wide, 7" deep. UL approved. CONSUMER PRICE: \$65.00

## AMPLIFIER — Model AR-419

Peak power-handling capacity of 40 watts with less than 1% total harmonic distortion at 20 watts. Frequency response of 15 to 25,000 cps. Hum and noise level 80 db below rated output with controls at listening level. Bass control provides 15 db boost, 15 db droop at 50 cps. Treble

control provides 10 db boost, 15 db cut at 10,000 cps. Four inputs: magnetic phono, radio tuner, tape, auxiliary. Tape output jack. Output taps for 4, 8, 16 ohms. UL approved. Sizes: 4¾" high; 14" wide; 9½" deep.

CONSUMER NET: \$99.95



## ← AMPLIFIER — Model AR-420

Peak power — 50 watts. Distortion well under 1% even at 25-watt level. Frequency response of 10 to 40,000 cps. Bass control provides 15 db droop and 15 db boost at 50 cps. Treble control provides 15 db boost and 15 db cut at 10,000 cps. Record equalization of magnetic phono input with

continuously variable turnover and de-emphasis controls, in addition to conventional tone controls. Volume control is a combination gain and loudness control depending on position of the loudness circuit switch. Output taps for 4, 8, 16 ohms. Size: 8" high, 14" wide, 8" deep. UL approved.

CONSUMER NET: \$119.95

## FM-AM RADIO TUNER — Model SR-402

Frequency response: FM — 20 to 20,000 cps at less than 1% total harmonic distortion. Temperature compensated oscillator circuits prevent drift on both FM and AM. Geared tuning condenser and expanded tuning scale assure ease of control. Only three controls . . . Tuning, Band

Selector, and Volume. No duplication of tone controls. Sensitivity: 1.5 microvolts for 20 db quieting. 2-position selectivity control on AM. Automatic Frequency Control provided. Size: 5¾" high, 12½" wide, 9¾" deep. UL approved. Meets all FCC requirements for spurious radiation.

CONSUMER NET: \$159.50



## ← FM-AM RADIO TUNER — Model SR-403B

Frequency response: FM — 30 to 15,000 cps. Sensitivity: FM — 3 microvolts for 20 db quieting. Harmonic distortion less than 1%. Temperature compensated oscillator circuits to prevent

FM and AM drifting. Outputs for audio amplifier and phono. Meets all FCC requirements for spurious radiation. U.L. approved. Size: 7" high, 12" wide, 7½" deep.

CONSUMER NET: \$105.00

## RADIO RECEIVER — Model SR-405

Peak handling capacity to 20 watts. 12 watts at less than 1% total harmonic distortion. Sensitivity — 3 microvolts for 20 db quieting. Inter-station whistle filter. Microphone, Television, Crystal Phono, Magnetic Phono and Magnetic Recorder inputs 10 to 30,000 cps. Bass control

provides 15 db boost, 20 db droop at 30 cps. Treble control provides 12 db boost, 20 db droop at 10,000 cps. Size: 8" high, 13" wide, 12" deep. UL approved. Meets all FCC requirements for spurious radiation.

CONSUMER NET: \$235.00



## ← RADIO RECEIVER — Model SR-406

Peak power output 32 watts. 20 watts at 1% total harmonic distortion. Sensitivity — 5 microvolts for 30 db quieting. Meets all FCC requirements for spurious radiation. Microphone, crystal phono, magnetic phono, auxiliary inputs 30 to

20,000 cps. Tape recorder output jack. Output taps for 4, 8, 16 ohms. Bass control provides 15 db boost, 10 db droop at 30 cps. Treble control provides 10 db boost, 15 db cut at 10,000 cps. U.L. approved. Size: 8" high, 15½" wide, 11½" deep.

CONSUMER NET: \$249.95

**STROMBERG-CARLSON, Division of General Dynamics, Electronics Center, Rochester, N. Y.**



*New this year!*

# SONOTONE'S HFA-200 20-WATT AMPLIFIER



**COMPACT:** easy to mount in furniture, bookshelves or wall paneling.



**VERSATILE:** 5 inputs for magnetic phono, ceramic phono, tuner, TV, etc. Outputs for both speakers and tape recorder.

Count on Sonotone to combine living-room styling with control-room clarity in a great new amplifier. A full 20 watts—more than enough power for any home installation. Five control knobs perform eight separate functions to give maximum control with simplicity of handling. Styling—sleek, simple—flexible as well. Wide variety of cover and panel color combinations.



This amplifier brings you the most versatile styling ever offered, including a reversible cover.

Use it in one position to achieve a sloping "canopy."

Reverse it for a straight front. (Either flush or with overhang as desired.)

Power Output	.....20 watts
Frequency Response	..... $\pm 1$ db 20 cycles—20 kc any level
Distortion	.....Less than 0.5%
Hum and Noise	.....Volume control at minimum: —80db Volume control at maximum— 4 high level outputs: —70db Mag. phono: —60db
Sensitivity	.....0.35 volts on high level 0.01 volts on mag. phono
Damping Factor	......30 or greater
Output Impedance	.....On 16 ohm tap—0.5 ohm or less
Equalization	.....EUR, LP, and RIAA
Inputs	.....Five
Controls	.....5 controls providing 8 functions, including 2 push-pull controls
Outputs	.....Speakers 4-10 and 12-30 ohms Tape Jack, unaffected by volume or tone control
Power Consumption	......65 watts quiescent, 85 watts full signal
Size	.....3"H x 12"W x 7"D
Weight	.....Approx. 14 lbs.

The Sonotone HFA-200 amplifier is available with front panels in a choice of three colors—Hunter's Green, Russet Brown, or Pearl Grey. This colored panel is included in the cost. A separate cover, optional at slight extra cost, is available in the same three colors, to match or contrast with the front panel.

Amplifiers are shipped with cover attached only if specified. Order as "HFA-200 green with green cover," or "HFA-200 green with brown cover," etc.

If cover is not desired, order as "HFA-200 grey, less cover," etc.

Cover alone may also be ordered as "AC-200 green" or "AC-200 brown," etc.

Shipping Weights (approx.): Amplifier with cover: 15 lbs. Amplifier less cover: 14 lbs. Cover alone: 2 lbs.

Electronic Applications Division

## SONOTONE<sup>®</sup> CORPORATION

Elmsford, N. Y.



### MODEL PE-10 10 WATT AMPLIFIER

Power output 10 watts; response  $\pm 2$  DB. 70 to 10,000 CPS; Controls for microphone, phono and tone; Output 4, 8, 16, and 70V (500 ohms); Tubes: 12AX7, 6L6GB and 6X5GT. **Net Price \$32.50**



### MODEL PE-15 15 WATT AMPLIFIER

Power output 15 watts; response  $\pm 2$  DB. 30 to 15,000 CPS; Controls for microphone, phono, bass and treble; Output 4, 8, 16 and 70V (333 ohms); Tubes: 2-12AX7, 2-6973 and 6BW4. **Net Price \$49.00**  
**4 Speed Phono top \$20.00**



### MODEL PE-30 30 WATT AMPLIFIER

Power output 30 watts; response  $\pm 1$  DB. 30 to 15,000 CPS; Controls for microphone-1, microphone-2, phono, bass and treble; output 8, 16, 250 and 70V (167 ohms); Tubes: 3-12AX7, 2-6L6GB and 5U4GB. **Net Price \$59.25**  
**4 Speed Phono top \$20.00**



### MODEL PE-60 60 WATT AMPLIFIER

Power output 60 watts; response  $\pm 1$  DB. 30 to 15,000 CPS; Controls for microphone-1, microphone-2, phono, bass and treble; Output 8, 16, 250 and 70V (84 ohms)! Tubes: 3-12AX7, 2-6550 and 2-5U4GB. **Net Price \$99.50**  
**4 Speed Phono top \$22.50**



### MODEL PE-30MP-2 25 WATT MOBILE AMPLIFIER

Power output 25 watts; response  $\pm 1$  DB. 30 to 15,000 CPS; Controls for microphone-1, microphone-2, phono, bass and treble; Output 8, 16, 250 and 70V (200 ohms); Tubes: 2-12AX7, 2-6L6GB and 2-6X5GT. **Net Price \$143.00** phono incl.



### MODEL LJ6K 10 WATT HI FI KIT

Distortion 2% @ 8 watts; response  $\pm 1$  db. 30 to 20,000 CPS. @ 1 watt; Controls: selector, volume, bass and treble; Compensator for mag. pickup; Output 4, 8, and 16 ohms; Tubes: 2-12AX7, 2-6V6GT and 6X5GT. **Net Price \$24.95**



### MODEL 61PGK 20 WATT HI FI KIT

Distortion 2% @ 20 watts; response  $\pm .5$  DB. 20 to 20,000 CPS. and 1 watt; Controls: Selector turnover, roll off, loudness, level, bass and treble; Pre-amp for mag. pickup; Feedback circuits throughout; Output for tape recorder. 4, 8, and 16 ohms; Tubes: 3-12AX7, 2-6L6GB and 2-5Y3GT. **Net Price \$59.50**



### MODEL 202 SIGNAL TRACER

All purpose tester traces signal for antenna to speaker. Use as test speaker, noise locator, audio amplifier and wattmeter. Level indicated on eye tube. **Complete with AF probe. Net Price \$37.50**  
A Probe \$4.50, B probe \$7.50 extra.



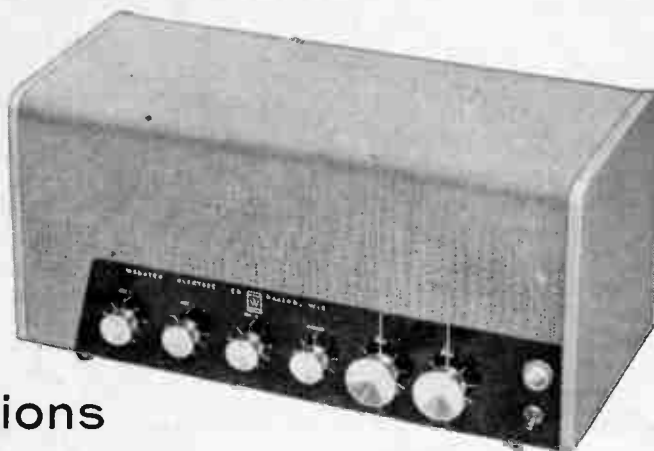
### MODEL TVC TELEVISION CLARIFIER

Wave trap eliminates interference by connecting between antenna and TV set. **Net \$4.50**



# Webster Amplifiers

New look in amplifiers, new efficiency in every application. New Webster Amplifier's trim metal cabinet and professional construction compliment any modern companion unit. Exceptional high fidelity performance, ample "reach" and volume for large auditoriums, factories, large open areas. Wide range of models: 10 to 90 watt. 50 and 90 watt booster available. Three microphone inputs, one phonograph input. Separate bass and treble controls. Finished in platinum grey with black and brushed aluminum trim. Convenient to carry. Rugged, dependable—high quality components for longer life, lower maintenance.



## specifications

MODEL	INPUTS	OUTPUTS IMPEDANCE	SUGGESTED LIST
10 watt	1 high-impedance, mic. 1 high-impedance, phono. 1 low-impedance, telephone line	2, 4, 8, 16, 500 (70V) ohm.	\$ 99.95
15 watt	2 high-impedance, mic. 1 high-impedance, phono. (plug-in mic. transformer available)	4, 8, 16, 250, 333 (70V), 500 ohm.	136.00
25 watt	3 high-impedance, mic. 1 high-impedance, phono. (plug-in mic. transformer available)	2, 4, 8, 16, 125, 250 (70V), 500 ohm.	173.75
50 watt	3 high-impedance, mic. 1 high-impedance, phono.	6-8, 24-32, 54-72, 96-128 (70V), 150-200, 216-288, 294-392 ohm.	282.50
50 watt booster	high-impedance	6-8, 24-32, 54-72, 96-128 (70V), 150-200, 216-288, 294-392 ohm.	201.25
90 watt	4 high-impedance, mic. (convertible to low imped.) OR 3 high-impedance, mic. 1 high-impedance, phono.	4.5-7.0, 18-28, 40-63 (70V), 72-112, 113-165, 166-230, 231-343 ohm.	375.00
90 watt booster	high-impedance	4.5-7.0, 18-28, 40-63 (70V), 72-112, 113-165, 166-230, 231-343 ohm.	275.00



## Com-ette Intercom

Low-cost, two-way intercom designed for small budgets. Crystal-clear communication wherever two stations will serve. Especially adaptable to needs of small businesses, stores, farms, offices. Ideal for the home—in the nursery or sick room.

Com-ette wireless plugs into any AC or DC outlet—ready to operate. Carries up to a half-mile or more depending on local line conditions. Wired models are also available. High quality components and construction. Smart black plastic cabinet with contrasting stark white grille.

List price: Model WC2, wired, complete with master and speaker \$49.50

Model RF2, wireless, package of two \$99.50



ELECTRONICS DIVISION

WEBSTER ELECTRIC



RACINE · WIS

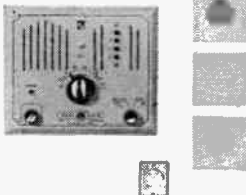


## MUSIC INTERPHONE SYSTEMS

MODEL 2500

*Radio-Com interphone-radio music system*

Low-cost intercom between master and any or all remotes with 3-wire system. AM radio plus phono jack for recorded music. Interphone can be used while music is playing (calls from any or all stations can be heard above radio or phono sound). Designed for all installations. Includes master station, entry remote, three room remotes, and complete installation kit. Provision for adding two extra remote stations.

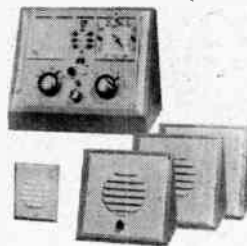


SIZES Master unit panel 10" x 8"  
Remote speaker panel 7½" x 7½"  
Entry door speaker panel 4" x 5" LIST PRICE .....\$122.75  
DEALER'S NET..... 69.95

MODEL 2500-CT-3

*Deluxe portable radio-interphone-clock Radio-Com system*

3-wire interphone permits remote stations to originate calls . . . plus the enjoyment of radio or recorded music . . . in handsome leatherette-covered cabinets for desk or table. Electric clock controls automatic AC outlet for electric appliance or light. Interphone calls can be heard while music is playing. Includes master, entry remote, three room remotes, and installation kit. Provision for adding two extra remote stations.

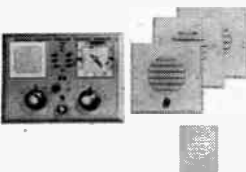


SIZES Master unit panel 9" x 12"  
Remote speaker panel 7½" x 7½"  
Entry door speaker panel 4" x 5" LIST PRICE .....\$154.95  
DEALER'S NET..... 92.95

MODEL 2500-C-63

*Deluxe built-in Radio-Com with music, interphone, & clock*

Designed for new construction . . . installs in the wall between studs. Complete with full instructions, wire, and hardware . . . no soldering required. The 2500-C-63 is a deluxe 3-wire interphone system with AM radio, phono jack, and electric clock with controlled AC outlet. Includes master station, entry remote, and three room remote stations. Two extra remotes may be added. All remotes have individual volume controls.

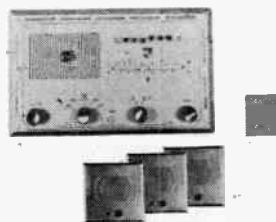


SIZES Master unit panel 9" x 12"  
Remote speaker panel 7½" x 7½"  
Entry door speaker panel 4" x 5" LIST PRICE .....\$145.75  
DEALER'S NET..... 84.50

MODEL 2500-FM-7

*Deluxe AM-FM radio and interphone system*

Deluxe 3-wire intercom system with sensitive AM-FM radio chassis plus phonograph jack for adding record player attachment. Remote stations can originate as well as receive calls . . . individual volume controls. Super sensitive mike picks up conversation up to 30 feet away. Interphone can be used while music is playing. Includes master, entry remote, and three room remotes. Installs in less than 30 minutes . . . complete installation kit included.



SIZES Master unit panel 8" x 13"  
Remote speaker panel 7½" x 7½"  
Entry door speaker panel 4" x 5" LIST PRICE .....\$164.95  
DEALER'S NET..... 99.50

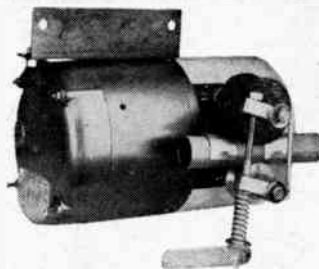
### ACCESSORIES

	List	Net
2500 & 2500-C REMOTE SPEAKER with control and plaster ring	\$10.00	\$ 6.00
2500-CT REMOTE SPEAKER in leatherette cabinet	12.00	7.20
2500-FM REMOTE SPEAKER with controls and plaster ring	11.00	6.50
2500 INSTALLATION KIT includes wire, hardware, and full instructions	—	14.50
2500-C & 2500-FM INSTALLATION KIT includes wire, hardware, and full instructions	—	15.75

### RADIO-CONTROLLED GARAGE DOOR OPENER

Complete garage door opener assembly, including opener unit, radio transmitter, radio receiver, and hardware.

- Gear-driven heavy duty motor
- Automatic light when door opens
- Adjustable clutch on door opener
- Transmitter operates on 6 or 12 volts
- Plug-in coils permit 200 possible frequency combinations for multiple units
- Non-radiating triple detection superheterodyne receiver



MODEL 540  
List Price \$189.95  
NET ..... \$142.50

MODEL 542  
Transmitter Only  
List Price \$39.95  
NET ..... \$30.00

All Radio-Com units licensed under patents of RCA and Hazeltine Laboratories. UL approved.

TRANS-TEL CORPORATION Los Angeles, California



# TALK-A-PHONE Intercommunication Systems

For the Home, Farm, Professional Man, Office and Business. A flick of a finger gives you instant and direct two-way conversation between any two points—anywhere. Designed to withstand continuous day and night use, TALK-A-PHONE operates at but a fraction of a cent a day . . . and it can be installed by anyone. All units are complete, ready to plug in. Walnut impact bakelite cabinets. Cabinets measure 8 1/4" x 6 1/4" x 7 1/2".



①



②



③



④



⑤

## NEW TALK-A-PHONE WIRELESS INTERCOMS

with the Exclusive "Sonic Gate" Circuit

### New 2-Station Wireless System (Figure 3)

A quality wireless intercom system for use in Homes, Apartments, Offices, Stores, Factories and Farms. No installation, no wiring, no cables. Just plug in any electrical outlet and talk. More stations can be added at any time, all stations will receive any messages transmitted by any other station. Mobile-units can be moved anywhere an electrical outlet is available. Uni-Trans gives you dictation and supervisory control. When set for Uni-Trans, unit provides continuous transmission to other unit, to dictate or to "listen in", for example, on baby's room. The "Sonic Gate," together with the Talk-A-Phone "Squelch," effectively suppresses line noises and hum while system is in actual operation as well as when in stand-by position. Beautifully styled in sturdy, impact bakelite cabinets, finished in rich walnut or executive gray. For 110-120 volt AC-DC. All units in system operate from same electric service transformer. Size 8 1/4" x 6 1/4" x 7 1/2". Complete with tubes and instructions.

LC-33 consists of two master stations. Shipping weight 14 lbs. Walnut cabinets. List Price complete \$120.00 . . . . . Net **69.95**

LC-17 Additional single station. Shipping weight 7 lbs. Walnut Cabinet. List Price complete \$60.00 . . . . . Net **35.00**

\*Last number indicates the only channel number on which staffs can receive and reply. (Example: LCS-806 can receive and reply on channel 6 only).

### The New 6-Station Selective Wireless System (Figure 4)

Simple to install, no wiring, simply place each Master where needed, plug into an electrical outlet, and talk! Where changes of location are desired, simply pick-up the unit and move it. Each Master Station has a 6-Channel Selector and can converse with any other station selectively, and can receive calls on any channel it elects. Hold as many as 3 separate conversations with 6 Masters. Masters can also setup conferences. Where some locations need not originate calls, but must reply when called, Wireless Staff Stations are available. Wireless Staff Stations can also be used to receive Paging calls simultaneously from any Selective Wireless Master Station in the system. Use as many Wireless Staff Stations as needed (all Staffs must operate on same channel for this purpose). Equipped with the most effective noise-free circuit ever developed, the "SONIC GATE CIRCUIT". Operates universally on 110-120 Volts, AC-DC. All units in system must operate from same electric service transformer. Size: Masters—12" x 9" x 7", Wt. 12 1/2 lbs. Staff—8 1/4" x 6 1/4" x 7 1/2", Wt. 7 lbs. MODEL LCM-8806—6-Station Selective Wireless Master, complete with tubes and instructions, ready to use. List Price Each \$129.50 . . . . . Net Each **72.00** MODELS LCS-801\* LCS-802\*, LCS-803\*, LCS-804\*, LCS-805\* and LCS-806\* Wireless Staff Stations which receive and reply on single channel only. List Price Each \$66.00 . . . . . Net Each **38.80**

## NEW TALK-A-PHONE DELUXE SYSTEMS

### Master Selective Systems (Figs. 1 & 2)



A system consisting of one Master Station and one to ten Sub-Stations. Master Station can talk and listen to any one Sub-Station or with all simultaneously. Sub-Stations do not communicate with each other. Only the Master Station plugs into an electrical outlet. You may start with only one Master and one or two Sub-Stations and then add later when necessary. Installation of system has optional feature, whereby Sub-Stations can be connected "privately," or "non-privately" and still originate calls to the Master under either application. Once a conversation has been initiated with a "non-private" system, persons at Sub-Stations need operate no controls and can reply from a distance. When the system is connected "privately," Master unit cannot "listen in" on Sub-Stations. However, they can reply when called, and also originate calls to the Master. Operates universally on 110-120 volts, AC-DC. U.L. Approved. The AC-5406 and AC-5411 Master Stations operate as above with the added feature of 10 times volume output. A desirable feature for large areas or noisy locations. Operates on 110-120 volts, AC only. Only one master station can be used in these systems.

Model LM-3 Master Selective Station for 5 Sub-Stations, complete with tubes and easy-to-follow instructions. Wt. 7 lbs. List Price each \$49.95 . . . . . Net each **29.35**  
Model LM-10 Master Selective Station for 10 Sub-Stations, complete with tubes and easy-to-follow instructions. Wt. 7 lbs. List Price each \$65.00 . . . . . Net each **38.20**

Model LR-3 Sub-Station for use with LM-5 or LM-10 Masters. Wt. 5 lbs. List Price each \$16.95 . . . . . Net each **9.95**

Model LR-3M Sub-Station in brown metal case. Wt. 3 lbs. List Price each \$16.95 . . . . . Net each **9.95**

Model AC-5406 Master Station. 5 sub-station capacity. High Volume Output. Wt. 8 lbs. List Price each \$65.00 . . . . . Net each **38.20**

Model AC-5411 Master Station. 10 sub-station capacity. High Volume Output. Wt. 8 lbs. List Price each \$79.95 . . . . . Net each **47.00**

Model AR-3 Sub-Station for use with AC-5406 or AC-5411 Masters. Wt. 5 lbs. List Price each \$17.95 . . . . . Net each **10.50**

Model AR-3M Same as AR-3 above, but in brown metal case. Wt. 3 lbs. List Price each \$17.95 . . . . . Net each **10.50**

Model HP-3 Hi-Power Staff Station for wall mounting. Brown metal case. Wt. 8 lbs. List Price each \$28.00 . . . . . Net each **16.50**

Model C-20 Nine-Inch Weatherproof Re-Entrant Horn. Wt. 5 lbs. List Price each \$44.95. Net each \$100.00 . . . . . Net each **26.50**

S-100 Wall Switch for origination of call through C-20 or HP-3. List Price each \$6.00 . . . . . Net each **3.50**

No. 5303 (3-conductor) Cable for connecting Sub-Stations to Master. List Price per foot 5c . . . . . Net per foot **.03**

### Super Selective Systems (Fig. 2)



A system of all Master Stations. Any Station can call any other Station. Several completely private 2-way conversations are possible at same time. A versatile, low cost intercom system offering extreme flexibility, meeting many requirements in industry, offices, homes, etc. Any Station can call and carry on a conversation with any other Station in your office and your mind is at ease that no one can eavesdrop on your conversation. Stations can be located even 1000 feet apart. Variable volume, adjustable at each unit, controls incoming voice. You can start with two or three masters and then add later as required. Operates universally on 110-120 volts, AC-DC, U.L. Approved.

Model LS-5 Super Selective Station for five Masters, complete with tubes and easy-to-follow instructions. Wt. 7 lbs. List Price each \$49.95 . . . . . Net each **29.35**  
Model LS-10 Super Selective Station for ten Masters, complete with tubes and easy-to-follow instructions. Wt. 7 lbs. List Price each \$65.00 . . . . . Net each **38.20**

No. 5306 (6-conductor) Cable for connecting LS-5 Masters. List Price per foot 13c . . . . . Net per foot **.07 1/2**  
No. 9911 (11-conductor) Cable for connecting LS-10 Masters. List Price per foot 24c . . . . . Net per foot **.14**

### Combination Systems (Fig. 2)



For the more flexible type of system requiring operation of more than one Master Station, along with Sub-Stations which need not originate calls. Personnel can answer incoming calls even though they are 25 to 40 feet from their unit. Master Stations may talk to each other and to all Sub-Stations in the system selectively, or you can have one or more Sub-Stations which are exclusive to only one Master Station (as illustrated in the diagram above). Master Stations have the option of making themselves "private," or "non-private" at will. You can begin with two stations (at least one must be a Master) and add other units as required. Model CL-5 Master Station has a total inter-connecting capacity of five stations, including Masters and Sub-Stations, while Model CL-10 Master Station has a total capacity of ten stations. Sub-Stations are not plugged in to a source of electric current. Operates universally on 110-120 volts, AC-DC. U.L. Approved.

Model CL-5 Combination Master for five station use, complete with tubes and easy-to-follow instructions. Wt. 7 lbs. List Price each \$62.00 . . . . . Net each **36.40**  
Model CL-10 Combination Master for ten station use, complete as above and with addition of junction box attached by 6' cable to unit. Wt. 8 1/2 lbs. List Price each \$83.00 . . . . . Net each **48.80**

Model LR-2 Sub-Station for use with either of above Masters. List Price each \$15.95 . . . . . Net each **9.35**

Model LR-2M Same as LR-2, but in brown metal case. Wt. 3 lbs. List Price each \$15.95 . . . . . Net each **9.35**

Model HP-3 Hi-Power Sub-Station for wall mounting in brown metal case. Wt. 8 lbs. List Price each \$28.00 . . . . . Net each **16.50**

Model C-20 Nine-inch weatherproof re-entrant horn. List Price each \$44.95 . . . . . Net each **26.50**

No. 6212 (6-pair) Cable for interconnecting CL-5 Masters. List Price per foot 24c . . . . . Net per foot **.14**

No. 6224 (12-pair) Cable for interconnecting CL-10 Masters. List Price per foot 47c . . . . . Net per foot **.28**

No. 6908 (2-conductor) Cable for connecting Sub-Stations to CL-5 or CL-10. List Price per foot 3 1/2c . . . . . Net per foot **.02**

### How To Determine Cable Requirements

All Models  
For Master Selective Systems measure from each Sub-Station to the Master and order total. For Super Selective Systems—measure from first Master to second Master only, from second Master to third Master only, etc., and total. Cable between first and last Master not necessary. For Combination Systems—Master cable; measure from first Master to second Master only, from second Master to third Master only, etc., and total. Sub-Station cable; measure from each Sub-Station to nearest Master only.

EARPHONE—(Fig. 6)—Available for all units above. List Price per station, add \$28.00 . . . . . Net, add **13.50**  
CRADLEPHONE—(Fig. 5)—Available for units above. List Price per station, add \$49.95 . . . . . Net, add **29.35**

EXECUTIVE GRAY Cabinets available at additional cost. For LC-33, List Price, add \$6.00 . . . . . Net, add **3.60**  
For LCM-8806, List Price, add \$4.50 . . . . . Net, add **2.70**  
All other units, List Price, add \$3.00 . . . . . Net, add **1.80**

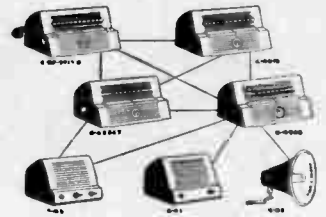
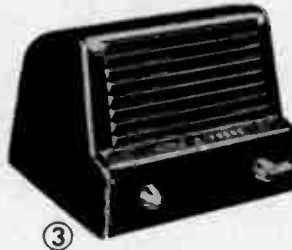
For more complex installations . . . . . Send for information on the TALK-A-PHONE "CHIEF" Intercom Systems.

Prices slightly higher west of the Rockies.

# TALK-A-PHONE The Intercom with the "Built in Brain"



World's Finest, Most Complete Line of Intercommunication Systems



## New "CHIEF" Talk-A-Phone THE ONE MODEL THAT MEETS EVERY REQUIREMENT The Answer to Your Intercommunication Problem

Setting a new standard in versatility and flexibility, the Talk-A-Phone "CHIEF" meets every intercommunication need of office, factory, institution or home. A touch of a button gives you instant, direct two-way Communication with every department. Saves time, increases efficiency, reduces loads on busy switchboards and enables executives and key personnel to cover more ground. It pays for itself many times over. Beautifully styled in streamlined impact bakelite cabinets. Walnut finish.

### "Chief" Universal Master Stations (Figure 1)

The "Chief" with its exclusive Dynasonic Design can be used in any combination—with all Master Stations—one Master and Staff Stations—or a number of Masters combined with Staff Stations. Six, 12, 20, 30, 40, 50, and 60, Station Masters, together with Staff Stations can be intermixed in same system. Masters can talk with any other Master, as well as with Staffs. Staff Stations can answer all Masters and can originate calls to as many as six Masters, depending upon Staff's capacity. Staff Stations are not connected to electrical outlet.

**Exclusive Features:** (1) **DYNASONIC DESIGN**—permits intermixing of units, variation of performance and additions to system at any time. Some Staff Stations can be "private," others "non-private." Any Staff Station can be "non-private" to one or more Masters and "private" to others. (2) **MULTI-MAGIC SELECTOR**—enables selection of up to 40 stations with 12 push buttons (50 and 60 stations with 14 push buttons). (3) **UNI-TRANS**—for dictation... with no operation of controls necessary while speaking.

**Optional:** LD "Long Distance" (Figure 8)—for use between Master Stations over cables 2,000 ft., 5,000 ft., 10,000 ft. or even greater distances without loss of volume. Built-in at factory. At slight additional cost.

**BUSY SIGNAL**—on Master Stations. (Figure 7) Visual indication when Master Station called is busy. Built-in at factory. At slight additional cost.

**"CHIEF"** (Figure 1) Master Stations are complete with tubes, junction box with 6-foot cable and instructions. Universal operation, 110-120 volts AC-DC. With push button selector and talk-listen control. Volume control with translucent light indicating when unit is on. Beautifully styled in streamlined impact bakelite cabinets. Walnut finish. Size 12" wide, 7" high and 9" deep.

- C-4906 Master 6 station capacity. Wt. 13 lbs. List Price per station \$ 99.00... Net **58.20**
- C-4912 Master 12 station capacity. Wt. 14 lbs. List price per station \$119.00... Net **69.95**
- C-4920 Master 20 station capacity. Wt. 17 lbs. List Price per station \$140.00... Net **82.30**
- C-4930 Master 30 station capacity. Wt. 20 lbs. List Price per station \$161.00... Net **94.65**
- C-4940 Master 40 station capacity. Wt. 23 lbs. List Price per station \$182.00... Net **107.00**
- C-4950 Master 50 station capacity. Wt. 26 lbs. List Price per station \$203.00... Net **119.35**

### "Chief" Redi-Power Master Stations (Figure 2)

"Chief" Redi-Power Master Stations have all the operational features listed above, plus the additional feature of built-in extra power for use when needed. This added power (up to 20 watts), gives you the additional volume needed, for example, when calling a number of stations at one time or calling noisy locations. Return speech from called stations is received at normal volume. Needs no separate power booster which would eliminate return speech. "Chief" Redi-Power has self-compensating volume, whether you call 2, 10 or 20 stations simultaneously. Each station receives its pre-determined volume with no division of output when you call more stations at one time. One or more Redi-Power Masters can be combined with regular Chief Masters and Staff Stations in same system. 110-120 volts, AC only.

Redi-Power Master Stations are also available with the added feature of pre-selected paging for each master unit as Model C-RP-5911. Provides 11-station capacity with one selector button for paging. Each Master may page its own pre-selected stations without any external paging equipment. 110-120 volts, AC only.

- C-RP-5912 Redi-Power Master 12 station capacity. Wt. 18 lbs. List Price per Station \$179.00... Net **105.00**
- C-RP-5911 Redi-Power Master. 11 station capacity with pre-selective paging button. Wt. 18 lbs. List Price per station \$199.00... Net **117.00**
- C-RP-5920 Redi-Power Master 20 station capacity. Wt. 21 lbs. List Price per Station \$200.00... Net **117.50**

### "Chief" Models Available in Executive Gray Cabinets

For C-41 and C-42 Staff Stations, List Price each add \$3.00... Net add **\$1.80**  
For all Master Stations and C-46 Staff Station, List Price each add \$4.50... Net add **\$1.70**

### How to Determine Cable Requirements

To inter-connect Master Stations, measure from first Master to second Master only, from second to third Master only, etc., until the last unit in the system is reached, and total. For C-4920 and C-RP-5920, use two lengths of 6224 Cable and for C-4930 use three lengths of 6224 Cable, etc. To connect C-41, C-20, HP-2 or HP-3 Staff Stations, measure from Staff Station to the one Master to which Staff Station originates calls. To connect C-42 and C-46 Staff Stations measure a separate length of cable from Staff Station to each Master Station to which Staff originates calls (for each C-42 or C-46, follow same procedure).

Prices slightly higher west of the Rockies.

### "Chief" Staff Stations (Figure 3)

For use with any "Chief" Master, Staff Stations may be connected "privately" or "non-privately." Connected "non-privately," persons can answer Master at a distance from the Staff without operation of any controls. Persons at "non-private" Staffs may reply to all Masters in the system (whether connected directly to them or not) and can originate calls to one, two, or up to six Masters, depending upon its capacity. Connected "privately" no one can "listen-in," but any Master can call. Private Staff can originate calls and reply to 1, 2 or 6 Masters depending on its capacity. Staff Stations do not need electrical outlet. Handsomely styled in molded impact bakelite cabinets. Walnut finish. Size: 8 1/4" wide, 6 1/4" high, 7 1/2" deep.

- C-41 Staff Station for origination of call to one Master. Wt. 5 lbs. List Price each \$22.95... Net each **13.50**
- C-41M Same operation as C-41, but in brown metal case. Wt. 3 lbs. List Price each \$22.95... Net each **13.50**
- C-42 Staff Station for origination of call to two Masters. Wt. 5 lbs. List Price each \$29.95... Net each **17.50**
- C-42M Same operation as C-42, but in brown metal case. Wt. 3 lbs. List Price each \$29.95... Net each **17.50**
- C-46 Push Button Staff Station for origination of call to six Masters. Wt. 9 lbs. List Price each \$73.00... Net each **43.00**
- HP-3 Hi-Power Staff Station for wall mounting. Brown metal case. 5 watt capacity. Wt. 8 lbs. List Price each \$28.00... Net each **16.50**
- HP-2 Super Staff Station for wall mounting. Brown metal case. 15 watt capacity. Wt. 9 lbs. List Price each \$44.95... Net each **26.50**
- C-20 Nine-Inch Weatherproof Re-Entrant Horn. For greater volume. (Fig. 4) Capacity, 15 watts, with bracket for wall mounting. Wt. 5 lbs. List Price each \$44.95... Net each **26.50**



### Optional Equipment

- Cradle Phone (Fig. 6) Available on all Models, except metal staffs. Add "H" to Model No. when ordering. List Price each—add \$49.95... Net add **29.35**
- Earphone (Fig. 5) Available on all Models. Add "X" to Model No. when ordering. List Price each—add \$23.00... Net add **13.50**
- Busy Signal (Fig. 7) Available on all "Chief," and "Chief REDI-POWER" Masters. Add "B" to Model No. when ordering. List Price each—add \$12.00... Net add **7.00**
- LD—Long Distance Feature (Fig. 8) Available on "Chief," and "Chief REDI-POWER" Masters. Add "LD" to Model No. when ordering. List price each—add \$20.00... Net add **11.75**
- S-101 Wall Switch for origination of call through C-20, HP-2 or HP-3 in Chief systems. List Price each \$6.00... Net **3.50**
- S-102 Wall Switch for origination of call to two Masters through C-20, HP-2 or HP-3 in Chief systems. List Price each \$11.00... Net **6.50**
- RW-10 Right-of-Way Relay. For use with C-RP-5912-5920 Masters. To call any group of stations with single button. Capacity 10 stations. Add relays for greater number. Connects to one Master, others in system also utilize facility. List price each \$63.00... Net **37.00**

HP-30 Power Booster. Designed for Hi-Power Paging in conjunction with TALK-A-PHONE Intercommunication systems. 30 watts output. Use with separate paging speakers, such as Models C-20 and HP-2. Size: 12" L x 7 1/2" W x 8 1/2" H. Wt. 24 lbs. List Price each \$138.00... Net **81.00**

### Cable

- 6204 Cable for connecting C-41, C-42, C-46, HP-3, C-20 and HP-2. List price per ft. 10c... Net per ft. **\$.06**
- 6212 Cable for inter-connecting C-4906 Masters. List Price per ft. 24c... Net per ft. **\$.14**
- 6224 Cable for inter-connecting C-4912, C-4920, C-4930, C-4940, C-4950, C-RP-5911, C-RP-5912 and C-RP-5920 Masters. List Price per ft. 47c... Net per ft. **\$.28**
- 6902 Cable for connecting HP-3, C-20 and HP-2 without origination of call. List Price per ft. 03 1/2c... Net per ft. **\$.03**

TALK-A-PHONE COMPANY • CHICAGO 23, ILLINOIS



# New! AUTOMATION IN INTERCOM!

## TALK-A-PHONE *Super Chief*



**TWO NEW AUTOMATION SERIES** to meet the intercommunication needs of modern business.

Series 7700 featuring Sensational New **AUTOMATIC VOICE CONTROL** and **AUTOMATIC TRAFFIC CONTROL**.

Series 7600 featuring **AUTOMATIC TRAFFIC CONTROL** and manually operated **TOUCH CONTROL**. Both **VOICE CONTROLLED** and **TOUCH CONTROLLED** Series can be intermixed.

For the discriminating executive. The **TALK-A-PHONE SUPER CHIEF** system features many exclusive achievements in intercommunication engineering, including . . . **BUILT-IN AUTOMATION** • **AUTOMATIC VOICE CONTROL** • **AUTOMATIC TRAFFIC CONTROL** • **AUTOMATIC REPLY** • **CONFERENCE CONTROL** • **DYNASHONIC DESIGN** • **MULTI-MAGIC SELECTOR** • **AUTOMATIC MONITORING SIGNAL** • **TOUCH CONTROL WITH UNI-TRANS** • **CRADLE PHONE** and **POWER PAGING** (both optional).

**TALK-A-PHONE SUPER CHIEF STAFF STATIONS** are available in both the **TOUCH CONTROLLED** and **VOICE CONTROLLED** series. Staff Stations can reply when called, to any Master Station of either series in the system, but cannot originate calls. Model ACS-7701 **VOICE CONTROLLED** Staffs can reply at a distance without operating any controls, and are equipped with **AUTOMATIC MONITORING SIGNAL** capability, which visually indicates when Staff is being monitored. Model ACS-7601 **TOUCH CONTROLLED** Staff, must manually operate Talk-Listen Control to reply. For locations where reply is not necessary use **SUPER CHIEF Sub-Stations**. Both **VOICE CONTROLLED** and **TOUCH CONTROLLED** Masters can call Subs but Subs cannot reply or originate calls.

### HOW TO DETERMINE CABLE REQUIREMENTS

For Master Stations, measure from first Master to second Master only; etc., from second Master to third Master only; etc., until the last Master in the system is reached, and total. For ACS-7720 and ACS-7620 use 2 lengths of 6624 cable; and for ACS-7730 and ACS-7630 use 3 lengths of 6224 cable, etc. Connect each Staff Station and each Sub-Station of either series to nearest Master only with TALK-A-PHONE No. 6204 cable (Although Staff and Sub-Stations are directly connected to only one Master, all Masters in system can call any Staff or Sub-Station; and can receive a reply from Staff, but not from Sub.) Connect Power Supply Unit to one Master Station only with TALK-A-PHONE No. 6302 cable.

### CABLES

6902—(1-pair)	Net per foot .02
6902—(2-pair) Approx. dia. 7/32"	Net per foot .06
6212—(8-pair) Approximate dia. 3/8"	Net per foot .14
6224—(12-pair) Approximate dia. 1/2"	Net per foot .28

**EXECUTIVE GRAY CABINETS** available at additional cost. For Master Stations, List Price add \$4.50. Net add \$2.70. For Staffs & Sub-Stations, List Price add \$3.00. Net add \$1.80.

**SERIES 7700—WITH THE SENSATIONAL NEW AUTOMATIC VOICE CONTROL.** Your own voice automatically operates the Talk-Listen Control for you.

MODEL ACS-7704—Master Station—4-Station capacity, Wt. 16 lbs.	124.00
List Price each \$211.00	Net each
MODEL ACS-7710—Master Station—10-Station capacity, Wt. 18 lbs.	140.00
List Price each \$238.00	Net each
MODEL ACS-7720—Master Station—20-Station capacity, Wt. 17 lbs.	163.50
List Price each \$278.00	Net each
MODEL ACS-7730—Master Station—30-Station capacity, Wt. 18 lbs.	187.00
List Price each \$318.00	Net each
MODEL ACS-7740—Master Station—40-Station capacity, Wt. 19 lbs.	210.00
List Price each \$357.00	Net each
MODEL ACS-7701—Staff Station, Wt. 8 lbs.	98.00
List Price each \$167.00	Net each

Sturdy impact bakelite cabinets finished in rich walnut tone. Available in executive gray cabinets at slight additional cost. All Masters have junction box attached with 6 ft. length of flexible cable.

### POWER SUPPLY, SUB-STATIONS, PAGING POWER BOOSTER AND ACCESSORIES

ACS-71 (Bakelite Cabinet) Sub-Station.	
ACS-71M (Metal Cabinet) Sub-Station.	
To receive calls from both Voice Controlled and Touch Controlled Masters. (Cannot reply and cannot originate calls). Wt. 5 lbs.	21.50
List Price each \$36.50	Net each
MODEL ACS-73—Hi-Power Sub-Station to receive calls from both Voice Controlled and Touch Controlled Masters, (cannot reply, and cannot originate calls). Wt. 8 lbs.	27.00
List Price each \$46.00	Net each
MODEL ACS-77—Power Supply Unit. Will accommodate a system of up to 10 stations. Only one required per system, except where stations are more than 500 feet from Power Supply Unit, Wt. 11 lbs.	29.95
List Price each \$51.00	Net each
MODEL ACS-77A—Power Supply Unit. Will accommodate a system of up to 20 stations. Only one required per system, except where stations are more than 500 feet from Power Supply Unit. (For 30 and 40 Stations use two ACS-77A Power Supply Units, Wt. 12 lbs.)	39.00
List Price each \$68.00	Net each

**SERIES 7600—Provides all of the quality features of the 7700 Series, except Automatic Voice Control; and is equipped with manually operated TOUCH CONTROL.**

MODEL ACS-7604—Master Station—4-Station capacity, Wt. 16 lbs.	124.00
List Price each \$211.00	Net each
MODEL ACS-7610—Master Station—10-Station capacity, Wt. 16 lbs.	140.00
List Price each \$177.00	Net each
MODEL ACS-7620—Master Station—20-Station capacity, Wt. 17 lbs.	163.50
List Price each \$199.00	Net each
MODEL ACS-7630—Master Station—30-Station capacity, Wt. 18 lbs.	187.00
List Price each \$221.00	Net each
MODEL ACS-7640—Master Station—40-Station capacity, Wt. 19 lbs.	210.00
List Price each \$243.00	Net each
MODEL ACS-7601—Staff Station, Wt. 8 lbs.	98.00
List Price each \$167.00	Net each

Sturdy impact bakelite cabinets finished in rich walnut tone. Available in executive gray cabinets at slight additional cost. All Masters have junction box attached with 6 ft. length of flexible cable.

### CRADLE PHONE (Optional)—Live Microphone.

When used with any Super Chief Master or Staff Station, persons at such units do not operate any controls to talk and to listen while conversing over Cradle Phone. List Price per station, add \$49.95. Net, add \$29.35.

**MODEL MP-30—Power Booster.** Designed for Hi-Power Paging in conjunction with TALK-A-PHONE Intercommunication systems. 30 Watts output. Use with separate paging speakers, such as Models C20 and HP-3. Size: 12" L x 7 1/2" W x 8 1/2" H. Wt. 24 lbs. List Price each \$138.00. Net each \$81.00.

Masters, Staffs and Power Supply Units operate on 115-120 volts, 60 cycles, AC only. All Masters and Staffs come complete with tubes and instructions, ready to install. Size: Master, 12" W x 9" D, x 7" H. Staff & Sub-Stations, 12" W x 7 1/2" H. Wt. 24 lbs. Hi-Power Sub-Station, 12" x 8" x 12". Metal Sub-Station Cabinet, 6" W x 4" D x 7" H.

## NEW TALK-A-PHONE All-Transistor Home Intercom Radio System

• LISTEN-IN ON BABY, CHILDREN OR SICK ROOM . . . from any room in the house, day or night • ANSWER OUTSIDE DOORS FROM ANY ROOM . . . in any part of the house—without opening doors to strangers • TALK FROM ROOM TO ROOM . . . back and forth, up stairs or downstairs, any time, day or night • LISTEN TO YOUR FAVORITE RADIO PROGRAMS . . . follow you throughout the house with a flick-of-a-switch.

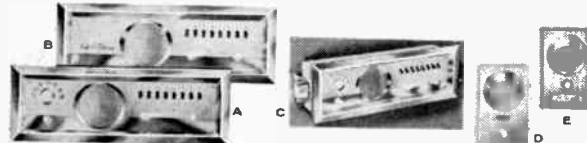
**CENTRAL MASTER STATION.** One and only one Central Master Station (with or without radio) is used per system. It contains the All-Transistor amplifier (and radio when built-in) and operates from any 9-volt dry battery.\* Place in any room. Master can call and converse with any other station, or stations in system, and can listen-in to any Staff or Sub-Station that has switched itself to "non-private." By a flick of its own switch, Central Master, any Staff and any Indoor Sub can listen to standard broadcast (AM) radio programs. Additional Masters can be used in rooms where "personal" radio facilities are desired and otherwise provide same intercom facilities as Central Master. Recess Central and Additional Masters in wall for flush mounting; or with optional Housing Assembly HI-SM (Fig. C) mount on wall, cabinets, etc., or stand on tables, shelves, etc. Front Panel: 15 1/4" x 5 1/4". Plaster Ring Approx.: 14-1/16" W x 4 3/4" H x 3 1/2" D. Does not plug into electrical outlet. 9-station capacity.

MI-9 (Fig. B). Central Master Station. All Transistor. For flush wall mounting. With plaster ring and full instructions. Without built-in radio. Less battery.	58.00
List Price Each \$98.58	Net Each
MI-9R (Fig. A). Central Master Station. Same as MI-9, except with built-in radio.	89.50
List Price Each \$154.00	Net Each
MI-29R (Fig. A). Additional Master Station. All Transistor. For flush wall mounting. With plaster ring and full instructions. With built-in radio. Less battery.	89.50
List Price Each \$154.00	Net Each

**JUNCTION BOX, BATTERY, POWER SUPPLY UNIT**  
MI-1B Common Junction Box to connect Masters and Staffs.

List Price Each 7.00	Net Each
<b>BATTERY</b> —Use any 9-volt dry battery. (Ignition or Telephone battery; or six standard #6 dry cells in series), which are available from local sources. When Battery is used, Power Supply is not needed.	4.00
<b>HI-PS Power Supply Unit.</b> (Optional—not required when Battery is used). Only one necessary per system. Plug into ordinary home electrical outlet of 110-120 volts, A.C., placed in basement, attic, closet, etc.	15.95
List Price Each \$27.50	Net Each

**ARCHITECTS AND CONTRACTORS—MI-PR Plaster Rings.** For Masters and Staffs, also available do not use Plaster Ring). Approx. Size: 14-1/16" W x 4 3/4" H x 3 1/2" D. List Price Each \$2.50. Net Each



**STAFF STATION.** Use as many as desired within system's capacity. Can call and converse with any other Station, or Stations, Staff, Master or Sub alike. Any Staff can switch itself "private" or "non-private" as desired. When "non-private", as in baby or sick room, another Staff or Master can listen in. At the flick of its own switch, Staff can listen to standard broadcast (AM) radio programs of Central Master. Recess Staff in wall for flush mounting; or with optional Housing Assembly HI-SM (Fig. C) mount on walls, cabinets, . . . stand on tables or shelves. Front Panel: 15 1/4" x 5 1/4". Plaster Ring Approx.: 14-1/16" W x 4 3/4" H x 3 1/2" D.

MI-8 (Fig. B). Staff Station. For flush wall mounting. Does not plug into electrical outlet. With plaster ring and full instructions.	31.50
List Price Each \$54.00	Net Each

**HI-SM HOUSING ASSEMBLY (Fig. C).** To enclose any Master or Staff Station and enable mounting on walls or cabinets or to stand on tables and shelves at any angle. Finished in gray tones with polished chrome finish knobs and brackets. Can be removed anytime so same unit can be recessed in wall.

List Price each \$19.00	Net Each
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### HOW TO DETERMINE CABLE NEEDS

Masters and Staff Stations Use #224 cable in either one of two methods. 1) Measure from first unit to second unit only; from second unit to third unit only; etc., until last unit is reached, and total. Cable between last and first unit not necessary. 2) OR, PLACE A COMMON JUNCTION BOX (Model HI-1B), in attic, basement, closet, etc. Measure from each Master and Staff to junction box, and total.

**Indoor and Outdoor Sub Stations:** Connect to nearest Master or Staff only. Use #2205 cable.

**INDOOR SUB-STATION (Fig. D).** Use as many as desired, within system's capacity. Can receive and reply to calls from any Master, or Staff Station. Can switch itself to "private" or "non-private" (to allow any Master or Staff to listen-in) position, as desired. Ideal for baby's room, and other locations where reply . . . but no origination-of-call is desired. At the flick of its own switch, Indoor Sub can listen to standard broadcast (AM) radio programs of Central Master Station (when Central Master is equipped with built-in radio). For flush wall mounting only. Front Panel: 3 3/4" W, 5 3/4" H.

MI-2 Indoor Sub-Station. Requires 2-inch square opening, 2 inches deep. Does not plug into electrical outlet. With full instructions.	15.95
List Price Each \$27.50	Net Each

**OUTDOOR SUB-STATION (Fig. E).** For front and rear doors. Complete with push button bell to connect to regular house chime or buzzer, and illuminated nameplate. When caller rings bell you may answer from any Master or Staff Station and converse with caller. Caller operates no controls for flush wall mounting only. Front Panel: 3 3/4" W, x 5 3/4" H.

MI-1 Outdoor Sub-Station. Requires 2-inch square opening, 2 inches deep. Does not plug into electrical outlet. With full instructions. List Price Each \$27.50	Net Each
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For Indoor Sub; #6202 cable for Outdoor Sub. Battery or Power Supply Unit; Connect with #2202 cable to Central Master Station only.

<b>CABLE (For indoor or outdoor use).</b>	
6224 (12-pair). Approx. O.D. 1/2".	28c
List Price per foot .47	Net per foot
6206 (3-pair). Approx. O.D. 1/4".	8 1/2c
List Price per foot .14	Net per foot
6202 (1-pair).	3 1/2c
List Price per foot .06	Net per foot
Sub-Stations (Sub-Stations	1.45
Net/Each	

# AN AMPLIFIER FOR EACH INDIVIDUAL INSTALLATION, A CHOICE OF NUMBER OF INPUT CHANNELS AND POWER OUTPUT

## SINGLE CHANNEL

Now, booster or bridging amplifiers are available in a wide range of power outputs. The lower power series can be used with inter-coms to build paging systems. The higher power series can be used to build high coverage systems where large amounts of power are required.

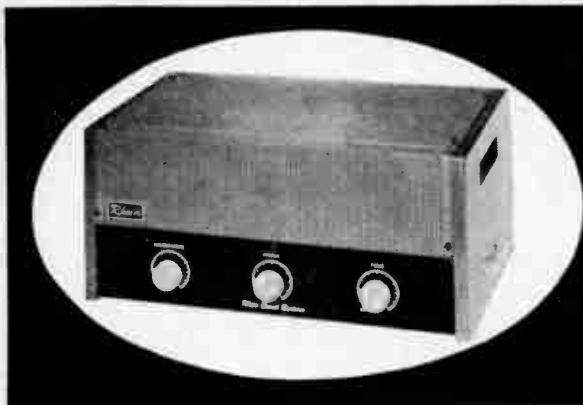
- 14A6 — 14 WATT, Single Channel (Booster) Amplifier.
- 20A6 — 20 WATT, Single Channel (Booster) Amplifier.
- 30A6 — 30 WATT, Single Channel (Booster) Amplifier.
- 50A6 — 50 WATT, Single Channel (Booster) Amplifier.



## TWO CHANNELS, WITH TONE.

When two input channels are required, this series will be used. One microphone input and one phonograph input are provided, each with a separate gain control. A treble attenuation control permits easy adjustment of tones.

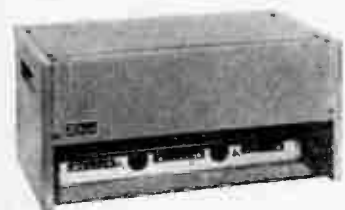
- 14B5 — 14 WATT, 2 Channel Amplifier.
- 20B5 — 20 WATT, 2 Channel Amplifier.
- 30B5 — 30 WATT, 2 Channel Amplifier.
- 50B5 — 50 WATT, 2 Channel Amplifier.



## THREE CHANNELS, WITH TONE.

This series meets the requirements for 3 input channels, two microphone and one phonograph. There is an independent gain control for each of the input channels to permit mixing and blending of the inputs. Also a control for attenuation of the treble frequencies.

- 14C6 — 14 WATT, 3 Channel Amplifier.
- 20C6 — 20 WATT, 3 Channel Amplifier.
- 30C6 — 30 WATT, 3 Channel Amplifier.
- 50C6 — 50 WATT, 3 Channel Amplifier.



POWER UNIT SPECIFICATIONS

### 14 WATT POWER UNIT MODEL 14-6

Power Output: 14 Watts at less than 4% distortion.  
 Frequency Response: 40 to 12000 cy.  $\pm 2$ db.  
 Output Impedances: 4, 8, 16, 500 ohm and 70 volt Line.  
 Regulation: 70 Volt Line, 2 1/2db Max. No Load to Full Load.  
 Tubes: 1-6SF5, 1-6SL7GT, 2-6V6GT, 1-5Y3GT.  
 Size: 7 1/2" H x 8 1/2" D x 16 1/2" L. Shipping Wt. 20 lbs.

### 20 WATT POWER UNIT MODEL 20-6

Power Output: 20 Watts at less than 4% distortion.  
 Frequency Response: 40 to 12000 cy.  $\pm 2$ db.  
 Output Impedances: 4, 8, 16, 500 ohms and 70 volt Line.  
 Regulation: 70 Volt Line, 2 1/2db Max. No Load to Full Load.  
 Tubes: 1-6SF5, 1-6SL7GT, 2-6L6GB, 1-5U4GB.  
 Size: 7 3/4" H x 8 1/2" D x 16 1/2" L. Shipping Wt. 23 lbs.

### 30 WATT POWER UNIT MODEL 30-6

Power Output: 30 Watts at less than 4% distortion.  
 Frequency Response: 40 to 12000 cy.  $\pm 2$ db.  
 Output Impedances: 4, 8, 16, 500 ohms and 70 volt Line.  
 Regulation: 70 Volt Line, 2 1/2db Max. No Load to Full Load.  
 Tubes: 1-6SF5, 1-6SL7GT, 2-6L6GB, 1-5U4GB.  
 Size: 7 3/4" H x 10 1/2" D x 16 1/2" L. Shipping Wt. 26 lbs.

### 50 WATT POWER UNIT MODEL 50-6

Power Output: 50 Watts at less than 4% distortion.  
 Frequency Response: 40 to 12000 cy.  $\pm 2$ db.  
 Output Impedances: 4, 8, 16, 500 ohms and 70 volt Line.  
 Regulation: 70 Volt Line, 2 1/2db Max. No Load to Full Load.  
 Tubes: 1-6SF5, 1-6SL7GT, 4-6L6GB, 2-5V4G.  
 Size: 7 3/4" H x 12 1/2" D x 16 1/2" L. Shipping Wt. 32 lbs.

The "mixer output" is available on all power units.



**" UNITIZED FOR VERSATILITY " BY " INTERCHANGEABILITY "**  
**A NEW CONCEPT IN COMMERCIAL AMPLIFIER DESIGN**



**THREE CHANNELS, DUAL TONE.**

Where 3 input channels are required but acoustical conditions require a more flexible tonal balance, this series should be used. It also provides the two microphone channels and phonograph channel but with individual bass and treble controls providing attenuation or boost independently at each end of the frequency range.

- 14D6 — 14 WATT, 3 Channel Amplifier.
- 20D6 — 20 WATT, 3 Channel Amplifier.
- 30D6 — 30 WATT, 3 Channel Amplifier.
- 50D6 — 50 WATT, 3 Channel Amplifier.

**FOUR CHANNELS, WITH TONE.**

Three microphone channels and one phonograph channel are available with this series. These with the treble attenuation type tone control along with the wide range of power outputs available makes this a very adaptable series.

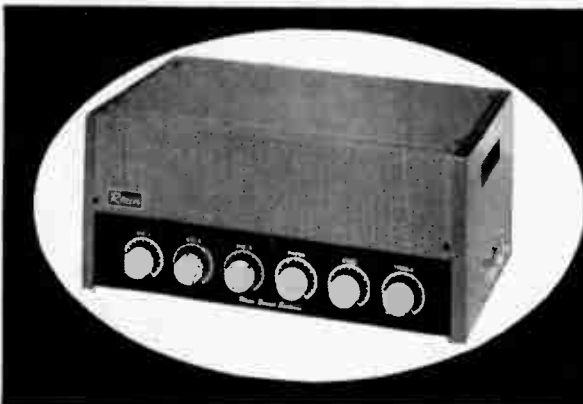
- 14E6 — 14 WATT, Four Channel Amplifier.
- 20E6 — 20 WATT, Four Channel Amplifier.
- 30E6 — 30 WATT, Four Channel Amplifier.
- 50E6 — 50 WATT, Four Channel Amplifier.



**FOUR CHANNELS, DUAL TONE.**

This series also provides for 3 microphone and a phonograph channel but has the additional advantage of individual treble and bass tone controls providing both boost and attenuation.

- 14F6 — 14 WATT, Four Channel Amplifier.
- 20F6 — 20 WATT, Four Channel Amplifier.
- 30F6 — 30 WATT, Four Channel Amplifier.
- 50F6 — 50 WATT, Four Channel Amplifier.



**INPUT UNIT MODEL "A"**

Inputs: One — High Impedance (1/2 meg.)  
 Control: One — "GAIN"  
 Input Voltage For Full Output — Any power unit: 0.35 v.  
 Num: —68db. Shipping Wt. 2 1/4 lbs.

**INPUT UNIT MODEL "C"**

Inputs: Two — 2 Microphone (2 meg.); 1 Phono (1/2 meg.)  
 Tone Control: Attenuator Type; —20db at 10000 cy.  
 Input Voltage For Full Output — Any power unit:  
 Mic. Channel: .004 v.; Phono Channel 0.35 v.  
 Num: Mic. Channel: —45db; Phono Channel —68db.  
 Tubes: 1-12AY7. Shipping Wt. 2 1/4 lbs.

**INPUT UNIT MODEL "E"**

Inputs: Four, 3 Microphone (2 meg.); 1 Phono (1/2 meg.)  
 Tone Control: Attenuator Type; —20db at 10000 cy.  
 Input Voltage For Full Output — Any power unit:  
 Mic. Channel: .004 v.; Phono Channel 0.35 v.  
 Tubes: 1-12AY7; 1-6AV6.

**INPUT UNIT MODEL "B"**

Inputs: Two — 1 Microphone (2 meg.); 1 Phono (1/2 meg.)  
 Tone Control: Attenuator Type; —20db at 10000 cy.  
 Input Voltage For Full Output — Any power unit:  
 Mic. Channel: .004 v.; Phono Channel 0.35 v.  
 Num: Mic. Channels —45db; Phono Channel —68db.  
 Tube: 1-6AV6. Shipping Wt. 2 1/4 lbs.

**INPUT UNIT MODEL "D"**

Inputs: Three — 2 Microphones (2 meg.); 1 Phono (1/2 meg.)  
 Tone Control: One Treble, —18db to +10db at 8000 cy.  
 One Bass, —10db to +8db at 80 cy.  
 Input Voltage For Full Output — Any power unit:  
 Mic. Channel: .004 v.; Phono Channel 0.35 v.  
 Num: Mic. Channels —45db; Phono Channel —68db.  
 Tubes: 1-12AY7; 1-6AV6. Shipping Wt. 2 1/4 lbs.

**INPUT UNIT MODEL "F"**

Inputs: Four — 3 Microphone (2 meg.); 1 Phono (1/2 meg.)  
 Tone Controls: 1-Treble, —19db to +db at 8000 cy.  
 1-Bass, —10db, +8db at 80 cy.  
 Input Voltage For Full Output — Any power unit:  
 Mic. Channel: .004 v.; Phono Channel 0.35 v.  
 Num. Mic. Channels: —45db; Phono Channel: —68db.  
 Tubes: 2-12AY7. Shipping Wt. 2 1/4 lbs.

All microphone inputs can be converted for low impedance microphones by using "plug-in" input transformers.

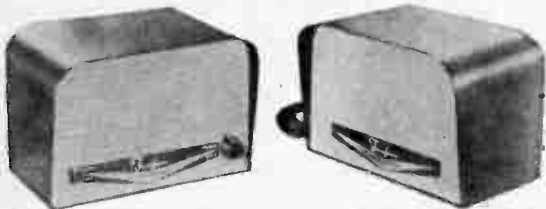
- ★ Conservative, continuous duty power readings.
- ★ Adequate feed back provides 70 V. line regulation.
- ★ "Mixer Output" available on all power units.
- ★ Low impedance "Plug-In" on input channels.
- ★ 3 speed phono covers for all units.
- ★ All units available rack panel mount.

# Fanfare® INTERCOMS

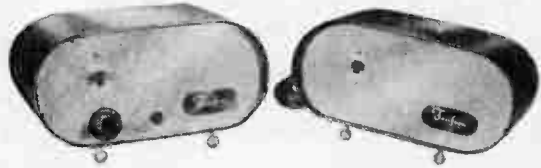


The complete intercom line styled for the modern office and home at economy prices.

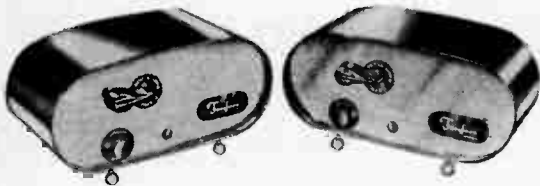
The complete line uses the same proven circuit and components: Three tubes — 12AU6, 50C5 and 35W4. • 3½" Alnico V speaker • Neon pilot light • Press-to-talk switch with long lasting "Coil-Spring" return • AC or DC • Remotes may be private or non-private • 2½ watt output • 20 watt power consumption • Dimensions: 8" x 4" x 4" • Decorator colors in Grey, Tan, Black and White. Brushed Brass at slight additional cost.



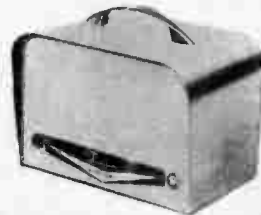
**TALK-A-LOT — \$19.95.** Economy, 2 station system, with 50 ft. cable. Remote is always open-no switch to operate. Smartly styled, metal cabinets. Ideal for baby sitting and the home. Ready to operate — nothing more to buy. Weight: 6 lbs.



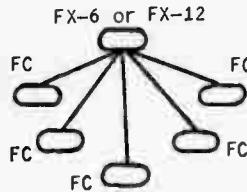
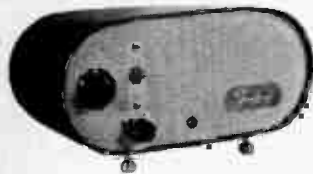
**FX-2, TWIN — \$29.95.** Ultra-sensitive 2-station system with 50 ft. cable. Powerful amplifier picks up slightest noise. Remote has TALK-LISTEN switch to permit originating calls to master. Use it anywhere — home or business. Extra remote, FS, may be added: \$12.50. Weight: 6 lbs.



**FW-20, WIRELESS — \$79.95.** A complete 2 station system ready to operate. No wires — no installation — just plug into any AC or DC outlet. Four tube plus germanium diode amplifier. Three way Talk-Listen Dictate switch. Standard model in ebony — Deluxe model, FW-20D, in brushed brass cabinets: \$81.50. Additional single stations: FW, \$39.75, FWD, \$42.25. Weight: 9 lbs.

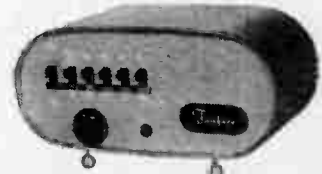
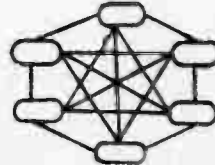


**RB-1, BABY-COM — \$19.95.** A one-station, wire-less radio intercom. No installation, no wires required — merely plugs in to any AC or DC outlet and voice is heard through any radio (even ear or battery radios). Ideally suited as a portable baby-sitter. Extremely sensitive, can be heard 300 ft. away. Blue or pink cabinets. Weight: 4 lbs.



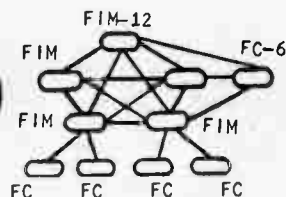
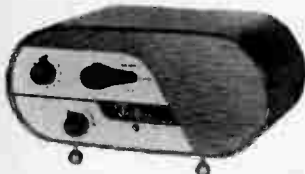
OR

All FX-6 or FX-12

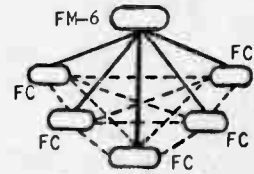
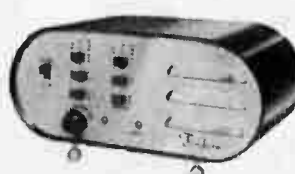


**FX-12, MANAGER — \$37.50.** A dual purpose master for use with up to eleven FC remotes, in a MASTER-TO-REMOTE system, or up to twelve masters in an ALL MASTER system. Twelve station rotary selector switch. Six private conversations or conference of all stations, may be held in an all master system. Weight: 4 lbs.

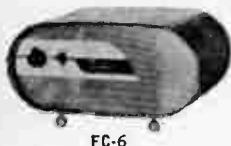
**FX-6, CHIEF — \$34.95.** A dual purpose master, for use with up to five FC remotes in a MASTER-TO-REMOTE system, or up to six masters in an ALL MASTER system. Five individual station selector switches. In all master systems, 3 private conversations or conference of all stations may be held. Weight: 4 lbs.



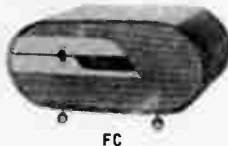
**FIM-12, EXECUTIVE — \$44.95.** A deluxe twelve station intermix master which can be used in any combination of masters and/or remotes. Master has 3 position Talk-Listen-Dictate switch. Use in conjunction with two types of remotes: FC-6 which can selectively call any one of six masters, and FC which can call only one master. Weight: 4 lbs.



**FM-6, MONITOR — \$37.50.** A master used with up to five FC remotes in a MASTER-TO-REMOTE system. "Switch-board" feature provides direct remote-to-remote conversations. Master can monitor any or all remotes. Master can "set-up" remotes to monitor other remotes. Remotes can originate calls to master and to other remotes. Busy-light flashes during conversations. Weight: 4 lbs.



FC-6



FJ

**FC, REMOTE — \$13.25.** Used in conjunction with FX-6, FX-12, FM-6, FIM-12 and Entry-Sentry.

**FC-6, REMOTE — \$19.95.** (Far Left) Six station selective remote used with FIM-12 only.

**FJ, REMOTE — \$17.95.** Same as FC, but with phono input. Use with FM-6 and Entry-Sentry only.

## ACCESSORIES

- YX—Wall bracket for any master \$1.50
- YF—Wall bracket for any remote \$1.50
- FA-30—Isolation transformer \$12.50
- PH-5—Paging horn \$26.95
- J0—Junction box \$9.95

**FANON ELECTRIC COMPANY, Inc. • Brooklyn 8, N. Y.**



# Fanfare<sup>®</sup> MUSI-TALK<sup>®</sup>



Flush-mounting radio-intercom systems, for the home, office, school and industry.

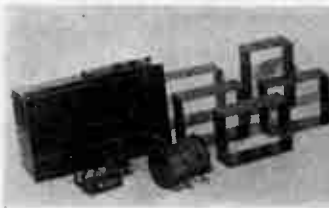
There are two MUSI-TALK systems — namely system MT (with radio), and MTL (less radio). For easier handling and greater economy the MUSI-TALK systems are packaged in kit-form, as follows:

**IK, (Installation Kit)** — Consists of 1 master plaster box, 5 remote plaster boxes, 200 ft. of wire and hardware. This installation kit is used in conjunction with either the IK or EKL electronic kits. List, \$34.95

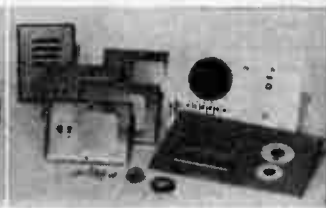
**EK, (Electronic Kit)** — Consists of 1 MC Master Control, (with radio), 4 BC Indoor Remotes, 1 BD Door Remote and hardware. List, \$115.00

**EKL, (Electronic Kit)** — Consists of 1 MCL Master Control, (less radio), 4 BC Indoor Remotes, 1 BD Door Remote and hardware. List, \$85.00

Any of the kits may be purchased separately. If complete kits are not desired, individual component parts may be purchased. (Listed below.)



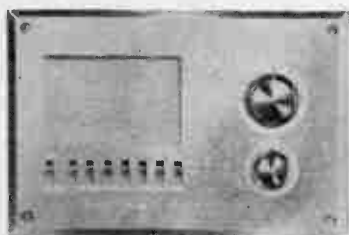
INSTALLATION KIT — IK



ELECTRONIC KIT — EK or EKL

Complete Musi-Talk system MT, consists of one EK and one IK. List, \$149.95

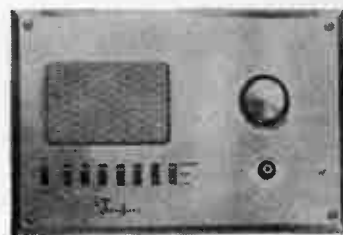
Complete Musi-Talk system MTL, consists of one EKL and one IK. List, \$119.95



MC — MASTER CONTROL

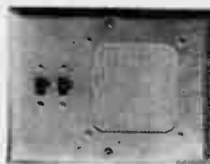
**MC, MASTER CONTROL** — A six tube, six-station master from which you may converse with any or all remotes. The master can "set-up" two or more remotes for direct communication with one another. "Monitor" feature enables master and remotes to eavesdrop any other locations. Powerful printed circuit radio can be "piped" to as many rooms as desired. Simultaneous radio and intercom operation is featured. Stylish satin copper panel is 11" x 7 3/4". List, \$89.95

**MCL, MASTER CONTROL** — Has all the intercom features listed above, less the radio. A phono input jack enables you to plug in any external music source for complete music distribution. List, \$59.95



MCL — MASTER CONTROL

Four BC and one BD remote stations are included in each electronic kit. (Since master controls accommodate 6 stations, any one remote may be added optionally.)



BC — REMOTE



BD — REMOTE

**BC, INDOOR REMOTE** — Four indoor remotes provide instant 2-way conversation among themselves and the master, as well as radio-music throughout the home. Remotes can originate calls to the master or to other remotes. Remotes may also "monitor" any other locations. Talk-Listen switch and Privacy switch. Satin copper panel is 6 1/4" x 4 3/4". List, \$11.25

**BD, DOOR REMOTE** — Has weatherproof rubber gasket and "weatherized" speaker to withstand all types of weather. Enables you to answer the door from within the house and to "pipe" music to the porch or patio. Copper finish panel 6 3/4" x 4 3/4". List, \$9.95

**OPTIONAL EQUIPMENT:**

**BJ, INDOOR REMOTE** — Same as BC, but incorporates a jack and matching transformer. Enables you to "pipe" your hi-fi to any or all rooms. List, \$15.95

**BDR, DOOR REMOTE** — Same as BD, but incorporates a bell-button. List, \$12.50

**DD, DESK-TOP CABINET** — Wood cabinet for surface installation of MC or MCL Masters. List, \$9.95

**PB, PLASTERBOX** — Wall box for mounting all wall-type remotes. Measures 5 1/4" x 3 3/4" x 2". List, \$2.50



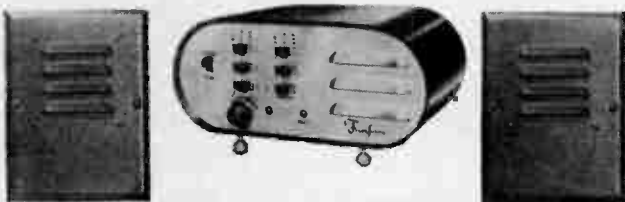
BJ — REMOTE



DD — CABINET

## "ENTRY - SENTRY"<sup>®</sup>

Low cost, home-intercom "package"!



A new door-answering and intercom system for the home. Ideal for the low-priced home builder and "do-it-yourself" trade. Adds security and comfort to every home.

**ENTRY-SENTRY** consists of: FM-6 Monitor 5-station master, YX wall bracket, two BD weatherproof door remotes and 100 ft. 2 conductor wire. Weight: 9 lbs. Complete system: List, \$54.95

Three additional remote stations may be added optionally to above system. Model BC for flush wall installation, list, \$11.25, or Model FC for desk-top use, list, \$13.25. Also Model BJ, list, \$15.95, and Model FJ, list, \$17.95.

**FANON ELECTRIC COMPANY, Inc. • Brooklyn 8, N. Y.**

**THESE EXCLUSIVE FEATURES ASSURE LOGE QUALITY**

**PATENTED SELECTOR SWITCH ASSEMBLY**

Feather-touch keys provide maximum ease of operation. Patented construction permits instant access for adjustment or minor part replacement.



**MASTER CHASSIS**

Removable in one minute for service (no extension wires required)... all units AC only (no AC-DC circuits are used).



**VISUAL ANNUNCIATORS**

On all models. Plunger is activated into position by in-coming call... acts as memo message if call is not answered.



**JUNCTION-TYPE TERMINAL CONNECTIONS**

Permits quick installation and interconnection between masters and remotes. Plug-in male and female terminals allow rapid removal for servicing or future expansion.



**KWIK-KALL SENIOR INTERCOMS**



**MODEL L-406**  
6-station master **\$12750**  
List Price

*Only Loge offers all this quality...*

- ▶ **ADAPTABLE** for every type of business and every size installation. Senior master units are available in 6, 12, 18, 24 and 36-station units which can be interconnected with Loge Junior Masters, remote stations, and paging speakers.
- ▶ **PRECISION BUILT** with exclusive Loge engineering features and extra power for wider range adaptability.
- ▶ **SOLID WALNUT** cabinets, beautifully styled and finished to harmonize with every office decor.
- ▶ **AVAILABLE WITH ACCESSORY FEATURES** including telephone handset, busy light signal, or annunciators.

**KWIK-KALL JUNIOR INTERCOMS**



**MODEL L-100-P System including L-100 Junior Master, one JR-3-45 remote speaker, and 50 ft of cable.**

**PR-50 Paging Speaker** **JR-3-45 Remote Speaker**  
**\$1450** **\$900**  
List Price List Price

*Low cost versatile intercoms for smaller installations*

- ▶ **2, 4, 6 AND 12-STATION UNITS** ideal for smaller offices and plants, or for interconnection with Loge Kwik-Kall Senior Masters. Compatible with all Loge remote station speakers and paging speakers.
- ▶ **STURDY METAL CASE** with hammertone finish assures rugged construction. Patented switch assembly and other Loge exclusive features. Small, compact, powerful.
- ▶ **AVAILABLE IN DESK OR WALL MODELS.** Junior master units can be ordered singly or in the L-100-P complete master-and-remote packaged system.

**KWIK-KALL "NOR" INTERCOMS**



**MODEL L-406A-NOR**  
6-station master with annunciators, telephone, handset, and chime signal.

**\$22950**  
List Price

*Revolutionary 1-pair wire system for secret 2-way intercom*

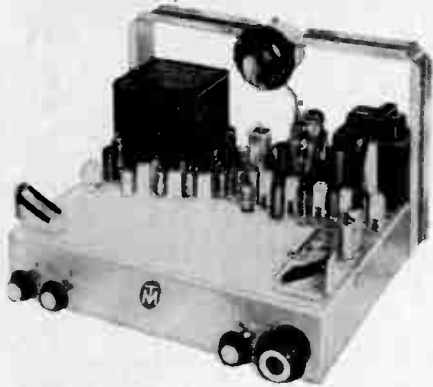
- ▶ **SECRET INTERCOM** with absolute privacy between any two master stations, yet but a single pair of wires is needed. Conference calls are possible with only desired stations connected. Equipped with telephone handset as well as talk-back.
- ▶ **AUDIBLE AND VISIBLE ANNUNCIATORS.** Each call announced by chime or buzzer, and also by plunger signal which acts as memo message until answered.
- ▶ **PAGING KEY AVAILABLE** at small additional cost. Power is automatically quadrupled with use of paging key.
- ▶ **UNLIMITED INTERCONNECTIONS.** Standard master units available with 6, 12, 18, 24, and 36 stations. Larger units available on special order. In solid walnut cabinet with exclusive Loge construction features. 4-station Junior "NOR" master available in metal cabinet. All units can be interconnected with Loge remote stations and paging speakers. Installations of NOR units can be made up to 10,000 feet with No. 22 wire.
- ▶ **ZERO LEVEL** with dual amplification. Can be installed within telephone cable pairs on private or government-owned telephone systems.



# TECH-MASTER

## Custom Built TV Chassis

### The World's Most Powerful, Most Dependable TV Receivers



### The Gold Medal.

The new rugged Gold Medal TV chassis combines the time proven RCA 630 Type circuitry with the most advanced engineering. Designed for long life and dependability. Flawless video plus versatility in audio. By means of simple external switching arrangement, you may use either the completely self contained high quality amplifier and 12" loud speaker of the Gold Medal receiver, or feed the sound thru your own hi-fi system.

- New system of picture-sound-synchronization.
- Latest 630 type circuit uses only finest available components.
- Advanced cascode turret tuner.
- Quick-action, keyed AGC circuit for stabilized control.
- New Hi-sweep auto transformer system.
- 5  $\mu$ v sensitivity for good fringe area reception.
- Full horizontal and vertical blanking.
- Local-distance area control switch on front panel.
- Picture-Expander control for low line voltage conditions.
- Chassis beautifully plated in gleaming nickel.
- Audio Takeoff for feeding to hi-fi system.
- Phono input.

**Model 2430-N** — 90° picture tubes, 21" to 27", with quality 12" PM speaker and universal kine mounting brackets. **Dimensions:** 20 1/4" W. x 16 1/4" D. With kine brackets removed, chassis is 19" wide for rack panel mounting. **Shipping Weight:** 65 lbs. **Net Price \$194.50**

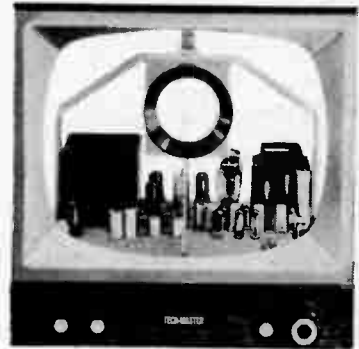
### The "VIDEO THEATRE"

The 'theatre-in-the-home,' with an incomparable combination of fidelity in Audio and Video reproduction!

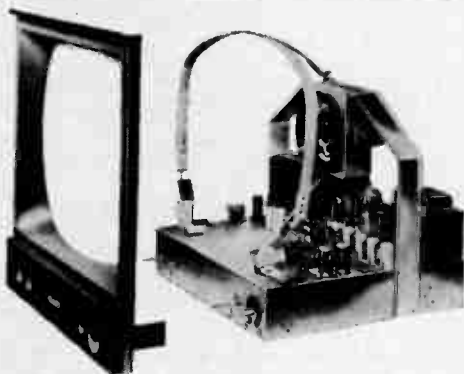
Long acknowledged as the leader in the field of quality custom television, Tech-Master now brings you the 'Video Theatre' with outstanding performance provided by means of a multi-network, basic "630," 31-tube circuit. There are no short cuts in the design, engineering or construction of the 'Video Theatre.' By every advanced engineering method and with the use of the finest available components, Tech-Master is able to offer at a realistic price the finest in sight combined with the finest in sound.

#### COMPARE THESE OUTSTANDING FEATURES:

- 31 tube, 630-type chassis.
- Push-Pull, 6-Watt Output — with inverse feedback. 4-8-16 Ohm match.
- Wide-Range Tone Control.
- Input — for phonograph, radio tuner or microphone.
- 2-Stage Audio Amplifier.
- Sound IF Carrier Frequency — 41.25 mc.
- PLUS — all the exceptional video features of the "Videophile" described above.



**Model 630-5** — The 'Video Theatre,' for all 90° picture tubes from 21" to 27". **Dimensions:** 19" W. x 17 3/8" D. **Shipping Weight:** 65 lbs. **Net Price \$254.50**



**Model 630-5T** — The "Videophile" . . . for all 90° picture tubes, from 21" to 27" **Dimensions:** 19" W. x 17 3/8" D. **Shipping Weight:** 58 lbs. **Net Price \$249.50**

### The "VIDEOPHILE"

#### HIGH FIDELITY TV TUNER FOR HIGH FIDELITY AUDIO SYSTEMS

The ultimate in TV receivers, for owners of home music systems who want to enjoy the sound quality of their own high fidelity system plus equivalent picture quality, not provided by mass-produced TV sets.

The picture fidelity of the "Videophile's" powerful 28-tube chassis matches the audio quality of the finest sound installations. Noise-free sound take-off for feeding into external Hi-Fi audio system. Undistorted FM signal at ratio detector stage is fed through cathode follower for matching any amplifier circuit.

#### FEATURES

- AFC Horizontal Hold—using synchro-lock discriminator transformer.
- Stabilized Vertical Hold.
- 3-Stage Sync. Chain — with high transconductance noise-limiting sync. amplifier.
- Antiblooming circuit.
- Full Horizontal and Vertical Blanking.
- Accommodates both magnetic-and electrostatic-focus kinescopes.
- Supersensitive — 5 microvolt sensitivity. Cascode tuner.
- AGC Level and Area Control — for adjusting reception to any signal area.
- Video IF Carrier Frequency — 45.75 mc.
- 4-Stage Video IF and 2-Stage Video Amplifier.

### FRONT PANEL ASSEMBLY

Complete with mask, glass and hardware

FITS ALL MODELS LISTED ABOVE

For 21" picture tube —	
Model P21	\$27.50
For 24" picture tube —	
Model P24	\$27.50





# TECH-MASTER

# TV RECEIVERS

REMOTE TV TUNER • RADIO KIT

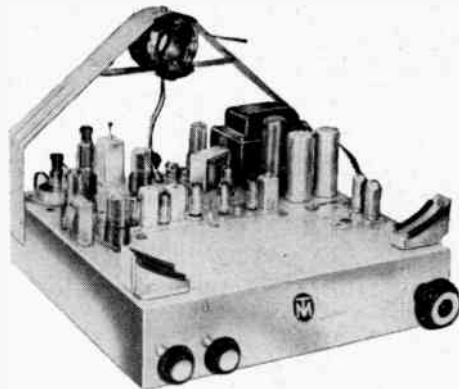
## The CONSTELLATION

A star performer for conventional cabinet or built-in custom installation. AC, transformer powered model, not commercially mass-produced, but crafted with the same care as our higher priced receivers. Designed for use where economy is a major consideration. Supersensitive for fringe or troublesome areas. Videola Star TV receiver operates efficiently with any standard indoor antenna in normal signal areas. 16-tube, power-packed circuit delivers bright, sharp, rock-steady picture and clean, undistorted static-free sound.

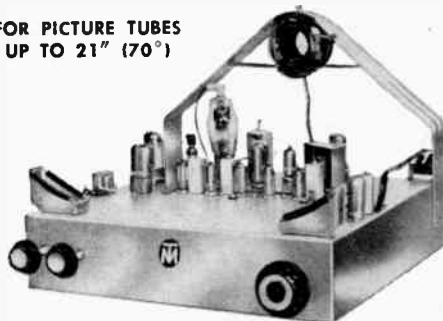
### OUTSTANDING FEATURES OF VIDEOLA TV RECEIVER

- Automatic Gain Control.
- 3-Stage, stagger-tuned IF.
- Auto-transformer high voltage system.
- Wired for low-voltage electrostatic focus kinescopes.
- For 90 degree picture tubes from 21" to 27".
- Sensitivity 6 uv at 20V peak-to-peak.
- 2-Stage video amplifier sweep circuit.
- Tube complement: 6J6, 6BC5, 2-6CB6, 6AU6, 6T8, 6AQ5, 2-12AU7, 6SN7, 12BH7, 6BQ6, 5U4GA, 1X2B, 6W4, 6AM8.
- Dimensions: Chassis measures only 12 x 16. Size of picture tube really determines space requirements with this compact, easily mounted unit.
- Shipping Weight: 35 lbs.
- Complete with mounting hardware, speaker and knob kit.

The Constellation .....\$129.50 Net



FOR PICTURE TUBES  
UP TO 21" (70°)



Model 5516W—Same as above but with IF section fully wired and aligned. Uses Standard tuner (sensitivity 7 uv). \$99.50 Net

## New TECH-MASTER TV CRAFT KIT

The most up-to-date TV kit, with the latest improvements in tubes and circuitry. Ideal for student work or home project. This kit not only provides excellent training in television, but builds into a first class, modern receiver that anyone would be proud to own. Coils are preadjusted and tuned at the factory. Quality components, carefully selected and packed by personnel experienced in the TV-kit field, insure satisfaction. Step-by-step instructions with pictorial and schematic diagrams are easy to follow — leave nothing to the imagination. Sockets, terminal strips and connectors riveted on chassis.

- Advanced and improved, super-selective, 12-channel turret tuner.
- New, 600 milliampere, rugged low-drain tubes.
- Operates new low-voltage electrostatic-focus kinescopes (17" and 21").
- High-efficiency circuit-sensitivity of 9 microvolts at 20 V peak-to-peak.
- Three-stage stagger-tuned IF, using high-gain bil-filar coils.
- Automatic gain control.
- Synchro-guide horizontal hold with AFC.
- Ceramic core horizontal output transformer with beam power amplifier.
- Size: 17" x 17" x 9". Weight: 26½ lbs.

## The DUO-MASTER

### PLUG-IN REMOTE-CONTROL TV TUNER

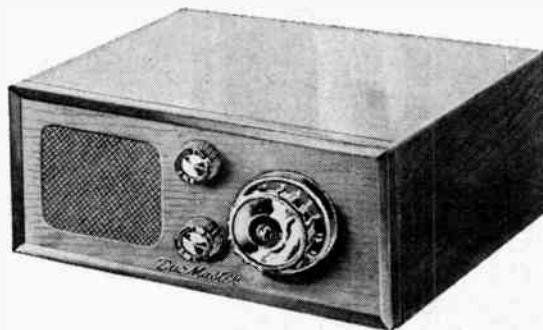
with its own high-fidelity FM sound

In effect a complete, super-sensitive TV receiver, minus high-voltage supply, sweep and video output circuits, and picture tube. Thus it acts as a self-contained remote-control system for every other function of your TV set. Just plug the single, thin, remote-control lead into your TV receiver, and you can select your station, fine-tune both picture and sound, and adjust picture intensity—right from your armchair, to 50 feet from the screen. There is a separate loudspeaker in the handsomely styled "Duo-Master" cabinet—or you can use the speaker in your TV set or hi-fi system—or plug headphones right into the "Duo-Master" for private listening. When "Duo-Master" is connected to tape recorder thru cathode take-off, speaker may be used for monitoring.

Dimensions: 12½" x 8" x 6"

Weight: 15 lbs.

Model 23 — The Duo-Master .....Net Price: \$79.50



- Ideal for tape recording of TV programs
- A must for studio operations
- 3 IF stages
- 2 audio stages
- Built-in speaker
- Headphone jack with alternate connection for external amplifier take-off or tape recorder
- 9 tubes plus rectifier—incl. 6AQ5, 6T8, 6AU6, 3-6CB6, 6J6, plus RF and oscillator tubes in front-end turret tuner.

## NEW DELUXE SUPERHET AC-DC RADIO KIT



Kit is furnished complete with modernly styled, handsome Bakelite cabinet (10" x 5½" x 5½"), attractive station selector and control knob.

Only the finest components are furnished with this kit. Tunes all standard AM broadcasts from 550-1720 KC. Super-sensitive, high gain circuit assures outstanding reception with built-in loop antenna. Automatic volume control circuit to eliminate blasting or fading.

Tube Complement: 12SA7, 12SK7, 12SQ7, 50L6 and

35Z5 rectifier. Detailed schematic and pictorial diagrams with clearly illustrated assembly instructions provide easy-to-follow directions for quick assembly. Operates 115-125 volts, 50-60 cycles, AC or DC. Shipping weight: 6 lbs.

Model 385-K — Complete with tubes and cabinet. (Wire and solder not included).

\$19.95 Net



# TECH-MASTER

# HIGH FIDELITY KITS

## NEW TECH-MASTER MODEL 19K 60-WATT HIGH FIDELITY



### Amplifier- Preamplifier Kit

NOW, for the first time, an integrated high-power amplifier package in kit form for the audio perfectionist — complete with versatile preamplifier in one compact, high-styled unit — at a budget price! Only the most advanced high-fidelity circuitry and the finest available components are used in this superb new Tech-Master Kit, which is unexcelled in performance by any available amplifier system, regardless of price. Undistorted power output is guaranteed to be 60 watts at any frequency from 20 to 20,000 cps. Intermodulation distortion is below 1% at 60 watts and below 0.25% at all ordinary listening levels. Reserve power is great enough to drive without distortion the new wide-range electrostatic loudspeakers. The preamplifier provides compensation for all recording characteristics. Assembly is simple and foolproof — with easy-to-follow written instructions and picture diagrams to guide every step. No flimsy, hard-to-solder printed wiring boards!

- Frequency response flat from 10 to 50,000 cps.
- Special 10 lb. output transformer with tapped primary for ultra linear connection
- Direct interstage coupling
- Output matching for 4, 8 or 16-ohm speakers
- Hum level 65 db below rated output through magnetic cartridge input; 72 db below rated output through other inputs
- Variable calibrated pickup load control
- Equalizer positions for RIAA, AES, NAB, Orig. LP, and 78's
- Selector switch for Piezo cartridge, Tuner, TV Sound, and Tape
- Cathode-follower tape recording take off
- Low-distortion feedback type tone controls with concentric control knobs
- Low silhouette cabinet combined with upright tube and transformer positions for optimum ventilation
- Elegantly styled black and gold panel
- Tube Complement: 12AX7 preamp, 12AU7 tone, 6AN8 driver and phase splitter, 2-6Y50 output, 5U4GB rectifier. Separate selenium rectifier for fixed bias.

Dimensions: 14 1/4" wide x 10 3/4" deep x 5 1/4" high  
Weight: 28 lbs.

Model 19K Kit ..... Net Price \$79.95  
Cabinet 19C ..... \$7.50

## NEW TECH-MASTER MODEL 21K 25-WATT HIGH FIDELITY



### Amplifier- Preamplifier Kit

A top-quality integrated amplifier-preamplifier system on a single chassis in kit form, at an exceptionally low price. Performance equals or exceeds that of any available amplifier up to rated power of 25 watts. Circuitry, components and features similar to Model 19K above, except for 25 watt power rating of output tubes and output transformer. Performance identical to Model 19K up to rated power. Equalizer has RIAA position, with exclusive Tech-Master calibrating feature on treble control for accurate compensation of AES, NAB, Orig. LP and 78 characteristics.

Tube Complement: 12AX7 preamp, 12AU7 tone, 6AN8 driver and phase splitter, 2-6L6GB output, 5V4CA rectifier plus selenium rectifier for fixed bias.

Dimensions: 14 1/4" wide x 9" deep x 5 1/4" high  
Weight: 21 lbs.

Model 21K Kit ..... Net Price \$59.95  
Cabinet 21C ..... \$7.50

## Tech-Master TM-15A Williamson Type 20 Watt Amplifier Kit



Uses famous WILLIAMSON circuit with unique modification for true high fidelity reproduction at increased power output. Frequency response flat and smooth through entire audible range, with distortion less than .0025 at normal listening levels, and excellent transient characteristics. Kit is complete, including tubes and detailed instructions.

Power Output .....	20 watts undistorted
Output Impedance .....	4-8-16 ohms
Input Impedance .....	High for crystal pickups, tuners, pre-amps, etc.
Input Voltage .....	1.1 VRMS (for 20W out)
IM and Harm. Distortion .....	.25% at 10W .5% at 15W
Hum and Noise Level .....	70 db below rated output
Feedback .....	20 db
Response at 5 Watts .....	8 cps to 100,000 cps 1 db
Response at 15 Watts .....	10 cps to 70,000 cps 1 db
Power Requirements .....	105.125V, 50-60 cycles, 120W
Tube Complement .....	2 6SN7, 2/5881, 1/5V4G

Dimensions: 9 x 12 x 6 1/2" ..... Weight: 27 lbs.  
Model TM-15A ..... \$49.95 Net

## Tech-Master TM-16A Self-Powered Preamp-Equalizer Kit



Beauty and versatility at low cost! Modernly styled in smart two-tone black and gold, the new Model TM-16A will provide new beauty and versatility to your music reproduction system.

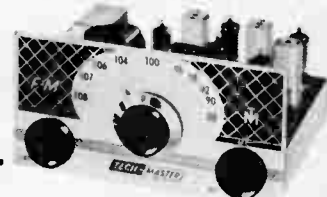
Cathode Follower Output — Loudness-Compensating Control.  
Input Selector — Phono Pre-Amp — Tone Control

Four Input channels ..... One-low level-high gain  
Three hi-impedance  
Bass frequency control ... ±15 db boost or attenuation at 20 cy.  
Treble frequency control ... ±15 db boost or attenuation at 20 KC  
5 Position Equalization—78 rpm.—old 78's—RIAA—PFRR—AES  
AC Power supply—transformer isolated, 115V - 60 cycles.  
Tube Complement: 1-12AX7, 1-12AU7, 6C4, Selenium Rect.  
Dimensions: 9 3/4" x 3 3/8" x 4 1/2". Weight: 4 lbs.

TM-16A ..... \$24.50 Net

TM-17P ECONOMY MODEL:  
Similar to 16A except power is obtained from TM-15A.  
3 Pos. equalizer switch—true-taper volume control \$19.95 Net

## New TECH-MASTER HI-FI FM TUNER KIT



Designed for optimum performance at minimum cost with excellent selectivity. Self-contained power supply. Complete, detailed step-by-step instructions and pictorial diagram.

- Tuning range 87-109 Mc.
- IF Bandwidth 200 Kc.
- Grounded grid RF stage
- Automatic Frequency control
- Manual AFC cutoff
- Micro-vernier tuning
- No drift ratio detector
- Sensitivity 4 microvolts for 20 db quieting
- Standard de-emphasis network
- Cathode follower output .8 V RMS
- High impedance output 3.2 V RMS
- Input impedance 300 ohms
- AC receptacle for on/off control
- 2/12AT7, 6BA6, 6AU6, 6AL5, 6C4, Sel. Rect.
- Size: 4 1/2 x 8 x 6 1/4"
- Weight: 6 1/2 lbs.

Model FM-18—Complete Kit (less wire and solder) \$29.50 Net  
Model 18C Cabinet ..... \$ 7.50 Net



# TECH-MASTER

## HIGH FIDELITY AMPLIFIERS AND FM TUNER



### NEW TECH-MASTER MODEL 19 60-WATT HIGH FIDELITY AMPLIFIER SYSTEM

The highest achievement to date in integrated high-power amplifier design. Combining a low-distortion preamplifier-control section with an ultra-modern power-amplifier circuit in a single low-slung unit of strikingly elegant appearance, the Model 19 brings high-fidelity amplification close to the theoretical limits of perfection. Regardless of new developments in loudspeakers, pickups and other associated high-fidelity equipment, this superb new Tech-Master instrument is your gilt-edged insurance against amplifier obsolescence for many years to come.

- 60 watts undistorted power at any frequency from 20 to 20,000 cps.
- Intermodulation distortion below 1% at 60 watts, less than 0.25% at all normal listening levels.
- Frequency response flat from 10 to 50,000 cps.
- Ultra linear type output stage
- Direct interstage coupling
- Special 10 lb. output transformer with tapped primary for ultra linear connection
- Output impedance matching for 16, 8 or 4-ohm speaker systems
- R-C filter network for clean, hum-free signal—Hum Level 65 db below rated output through magnetic cartridge input; 72 db below rated output through other inputs
- Variable calibrated pickup load control to accommodate all magnetic cartridges.
- Equalizer positions for RIAA, AES, NAB, Orig. LP, and 78's
- Input selector switch for Piezo cartridge, Tuner, TV Sound, and Tape
- Cathode-follower tape recording take off for all inputs
- Two AC outlets in rear of chassis for associated equipment
- Low-distortion feedback type tone controls with concentric control knobs
- Low silhouette cabinet combined with upright tube and transformer positions for optimum ventilation

Tube Complement: 12AX7 preamp. 12AU7 tone, 6 AN8 driver and phase splitter, 2-6550 output, 5U4GB rectifier. Separate selenium rectifier for fixed bias.

Dimensions: 14 1/4" w x 10 3/4" d x 5 1/4" h

Weight: 28 lbs.

Model 19 ..... \$129.95  
complete with cabinet



Dimensions: 14 1/4" wide x 9" deep x 5 1/4" high  
Weight: 22 lbs.

### NEW TECH-MASTER MODEL 21 25-WATT HIGH-FIDELITY AMPLIFIER-PREAMPLIFIER SYSTEM

An integrated medium-power amplifier-preamplifier system of unsurpassed quality, representing the ultimate achievement in the 20-to-30 watt power class. Ideal for the budget-conscious perfectionist. Circuitry, components and features similar to Model 19 above, except for the lower power rating of the output tubes and output transformer. Performance identical to Model 19 up to rated power of 25 watts. Equalizer has RIAA position, with exclusive Tech-Master calibrating feature on treble control for compensation of AES, NAB, Orig. LP and 78 characteristics.

Tube Complement: 12AX7 preamp, 12AU7 tone, 6AN8 driver and phase splitter, 2-6L6GB output, 5V4GA rectifier, selenium rectifier for fixed bias.

Model 21 ..... \$99.50  
(With Cabinet)

### The Cantata: HIGH FIDELITY FM TUNER

A complete high fidelity FM tuner with self-contained AC power supply. Compactly constructed for versatile installation, yet a veritable giant in performance.

- Cathode follower and high impedance outputs.
- Covers the full FM band (88-108 Mc.).
- Limiter and AFC circuit for easy pinpoint tuning.
- Manually controlled AFC cutoff to pick up weak signal stations adjacent to strong signal stations.
- Sensitivity is 4 microvolts for 20 db quieting.
- Uses balanced ratio detector and grounded-grid RF amplifier.

- Full power transformer operation for line isolation.
- Standard de-emphasis network automatically regulates high-frequency response.
- Micro-Vernier tuning.

The CANTATA complete with mounting instructions, tubes—6AU6, 6C4, 6AL5, 6BA6, 2/12AT7, and selenium rectifier, less cabinet ..... \$49.50 Net

Dimensions 4 1/2" H. x 8" W. x 7" D.

Shipping Weight: 7 lbs.

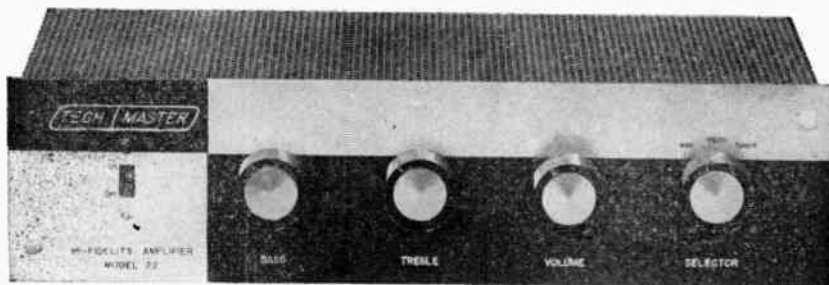
Model C18 Cabinet ..... \$7.50 Net





# TECH-MASTER

## HIGH FIDELITY AMPLIFIER AND FM TUNER



### CONTROLLED AMPLIFIER

*High Fidelity*

*Low Silhouette*

A complete amplifier — preamplifier combination for true Hi-Fi reproduction throughout the entire audible frequency range.

The frequency response is clean and faithful at any volume setting from a fraction of 1 watt to the full rated output.

This beautifully styled unit is designed for use on tabletop, shelf, or in cabinet mounting. Front panel is removable and designed for quick, simple cabinet installation.

Inputs: Magnetic, piezo and tuner. Equalization: RIAA. Bass frequency control  $\pm 15$  db at 50 cps. Treble frequency control  $\pm 15$  db at 10000 cps. Hum and noise level: 70 db below rated output. Output transformer: 4, 8 and 16 ohm. Power output: 12 watts. Tubes: 2—EL 84; 2—12 AX7/ECC 83; 1—EZ 81.

Dimensions:  $3\frac{1}{2}$ " x  $5\frac{1}{8}$ " D. x  $14\frac{1}{8}$ " W. Shipping weight: 12 lbs.

Model 22 complete, instrument-tested, amplifier. NET PRICE:



### FM TUNER

*High Fidelity*

*Low Silhouette*

Top performing, handsomely designed frequency modulation tuner. Uses the Foster-Seeley (Armstrong) type limiter, discriminator circuit. The tuning mechanism is ultra smooth in operation for quick, accurate station selection. AFC action provides positive hold and drift-free reception even on weak signals.

3 stages of IF. Balanced 300 ohm input. 1 volt RMS output. Manually controlled AFC cutoff. Covers 87 to 109 Mc. Sensitivity is 2 microvolts for 20 db quieting. Grounded-grid RF amplifier. Full power transformer operation for line isolation. Standard de-emphasis network. Tubes: 2—6BZ6; 1—6U8; 1—6BZ7; 1—6AU6; 2 crystal diodes for discriminator. Selenium rectifier.

Dimensions:  $3\frac{1}{2}$ " x  $5\frac{1}{8}$ " D. x  $14\frac{1}{8}$ " W. Shipping weight: 8 lbs.

Model 27, complete, instrument-tested, FM-Tuner. NET PRICE:



# Philmore GUARANTEED Electronic PRODUCTS

## 2-TUBE (Incl. Rectifier Tube) AC-DC RADIO KIT



Designed purposely for easy construction yet uses the most efficient type of circuit. Kits are replicas of parts and circuits used and thoroughly tested in master models and standardized. Simple instructions and diagrams. Uses 1 each 35Z5GT and 12SJ7 tubes. Supplied with punched and formed chassis. Silk screen panel and gray hammertone finish. Attractively packaged in sturdy box.

No. 7001B—Complete, less tubes and headsets.....List Price \$12.50  
Plus Federal

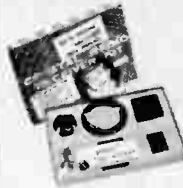
## 3-TUBE (Incl. Rectifier Tube) AC-DC RADIO KIT



More elaborate than the two-tube and much greater in signal strength—permitting use of a 4" P.M. speaker. Simple instructions with pictorial, schematic diagrams. Silk screen panel and gray hammertone finish. Superior in tone and selectivity to many manufactured radios! Uses 1 each 35Z5GT, 50L6GT and 12SJ7 tubes. Completely assembled, you have a TWO-BAND set, covering standard broadcast (550-1700 Kc) and SHORT WAVE (6-18 Mc).

Cat. No. 7001C—Complete with Speaker, less tubes .....List Price \$20.00  
Excise Tax

## PHILMORE "SKY-ROVER" RADIO RECEIVER KIT



- Bakelite Cabinet for beauty and long lasting use.
- Supersensitive Crystal for clarity and volume.
- Precision wound Tuning Coil.
- Single 1000 ohm High Impedance professional type earphone.

More than just an ordinary "toy," when assembled according to easy-to-follow step by step instructions, the Sky Rover Radio Kit actually brings in loud, clear reception. There are no batteries, no electricity, no cost for operation. Cat. No. 400—Including Earphone .....List Price \$4.15  
Includes antenna lead-in wire and necessary hardware.  
Plus Federal Excise Tax

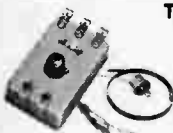
## 5-TUBE AC-DC RADIO KITS 1 and 2 Band Models



Latest model compact hi-fi quality radios. Single Band: 550-1600 Kc. Two Band: 550-1600 Kc and 5.5-16 Mc. Sturdy walnut bakelite cabinets, loop antenna, punched chassis. All Parts and Tubes included: 12SA7GT, 12SK7GT, 12SQ7GT, 50L6GT, 35Z5GT. Size: 9 1/4 x 5 1/2 x 5 1/4".

Model No. 201 Single Band AC/DC.....List Price \$34.00  
Model No. 202 2-Band AC/DC.....List Price 39.00  
Plus Federal Excise Tax

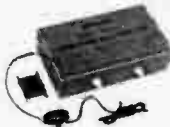
## TRANSISTOR BATTERY RADIO KIT Model TR-101



Includes Germanium Diode Crystal Detector and Transistor amplifier.

Uses one 1 1/2-volt Penlite "A" Battery, Eveready type 915 or equivalent, which fits inside cabinet, gives long service. Features High "Q" Litz wound coil tuned by variable condenser. Attractive molded polystyrene cabinet, 3 3/4 x 2 1/2 x 1 1/4". Weight with battery: 4 oz. MODEL TR-101 Including Earphone (less battery) .....List Price \$9.75  
Plus Federal Excise Tax

## "LITTLE MIRACLE" One-Tube Portable Battery Radio Kit



Easy to build—works like a Big Set! 550 Kc. to 1650 Kc. Has regular variable condenser and Litzwound coil. Has sensitive regenerative detector circuit. Light, compact. The Carton is the Cabinet! Uses standard A & B Batteries. No. 7501—Complete with earphone, 3V4 Tube, and antenna wire (less batteries, solder, hookup wire) .....List Price \$12.25 plus Fed. Excise tax.

## "Supertone" Crystal Radio Receiver KIT



Includes all necessary components, ready wound tuning coil, single phone, with headband, hardware, instructions. No. 7001A.....List Price \$4.90\*  
\*Plus Fed. Excise Tax

## "Supertone" RADIO RECEIVING SET



Built to give everlasting service. Brings in broadcasting loud and clear without distortion or noises. Equipped with a Philmore Super-sensitive Crystal which will give excellent results. Cat. No. 7001.....List Price \$2.25  
Plus Federal Excise Tax

## NEW ECONOMY MODEL "LITTLE WONDER" Radio Receiver KIT



Radio Receiver KIT

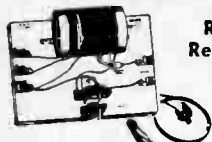
Outstanding value! Includes molded bakelite base, precision-wound coil, crystal, all hardware. Less phone and aerial wire. No. 7000K.....List \$2.00  
Plus Fed. Excise Tax

## "LITTLE WONDER" RADIO RECEIVING SET



Compact in size but big in results. The open type detector permits fine adjustments. Includes Philmore Super-sensitive Crystal. Cat. No. 7000.....List Price \$1.75  
Plus Federal Excise Tax

## NEW "SELECTIVE" GERMANIUM DIODE Radio Receiver KIT



Radio Receiver KIT

Features Variable Capacity Tuning, High "Q" Coil, permanently fixed crystal. Plywood baseboard, with template label. Easy to assemble. All hardware, step-by-step instructions, including earphone. No. VC-1000.....List \$5.00  
Plus Fed. Excise Tax

## PHILMORE AERIAL KIT



A complete kit of parts for assembly of a professional antenna. Attractively packaged in a multi-colored display box. 1 coil 50 ft. stranded aerial wire. 1 coil 25 ft. lead-in wire. 1 Ground clamp. 2 Nail-it knobs. 1 Lead-in strip. 1 Instruction sheet. 2 Porcelain insulators. Cat. No. 2103.....List Price \$1.65

## HAND MICROPHONE Carbon Type



Talk or sing through the radio speaker. Button switch cuts mike in and out of broadcast. Simple to install. Equipped with 9 ft. cord.

Cat. No. 500H.....List Price \$3.25



## Junior MICROPHONE Carbon Type

For home broadcasting. Push button switch cuts off radio programs and brings in the home broadcaster's voice very clearly. Sensitive, with excellent volume, shock-proof. Easily attached to any set without rewiring and can remain attached without interfering with regular broadcasting. Cat. No. 500.....List Price \$2.50

## Open Type CRYSTAL DETECTOR



Universal joint on swivel arm provides quick, accurate adjustment. Completely assembled. Includes crystal. Cat. No. 7003.....List Price \$.55

## Fixed CRYSTAL DETECTOR



Ideal for reflex or crystal sets. Sensitivity fixed permanently. Enclosed in a bakelite case. Cat. No. 7002.....List Price \$1.20

## Plastic Enclosed CRYSTAL DETECTOR



Delicately adjustable. Includes Super-sensitive Crystal. Dustproof. Cat. No. 7008  
List Price \$9.00

## METER TESTED CRYSTAL



No. 7004—Galena Crystal. Indiv. boxed....List \$2.25  
No. 7005—Galena Crystal. Display Card....List \$2.20

## CAT'S WHISKER



Display card. No. 7006—Set of 2.  
List Price \$2.20

## Unmounted DETECTOR



Includes stand, crystal cup, arm with cats-whisker, hardware. Less crystal. Cat. No. 7010.....List Price \$2.25

## PHILMORE DOUBLE HEADPHONES



Accurately matched. Each unit consists of "double high flux" magnets. Ruggedly constructed of lightweight metal. Polished bakelite ear caps. Concealed terminal type. Plastic covered adjustable headband and cord 4 1/2 feet long. 2000 ohm impedance. Cat. No. 2260.....List Price \$5.25

## SINGLE HEADPHONES

Same construction, head band is of spring steel. 1000 ohm impedance. Cat. No. 2261.....List Price \$2.75

## PHILMORE "OMEGA" DOUBLE HEADPHONE



Here's a superlative value in headphones! This ruggedly built yet lightweight headset is practically unbreakable. Double High Flux Magnet, highly polished bakelite shell and cap. Hardened steel headband, adjustable. High impedance of these headphones provides very sensitive performance. Equipped with 5-ft. tinsel braided cord.

Cat. No.	Impedance	List Price
2263	4000 Ohms	\$5.00
2264	2000 Ohms	4.50

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# Philmore *Guaranteed* ELECTRONIC COMPONENTS

## PHILMORE 2-TRANSISTOR RADIO KIT

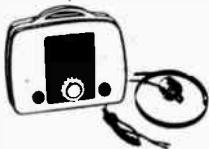


with  
**4" ALNICO PM LOUDSPEAKER**

Completely transistorized, no tubes to burn out. Built-in loop antenna coil, no external aerial or ground required. Powered by single 9-volt "A" battery (RCA VS300, Rayovac 1600, or equivalent). Two transistors and Germanium diode in up-to-date circuit. The tuning range covers broadcast band and police calls. Colorful plastic cabinet 7½x5x2½". Step-by-step instructions included.

Model TR22 (less battery) . . . . . List Price \$20.45  
Plus Federal Excise Tax  
Model TCC Leatherette Carrying Case  
(Optional) . . . . . List Price \$3.40

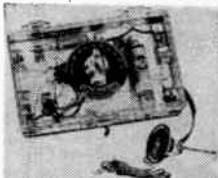
## PHILMORE TRANSISTOR BATTERY RADIO SET



Wired, ready to operate. Uses transistor and diode, powered by self-contained penlite battery. Plastic case

3½x3x1½". Includes 1000-ohm earphone with headband, antenna wire, ground wire and battery. Model TR-8 . . . . . List Price \$10.75  
Plus Federal Excise Tax

## PHILMORE TRANSISTOR BATTERY RADIO KIT



No soldering required. Printed template furnished. Uses transistor and germanium diode. Tunes entire broadcast

band. Transparent plastic cabinet 5¾x3¾x1¾". Kit includes transistor, germanium diode, penlite battery, antenna wire, ground wire, 1000-ohm earphone with headband, and all necessary components required for complete assembly. Model TR-9 . . . . . List Price \$9.75  
Plus Federal Excise Tax

## MAGNETIC EAR CHANNEL PHONE



A triumph of ingenious design! This clever earphone has protruding nodule which engages the helical channel of the

outer ear. Holds phone firmly, with complete comfort! Sturdy, light plastic construction, equipped with 5-ft. plastic covered cord. Magnetic type, 1000 ohms impedance. No. 745 . . . . . List Price \$2.75

## D.P.D.T. KNIFE SWITCH



Midjet type knife switch, on black plastic base 2¾x1½x3/16" thick. Nickel plated throughout, screw terminals. Ideal for radio, television and electrical applications. No. 197 . . . . . List Price \$4.42

## ALLIGATOR CLIP

Nickel plated, with Screw connection. Strong spring with hard bite. 2" long. No soldering necessary. No. 10120 . . . . . List Price \$7.50 per C.

## INSULATED ALLIGATOR CLIPS

Equipped with screw, making it ideal for solderless connections. Overall length 2"; plastic insulating sleeve ¾".

No.	Color of Sleeve	List Price per 100
10120B	Black	\$12.50
10120R	Red	\$12.50

## PHILMORE "SKY ROVER" CRYSTAL RADIO OUTFIT



Sharp reception is made possible by such Philmore features as—

- Crystal Detector of the open type for ease of adjustments to the finest degree.
- Bakelite cabinet for durability.
- Single 1000 ohm High Impedance professional type earphone.

The Sky Rover Outfit comes completely assembled with all necessary equipment—no other accessories are needed. It costs nothing for upkeep and will be a continual source of pleasure and education for the long-lasting life of the set.

Cat. No. 498 . . . . . List Price \$6.00  
Plus Federal Excise Tax

## PHONO OSCILLATOR Model PA49



Actually a low-powered transmitter, this unit, when connected to the output from a record player pickup, enables music or speech to be transmitted to and received by any number of radio sets in the house, without any wire connections. Supplied with phono pickup input jacks and on-off slide switch.

Operation: Plug the oscillator into the AC or DC outlet. Set receiver dial at some point between 1000 and 1500 Kc where no station is heard. Then, with a record playing into the phono oscillator, tune the oscillator slowly until the sound is picked up by the receiver. After that, no further adjustment is needed. Small and compact, this phono oscillator can be secured permanently to the record player. Oscillator employs one 12AX7 type tube.

Model No. PA49 (less tube) . . . . . List Price \$9.25



## 2-CONDUCTOR SHIELDED DOUBLE PHONE PLUG

Brass, nickel plated. Supplied with fibre insulating tube. Will fit all standard jacks. Diameter of barrel 5/16". Overall length 3¾". No. 517S . . . . . List Price \$1.00



## BAKELITE PORTABLE JACK

Two conductor single open circuit jack. Overall size: 1½", diameter ¾". No. 518S . . . . . List Price \$.70

## BAKELITE DOUBLE PHONE PLUG



Has sure-grip Molded Bakelite Ribbed Barrel for greater ease in handling. Fits all standard size telephone type jacks. Will take two sets of Cord tips. Supplied in Black or Red. No. 516 . . . . . List Price \$.50

## SUBMINIATURE PHONE PLUG AND JACK COMBINATION



Consists of a two-conductor phone plug and Single Open and Closed Circuit Jacks. Especially suitable for small radios, recorders, musical equipment, etc. Plug length overall: 1½", barrel diam.: ¾". Plugs available in Red, Black or Ivory. No. 501 . . . . . Per Set, List Price \$.78

**SHIELDED SUBMINIATURE PHONE PLUG AND JACK COMBINATION.** Similar to above, but phone plug has Shielded Nickel Plated Shell. No. 115 . . . . . Per Set, List Price \$.95

## PHILMORE "HIT PARADER" 4-TRANSISTOR SUPERHET PORTABLE RADIO KIT



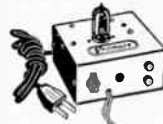
No. TR44

A Superb Performer—and it's EASY to BUILD! Uses latest advanced transistor circuit design, easily assembled, following clear and simple Philmore Step-by-Step Instructions. Features:

- SUPERSELECTIVE, 4-transistor superhet plus diode, transformer coupled audio driver.
  - 4-INCH PM SPEAKER, large size, powerful.
  - LOOP ANTENNA, built-in ferrite type, high "Q".
  - TUNING RANGE 550 to 1650 KC.
  - VERY ECONOMICAL, low battery drain.
  - NIPPLE EARPHONE, for private listening, included; Plugs into jack on back of set.
- Compact, "Texon" Leather Cabinet with handle, 7¾"x5½"x2¾"; long wearing, good looking; weighs less than 2½ lbs. with battery (9V RCA VS300 etc.).

Cat. No. TR44 Kit, less battery. . . . . List Price \$40.00  
Plus Federal Excise Tax

## CODE PRACTICE OSCILLATOR



Model  
#C0205—Wired  
#C0206—Kit

This unit is contained in metal case 4 x 4 x 2" with attractive gray hammertone finish. The circuit is completely isolated from case, insuring maximum safety. Tone pitch is fixed but may be varied by simple circuit change as shown in diagrams supplied. Designed for operation with Earphones. Both models supplied less tube (12AX7 or 12AT7), phone and key. Operates on 110 volts AC or DC.

Model No. C0205—Wired. . . . . List Price \$12.50 Ea.  
Model No. C0206—Kit. . . . . List Price 8.50 Ea.

## CODE PRACTICE TELEGRAPH SET

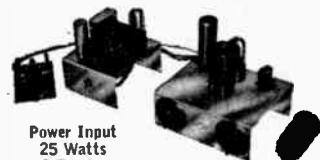


Compact, sturdy, ideal for beginners. It employs a high grade Sig. Corps type key. Adjustable buzzer.

The entire unit is assembled on a plywood base, and clasp holders are provided for two flashlight cells to supply operating voltage of 3 volts. Ordinary 1½ Volt Flashlight cells are used. This set can be used singly, for individual sending and receiving practice. Or, two complete units, connected over a distance by a 3-wire cable, can be used for two-way telegraphic communication. Supplied with complete instructions and hookup diagrams.

Model No. 750 (Less Batteries) . . . . . List Price \$6.00  
No. HF203 (Buzzer Only) . . . . . List Price \$1.25

## NOVICE TRANSMITTER AND POWER SUPPLY KIT (Including Key)



Power Input  
25 Watts  
3 Bands  
15, 40, 80 Meters

Easy to assemble, easy to operate. Untuned Pierce type Xtal Osc., uses 6V6 tube. Tuned output Amplifier uses 6L6 tube. Power supply uses 5Y3 tube, 370 Volts DC at 100-Ma. Supplied with tubes and standard key. Foolproof instructions.

Model NT-200. . . . . Amateur Net Price \$29.40

PHILMORE MFG. CO. INC. . . . . New York 3, N. Y.

**TRANSISTOR FERRITE ROD LOOP ANTENNA COILS**

Litz wire space wound. High quality ferrite core. Extremely high "Q" of over 375. More than twice the "Q" of conventional types.  
Very high sensitivity and selectivity. Separate (not a tap) low impedance winding, bi-filar wound with tuned winding for correct impedance match into transistor input circuitry.  
Also used to increase performance of present day vacuum tube radios. Convenient mounting straps. Total length 6 1/4 x 3/8" diameter.  
No. TL-100 Will match R.F. or Converter tuning condenser of 420 Mmf. .... List Price \$1.40  
No. TL-101 Similar to TL-100, designed to match our No. 51-RC 2-gang Var. Cond. (123 Mmf.) List Price \$1.50  
No. TL-102 Similar to TL-100, designed to match a 365 mmf. Variable Condenser. List Price \$1.50  
No. TL-103 Similar to TL-100, designed to match our No. 52-JC 2-gang variable condenser (211 mmf.) ..... List Price \$1.50



**TRANSISTOR SUBMINIATURE VOLUME CONTROLS**

These controls are especially designed for transistor circuits. They have a 1" shaft length, by .156 (5/32") diameter. The 1/4-32 bushing is 1/4" long. Overall diameter of the controls is 5/16".



Cat. No.	Description	List Price
PC-50	5,000 Ohm Less Switch	\$ .85
PC-51	10,000 Ohm Less Switch	.85
PC-52	5,000 Ohm SPST Switch rated 3 amp. @ 125V.	1.65
PC-53	10,000 Ohm SPST Switch rated 3 amp. @ 125V.	1.65
PC-54	500K Ohm SPST Switch	1.65
PC-55	1 meg Ohm SPST Switch	1.65

**SUBMINIATURE KNOBS**

Dia. 5/16", height 3/8", with set screws, to fit 5/32" shaft.  
No. K54 Black ..... List Price, Each \$2.20  
No. K55 Walnut ..... List Price, Each \$2.20

**TRANSISTOR MINIATURE I.F. TRANSFORMERS**

The latest type I.F. Transformers, designed for all transistor circuits.  
I.F. Frequency 455 Kc. Size: 1/2 x 1/2 x 3/4".  
No. Description List Price  
BS-725 For 1st and 2nd I.F. Stages. Input and intermediate. .... \$2.35  
BS-726 For output or Diode load. .... \$2.35



**MATCHED OSCILLATOR COIL**

Has tunable iron core for varying inductance to match all types of Loop Antenna Coils.  
No. TC220 ..... List Price \$1.25

**TRANSISTORS**

Transistor Type No.	Current Gain db.	Power Gain db.	Col. Dissipation Mw.	Freq. Cut-Off Mc.	Power Output Milli-watts Mw.	List Price Each
PH-1	20	36	50	0.15 Mc.	25	\$2.40
PH-2	40	40	70	500 Kc.	50	2.75
PH-3	70	30	50	10 Mc.	—	3.50

**GENERAL INFORMATION ON TRANSISTORS**

Type PH-1 is a general purpose PNP high gain audio transistor.  
Type PH-2 is a general purpose PNP power output audio transistor, furnished with a heat sink.  
Type PH-3 is a general purpose PNP R.F. transistor, suitable for Radio Frequency and Intermediate Frequency Service.  
Types PH-1, PH-2, and PH-3 correspond in general to 2N222, 81, 761 or equivalent makes, respectively.

**MIDGET TRANSFORMERS FOR TRANSISTORS**

These tiny transformers use finest quality cores, made of hydrogen heat processed permalloy. Fine coil wire of 0.025 mm diameter is used. Vacuum impregnated insulation.



No.	Type	Primary Ohms	Secondary Ohms	Net Wt. oz.	List Price Each
* ST-11	Driver	20,000	1,000	1/4	\$2.95
* ST-12	Input	100,000	1,000	1/4	3.50
* ST-13	Input	200,000	1,000	3/8	4.20
† ST-14	Input	500,000	1,000	1/2	4.85
† ST-21	Driver	10,000	2,000CT	1/2	3.45
† ST-31	Output	500CT	3.2	1/2	3.45
† ST-32	Output	1,000CT	8	1/2	3.45

\* Overall Size: 3/4 x 5/8 x 13/16"  
† Overall Size: 13/16 x 5/8 x 3/4"

**COMPACT WAFER TYPE VARIABLE TUNING CONDENSER Single Gang 365 to 400 Mmf.**



Specially Adaptable to Transistorized Circuits Requires only 9/16" behind panel. Overall 1 1/2" square, with standard 1/4" knob shaft, 3/8" lens. Interleaved insulation prevents shorting between plates.  
No. 1946G ..... List Price, Each \$1.40

**BROADCAST COIL**

Compact, for Transistorized Circuits This Litz-wound HI-Q coil is specifically designed for the Broadcast Band from 550 to 1600 Kc., and matches our No. 1946G tuning condenser shown above. Can be mounted right on the condenser itself. Only 11/16" diam., 1/4" thick.  
No. C-110 ..... List Price \$2.40

**ANGLE BRACKET**

Provides correct mounting for our No. 1946G tuning condenser shown above. Made of cadmium plated steel. This bracket measures 1-5/16" H. x 1-3/16" D.  
No. B-111 ..... List Price \$1.17



**MAGNETIC EARPHONE**

Miniature type, plugs directly into ear. Equipped with 5-ft. plastic covered cord and headband. Sturdy, light plastic construction. 1000 ohm impedance. Ideal for use with miniature sets.  
No. 743 ..... List Price \$2.75

**CRYSTAL EARPHONE**

Molded plastic shell, miniature type, fits comfortably into the ear. Equipped with 5-ft. plastic covered cord. High impedance. Ideal for many applications; crystal element.  
No. 748 ..... List Price \$2.75

**MINIATURE ELECTROLYTIC CONDENSERS**

CAPACITANCE TOLERANCE....10% +100%  
POWER FACTOR....15% Maximum, Average 14%  
LEAKAGE CURRENT....Better than 0.05 CV. microamps where C is the capacitance in Mfd. and V is the DC working voltage.

These units are encased in solid-drawn single-ended aluminum cans, spun onto plastic end plugs to give moisture-proof seals, and provided with 1 1/2" wire ends. The internal construction is all-aluminum. A unique feature is the retention of the well-proven riveted positive connection, on a smaller scale. Plastic covering insulates the can.

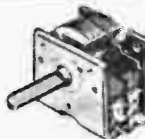
Cat. No.	Mfd.	DC WV.	Dia.	Length	List Price Each
E-1	5	6	1/4"	1 1/4"	\$ .45
E-2	10	6	1/4"	1 1/4"	.50
E-3	25	6	1/4"	1 1/4"	.50
E-4	50	6	1/4"	1 1/4"	.55
E-5	75	6	3/8"	1 1/4"	.70
E-6	100	6	3/8"	1 1/4"	.85
E-7	150	6	1/2"	1 1/4"	.95
E-8	5	12	1/4"	1 1/4"	.50
E-9	10	12	1/4"	1 1/4"	.50
E-10	25	12	1/4"	1 1/4"	.55
E-11	50	12	3/8"	1 1/4"	.55
E-12	75	12	3/8"	1 1/4"	.75
E-13	100	12	1/2"	1 1/4"	.85
E-14	5	25	1/4"	1 1/4"	.50
E-15	10	25	1/4"	1 1/4"	.55
E-16	25	25	1/4"	1 1/4"	.55
E-17	50	25	3/8"	1 1/4"	.65
E-18	75	25	3/8"	1 1/4"	.80
E-19	100	25	1/2"	1 1/4"	.90

**FERRITE SLUG-TUNED VARIABLE INDUCTANCE LOOP ANTENNA COIL**

Highly sensitive and selective, this hi "Q" antenna coil has a tap for use with transistor or germanium diode input circuits. Also used with tube circuits. 12" pigtail lead for additional pickup. Will match tuning condensers of 365 mmf. to 420 mmf. Length of coil 2 1/2" x 3/8" width.  
Cat. No. RB41-T. .... List Price \$1.25



**TRANSISTOR MINIATURE 2-GANG SUPERHET VARIABLE CONDENSER**



Capacity of RF section is 6.3 minimum to 123.1 mmf. Oscillator section: 5.7 to 78.2 mmf. Aluminum frame plates. Smooth ball-bearing action over entire 180° rotation. Effective range of trimmers is 15 mmf. Capacity increases counter-clockwise. Dimensions: 1 1/2" wide, 1-15/16" high, 15/16" deep. Flatted shaft 1/4" diameter by 1 1/4" long.  
No. 51-RC ..... List Price \$2.50

**Tiniest Variable Condenser in the World! 2-GANG SUPERHET VARIABLE CONDENSER**

This tiny condenser is completely housed in a transparent plastic dustproof enclosure. Size: 5/8 x 1-1/16 x 1-1/16". Capacitance: Antenna section, 13 to 211 mmf.; Oscillator Section, 11 to 101 mmf. Counter clockwise rotation. Trimmer 12 mmf. max. Coil Inductance: Antenna 400 uh. Oscillator 220 uh.  
Cat. No. 52-JC ..... List Price \$3.50



**GERMANIUM DIODES**

General purpose type diode, equivalent to type 1N34.  
Type PH-4 ..... List Price \$0.70

**MIDGET 1 1/2-INCH PM SPEAKER**

1 1/2" diameter x 15/16" deep. The magnet weighs .5 oz., is made of Alnico V. 8 ohm or 3.2 ohm voice coil impedance. Also used as a tweeter for Hi-Fi Speaker systems.  
No. 707. .... List Price \$3.75



# Philmore *Guaranteed* ELECTRONIC COMPONENTS



### 3-SPEED CRYSTAL CARTRIDGE

Frequency response 50-6500 cps. 3.5 volt output, standard 1/2" mounting holes. Has screw-type chuck for conventional needles. Individually boxed.

No. SC2 (Less Needle).....List Price \$2.25



### DESK TYPE CRYSTAL MICROPHONE (Uni-Directional)

Has many uses, excellent for tape recording, public address systems, hams, etc. Although microphone needs no extra stand, an adapter

is provided for mounting to a floor stand. Brown plastic case. Supplied with 5 foot gray plastic covered shielded cable. Output level minus 50 db high impedance.

Frequency response from 70 to 8500 C.P.S. Size—3x2 3/4 x 1 1/4". Net weight—4 ounces.

No. MC60 .....List Price \$8.35



### LAPEL TYPE CRYSTAL MICROPHONE (Uni-Directional)

Gives crisp, clear speech reproduction. Specially designed and widely used by lecturers, instructors, speakers, etc. Furnished with lapel spring clip and 6 1/2 foot gray plastic covered shielded cable. Chrome plated finish. Output level minus 50 db high impedance.

Frequency response from 70 to 8000 C.P.S. Size—1 1/2" diameter x 11/16". Net Weight—1 1/2 ounces.

No. MC90 .....List Price \$6.50

### SUBMINIATURE PLUG AND JACK



Phone plug ideal for thin 2-conductor cable. Length of plug is 1 1/4". The single closed-circuit jack mounts in 1/8" hole. Supplied as a set. Available in Red, Black or Ivory.

No. 702 .....List Price per Set \$7.78

### ULTRA-MINIATURE PLUG AND JACK COMBINATION



Consists of 2-conductor plug, overall length 15/16", barrel diam. 5/16"; with matching single Closed Circuit Jack. Plugs available in Red, Black or Ivory. Supplied as a set.

Cat. No. 660 .....List Price \$5.55



### 8-OHM MAGNETIC EARPHONE

Hearing-aid type. Equipped with 5-ft. plastic covered cord and headband. Sturdy light plastic construction.

The 8-ohm impedance makes this earphone suitable for individual hearing on a television or radio set.

No. 746 .....List Price \$2.75



### 500-FT. SPOOL TWIN COPPER STRANDED PLASTIC WIRE

Its flexibility makes it ideal for wiring installations on Hi-Fi speakers, as well as wiring to phono cartridges.

No. A013 .....List Price per Spool \$14.00



### TEST LEADS WITH PHONE TIPS

Plastic Test prod handles 3 1/2" long, 3/8" diameter, with extra long prods 1 3/4" long, Red and Black. Equipped with 48" kinkless plastic covered leads, with insulated phone tips at other end. Phone tips fit standard American phone tip jacks.

No. 456.....Per Pair, List \$8.80



### TEST LEADS WITH BANANA PLUGS

Plastic Test Prod Handles, 3 1/2" long, 3/8" diameter, with long 1 3/4" prods. Supplied with 48" kinkless plastic covered leads, with standard insulated banana plugs at other end. These banana plugs are spring type, and will fit all standard

American Banana Jacks. Supplied in Red and Black pairs.

No. 457.....Per Pair, List Price \$9.95



### TEST LEADS WITH SOLDERLESS PHONE TIPS

#### Polystyrene Handles

Red and White Test Prod Handles made of semi-flexible plastic, very durable, 3 3/4" long, with 1 3/4" prods. Equipped with kinkless plastic covered 48" leads, having solderless phone tips at other end. Phone tips fit standard American phone tip jacks. Supplied in Red and Black Pairs.

No. 582 .....Pair Pair, List Price \$1.55



### TEST LEADS WITH FINGER GRIP PHONE TIPS

Plastic test prod handles 3 1/2" long, 3/8" diam. Extra long prods. Molded plastic finger grip phone tips, 48" plastic red and black leads. Phone tips fit standard American phone tip jacks.

No. 458....Per Pair, List \$1.20



### TEST LEADS WITH FINGER GRIP BANANA PLUG TIPS

Plastic test prod handles 3 1/2" long, 3/8" diam. Extra long prods. Molded plastic finger grip banana plug tips at other end, 48" plastic red and black leads. Banana plug tips fit standard American Banana jacks.

No. 459....Per Pair, List \$1.30



### SPLIT TYPE INSULATED BANANA PLUGS

Plastic insulated handle 3/4" long, cross slotted plug 3/8", overall 1 1/2". Wire connection is made by means of set screw in side of plug. Fits all standard American banana type jacks.

Supplied in Red and Black, please specify color. No. 2349-G .....List Price, Each \$1.14



### INSULATED PHONE TIP JACKS

Completely insulated, these jacks take all standard American phone tips. Overall length of jack is 1 3/16", with plastic insulated head, and insulating shoulder washer. Supplied with solder lug and hex nut. Mounts in 5/16" hole. Red and Black, please specify color.

No. 259 .....List Price, Each \$1.17



### INSULATED BANANA JACKS

Accommodates all standard American banana plugs. Plastic insulated head with insulating shoulder washer, solder lug, and hex nut. Overall length 3/4". Mounts in 5/16" hole. Red and Black, please specify color.

No. 260 .....List Price, Each \$1.14



### INSULATED ALLIGATOR CLIP

Sturdy steel jaws, with plastic insulated thumb rest and barrel. Overall length 2 1/2". Supplied in Red and Black, please specify color.

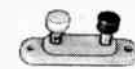
No. 264 .....List Price \$1.14



### ALL INSULATED ALLIGATOR CLIP

Cleverly constructed, compact, only 1 1/4" over-all, and completely insulated, practically shock-proof. Solder lug connection. Supplied in Red and Black, please specify color.

No. K-23 .....List Price \$2.22



### TWIN BINDING POSTS

All Molded Plastic. Both posts completely insulated. Mounting centers 1-13/16". Base is 2-3/16" long, 11/16" wide. Supplied with Red and Black knobs.

No. 121 .....List \$3.35



### FUSE MOUNT

Single fuse mounting base for 3AG fuses, with removable slide-on metal shield cover. Top chassis single hole mount. 1/8" thickness, molded bakelite base.

No. 107.....List Price \$1.11



### 3/8-INCH JEWEL PANEL INDICATOR

Mounts in 5/16" diameter hole. Nickel plated, overall height 1-7/16", depth behind panel 1", take standard miniature base pilot light. Smooth faced jewel, available in Red or Green. Specify color.

No. 565....List Price, Each \$3.1



### ROTARY SWITCH

Will Carry 6 Amps. Single pole, six positions. 180° rotation. Shaft length 1/2 x 1/4" dia. Includes mounting nut and washer. Exceptionally good detent action. Non-shorting type.

No. 229.....List Price \$4.45



### D.P.D.T. TOGGLE SWITCH

Bat handle, with neutral center, molded bakelite case. Rated 3 amp. 250 volts, 6 amp. 125 volts. Supplied with two mounting nuts, 15/32" shank.

No. 226.....List Price \$1.85



### BAT HANDLE TOGGLE SWITCHES

Supplied with "on-off" plates. Molded bakelite case; rated 3 amp. 250 volts, 6 amp. 125 volts. Complete with two mounting nuts.

No.	Type	Shank	List Price
219	S.P.S.T.	5/16"	\$.50
220	S.P.D.T.	5/16"	.70
221	D.P.D.T.	3/8"	.80



### BAR KNOBS

1 1/4" long, with Brass Inserts, equipped with set screw, to fit 1/4" shaft.

No. 277A	Black Bar Knob with white indicator line	.....List Price \$1.11
No. 276A	White Bar Knob with black indicator line	.....List Price \$1.13

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# Fleetwood Custom Television

## with EXCLUSIVE DEFINITION CONTROL

Fleetwood's definition control varies the picture quality from hard and sharp to soft and diffused . . . lets you see the picture as you like it. Full electronic remote control Fleetwood models put all of the normal operating controls at viewing distance. Fleetwood . . . designed for custom installation . . . can be used with high fidelity sound systems.

Fleetwood picture fidelity is the perfectionist's choice. It's the same outstanding quality usually seen only on TV station monitors . . . also made by Fleetwood.

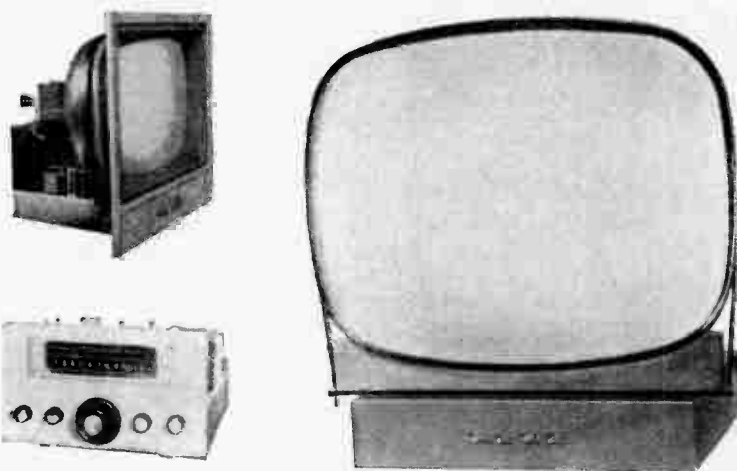
Set employs 27 tubes in addition to picture tube and provides audio power for a speaker, as well as a detector output to connect to high fidelity sound systems. The picture chassis is relay operated by the on-off switch on the separate tuner chassis for full remote control. Both units are attractively finished. An eye-catching, gold finished, hinged escutcheon plate is furnished for easy access to secondary controls.

The separate tuner unit has simulated leather front panel, with edgelit dial and individual channel pilot lamps. Includes the off-on/volume, contrast, brightness, definition, channel selector/fine tuning controls. The tuner is of the Super Cascade type and is completely adaptable for Ultra High Frequency reception, by a simple interchange of tuning strips and insertion of the correct channel identification number. The illuminated channel numbers are readily replaceable and a full set of numerals, from 2 to 82, is provided. The four video I.F. stages provide full four megacycle bandpass, and there are separate cathode followers for audio and video circuits. Three audio outputs are provided: (a) low level high impedance, and (b) low level cathode follower, both for connection to existing high fidelity music systems, and (c) power amplifier to operate a loud speaker.

### CHASSIS DIMENSIONS

Tuner Chassis	7"	11½"	9"
800 or 810 Chassis (21AMP4 Mounted)	21¼"	21"	21½"
800 or 810 Chassis (24CP4A or 24TP4 Mounted)	23¾"	23¼"	22¼"
800 or 810 Chassis (27EP4 Mounted)	26¼"	26"	24"

Picture chassis finished in gray and black baked enamel. Tuner chassis has brown pebbled, simulated leather front and gold-colored escutcheon.



**FLEETWOOD 800:** Full Remote Control Receiver for 21", 24" and 27" rectangular 90° picture tubes. Includes tuner chassis and picture chassis. Supplied with 27 tubes, 14 pilot lamps, 40 feet of cable, ion trap, all knobs, and matching hinged cover for secondary controls. (Shipping Weight: 65 lbs.) **Users Net \$299.50**

**FLEETWOOD 810:** Complete Television Chassis for 21", 24" and 27" rectangular 90° picture tubes. Non-remote control. Supplied with 24 tubes, ion trap, all knobs and matching hinged cover for secondary controls. (Shipping Weight: 50 lbs.) **Users Net \$229.50**

All chassis less picture tube, speaker and mounting brackets.

### MOUNTING AND ACCESSORY KITS

Accessory kits contain wood frame, safety glass and royalite picture tube mask. Wood frame of accessory kit extends down over the secondary controls. The extension is cut out for the secondary controls to allow easy mounting of the escutcheon plate. Holes for main controls of non-remote unit, are partially drilled. They may be punched through and panel reversed to present clean hole side. Brackets for mounting accessory kit on picture chassis are provided, thus allowing easy drawer-like installations. Mounting kits include tube supports, tie-down straps and all hardware for mounting picture tube on chassis. Consult chart below for appropriate kits.

#### 27" Picture Tube, Models 800 and 810

Tube Type	Mounting Kit	Accessory Kit
27EP4/27RP4	807B	(28½" x 30" O.D.) 827BF

#### 24" Picture Tube, Models 800 and 810

Tube Type	Mounting Kit	Accessory Kit
24CP4A/24TP4	804B	(25" x 25" O.D.) 824BF

#### 21" Picture Tube, Models 800 and 810

Tube Type	Mounting Kit	Accessory Kit
21AMP4/21ACP4A	801B	(23" x 23½" O.D.) 821BF

Fleetwood made by

**CONRAC, INC.** • SINCE 1939 • GLENDORA, CALIFORNIA

# TRUMPETS

University pioneered the reflex trumpet, now the industry standard where maximum conversion efficiency, intelligibility and distance or noise penetration are essential. Careful, scientific design and meticulous attention to mechanical detail are virtues that are more than skin deep with these University products. Any similarity between these trumpets and other brands is largely in their appearance. For uncompromising performance, University presents a wide and varied selection of directional, wide-angle and radial models to satisfy the most demanding specifications.

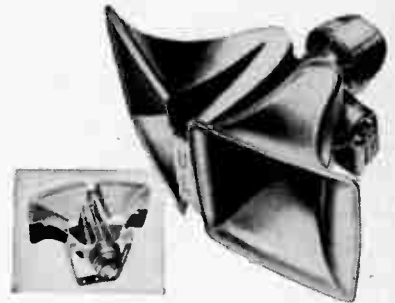


## DIRECTIONAL

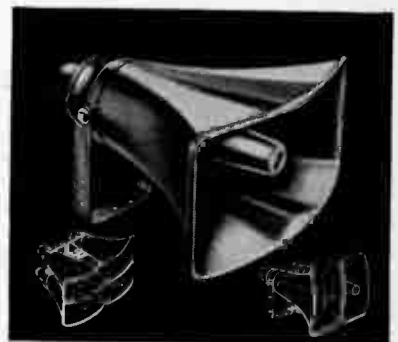
These models, designed to concentrate acoustic energy in a relatively narrow angle of sound dispersion, are incomparable for applications requiring maximum penetration of distance and noise. Rigid adherence to time-proven design formula achieves peak attainable conversion efficiency, resulting in higher sound pressure output and greater utilization of amplifier power. Four trumpet sizes satisfy every need. The GH has very low cut-off for finest reproduction of music. LH is excellent for general use where music quality, voice intelligibility and penetration are important considerations. The PH has wider dispersion and may be used for both music and voice where cost is a factor. The SMH is ideal for speech and for covering wider areas with good penetrative qualities. All models take any University driver unit; have positive-lock, serrated swivel "U" mtg. bracket.

MODEL	GH	LH	PH	SMH
LOW FREQUENCY CUT-OFF	85 cps	120 cps	150 cps	200 cps
SOUND DISTRIBUTION	65°	75°	85°	95°
AIR COLUMN LENGTH	6½ ft.	4½ ft.	3½ ft.	2½ ft.
*SERIES CAPACITOR FOR HORN CUT-OFF	120 mfd.	85 mfd.	65 mfd.	50 mfd.
HORN LENGTH	28"	19"	15¾"	12"
BELL DIAMETER	31"	25¾"	20¾"	16¼"
SHIPPING WEIGHT	22 lbs.	16½ lbs.	11¾ lbs.	8 lbs.
LIST PRICE	\$65.00	\$44.50	\$31.00	\$26.00

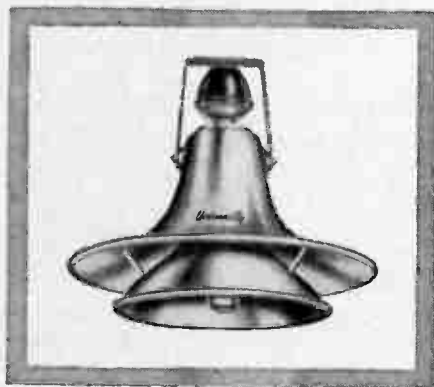
## WIDE-ANGLE



**Cobreflex** Unmatched for ruggedness and exceptionally high speech articulation in fixed or mobile applications requiring coverage of areas having greater width than depth. "Dual Exponential Flare" design . . . two identical *one-piece* all die-cast aluminum combination air column/bell castings form a completely integrated, virtually indestructible and scientifically perfect twin wide-angle reflex trumpet. Nothing else like it! Takes any University driver unit; use singly or in clusters. Adjustable, positive-lock "U" mtg. bracket.



**Model CLH** Newest addition to University's expanding line of wide-angle trumpets and paging speakers. The CLH combines longest air column length and new wide-angle bell designed for maximum low frequency response and compact, low silhouette dimensions. New *omni-swivel*, positive-lock mtg. bracket permits speaker to be placed where most convenient and rotated horizontally and vertically for optimum projection. Dispersion can be literally *tuned* to avoid echo and reverberation, or used to specifically include elusive "dead spots." CLH is perfect too for multi-speaker cluster arrays; can be "stacked" in any configuration, for any sound distribution pattern. Uses any University driver.



## RADIAL

Economical and efficient, these models provide uniform horizontal dispersion in all directions from a single projector. Fewer loudspeakers needed to cover an area. Using University drivers, they give as much as 500% more output than radials using cone speakers. Especially popular for high-ceilinged factories, hangars, church interiors and towers, warehouses, etc. Rugged, weather-resistant; ideal as well in installations subject to high humidity and dust-laden atmosphere. Model RLH has longest air column for maximum low frequency response. RPH has higher cut-off; is suitable for both music and speech in general purpose applications. RSH is good for speech and further cost reduction.

MODEL	RLH	RPH	RSH
LOW FREQUENCY CUT-OFF	120 cps	140 cps	180 cps
SOUND DISTRIBUTION	360°	360°	360°
AIR COLUMN LENGTH	5 ft.	4 ft.	3 ft.
*SERIES CAPACITOR FOR HORN CUT-OFF	55 mfd.	70 mfd.	85 mfd.
OVERALL HEIGHT (Horn Only)	18½"	13¾"	11"
BELL DIAMETER	28½"	25½"	19"
SHIPPING WEIGHT	25 lbs.	19 lbs.	13 lbs.
LIST PRICE	\$59.00	\$47.00	\$41.00

MODEL	COBREFLEX	CLH
LOW FREQ. CUT-OFF	200 cps	120 cps
SOUND DISTRIBUTION	120° x 60°	120° x 60°
AIR COLUMN LENGTH	2½ ft.	4½ ft.
*SERIES CAPACITOR FOR HORN CUT-OFF	50 mfd.	85 mfd.
BELL MOUTH SIZE	18½" x 9¼"	21½" x 11½"
DEPTH (Less driver)	10¼"	20"
SHIPPING WEIGHT	10¼ lbs.	15 lbs.
LIST PRICE	\$38.33	\$44.50

\*For doubling "Full Range" driver power capacity. Assumes 16 ohm driver. If two drivers with 2YC used, halve capacitor value if drivers wired in series; double if wired in parallel.

# DRIVERS

University has a long history of great "firsts" in driver units; among them are wide-range response, breakdown-proof mechanisms, super-efficient "W" magnets, built-in matching transformers, etc. The new line presented below is the largest and most complete selection on the market today, meeting every soundcasting requirement with the highest quality standards. Only the prices are compromised.



### Model MA-25

Use this rugged, weather-proof driver unit where response to 6500 cycles is adequate, or to preserve "balance" when used with high cut-off frequency trumpets. Low in cost, high in quality, featuring high efficiency magnet, tropicalized voice coil, rim-centered breakdown-proof diaphragm.

### Model SA-HF

Often called "the workhorse of the sound industry." Meets most p.a. and industrial requirements. Response to 10,000 cycles and more efficient than the Model MA-25. This unit will deliver that extra punch needed to cut through heavy noise. Use for speech or high quality music. Tropicalized and hermetically sealed for continuous top flight performance even under adverse weather conditions.

### Model SA-30

High efficiency and response of Model SA-HF, plus "battleship" construction for maximum durability against abuse or in hazardous environments. Completely die-cast aluminum housing and built-in matching transformer for connection to high impedance lines or "constant voltage" systems. Exclusive water-tight dural gland nut cable entrance. Shockproof bi-sectional speaker construction.

### Model PA-HF

Without question the finest driver unit ever offered. For applications requiring the greatest power handling capacity, maximum sensitivity, widest range frequency response, plus rugged lifetime construction. Features bi-sectional construction, super-efficient Amnico 5 W magnet, completely die-cast aluminum housing. Water-tight voice coil terminals conveniently located at base of housing. Increased sound output cuts amplifier requirements in half!

### Model PA-50

The ultimate in deluxe, advance-design. Features extended high and low frequency range, highest continuous duty power capacity, Super W magnet, bi-sectional construction, greatest conversion efficiency, husky built-in multi-match transformer with terminals conveniently located at base of unit. Recommended for church chimes, carillons, etc.; fast set-up time ideal for rental or semi-permanent systems. Answer to toughest set problems. Nothing finer!

MODEL	MA-25	SA-HF	SA-30	PA-HF	PA-50
FREQUENCY RESPONSE	85 to 6500 cps	80 to 10,000 cps	80 to 10,000 cps	70 to 10,000 cps	70 to 10,000 cps
POWER CAPACITY (Cont. Duty)					
FULL RANGE	25 watts	30 watts	30 watts	50 watts	50 watts
*ADJUSTED RANGE	50 watts	60 watts	60 watts	100 watts	100 watts
VOICE COIL IMPEDANCE	16 ohms	16 ohms	16 ohms	16 ohms	16 ohms
TRANSFORMER IMPEDANCES	-----	-----	45/165/250/500/ 1000/2000 ohms	-----	16/100/165/250/500/ 1000/2000 ohms
70 V. LINE POWER TAPS	-----	-----	30/20/10/5/2.5 watts	-----	50/30/20/10/5/2.5 watts
‡SOUND PRESSURE LEVEL	127 db	130 db	130 db	134 db	134 db
DIMENSIONS (OVERALL)	4 1/8" dia. 3 3/4" deep	4 1/2" dia. 4 7/8" deep	5" dia. 6 1/4" deep	4 11/16" dia. 5" deep	6 3/4" dia. 6 3/4" deep
SHIPPING WEIGHT	3 3/4 lbs.	4 1/2 lbs.	5 1/4 lbs.	5 3/4 lbs.	6 1/4 lbs.
LIST PRICE	\$27.50	\$36.00	\$47.50	\$47.50	\$57.50

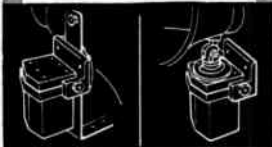
\* When input program response limited to above low frequency cut-off of trumpet used.

‡ Sound Pressure readings taken at 4 ft. on 6 1/2" horn, with rated Full Range power input. Reduce by 6 db each time distance is doubled. Reduce by 3 db each time power input is halved, add 3 db if power is doubled.

## ACCESSORIES



MODEL CTR



### Model CTR Transformer/Junction Housing

New all die cast aluminum construction. Complete weather protection with exclusive University gland nut cable entrance and exit. For housing Models 5433, 5434 or other transformers with 4" x 4-15/16" x 3 3/4" max. dimen. Adjustable slotted adapter mounts transformers with centers 1 1/2" to 2 3/4". Also makes a wonderful junction box for terminating and tying speaker transmission lines. Includes bar strap for mounting to trumpet "U" bracket; and can be screwed directly to wall or super structure; will also hold University Paging speakers. Shpg. wt., 2 lbs. \$8.00 List.

## LINE MATCHING TRANSFORMERS & WEATHERPROOF HOUSINGS



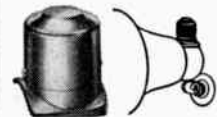
MODEL 5433



MODEL 5434

**Model 5433 Transformer** has a 30 watt capacity and may be used with the MA-25 and SA-HF driver units, or can be used in a speaker transmission line feeding a number of smaller paging speakers like the 1B, MIL or CR, etc. The universal secondary impedance permits matching to any series, parallel or series/parallel combination, as well as obtaining unlisted impedance ratios. Pri. Imp.: 45/165/200/250/500/1000/2000 ohms, Sec. Imp.: 4/8/16 ohms, 70 v. Line Pwr. Taps: 30/25/20/10/5/2.5 watts. Overall dimensions: 1-15/16" x 2-5/16" x 1 1/4". Mounting hole centers: 2 3/4". The 5433 will fit the CTR Weatherproof Housing. Shpg. wt., 1 lb. \$7.00 List.

**Model 5434 Transformer** has a 15 watt power capacity suiting it to paging speakers or lines carrying a number of the smaller types. Primary impedance ratios have been selected to provide the most practical range; while the multi-tap secondary permits obtaining other unlisted impedances that may be desired. Pri. Imp.: 45/325/500/1000/2000/4000/8000 ohms, Sec. Imp.: 4/8/16 ohms, 70 v. Line Pwr. Taps: 15/10/5/2.5/1.25/.65 watts. Overall dimensions: 1 1/2" x 1-15/16" x 1 1/4". Mounting hole centers: 2". The 5434 will fit the CTR and PB-1 Weatherproof Housings. Shpg. wt., 3/4 lb. \$6.00 List.



### Model PB-1 Transformer Housing

New, water-shedding and splashproof transformer housing for MIL, CMIL, IB and CIB paging speakers. Use Model 5434 or any suitable transformer with 2" mtg. center. Shpg. wt., 1 lb. \$3.75 List



2YC

**2YC Connector** - Enables two driver units to be used on any single radial, directional or wide-angle trumpet. Use when unusually high input power is required in speech applications. Shpg. wt., 1 lb. \$12.00 List.



PMA

**PMA Adapter** - Fits standard 1/2" I.P.S. threaded pipe to any University "U" mounting bracket. Use in special appli-

cations requiring pipe mounting from ceiling, stands, etc. Shpg. wt., 3/4 lb. \$2.00 List.

**RTA Adapter** - Fits University trumpets to Western Electric and RCA drivers having 1-7/16-16 threads, thus obtaining advantage of University projector performance. Shpg. wt., 1/2 lb. \$3.00 List.

**WEA Adapter** - Fits University driv-



RTA



WEA

ers to Western Electric and RCA trumpets having 1-7/16-16 threads, thus obtaining advantage of University driver unit performance. Shpg. wt., 1/2 lb. \$2.50 List.

**SPA Adapter** - Replaces standard triangular base used on all University CR and MM-2 series paging speakers in order to mount to 1/2" threaded I.P.S. pipe. Shpg. wt., 1/2 lb. \$1.75 List.



SPA

## HORN AND DRIVER ADAPTERS

# PAGING AND TALK-BACK

University progress and ever increasing standards of achievement have yielded an exceptionally large series of compact, moderate-power speakers capable of literally incredible performance for their size. The unusual variety of types available for paging and "talk-back" applications is certain to more than satisfy every conceivable technical and installation requirement.

University



**Model MIL** - Small, compact reflex; excellent for limited areas and filling in "dead" spots. High conversion efficiency triples effectiveness of low power paging and intercom systems normally using cone speakers. Tropicalized, hermetically sealed. Exclusive OMNI-LOK swivel mounting bracket; also fastens to 1/2" pipe without additional fixture.



**Model CMIL** - High efficiency paging and talk-back speaker with University "cobra" horn for effective coverage of wide areas. Eliminates waste of sound where not needed. Tropicalized Hermetically sealed. Geared omni-swivel mounting bracket with 2-plane positive-lock; also fastens to 1/2" pipe without additional fixture.



**Model IB** - World's most widely used medium power speaker. For paging/talk-back. Tropicalized, weatherproof, for trouble-free lifetime operation. High efficiency, special rising frequency characteristic, wide range response and 90° projection assure maximum penetration and intelligibility in noisy areas. Geared 2-plane omni-swivel positive-lock mtg. bracket; also fits 1/2" pipe.



**Model CIB** - Exclusive University "cobra" horn for uniform wide-angle sound pattern with optimum vertical dispersion. OMNI-LOK swivel mtg. bracket directs sound where desired. Ideal for coverage of wide area where ambient noise level is not excessive. Design minimizes feed-back problems. Highly efficient. Bi-sectional driver mechanism is tropicalized, hermetically sealed for continuously dependable performance.



**Model IBR** - Exceptionally compact, complete with built-in driver. Uniform 360° sound dispersion offers an economical solution to installations where omni-directional coverage is required but the total number of speakers must be kept to a minimum. For cube-like areas where speakers can be suspended from the ceiling. Tropicalized, hermetically sealed; ideal for both commercial and industrial applications.



**Model MIS** - Compact reflex speaker similar to Model MIL, but designed for flange or flush mounting in cabinets, walls, ceilings, bulkheads, dashboards, etc. Tropicalized, hermetically sealed for total weather-proofing. Ideal replacement for less efficient cone speakers, provides more output gain and greater reliability. Cork-neoprene flange gasket included.



**Model CR** - Big power in a small package. 90° dispersion, built-in driver with heavy-duty 2" voice coil—for the punch and penetration that assures high intelligibility in noisy areas. Its frequency response makes Model CR ideal for paging/talk-back systems that must also reproduce music. Tropicalized, hermetically sealed; serrated swivel bracket.



**Model 2WP** - Bi-directional paging projector enables economical coverage of two oppositely located areas with a single driver unit. Use with MA-25, SA-HE, SA-30 or PA-HF driver. Adjustable mtg. bracket permits output from the two horns to be directed 10° downward or outward for best sound distribution. Mounts on any surface, pipe or superstructure.

MODEL	IB	CIB	MIL	CMIL	MIS	CR	IBR	2WP
FREQUENCY RESPONSE	300-13,000 cps	300-13,000 cps	400-13,000 cps	400-13,000 cps	500-13,000 cps	250-8000 cps	300-10,000 cps	350 cps horn cut-off
POWER CAPACITY (Cont. Duty)								
FULL RANGE	15 watts	15 watts	5 watts	5 watts	5 watts	20 watts	15 watts	Depends upon driver used
ADJUSTED RANGE	30 watts	30 watts	10 watts	10 watts	10 watts	40 watts	30 watts	
IMPEDANCE	4,8,45 ohms	4,8,45 ohms	4,8,45 ohms	4,8,45 ohms	4,8,45 ohms	16 ohms	4,8,45 ohms	Depends upon driver used
DISPERSION	90°	120° x 60°	120°	120° x 60°	150°	90°	360°	120° each horn
**SOUND PRESSURE LEVEL	120 db	118 db	113 db	113 db	111 db	119 db	106 db	Depends upon driver used
‡SENSITIVITY AS MICROPHONE	-26 DBM	-22 DBM	-23 DBM	-20 DBM	-22 DBM	-22 DBM	-32 DBM	Depends upon driver used
DIMENSIONS	8 1/2" dia. 9" deep	7 3/8" hl. 14" wide 12" deep	6 3/8" dia. 7" deep	6 1/4" hl. 9 1/2" wide 8 1/2" deep	5 1/2" o.d. 4 7/16" deep 6 holes on 4 7/8" mtg. dia.	11 1/2" dia. 11 1/2" deep	13" dia. 10 1/4" high	8 1/2" dia. each bell 20 1/2" long
SHIPPING WEIGHT	4 lbs.	5 1/2 lbs.	3 1/4 lbs.	4 lbs.	3 1/2 lbs.	8 3/4 lbs.	5 1/4 lbs.	4 lbs.
LIST PRICE	8 1/2" - \$34.50 4,45 1/2" - \$36.00	8 1/2" - \$42.00 4,45 1/2" - \$43.50	8 1/2" - \$26.00 4,45 1/2" - \$27.25	8 1/2" - \$29.75 4,45 1/2" - \$31.00	8 1/2" - \$24.00 4,45 1/2" - \$25.25	\$45.00	8 1/2" - \$45.00 4,45 1/2" - \$46.50	\$28.00

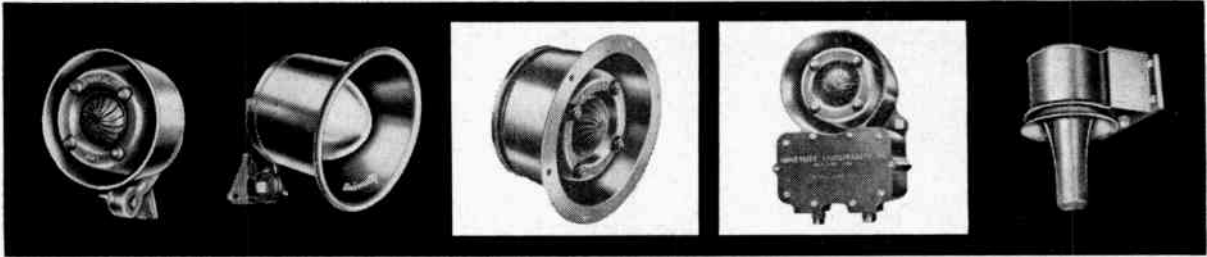
\*Input program response above speaker low frequency cut-off.

\*\*Sound pressure readings taken at 4 ft. with "Full Range" power input. Reduce by 6 db each time distance is doubled. Reduce by 3 db each time power input is halved; increase by 3 db when power input is doubled.

‡DBM re 10 dynes/cm<sup>2</sup>

# SUBMERGENCE-PROOF

University's perception of the many conditions encountered in meeting the more stringent requirements of marine and heavy-industry applications has resulted in this exclusive and unequalled series of submergence-proof speakers that are impervious to dust and dirt, fumes, and salt water spray. They can be relied upon unequivocally to do the job . . . and keep on doing it.



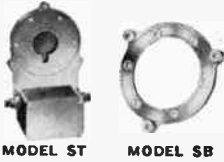
**Model MM-2**—Rugged, compact . . . power capacity and frequency response ideal for clear, noise-cutting reception. Four screws of reflector permit removal from front to expose diaphragm for cleaning. Serrated die-cast swivel mtg. bracket for fast, reliable adjustment.

**Model MM-2L**—Similar to the MM-2, but has higher power capacity and extended low frequency response. Used where both music and speech, or high power capacity are needed. Swivel mounting bracket can mount directly on CTR watertight transformer housing.

**Model MM-2F**—Similar to the MM-2, but for flush mounting in walls, ceilings, bulkheads, dashboards; or where looks or mechanical protection are important. Drains automatically. Corneoprene weatherproofing gasket. Six mounting holes on a 6 $\frac{1}{2}$ " circle dia.

**Model MM-2TC**—Complete speaker, using cast aluminum combination bell and weatherproof housing with space for a line matching transformer and/or volume control. Control can be mounted right into position provided. For bulkhead, wall or ceiling mounting. MM-2TC T . . . comes wired with multi-impedance transformer and pad attenuator.

**Model MSR**—All die-cast reflexed air column speaker with radial deflector for 360° horiz. dispersion. Hermetically sealed driver easily removed. Provisions for line matching transformer and volume control. Wall / ceiling bulkhead mtg. MSR-T comes wired with multi-impedance transformer and pad.



MODEL ST      MODEL SB

### Model ST . . . Transformer / Junction Box Adapter

Fits MM-2, MM-2L. Weatherproofed. For bulkhead, wall, ceiling mounting. Houses transformers up to 2 $\frac{1}{4}$ " x 2 $\frac{1}{4}$ " x 2 $\frac{3}{4}$ " with 2" and 2 $\frac{3}{4}$ " mtg. centers. Used as terminal or junction box. \$12.50 List.

### Model SB . . . Bulkhead Mtg. Adapter

Fits MM-2, MM-2L, MM-2F. 3 mounting holes 120° apart on 5-13/16" mounting circle dia. For flush-fit mounting onto bulkhead, wall, ceiling. \$3.00 List.

MODEL	MM-2	MM-2L	MM-2F	MM-2TC	MSR
FREQUENCY RESPONSE	350-10,000 cps	250-10,000 cps	350-10,000 cps	350-10,000 cps	250-10,000 cps
POWER CAPACITY (Cont. Duty)	15 watts	25 watts	15 watts	15 watts	15 watts
FULL RANGE	30 watts	50 watts	30 watts	30 watts	30 watts
*ADJUSTED RANGE					
DISPERSION	150°	120°	150°	120°	360°
**SOUND PRESSURE LEVEL	117 db	120 db	117 db	117 db	114 db
IMPEDANCE	16 ohms	16 ohms	16 ohms	16 ohm	16 ohms
‡SERIES CAPACITOR FOR ADJUSTED RANGE	33 mfd	40 mfd	33 mfd	33 mfd	40 mfd
DIMENSIONS (overall)	6" O.D. 5" deep	7 $\frac{1}{4}$ " O.D. 5" deep	7 $\frac{1}{4}$ " O.D. 3 $\frac{3}{4}$ " deep	10" high 6 $\frac{1}{4}$ " W. 4 $\frac{1}{4}$ " deep	10 $\frac{3}{4}$ " high 7 $\frac{3}{4}$ " W. 8 $\frac{1}{4}$ " deep
SHIPPING WEIGHT	5 $\frac{1}{4}$ lbs.	6 $\frac{3}{4}$ lbs.	5 $\frac{1}{4}$ lbs.	MM-2TC—8 $\frac{1}{2}$ lbs MM-2TC-T—10 $\frac{1}{4}$ lbs.	MSR—10 lbs. MSR-T—10 $\frac{1}{2}$ lbs.
LIST PRICE	\$46.00	\$52.00	\$46.00	MM-2TC—\$70.00 MM-2TC-T—\$83.50	MSR—\$70.00 MSR-T—\$83.50

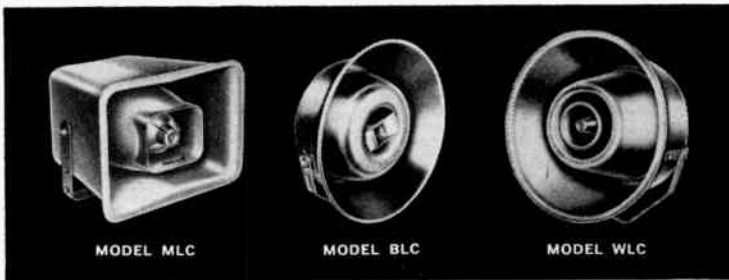
\*Input program response above low frequency cut-off.

‡Assumes use of 16 ohm input.

\*\*Sound Pressure readings taken at 4 ft. with "Full Range" power input. Reduce by 6 db each time distance is doubled; reduce by 3 db each time power input is halved; increase by 3 db when power input is doubled.

## HIGH FIDELITY WEATHERPROOF DUAL-RANGE SYSTEMS

LC speakers are complete systems . . . designed to simplify indoor and outdoor high fidelity sound installations. Include: tropicalized, heavy-duty low frequency driver, separate compression high frequency reproducer coaxially assembled, electrical frequency divider . . . all wired and housed in compact dual horn projector. Baffled chamber and front folded horn provide optimum loading, assure clean bass. Exceptional uniformity of frequency response and sound distribution helps eliminate reverberation problems. Dependable performers for fixed or mobile applications, indoors or out. Weatherproof, all metal construction. Sturdy "U" mounting bracket for ease of installation and adjustment.



MODEL MLC

MODEL BLC

MODEL WLC

MODEL	MLC	BLC	WLC
POWER CAPACITY (Cont. Duty)	15 watts	25 watts	30 watts
FREQUENCY RESPONSE	150-15,000 cps	70-15,000 cps	50-15,000 cps
IMPEDANCE	8 ohms	8 ohms	8 ohms
DISPERSION	120°	120°	90°
*SOUND PRESSURE LEVEL	117 db	119 db	120 db
DIMENSIONS			
DIAMETER (overall)	12 $\frac{3}{4}$ " W x 9 $\frac{1}{4}$ " H	22 $\frac{3}{4}$ "	33 $\frac{1}{2}$ "
DEPTH (overall)	10 $\frac{3}{4}$ "	9 $\frac{1}{4}$ "	20"
SHIPPING WEIGHT	10 lbs.	21 lbs.	72 lbs.
LIST PRICE	\$54.50	\$86.00	\$250.00

\*Sound Pressure taken at 4 ft., 750-1250 cps with 1 cps sweep. Reduce by 6 db each time distance is doubled; reduce by 3 db each time power input is halved.

### Model MLC . . . Mighty Midget for Music/Voice

All new, small sized version of time-tested LC design is for low level speaker distribution, or to cover medium size areas. Incorporates design changes that make it suitable for paging applications. Articulation is exceptional, and musical balance is well preserved. MLC is the ideal speaker for sound reinforcement systems. It carries sound to points that can't be reached unaided, yet retains naturalness. Very efficient; easily installed.

### Model BLC . . . For General Applications

A sensation when introduced, the BLC has set new standards for high fidelity sound in p.a. for voice and music reproduction . . . indoors and out. Lightweight and easy-to-carry. Shallow depth solves problems where emphasis is on decor or physical limitations. As a complete system, the price is in line with fine trumpet/driver combinations, and can be used in their place except under exceptionally noisy conditions.

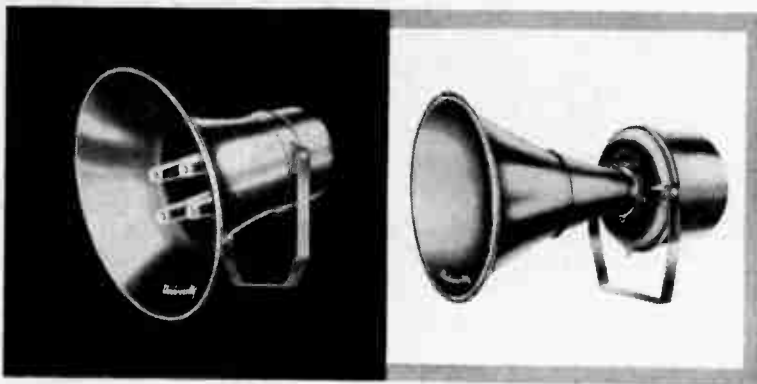
### MODEL WLC . . . Heavy Duty System

The largest of the series, the WLC has a decade of successful performance in concert halls, rinks, auditoriums, stadiums and outdoor theatres throughout the world. Though rated only a few more watts power capacity than the BLC, the WLC with heavy duty, super-efficient components gives greater low frequency response, and higher overall output equal to double the power on a relative basis. Finest full-range response. Simple installation. Completely ignores the weather.



# SUPER-POWER PROJECTORS

University leadership and experience in military requirements has produced highly refined designs for the reproduction and projection of high power sound with no compromise in efficiency, intelligibility and reliability. With the expanding use of soundcasting in civil, commercial, and industrial applications, these highly versatile University speakers are worthy of serious consideration.



**Model 4A4**—Exceptionally versatile, powerful and compact, the 4A4 can be used with Models MA-25, SA-HF, SA-30, or PA-HF drivers . . . depending upon the power capacity, response, efficiency and impedance needed. Four individually reflexed center assemblies used in acoustically correct mixing chamber. Combined output concentrated by a single bell assures maximum penetration of distance and ample reserve power where uninterrupted service is essential. Adjustable "U" bracket for complete mounting flexibility. Dispersion 80°; bell dia. 30 3/4"; Length overall 28 3/4"; Shpg. wt., (less driver) 49 lbs. \$125.00 List.

**B-12P**—Accommodates twelve University drivers of the MA-25, SA-HF, SA-30, or PA-HF types. Achieves fantastic power range . . . reserve power to meet any challenge. Drivers screw into patented mixing chamber of heavy cast aluminum construction. Bell is separate assembly . . . easily attaches to mixing chamber. Large spun aluminum coverall protects the drivers and interconnections. Adjustable "U" mounting bracket. Many applications: military, civil defense, church towers, large stadiums, etc. Dispersion 80°; Bell dia. 31 1/2"; Length overall 47"; Shpg. wt., (less drivers) 60 lbs. \$395.00 List.

## EXPLOSION-PROOF SPEAKERS ... FOR HAZARDOUS DUTY



**Models 7101, 7102** are Underwriters' Labs. approved for use where flammable liquids, gases, dust and other combustibles are present. They enable industries previously denied sound, paging and intercom to install 100% safe systems. Shipped fully assembled, complete with built-in line matching transformer to comply with Government Safety regulations and installation approval. Required conduit entrance is provided as part of the driver housing casting. Model 7101 for Class I, Groups C and D; Model 7102 for same plus Class II, Groups E, F, G.

### SPECIFICATIONS—7101 AND 7102

FREQUENCY RESPONSE	200-10,000 cps
POWER CAPACITY (Cont. Duty)	
FULL RANGE	25 watts
*ADJUSTED RANGE	50 watts
DISPERSION	95°
**SOUND PRESSURE LEVEL	7101 122 db 7102 110 db
‡SENSITIVITY AS MICROPHONE	7101 -23 DBM 7102 -32 DBM
VOICE COIL IMPEDANCE	16 ohms
TRANSFORMER IMPEDANCES	45/500/1000/ 1500/2000 ohms
DIMENSIONS	
BELL DIAMETER	15 3/4"
LENGTH OVERALL	19"
SHIPPING WEIGHT	23 3/4 lbs.
LIST PRICE	7101 \$125.00 7102 150.00

\*Input program response limited to above 200 cps.  
\*\*Sound Pressure readings taken at 4 ft. with "Full Range" power input. Reduce by 6 db each time distance is doubled; reduce by 3 db each time power input is halved; increase by 3 db when power input is doubled.  
‡DHM re 10 dynes/cm<sup>2</sup>

### SPECIFICATIONS—4A4 WHEN USED WITH FOLLOWING DRIVERS

MODEL	MA-25	SA-HF	SA-30	PA-HF
FREQUENCY RESPONSE	120-6500 cps	120-10,000 cps	120-10,000 cps	120-10,000 cps
POWER CAPACITY (Cont. Duty)				
FULL RANGE	100 watts	120 watts	120 watts	200 watts
*ADJUSTED RANGE	200 watts	240 watts	240 watts	400 watts
‡SOUND PRESSURE LEVEL	128 db	131 db	131 db	135 db

\*Input program response limited to above 120 cps.  
‡Sound Pressure reading taken at 4 ft. with "Full Range" power input. Reduce by 6 db each time distance is doubled; reduce by 3 db each time power input is halved; increase by 3 db when power input is doubled.

### SPECIFICATIONS—B-12P WHEN USED WITH 12 DRIVERS OF FOLLOWING TYPES

MODEL	MA-25	SA-HF	SA-30	PA-HF
FREQUENCY RESPONSE	100-6500 cps	100-10,000 cps	100-10,000 cps	100-10,000 cps
POWER CAPACITY (Cont. Duty)				
FULL RANGE	300 watts	360 watts	360 watts	600 watts
*ADJUSTED RANGE	600 watts	720 watts	720 watts	1200 watts
‡SOUND PRESSURE LEVEL	136 db	139 db	139 db	143 db

\*Input program response limited to above 100 cps.  
‡Sound Pressure readings taken at 4 ft. with "Full Range" power input. Reduce by 6 db each time distance is doubled; reduce by 3 db each time power input is halved; increase by 3 db when power input is doubled.

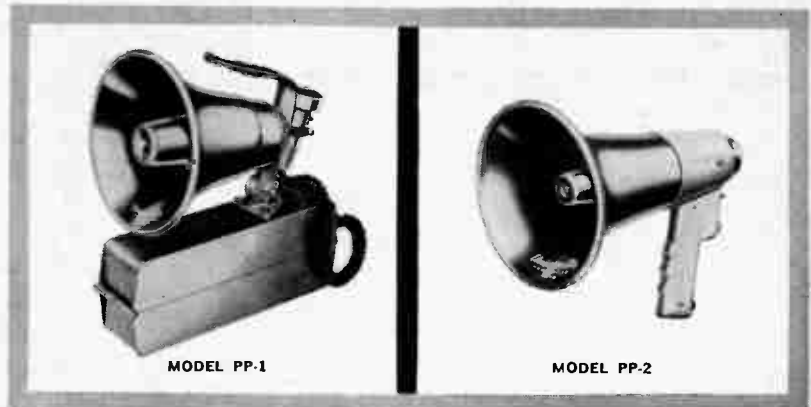
## POWRPAGE—NEW ULTRA-LIGHT PORTABLE SOUNDCASTING SYSTEMS—EXCLUSIVE FEATURES & 1001 APPLICATIONS

### Model PP-1 . . . Portable Powrpage

The most compact, efficient portable system ever devised. Ideal for police, fire, civil defense, railroads, sporting events, etc. High output, weatherproof reflex speaker projects sound in any desired direction. Hand microphone with 11 ft. cable gives full freedom of movement. Powrsaver press-to-talk switch controls entire system, gives instantaneous operation without warm-up or power waste. Uses 6 volt standard lantern batteries (Burgess type S-4H or equivalent). Equipped with comfortable carrying handle and convenient microphone clip. Battery housing serves as base stand for entire assembly. Lightweight, easily handled. Shpg. wt., 11 1/2 lbs. \$116.25 List. (Less batteries).

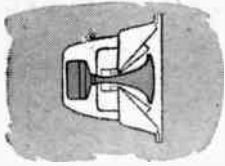
### Model PP-2 . . . Pistolgrip Powrpage

Aim, press, talk . . . projects crystal clear, powerful sound in any direction . . . as you move. Streamlined, only 3 1/2 lbs. including batteries. Can be taken anywhere; easy, one-hand use. Ideal for marine, construction, auctions, carnivals, etc. Slim handle holds pencil batteries and Powrsaver press-to-talk switch. Weatherproof, high-output speaker. Instantaneous operation without warm-up or power waste. Built-in jack can draw 6 to 12 volts from boat or auto ignition system. Shpg. wt., 4 lbs. \$108.35 List. (Less batteries).



MODEL PP-1

MODEL PP-2



# DIFFAXIALS

University has ingeniously combined the most advanced principles of audio and acoustic engineering to produce a speaker that is different . . . the Diffaxial . . . an exceptionally high quality extended range speaker, capable of the most magnificent, natural, wide-range reproduction of sound.



### Model 315-C Super 15" 3-way Diffaxial Speaker

The new, improved 315-C embodies all latest and *exclusive* developments. Big theatre woofer with high excursion, dual spider piston and special anti-breakup low resonance diaphragm achieve clean, rich bass reproduction never before attained. *Patented* multi-element Diffusicone mid-range section crosses over at 1000 cps. Treble range now covered by new heavy duty T-50 Hypersonic driver and new true-axially mounted wide-angle horn. Re-designed crossover network includes *exclusive* "emotional" balance adjustment which alters the overall tonal personality of the speaker to best match room acoustics, baffle contribution, associated electronic equipment characteristics and personal tastes or hearing acuity. Adjustment of tweeter output also provided. Contains 6 1/2 lbs. all-Alnico 5 Gold Dot magnet (including tweeter). Response: 25 cps. to inaudibility; 50 watts\* power capacity; 8-16 ohms. 12" deep; Shpg. wt., 3 1/2 lbs. \$260.00 List.

### Model 6303 15" 3-way Diffaxial Speaker

A tremendous value, with performance capabilities second only to the 315-C Super-efficient woofer, deluxe multi-element Diffusicone for mid-range with crossover at 1000 cps., famous and newly improved HF-206 Hypersonic tweeter *true-axially* mounted, for sweet, clear treble, crossing over at 5000 cps. and going out to inaudibility. Built-in frequency dividing network includes "Brilliance" balance control. Handles 30 watts\* of power; 8-16 ohms impedance; 10" deep; Shpg. wt., 12 lbs. \$138.33 List.

### Model 312 Super 12" 3-way Diffaxial Speaker

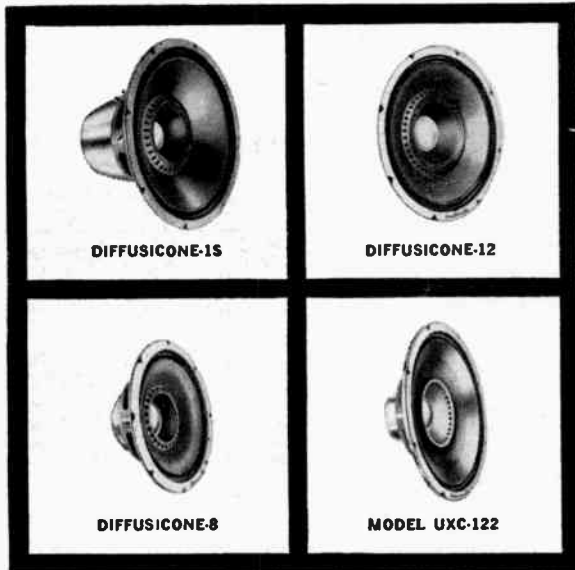
A completely engineered package . . . University's new Hypersonic HF-206 super-tweeter is *true-axially* projected through the center of the 12" woofer. Full-bodied mid-range reproduction is handled by *patented* deluxe multi-element Diffusicone section. Built-in L/C network and variable "Brilliance" control. Crossover is mechanical at 1000 cps. and electrical at 5000 cps. Contains extra heavy 2 lbs. of all-Alnico 5 Gold Dot magnet. Frequency response to inaudibility; 25 watt\* power handling capacity; 8-16 ohms; 8" deep; Shpg. wt., 11 lbs. \$116.67 List.

### Model UXC-123 12" 3-way Diffaxial Speaker

An integrated 3-way speaker assembly completely wired with built-in L/C network and "Brilliance" control. Employs *exclusive* standard uni-sectional diffusicone element. UXT-5 Super Tweeter with "reciprocating flare" horn mounted *through* the center axis of woofer assembly. Highest efficiency, lowest distortion, and true uniform wide-angle dispersion. Super-sensitive all-Alnico 5 magnet. Crosses over mechanically at 1000 cps., electrically at 5000 cps. Response from 45 to 17,500 cps.; 25 watts\*; 8-16 ohms; 8 1/4" deep; Shpg. wt., 9 lbs. \$106.67 List.

### Model 308 8" 3-way Diffaxial Speaker

Features University's *exclusive true-axial* construction with compression tweeter projected *through* center of woofer. Tweeter employs University's "reciprocating flare" principle crossing over electrically at 5000 cps. . . . mid-range is reproduced from *patented* deluxe multi-element Diffusicone section with 1000 cycle crossover. Woofer has extra large voice coil for enhanced bass. Heavy 1 1/4 lbs. all-Alnico 5 Gold Dot magnet. Response to 15,000 cps. Handles 25 watts\*; 8-16 ohms; 6 1/4" deep; Shpg. wt., 5 lbs. \$66.25 List.



### EXCLUSIVE UNIVERSITY 2-WAY DIFFAXIALS

University's 2-way diffaxials employ the *patented* deluxe multi-sectional diffusicone design with 1000 cps. mechanical crossover in 8", 12" and 15" size speakers. Coaxial dual horn loading at apex of cone extends mid and high frequency response. Uniform wide-angle dispersion of highs achieved by means of radial projector with aperture diffraction. Full fidelity at all listening points off speaker axis. All models contain heavy super-sensitive all-Alnico 5 Gold Dot magnets for high efficiency.

**DIFFUSICONE-15** — Response from 30 to 14,000 cps.; 30 watts\*; 1 1/2 lbs. of all-Alnico 5 magnet; 8-16 ohms; 7 1/4" deep; Shpg. wt., 8 1/4 lbs. \$75.00 List.

**DIFFUSICONE-12** — Response from 40 to 14,000 cps.; 30 watts\*; 1 1/2 lbs. of all-Alnico 5 magnet; 8-16 ohms; 4 1/2" deep; Shpg. wt., 6 lbs. \$61.67 List.

**DIFFUSICONE-8** — Response from 70 to 13,000 cps.; 25 watts\*; a full pound of all-Alnico 5 magnet; 8-16 ohms; 3 3/8" deep; Shpg. wt., 3 1/4 lbs. \$43.33 List.

### Model UXC-122

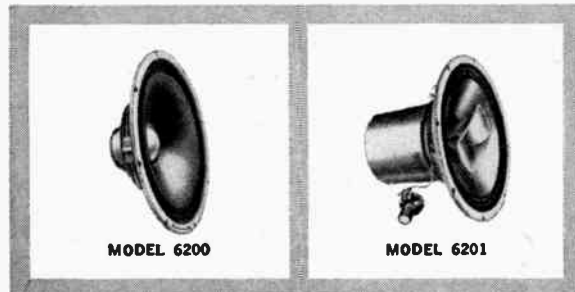
12" Diffaxial speaker employing *exclusive* standard uni-sectional diffusicone element with 1000 cps. mechanical crossover. Coaxial horn loading at the apex of the cone extends mid and high frequency response. Uniform wide-angle dispersion by means of radial projector plus aperture diffraction for full fidelity at all listening points off speaker axis. Extra-large voice coil and one-piece molded woofer cone of special pulp content provide long, trouble-free life and high-power capacity. Contains super-sensitive all-Alnico 5 magnet. Response from 45 to 13,000 cps.; 25 watts\*; 8-16 ohms; 4 3/8" deep; Shpg. wt., 3 1/4 lbs. \$55.00 List.

### Model 6200 12" Extended Range Speaker

Shallow design perfect for wall, flush ceiling, and limited space installations. Contains a full pound of super-sensitive all-Alnico 5 magnet. One-piece molded cone of special pulp content for long, trouble-free life. High efficiency, requires a fraction of the power needed for ordinary 12" speakers. Response from 45 to 10,000 cps.; 30 watts\*; 8-16 ohms; 4" deep; Shpg. wt., 3 1/4 lbs. \$43.33 List.

### Model 6201 12" Dual Range Coaxial Speaker

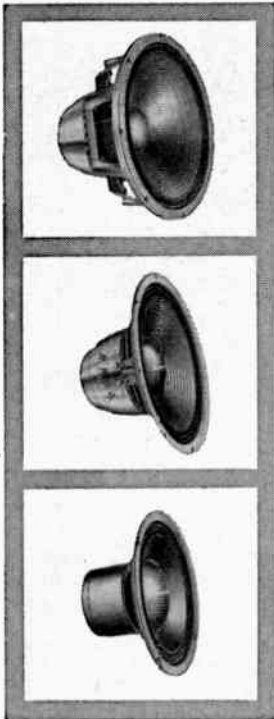
A *true* dual range coaxial system. The tweeter, with compression driver and "reciprocating flare" horn is mounted *through* the center axis of the cone. High efficiency, wide-angle, uniform treble reproduction. Contains heavy super-sensitive all-Alnico 5 Gold Dot Magnet. Built-in L/C network with "Brilliance" control. Response from 45 to 15,000 cps.; 25 watts\*; 8-16 ohms; 8 3/8" deep; Shpg. wt., 10 1/4 lbs. \$86.67 List.



\*Integrated Program

# WOOFERS

University recognition of all the obscure as well as the more apparent engineering concepts involved in multi-speaker and stereophonic systems has resulted in the widest assortment of specialized low frequency reproducers, to suit specific application, technical and budget requirements.



## Model C-15W 15" Dual Impedance Woofer

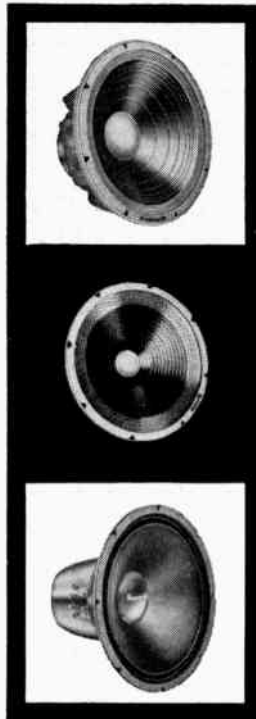
Maximum conversion is maintained by a new type voice coil with greatest axial depth and excursion ever attained. Exclusive *twin spider* arrangement and 6 lb. all-Alnico 5 Gold Dot magnet reduces distortion to virtually broadcast level. Response from below 25 to 1500 cps. Up to 50 watts\*. Exclusive dual impedance voice coil assembly enables use in any system of 4 to 20 ohms... facilitating alteration and expansion of systems, and balancing to associated components of varied efficiency. 10 1/2" deep; Shpg. wt. 26 3/4 lbs. \$141.67 List.

## Model C-12W 12" Adjustable Response Woofer

Built-in facilities enable high-end adjustment of response to 700, 2500 or 5000 cps. suiting requirements of most tweeters. Crossover points can be changed to achieve best tonal balance. When used with N-1 adjustable high-pass filter in a 2-way system combination forms a complete L/C network. 1 1/2 lbs. super-sensitive all-Alnico 5 Gold Dot magnet. Response 40 to 6000 cps. (overall); 8 ohms. Up to 30 watts\*; 6 1/4" deep. Shpg. wt. 7 1/4 lbs. \$60.00 List.

## Model C-8W 8" Woofer

Ideal for assembling a compact, high quality speaker system. Perfect also for mid-range in low cost 3-way systems. Suitable for crossover up to 5000 cps. Super-sensitive all-Alnico 5 Gold Dot magnet. Response to 50 cps. is achieved when properly baffled. Up to 25 watts\*; 8 ohms; 4 1/4" deep. Shpg. wt. 3 lbs. \$22.50 List.



## Model C-15HC 15" High Compliance Woofer

Now, for the first time, a high compliance, low resonance 15" woofer which yields astounding bass depth without compromising power handling ability and clean output. Specifically designed for ultra-linear response *throughout* the complete low frequency range. Magnetic assembly employs the NEW Hiflux UNIFERROX-7 magnet material in specially designed suspension assembly insuring positive transient control during maximum excursions. Recommend installation in a baffle volume or enclosure of approximately 3.4 cu. ft. with a duct 4" in length, and 3" in dia. at rear of enclosure. Overall response to 800 cycles. Resonance 15 cps. Dual impedance voice coil, 4-8 and 10-20 ohms. Operating input power to complete speaker system 20 to 70 watts. 9 1/2" deep; Shpg. wt. 24 3/4 lbs. \$149.17 List.

## Model C-12HC 12" High Compliance Woofer

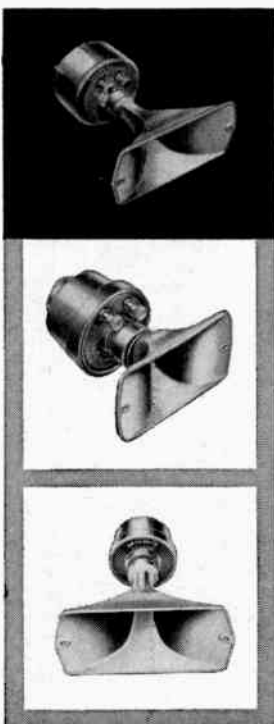
A new high compliance, ultra-linear 12" woofer capable of outstanding performance in matched level systems utilizing operating input power of 25 to 60 watts. Recommend installation in a baffle volume or enclosure of approximately 1.8 cu. ft. with a duct 10" in length, and 3" in dia. at rear of enclosure. Response to 2500 cycles permits use in speaker system with addition of only a tweeter. Magnetic assembly employs the NEW Hiflux UNIFERROX-7 magnet material. Cone resonance 18 cps. Dual impedance voice coil, 4-8 and 10-20 ohms. 6 1/2" deep; Shpg. wt. 8 1/2 lbs. \$82.50 List.

## Model C-63W 15" Adjustable Response Woofer

Highly versatile low frequency speaker with exclusive built-in features. Adjustable response limiter sets response to 700, 2500 and 5000 cps. to suit crossover requirements of most tweeters. Combination with N-1 Adjustable High Pass Filter forms a 2-way L/C network with "Brilliance" control. Bass response is smooth to better than 30 cps. with lowest distortion. One-piece molded cone of special pulp content for increased stability. 1 1/2 lbs. of super-sensitive all-Alnico 5 Gold Dot magnet. Response from 30 to 6000 cps. (overall). 30 watts\*; 8 ohms; 10" deep; Shpg. wt. 10 lbs. \$81.67 List.

# TWEETERS

University research and engineering have achieved new horizons which are leading the art of tweeter design away from the shortcomings of staid, antiquated designs of the past. Here is a wide selection of the very finest, most advanced examples of the art, embodying important patented features which make them outstanding values.



## NEW HF-206 Hypersonic Tweeter

High frequency far beyond audibility. Employs improved die-cast aluminum wide-angle horn based on "reciprocating-flare" principle providing uniform 120° horizontal and 50° vertical dispersion. New super-efficient driver mechanism also housed in die-cast aluminum casting. Low end cut-off 3500 cps. Power capacity; 25-50 watts\*, depending on crossover frequency used and speaker system set-up. 8 ohms. N-1 or N-2B network for 5000 cps. crossover recommended. 6" x 3-5/16" x 6-9/16" Shpg. wt. 3 1/2 lbs. \$55.00 List.

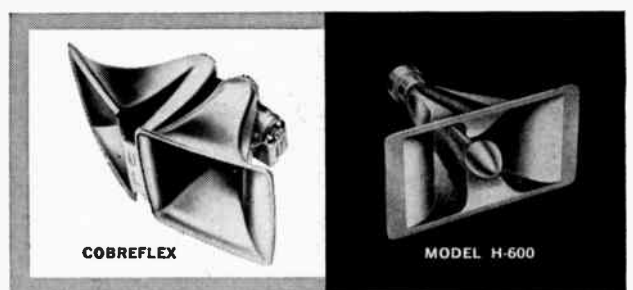
## Model UXT-5 Super Tweeter

A compact super tweeter assembly for crossover at 5000 cps. or above. Employs a genuine compression driver with super-sensitive Alnico 5 magnet, coupled to University's exclusive and patented "reciprocating flare" horn. Uniform wide-angle response, high conversion efficiency. N-1 or N-2B L/C network recommended. Response from 4500 to 17,500 cps.; 120° horizontal and 50° vertical dispersion. 25-50 watts\*. 8 ohms; 4 1/4" x 2 1/2" x 4"; Shpg. wt. 1 3/4 lbs. \$35.00 List.

## Model 4401 Tweeter

Sturdy one-piece die-cast horn using "reciprocating-flare" principle; response in 120° horizontal high frequency dispersion and 50° vertical. High conversion efficiency due to use of genuine "driver" mechanism with light weight duralumin voice coil suspension. Hermetically sealed construction. Response from 2000-15,000 cps. 8 ohms. Handles up to 25 watts\*. N-1 or N-2B dividing network recommended. 6" x 2 3/4" x 6-5/16". Shpg. wt. 2 lbs. \$30.00 List.

\*Integrated Program



## Model Cobreflex Horn

Unsurpassed as a mid-range horn in 3-way systems when used with T-30 compression driver unit. . . 27" exponentially-flared air column permits crossover as low as 350 cps. Exclusive twin-flare design for uniform wide-angle dispersion, 120° horizontal and 60° vertical. Two identical one-piece die-castings of extra heavy aluminum. 1 3/8"-18 throat; 10 1/4" x 18 1/2" x 9 1/4". Shpg. wt. 10 1/4 lbs. \$38.33 List.

## Model H-600 Mid-Range and High Frequency Horn

New and improved, the H-600 is the finest in 600 cycle cut-off wide-angle horns for professional and home hi-fi applications. All-new die-cast design combines famous patented "reciprocating-flare" principle with hemispherical deflection for exceptionally uniform sound distribution patterns throughout the full response range. Use with T-30 or T-50 drivers and N-2A network. Will take any driver with standard 1 3/8"-18 throat, 7 3/4" x 8 3/4" x 4 3/4". Shpg. wt., 2 1/2 lbs. \$30.00 List.

## NEW T-30 Mid-Range and High Frequency Driver

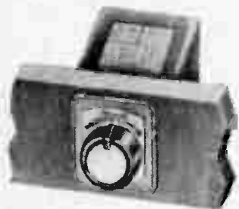
Redesigned throughout; new mechanism and housing. For mid-range in 3 and 4-way systems, or as tweeter in 2-way system. Use with H-600 or Cobreflex horns. N-2A network recommended. Response 200 to 15,000 cps.; 8 ohms; 1 3/8"-18 throat; 3 1/2" dia., 3 3/4" deep; Shpg. wt. 2 3/4 lbs. \$50.00 List.

## NEW T-50 Hypersonic High Frequency Driver

Heavy duty super-efficient driver for use with the H-600 horn. Response covers from 600 cps. to inaudibility and is recommended for large theater and auditorium systems, and deluxe home hi-fi where the ultimate in performance is desired. Use with N-2A network. 8 ohms; 1 3/8"-18 throat; 4 1/4" dia.; 4 1/4" deep Shpg. wt. 5 lbs. \$82.50 List.

# ADJUSTABLE CROSSOVER NETWORKS

University offers the most complete line of frequency dividing filters and crossover networks to satisfy all popular requirements. Because of their exclusive features, as well as "adjustable" design that eliminates obsolescence and makes technical exploration possible—these units are a truly worthwhile investment.



**Model N-1 Adjustable Filter**  
Adjustable high pass filter with built-in "Brilliance" Control; for dividing program between woofer and tweeter in 2-way systems. Crossover and impedance combinations: 2500, 5000, 10,000 cps. at 8 ohms; 1250, 2500, 5000, 10,000 cps. at 16 ohms; 5000, 10,000 cps. at 4 ohms. Can be used with N-2A L/C network in 3-way system. Fits panels up to 1" thick. 3 5/8" x 3 1/4" x 3". Shpg. wt., 1 1/2 lbs. \$17.50 List



**Model N-3 Acoustic Baton Network**  
An adjustable L/C network for 3-way systems. Connections for either 350 or 700 cps. crossover between mid-range and woofer. Tweeter crossover is 5000 cps. Built-in "Presence" and "Brilliance" controls. Adjustable for vertical or horizontal mounting. Fits panels up to 1" thick. 8 ohms; 7" x 5" x 3". Shpg. wt., 5 1/2 lbs. \$46.67 List.



MODEL N-2B



MODEL N-2A

**Models N-2A and N-2B Adjustable L/C Dividing Networks**

With either or both these units, any combinations of speakers can be used in a great variety of voice coil impedances and popular crossover points. N-2A and N-2B can be used in combination for 3-way speaker systems. 3 5/8" x 3 1/4" x 3". Shpg. wt., each 2 1/4 lbs.  
**N-2A ADJUSTABLE CROSSOVER**  
6 db/oct. 2-way L/C network. May be used in pairs as 12 db/oct. network or singly as 12 db/oct. low or high-pass filter. Crossover—350 or 700 cps. at either 8 or 16 ohms; 700 cps. at 4 ohms. \$30.00 List.  
**N-2B ADJUSTABLE CROSSOVER**  
6 db/oct. 2-way L/C network. May be used in pairs as 12 db/oct. network, or singly as 12 db/oct. low or high-pass filter. Crossover—1250, 2500 or 5000 cps. at 8 ohms; 2500 or 5000 cps. at 16 ohms; 2500 at 4 ohms. \$23.33 List



**Model AP-8 "Balance" Control**  
Effective and efficient attenuator pad for balancing sound according to room acoustics and personal taste. Ideal for use with N-2A and N-2B networks. Complete with attractive escutcheon and knob, marked two sides; "Presence" for use in mid-range circuits and "Brilliance" for use with tweeters. Suits 8-16 ohms systems. Fits panels up to 1" thick. Shpg. wt., 7 oz. \$6.58 List.

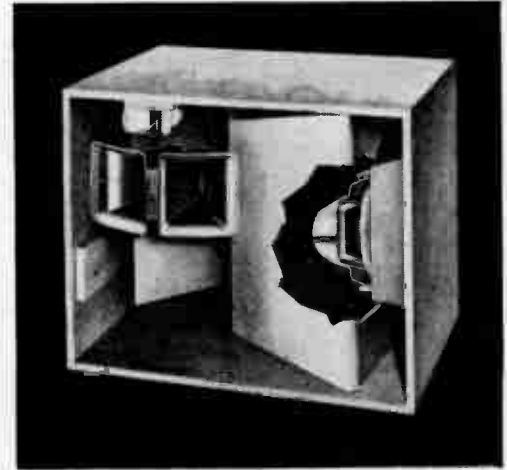
## UNFINISHED UTILITY "CLASSIC" ENCLOSURE AND SYSTEM

### Model EN-CB Unfinished "CLASSIC" ENCLOSURE

A true, self-contained front-loaded folded horn, operating with highest quality wherever placed. Independently of walls or floors. Complete in itself with all acoustically correct elements always in place. EN-CB is identical in design to the enclosure used in the famous "Classic" system. Ideal for the do-it-yourself home decorator . . . the many ways to finish the EN-CB is limited only by the imagination. Can be used horizontally or vertically. Fully assembled, constructed of select 3/4" white birch veneer plywood with lock and mitre joints and braced with heavy glue blocks. Supplied unfinished, less base and frame, but with necessary hardware for mounting speakers. Recommended components are Model C-15W Woofer, Model HF-206 Hyper-sonic Tweeter, Cobrelex Mid-range Horn with T-30 Driver. Model N-3 Crossover Network. 40 1/2" x 31 1/2" x 23 3/4" Wt., 142 lbs. \$269.00 List.

### Model S-9 Unfinished UTILITY "CLASSIC" SYSTEM

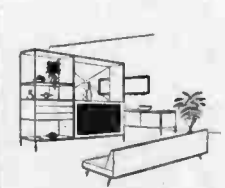
Model S-9 is the EN-CB with the recommended CLASSIC speakers and network completely installed and wired. A real convenience for those who wish to buy the whole system—ready to use or finish. No charge for installation and wiring. Shpg. wt., 185 lbs. \$533.33 List.



EN-CB illustrated with components installed



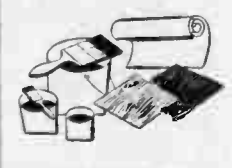
BUILT-INS



ROOM DIVIDERS



PICK A PERIOD



CUSTOM FINISHING

Why you need every feature of these

**NEW**

# UNIVERSITY FOLDED-HORN ENCLOSURE KwiKits

Because ... in performance, mechanical design, construction and ease of assembly, these new KwiKits are unquestionably the *very finest* enclosure kits — at any price!

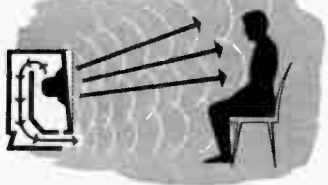
KEN-12 ... for 12" speakers and systems

KEN-15 ... for 12" or 15" speakers and systems



MODEL KEN-12

## ROOM-BALANCED PERFORMANCE



KwiKit acoustic design and tilted baffle combine direct speaker radiation and compensated rear horn loading in a way that blends bass, middle and treble ranges perfectly ... for uniform response throughout the listening areas of a room.

## HEAVIER CONSTRUCTION



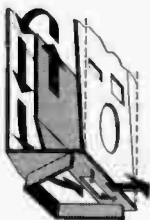
Heavy 3/4" first grade, fully cured lumber for top, bottom, sides and back ... not flimsy 1/2" wood commonly used in "kits." Bigger, sturdier — as much as 30% heavier than others in the same price class. Eliminates spurious resonances so detrimental to achieving richer, cleaner bass reproduction.

## PRECISION MECHANICAL DESIGN



Exterior and interior elements, even the cleats, fit snugly within close tolerance "rabbeted" grooves. Gluing and screwing of each piece results in reliably air-tight, permanent joints. No nails used. No pencil markings necessary. Mitering and plenty of glue blocks and bracing for truly rigid construction.

## PLACE ANYWHERE IN ROOM



Underside view shows how advanced design, self-contained folded horn extends to the front of the cabinet, projecting low frequencies out into the room ... not back into a corner, splashed against the walls. Small slot in base is resistively controlled vent which equalizes woofer diaphragm excursions in compression chamber. KwiKits are therefore independent of room furnishings, shape or placement and can be used against a flat wall, in a corner ... even up in the air!

## FOOLPROOF ASSEMBLY



All pieces are pre-cut and pre-drilled ... engineered to go together quickly. All you need is a screwdriver! Baffle board is pre-cut ... blank plugs and adapters supplied for easy installation of additional components as your system expands. Your KwiKit includes all required hardware, plastic wood, glue, sandpaper, Tufflex insulation, easy-to-follow instructions and ... special attention is given to packaging of KwiKits to insure safe, intact delivery to your door.

## PROFESSIONAL RESULTS

### GENUINE KORINA VENEER

... for a luxurious finish in any desired color.

### DECORATIVE FRONT MOLDINGS

... designed to complement and enhance any decor.

### TEXTURED GRILLE FABRIC

... exquisite, and acoustically correct to prevent high frequency attenuation.

For any wide-range, coaxial, diffraxial or multi-speaker system ... if it's a kit that you want, it's KwiKit you need!

KEN-12-15 1/2 D x 21 1/2 W x 29 1/2 H Shpg. Wt. 50 lbs. \$74.58 List  
KEN-15-18 1/2 D x 29 W x 35 1/2 H Shpg. Wt. 73 lbs. \$99.17 List  
Adapter for mounting 12" speakers in KEN-15 \$2.50 List

LISTEN

*University sounds better*

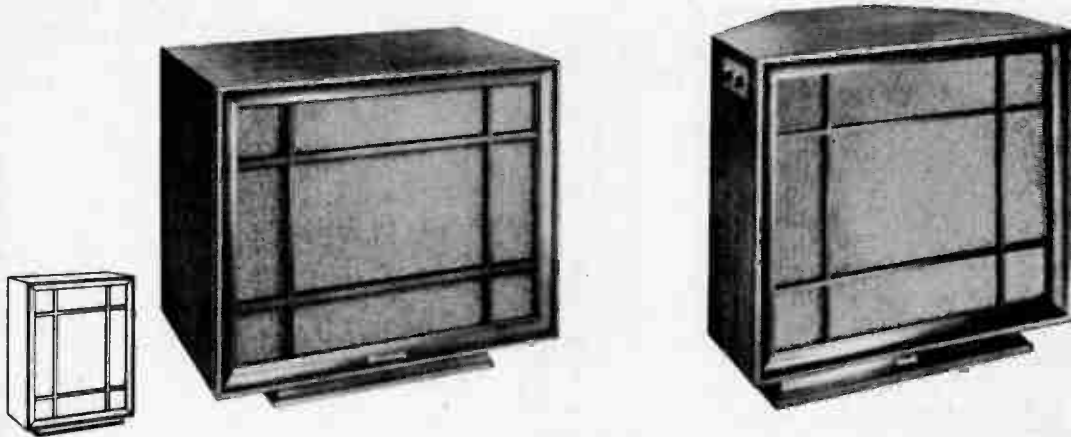


# SPEAKER SYSTEMS AND ENCLOSURES



University enclosures are as important to the realization of fine reproduction as a loudspeaker. They enjoy the full benefit of University's extensive engineering experience and manufacturing know-how. When used together, University speakers and speaker enclosures attain system quality in the highest tradition of audio and acoustic design.

## HIGH EFFICIENCY SPEAKER SYSTEMS



### Model S-8 "Classic" Deluxe Console Speaker System

The CLASSIC embodies University's many engineering advances. Components comprise the incomparable C-15W 15" woofer, Cobreflex wide-angle dual exponential horn with T-30 driver for rich, full-bodied middles; the new HF-206 Hypersonic Tweeter and N-3 Acoustic Baton network with "Brilliance" and "Presence" controls. The enclosure is a versatile front-loaded, folded horn operating the woofer as a compression driver for maximum efficiency. Thus, the CLASSIC functions independently of walls and floor. May be used as "lowboy" or "highboy" console. Response: 20 cps. to inaudibility, 50 watt\* power handling capacity; 8 ohms. Available in mahogany, walnut and blonde. Size: 34½" x 40½" x 25½". Shpg. wt., 225 lbs. List Price: Mahogany—\$791.67, Walnut—\$866.67, Blond—\$825.00.

### Model S-7 "Dean" Deluxe Corner Speaker System

Employs the same high quality components and exclusive advance design as the "Classic." The DEAN is truly a "cornerless-corner" system. This enclosure is a full compression, front-loaded, folded horn that functions completely independent of room configuration and acoustics. Just listen to the results of the C-15W 15" woofer, Cobreflex with T-30 driver for the mid-range, and the HF-206 for highs. The N-3 Acoustic Baton network crosses over at 350 and 5000 cycles. It will be difficult for your ears to believe that such magnificent sound can be produced by a speaker. Response: 20 cycles to inaudibility; Handles 50 watts\*; 8 ohms. Available in mahogany, walnut or blond. Size: 36½" H. x 37¾" W. x 26¾" D. Shpg. wt., 208 lbs.; List Price: Mahogany—\$791.67, Walnut—\$866.67, Blond—\$825.00.

### Model S-6 "The Master"—Multi-Speaker System

Provides the full response and dynamic range of music... at an attractive price for such quality. Integrates the C-15W 15" woofer, the H-600 horn with T-30 driver for mid-range, with the HF-206 Hypersonic Tweeter for natural highs. The N-3 Acoustic Baton completes this quality team of components. Includes "Presence" and "Brilliance" controls. Performance competes with speaker systems considerably larger in size and higher in cost. Handles up to 50 watts\*. All are installed in a new folded horn "cornerless-corner" enclosure which permits use either in a corner or flat against wall. Size: 37" H x 29" W x 20" D. Available in mahogany, walnut and blond. Shpg. wt., 130 lbs. List Price: Mahogany—\$516.67, Walnut—\$541.67, Blond—\$533.33.

### Enclosure only—Model EN-15

For use with any University 12" or 15" extended range speaker or multiple speaker combination using 12" or 15" woofer; 8" speaker or H-600/T-30 for mid-range; 4401, UXT-5, HF-206 or H-600 T-50 as tweeter. Available in mahogany, walnut, blond and unfinished. Shpg. wt., 96 lbs. List Price: Mahogany—\$208.33, Walnut—\$232.50, Blond—\$225.00, Unfinished—\$170.00.



### Model S-5 "The Senior"—Multi-Speaker System

Fulfills the need for a top quality performer whenever space and budget are limited. Using the basic C-12W woofer (minus response limiter), H-600/T-30 mid-range combination; the UXT-5 "reciprocating-flare" wide-angle Super Tweeter and Acoustic Baton network... this outstanding team of components performs with excellent efficiency to beyond audibility, handling up to 30 watts\*. Installed into University's NEWEST folded horn enclosure... the result is smooth, natural reproduction of music and speech. Made by master craftsmen with same quality of material, workmanship and finish as the finest furniture. Available in mahogany, walnut and blond. Size: 30" H. x 21½" W. x 15¾" D. Shpg. wt., 85 lbs. List Price: Mahogany—\$333.33, Walnut—\$348.33, Blond—\$341.67.

### Enclosure only—Model EN-12

For use with any University 12" extended range speaker or multiple speaker system with 12" woofer, H-600 with T-30 driver for mid-range or with T-50 for full range; 4401, UXT-5 or HF-206 as tweeter. Available in mahogany, walnut, blond and unfinished. Shpg. wt., 60 lbs. List Price: Mahogany—\$126.67, Walnut—\$139.17, Blond—\$132.50, Unfinished—\$109.17.

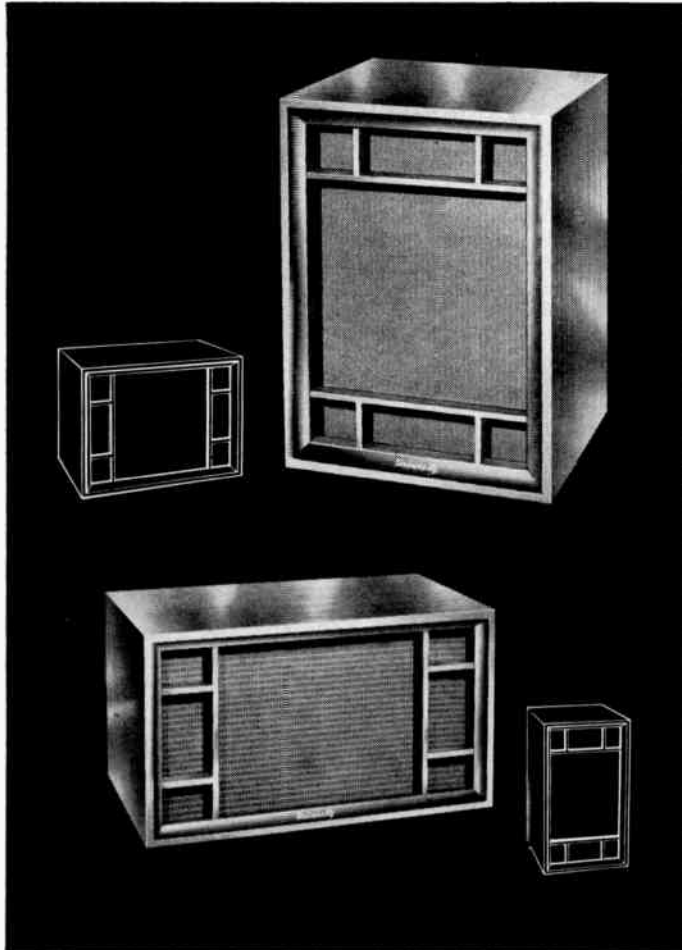


• Integrated Program

UNIVERSITY successfully meets the challenge of achieving high fidelity performance . . . almost the equal of considerably larger systems . . . with small ensembles. Necessitating a completely new electrical and acoustical design concept, the resulting exciting component and enclosure designs are setting new industry standards.



## ULTRA-LINEAR SPEAKER SYSTEMS



### Ultra-Linear 15, Models S-11H and S-11L

"Incredible . . . outstanding" — these are the words you'll use to describe the magnificent performance of the Ultra-Linear 15.

Small overall size is achieved by coupling the new University infinite loading/annular relief enclosure design to the new, heavy duty high compliance C-15HC woofer. A specially designed matched-level network integrates the Diffusicone-8 with its own compression chamber for mid-range and the new HF-206 Hypersonic Tweeter for response to beyond audibility. The S-11 will outperform most other systems regardless of type, size and cost! Extra heavy construction; beautiful, fine furniture finishes, styled in good taste to complement every decor. Operates with power input of 20 to 60 clean watts. S-11H is upright model, S-11L for lowboy use. 8 ohms impedance. Cabinet base removable. Available in mahogany, walnut and blond. 26 $\frac{1}{2}$ " x 19 $\frac{1}{2}$ " x 17 $\frac{1}{2}$ ". List Price: Mahogany—\$408.33, Walnut—\$421.67, Blond—\$415.00.

### Ultra-Linear 12, Models S-10H and S-10L

These systems are intended for use where available space is most restricted, yet highest quality reproduction is essential. Model S-10H is for use where minimum width must be considered; S-10L where height must be conserved. Either model can be used without its base, for shelf, bookcase or "built-in" applications. Only 25" x 14" x 14 $\frac{1}{2}$ "; base adds 1 $\frac{1}{2}$ ". The new C-12HC 12" high compliance, low resonance woofer is employed with the 2500 cps. wide-angle tweeter and a specially matched-level crossover network. Includes high frequency adjustment for matching room attenuation characteristics. Operates with power input of 25 to 60 clean watts. 8 ohms impedance. Enclosure is a new infinite-loaded design with annular compression relief. Heavy 1 $\frac{1}{4}$ " thick double braced construction; beautiful natural grain, hand-rubbed finish. Cabinet base removable. Available in mahogany, walnut and blond. List Price: Mahogany — \$231.67, Walnut — \$245.00, Blond — \$238.33.

## "BEST BUYS" IN SMALL SYSTEMS AND ENCLOSURES



### Tiny Mite Enclosure, Model TM-812 Speaker System, Model S-3TM

Where the cost of the enclosure, loudspeaker and amplifier must be kept to a minimum but not at the expense of achieving high fidelity reproduction, the TM-812 TINY-MITE enclosure operating with one of the University high efficiency 8" or 12" extended range speakers is the solution. Sturdy  $\frac{3}{4}$ " wood is used throughout. Versatile enclosure is supplied with baffle board cut out for 12" speakers; adapter available for 8" speaker with ample space for tweeter. Baffle board removable from front for easy installation. Beautifully finished, including rear of cabinet. True "cornerless-corner" design permits use in corner, against wall or upside down! TM-812 is available in mahogany, walnut, blond and unfinished. 21 $\frac{1}{2}$ " H. x 15 $\frac{1}{2}$ " W. x 12 $\frac{1}{2}$ " D. Shpg. wt., 25 lbs. List Price: Mahogany—\$72.50, Walnut—\$80.83, Blond—\$77.50, Unfinished—\$62.92.

**Model S-3TM** — Incorporates Model 308 3-way 8" Diffaxial Speaker, wired and ready to use. A modestly priced combination of exceptional performance. Shpg. wt., 30 lbs. List Price: Mahogany—\$141.67, Walnut—\$149.17, Blond—\$146.67.



### Model S-1 "Companionette" 2-Way Speaker System

Decorative and smartly styled, ideal speaker system for limited space application or as extension speaker to an existing high fidelity installation. Makes every room a music room with this true 2-way speaker system using the Model 4401 wide-angle Tweeter and Model C-8W Woofer. The enclosure employs the "distributed port" phase inversion principle for deep, rich bass reproduction. The cabinet is skillfully constructed of the finest and fully cured woods. Ideal for bookcase installations. Wrought iron legs may be purchased from furniture or department store to convert system for floor use. Response to 15,000 cps.; Handles 25 watts\*; 8 ohms impedance. Available in mahogany, walnut and blond. Size: 10" H. x 24" W. x 10" D. Shpg. wt., 21 lbs. List Price: Mahogany—\$103.33, Walnut—\$109.58, Blond—\$106.67.

\*Integrated Program

# RCA TECHNICAL LITERATURE

**CURRENT  
COMPREHENSIVE  
AUTHORITATIVE**



Accurate servicing information at your fingertips when you need it means a better, faster service job. Here is detailed, authoritative data for servicing RCA Victor products you can't get anywhere else. Keep your service accurate by keeping your service files up-to-date... the RCA way!

## SERVICE PARTS DIRECTORIES FOR RCA VICTOR TV RECEIVERS

**SP-1007** (10 $\frac{1}{8}$ " x 16 $\frac{3}{4}$ ") 80 pages. Schematic diagrams and replacement parts lists for all RCA Victor TV receivers manufactured from 1946 through June 1950 (56 models). Each schematic diagram faces its corresponding parts list for quick reference. Price, 75 cents per copy.

**SP-1014** (10 $\frac{1}{8}$ " x 16 $\frac{3}{4}$ ") 142 pages. Schematic diagrams, replacement parts lists and top and bottom chassis views for the 71 models of 1950 and 1951 RCA Victor TV receivers. The comprehensive index for model and chassis numbers provides a ready source of reference. Price, \$1.50 per copy.

**SP-1021** (10 $\frac{1}{8}$ " x 16 $\frac{3}{4}$ ") 36 pages. Schematic diagrams, wiring diagrams, replacement parts lists, and top and bottom chassis views for the 27 models of 1952 RCA Victor TV receivers. The comprehensive index cross-references RCA TV model names to model numbers, and model numbers to the publication in which information may be found. Price, 50 cents per copy.

**SP-1028** (10 $\frac{1}{8}$ " x 16 $\frac{3}{4}$ ") 84 pages. Schematic diagrams, wiring diagrams, replacement parts lists and top and bottom chassis views for the 108 models of 1953 RCA Victor TV receivers. Also includes schematic diagrams, replacement parts, and other information for radio chassis used in radio-TV combination receivers. Cross-references model names to model numbers of all RCA TV receivers from 1946 to 1953. Cross-references all model numbers and chassis numbers to the publication in which information may be found. Price, \$1.35 per copy.

**SP-1035** (10 $\frac{1}{8}$ " x 16 $\frac{3}{4}$ ") 72 pages. Schematic diagrams, top and bottom chassis views, replacement parts lists and top and bottom chassis adjustments for the 106 models of 1954 RCA Victor TV Receivers. Also included is information on the CT-100 and the 21-CT55 Color Television Receivers, and the RP-197 and RP-198, 3-speed record changers. The comprehensive index references model names to model numbers of all RCA Victor TV receivers from 1946 through 1954, and all model and chassis numbers to the Service Parts Directory in which information may be found. Price, \$1.25 per copy.

## RCA VICTOR TV SERVICE PARTS GUIDE AND TUNER PARTS GUIDE

**SP-2001B** (10 $\frac{1}{8}$ " x 8 $\frac{3}{8}$ ") 16 pages. Lists stock numbers of major replacement parts for RCA Victor TV sets by receiver-model number and corresponding receiver-chassis number. Also lists stock numbers of tuner-replacement parts by tuner-chassis number. Covers period from 1946 through 1955. Price, 25 cents per copy.

## RCA BATTERY CATALOG

**BAT-1348** Contains complete specifications and interchangeability data for portable "A," "B," "A-B" packs, farm packs; and special information on flashlight, lantern, industrial and special-purpose types. Also Battery Interchangeability Directory for leading portable radio models, and Battery Replacement Guide for virtually all portable radios manufactured between 1948 and 1954. Sent upon request, free of charge.

## RCA TEST EQUIPMENT

Individual data bulletins containing complete specifications—electrical and mechanical data, uses, features, etc.—covering the complete line of precision RCA Test Equipment are available and will be sent upon request. No charge for single copies.

Copies of the publications listed above may be obtained from your RCA Tube Distrib. or direct from Commercial Engineering, Radio Corporation of America, Harrison, New Jersey.

\*Prices shown apply in U.S.A. and are subject to change without notice.





# RCA TECHNICAL LITERATURE

THE MOST AUTHORITATIVE IN THE INDUSTRY

### • RCA RECEIVING TUBE MANUAL

18 (8 3/8" x 5 1/2") — 352 pages. Revised, expanded, and brought up to date. Contains technical data on more than 575 receiving tubes, including types for black-and-white and color television and series-string applications. Features tube theory written for the layman, application data for radio and television circuits, Resistance-Coupled Amplifier Section, and several circuits for high-fidelity audio amplifiers. Features lie-flat binding. Price 75 cents.\*



### • RCA PHOTSENSITIVE DEVICES AND CATHODE-RAY TUBES

Booklet CRPD-105 (10 7/8" x 8 3/4")—24 pages. Contains technical information on 109 RCA tubes including single-unit, twin-unit, and multiplier phototubes; flying-spot tubes; monitor, projection, transcriber, and view-finder kinescopes, and storage tubes. Price 20 cents.\*

### • RCA RECEIVING TUBES FOR AM, FM, & TELEVISION BROADCAST

Bulletin 1275-G (10 7/8" x 8 3/4") — 28 pages. Contains characteristics of more than 600 RCA entertaining receiving tubes and picture tubes. Socket connection diagrams arranged for quick and easy reference. Price 20 cents.\*



### • RCA POWER AND GAS TUBES

Bulletin PG-101-C (10 7/8" x 9 3/4") — 24 pages. Technical information on 174 RCA vacuum power tubes, rectifier tubes, thyratrons, ignitrons, magnetrons, and vacuum-gauge tubes. Includes terminal connections. Price 20 cents.\*

### • RCA PICTURE TUBES

Booklet K11-106 (10 7/8" x 8 3/4") 16 pages. Contains characteristics and base connection diagrams for RCA's complete line of picture tubes. Features an interchangeability directory on more than 150 types. Price 20 cents.\*



### • RCA INTERCHANGEABILITY DIRECTORY OF INDUSTRIAL-TYPE ELECTRON TUBES

Booklet 1D-1020A (10 7/8" x 8 3/4") — 16 pages. Lists more than 2000 type designations of 26 different manufacturers arranged in alphabetical-numerical sequence; shows the RCA Direct Replacement Type or the RCA Similar Type, when available. Price 20 cents.\*

### • RADIOTRON DESIGNER'S HANDBOOK

4th Edition—1500 pages. Comprehensive reference thoroughly covering the design of radio and audio circuits and equipment. Written for the design engineer, student, and experimenter. Contains 1000 illustrations, 2500 references, and cross-referenced index of 7000 entries.

Price \$7.00\*

SP-1006C



### • RCA RECEIVING-TYPE TUBES FOR INDUSTRY AND COMMUNICATIONS

Booklet RIT-104 (10 7/8" x 8 3/4") — 20 pages. Technical information on 130 RCA special red tubes, premium tubes, computer tubes, pencil tubes, glow-discharge tubes, small thyratrons, low-microphonic amplifier tubes, and other special types. Includes socket connection diagrams. Price 20 cents.\*

### • RCA TUBE HANDBOOK

HB-3 (7 3/4" x 5") Five deluxe 2-inch capacity binders imprinted in gold. The bible of the industry — contains over 3100 pages of loose-leaf data and curves on RCA receiving tubes, picture tubes, power tubes, cathode-ray tubes, phototubes, special tubes, and semiconductor devices. Available on subscription basis. Price \$17.50\* including service for first year. Write to Commercial Engineering for descriptive folder and order form.



### • RCA TRANSISTORS AND SEMICONDUCTOR DIODES

Booklet SCD-108 (10 7/8" x 8 3/4")—This new 24-page booklet includes a wide variety of practical circuit diagrams which will be welcomed by experimenters, radio amateurs, hobbyists, and others who wish to build transistor projects. The booklet also contains extensive technical data on RCA's line of transistors and semiconductor diodes, an interchangeability directory listing more than 500 type designations for 27 different manufacturers, and a discussion of transistor theory written for the student and the experimenter. Price: 25 cents



### • TECHNICAL DATA BULLETINS

Complete authorized information on RCA transmitting tubes and other tubes for communications and industry. Be sure to mention tube-type booklet desired. Single copy on any type free on request.

### • RCA HEADLINERS FOR HAMS

Booklet HAM-103B (10 7/8" x 8 3/4") — 4 pages. Technical information and terminal connection diagrams for 48 RCA "HAM" PREFERENCE TYPES: modulators, class C amplifiers and oscillators, frequency multipliers, rectifier tubes, thyratrons, cold-cathode (glow-discharge) tubes, and cathode-ray tubes. Single copy free on request.

### • RCA POWER-TUBE FITTINGS

Booklet PTF-1012A (10 7/8" x 8 3/4") — 24 pages. A 24-page booklet listing 39 power-tube fittings designed for supporting and cooling power tubes, and illustrating their use with power tubes made by RCA and other manufacturers. Includes exploded-view assembly drawings as well as detail drawings of all fittings. Price 25 cents.

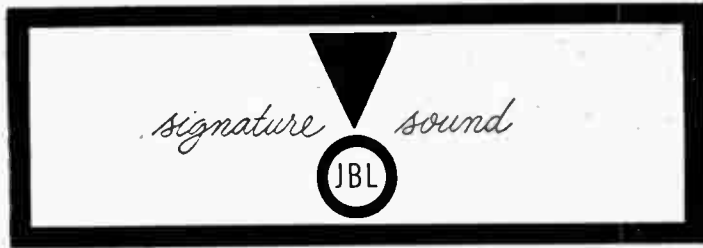


### • RCA TRANSMITTING TUBES

TT-4 (8 3/8" x 5 1/2") 256 pages. Written for the engineer, service technician, radio amateur, student, and experimenter. Contains basic information on generic tube types, on tube parts and materials, on tube installation and application, and on interpretation of tube data. Includes maximum ratings, typical operating values, and characteristics curves for power tubes having plate-input ratings up to 4 kilowatts, and maximum ratings and operating values for associated rectifier tubes. Contains sections on transmitter-design considerations and on rectifier circuits and filters. Features classification charts for quick, easy selection of tubes, and circuit diagrams for transmitting and industrial applications. Features lie-flat binding. Price \$1.00\*.

Copies of the publications listed above may be obtained from your RCA Tube Distrib. or direct from Commercial Engineering, Radio Corporation of America, Harrison, New Jersey.

\*Prices shown apply in U.S.A. and are subject to change without notice.



signature sound  
JBL

### HIGH FREQUENCY UNITS



The 175DLH High Frequency Assembly features the Signature Koustical Lens, giving smooth distribution over 90° solid angle without transmission loss. Impedance, 16 ohms; power input 25w above 1200 cps. Shipping weight, 12 lbs.

User Net \$123.00



The 075 High Frequency Ring Radiator employs a new principle for generating undistorted highs. Adds brilliance to the performance of Signature extended range speakers. Impedance, 16 ohms; power input, 20w above 2500 cps. Shipping wt., 8 lbs.

User Net \$59.40

### COMPLETE TWO-WAY SYSTEM KITS

The D001 and D050 speaker systems can be purchased as a kit for installation in your own cabinet or for built-in installations.



001—2-unit, 2-way system for use in C34, C35, C37, C39 and C435 Enclosures. Components: 1 D130A LF unit; 1 175DLH HF Assembly; 1 N1200 Dividing Network. Shipping Weight: 42 lbs.

User Net \$239.25

050—3-unit, 2-way system for use in C31, C32 and C550 Enclosures. Components: 2 D130B LF units; 1 175DLH HF Assembly; 1 N1200 Dividing Network. Shipping weight: 65 lbs.

User Net \$320.25



002—2-unit, 2-way system for use in C35, C36, C37, C38 and C39 Enclosures. Components: 1 D123 Ext. Range unit; 1 075 HF unit; 1 N2500 Dividing Network. Shipping weight: 25 lbs.

User Net \$133.80

004—5-unit, 2-way system for use in C35, C37 and C39 Enclosures. Components: 4 D123 Ext. Range units, 1 075 HF unit; 1 N2500 Dividing Network. Shipping weight: 61 lbs.

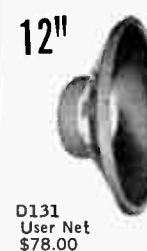
User Net \$312.00

### EXTENDED RANGE SPEAKERS



D130  
User Net  
\$84.00

4"	VOICE COIL DIAMETER
25 watts	POWER INPUT
16 ohms	IMPEDANCE
37 c.p.s.	FREE CONE RESONANCE
15 1/8"	OUTSIDE DIAMETER
5 5/8"	DEPTH
FIELD	
23#	SHIPPING WEIGHT



D131  
User Net  
\$78.00

4"	
20 watts	
16 ohms	
36 c.p.s.	
12 1/8"	
5"	
Permanent Magnet	
22#	



D-123  
User Net  
\$59.40

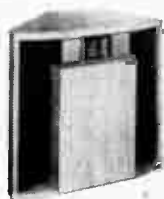
12"	WALL MOUNTING
3"	
20 watts	
16 ohms	
35 c.p.s.	
12 1/8"	
3 5/8"	
Permanent Magnet	
12#	



D208,  
8 ohms  
D216,  
16 ohms  
User Net  
\$27.90

2"	
12 watts	
8 ohms	
68 c.p.s.	
8 1/4"	
2 7/8"	
Permanent Magnet	
6#	

**ENCLOSURES:** System-tested for use with SIGNATURE Sound Systems. Standard finishes: Mahogany (dark or blond), Limba-Blond, Birch. Premium finishes: Walnut, Primavera, Oak, Maple, Ebony (brown). Prices listed are for standard finish. Dimensions are height x depth x front width.



**C30 The HARTSFIELD**  
For use with the 085 theatre components system. Experts' choice for high fidelity "Dream Set."  
Height ..... 45 1/2"  
Depth ..... 24 1/2"  
Front Width ..... 47"  
Shipping Wt. 190 lbs.  
Mahogany enclosure only  
User Net \$366.00



**C31 Horn-Reflex**  
for 050 System only. Dim.: 49" x 28" x 37 1/2".  
Shipping Wt.: 157 lbs.  
User Net: \$249.00



**C34 Rear-Loaded Horn**  
for D130 or 001 System. Dim.: 89 3/4" x 22 1/2" x 28 3/4".  
Shipping Wt.: 111 lbs.  
User Net: \$151.00



**C36 Reflex**  
for D208, D123, 002. Dim.: 29 1/2" x 15 7/8" x 19 3/8".  
Shipping Wt.: 48 lbs.  
User Net: \$63.00



**C39 The HARLAN**  
for D123, D130, 001, 002, 004. Dim.: 35 3/4" x 28" x 31 1/2".  
Shipping Wt.: 65 lbs.  
User Net \$147.00



**C35 Console Reflex**  
for D130, D131, 001, 002, 004. Dim.: 38 1/2" x 16" x 28 3/8".  
Shipping Wt.: 85 lbs.  
User Net: \$105.00



**C37 Lo-Boy Reflex**  
for D130, D131, 001, 002, 004. Dim.: 29 1/2" x 16" x 36".  
Shipping Wt.: 69 lbs.  
User Net: \$115.00

**JAMES B. LANSING SOUND, INC. • Los Angeles 39, Calif.**

# SPEAKERS AND HOUSINGS

Stromberg-Carlson's years of world leadership guarantee the very finest in sound-engineered speakers designed for high quality sound reproduction.

All "RC" and "RF" speakers employ high-efficiency Alnico V magnets, aluminum, voice coil forms and one-piece, molded cones.



**Model RC-27** — 8" Cone Speaker — Alnico V Magnet. Frequency Response: 55 to 13,000 cps. Power Rating: 10 watts (program). Cone Resonance: 105 cps. Flux Density: 8000 gauss. Voice Coil Impedance: 8 ohms. Sensitivity: 88 db. Speaker Mounting: 8 equally spaced holes on 7 $\frac{1}{2}$ " diameter bolt circle. Size: 8 $\frac{1}{8}$ " dia., 3 $\frac{1}{2}$ " deep. Weight: 2 lbs.  
LIST PRICE: \$10.00

**Model RC-28** — 8" Cone Speakers. Frequency Response: 50—13,500 cps. Power Rating: 12 watts (program). Cone Resonance: 105 cps. Flux Density: 13,000 gauss. Voice Coil Impedance: 8 ohms. Sensitivity: 90 db. Speaker Mounting: 8 equally spaced holes on 7 $\frac{1}{2}$ " dia. bolt circle. Size: 8 $\frac{1}{2}$ " dia. Weight: 2 $\frac{1}{4}$  lbs.  
LIST PRICE: \$15.00



**Model RC-58** — 12" Cone Speaker — Alnico V Magnet. Frequency Response: 55 to 13,000 cps. Power Rating: 16 watts (program). Cone Resonance: 80 cps. Flux Density: 8,500 gauss. Voice Coil Impedance: 8 ohms. Sensitivity: 85 db. Speaker Mounting: 8 equally spaced holes on 11 $\frac{1}{8}$ " diameter bolt circle. Size: 12 $\frac{1}{8}$ " dia., 4 $\frac{3}{4}$ " deep. Weight: 2 $\frac{1}{2}$  lbs.  
LIST PRICE: \$13.50

**Model RC-62** — 12" Cone Speaker — Alnico V Magnet. Frequency Response: 50 to 13,500 cps. Power Rating: 20 watts (program). Cone Resonance: 80 cps. Flux Density: 13,000 gauss. Voice Coil Impedance: 8 ohms. Sensitivity: 87 db. Speaker Mounting: 8 equally spaced holes on 11 $\frac{1}{8}$ " dia. bolt circle. Size: 12 $\frac{1}{8}$ " dia., 4 $\frac{3}{4}$ " deep. Weight: 2 $\frac{3}{4}$  lbs.  
LIST PRICE: \$20.00



**Model RF-460** — High Fidelity 8" Speaker. Provides wide-range music and voice reproduction in a smaller enclosure at lower cost than heretofore possible. Ideal for every small size and hard-to-fit application. Frequency Response: 45 to 14,000 cps. Power Rating: 12 watts (program). Cone Resonance: 75 cps. Flux Density: 13,000 gauss. Voice Coil Impedance: 8 ohms. Sensitivity: 88 db. Speaker Mounting: 8 equally spaced holes on 7 $\frac{1}{2}$ " dia. bolt circle. Size: 8 $\frac{1}{8}$ " dia., 4 $\frac{1}{2}$ " deep. Weight: 3 lbs. (shipping 4 lbs.)  
CONSUMER NET: \$20.00

**Model RF-473** — High Fidelity 12" Diffuser Speaker. Combines high power-handling capacity, durability, extended frequency range, smooth response, wide-angle coverage and high efficiency. Curvilinear, moisture-resistant cone has hard center and coaxially located diffuser for improved treble and wide angle response comparable to systems with two separate voice coils and cones. Frequency Response: 30 to 14,000 cps. Power Rating: 32 watts (program). Cone Resonance: 50 cps Flux Density: 11,000 gauss Voice Coil Impedance: 8 ohms Sensitivity: 92 db. Speaker Mounting: 8 equally spaced holes on 11 $\frac{1}{8}$ " dia. bolt circle. Size: 12 $\frac{1}{8}$ " dia., 7" deep. Weight: 10 lbs. (shipping 14 lbs.). Angle of Coverage: 75 degrees — plus.  
CONSUMER NET: \$35.00



**Model RF-465** High Fidelity 15" Coaxial Speaker. True Coaxial Speaker System with "Omega M" Voice Ring horn-loaded 2 $\frac{1}{2}$ " tweeter and 15" low-frequency woofer with 3" voice coil. Engineered to operate perfectly in any 15" speaker enclosure. Brilliance control provided. Frequency Response: 30 to 20,000 cps. Power Rating: 35 watts (program). Cone Resonance: 35 cps. Flux Density: 10,000 gauss (both tweeter and woofer). Voice Coil Impedance: 16 ohms. Sensitivity: 93 db. Speaker Mounting: 8 equally spaced holes on 14 $\frac{1}{8}$ " dia. bolt circle. Size: 15 $\frac{1}{2}$ " dia., 6 $\frac{5}{8}$ " deep. Weight: 14 $\frac{1}{2}$  lbs. (shipping 20 lbs.) Angle of Coverage: 90 degrees—plus.  
CONSUMER NET: \$89.95

**Model RF-466** — High Fidelity 15" Coaxial Speaker. Precision-engineered, budget-priced. Separate low and high frequency units. 15" low frequency speaker with 2" voice coil. 2 $\frac{3}{4}$ " high frequency speaker with 3 $\frac{1}{2}$ " voice coil. Enclosed Alnico V magnets (20 oz. and 1.75 oz.). Frequency Response: 30 to 15,000 cps. Power Rating: 32 watts (program). Cone Resonance: 40 cps. Flux Density: 11,000 gauss (15"); 8,500 gauss (2 $\frac{3}{4}$ "). Voice Coil Impedance: 16 ohms. Sensitivity: 92 db. Speaker Mounting: 8 equally spaced holes on 14 $\frac{1}{8}$ " dia. bolt circle. Size: 15 $\frac{1}{8}$ " dia., 6 $\frac{3}{8}$ " deep. Weight: 12 lbs. (16 lbs. shipping). Angle of Coverage: 100 degrees—plus. Crossover Network: On Frame.  
CONSUMER NET: \$75.00



**Model RF-471** — High Fidelity 12" Coaxial Speaker. Highly recommended for broadcast station and recording studios for monitor or audition applications. 2" tweeter with 3 $\frac{1}{2}$ " voice coil and protective lens and separate 12" woofer with 1 $\frac{1}{2}$ " voice coil and 20 oz. Alnico V completely enclosed for full protection. Frequency Response: 30 to 14,000 cps. Power Rating: 32 watts (program). Cone Resonance: 50 cps. Flux Density: 11,000 gauss (12"); 8,500 gauss (2"). Voice Coil Impedance: 8 ohms. Sensitivity: 91 db. Speaker Mounting: 8 equally spaced holes on 11 $\frac{1}{8}$ " bolt circle. Size: 12 $\frac{1}{8}$ " dia., 7 $\frac{1}{4}$ " deep. Weight: 11 lbs. (14 lbs. shipping). Angle of Coverage: 100 degrees plus. Crossover Network: On Frame.  
CONSUMER NET: \$49.95

**Model RF-475** — High Fidelity 15" Coaxial Speaker. A "power-plus" system with two independently driven speakers with several new and exclusive engineering ideas provide unusually high efficiency, broad and uniform angle of coverage and uniform response—finest reproduction at all volume levels. 15" woofer with 3" voice coil, 2" diaphragm with 1 $\frac{1}{2}$ " voice coil. Frequency Response: 30—20,000 cps. Power Rating: 40 watts (program). Cone Resonance: 38 cps. Flux Density: 11,500 gauss (15"); 15,500 gauss (2"). Voice Coil Impedance: 16 ohms. Sensitivity: 96 db. Speaker Mounting: 8 equally spaced holes on 14 $\frac{1}{8}$ " dia. bolt circle. Size: 15 $\frac{1}{8}$ " dia., 10 $\frac{1}{2}$ " deep. Weight: 40 $\frac{1}{2}$  lbs. (50 lbs. shipping). Crossover Network: On Frame. Angle of Coverage: 90 degrees—plus.  
CONSUMER NET: \$179.00



**Models RH-28 and RH-28D** — Attractive plastic cabinet for 5 $\frac{1}{2}$ " or 8" cone speakers. Model RH-28 finished in Mottled Brown; RH-28D in Desert Sand enamel.  
LIST RH-28—\$13.00  
RH-28D—\$14.50



**Models RH-35** — Steel flush-mounting speaker baffles, in Desert Sand color, for mounting on standard Columbia box. Model RH-35 accommodates 8" speaker, is 13" square.  
LIST: \$12.35



**Models RH-34 and RH-54** — Ruggedly constructed tilt-type wall mounting cabinets in Desert Sand finish. RH-34 made for 8" speaker. RH-54 for 12" speaker. Housings easily converted to 2-way use by addition of RA-8 or RA-12 back panel.  
LIST: RH-34—\$15.00  
RH-54—\$22.00

**Model CNO-CNM Corner Speaker Cabinet.** Size: 24 $\frac{1}{2}$ " high, 19" wide, 10" deep. Finish: CNM Mahogany — CNO Blonde Lined Oak. Features Stromberg-Carlson Acoustical Labyrinth\* for pure tone reproduction. Accommodates 8" RF-460 speaker. Easily removable front screen may be recovered with wrap-around grille cloth to match room décor.  
LIST PRICE: CNM \$49.95  
CNO \$57.50



\*Reg.

**STROMBERG-CARLSON, Division of General Dynamics, Electronics Center, Rochester, N. Y.**

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Net

The MASTER — 22nd Edition

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Page C-115

# Jensen Concert & Viking Speakers

## JENSEN CONCERT SERIES SPEAKERS CONCERT SERIES PM SPEAKERS

Nom. Size Inches	Model No.	Mag. Wt.* Oz.	Voice Coil		Dimensions, Inches			Baffle Opening	List Price
			Imp. Ohms	Power Watts	Dia. In.	H. & W.	Depth		
2 1/2	P275-Y	0.65	16	0.15	3/8	2 1/4	1 1/2	2 1/4	\$6.25
3	P3-W	1.00	3.2	3.5	3/8	3	1 1/2	2 1/4	4.30
3 1/2	P35-W	1.00	3.2	4.0	3/8	3 1/2	2 1/4	3 1/4	4.20
4	P4-W	1.00	3.2	4.5	3/8	4 1/4	2 1/4	3 1/2	4.20
4	P4-WV	1.00	4.5	4.5	3/8	4 1/4	2 1/4	3 1/2	4.35
4	P4-V	1.47	3.2	5.0	3/8	4 1/4	2 1/4	3 1/2	4.80
4 x 6	P46-W	1.00	3.2	4.5	3/8	4 1/4 x 6 1/4	2 1/4	3 1/4 x 5 1/4	4.95
4 x 6	P46-V	1.47	3.2	5.0	3/8	4 1/4 x 6 1/4	2 1/4	3 1/4 x 5 1/4	5.50
5	P5-W	1.00	3.2	5.0	3/8	4 3/4	2 1/4	4	4.55
5	P5-WV	1.00	4.5	5.0	3/8	4 3/4	2 1/4	4	4.70
5	P5-V	1.47	3.2	5.5	3/8	4 3/4	2 1/4	4	4.85
5	P5-T	3.16	3.2	6.0	3/8	4 3/4	2 1/4	4	7.40
5 1/4	P525-W	1.00	3.2	5.5	3/8	5 1/4	2 1/4	4 1/2	4.75
5 1/4	P525-V	1.47	3.2	6.0	3/8	5 1/4	2 1/4	4 1/2	5.25
5 x 7	P57-V	1.47	3.2	6.0	3/8	5 x 7 1/4	2 1/4	4 1/2 x 6 1/2	5.95
6	P6-W	1.0	3.2	6.0	3/8	6 1/4	2 1/4	5 1/4	4.85
6	P6-T	1.47	3.2	6.5	3/8	6 1/4	2 1/4	5 1/4	5.30
6	P6-T	3.16	3.2	7.5	3/8	6 1/4	2 1/4	5 1/4	7.80
6 x 9	P69-V	1.47	4	7.5	3/8	6 3/4 x 9 3/4	3 1/4	5 1/2 x 8 1/2	7.50
7	P7-V	1.47	3.2	7.0	3/8	7	3	6 1/4	7.00
8	P8-U	1.73†	3.2	9.0	1	7 1/4	3	6 3/4	7.65
8	P8-T	2.51†	3.2	10.0	1	7 1/4	3 1/4	6 3/4	8.95
8	P8-S	4.64	8	11.0	1	7 1/4	3 1/4	6 3/4	11.30
8	P8-R	6.8	8	12.0	1	7 1/4	4	6 3/4	13.25
10	P10-T	2.51†	3.2	11.0	1	10 1/4	5 1/4	8 3/4	10.75
10	P10-S	4.64	8	12.0	1	10 1/4	5 1/4	8 3/4	14.35
12	P12-T	2.51†	3.2	12.0	1	12 1/4	6 1/4	10 1/2	11.55
12	P12-S	4.64	8	13.0	1	12 1/4	6 1/4	10 1/2	15.75
12	P12-R	6.8	8	14.0	1	12 1/4	6 1/4	10 1/2	17.35
12	P12-P	14.6	8	18.0	1 1/2	12 1/4	6 1/4	10 1/2	33.60
12	P12-N	27.0	8	20.0	1 1/2	12 1/4	7	10 1/2	52.50
14 x 3	P14-T	3.16	3.2	7.5	3/8	3 1/2 x 14 3/4	3 1/4	2 1/4 x 13 1/2	12.75
15	P15-P	14.6	8	20.0	1 1/2	15 1/4	8	13 1/4	45.50
15	P15-N	27.0	8	25.0	1 1/2	15 1/4	8	13 1/4	61.50

\*All Magnets DP Alnico 5. All 10", 12" and 15" speakers equipped with magnet covers. †Performance equivalent to RETMA 3.16 oz. ‡Performance equivalent to RETMA 2.15 oz.

## CONCERT SERIES FIELD COIL SPEAKERS

Nom. Size In.	Model No.	Stock No.	Voice Coil*		Field		Dimensions, Inches			List Price
			Power Watts	Dia. In.	Resist. Ohms	Power Watts	H. & W.	Depth	Baffle Opening	
4	F4-X	ST-196	3.5	1 1/8	450	4.5	4 1/2	2 1/2	3 1/2	\$4.50
5	F5-X	ST-182	4.0	1 3/8	450	4.5	4 3/4	2 1/2	4	4.65
5	F5-X	ST-194	4.0	1 3/8	450	4.5	4 3/4	2 1/2	4	4.65
5 x 7	F57-W	ST-184	5.5	1 5/8	85	5.0	5 x 7 1/4	2 1/4	4 1/2 x 6 1/2	6.25
6	F6-X	ST-189	5.0	1 3/8	450	4.5	6 1/4	2 1/2	5 1/4	5.50
10	F10-S	ST-175	12.0	1	1500	8.5	10 1/4	5 3/4	8 3/4	10.75

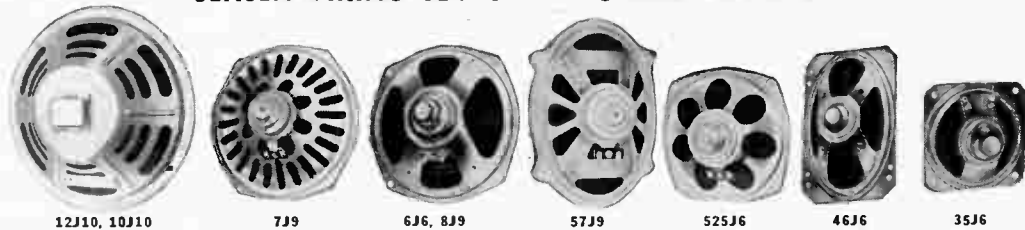
\*All Voice Coil Impedances are 3.2 Ohms.

## CONCERT SERIES SPECIAL OVAL GROUP FOR AUTO USE

Nom. Size Inches	Model No.	Mag. Wt.* Oz.	Voice Coil		Dia. In.	Dimensions, Inches			List Price
			Imp. Ohms	Power Watts		H. & W.	Depth	Baffle Opening	
5 x 7	P57-U	1.73†	3.2	9.0	1	5 x 7 1/4	2 1/4	4 1/2 x 6 1/2	\$7.25
5 x 7	P57-T	2.51†	3.2	9.0	1	5 x 7 1/4	2 1/4	4 1/2 x 6 1/2	8.35
6 x 9	P69-U	1.73†	3.2	9.0	1	6 3/4 x 9 3/4	3 1/4	5 1/2 x 8 1/2	7.80
6 x 9	P69-T	2.51†	3.2	10.0	1	6 3/4 x 9 3/4	3 1/4	5 1/2 x 8 1/2	8.95
6 x 9	P69-T	2.51†	3.2	10.0	1	6 3/4 x 9 3/4	3 1/4	5 1/2 x 8 1/2	8.95

‡High Fidelity Model. \*All Magnets DP Alnico 5. †Performance Equivalent to RETMA 2.15 oz. ‡Performance Equivalent to RETMA 3.16 oz.

## JENSEN VIKING SERIES REPLACEMENT SPEAKERS



Nom. Size In.	Model No.	Mag. Wt. Oz.	Pwr. Watts	V.C. Dia. In.	Dimensions in Inches		Baffle Opening	List Price
					H. & W.	Depth		
3	316*	0.85	3.0	3/8	3	1 1/4	3 1/4	\$3.70
3 1/2	35J6*	0.85	3.5	3/8	3 1/2	1 1/4	3 1/4	3.60
4	4J6*	0.85	4.0	3/8	4 1/2	1 1/4	3 1/4	3.60
4 x 6	46J6*	0.85	4.0	3/8	4 1/2 x 6 1/4	1 1/4	3 1/4 x 5 1/4	4.70
5	5J6	0.85	4.5	3/8	5	1 1/4	4	4.05
5 1/4	525J6*	0.85	5.0	3/8	5 1/4	2 1/4	4 1/4	4.15
5 x 7	57J9†	1.17	6.0	3/8	5 x 7 1/4	2 1/4	4 1/2 x 6 1/2	5.85
6	6J6*	0.85	5.5	3/8	6	2 1/4	5 1/4	4.35

Nom. Size In.	Model No.	Mag. Wt. Oz.	Pwr. Watts	V.C. Dia. In.	Dimensions in Inches			List Price
					H. & W.	Depth	Baffle Opening	
6 x 9	69J9†	1.47	7.5	3/8	6 3/4 x 9 3/4	3 1/4	5 1/2 x 8 1/2	\$6.50
7	7J9	1.47	7.0	3/8	7	2 1/4	6 3/4	6.25
8	8J9	1.47	8.0	3/8	7 1/4	2 1/4	6 3/4	6.25
10	10J10	1.73	10.0	1	10 1/4	3 3/4	8 3/4	9.00
12	12J10	1.73	11.0	1	12 1/4	4 1/4	10 1/2	10.00

‡3.2 ohm voice coils. †Alnico 5 magnets. ‡Oval design. \*CTM-1 Univ. Mtg. bracket free on request; also holds 1/4" sq. transformer.

# Jensen Authentic Hi-Fi Reproducers



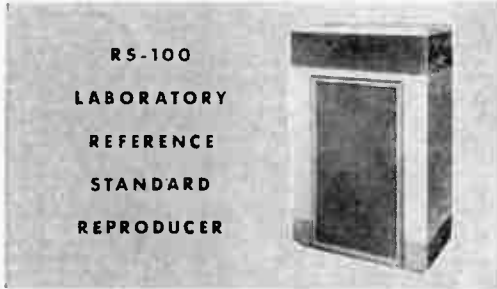
**PR-100**

## Imperial

In the search for pure high fidelity, completely authentic, with smooth coverage of the complete frequency range from the lowest bass to upper limits of audibility, Jensen designed the RS-100 Laboratory Reference Standard Reproducer (see below) for use as a standard of comparison in high fidelity. For those who pursue the ultimate, the very same reproducer is offered here as the Imperial PR-100 in cabinetry that bespeaks a place of honor in the distinguished home. There's a totally new, smooth sound, utterly real—undoubtedly the finest sound you've ever heard. Voices come to life and there's a new, almost geometrical separation of instruments. The l-f unit is loaded by a new-design reactance-annulling trilateral-mouth horn for bass; selected compression-driver horn-loaded mid-channel with intrarange equalizer for a final touch to precise balance and coloration elimination; and a superlatively smooth, space-blended supertweeter top. Expensive to be sure . . . but priceless in performance. Place it on sidewall or in a corner as you choose. Individually serial numbered, laboratory tested with signed certificate and guarantee of performance. Impedance 16 ohms, power rating 35 watts. 54 $\frac{1}{4}$ " H.; 32 $\frac{3}{8}$ " W.; 24 $\frac{3}{8}$ " D. Shipping Weight, 225 lbs.

**PR-100 "IMPERIAL" REPRODUCER**

Selected Mahogany. Net Price . . . . . **\$570.00**  
 Blonde Mahogany. Net Price . . . . . **580.00**

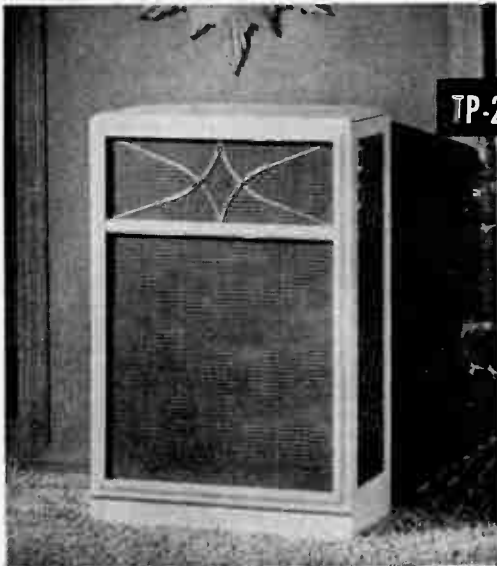


**RS-100  
 LABORATORY  
 REFERENCE  
 STANDARD  
 REPRODUCER**

Designed by the Jensen engineering staff for their own use as a reference standard of the highest quality of high-fidelity reproduction, the RS-100 Laboratory Reference Standard Reproducer is a new and important tool for sound engineers, workers in psychoacoustics and music critics who require an unusually high quality of reproduction. Some music lovers and audiophiles will undoubtedly want to own an RS-100. Cabinet is plywood attractively two-toned in blue gray. Same acoustic and electrical specifications as PR-100. Individually laboratory tested with signed certificate and guarantee of performance and descriptive brochure. 52 $\frac{3}{8}$ " H.; 33" W.; 25 $\frac{1}{2}$ " D. Shipping Weight, 215 lbs.

**RS-100 LABORATORY REFERENCE STANDARD REPRODUCER**

Net Price . . . . . **\$475.00**



**TP-200**

## Tri-Plex

Outperforms any comparable speaker system. Bass response enhanced with Bass Ultraflex enclosure to give more true balanced response than previous models. Three completely independent reproducers divide the frequency range (RP-302, RP-201, P15-LL). Individual controls on the side of cabinet for exact adjustment of response balance, presence and brightness. Choice of selected Mahogany or Blonde Mahogany veneers with genuine matching hardwood trim. Each TRI-PLEX is individually tested and is accompanied by a certificate and guarantee of performance. Impedance, 16 ohms. Power Rating; 35 watts. 38 $\frac{3}{8}$ " H.; 25 $\frac{3}{8}$ " W.; 19 $\frac{3}{8}$ " D. Shipping Weight, 120 lbs.

**MODEL TP-200 "TRI-PLEX" REPRODUCER**

Selected Mahogany or Blonde Mahogany. Net . . . **\$329.50**

**BL-250 CABINET ONLY**

Will accommodate any 15" speaker or system, KT-32 3-way and KT-21 2-way system kits, KTX-1, KTX-2, and KTX-3 Step-Up Kits.

**BL-250 Cabinet—Mahogany or Blonde Mahogany.**  
 Net Each . . . . . **\$109.50**

# Jensen Authentic Hi-Fi Reproducers



CT-100

## Concerto

A true two-way system with separate woofer and tweeter—high fidelity reproduction in compact enclosure to fit even the most crowded living space. Finer music reproduction cannot be approached except at far greater cost. L-F unit is the P12-NL 12" woofer especially designed for this system. In combination with the Bass Ultraflex cabinet, the system gives full bass response. RP-102 H-F unit handles frequencies above 2000 cycles, providing exceptional smoothness and approaching the upper limits of audibility. H-F Balance Control on cabinet side. You can step up performance easily by converting to a three-way system whenever you wish. KTX-1 Range Extender Kit can be installed without cabinet alterations. Available in selected Mahogany or Blonde Mahogany veneers. Reproducer is fully assembled and carefully tested at the factory. Impedance, 16 ohms. Power rating, 25 watts. 30 $\frac{1}{2}$ " H.; 22 $\frac{1}{4}$ " W.; 17 $\frac{1}{2}$ " D. Shipping Weight, 65 lbs.

**MODEL CT-100 "CONCERTO" TWO-WAY REPRODUCER**

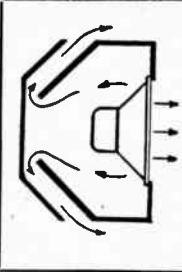
Selected Mahogany or Blonde Mahogany. Net...\$179.50

**BL-220 CABINET ONLY**

Will accommodate any 12" speaker or system, KT-22 Concerto or KT-23 2-way system kits and KTX-1, KTX-2, KTX-3 Step-Up Kits.

**BL-220 CABINET—Mahogany or Blonde Mahogany.**

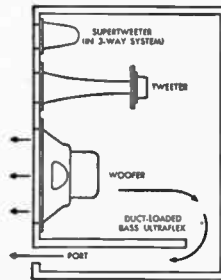
Net Price.....\$79.50



**BASS ULTRAFLEX FOR CORNER OR SIDEWALL**

Enclosure principle used in the TRI-PLEX, Concerto and Type "BL" 12 and 15-inch cabinets is the result of Jensen's advanced research on enclosure acoustics. Precisely matching "woofer" characteristics to enclosure volume, Bass Ultraflex gives more true balanced bass response than previous methods employed in cabinets of average size. Especially designed for use either in a corner or against a sidewall, with excellent results.

## CONTEMPORARY



These new Contemporary two-way and three-way reproducers will thrill you with their elegant simplicity of line and form, executed in fine furniture genuine hardwood veneers with performance which sets a new high standard for hi-fi in modestly dimensioned cabinetry. Their clean lines with subtle decorative touches make them at home in a wide range of decor schemes. Choice of hand rubbed Selected Mahogany or Blonde Oak. Cabinet acoustics have been carefully coordinated with the heavy duty 8" woofer. Duct-loaded Bass Ultraflex achieves excellent bass range extension

(see diagram). Size overall; 24 $\frac{1}{2}$ " H.; 19" W.; 12 $\frac{3}{8}$ " D. Power rating, 20 watts. Impedance, 8 ohms.

**CN-82 CONTEMPORARY TWO-WAY SYSTEM**

An authentic high fidelity two-way system with heavy duty 8" woofer and compression driver horn loaded tweeter. Reproduction is especially smooth, and free from coloration, with high response approaching the limits of audibility. Makes an excellent modestly priced "starter" system which is easily converted later to a three-way system with the KTX-1 Range Extender Kit without cabinet modifications. Comes fully assembled, wired and factory tested. Shipping Weight, 31 lbs.

**MODEL CN-82**

Selected Mahogany or Blonde Oak. Net Price.....\$83.50

**CN-83 CONTEMPORARY THREE-WAY SYSTEM**

For those who want the ultimate response range in the Contemporary design, the three-way version is offered. Similar to the CN-82, except range from 4000 cycles to beyond limits of audibility is smoothly reproduced by means of an RP-302 Super-tweeter in conjunction with an A-402 full Crossover Network, M-F and H-F balance controls in rear of unit. Fully assembled, factory wired and tested. Shipping Weight, 32 $\frac{3}{4}$  lbs.

**MODEL CN-83**

Selected Mahogany or Blonde Oak. Net Price.....\$123.50

**CONTEMPORARY CABINETS ONLY**

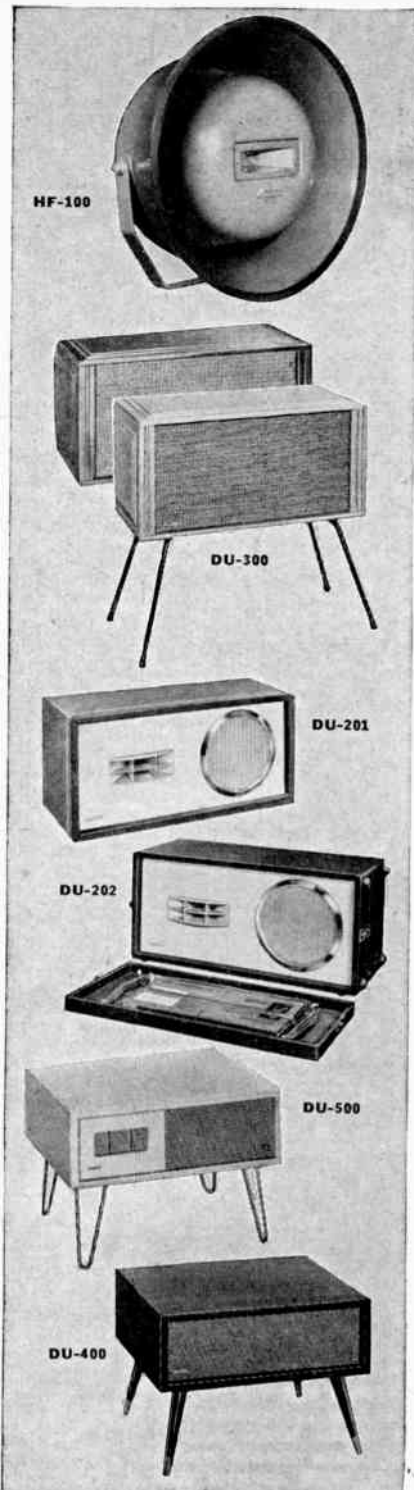
Will accommodate any 8" speaker or KDU-10 Kit. Cut-out provided for KTX-2 and KTX-1 Step-Up Kits. Shipping Weight, 25 $\frac{1}{4}$  lbs.

**BL-80 Cabinet—Mahogany or Blonde Oak. Net Price. \$52.50**



CN-82  
CN-83

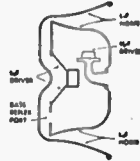
# Jensen Authentic Hi-Fi Reproducers



## HF-100 "WEATHERPROOF" REPRODUCER

The Jensen HF-100 is the perfect way to take your hi-fi out-of-doors with you. A true 2-way high fidelity speaker that is professionally weather-proofed—can be mounted outside and left all-year round. A special heavy duty 8" "woofer" feeding a folded-horn plus a horn-loaded compression driver "tweeter". Low frequency unit feeds horn by a combination of direct driver and phase-inversion bass-reflex ports for superior efficiency in the low frequency region. The high frequency horn has a 90° fold and is mounted so that the driver unit is at the top, thus providing self-draining and making it impossible for rain, sleet or snow to reach the driver unit.

Horn outer section is spun aluminum with baked enamel finish. Central enclosure is glass fibre reinforced polyester in matching natural moulded Modern Tan finish. Sturdy "U" mounting bracket is fully adjustable and positive locking.



### SPECIFICATIONS:

Type: Coaxial assembly of separate low and high frequency units.

Frequency Range: 70 to 15,000 cycles. Power Rating: 25 watts. Impedance: 16 ohms. Rated Coverage Angle: 120°. Overall Diameter: 24 1/2". Overall Depth: 11 3/4". Net Weight: 23 lbs. Shipping Weight: 30 lbs. **\$77.70**  
Jensen Model HF-100—Net Each.....

## Duette Treasure Chest

An elegant addition to tradition or modern home decor. Handsomely styled chest design in selected Mahogany or Blonde Oak veneers with genuine matching hardwood trim. Fits on bookshelf or table. For a free-standing piece, add the graceful modern wrought iron legs (not furnished—must be ordered separately).

Duette "Treasure Chest" gives the full performance of the true two-way system with its special 8-inch "woofer" and compression driver "tweeter" in an unusually compact acoustic enclosure. Ideal for small space hi-fi system, excellent as an improvement addition for true hi-fi from existing radio, TV, phonograph or tape recorder. Use one as the extra speaker for stereo... two as a fine performing compact stereo system. Capable of adequate bass reproduction even at low listening levels. Clean, smooth response with the unmistakable presence of the true two-way reproducer. Size: 11" high, 23 1/4" wide, 10" deep. Impedance: 4 and 8 ohms. Power Rating: 20 watts.

Jensen Model DU-300 Duette "Treasure Chest" Reproducer—**\$59.50**  
(Specially Mahogany or Blonde Oak). Net Each.....  
ST-862—Set of wrought iron legs. Shipping Wt. 26 lbs. Net Each...\$4.25

## Duette REPRODUCER

First to give you real high fidelity in a small package... with the advantages of the two-way system principle, the JENSEN "Duette" is the answer. Can be used on a table, in bookshelves or on the floor, either on its side or standing on end. Ideal for improving the performance of portable phonographs, radio and TV sets, as well as for a basic hi-fi system in a small space. Special 8-inch "woofer" plus a multiteel horn-loaded compression driver "tweeter" with built-in frequency division system. Clean smooth reproduction with the remarkable power handling capacity and the unmistakable "presence" of the two-way hi-fi reproducer. Impedance: 4 and 8 ohms. Power Rating: 20 watts maximum speech and music input. Size: 11" high, 23 1/4" wide, 10" deep. Shipping Weight: 24 lbs. Rich attractive burgundy pigskin-grained Fabrikoid finished cabinet with contrasting front panel and cast metal trim furnished copper.

Jensen Model DU-201 "Duette" Reproducer—Shipping Weight **\$49.50**  
25 lbs. Net Each.....

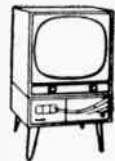
JENSEN PORTABLE "DUETTE". Lets you take hi-fi with you. Same specifications as DU-201. Excellent for lecturers, musicians and hi-fi listeners. Can be used on its side or standing on end. 25-ft. cable with plug. Sturdy carrying handle. Impedance: 4 and 8 ohms. Power Rating: 20 watts. Size: 11" H., 24 1/4" W., 10" D. Finished in black leatherette case with contrasting gray panel.

Jensen Model DU-202 "Duette" Portable—Shipping Weight **\$62.50**  
27 lbs. Net Each.....

## Duette TABLE SPEAKER

### THE SPEAKER THAT DOUBLES AS FURNITURE

DU-500 TABLE "DUETTE". A high fidelity loudspeaker in beautiful space-saving double-duty table form. Authentic Jensen two-way system serves as chairside or coffee table, adds a decorator touch to your home. The versatile Duette table serves as the basic speaker for a complete hi-fi system. Handy switch lets you transfer the Duette from hi-fi system to TV set for an amazing improvement in sound quality. Two Duette tables are ideal for "spread" sound or stereo. Genuine hardwood veneer, matching hardwood trim in choice of Ribbon Striped Mahogany or Blonde Oak. Heavy 6" x 9" oval "woofer" plus a full compression driver horn-loaded "tweeter" with frequency division system. Size: 24" W., by 22" D.; top 17 1/4" above floor. Impedance: 4 ohms. Power Rating: 20 watts.



Jensen Model DU-500 "TV-Duette"—**\$66.50**  
Ribbon Striped Mahogany, wood legs. Shpg. Wt. 31 lbs. Net.....  
Blonde Oak, brass hairpin legs. Shpg. Wt. 35 lbs. Net Each.....**\$69.50**

DU-400 DUETTE TABLE. An expertly engineered, finely balanced hi-fi speaker system for full range reproduction. Gives you authentic high fidelity for records, tape, TV or radio. Size: 24" wide, 22" deep, 17 1/4" high. Impedance: 4 ohms. Power Rating: 15 watts. Has 6" x 9" oval "woofer" and 3" "tweeter". Choice of attractive simulated wood grain finishes on genuine plywood; matching wood legs with brass ferrules.

Jensen Model DU-400 "TV Duette"—Choice of Mahogany or **\$39.50**  
Blonde Mahogany finishes. Shipping Wt. 28 lbs. Net Each.....

# Jensen High Fidelity Loudspeakers



## YOU'RE AHEAD WITH JENSEN AUTHENTIC HIGH FIDELITY!

The new Jensen line of unitary loudspeakers offers for the first time a complete range of types and sizes to meet every performance and budget requirement. Many have remarkable cost advantages over previously available similar speakers; in each case, skillful design and advanced manufacturing methods have resulted in **more** performance . . . **authentic** high fidelity by Jensen . . . at lower cost.

### TRIAxIAL\* AND TRIAX\* 3-WAY SYSTEMS

The famous Jensen G-610A and new G-600 are genuine 3-way systems, the only speakers with three electrically and acoustically independent L-F, M-F and H-F channels for utmost balance, efficiency, smoothness and range extension to upper hearing limit. M-F and H-F sections both employ compression-driver horn-loaded units for low distortion and wide angle dispersion of highs. Separate dual crossover network, M-F and H-F Balance Controls, fully wired. The ultimate in performance in a unitary speaker.

### COAXIAL 2-WAY SYSTEMS

Jensen "H" and "K" Series Coaxials are genuine 2-way with electrically and acoustically independent "woofer" and "tweeter". "K" Series uses direct radiator cone type "tweeters" for a maximum of value at low cost; they have integral electrical crossovers. KTX-2 Step-Up Kit will later provide compression-driver highs above 2000 cps. "H" Series is designed for ultimate coaxial performance; they employ the expensive through-bore compression-driver "tweeter" for maximum 2-way system performance and low crossover frequency (2000 cps). Full L-C crossover network. KTX-1 Step-Up Kit may be added later for range extension to upper hearing limit.

### COAXIAL 3-ELEMENT SYSTEMS

"CX" Series speakers are a combination of a compression driver supertweeter and a 2-element direct-radiator woofer-mid-channel. Electrical crossover is at 4000 cycles. Small diffusion radiator disperses and balances radiation from 2000 to 4000 cps. Three terminals for easy wiring of KTX-3 Step-Up Kit for later conversion to full 3-way system with compression driver mid-channel. A "best buy" for performance intermediate between DUAX and "H" Series coaxials.

### DUAX\* 2-ELEMENT SYSTEMS

"DX" Series speakers have two carefully coordinated cones driven by a single voice coil. Both operate together up to a "mechanical crossover" at 4000 cps; the small H-F radiator is effective above 4000 cps. May be expanded to 2-way system with compression driver "tweeter" with KTX-2 Step-Up Kit.

### UNAX\* SINGLE ELEMENT LOUDSPEAKERS

A new high in single-cone single voice coil speakers with performance exceeding that of some speakers costing far more. Cone is specially designed so central sector radiates smoothly and efficiently at high frequencies. Viscous edge damping. KTX-2 Step-Up Kit may be added to make 2-way system.

\*T.M. Reg. Jensen Mfg. Co.

Model No.	Type	Size	Frequency Range	Imped. Ohms	Power Rating	Magnet Weight†	"Step-Up" Kit	Shipping Weight	Net Price
G-610A	TRIAxIAL	15"	25-UHLL‡	16	40 w.	6½ lbs.	.....	46 lbs.	\$252.75
G-600	TRIAx	15"	30-UHLL‡	16	35 w.	3½ lbs.	.....	36¼ lbs.	129.50
H-520	Coaxial	15"	30-15,000 cps	16	27 w.	1¼ lbs.	KTX-1	16 lbs.	79.50
H-222	Coaxial	12"	30-15,000 cps	16	25 w.	1¼ lbs.	KTX-1	13 lbs.	62.50
K-310A	Coaxial	2-way	40-14,000 cps	16	16 w.	¾ lb.	KTX-2	12 lbs.	39.75
K-210	Coaxial	2-way	45-14,000 cps	8	14 w.	¾ lb.	KTX-2	7 lbs.	27.50
K-80	Coaxial	2-way	50-14,000 cps	16	12 w.	½ lb.	KTX-2	4 lbs.	16.75
CX-255	Coaxial	3-element	30-15,000 cps	16	27 w.	1¼ lbs.	KTX-3	13½ lbs.	78.50
CX-150	Coaxial	3-element	30-15,000 cps	16	25 w.	1 lb.	KTX-3	12½ lbs.	68.50
CX-225	Coaxial	3-element	30-15,000 cps	16	22 w.	1 lb.	KTX-3	10¼ lbs.	59.50
CX-120	Coaxial	3-element	30-15,000 cps	16	20 w.	1 lb.	KTX-3	9½ lbs.	49.50
DX-150	DUAX	2-element	40-13,000 cps	16	22 w.	1 lb.	KTX-2	11 lbs.	35.50
DX-120	DUAX	2-element	40-13,000 cps	16	20 w.	1 lb.	KTX-2	7½ lbs.	25.50
UX-120	UNAX	Single element	40-12,000 cps	8	14 w.	½ lb.	KTX-2	5½ lbs.	19.50
UX-80	UNAX	Single element	50-12,000 cps	8	12 w.	½ lb.	KTX-2	4 lbs.	14.50

†High energy DP-Atulco-5.

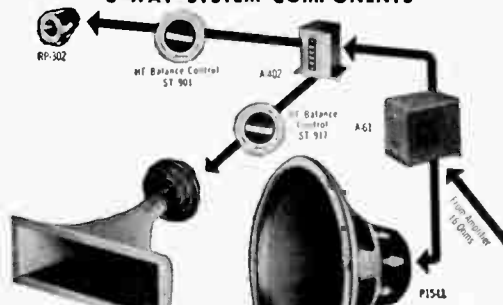
‡Response to Upper Hearing Limit.

Note: Low frequency response depends on enclosure.



# Jensen System Components

## 3-WAY SYSTEM COMPONENTS



**P15-LL L-F UNIT**  
Rugged, 15" woofer handles bass range up to 600 cps (2000 cps in 2-way system). Edge damping. Resonance 37 cycles. Power rating 35 watts. Impedance 16 ohms. Shipping Weight, 18 lbs. Net Each ..... **\$56.80**

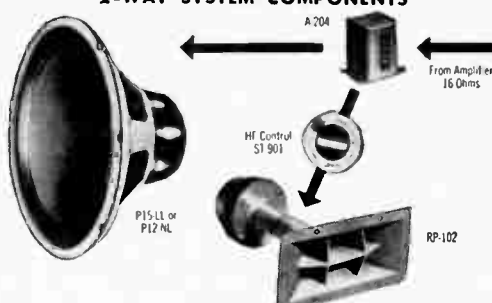
**RP-201 H-F UNIT**  
Reproduces the range from 600 to 4000 cycles as the mid-channel in a 3-way system. Driver unit loaded by cast aluminum Hypex horn. Coverage angle, 115°. Impedance, 16 ohms. Power rating with A-61 network, 35 watts speech and music signal input to system. Depth 14". Shipping Weight, 8 lbs. Net Each ..... **\$42.60**

**RP-302 ULTRA H-F UNIT**  
Covers the top of the range from 4000 cycles to the highest audible frequencies with unexcelled smoothness and freedom from distortion. Coverage angle, 120°. Impedance, 16 ohms. Power rating with A-402 network, 35 watts speech and music signal input to system. Mounts in 1 1/4" hole in baffle or on bracket. Overall depth 3 3/4". Satin finish. Shipping Weight, 3 lbs. Net Each ..... **\$33.80**

**A-402 CROSSOVER NETWORK**  
Two-channel type; high pass transmits everything above 4000 cycles, low-pass everything below this frequency. 180° constant-resistance type. 4 1/2" high, 3 1/2" wide, 3 1/4" deep. Ship- ping Weight, 3 lbs. Net Each ..... **\$10.90**

**A-61 600 CYCLE NETWORK**  
Sends frequencies above 600 cycles to A-402 for further division; below 600 cycles to the P15-LL unit. Two-channel, 180° constant-resistance type, with 12 db/octave attenuation outside pass band; 5 1/4" high, 7" wide, 4 3/4" deep. Shipping Weight, 5 1/2 lbs. Net Each ..... **\$19.75**

## 2-WAY SYSTEM COMPONENTS



**P12-RL LOW FREQUENCY UNIT**  
New, rugged 12" "woofer" especially designed for 2-way systems. Handles bass up to 2000 cycle crossover. Impedance, 16 ohms. Power rating, 25 watts. Shipping Weight, 10 lbs. Net Each ..... **\$36.50**

**RP-102 HIGH FREQUENCY UNIT**  
A new advanced design "tweeter" for use in 2-way systems cross- ing over at 2000 cycles. Reproduces an unusually wide range from 2000 cycles to extremely high frequencies with smooth response, excellent balance and very low distortion. Impedance, 16 ohms. Power rating, 35 watts speech and music signal to input of 2-way system when used with A-204 network. Depth 9 1/4". Shipping Weight, 6 1/2 lbs. Net Each ..... **\$28.35**

**A-204 CROSSOVER NETWORK**  
Two-channel type. High-pass section transmits everything above 2000 cycles, low-pass, everything below this frequency. 180° constant-resistance type. 4 1/2" high, 3 1/2" wide, 3 1/4" deep. Shipping Weight, 3 1/2 lbs. Net Each ..... **\$13.00**

**BALANCE AND LEVEL CONTROLS**  
Flush satin brass cup escutcheons, appropriately marked, mount- ing 1 1/4" holes, and matching bar knobs, 25" leads.  
**H-F Balance Control**—For adjusting balance of H-F 5.00 units, 16 ohms. ST-901. Net Each .....  
**M-F Balance Control**—For adjusting balance of M-F 5.25 units, 16 ohms. ST-917. Net Each .....  
**Level Control**—Input control to speaker, 16 ohms. 5.25 ST-880. Net Each .....  
**Z-342 Autotransformer**—For matching any 2 of 16/8/4 5.15 ohm impedances. Net Each .....

## NEW 2-WAY SYSTEM COMPONENTS

These woofers and tweeters are ideal for inexpensive 2-way systems with very excellent performance. A choice of compression-driver RP-103 or direct radiator P35-VH tweeters is available, either of which may be used with P12-RL (12") or P8-RL (8") woofers for a matched system. For crossover use 2 muft. capacitor or A-204 network.



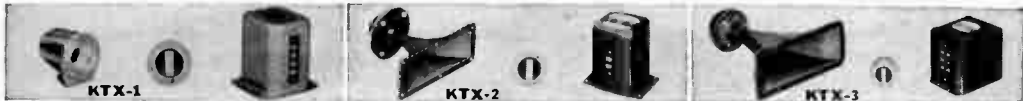
**P12-RL WOOFER**  
Power 20 watts, 40-2500 cps. Imp., 16 ohms. Magnet 1/2 lb. D.P.-Alnico-5. Size: 12 1/4" OD; 6 1/4" D. Cutout 10 1/2" dia. Shpg. Wt., 6 lbs. Net Each ..... **\$12.90**

**P8-RL WOOFER**  
Power 20 watts, 50-3000 cps. Imp., 8 ohms. Magnet 1/2 lb. D.P.-Alnico-5. Size: 8 1/4" OD; 4" D. Cutout 6 3/4" diameter. Shpg. Wt., 3 lbs. Net Each ..... **\$8.75**

**RP-103 TWEETER**  
Compression horn type. Power 20 watts, 2000-15000 cps. Imp., 16 ohms. Size: 3" H, 7 1/4" W; 6 1/2" D. Cutout 2" by 6". Shpg. Wt., 2 1/2 lbs. Net Each ..... **\$16.50**

**P35-VH TWEETER**  
Direct radiator type. Power 15 watts, 2000-14000 cps. Imp. 16 ohms. Size: 3 1/2" H & W; 2 1/4" D. Cutout 3 3/4" dia. Shipping Wt., 3 1/2 lb. Net Each ..... **\$4.00**

## INCREASE SPEAKER PERFORMANCE WITH THESE "STEP-UP" KITS



These new Step-Up Kits give you inexpensive, easy-to-add acoustically correct performance step-up for your present or "starter" speaker or system. Speaker, network and control (see descriptions above), packaged with wiring material, easy to follow instructions.

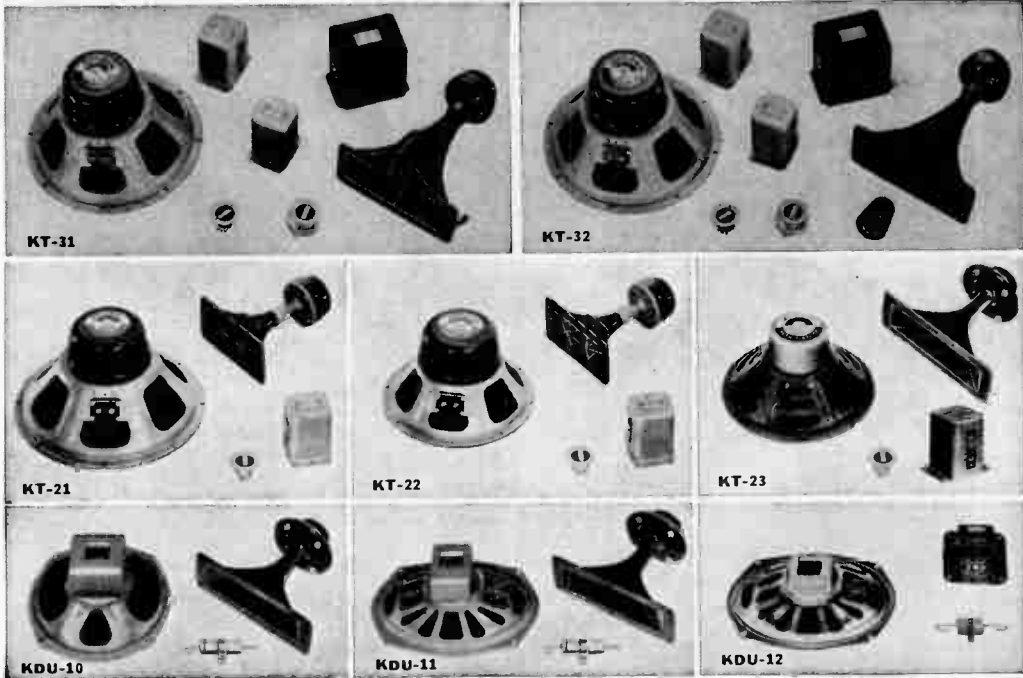
**KTX-1 STEP-UP KIT**  
Adds smooth, clean distortion-free highs from 4000 cps to upper hearing limit to any speaker system. Adds efficiency and im- proves directional distribution of extreme highs. Makes a 3-way system out of any 2-way speaker or system. Suggested for Jensen "H" Series and similar speakers.

**KTX-2 STEP-UP KIT**  
Gives full compression-driver horn-loaded tweeter performance in the 2000-15000 cps range. Converts any single or dual cone speaker or coaxial with direct radiator tweeter to a fine 2-way system. A logical improvement for Jensen "UX", "DX", and "K" Series and all similar speakers.

**KTX-3 STEP-UP KIT**  
Provides efficient, distortion-free reproduc- tion from compression-driver horn-loaded in the important midrange from 600-4000 cycles. Converts Jensen "CX" Series and similar speakers to a true 3-way system.

Model	Type	Speaker	Network	Control	Power Rating Watts	Impedance Ohms	Frequency Range	Shpg. Wt. Lbs.	Net Price
KTX-1	Supertweeter	RP-302	A-302	ST-901	35	16	4000-17000	4 1/2	\$43.75
KTX-2	Tweeter	RP-103	A-204	ST-901	30	16-8	2000-15000	6 1/4	\$32.50
KTX-3	Midrange	RP-201	A-61	ST-917	35	16	600-4000	17	\$62.50

# Jensen Hi-Fi Speaker System Kits



## EASY TO BUILD YOUR OWN HI-FI SPEAKER SYSTEM WITH JENSEN SPEAKER KITS

Now you can have famous Jensen authentic high fidelity loudspeaker performance plus the fun and satisfaction of building your own speaker system. You can build your own enclosure, build into your home music area; or install in a Jensen enclosure or Jensen-designed Cabinart do-it-yourself kit. You get the same high quality matched components used in Jensen's factory assembled reproducers; you "do-it-yourself" and save. Just select the Jensen loudspeaker kit that best fits your needs and budget—follow simplified plans—and enjoy finest sound reproduction.

Jensen speaker kits are complete—every high fidelity speaker kit comes packed in a single carton with all components, crossovers, controls, mounting brackets and wiring for easy installation. Detailed constructional plans help you build the acoustically correct enclosure.

No technical skill is required. You build the enclosure with confidence that your system will give the excellent reproduction you would expect from a Jensen factory built loudspeaker system.

### NO WOODWORKING WITH THESE FINE ENCLOSURES!

You can install speaker kits in factory built Jensen Enclosures or Jensen-designed Cabinart do-it-yourself kits.

Speaker Kit	Kit	Enclosure
KT-31	Kit	Cabinart K-101
KT-32 & KT-21	Assembled	Jensen BL-250; BL-1215
KT-22 & KT-23	Kit	Cabinart K-103; K-105
KT-22 & KT-23	Assembled	Jensen BL-220; BL-1215; BL-812
KDU-10	Kit	Cabinart K-107; K-109
	Assembled	Jensen BL-80; BL-812
	Kit	Cabinart K-111; K-113

### 36 PAGE JENSEN MANUAL 1060

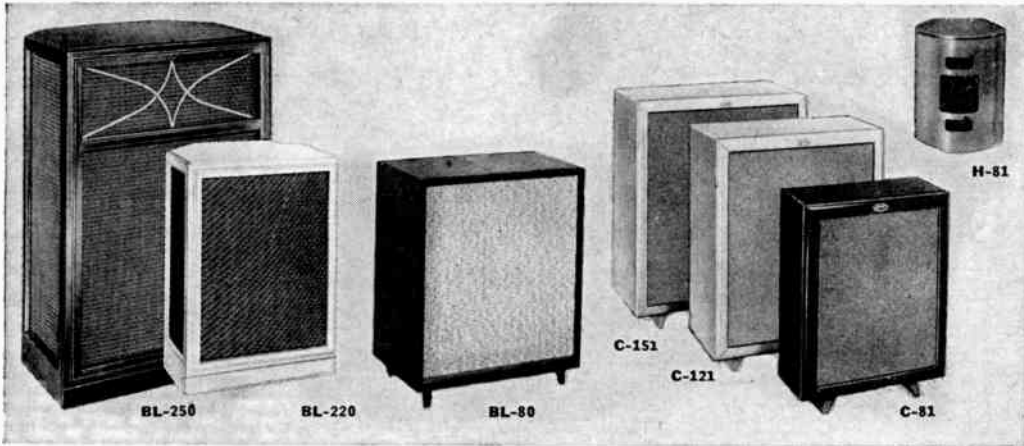
This is your guide to kit selection and enclosure construction. Complete data and instructions for all Jensen Speaker Kits from the famous 3-way "Imperial" system to the budget cost 2-way "Duetto" system. Describes Bass-Ultratex and Back-loading Folded Horn enclosures in complete detail with exploded views and simplified wiring instructions. **50¢**



Model	KT-31††	KT-32††	KT-21	KT-22	KT-23	KDU-10	KDU-11	KDU-12
Type	3-way	3-way	2-way	2-way	2-way	2-way	2-way	2-way
Frequency Range†††	25-UHL	30-UHL	30-15,000	30-15,000	40-15,000	50-15,000	50-15,000	55-13,000
Power Rating (Watts)	35	35	30	25	20	20	20	15
Impedance (Ohms)	16	16	16	16	16	8	4	4
Components:								
L-F ("Woofer")	P15-LL*	P15-LL	P15-LL	P12-NL	P12-RL	P8-RL	P89-RL†	69J10†
M-F (Mid-Range)	RP-201	RP-201	RP-102	RP-102	RP-103	RP-103	RP-103	P35-VH
H-F ("Tweeter" or "Supertweeter")	RP-302	RP-302	RP-102	RP-102	RP-103	RP-103	RP-103	P35-VH
Networks	A-61; A-402	A-61; A-402	A-204	A-204	A-204	Capacitor	Capacitor	Capacitor
Controls	**	ST-917; ST-901	ST-901	ST-901	ST-901			
Shipping Weight (Lbs.)	43	43	29	19	15	7	6½	3¾
Net Price	\$184.50	\$169.50	\$99.50	\$73.00	\$42.75	\$24.75	\$23.75	\$10.50

\*Special "woofer" for "Imperial" Back-Loading folded horn—not available separately.  
 †6 x 9 Oval—not available separately.  
 ††Includes M-1131 Intrarange equalizer—not available separately.  
 †††Special M-F and H-F Controls—not available separately.  
 †††L-F response depends on enclosure. (UHL-Upper Hearing Limt).

# Jensen Cabinets . . . Loudspeakers



## BASS ULTRA-FLEX\* CABINETS

These Type "BL" Cabinets are beautifully-styled loudspeaker enclosures offering improved efficiency in bass response and achieving a new high in flexible adaptability to mounting of speakers, Jensen Speaker System Kits and "Step-Up" Kits, mid-channel and high-frequency units, woofers, super-tweeters, in any desired combination without sawing or cutting! All units are easily mounted from the rear of the cabinet and are concealed behind the Transacoustic plastic grille cloth. Unused pre-cut openings in front baffle are automatically blocked by adapter baffle. Easy to follow instructions make mounting a matter of moments.

These famous cabinets are designed to fit in a corner or they may be placed against a sidewall. Low frequency radiation is augmented by carefully coordinated acoustic duct-loading passages opening into the sides of the cabinet.

Simple yet graceful styling with finely sculptured lines qualifies these beautiful cabinets for a place in distinguished modern or traditional interiors. Choice of selected Mahogany or Blonde Mahogany plywoods with genuine matching solid wood trim.

\*T.M. Reg.

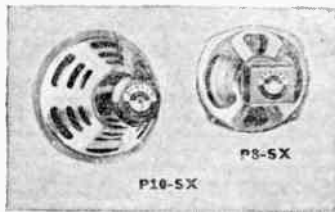
## BASS REFLEX CABINETS

Type "C" enclosures combine acoustically correct performance with attractive modern wood cabinetry at moderate cost. A fine cabinet with Bass-Reflex for low budget high fidelity audio systems. Models to fit 8", 12" or 15" speakers, in choice of simulated Blonde or Mahogany finishes. Two concealed cut-outs in Model C-151, one cut-out in Model C-121, for easy installation of flush H-F and Level Controls or RP-302 "Supertweeter".

## SECTOR CABINETS

For 8" speakers, especially designed for installations where multiple speakers are required. With front curved to a 14 1/2" radius, they fit anywhere—in corners, on walls, at intersection of ceiling and wall or on posts. May be mounted in pairs or clusters for wide-angle distribution. Wood composition built around a frame of solid wood. Finished in brown lacquer. Brackets and screws furnished for mounting.

Jensen No.	Speaker Size	Finish	Dimensions, Inches			Shipping Wt., Lbs.	Net Each
			Height	Width	Depth		
BL-250	15"	Mahogany or Blonde Mahogany	38 1/2	28	19 1/4	86	\$109.50
BL-220	12"	Mahogany or Blonde Mahogany	30 1/2	22 1/2	17 1/2	48	78.50
BL-80	8"	Mahogany or Blonde Oak	24 1/2	19	12 1/2	25 1/2	52.50
C-151	15"	Mahogany or Blonde Mahogany	32	28	15	53	46.35
C-121	12"	Mahogany or Blonde Mahogany	29	25	13 1/2	42	39.40
C-81	8"	Mahogany or Blonde Mahogany	23 1/2	20	9	26	28.75
H-81	8"	Brown Lacquer	23 1/2	17 1/2	8 1/2	14	15.42



## HIGH FIDELITY EXTENDED RANGE SPEAKERS

These units, ranging from 5-inch to 12-inch size classes, attain a high level of performance by proper extension of the frequency range and control of all factors which lend "presence" to reproduction.

The selection of a direct-radiator loudspeaker from this series, in size or cost appropriate to the application, insures the best quality obtainable in a "one-way" speaker. Alternate models in the same size group differ mainly in efficiency and power rating.

JENSEN Extended Range loudspeakers are ideal as replacement-improvement units for less worthy speakers in radio, television and record playing equipment. The logical choice for better reproduction on a low budget.

Nominal Size	Model No.	Magnet Wt. Alnico 5	Dimensions, Inches			Voice Coil			†Transformer Size	Net Each
			O.D.	Depth	Baffle Open	Diam., In.	Imped., Ohms	Power Watts		
12"	P12-NX	1 3/4 lbs.	12 1/4	7	10 1/2	1 1/2	6-8	16.0	1" x 1"	\$35.25
	P12-RX	1/2 lb.	12 1/2	6 1/4	10 1/2	1	6-8	11.0	3/4" x 3/4"	12.40
	P12-SX	4.64 oz.	12 1/2	6 1/4	10 1/2	1	6-8	9.0	3/4" x 3/4"	11.35
10"	P10-SX	4.64 oz.	10 1/2	5 1/2	8 3/4	1	6-8	8.0	3/4" x 3/4"	10.54
	P8-RX	1/2 lb.	8 1/2	4	6 3/4	1	6-8	8.0	3/4" x 3/4"	8.50
8"	P8-SX	4.64 oz.	8 1/2	3 1/2	6 3/4	1	6-8	7.0	3/4" x 3/4"	7.48
	P6-TX	3.16 oz.	6 1/4	3 1/2	5 1/2	3/4	3-4	5.0	3/4" x 3/4"	5.05
5"	P5-TX	3.16 oz.	5	2 1/4	4	3/4	3-4	4.0	3/4" x 3/4"	4.90

†Size Recommended.

# Jensen Professional Series



D-30



D-40



DD-100

## NEW HYPEX® LIFETIME DRIVER UNITS

The new Jensen Hypex® Lifetime Driver Units have many new features which contribute to increased performance and reliability. Frequency range is based on achieving substantially higher conversion efficiency, higher power ratings and improved reliability over comparable units previously available, while affording good fidelity in the reproduction of speech and music. Lower cutoff frequency is somewhat below those of the horns with which they will be used; the specifications show the maximum upper limiting frequencies, but response has been shaped to give emphasis to the 3-5 kc region, which is extremely important in high efficiency sound projection. As a result of these design choices and special research on ruggedization, the D-30 can be rated at 30 watts speech and music, D-40 at 40 watts, and a Lifetime Guarantee extended against failure under normal conditions of use!

The DD-100 100-watt Superpower Driver Unit, similarly guaranteed, is the first double acting integrated sound chamber driver unit ever to be offered; it is also the first 100 watt unit available.

achieving a higher power input rating to a single projector or an array, than has ever been possible before. Magnetic structures are the most efficient that research has been able to develop, yielding the highest magnetic energy from the generous sized Alnico V magnets which scientific proportioning of magnet material and soft iron structure can provide. Specially shaped reinforced plastic diaphragms combine ruggedness with excellent acoustic properties and freedom from "breakup". Voice Coils are varnish wound, baked and aged on treated, heat and moisture resistant bobbins, resulting in a rigid assembly that is indestructible in normal service. Beryllium copper leads are indefinitely fatigue-resistant. Models D-40 and DD-100 have precision self-centering moving system assemblies which are added insurance for dependability under severe operating conditions. External leads connect to heavy binder screw terminals; added reliability for wiring is provided by strain reliefs on all units. All units are threaded 1 1/8"-18.

### SPECIFICATIONS

Model	Power Rating†	Impedance	Frequency Range	Length	Diameter	Weight, lbs.		List Price
						Net	Shpg.	
D-30	30 w.	16 ohms	75-7,000 cps	4 1/4"	4 1/2"	3 1/4	3 1/2	\$27.50
D-40	40 w.	16 ohms	75-10,000 cps	4 1/4"	4 1/2"	4	4 1/2	36.00
DD-100	100 w.	8/32 ohms	75-10,000 cps	5 1/2"	8 1/2"	7 1/2	8	96.50

†Integrated speech and music program material. For sine wave or siren signal input, reduce ratings one-half. Ratings apply only for frequencies above horn cutoff.



HF-100



VH-91



VR-11

## JENSEN COMPLETE HYPEX® PROJECTORS

### HF-100 WEATHERPROOF TWO-WAY HIGH FIDELITY PROJECTOR

Here is a real high fidelity projector for use indoors or out, under all weather conditions. Consists of a heavy duty 8" woofer, feeding a folded horn plus a horn-loaded compression driver "tweeter". Low frequency unit feeds horn by a combination of direct radiation and phase-inversion bass reflex ports for superior efficiency in the low frequency region. The high frequency horn has a 90° fold and is mounted so that the driver unit is at the top, thus providing self-draining and making it impossible for rain, sleet or snow to reach the driver unit.

Horn outer section is spun aluminum with baked enamel finish. Central enclosure is glass fibre reinforced polyester in matching natural molded Modern Tan finish. Sturdy "U" mounting bracket is fully adjustable and positive locking.

#### SPECIFICATIONS: HF-100 PROJECTOR

Type: Coaxial assembly of separate low and high frequency units.  
 Frequency Range: 70 to 15,000 cycles.  
 Power Rating: 25 watts.  
 Impedance: 16 ohms.  
 Rated Coverage Angle: 120°.  
 Overall Diameter: 24 1/2".  
 Overall Depth: 11 1/4".  
 Net Weight: 23 lbs.  
 Shipping Weight: 30 lbs.  
 HF-100—List Price \$129.50.

Jensen VH-91 and VR-11 Hypex® projectors are the most compact in the line and their use is indicated where speech reproduction is the only important consideration and where size or cost are controlling factors. Designed for maximum efficiency in the upper frequency range, these units provide excellent penetration of noise. Small in size, they can also be located near areas of extreme noise. Magnetic structures are highly efficient, using Alnico V magnets in ample soft iron structures. Corrosion-resisting finishes and materials such as plastic cloth base diaphragms insure long life under outdoor and industrial atmospheric conditions. For further protection driver units are completely enclosed inside the rigid outer shell.

### MODEL VH-91 HYPEX® PROJECTOR

Equipped with universal mounting brackets for orientation in any direction and secure locking with a single wing nut. Two mounting holes on bracket are spaced to accommodate standard 3/8" x 3/8" transformers with the same mounting screws.

### MODEL VR-11 HYPEX® RADIAL PROJECTOR

For application requiring 360° coverage in horizontal plane, such as low ceiling industrial areas. Equipped with sturdy eye-bolt for clamping or suspension from above.

#### SPECIFICATIONS

Model	Power Rating	Impedance	L-F Range	Mouth Dia. Over All	Over All Lgth.	Air Column Path Lgth.	Rated Coverage Angle	Net Shpg. Wt. Lbs.		List Price
								Wt.	Wt.	
VH-91	15	8	300	8 3/4"	7 3/4"	16"	100°	2 3/4	3 3/8	\$35.80
VR-11	15	8	280	11"	10 3/4"	18"	360°	4	5	46.50

### BV-1 BLAST VALVE



The BV-1 Blast Valve is an accessory device for protecting the driver unit from high pressures due to explosive forces. Valve is the same as used in Jensen military blastproof loudspeakers. Under the positive blast pressure phase, the valve moves inward to seal off the driver unit from the horn throat. On the negative phase the valve moves out-

ward, again effecting a seal. With the valve in neutral position, attenuation of sound is negligible. Screws between horn and driver unit. Overall diameter 3". Fits all Jensen driver units and horns.  
 Net weight, 1/2 lb. Shipping Weight, 3/4 lb.  
 BV-1—List Price \$15.00.

\*T. M. Reg. Jensen Mfg. Co.

# Jensen Professional Series



H-150



H-200



H-240

## NEW JENSEN HYPEX\* PROJECTOR HORNS

These new projector horns are acoustically coordinated in design for best performance with HypeX\* Driver Units D-30, D-40 and DD-100, any one of which may be used on any of the horns. The horn expansion formula is the hyperbolic exponential (U. S. Patent 2,338,262) providing low frequency reproduction superior to that obtained with conventional horns of the same mouth size. Horns (with the exception of RT-20) are spun aluminum with weather-resistant baked tan enamel finish. Horns are threaded 1 1/4"-18 and may be used with any driver units with this thread. Sturdy steel mounting "U" brackets allow horn to point in any desired direction; horn locks in desired position by means of new positive action trunion clutches.

(See separate description and specifications on RT-20 Rectangular Horn).

Specifications	H-150 (15°)	H-200 (20°)	H-240 (24°)	R-242 (24° Radial)
Mouth diameter, over all	15 1/2"	20 1/2"	25 1/2"	25 1/2"
Length, over all (less driver)	12"	14 1/4"	20 1/8"	14 1/2"
Air column length	31"	41"	59"	40"
Low frequency cutoff	200 cycles	150 cycles	120 cycles	140 cycles
Rated coverage angle	95°	85°	75°	360°
Net weight (less driver)	6 lbs.	8 1/2 lbs.	12 1/2 lbs.	10 1/2 lbs.
Shipping weight	7 1/4 lbs.	12 1/4 lbs.	19 1/4 lbs.	14 1/2 lbs.
List price	\$26.00	\$31.00	\$45.00	\$47.00

\*T.M. Reg. Jensen Mfg. Co.



R-242

## MODEL RT-20 RECTANGULAR HORN

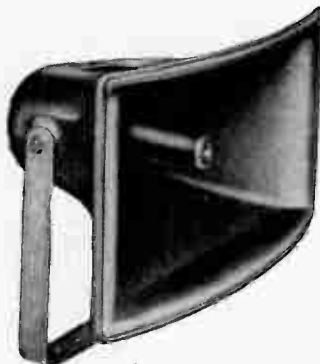
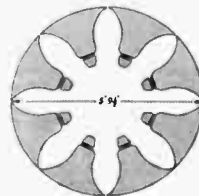
These versatile new horns may be used in a variety of ways to provide projector systems of almost any desired directional characteristics and total power rating. They may be used singly just as round horns are used and in such cases, the rectangular shape is frequently an advantage in appearance, minimizing obstruction to vision, and facilitating mounting.

RT-20 Horns are designed so that they may be stacked in plane or circular arrays. Eight units, each with a geometric sector angle of 45 degrees, form a complete circle with a diameter of 5' 9 1/2", giving 360° horizontal coverage. Fewer units are used where less than 360° coverage is required as indicated below:

Number of Units	Horizontal Coverage Angle
1	80°
2	125°
3	170°
4	215°
5	260°
6	305°
8	360°

Horns may be "double deeked," which will concentrate the sound in a narrower angle in the vertical plane. A stack two units high will give a vertical coverage angle of approximately 30 degrees; at the same time, there is a gain in sound pressure on the axis of 2.5 db, due to the restricted angle of radiation.

The horn is molded of high impact strength glass fibre reinforced polyester. Natural molded finish in Modern Tan color.



## ACCESSORIES

### MA-1 PIPE ADAPTER

A sturdy malleable iron casting which bolts to the "U" bracket of HypeX\* Projector Horns and provides 3/4" pipe thread for pipe mast mounting. Baked tan enamel finish. Net weight: 3/4 lb. Shipping Weight: 1 lb. MA-1—List Price \$2.30.

### MA-3 STACKING HARDWARE

Complete set of hardware for joining two RT-20 horns side by side. Net weight: 2 1/4 lbs. Shipping Weight: 2 3/4 lbs. MA-3—List Price \$5.30.

### MA-4 STACKING HARDWARE

Complete set of hardware for joining two RT-20 horns double deeked. Net weight: 1 1/2 lbs. Shipping Weight: 2 lbs. MA-4—List Price \$4.60.

## SPECIFICATIONS—RT-20

Mouth Size: 25" wide by 12 1/2" high.  
Horn Length, overall, less driver: 16 1/4".  
Air Column length: 41".  
Low Frequency cutoff: 140 cycles.  
Rated Coverage angle: 80° horizontal. (See data for arrays).  
Net Weight, less driver unit: 10 1/2 lbs.  
Shipping Weight: 15 lbs.  
RT-20—Horn only. List Price. . . . . \$46.50

# Jensen Professional Series

## JENSEN SPEECH MASTER LOUDSPEAKERS



AP-10

JENSEN Speech Master loudspeakers are specialized units designed for applications where highly intelligible speech reproduction is a prime requisite. Good basic design and sturdiness of construction as well as

pleasing appearance and functional styling are outstanding features of these units. All loudspeakers in this group use high efficiency direct radiator driver units of the permanent magnet type.

### MODEL AP-10 SPEECH MASTER

Attractively styled desk type unit. Heavy cast base with felt pad. Specially designed for superior intelligibility in the presence of static and acoustic background noise. Excellent "talk-back" characteristics. Driver Unit, a sturdy 5" speaker, fully enclosed with protective front screen. Mounting facility for 3/4" x 1/2" transformer (inside cover) locking tilt adjustment. Power rating, 5 watts maximum speech signal, 36" rubber cable. 6 3/4" H.; 5 3/4" D.; 5" W. Gray finish. Shipping Weight 5 1/4 lbs.  
**ST-590.** 3-4 ohms. List Price \$19.30.  
**ST-591.** 45-50 ohms. List Price \$20.30.

### MODEL RK-61 "CORRIDOR" SPEECH MASTER

Designed for two-direction sound in corridor or office. Heavy steel case perforated on both sides for high quality speech coverage in both directions protected heavy duty 6" loudspeaker driver unit. Sturdy mounting bracket welded to case provides flexibility in installation. Standard 3/4" conduit (not supplied) can be used. 24" heavy SJ cable for connections. Transformers up to 3/4" x 1/2" mount on speaker frame inside case. Excellent "talk-back" characteristics. Quality on music is also acceptable for many areas. Power rating 8 watts. Case diameter 8"; thickness 3 1/4"; overall distance from wall 9 1/4". Gray hammer finish.  
**ST-850.** 3-4 ohms. List Price \$12.60.



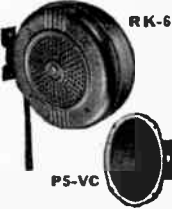
AR-10

### MODEL AR-10 SPEECH MASTER PROJECTOR

Specially designed for intercom and paging systems. Reentrant horn directs sound and adds speech range efficiency. Used in factories, warehouses, garages, etc. Sturdy P5-VC driver shielded from direct exposure. 3/4" x 1/2" transformer fits in cover. Power rating 6 watts. 22" rubber cord. 10" dia. Gray hammer finish. Shipping Weight 6 1/2 lbs.  
**ST-643.** 3-4 ohms. List Price \$23.50.  
**ST-644.** 45-50 ohms. List Price \$24.50.

### MODEL P5-VC SPEAKER

This loudspeaker is offered for installation in radio communications, intercom and paging equipment. May be panel mounted, wall mounted or installed in a small case as required with excellent results. Provides the performance of the AP-10 Speech Master in your equipment. Power rating, 5 watts. Depth, 2 1/2"; OD, 5"; baffle opening 4"; Shipping Weight 1 lb.  
**ST-916.** 3-4 ohms. List Price \$5.30.



P5-VC

## JENSEN PROFESSIONAL SERIES TRANSFORMERS

### MODEL W-1 WEATHERPROOF TRANSFORMER CASE

Thoroughly weatherproof for permanent outdoor installations for maximum protection to transformers. Designed for upright mounting on U-bracket of Jensen Types H, RT and R Hypex\* horns or on pipe by means of clamp. Also suitable for screw mounting to side wall or other flat surface. Accommodates transformers of standard nominal core sizes of 1 x 1, 1 1/4 x 1 1/4, 1 1/2 x 1 1/2 and 1 3/4 x 1 3/4 with maximum transformer height of 4". Cable entry holes provide for up to four Type SJ cables. Cast aluminum base and spun aluminum cover with bayonet locking. Rich tan baked enamel finish. Complete with transformer mounting and clamp hardware. Net weight 1 lb., shipping weight 1 1/4 lbs. List \$10.50.  
 \*T.M. Reg. Jensen Mfg. Co.



### TYPE ZC "CONSTANT VOLTAGE" TYPE TRANSFORMERS

These transformers are designs especially for the distribution systems commonly referred to as 70-volt constant voltage systems. They are designed to draw a predetermined amount of power from a 70-volt line as indicated in the tables. All are mountable in W-1 Weatherproof Transformer Case except ZC-3514, as noted.

desired input power. Heavy duty screw terminals are provided for speaker and line connection. Completely impregnated and dip processed for operation in outdoor and industrial atmospheres.

Models ZC-3514 and ZC-3515 are similar except color coded pigtail leads replace the terminal board. Non-weatherproof, recommended for indoor and less severe locations.

Model No.	Nominal Core Size	Input Watts:	Input Imped., Ohms	Sec. Imped., Ohms	Mtg. Ctrs.	List Price
ZC-100	1" x 1"	30	167	4/8/16	3 3/4"	\$11.50
		15	333			
		7 1/2	667			
ZC-200	1" x 1"	25	200	4/8/16	3 3/4"	13.00
		10	500			
		5	1000			
ZC-300	3/4" x 3/4"	20	250	4/8/16	3 3/4"	9.65
		10	500			
		5	1000			
ZC-400	5/8" x 5/8"	5	1000	4/8/16	2 3/4"	7.00
		2 1/2	2000			
		1 1/2	4000			

Model No.	Nominal Core Size	Input Watts:	Input Imped., Ohms	Sec. Imped., Ohms	Mtg. Ctrs.	List Price
ZC-3514*	1" x 1 1/4"	16	313	3/16	2" x 2 3/4"	\$13.00
		8	625			
		4	1,250			
		2	2,500			
ZC-3515	5/8" x 5/8"	4	1,250	8	2 3/4"	4.75
		2	2,500			
		1	5,000			
		3/4	10,000			
		3/8	20,000			

Response characteristics:  
 Type ZC-200: plus or minus 1 db, 30-15,000 cycles.  
 Type ZC-100, ZC-300, ZC-400:  
 plus or minus 2 db, 70-10,000 cycles

Response Characteristics: plus or minus 1 db 30-15,000 cycles.

\*Not mountable in W-1 Case.  
 †Marked VA (volt-amperes) on terminals.

### ADJUSTABLE IMPEDANCE TRANSFORMERS

The Type ZY adjustable impedance transformers have long been popular for use on 500-ohm line systems. Equipped with sturdy terminal board with pin jack adjustment of impedance. Type ZL transformers are similar except for solder lug terminals for impedance adjustment and pig-tail secondary leads. Vacuum wax impregnated for general purpose applications. Can be installed in Model W-1 Weatherproof Transformer Case.

### TYPE "Z" TRANSFORMERS

Model Z-3422 is a high fidelity autotransformer for interconnecting 4, 8 or 16 ohm circuits. Model Z-3345 is particularly designed to properly match 8 ohm loudspeakers and projectors to 45-50 ohm intercommunication systems. Vacuum wax impregnated and mountable in Model W-1 Weatherproof Transformer Case.

Model No.	Nom. Core Size, In.	Power Rat. Ing. Watts	Input Imped., Ohms	Sec. Imped., Ohms	Mtg. Ctrs.	List Price
ZY-2005	1x1	25		8	3 3/4"	\$11.65
ZY-2003	1/2 x 1/2	18		8	3 1/4"	9.92
ZY-2002	3/4 x 3/4	10		8	2 1/4"	8.25
ZY-4004	5/8 x 5/8	10	500/1000/1500/2000	4	2 1/4"	8.25
ZY-4005	3/4 x 3/4	6 1/2		8	2 3/4"	6.15
ZY-4002	5/8 x 5/8	6 1/2		4	2 3/4"	6.15

Model No.	Nom. Core Size, In.	Power Rat. Ing. Watts	Input Imped., Ohms	Sec. Imped., Ohms	Mtg. Ctrs.	List Price
ZL-2022	3/4 x 3/4	8 1/2	500/1000/1500/2000	8	2 3/4"	\$ 4.65
ZL-2021	1/2 x 1/2	3 1/2		4	2"	3.75
Z-3422	1x1	25	4/8/16	8	3 1/4"	8.58
Z-3345	3/4 x 3/4	6 1/2	45-50	8	2 3/4"	5.30

Response characteristics:  
 Plus or minus 2 db, 70-10,000 cycles.

Response characteristics:  
 Types ZL-2021, ZL-2022 and Z-3345:  
 Plus or minus 2 db, 70-10,000 cycles.  
 Type Z-3422: plus or minus 1 db, 30-15,000 cycles.

# Jensen Professional Series

## TWO-WAY AND THREE-WAY UNITARY HIGH FIDELITY LOUSPEAKERS

These outstanding unitary two-way and three-way loudspeakers have been especially designed for institutional, industrial and commercial sound systems where high fidelity music and realistic voice reproduction are essential. They may be mounted in proscenium arch or underneath a canopy; flush or in small enclosures on walls; in large or small cabinets. In enclosures they may stand on floor or be suspended overhead for large audience coverage. In wide angle coverage of entire frequency range and in sound quality, they are markedly superior to projector type speakers. Ideal for school rooms, auditoriums, arenas and the like.

Moving systems and other parts have been moisture-proofed so that they are highly satisfactory for protected outdoor service where not directly exposed to rain, sleet, or snow. Durable finishes and materials are used throughout. Construction is rugged to insure trouble-free performance indefinitely. Terminals are provided for insertion of fixed or adjustable pads if desired (not furnished—see control listings) in the "tweeter" circuits. All units have full dividing networks (mounted on housing in H-525C and H-225C). Input terminals are screwdriver type. Housing finish is baked tan enamel; horns, etc., at the front of the units are finished in black enamel for minimum visibility through grille cloth. All units are thoroughly dustproofed.

These units incorporate Alnico 5 magnets in highly efficient conservatively designed magnetic structures. Table shows loudness efficiency relative to Model H-225C.

### G-615C 15" THREE-WAY LOUSPEAKER

The TRIAXIAL, a unitary three-way loudspeaker, has three electrically and acoustically independent speaker elements, each handling a portion of the frequency range. Separate three-way 600 and 4000 cycle crossover network with provision for easily adding m-f and h-f balance controls (not supplied—see separate listing). Heavy duty curvilinear l-f diaphragm and compression horn-type m-f and h-f units in exclusive Jensen design. Excellent damping and high conversion efficiency. Power rating 35 watts. Impedance 16 ohms. Recommended baffle opening 13 1/4" dia.; OD 15 1/4"; depth 10 1/2"; net weight 29 lbs.; shipping weight 48 lbs.

Model G-615C—  
List Price \$350.00;  
\*T. M. Reg. Jensen Mfg. Co.

### H-535C 15" TWO-WAY LOUSPEAKER

An outstanding unitary loudspeaker of the coaxial type. Employs a heavy duty low frequency unit with heavy magnet to handle the range below 2000 cycles, with high conversion efficiency and good damping. High frequency range is reproduced by an efficient multiteel horn-loaded compression driver unit. Excellent high frequency distribution. Separate plug-connected 2000

cycle crossover network with provision for adding h-f balance pad (not furnished—see separate listing). Impedance 16 ohms. Power rating 30 watts. Recommended baffle opening 13 1/4" dia.; OD 15 1/4"; depth 9"; net weight 17 lbs.; shipping weight, 25 lbs.

Model H-535C—  
List Price \$192.00;

### H-525C 15" TWO-WAY LOUSPEAKER

A coaxial unitary two-way loudspeaker like Model H-535C above, except built-in crossover network and lighter magnetic structures on l-f and h-f units. Power rating 25 watts. Impedance 16 ohms. Recommended baffle opening 13 1/4" dia.; OD 15 1/4"; depth 8 1/2"; net weight 16 lbs.; shipping weight 16 lbs.

Model H-525C—  
List Price \$112.50;

### H-225C 12" TWO-WAY LOUSPEAKER

A coaxial unitary two-way loudspeaker like Model H-525C above, except 12-inch l-f unit. Power rating 25 watts. Impedance 16 ohms. Recommended baffle opening 13 1/4" dia.; OD 15 1/4"; depth 7 1/2"; net weight 9 lbs.; shipping weight 13 lbs.

Model H-225C—  
List Price \$81.50;



G-615C

H-535C



H-525C



H-225C

Model No.	Relative Efficiency
G-615C	+5 db
H-535C	+3 db
H-525C	+1 db
H-225C	0 db



P-4VC



P-5FC



P-8PC



P-8RC



P-12RC



P-12-NC

## EXTENDED RANGE HIGH FIDELITY LOUSPEAKERS

Here is a complete line of loudspeakers of latest designs especially for commercial and general purpose applications, all field tested for the exacting and rigorous requirements of professional service. There is a loudspeaker for every need—ruggedly dependable units which have enjoyed the position of "world's quality standard" for many years in the professional field.

These heavy duty loudspeakers are of the extended range high fidelity type with performance suitable for applications where two-way and three-way speakers are not needed. High efficiency is assured with carefully designed magnetic structures using Alnico 5 magnets and ample soft iron circuits. Moisture-resistant cones and other materials contribute to long life expectancy. The units are especially suitable for protected outdoor locations not directly exposed to rain, sleet and snow, as well as for indoor use.

Extended h-f range insures excellent music reproduction. The l-f range will depend on the enclosure size and design. Commonly used in small enclosures or ceiling baffles. Models P8-SC and P12-SC are practically standard in the industry for interior low level music distribution systems.

Sizes from 4" to 15" offer the best performance possible in each size and cost class. Choices as to efficiency and power ratings are available in some sizes. Relative loudness efficiency is shown in the table referred to the P4-VC. A speaker with relative loudness efficiency of +3 db will be noticeably louder than the P4-VC for the same power; only one-half the power will be required to be equally as loud as the P4-VC.

Nominal Size	Model No.	Power Rating Watts	Magnet Wt., Oz., Alnico 5	Relative Loudness Efficiency	Imped., Ohms	V. C. Dia., Inches	Baffle Cutout Dia., In.	Overall Dia., Inches	Depth Inches	Ship. Wt., Lbs.	List Price
15"	P15-NC	20	27	+7 1/2 db	8	1 1/2	13 1/4	15 1/4	7	7	\$59.50
12"	P12-NC	18	27	+7 db	8	1 1/2	10 1/2	12 1/4	6	10	\$1.00
15"	P12-RC	12	6.8	+4 1/2 db	8	1	10 1/4	12 1/4	5 1/2	6	16.65
12"	P12-SC	10	4.64	+3 1/2 db	8	1	10 1/4	12 1/4	5 1/2	6	15.20
10"	P10-SC	9 1/2	4.64	+3 1/2 db	8	1	8 1/4	10 1/4	4 1/2	4	13.75
8"	P8-PC	10	14.6	+5 db	8	1 1/2	8 1/4	10 1/4	4 1/2	5 1/2	31.80
8"	P8-RC	9	6.8	+2 1/2 db	8	1	6 1/4	8 1/4	4	3	14.80
8"	P8-SC	8	4.64	+1 1/2 db	8	1	6 1/4	8 1/4	3 3/4	3	12.70
6"	P6-TC	6	3.16	+1 1/2 db	4	1/2	5 1/4	6 1/4	3 1/4	2	8.50
5"	P5-TC	5	3.16	+1 1/2 db	4	1/2	4	5	2 1/4	2	8.15
4"	P4-VC	4	1.47	0 db	4	1/2	3 1/2	5	2 1/4	1 1/2	5.25

# THE R. T. BOZAK SALES COMPANY

## Quality Loudspeakers

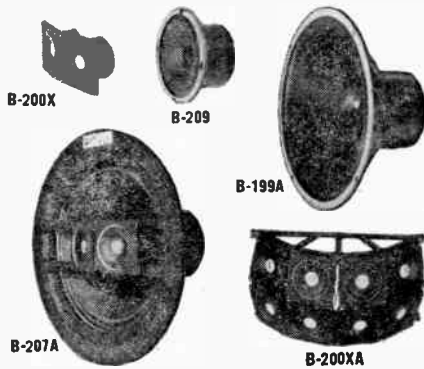
There are only three basic Bozak Loudspeakers — *one line of one quality* — which combine into Speaker Systems of various sizes, with realism, range, and power-handling capacity depending solely on the number of bass speakers employed.

All Bozaks are completely compatible in their electrical and acoustical characteristics. All are direct-radiators, well suited to the infinite-baffle mounting required to preserve their outstanding smoothness and transient response. With the infinite baffle, *Systematic Growth* by the addition of more Bozaks and modification of the N-10102 Network, is easily accomplished.

The slow 6-db-per-octave crossovers are through electrical networks, free of transient distortion, which blend the

ranges smoothly without sense of separated sound sources. The Bozaks must be used with a turntable, pickup and amplifier of the highest quality; the amplifier's damping factor *must* be between 8 and 20. Automatic Impedance-Matching devices and Loudness Controls *must never* be used, as they alter tonal balance and muddy the response: compensation at low levels is best achieved with the regular Bass and Treble Controls.

Bozak factory-made enclosures are infinite baffles of 3/4-inch or heavier plywood, glued and screwed and cross-braced, lined and curtained with acoustical-damping materials, veneered with fine woods, and handsomely finished. The E-300 is available as a complete Kit. Plans are available on request for all enclosures.



### BOZAK LOUDSPEAKERS

Bozak Speakers	Range cps	Impd ohms	Resonance	Power Rating	Mntg Hole	Weight lbs	Retail Price
<b>B-207A</b>	40 -	B	below 40 c	15W*	12 1/4" diam.	13	\$83.85
Coaxial	16,000						
<b>B-200X</b>	2000 -	8	—	15W*	6"x3"	2 3/4	30.00
Treble	16,000						
<b>B-209</b>	200 -	B	none	50W*	5 1/2" diam.	6 1/2	48.00
Mid-Range	3500	16					
<b>B-199A</b>	30 -	8	below 40 c	15W*	11 1/2" diam.	8	49.50
Bass	4500						
<b>B-200XA</b>	1500 -	8	—	50W*	†	11 1/4	132.00
Tweeter Array	20,000						
<b>B-100</b>	B-200XA in enclosure 15 3/4"W, 10"H, 7"D						165.00

\*—For use in Systems of indicated wattage †—Mounts outside woofer cavity.

### NETWORKS

Bozak Networks	used with	Crossovers cps	Impd ohms	Retail Price
4-mfd	B-207A	2500	8	\$ 1.50
<b>N-10102</b>	B-302/305	800-2500	8/16	27.50
N-103	B-305	400-2500	16	37.50
N-104	B-310/400	400-2500	8	37.50
N-25	B-310/400	Condenser Bank		11.60

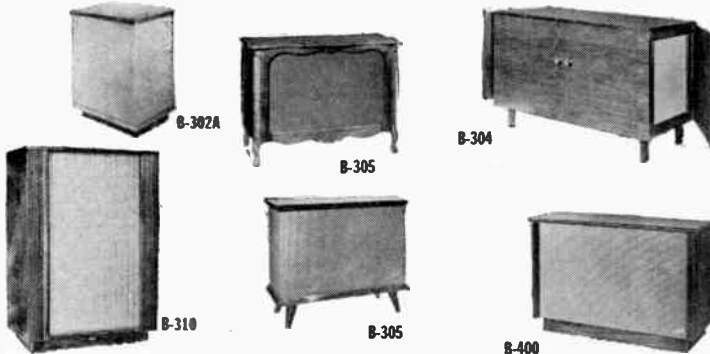


All prices are FOB Factory, Norwalk, Connecticut; add 5% in extreme South and Far West. Prices and Specifications subject to change without notice. All Bozak products are covered by a one-year Guarantee against defective materials and craftsmanship, subject to registration with us within 10 days of purchase by the original retail purchaser.

### ENCLOSURES\*

Enclosure Model	Model	Outside Dimensions			Vol cu ft	Retail Price
		hght	width	depth		
E-300	Cont	30 1/2"	24"	17"	5	\$ 75.00
E-300K	Kit	30 1/2"	24"	17"	5	42.50
E-305†	Cont	32"	36 1/2"	18 1/2"	8	141.00
E-305	Prov	31"	40"	20"	8.5	276.00
E-310	Cont	53"	36"	19"	16	300.00
E-400	Cont	34 1/2"	50"	21"	16	330.00

\*—Lined, Grille Cloth attached, speaker openings pre-cut, back removable for components installation. †—Bottom of E-305 Contemporary removable for component installation.



### BOZAK SPEAKER SYSTEMS

#### COMPLETE SYSTEMS IN ENCLOSURES\*

Bozak Systems	Model	Retail* Price	Speaker Complement				Network**	Enclosure	Impd Ohms	Power Rating	Range cps
			B-199A	B-209	B-200X	B-200XA					
B-300	Cont	\$162.60	1	—	1	—	4-mfd	E-300	8	15W	40c-16kc
B-302A	Cont	235.60	1	1	1	—	N-10102	E-300	8	20W	40c-16kc
B-304	Cont	720.00	two complete B-302A Systems				N-10102	E-304	8	2/30W	40c-16kc
B-304	Prov	820.00									
B-305	Cont	390.00	2	1#	2	—	N-10102	E-305	16	30W	35c-16kc
B-305	Prov	525.00									
B-310	Cont	723.00	4	1	—	1	N-104	E-310	8	50W	28c-16kc
B-310A	Cont	770.00	4	2	—	1	N-104	E-310	8	50W	28c-16kc
B-400	Cont	798.00	4	2	—	1	N-104	E-400	8	50W	28c-16kc

\*—Wired and installed in infinite-baffle enclosures of Mahogany, Birch or Walnut veneer.

\*\*—For Crossover Frequencies see "Networks" Table above.

#—16-Ohm Unit; B-Ohm for other Bozak Speaker Systems.

#### PANEL-MOUNTED SYSTEMS†

Model	Dimensions	Retail Price
P-302AP	23" x 27 1/2"	\$165.00
P-305P	34 1/2" x 24"	249.00
P-310P	36" x 48"	474.00
P-310AP	36" x 48"	522.00
P-400	46 1/2" x 30 1/2"	522.00

†—Speakers and Networks, wired and installed on 3/4" fir plywood panels (1 1/2" for P-310P, P-310AP, and P-400P). Ready for installation in a wall or suitable infinite-baffle enclosure; for minimum volumes see "Enclosures" Table.



# SONOTONE LOUDSPEAKERS!



## THE CA-12 12-INCH COAXIAL LOUDSPEAKER!

High performance: Full range, wide dispersion from the elliptical cone tweeter, complete L-C dividing network. Low price: Superb sound for limited budgets. Ideal second speaker.

Power Handling Capacity	10 watts
Frequency Range	40-14,000 cycles
Resonant Frequency	50 cycles
Crossover Frequency	2000 cycles
Impedance	15 ohms
Other specs as in W-12 below	
Shipping Weight	6 lbs.
Net Price: \$19.50	(Zone 2: \$21.00)

## THE CA-15 15-INCH COAXIAL LOUDSPEAKER!

Unusually smooth response, low resonant frequency. Elliptical cone tweeter radiates directly. Velour suspension. 5 lb. Alnico V magnet. High flux-density gaps. Rugged cast aluminum frame. 2 inch diameter voice coil.



Power Input	25 watts continuous, 40 watts peak
Frequency Range	20-17,000 cycles
Resonant Frequency	30 cycles
Impedance	15 ohms
Crossover Network	Built-in L-C dividing network
Crossover Frequency	2,000 cycles
Other specs as in W-15 below	
Shipping Weight	28 lbs.
Net Price: \$96.00	(Zone 2: \$98.50)



## THE W-12 12-INCH WOOFER!

Woofer component of the coaxial CA-12 available for separate two, three, or four-way systems.

Power Handling Capacity	10 watts
Frequency Range	40-7,000 cycles
Resonant Frequency	50 cycles
Flux Density	12,000 gauss
Impedance	15 ohms
Overall Diameter	12 $\frac{1}{2}$ "
Shipping Weight	5 lbs.
Net Price: \$12.00	(Zone 2: \$13.50)

## THE W-15 15-INCH LOW FREQUENCY DRIVER!

The low frequency unit of the coaxial CA-15 available as a woofer for separate two, three, or four-way systems.



Power Input	25 watts continuous
Frequency Range	20-7,000 cycles
Resonant Frequency	30 cycles
Impedance	15 ohms
Voice Coil Diameter	2"
Flux Density	15,000 gauss
Total Flux	228,000 lines
Magnet	5-lb. Alnico V
Suspension	Cloth (velour)
Overall diameter (Including mounting lugs)	16"
Overall diameter (Excluding mounting lugs)	15"
Shipping Weight	28 lbs.
Net Price: \$78.00	(Zone 2: \$80.50)



## THE T-64 ELLIPTICAL CONE TWEETER!

The tweeter unit of the coaxial CA-15 available for single or multiple use in separate two, three, or four-way systems.

Power Input	10 watts above 2,000 cycles
Frequency Range	Unbaffled: 2,000-17,000 cycles Baffled: 800-17,000 cycles
Flux Density	12,000 gauss
Impedance	15 ohms at 10 kc
Voice Coil Diameter	$\frac{3}{4}$ "
Voice Coil Wire	Aluminum
Size	6" x 4"
Shipping Weight	3 lbs.
Net Price: \$7.50	(Zone 2: \$8.50)

## THE SONOTONE "110" LOUDSPEAKER SYSTEM!

Precisely engineered to bring out the full range of the CA-12—at a remarkably low cost. Full utilization of the elliptical cone tweeter, because the CA-12 radiates directly, because the CA-12 radiates directly. Low frequency performance equal to many larger systems because of the exclusive rectilinear vent. Available in mahogany, blonde, or fruitwood handrubbed finish on birch. Shipped with CA-12 installed. Shipping Weight: 50 lbs. approx. See your distributor for details.



## THE SONOTONE "220" LOUDSPEAKER SYSTEM!

Consists of CA-15 mounted in enclosure designed to give smoothest frequency response ... optimum transient response. Sound radiates *directly*. Special rear acoustical loading array completely absorbs back wave. Allows placement of system anywhere in room. Available in *genuine* mahogany, blonde or fruitwood handrubbed finish. Shipping Weight: 110 lbs. approx. Net Price: \$199.50 (Zone 2: \$211.50)



Electronic Applications Division

**SONOTONE® CORPORATION**  
Elmsford, N. Y.

*New Series*

# ULTRA-FIDELITY ENCLOSURES

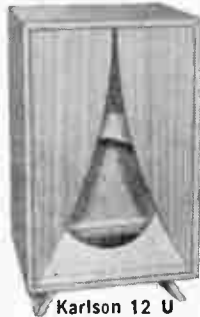
FOR ALL 8, 12, 15" SPEAKERS

BY *Karlson*

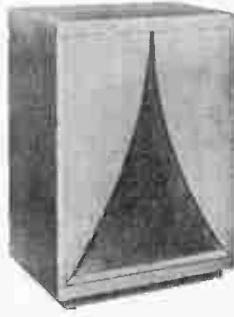
ENGINEERED FOR PERFECTION



Karlson 15 SW



Karlson 12 U



Karlson 15 B

## KARLSON 15 KARLSON LUXURWOODS

Size: 34 1/2 x 22 1/2 x 18"

The most beautiful and luxurious wood finishes available. Carefully selected natural wood veneers specially processed to produce a deeply transparent lifetime finish — virtually impervious to abuse.

Available in 15 SW Sable Walnut ..... \$174.00  
15 PV Prima Vera ..... \$174.00

### CLASSIC KARLSONITE MODELS

Karlson Front		Full Grille Front	
15 M Mahogany	\$129.00	15 MG Mahogany	\$129.00
15 F Fruitwood	\$129.00	15 FG Fruitwood	\$129.00
15 B Blonde	\$129.00	15 BG Blonde	\$129.00

In Karlson Laminates — beautiful as well as practical surfacing materials with photographically reproduced wood grains, keep your enclosures new-looking and attractive for many years.

15U Unfinished assembled, hardwood exterior, sanded smooth, ready for furniture finish. Complete with instructions. \$87.00  
15K Self assembling kit, hardwood exterior, suitable for fine furniture finishes. Complete with instructions. \$57.00



## KARLSON 12

Classic Karlsonite Design Only

12 M Mahogany ..... \$99.60 12 F Fruitwood ..... \$99.60  
12 B Blonde ..... \$99.60

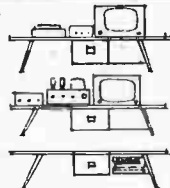
12U Unfinished assembled, hardwood exterior, sanded smooth, ready for furniture finish, complete with instructions. \$66.00  
12K Self assembling kit, hardwood exterior, suitable for fine furniture finish, complete with instructions. \$42.00

Karlson 12 M

Size: 24 3/4 x 16 3/4 x 13 3/4"



KARLSON Hi-Fi TV\* Equipment Table-T 1



The newest, smartest way to make Hi-Fi look as beautiful as it sounds. . . . The Karlson table is beautifully finished in black marbled Karlsonite, satin brass legs and accessories. No cut-outs or alterations of any kind are ordinarily needed, just place your equipment — any combination of Hi-Fi components and/or TV as per the suggested sketches. A "conversation" piece in the smartest home.

SIZE: 20" x 48" x 18" high Weight: 49 lbs. PRICE: \$94.50 net  
Also available in Blonde and Mahogany \$10.00 extra

# ONLY KARLSON SPEAKER ENCLOSURES

PROVIDE THESE FEATURES FOR YOUR HI-FI

- 1 Only one radiation aperture.
- 2 Front and back speaker loading.
- 3 Flat coupling over entire audio spectrum.
- 4 Unexcelled, clean, flat, extended bass response.
- 5 Extremely low distortion, even at highest sound levels.
- 6 Wide angle dispersion—all frequencies—all speakers.
- 7 Stereophonic projection.
- 8 High efficiency.
- 9 Full tonal definition and dynamic response.
- 10 Highest performance relative to size and cost.

"Karlson offers the utmost in versatility, outstanding bass response and unusual styling. Will improve the performance of even the least expensive of hi-fi speakers to a remarkable degree." Popular Mechanics, May 1956.

To gauge the effect of a Karlson installation with your speaker, cover your ears with your hands during a symphony. What you hear when you uncover them will give you an idea of the difference a Karlson makes.

\*The Karlson is a basic invention in the field of acoustic transducers and is entirely different from the other basic forms, e.g. Horn, Helmholtz resonator, drum (infinite baffle.)

This invention overcomes the fundamental limitations of these other approaches, to provide a new and higher standard of sound reproduction.

Described in:  
Audio Engineering — Sept. 1952  
Radio TV News — Jan. 1954  
Hi-Fi Manual — Fawcett Pub.  
Popular Electronics — May 1955  
Popular Mechanics — May 1955



Karlson 8 M

## KARLSON 8

8M Mahogany, hand rubbed wood grain finish \$42.60  
8W Walnut, hand rubbed wood grain finish \$42.60  
8B Blonde, hand rubbed wood grain finish \$42.60  
8U Unfinished assembled (see 12 & 15U) \$26.70  
8K Self Assembling kit (see 12 & 15 K) \$18.60

Size: 17 1/4 x 11 3/4 x 9 3/4"

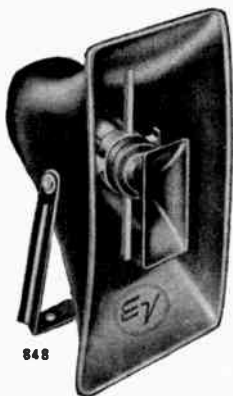
All prices net, subject to change without notice

\*Patent Pending



# Electro-Voice P. A. PROJECTORS

## FOR PERFECT VOICE PENETRATION AND FULL-RANGE MUSICASTING WEATHERPROOF • SPLASHPROOF • BLASTPROOF



848

**Electro-Voice Compound Diffraction Projector\*** provides a loudspeaker system so advanced in concept—so efficient in performance—that there is no basis for comparison with conventional P.A. reentrant horns. The "CDP" works in the same manner as an optical slit. When the slit width is of a shorter dimension than the wave length of the sound it passes, the sound energy is highly dispersed in the direction of this short dimension. Polar response of the "CDP" is phenomenal.

An increase in efficiency of three db over multi-cellular horns is achieved with better dispersion. There is no pinpointing effect since there are no cells to beam the sound path. Elimination of multiple throats at the driver mouth permits greater high-frequency efficiency as compared to multi-cellular horns. The direct path and optimum throat dimension of the "CDP" also has these advantages over the reentrant horns, resulting in a greater transfer efficiency and smooth extended high-frequency response.

The "CDP" bell and diaphragm are fabricated of molded fibreglass. Other parts are die-cast zinc and steel treated against corrosion. Edge-wise-wound copper ribbon voice coil puts 30% more conductor in the gap, raises the efficiency 20%. In E-V tests the "CDP" driver has been subjected to months of continuous operation under 30 watts of power at 60 cycles AC without failure for any reason whatsoever. Should it become necessary, the diaphragm is easily replaced in a moment. Silver contacts eliminate the need for soldering operations. The "CDP", with its higher sensitivity and power handling on a basis of distributed signal, provides superior coverage of the listening area with fewer units and at far lower cost. The "CDP" unit is weatherproof, splashproof, and blastproof, and virtually indestructible. It represents something so entirely new in public address efficiency and fidelity that it is indeed hard to believe such reproduction is possible.



876

**Model 846 25-Watt CDP**—Conservatively rated at 25 watts, the Model 846 provides peak-free response 200 to 10,000 cps—delivers  $2\frac{1}{2}$  octaves more musical range than usual P.A. units of even larger size. Speech articulation index is substantially increased. Polar distribution pattern exceeds  $120^\circ$ . The Model 846 utilizes two coaxially mounted horns working from opposite sides of a single diaphragm. Each horn is designed for optimum reproduction within its own range. Lower response is augmented by 100-cps horn taper, which insures at least one-half octave added bass over that possible from larger conventional P.A. horns. Nominal impedance is 16 ohms. The attractive neutral gray color is molded right into the bell material, which is impervious to acids, alkalis and most solvents. Hang up bracket has two mounting positions. Projector may be installed horizontally or vertically for augmented dispersion. Dimensions at mouth:  $10\frac{1}{2}$ " wide,  $20\frac{1}{2}$ " high. Overall depth 20". Shipping Weight, 17 lbs. List Price.....**\$75.00**



879

**Model 847 12-Watt CDP**—Compact, extremely efficient wide-range paging unit. Has low distortion and gives high articulation, permitting lower volume levels with high intelligibility. Response  $\pm 5$  db 300 to 10,000 cps; allows clear, clean music reproduction because of unusual low-frequency balance. RETMA sensitivity rating is 51 db. Polar coverage is  $135$  degrees; power handling is 12 watts. Impedance is 16 ohms. Weatherproof, splash-proof and blast-proof. Size  $11\frac{1}{4}$ " wide,  $7\frac{3}{4}$ " high, 10" deep. Shipping Weight, 7 lbs. List Price.....**\$46.33**

### ACCESSORIES FOR CDP



Model 847

**Model 876 25-Watt Line Matching Transformer**—In protective case for mounting on rear of Model 848 System. Primary taps for 25, 10, 5, and 2.5 watts with 70-volt line. Impedance taps of 45, 200, 500, 1000 and 2000 ohms. Transformer bypasses frequencies below Model 848 Horn cutoff. Case extends  $3\frac{1}{2}$ " behind Projector when mounted.  $5\frac{1}{4}$ " maximum diameter. Shpg. Wt., 3 lbs. List Price....**\$16.50**

**Model 879 Joining Kit**—Required for fastening multiple projectors together in any array; use one Model 879 kit for each junction between horns. Shpg. Wt., 1 lb. List Price.....**\$2.75**

**Model 877 Line Matching Transformer**—Same as Model 876, but with added full-range thermal bimetallic relay for maximum protection against overload. Size: Same as Model 876 Shipping Weight, 3 lbs. List Price...**\$17.50**

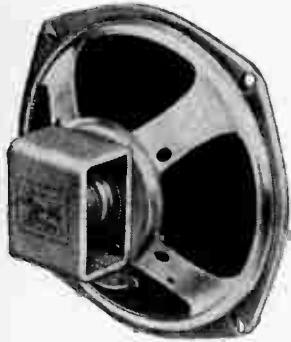
**Model 870 12-Watt Line Matching Transformer** for above mounts on side. Primary taps for 12, 8, 4, 2, 1 watts with 70-volt line; impedance taps for 45, 500, 2500 and 5000 ohms. Size  $2\frac{1}{2}$ " x  $2\frac{1}{2}$ " x 3". Shipping Weight, 2 lbs. List Price.....**\$12.00**

\*Design Patent 169,904.  
Additional Patent Pending.

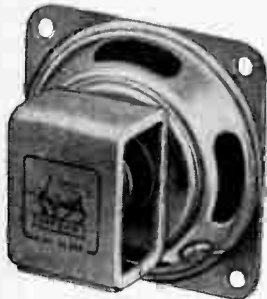
# OXFORD Speakers—

## PERMANENT MAGNET SPEAKERS— STANDARD REPLACEMENT LINE

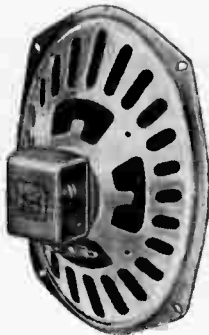
SIZE	MODEL NO.	MAG. WT.	LIST PRICE
2"	2AMS	.68 oz.	\$ 3.75
2"	2CMS	1.47	4.35
3"	3AMS	.68	3.75
3"	3CMS	1.47	4.35
4"	4AMS	.68	4.00
4"	4BMS	1.00	4.25
4"	4CMS	1.47	4.60
5"	5AMS	.68	4.25
5"	5BMS	1.00	4.50
5"	5CMS	1.47	4.85
5"	5PAMS	.68	4.35
5"	5PBMS	1.00	4.60
5"	5PCMS	1.47	5.00
5 1/4"	52AMS	.68	4.35
5 1/4"	52BMS	1.00	4.60
5 1/4"	52CMS	1.47	5.00
5 1/2"	55CMS	1.47	5.25
6"	6AMS	.68	4.85
6"	6BMS	1.00	5.10
6"	6CMS	1.47	5.50
6"	6CVS	1.47	5.75
6"	6EVS	2.15	6.00
6"	6FOS	3.16	6.85
7"	7CVS	1.47	6.50
8"	8CMS	1.47	6.85
8"	8CVS	1.47	7.10
8"	8EVS	2.15	7.35
8"	8FOS	3.16	8.50
8"	8HBS	4.64	10.00
8"	8JBS	6.80	12.00
10"	10CVS	1.47	8.75
10"	10EVS	2.15	9.50
10"	10FOS	3.16	10.50
10"	10HBS	4.64	12.00
10"	10JBS	6.80	13.50
12"	12CVS	1.47	9.75
12"	12EVS	2.15	10.50
12"	12FOS	3.16	11.50
12"	12HBS	4.64	13.00
12"	12JBS	6.80	14.50
4" x 6"	46AMS	.68	4.50
4" x 6"	46BMS	1.00	4.75
4" x 6"	46CMS	1.47	5.25
5" x 7"	57CMS	1.47	5.75
5" x 7"	57EVS	2.15	6.50
5" x 7"	57FOS	3.16	7.85
6" x 9"	69CVS	1.47	7.10
6" x 9"	69EVS	2.15	7.85
6" x 9"	69FOS	3.16	9.25



For Radio & Television



For Portables



For Auto Radios



Preferred For  
Original  
Equipment

Proven for  
Replacement!

Oxford Components, Inc., subsidiary of OXFORD ELECTRIC CORP., Chicago 6, Illinois

IN CANADA: ATLAS RADIO CORP., LTD., TORONTO

EXPORT: ROBURN AGENCIES, NEW YORK CITY

## EXTENDED RANGE SPEAKERS

SIZE	MODEL NO.	MAG. WT.	LIST PRICE
8"	HF8JB	6.8 oz.	\$16.50
10"	HF10JB	6.8	18.95
12"	HF12JB	6.8	22.50
12"	HF12LN	14.0	36.75
15"	HF15LN	14.7	44.95

## AUTO REPLACEMENT SPEAKERS

SIZE	MODEL NO.	MAG. WT. or FIELD	LIST PRICE
5"	5CMS	1.47 oz.	\$ 4.85
5 1/4"	52CMS	1.47	5.00
6"	6EVS	2.15	6.00
7"	7EVS	2.15	7.10
7"	7FOS	3.16	8.00
8"	82EVS	2.15	7.50
6" x 9"	69EVS	2.15	7.85
6" x 9"	69FOS	3.16	9.25

## PUBLIC ADDRESS SPEAKERS

SIZE	MODEL NO.	MAG. WT.	LIST PRICE
8"	8JBS-7	6.80 oz.	\$12.50
10"	10JBS-7	6.80	14.00
12"	12JBS-7	6.80	15.00

## INTERCOM SPEAKERS

SIZE	MODEL NO.	MAG. WT.	LIST PRICE
3"	3BMXS	1.00 oz.	\$ 4.75
4"	4BMXS	1.00	5.00
5"	5BMXS	1.00	5.25
8"	8EV-13	2.15	7.35

## SPACE-SAVER SPEAKER

SIZE	MODEL NO.	MAX. WT.	LIST PRICE
2 1/2" x 10"	2510CMS	1.47 oz.	\$10.00

## WEATHERPROOF and DRIVE-IN THEATRE SPEAKERS

SIZE	MODEL NO.	MAG. WT.	LIST PRICE
3"	3CMWS	1.47	\$ 4.85
4"	4AM6S	.68	3.92
4"	4CM13	1.47	5.81
5"	5BA3	.68	4.45
5"	5CM51	1.47	5.32
6"	6CMWS	1.47	6.15

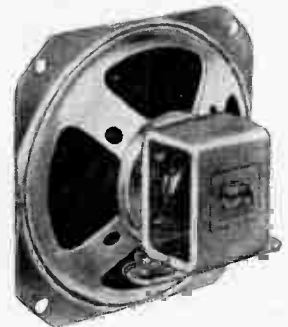
## PORTABLE RADIO SPEAKER

SIZE	MODEL NO.	MAG. WT.	LIST PRICE
2 3/4" Round	27ATS	.68	\$ 4.90

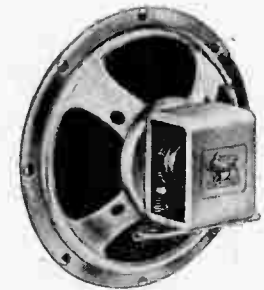
## "H" SERIES SPEAKERS

SIZE	MODEL NO.	MAG. WT.	LIST PRICE
2 1/2"	H2A	.68	\$ 3.10
3 1/2"	H3A	.68	3.10
4"	H4A	.68	3.10
5"	H5A	.68	3.25
4" x 6"	H46A	.68	3.55

REPLACEMENTS  
for any  
and  
every  
APPLICATION!



For Outdoor Applications



For Intercoms

There is an OXFORD SPEAKER to meet every requirement and need ... TV, FM, AM, Auto, Public Address, High Fidelity, and Outdoor Application ... from 2" to 15" units.

# OXFORD Speakers —

## HIGH FIDELITY — Tempo Series

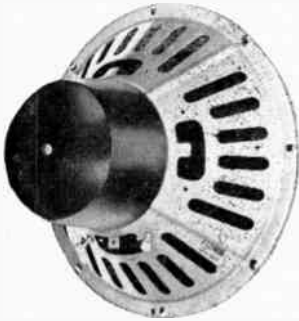
### COAXIAL SPEAKERS

MODEL C12J408	MODEL C15L608
Woofer size ..... 12"	Woofer size ..... 15"
Tweeter size ..... 3"	Tweeter size ..... 5"
Woofer magnet ..... 6.80 oz. Al. V	Woofer magnet ..... 14.70 oz.
Tweeter magnet ..... 1.47 oz. Al. V	Tweeter magnet ..... 1.47 oz.
Woofer voice coil dia. .... 1"	Woofer voice coil diam. .... 1 1/2"
Tweeter voice coil dia. .... 9/16"	Tweeter voice coil diam. .... 9/16"
Freq. response ..... 40-15,000 cps.	Frequency response ..... 30-15,000 cps.
Power handling cap. .... 15 watts	Power Handling Capacity ..... 25 watts
Input impedance ..... 8 ohms	Input impedance ..... 8 ohms
Network: capacitor type crossover at 4,000 cycles	Network: capacitor type crossover at 4,000 cycles
Standard pack ..... 4	Standard pack ..... 2
Suggested List Price ..... \$42.50	Suggested List Price ..... \$72.50



Coaxial for Hi-Fidelity

### FULL RANGE SPEAKERS



MODEL F8J408	MODEL F12J408	MODEL F12L608
Standard Pack ..... 12	Standard Pack ..... 4	Standard Pack ..... 4
Cone Diam. .... 8"	Cone Diam. .... 12"	Cone Diam. .... 12"
Magnet Wt.: 6.80 oz. Al. V	Magnet Wt.: 6.80 oz. Al. V	Magnet Wt.: 14.70 oz. Al. V
Voice Coil Diam. .... 1"	Voice Coil Diam. .... 1"	Voice Coil Diam. .... 1 1/2"
Voice Coil Impedance: ..... 8 ohms	Voice Coil Impedance: ..... 8 ohms	Voice Coil Impedance: ..... 8 ohms
Power Handling Capacity: ..... 15 Watts	Power Handling Capacity: ..... 15 Watts	Power Handling Capacity: ..... 25 Watts
Frequency Response: ..... 50-13,000 C.P.S.	Frequency Response: ..... 50-12,000 C.P.S.	Frequency Response: ..... 40-10,000 C.P.S.
Suggested List Price: \$24.95	Suggested List Price: \$32.50	Suggested List Price: \$49.25

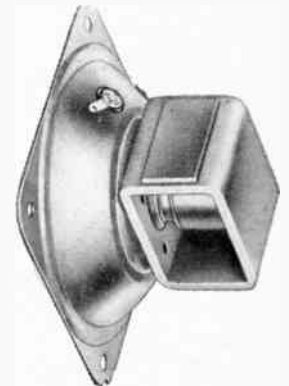
### EXTENDED RANGE SPEAKERS

MODEL HF8JB	MODEL HF10JB	MODEL HF12JB	MODEL HF12LN	MODEL HF15LN
Cone Diam. .... 8"	Cone Diam. .... 10"	Cone Diam. .... 12"	Cone Diam. .... 12"	Cone Diam. .... 15"
Magnet Wt.: 6.8 oz.	Magnet Wt.: 6.8 oz.	Magnet Wt.: 6.8 oz.	Magnet Wt.: 14 oz.	Magnet Wt.: 14 oz.
Voice Coil Diam.: 1"	Voice Coil Diam.: 1"	Voice Coil Diam.: 1"	Voice Coil Diam. .... 1 1/2"	Voice Coil Diam. .... 1 1/2"
Voice Coil Impedance: ..... 8 ohms	Voice Coil Impedance: ..... 8 ohms	Voice Coil Impedance: ..... 8 ohms	Voice Coil Impedance: ..... 8 ohms	Voice Coil Impedance: ..... 8 ohms
Power Handling Cap. .... 10 Watts	Power Handling Cap. .... 10 Watts	Power Handling Cap. .... 10 Watts	Power Handling Cap. .... 25 Watts	Power Handling Cap. .... 25 Watts
Freq. Response: ..... 70-10,000 C.P.S.	Freq. Response: ..... 70-10,000 C.P.S.	Freq. Response: ..... 70-10,000 C.P.S.	Freq. Response: ..... 70-10,000 C.P.S.	Freq. Response: ..... 70-10,000 C.P.S.
Sug. List Price: \$16.50	Sug. List Price: \$18.95	Sug. List Price: 22.50	Sug. List Price: \$36.75	Sug. List Price: \$44.95

### OXFORD TWEETERS

MODEL T3C208	MODEL T5C208
Magnet Wt.: 1.47 oz. Al. V	Magnet Wt.: 1.47 oz. Al. V
Voice Coil Diam. .... 9/16"	Voice Coil Diam. .... 9/16"
Voice Coil Impedance: ..... 8 ohms	Voice Coil Impedance: ..... 8 ohms
Frequency Response: ..... 18-15,000 C.P.S.	Frequency Response: ..... 11-15,000 C.P.S.
Min. Recom. Crossover Point ..... 2,000 Cycles	Min. Recom. Crossover Point ..... 1,500 Cycles
Suggested List Price: \$7.25	Suggested List Price: \$8.50

Recommended as woofers with these tweeters are F8J408 and F12L608.



Oxford Components, Inc., subsidiary of OXFORD ELECTRIC CORP., Chicago 6, Illinois

IN CANADA: ATLAS RADIO CORP., LTD., TORONTO

EXPORT: ROBURN AGENCIES, NEW YORK CITY

# OXFORD

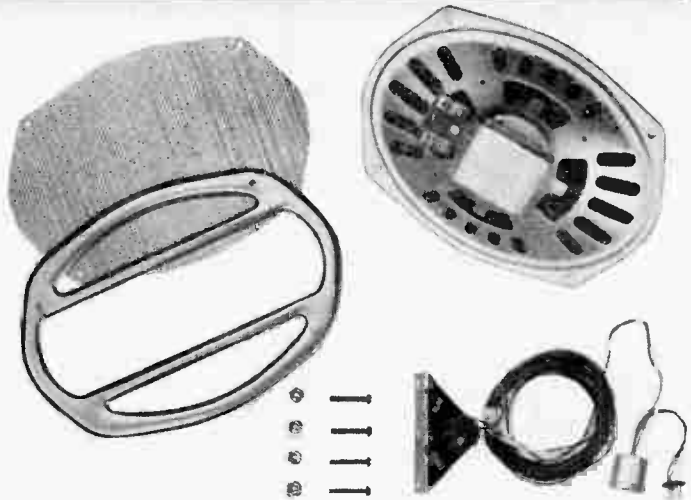
# REAR DECK SPEAKER KITS and ACCESSORIES

## Ready for Installation!

Each kit in this line includes a wiring harness which will simplify installation.

In most cases there is no need of splicing wires or soldering, since the connections are either of a plug in or snap in type.

The speakers included in these kits are equipped with spring type terminals for ease in wiring. In all cases detailed instructions are included.



### COMPLETE KITS CUSTOM LINE

PART NO.	FOR USE IN		SUGG. LIST	Same in TEMPO HI-FI* SUGG. LIST	
RM57A	Chrysler DeSoto Dodge Plymouth All Mopar Manual Tuning Sets	1953-1954 1951-1954 1949-1954 1949-1954 1955-1956	Chrome Grey	\$12.35 11.90	T \$13.35 T 12.90
RM57B	All Chrysler, DeSoto Dodge and Plymouth Push Button Sets Also Automatic Radio Co. Current Replacement Models	1955-1956	Chrome Grey	11.70 11.25	T 12.70 T 12.25
RM57C	Ford Mercury Lincoln	1946-1957 1946-1949 1946-1949	Chrome Grey	13.25 10.85	T 14.25 T 13.80
RM57D	Lincoln Mercury	1950-1951 1950-1956	Chrome Grey	11.30 10.85	T 12.30 T 11.85
RM69A	Buick Oldsmobile Pontiac Packard Chevrolet Chevrolet	1946-1956 1949-1952 1949-1952 1951-1954 1949-1952 1955-1956	Chrome Grey	13.20 12.75	T 14.20 T 13.75
RM69B	Chevrolet with Delco Sets	1953-1954	Chrome Grey	13.80 13.35	T 14.80 T 14.35
RM69C	Hudson Pontiac Chevrolet with Motorola Radio Set Oldsmobile	1948-1954 1953-1956 1953-1954 1953-1956	Chrome Grey	13.25 12.80	T 14.25 T 13.80

\* Use same Part Numbers when ordering except insert "T" before number (Example: TRM69A Chrome). Specify color when ordering.

COMPLETE KITS		SUPER DELUXE 2.15 OZ. MAGNET		DELUXE 1.47 OZ. MAGNET		ECONOMY .68 OZ. MAGNET	
		PART NO.	SUGG. LIST	PART NO.	SUGG. LIST	PART NO.	SUGG. LIST
5 x 7 (with 3 position switch)	Chrome	E575C	\$11.15	C575C	\$10.55	A575C	\$ 9.25
	Grey	E575G	10.60	C575G	10.00	A575G	8.70
	Chrome	*E575AC	12.00	*C575AC	11.35	*A575AC	10.05
	Grey	*E575AG	11.45	*C575AG	10.80	*A575AG	9.50
6 x 9 (with 3 position switch)	Chrome	E695C	12.15	C695C	11.50	A695C	10.20
	Grey	E695G	11.65	C695G	11.05	A695G	9.70
5 x 7 (with Fader control)	Chrome	E57FC	12.20	C57FC	11.60	A57FC	10.35
	Grey	E57FG	11.65	C57FG	11.05	A57FG	9.80
	Chrome	*E57FAC	13.00	*C57FAC	12.40	*A57FAC	11.10
	Grey	*E57FAG	12.45	*C57FAG	11.85	*A57FAG	10.60
6 x 9 (with Fader control)	Chrome	E69FC	13.15	C69FC	12.55	A69FC	10.60
	Grey	E69FG	12.60	C69FG	12.00	A69FG	10.10

\* These kits contain a 6 x 9 grille and an adapter plate for utilizing the 5 x 7 speaker. All kits contain complete materials and instructions. Deluxe and super-deluxe kits have spring terminals. All speakers have Alnico V Magnets. One year warranty on defective parts or workmanship.



**OXFORD**

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# OXFORD

## REAR DECK SPEAKER KITS and ACCESSORIES

### HI-FI SERIES TEMPO



- ALL KITS CONTAIN COMPLETE MATERIAL AND INSTRUCTIONS
- ALL SPEAKERS HAVE ALNICO V MAGNETS
- ALL SPEAKERS IN THIS SERIES HAVE DUAL CONES FOR HIGH FIDELITY REPRODUCTION
- SPECIFY COLOR WHEN ORDERING
- ONE YEAR WARRANTY ON DEFECTIVE PARTS OR WORKMANSHIP

COMPLETE KITS	SUPER DELUXE 2.15 OZ. MAGNET		DELUXE 1.47 OZ. MAGNET		ECONOMY .68 OZ. MAGNET	
	PART NO.	SUGG. LIST	PART NO.	SUGG. LIST	PART NO.	SUGG. LIST
5 x 7 (with 3 position switch)	TE575C	\$12.75	TC575C	\$11.55	TA575C	\$10.10
	TE575G	11.60	TC575G	11.00	TA575G	9.55
	*TE575AC	13.00	*TC575AC	12.35	*TA575AC	10.90
	*TE575AG	12.45	*TC575AG	11.80	*TA575AG	10.35
6 x 9 (with 3 position switch)	TE695C	13.15	TC695C	12.50	TA695C	11.05
	TE695G	12.65	TC695G	12.05	TA695G	10.55
5 x 7 (with Fader control)	TE57FC	13.20	TC57FC	12.60	TA57FC	11.20
	TE57FG	12.65	TC57FG	12.05	TA57FG	10.65
	*TE57FAC	14.00	*TC57FAC	13.40	*TA57FAC	11.95
	*TE57FAG	13.45	*TC57FAG	12.85	*TA57FAG	11.45
6 x 9 (with Fader control)	TE69FC	14.15	TC69FC	13.55	TA69FC	11.45
	TE69FG	13.60	TC69FG	13.00	TA69FG	10.95

\*THESE KITS CONTAIN A 6 x 9 GRILLE AND AN ADAPTER PLATE FOR UTILIZING THE 5 x 7 SPEAKER

ACCESSORIES	Part No.	Sugg. List	
5 x 7 Grille, Screen and Mtg. Hdwe.	G57C	\$2.05	Chrome
	G57G	1.50	Grey
6 x 9 Grille, Screen and Mtg. Hdwe.	G69C	2.20	Chrome
	G69G	1.65	Grey
3 Position Switch, Wired	W15C	2.45	
3 Position Switch, Not Wired	W015C	1.70	
Fader Control, Wired	W15M	3.40	
Fader Control, Not Wired	W015M	2.70	

COMPLETE KITS LESS SPEAKER	Part No.	Sugg. List	
5 x 7 (with 3 position switch)	575C	\$4.80	Chrome
	575G	4.30	Grey
	*575AC	5.65	Chrome
	*575AG	5.10	Grey
6 x 9 (with 3 position switch)	695C	5.15	Chrome
	695G	4.60	Grey
5 x 7 (with Fader control)	57FC	5.85	Chrome
	57FG	5.30	Grey
	*57FAC	6.65	Chrome
	*57FAG	6.10	Grey
6 x 9 (with Fader control)	69FC	6.10	Chrome
	69FG	5.60	Grey

SPECIFY COLOR WHEN ORDERING

\* These kits contain a 6 x 9 Grille, and an Adapter Plate . . . etc. as printed on asterisk above.



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IN CANADA: ATLAS RADIO CORP., LTD., TORONTO

EXPORT: ROBURN AGENCIES, NEW YORK CITY

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The MASTER — 22nd Edition

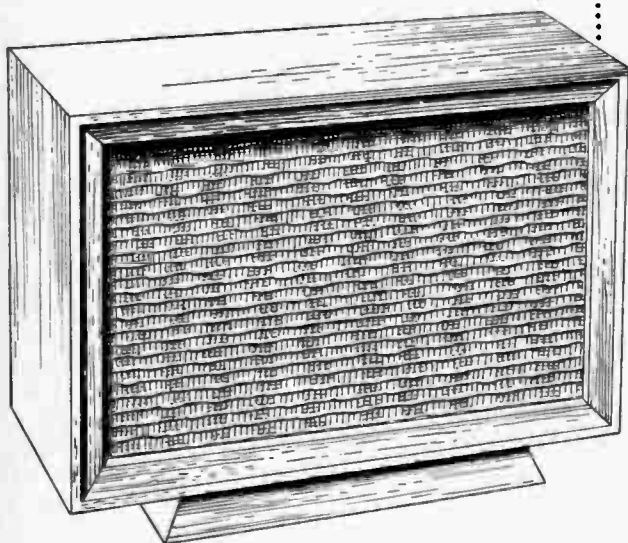
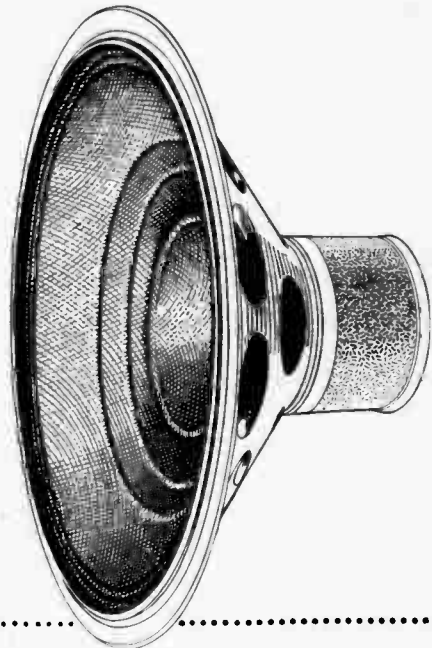
Page C-135

# You can have the finest sound reproduction throughout all frequency ranges without distortion

You will hear a remarkable difference in the clarity of Norelco \*Full Response Speakers. In a single speaker, twin-cones reproduce low frequencies, middle range, as well as the higher frequencies extending beyond the audible range—without distortion.

## WHY ARE NORELCO FRS SPEAKERS SO EXCEPTIONAL?

They have incorporated a number of technical refinements which are evident the moment you listen. The air gap has been made long so that the coil is completely enclosed in an even magnetic field at all times. A copper ring has been fitted into the deep air gap to keep the voice coil impedance constant over the whole frequency range; this avoids incorrect matching. High flux densities are obtained through the use of "Ticonal" magnet steel.



*Norelco FRS Improved Bass Reflex Enclosures are available in three sizes; FRS Enclosures I, II and III. Priced from \$33.75 to \$119.95.*

## *Norelco F.R.S.*

*speakers are available  
5", 8" or 12" sizes in standard impedances.  
Priced from \$6.75 to \$59.98  
Blue prints are available for the  
do-it-yourself enclosure builder.*

Norelco speaker-matched enclosures are scientifically designed acoustical boxes which enhance the exceptional tone qualities of FRS speakers; bringing out their true performance values.

Norelco FRS Speaker Enclosures are available in three sizes to match the characteristics of the speaker in use. Supplied in either mahogany or blond, these enclosures incorporate a removable base permitting the enclosures to be placed horizontally or vertically to suit any room arrangement or decor.



ADD TO ...and improve any sound system with **Norelco**<sup>®</sup>

**\*FULL RESPONSE SPEAKERS**

Write today to Dept. \_\_\_\_\_ for brochures and prices of these unique speakers.  
**NORTH AMERICAN PHILIPS CO., INC.,**

**New York 17, N. Y.**



# QUAM *Adjust-a-Cone*® SPEAKERS

These speakers are engineered and manufactured solely for replacement, public address, high fidelity and outdoor applications. RETMA standard dimensions. Fully dust-proofed. Baked aluminum enamel finish. RETMA service guarantee. QUAM UNIVERSAL MOUNTING BRACKET comes with all 3 1/2" to 6 1/2" speakers and may be attached to any two of the FOUR threaded mounting holes in the U-shaped pot. Any Quam speaker can be supplied with voice coil impedances other than those listed for an additional 25c list.

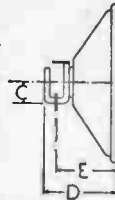


Fig. A



Fig. B



Fig. C



Fig. D

## QUAM ADJUST-A-CONE® SUSPENSION

This patented QUAM feature is your added assurance of trouble-free operation. In other speakers the spider is cemented in place with no means of accurate adjustment. The Adjust-a-Cone suspension permits precision centering of the voice coil as a final production operation.

## QUAM U-SHAPED COIL POT

Another QUAM exclusive, this patented U-shaped coil pot construction, used throughout the QUAM replacement line, provides an unbroken flux path of sufficient cross-section to carry the full energy of the magnetic field.

ED — Electro Dynamic Speakers

## REPLACEMENT SPEAKERS

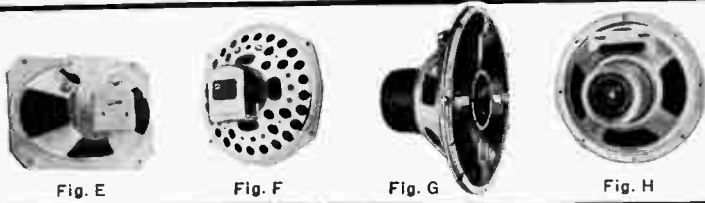
Voice coil impedance 3.2 ohms ± 10%

PM — Permanent Magnet Speakers

TYPE	CAT. No.	SIZE	FIGURE	FIELD	POWER HANDLING WATTS	DIMENSIONS IN INCHES			SHIP. WT., LBS.	LIST PRICE
						C	D	E		
PM	25A07*	2 1/2"	A	.65 oz. Alnico V	2	11/16	1-1/4	7/8	1/2	\$ 4.00
ED	3E45*	3 1/2"	A	450 Ohms	2.5	1-1/4	1-51/64	1-1/4	3/4	5.25
PM	3A07*	3 1/2"	A	.68 oz. Alnico V	2.5	3/4	1-33/64	1-7/64	1/2	4.00
ED	4E45‡	4"	A	450 Ohms	3	1-1/4	2	1-7/16	1	5.25
	4E10	4"	A	1000 Ohms	3	1-1/4	2	1-7/16	1	5.25
	4E62‡	4"	A	55-65 Ohms	3	1-1/4	2-5/16	1-5/8	1	5.25
PM	4A06*‡	4"	A	.58 oz. Alnico V	2.5	11/16	1-23/32	—	1/2	2.95
	4A07*	4"	A	.68 oz. Alnico V	3	3/4	1-23/32	1-5/16	1/2	4.00
	4A07R*★	4"	B	.68 oz. Alnico V	3	3/4	1-23/32	1-5/16	1/2	4.00
	4A1	4"	A	1.0 oz. Alnico V	3	1	2-3/16	1-9/16	3/4	4.25
	4A1R★	4"	B	1.0 oz. Alnico V	3	1	2-3/16	1-9/16	3/4	4.25
4A15	4"	A	1.47 oz. Alnico V	3	1	2-3/16	1-9/16	3/4	4.70	
ED	4E45‡	4" x 6"	E	450 Ohms	3.5	1-5/64	2-15/64	1-5/8	1-1/4	6.25
	4E62‡	4" x 6"	E	55-65 Ohms	3.5	1-5/64	2-15/64	1-5/8	1-1/4	6.25
	4E90‡	4" x 6"	E	85-95 Ohms	3.5	1-5/64	2-15/64	1-5/8	1-1/4	6.25
PM	46A07*	4" x 6"	E	.68 oz. Alnico V	3.5	3/4	1-15/16	1-27/64	3/4	4.45
	46A1	4" x 6"	E	1.0 oz. Alnico V	3.5	1	2-1/4	1-9/16	1	4.75
	46A15	4" x 6"	E	1.47 oz. Alnico V	3.5	1	2-1/4	1-9/16	1	5.15
ED	5E10	5"	C	6 Volt	3.5	1-1/4	2-1/8	1-19/32	1-1/4	5.50
	5E45‡	5"	C	450 Ohms	3.5	1-1/4	2-1/8	1-19/32	1	5.50
	5E10	5"	C	1000 Ohms	3.5	1-1/4	2-1/8	1-19/32	1	5.50
	5E62‡	5"	C	55-65 Ohms	3.5	1-1/4	2-7/16	1-19/32	1-1/4	5.50
	5E90‡	5"	C	85-95 Ohms	3.5	1-1/4	2-7/16	1-19/32	1-1/4	5.50
PM	5A07*	5"	C	.68 oz. Alnico V	3.5	3/4	1-7/8	1-7/16	3/4	4.20
	5A07R*★	5"	B	.68 oz. Alnico V	3.5	3/4	1-7/8	1-7/16	3/4	4.20
	5A1	5"	C	1.0 oz. Alnico V	3.5	1	2-5/16	1-11/16	1	4.45
	5A1R★	5"	B	1.0 oz. Alnico V	3.5	1	2-5/16	1-11/16	1	4.45
	5A15	5"	C	1.47 oz. Alnico V	3.5	1	2-5/16	1-11/16	1	4.85
5A15R★	5"	B	1.47 oz. Alnico V	3.5	1	2-5/16	1-11/16	1	4.85	
ED	52E50‡	5 1/4"	C	45-55 Ohms	4	1-1/4	2-17/32	1-27/32	1	6.00
	52E90‡	5 1/4"	C	85-95 Ohms	4	1-1/4	2-17/32	1-27/32	1	6.00
PM	52A1	5 1/4"	C	1.0 oz. Alnico V	4	1	2-25/64	1-25/32	1	4.65
	52A15Q‡	5 1/4"	A	1.0 oz. Alnico V	4	1	2-25/64	1-25/32	1	4.65
	52A21	5 1/4"	C	2.15 oz. Alnico V	4	1-1/8	2-21/32	1-25/32	1-1/4	5.70
	52A215Q‡	5 1/4"	A	2.15 oz. Alnico V	4	1-1/8	2-21/32	1-25/32	1-1/4	5.70
ED	57E45‡	5" x 7"	D	450 Ohms	5	1-1/4	2-13/16	2-9/64	1-1/2	7.25
	57E62‡	5" x 7"	D	55-65 Ohms	5	1-1/4	2-13/16	2-9/64	1-1/2	7.25
PM	57A1	5" x 7"	D	1.0 oz. Alnico V	5	1	2-11/16	2-5/64	1	5.40
	57A15	5" x 7"	D	1.47 oz. Alnico V	5	1	2-11/16	2-5/64	1	5.80
	57A21	5" x 7"	D	2.15 oz. Alnico V	5	1-1/8	2-61/64	2-13/64	1-1/4	6.45
ED	6E10	6 1/2"	C	6 Volt	5	1-1/4	2-23/32	2-1/32	1-1/2	6.50
	6E45‡	6 1/2"	C	450 Ohms	5	1-1/4	2-23/32	2-1/32	1-1/2	6.50
	6E10	6 1/2"	C	1000 Ohms	5	1-1/4	2-23/32	2-1/32	1-1/2	6.50
	6E18	6 1/2"	C	1800 Ohms	5	1-1/4	2-23/32	2-1/32	1-1/2	6.50
	6E62‡	6 1/2"	C	55-65 Ohms	5	1-1/4	2-23/32	2-1/32	1-1/2	6.50
	6E90‡	6 1/2"	C	85-95 Ohms	5	1-1/4	2-23/32	2-1/32	1-1/2	6.50
PM	6A1	6 1/2"	C	1.0 oz. Alnico V	5	1	2-5/8	2	1	4.80
	6A1R★	6 1/2"	B	1.0 oz. Alnico V	5	1	2-5/8	2	1	4.80
	6A15	6 1/2"	C	1.47 oz. Alnico V	5	1	2-5/8	2	1	5.20
	6A15R★	6 1/2"	B	1.47 oz. Alnico V	5	1	2-5/8	2	1	5.20
	6A21	6 1/2"	C	2.15 oz. Alnico V	5	1-1/8	2-7/8	2-1/8	1-1/4	5.85
	6A31	6 1/2"	C	3.16 oz. Alnico V	6	1-3/8	3-11/64	2-9/32	2	6.75
ED	69E10	6" x 9"	D	6 Volt	8	1-31/64	3-1/2	—	2	7.50
	69E10	6" x 9"	D	1000 Ohms	8	1-31/64	3-1/2	—	2	7.50
PM	69A2*	6" x 9"	D	1.4 oz. Alnico V	8	7/8	2-15/16	—	1-1/2	7.50
	69A3	6" x 9"	D	3.2 oz. Alnico V	10	1-1/4	3-5/16	—	2	8.95
ED	7E10	7"	F	6 Volt	7	1-9/32	2-3/4	—	2	7.50
	7E10	7"	F	6 Volt	7	1-9/32	2-3/4	—	2	7.50
PM	7A21*	7"	F	1.4 oz. Alnico V	6	7/8	2-31/32	—	1-1/4	7.25
	7A31	7"	F	3.16 oz. Alnico V	9	1-1/4	3-1/32	—	1-3/4	8.50

‡ TV speaker. † Equipped with hum bucking coils. \* Very shallow construction. ★ Round basket † Rotated pot.  
 § Square basket • 2 1/2", 3 1/2" and 4A06 without Adjust-a-Cone suspension. § No mounting bracket or threaded holes in pot.

# QUAM *Adjust-a-Cone*® SPEAKERS



QUAM speakers have been produced under the same management since 1923 and are used by leading set and sound manufacturers throughout the world. Only QUAM speakers use the Adjust-a-Cone feature and the U shaped coil pot. Fully protected by patents—their use insures customer satisfaction.

## Replacement Speakers (Cont'd)

Voice coil impedance 3.2 ohms ± 10%

TYPE	CAT. No.	SIZE	FIGURE	FIELD	POWER HANDLING WATTS	DIMENSIONS IN INCHES			SHIP. WT., LBS.	LIST PRICE
						C	D	E		
ED	8EV6	8"	C	6 Volt	7	1-1/4	3-9/32	—	1-3/4	7.50
	8E10	8"	C	1000 Ohms	7	1-1/4	3-9/32	—	1-3/4	7.50
	8E18	8"	C	1800 Ohms	7	1-1/4	3-9/32	—	1-3/4	7.50
	8E50‡	8"	C	45-55 Ohms	7	1-1/4	3-9/32	—	1-3/4	7.50
	8E90‡	8"	C	85-95 Ohms	7	1-1/4	3-9/32	—	1-3/4	7.50
PM	8A21	8"	C	2.15 oz. Alnico V	7	1-1/8	3-13/32	—	1-1/2	7.20
	8A31	8"	C	3.16 oz. Alnico V	9	1-3/8	3-21/32	—	2-1/4	8.50
ED	10E60‡	10"	B	600 Ohms	10	1-3/4	5-1/16	—	4	12.00
	10E10‡	10"	B	1000 Ohms	10	1-3/4	5-1/16	—	4	12.00
	10E65‡	10"	B	60-70 Ohms	10	1-3/4	5-1/16	—	4	12.00
	10E90‡	10"	B	85-95 Ohms	10	1-3/4	5-1/16	—	4	12.00
PM	10A31	10"	B	3.16 oz. Alnico V	9	1-3/8	4-1/2	—	2-3/4	10.50
	10A4A	10"	B	4.64 oz. Alnico V	10	1-3/8	4-1/2	—	3-1/4	11.70
	10A6A	10"	B	6.8 oz. Alnico V	12	1-7/16	4-5/8	—	3-1/2	13.60
ED	12E60‡	12"	B	600 Ohms	12	1-3/4	5-5/8	—	5	14.00
	12E10‡	12"	B	1000 Ohms	12	1-3/4	5-5/8	—	5	14.00
	12E15‡	12"	B	1500 Ohms	12	1-3/4	5-5/8	—	5	14.00
	12E90‡	12"	B	85-95 Ohms	12	1-3/4	5-5/8	—	5	14.00
PM	12A31	12"	B	3.16 oz. Alnico V	10	1-1/4	4-19/32	—	3-3/4	11.35
	12A4A	12"	B	4.64 oz. Alnico V	12	1-3/8	5-1/8	—	4	12.65
	12A6A	12"	B	6.8 oz. Alnico V	14	1-7/16	5-1/4	—	4-1/2	14.50

## OUTDOOR SPEAKERS

Voice coil impedance 3.2 ohms ± 10%

These Quam speakers have the new exclusive Humi-Gard Cone of plastic impregnated synthetic fiber fabric that outlasts ordinary moisture-proofed cones 3 to 1, yet has the response of an untreated paper cone. Resists sand and dirt abrasion. Air gap surfaces cadmium plated and enameled. No transformer mounting bracket or threaded holes in pot on speakers listed below. Quantity qua-

tations on request. All Quam speakers are available weather-proofed for an additional 70c list. When ordering weather-proofed speakers use part numbers appearing in this catalog and add suffix "OT" to part number. (Humi-Gard Cone available only on 3 1/2", 4", 5", and 6 1/2" speakers.)

PM	3A07 OT*	3 1/2"	A	.68 oz. Alnico V	2.5	3/4	1-19/32	1-3/16	1/2	\$ 4.00
	4A1 OT	4"	A	1.0 oz. Alnico V	3	1	2-3/16	1-9/16	3/4	4.25
	5A15 OT	5"	C	1.47 oz. Alnico V	3.5	1	2-5/16	1-11/16	1	4.85
	6A15 OT	6"	C	1.47 oz. Alnico V	5	1	2-5/8	2	1	5.20

## PUBLIC ADDRESS SPEAKERS

Voice coil impedance 6-8 ohms

PM	8A21PA	8"	C	2.15 oz. Alnico V	8	1-3/8	3-9/16	—	1-1/2	\$ 8.20
	8A31PA	8"	C	3.16 oz. Alnico V	10	1-3/8	3-9/16	—	2-1/4	9.20
	8A4PA	8"	B	4.64 oz. Alnico V	12	1-3/8	3-3/4	—	2-3/4	10.20
	8A6PA	8"	B	6.8 oz. Alnico V	12	1-7/16	3-7/8	—	3-1/4	12.10
PM	10A31PA	10"	B	3.16 oz. Alnico V	12	1-3/8	4-13/32	—	2-3/4	10.75
	10A4PA	10"	B	4.64 oz. Alnico V	14	1-3/8	4-1/2	—	3-1/4	11.70
	10A6PA	10"	B	6.8 oz. Alnico V	14	1-7/16	4-5/8	—	3-1/2	13.60
	10A10PA	10"	B	10 oz. Alnico V	20	1-3/8	4-21/64	—	3-1/2	18.00
PM	12A31PA	12"	B	3.16 oz. Alnico V	12	1-3/8	5	—	3-3/4	11.60
	12A4PA	12"	B	4.64 oz. Alnico V	15	1-3/8	5-1/8	—	4	12.65
	12A6PA	12"	B	6.8 oz. Alnico V	15	1-7/16	5-1/4	—	4-1/2	14.50
	12A10PA	12"	B	10 oz. Alnico V	25	1-3/8	4-15/16	—	4-3/4	19.00

## INTERCOM SPEAKERS

Voice coil impedance 45 ohms ± 10%

Speakers with voice coil impedances other than those listed are supplied at an increase of 25c list. Those cataloged are most fre-

quently used but any other model can be supplied with special voice coil impedance.

PM	3A07Z45*	3 1/2"	A	.68 oz. Alnico V	2.5	3/4	1-19/32	1-3/16	1/2	\$ 4.25
	4A07Z45*	4"	A	.68 oz. Alnico V	3.0	3/4	1-23/32	1-5/16	1/2	4.25
	4A1Z45	4"	A	1.0 oz. Alnico V	3.0	1	2-3/16	1-9/16	3/4	4.50
	5A07Z45*	5"	C	.68 oz. Alnico V	3.5	3/4	1-7/8	1-7/16	3/4	4.45
	5A1Z45	5"	C	1.0 oz. Alnico V	3.5	1	2-5/16	1-11/16	1	4.70

## HIGH FIDELITY SPEAKERS

TYPE	CAT. No.	SIZE	FIGURE	SPEAKER TYPE & SIZE	FREQUENCY RESPONSE-CPS	Power Handlg. Watts	V.C. Impedance	SHIPPING WEIGHT LBS.	LIST PRICE
PM	15A10CO	15"	G	Coaxial, 2000cps. Xover	25-15,000	20	6-8	8-1/2	\$47.50
	12A6CO	12"	G	Coaxial, 2000cps. Xover	50-15,000	14	6-8	6-1/2	30.00
	12A10X	12"	H	Extended range	50-12,000	15	6-8	4-3/4	26.00
	10A10X	10"	H	Extended range	50-12,000	12	6-8	3-3/4	24.00
	8A10X	8"	H	Extended range	60-12,000	10	6-8	3-1/4	18.60
	15A10L	15"	H	Low frequency woofer	25-5,000	10	6-8	7	35.00
	12A10L	12"	H	Low frequency woofer	50-5,000	10	6-8	4-3/4	26.00
	5A15T	3"	B	High frequency tweeter	2,000-15,000	10	14	1	6.50
	3A15T	3"	A	High frequency tweeter	2,000-15,000	10	14	3/4	5.75

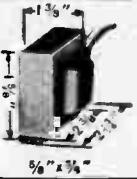
\* TV speaker. † Equipped with hum bucking coils. \* Very shallow construction. ★ Round basket † Rotated pot. ‡ Square basket § No mounting bracket or threaded holes in pot. • 2 1/2", 3 1/2" and 4A06 without Adjust-a-Cone suspension. § No mounting bracket or threaded holes in pot.

# QUAM TRU-MATCH OUTPUT TRANSFORMERS

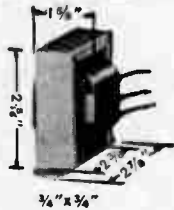
Designed by speaker engineers to give a true impedance match for a wide range undistorted sound. Specifications of each unit include a full stack of best electrical steel, the maximum amount of copper, highest quality insulation and adhesives. Underwriters approved lead wire and complete vacuum impregnation. Individually packed in attractive boxes using the widely known QUAM descriptive part numbering system.



Catalog Number	Primary Impedance (Ohms)	Secondary Load (Ohms)	Core Size (Inches)	Power Rating (Watts)	Primary M.A. (Max.)	Shipping Weight (Oz.)	List Price
TA20	2000	3.2	1/2 x 1/2	5	60	6	\$1.50
TA50	5000	3.2	1/2 x 1/2	5	40	6	1.75
TA75	7500	3.2	1/2 x 1/2	5	35	6	1.75
TA100	10000	3.2	1/2 x 1/2	5	30	6	1.75
TA100T	10000 CT <sub>1</sub>	3.2	1/2 x 1/2	5	30	6	2.00
TA160	16000	3.2	1/2 x 1/2	5	10	6	1.75
TA250	25000	3.2	1/2 x 1/2	5	10	6	1.75
TAL	LINE	3.2	1/2 x 1/2	5	—	6	2.50



TC20	2000	3.2	3/4 x 3/4	8	60	10	\$2.25
TC50	5000	3.2	3/4 x 3/4	8	50	10	2.25
TC70	7000	3.2	3/4 x 3/4	8	40	10	2.25
TC85	8500	3.2	3/4 x 3/4	8	40	10	2.25
TC100T	10000 CT <sub>1</sub>	3.2	3/4 x 3/4	8	40	10	2.50
TC140T	14000 CT <sub>1</sub>	3.2	3/4 x 3/4	8	10	10	2.50
TC160	16000	3.2	3/4 x 3/4	8	15	10	2.25
TC250	25000	3.2	3/4 x 3/4	8	40	10	2.25
TCL	LINE	6-8	3/4 x 3/4	8	—	10	3.00
TCU	UNIV.	3.2	3/4 x 3/4	8	50	10	3.50



TD25	2500	3.2	3/4 x 3/4	12	70	17	\$3.00
TD50T	5000 CT <sub>1</sub>	3.2	3/4 x 3/4	18	150	17	3.25
TD70	7000	3.2	3/4 x 3/4	12	50	17	3.00
TD100T	10000 CT <sub>1</sub>	3.2	3/4 x 3/4	12	50	17	3.25
TD140T	14000 CT <sub>1</sub>	3.2	3/4 x 3/4	12	50	17	3.25
TDL	LINE	6-8	3/4 x 3/4	15	—	17	3.75
TDU	UNIV.	5.2	3/4 x 3/4	12	50	17	4.00

1. TA100T, TC100T, TC110T, TD50T, TD100T and TD140T have center tapped primaries for push-pull output use. Plate to plate impedance is given.

2. TAL, TCL & TDL are for speaker to line use

and have primary taps at 500, 1000, 1500 & 2000 ohms.

3. TCU & TDU are universal type output transformers and provide matching impedances of 2500, 4000, 7500, 10000 & 16000 ohms, also 7500 ohm CT, 10000 ohm CT & 16000 ohm CT.

## UNIVERSAL FOCALIZER UNIT QF-4



fits all picture tubes regardless of size or anode voltage

Now all you need is one focalizer unit to cover all of the sets in use today.

Designed with new ceramic magnets and extended focusing range, the QF-4 provides maximum resolution and minimum spot size.

A "quick-setting" picture centering lock and a blank aluminum mounting bracket permit rapid adjustment and simple installation.

Dimensions: diameter, 3 3/8"; depth, at minimum flux, 1 1/8", at maximum flux, 1 3/8". Bracket measures 3 1/4" x 5 1/2". Shipping weight 1 pound.

QF-4 ..... LIST PRICE \$4.25

## QUAM ION TRAPS



Quam ion traps can be used on any picture tube where a trap was used as original equipment. IT1 and IT2 Traps are equipped with wing nut and binding screw. IT3 and IT4 are spring type. Individually packed with instruction sheet.

IT 1—Double field for tubes up to 10" in diameter. Field strength of 38 Gauss. Generally used with straight gun tubes. Weight 2 oz. .... List Price \$1.50

IT 2—Double field for tubes from 10" in diameter up. Field strength of 46 Gauss. Generally used with straight gun tubes. Wt. 2 oz. .... List Price \$1.50

IT 3—Single field for tubes requiring field strength of 35 to 45 gauss. Generally used with tubes having a bent gun. Weight 1 1/2 oz. .... List Price \$1.00

IT 4—Single field for tubes requiring field strength of 45 to 55 gauss. Generally used with tubes having a bent gun. Weight 1 1/2 oz. .... List Price \$1.00

## QUAM REAR SEAT AUTO SPEAKERS



Catalogue #AS-1 6 1/2" PM

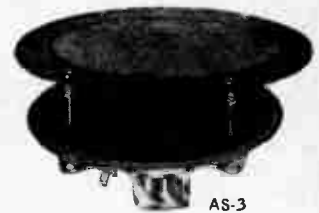
Kit includes Quam 6 1/2" PM Adjust-A-Cone speaker with capacity to handle full output of any single-ended auto set; 1.47 oz. Alnico V Magnet; 3/4" voice coil; rugged fader control for dash mounting; ample cable for any installation. Flocked grill screen, baffleplate, all necessary hardware, and installation instructions. Shipping weight 2 lbs.

List Price \$9.95

Catalogue #AS-3 5"x7" PM

Kit includes 5" x 7" PM Adjust-A-Cone speaker with capacity to handle full output of any single-ended auto set; 1.47 oz. Alnico V Magnet; 3/4" voice coil; rugged fader control for dash mounting; sufficient cable for any installation. Flocked grill screen, baffle plate, all necessary hardware and installation instructions. Shipping weight 2 1/4 lbs.

List Price \$11.95



AS-3



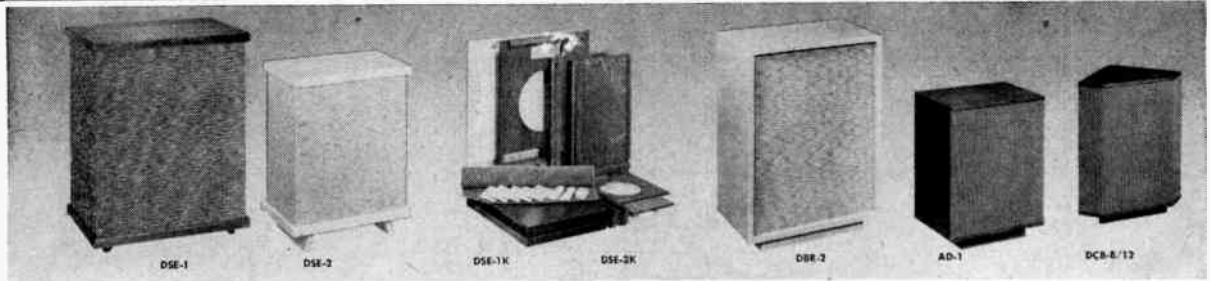
Catalogue #AS-2 6"x9" PM

Deluxe model: Kit includes Quam heavy duty 6" x 9" PM Adjust-A-Cone speaker with ample capacity to handle full output of the most powerful auto set; 2.15 oz. Alnico V Magnet; rugged fader control for dash mounting; sufficient cable for any installation; flocked grill screen, baffle plate, sponge rubber gasket for easy and trouble-free installation, all necessary hardware, and installation instructions. Shipping weight 3 1/2 lbs.

List Price \$13.95

Chrome plated grille for AS-2

List Price \$2.15



### The Californian . . . DE LUXE HI-FI CABINETS

Panelite top is most durable wood-grained surface known. Solid mahogany wood trim (dark or bleached). Acoustone plastic grille. New Jensen Bass Ultraflex† principle. Fiberglass acoustic padding.

**DSE-1**—The Californian (Factory-built). Takes 15" or 12" woofer and tweeter or coax speaker. Size 24" W. x 29" H. x 15" D. Ship. wt. 43 lbs. Blonde or Mahogany, same price . . . Net \$54.50

**DSE-2**—The Californian Jr. (Factory-built) Takes 12" or 8" woofer and tweeter or coax speaker. Size 19 1/2" W. x 23 3/8" H. x 13 1/2" D. Ship. wt. 30 lbs. Blonde or Mahogany, Net \$44.50

The Californian cabinets described at left are also available in pre-finished kits. All parts are pre-cut. Entire top and bottom sections finished.

**DSE-1K**—The Californian (Kit). Will take 15" or 12" woofer and tweeter or coax speaker. Size 24" W. x 29" H. x 15" D. Ship. wt. 41 lbs. Blonde or Mahogany, same price . . . Net \$40.50

**DSE-2K**—The Californian Jr. (Kit). Will take 12" or 8" woofer and tweeter or coax speaker. Size 19 1/2" W. x 23 3/8" H. x 13 1/2" D. Ship. wt. 28 lbs. Blonde or Mahogany, same price . . . Net \$32.50

### MODERATELY PRICED SPEAKER ENCLOSURES

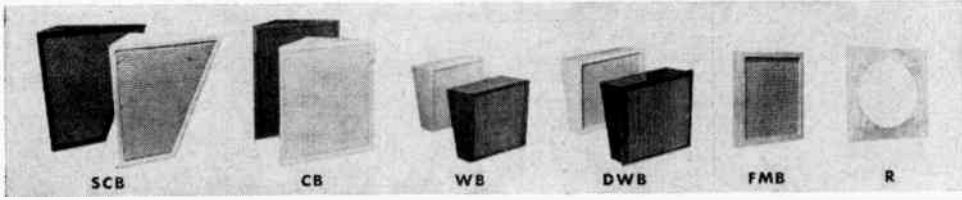
All three units below use the Bass Ultraflex† principle to extend low end of responsive curve. Fibreglas covering, plastic grille. Tweeter port cover, all hardware and speaker reducing ring.

**AD-1**—Blonde or Mahogany . . . Net \$24.95

A full-size hi-fidelity cabinet at a very moderate price. Can be used upright as shown or on side (Base is shipped unattached). Takes either 15" or 12" woofer and separate tweeter or a coax speaker. Size 23" W. x 30" H. x 15" D. Ship wt. 43 lbs. DBR-2—Blonde or Mahogany . . . Net \$36.50

Equal in fine tonal qualities to cabinets costing up to twice the price. Ideal height for use as lamp table. Takes either 12" or 8" woofer and separate tweeter or a coax speaker. Size 19 1/2" W. x 23 3/8" H. x 13 1/2" D. Ship. wt. 31 lbs.

Better tone than any comparable cabinet because of (1) Bass Ultraflex† system, and (2) corner location. Use on wall or floor. Takes either 12" or 8" woofer and separate tweeter or a coax speaker. Size 22 1/2" W. x 26 3/8" H. x 14 3/8" D. Wt. 25 lbs. DCB-8/12—Blonde or Mahogany . . . Net \$22.50



**SCB**—NEW SLANTING CORNER BAFFLES. Best tone because slanting panel aims sound downward. Bass reflex. Heavy ribbed fabric, Mahogany or blonde, same price.

**CB**—REGULAR CORNER BAFFLES. Bass reflex. Heavy ribbed fabric over thick plywood. Mahogany or blonde, same price.

**WB**—WALL BAFFLES. Heavy ribbed fabric over thick plywood or hardboard. Mahogany or blonde, same price.

**DWB**—DELUXE WALL BAFFLES in genuine wood. Blonde Mahogany or walnut-finished mahogany, same price.

**FMB**—CEILING MOUNTING BAFFLE. 12" sq. size for fitting into standard acoustic ceiling tiles. Heavy ribbed fabric.

**R-8/12** REDUCING RING for mounting 8" speaker in any 12" cabinet (baffle or console). All hardware included. Ship. Wt. 1 lb. . . . Net \$1.20

**R-12/15** REDUCING RING. Same only 12"—15" size. Ship. Wt. 1 1/2 lbs. . . . Net \$1.65

Model	Speaker In.	Width, Height Depth, In.	Ship. Wt. Lbs.	Net Each
SCB-8	8	21 x 15 x 10	5	\$ 7.90
SCB-12	12	21 x 21 1/4 x 10 1/2	9	10.95
CB-8A	8	12 1/4 x 14 x 6	4 1/2	7.41
CB-12A	12	18 x 20 1/4 x 9	9	10.50
WB-4/5A	4/5	6 x 6 x 4 1/4	2 1/2	2.80
WB-6A	6	7 1/2 x 8 1/2 x 5	3 1/2	3.40
WB-8A	8	9 3/8 x 10 1/2 x 6 1/2	5 1/2	4.05
WB-10A	10	11 1/2 x 12 1/4 x 7 3/4	7 1/2	4.80
WB-12A	12	13 1/4 x 14 1/4 x 9	9 1/2	5.55
DWB-8	8	9 3/8 x 10 1/2 x 6 1/2	4 1/2	6.00
DWB-12	12	13 1/4 x 14 1/4 x 9	7 1/2	8.40
FMB-6	6	12 x 12 x 1 1/2	5	4.50
FMB-8	8	12 x 12 x 1 1/2	5	4.50

\*Shipping weight of 2 in carton.



### PLASTI-KOTE SPRAYS

**ACRYLIC**. No. 274. Highest dielectric strength—800 volts/mil. 16 oz. . . . Net \$1.27

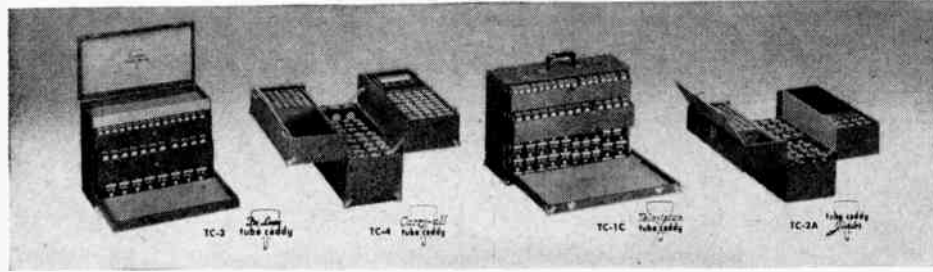
**MFR Moisture - Fungus - Resistant Varnish**. No. 277. Meets mil. specs. 16 oz. . . . Net \$1.33

**FIRE EXTINGUISHER**. No. 275. Non-toxic. 16.4 oz. Net \$1.27

**RUST SOLVENT, PENETRANT**. No. 276. 16 oz. . . . Net \$1.13

**ENAMEL**. Detachable professional nozzle. 16.4 oz.

No. 250 Black No. 264 Clear  
No. 251 White No. 266 Gray  
No. 259 Alum. No. 260 Gold  
Others on Req. . . . Net \$1.27



### TUBE CADDIES\* SPECIALLY DESIGNED FOR TV SERVICEMEN

They make work easier and quicker and you are more efficient. Regimented drawers give INVENTORY at a GLANCE—missing cartons are easily spotted. Shop owners say a tube caddy PAYS FOR

ITSELF IN THREE WEEKS' TIME. Men are checked in and out faster and always arrive on the job with the tools they need. This means more calls per day, lower cost per call. Durable tweed-gray fabric.

**DE LUXE TUBE CADDY\***  
Combines convenient tool tray (2 1/8" deep) with drawers for up to 225 tubes. Slip-out hinges on cover. 18" w. x 14 1/2" h. x 9 1/4" d. Ship. Wt. 14 1/2 lbs.  
**TC-3**—Net Each . . . \$16.95

**CARRY-ALL TUBE CADDY\***  
"Break-away" design gives quick availability to all items. Holds up to 262 tubes, plus tools and meter. 21" w. x 15" h. x 8" d. Ship. Wt. 12 lbs.  
**TC-4**—Net Each . . . \$15.95

**ORIGINAL TUBE CADDY\***  
Holds up to 249 tubes. Drawer partitions removable for tools and meter. Slip-out hinges on cover. 21" w. x 15" h. x 8" d. Ship. Wt. 14 1/2 lbs.  
**TC-1C**—Net Each . . . \$14.50

**TUBE CADDY\* JUNIOR**  
Easy-to-carry size for quick trips. Holds up to 143 tubes, or less with tools and meter. Size: 15 3/4" w. x 12 1/2" h. x 8" d. Ship. Wt. 13 lbs.  
**TC-2A**—Net Each . . . \$10.50

**SOUND CADDY**  
Accommodates two 12" speakers and amplifier. Brackets for cables. Heavy plywood, steel corner angles. Brown fabric covering. 17 1/4" w. x 22" h. x 13 1/4" d. Shipping Wt. 22 lbs.  
**SC-2A**—Net . . . \$19.50

**RECORD CHANGER CASE**  
Handsome mahogany and linen fabric covering. Clearance above board, 6 3/4", under board 3 1/4". Takes any standard changer. 17" w. x 10 1/2" h. x 15 1/4" d. Ship. Wt. 16 lbs.  
**PC-2**—Net . . . \$13.50

\*Registered TM of Argos Co. all prices slightly higher West of Rockies.

†Trade-mark of and Licensed by Jensen Manufacturing Co.

# Cletron *The Choice for Voice*

## HI-Fidelity SPEAKERS



Model PM15NCR

### 15" COAXIAL 50 to 18,500 Cycles

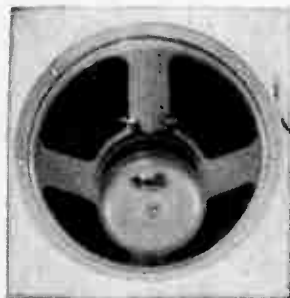
In keeping with the ever increasing standards for highest quality sound reproduction, CLETRON Engineering has perfected a new 15-inch coaxial speaker with aluminum voice coil forms for long, trouble-free operation. In addition to high power capacity, this speaker has a built-in crossover network and a high frequency control to turn off the tweeter when desired.

Power Handling Capacity: 25 to 35 watts. Voice Coil Impedance: 8 ohms. Frequency Response: 50 to 18,500 cycles,  $\pm 6$ db. Woofer Voice Coil Diameter: 2". Aluminum Voice Coil Forms are contained in both Woofer and Tweeter. Alnico V Magnets: 1 lb. in woofer, 1.47 oz. in tweeter. Built-in crossover network. Crossover at 3100 cycles. 15 1/2" Dia., 13 1/2" Baffle Opening, 8" Depth Behind Mounting Panel. Model PM15NCR: List Price: \$69.95

### ALSO 15" WOOFER 30 to 12,500 Cycles

This speaker is specifically designed to deliver clear undistorted bass ranges with rich tonal quality.

Cletron 8 ohm aluminum voice coil form handles high power of 25 to 35 watts. One-pound Alnico V magnet delivers exceptional response for this moderately priced speaker. 15 1/2" Dia., 13 1/2" Baffle Opening, 8" Depth Behind Mounting Panel. Attractive and durable blue hammertone baked enamel finish. Model PM15NR: List Price: \$59.95



Model PM12NR

### 12" DYNAMIC 30 to 16,000 Cycles

Here is the answer for a rich, full-bodied reproducer that will deliver the exceptional richness of the entire audio spectrum.

Power Handling Capacity: 16-25 watts. Voice Coil Impedance: 8 ohms. Frequency Response: 30 to 16,000 cycles. Aluminum Voice Coil Form: 2". Alnico V Magnet: 1 lb. Model PM12NR: List Price: \$44.50

### TWEETERS

Ideal for use with any standard 12" speaker to add real "presence." Aluminum voice coil form for higher wattage capacity, better heat dissipation and better moisture resistance. Easy to install.

#### 5-INCH, 1200 to 18,500 Cycles

8 ohms, 3.16 ounce magnet. 3 1/4" x 3 3/8" mounting hole centers. 2 3/4" depth behind mounting panel. Model PM5FR: List Price \$6.95

#### 5-INCH, 1200 to 14,000 Cycles

8 ohms, 1.47 ounce magnet. 3 1/4" x 3 3/8" mounting hole centers 2 3/4" depth behind mounting panel. Model PM5CR: List Price \$4.95

#### 3-INCH, 1200 to 16,000 Cycles

8 ohms or 3.2 ohms, 1.47 ounce magnet. 2 1/2" x 2 1/2" mounting hole centers. 1 3/4" depth behind mounting panel. Model PM3CR (8 ohm) List Price \$4.65

Model PM3CR3 (3.2 ohm) List Price \$4.65

### 8" EXTENDED RANGE 50 to 16,500 Cycles

The Cletron 8-inch extended range speaker will surprise you with its range and clarity. Hear this speaker perform and you will agree. Power Handling Capacity: 8 watts. Voice Coil Impedance: 8.2 or

8 ohms. Frequency Response: 50 to 16,500 cycles,  $\pm 6$ db. Aluminum Voice Coil Form. Alnico V Magnet. Mechanical crossover to diffusion tweeter. Depth behind Mounting Panel: 3 3/8".

Model PM8FW (8 ohm) List Price \$19.95  
Model PM8FW3 (3.2 ohm): List Price \$19.95

**NEW CLETRON SERVICE** CLETRON will completely rebuild any of the above 15", 12", or 8" speakers at any time, and restore their original factory-fresh high quality, at the following prices: 15" — \$6 12" — \$5 8" — \$4  
Now both manufacturers and jobbers can avail themselves of the CLETRON Repair-or-Replace service on all types and brands of speakers. Kindly advise details of your requirements.



Model 21 Outdoor  
List Price: \$15.50

### INTERCOM STATIONS

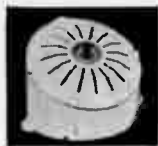
Newest, most practical intercom station available. Ideal for home, office or small business.

This CLETRON unit is especially engineered for the warehouse, drive-in restaurant and other industrial users who require a rugged, dustproof, and weatherproof intercom station.

Attractively designed around the CLETRON 4" Weatherproof Speaker with a 45 ohm or 13 ohm dustproof aluminum voice coil to provide clear, sharp audio tones.

Strong, light gray, cast aluminum cabinet is 4" x 6" x 2 1/2" deep.

Handy, dual-purpose switch permits 2-way communication. All you need with this intercom is an amplifier that you can furnish to your own specifications.



Plastic Case  
Model 22 Indoor  
List Price: \$12.50

### INTERCOM REPLACEMENTS — PERMANENT MAGNET SPEAKERS

SIZE INCHES	CATALOG NUMBER	MAGNET WEIGHT OUNCES	VOICE COIL SIZE & IMPEDANCE	WATTS	MOUNTING HOLE CENTERS INCHES	DEPTH INCHES	LIST PRICE
4	PM-4B45	1.00	45 ohms 8 $\frac{1}{2}$ "	2-4	3 $\frac{1}{8}$ x 3 $\frac{1}{8}$	2 $\frac{1}{8}$	\$ 5.10
4	PM-4B13	1.00	13 ohms 8 $\frac{1}{2}$ "	2-4	3 $\frac{1}{8}$ x 3 $\frac{1}{8}$	2 $\frac{1}{8}$	4.95
4	PM-4C45	1.47	45 ohms 8 $\frac{1}{2}$ "	2-4	3 $\frac{1}{8}$ x 3 $\frac{1}{8}$	2 $\frac{1}{8}$	5.50
4	PM-4C13	1.47	13 ohms 8 $\frac{1}{2}$ "	2-4	3 $\frac{1}{8}$ x 3 $\frac{1}{8}$	2 $\frac{1}{8}$	5.35
5	PM-5B45	1.00	45 ohms 8 $\frac{1}{2}$ "	2-4	3 $\frac{1}{8}$ x 3 $\frac{1}{8}$	2 $\frac{1}{8}$	5.35
5	PM-5B13	1.00	13 ohms 8 $\frac{1}{2}$ "	2-4	3 $\frac{1}{8}$ x 3 $\frac{1}{8}$	2 $\frac{1}{8}$	5.20
6	PM-6C45	1.47	45 ohms 8 $\frac{1}{2}$ "	2-4	3 $\frac{1}{8}$ x 3 $\frac{1}{8}$	2 $\frac{1}{8}$	6.65

**HIGHEST QUALITY ALUMINUM VOICE COIL CONSTRUCTION**

# Cletron *The Choice for Voice*

## Standard Group PERMANENT MAGNET SPEAKERS



SIZE INCHES	CATALOG NUMBER	MAGNET WEIGHT OUNCES	VOICE COIL SIZE & IMPEDANCE	WATTS	MOUNTING HOLE CENTERS INCHES	DEPTH INCHES	LIST PRICE
2 3/4	PM-2P2	.73	14 ohms 1"	250MV	No mounting holes	1 1/8	\$ 4.75
3	PM-3A	.68	3.2 ohms 1"	2-4	2 1/8 x 2 1/8	1 1/8	3.65
4	PM-4A	.68	3.2 ohms 1"	2-4	3 1/8 x 3 1/8	1 1/8	3.85
4	PM-4P2	.70	3.2 ohms 1"	2-4	3 1/8 x 3 1/8	1 1/8	8.95
4	PM-4B	1.00	3.2 ohms 1"	2-4	3 1/8 x 3 1/8	2 1/8	4.10
4	PM-4C	1.47	3.2 ohms 1"	2-4	3 1/8 x 3 1/8	2 1/8	4.50
5	PM-5A	.68	3.2 ohms 1"	2-4	3 1/8 x 3 1/8	2 1/8	4.10
5	PM-5P2	.68	3.2 ohms 1"	2-4	3 1/8 x 3 1/8	2 1/8	4.00
5	PM-5B	1.00	3.2 ohms 1"	2-4	3 1/8 x 3 1/8	2 1/8	4.35
5	PM-5C	1.47	3.2 ohms 1"	2-4	3 1/8 x 3 1/8	2 1/8	4.75
6	PM-6B	1.00	3.2 ohms 1"	2-4	4 1/8 x 4 1/8	2 1/8	4.75
6	PM-6C	1.47	3.2 ohms 1"	2-4	4 1/8 x 4 1/8	2 1/8	5.10
6	PM-6E	2.15	3.2 ohms 3/4"	4-9	4 1/8 x 4 1/8	2 1/8	5.75
6	PM-6F	3.16	3.2 ohms 3/4"	4-9	4 1/8 x 4 1/8	2 1/8	6.75
8	PM-8D	1.47	3.2 ohms 3/4"	4-9	5 1/8 x 5 1/8	3 1/8	6.85
8	PM-8E	2.15	3.2 ohms 3/4"	4-9	5 1/8 x 5 1/8	3 1/8	7.10
8	PM-8F	3.16	3.2 ohms 3/4"	4-9	5 1/8 x 5 1/8	3 1/8	8.25
10	PM-10E	2.15	3.2 ohms 3/4"	4-9	6 1/8 x 6 1/8	3 1/8	9.50
10	PM-10G	3.16	3.2 ohms 3/4"	6-12	6 1/8 x 6 1/8	4 1/8	10.25
10	PM-10H	4.64	3.2 ohms 1"	6-12	6 1/8 x 6 1/8	4 1/8	12.50
12	PM-12G	3.16	3.2 ohms 1"	6-12	8 1/8 x 8 1/8	4 1/8	11.50
12	PM-12H	4.64	3.2 ohms 1"	6-12	8 1/8 x 8 1/8	5 1/8	13.75

## Public Address and Hi Fidelity Group PERMANENT MAGNET SPEAKERS

	SIZE INCHES	CATALOG NUMBER	MAGNET WEIGHT OUNCES	VOICE COIL SIZE & IMPEDANCE	WATTS	MOUNTING HOLE CENTERS INCHES	DEPTH INCHES	LIST PRICE
	8	PM-8FR3	3.16	3.2 ohms 3/4"	4-9	5 1/8 x 5 1/8	3 1/8	\$ 8.50
	8	PM-8FR	3.16	8 ohms 3/4"	4-9	5 1/8 x 5 1/8	3 1/8	8.50
Public Address	8	EM-8F8	3.16	8 ohms 3/4"	4-9	5 1/8 x 5 1/8	3 1/8	8.28
	8	PM-8JM	6.80	8 ohms 1"	6-12	5 1/8 x 5 1/8	4 1/8	12.10
	10	PM-10JR	6.80	8 ohms 1"	6-12	6 1/8 x 6 1/8	4 1/8	15.00
	12	PM-12JR	6.80	8 ohms 1"	6-12	8 1/8 x 8 1/8	7 1/8	16.00
	12	PM-12LR	10.00	8 ohms 1 1/4"	12-20	8 1/8 x 8 1/8	7 1/8	19.95
Woofer	12	PM-12PW	21.50	8 ohms 1 1/2"	20-25	8 1/8 x 8 1/8	5 3/8	59.95
	15	PM-15PW	21.50	8 ohms 1 1/2"	20-25	10 1/8 x 10 1/8	7 3/8	73.50
Coaxial	12	PM-12CR	6.80	8 ohms 1"	6-12	8 1/8 x 8 1/8	7 3/8	27.65
	15	PM-15CR	6.80	8 ohms 1"	6-12	10 1/8 x 10 1/8	8	36.00

## Standard Group ELECTRO DYNAMIC SPEAKERS

SIZE INCHES	CATALOG NUMBER	FIELD RESISTANCE	VOICE COIL SIZE & IMPEDANCE	WATTS	MOUNTING CENTERS INCHES	DEPTH INCHES	LIST PRICE
4	ED-445	450 ohms	3.2 ohms 1"	2-4	3 1/8 x 3 1/8	2 1/8	\$ 4.50
5	ED-545	450 ohms	3.2 ohms 1"	2-4	3 1/8 x 3 1/8	2 1/8	4.75
6	ED-645	450 ohms	3.2 ohms 1"	4-9	4 1/8 x 4 1/8	2 1/8	5.50
10	ED-1010	1000 ohms	3.2 ohms 1"	6-12	6 1/8 x 6 1/8	4 1/8	10.50
10	ED-1018	1800 ohms#	3.2 ohms 1"	6-12	6 1/8 x 6 1/8	4 1/8	10.65
12	ED-1210	1000 ohms	3.2 ohms 1"	6-12	8 1/8 x 8 1/8	5 1/8	12.75
12	ED-1218	1800 ohms#	3.2 ohms 1"	6-12	8 1/8 x 8 1/8	5 1/8	12.90

# Tapped at 300 Ohms.

## Oval Group PERMANENT MAGNET SPEAKERS



SIZE INCHES	CATALOG NUMBER	MAGNET WEIGHT OUNCES	VOICE COIL SIZE & IMPEDANCE	WATTS	MOUNTING HOLE CENTERS INCHES	DEPTH INCHES	LIST PRICE
4 x 6	PM-46A	.68	3.2 ohms 1"	2-4	3 1/8 x 4 1/8	2 1/8	\$ 4.35
4 x 6	PM-46B	1.00	3.2 ohms 1"	2-4	3 1/8 x 4 1/8	2 1/8	4.65
4 x 6	PM-46C	1.47	3.2 ohms 1"	2-4	3 1/8 x 4 1/8	2 1/8	5.05
5 x 7	PM-57B	1.00	3.2 ohms 1"	2-4	4 1/8 x 4 1/8	2 1/8	5.15
5 x 7	PM-57C	1.47	3.2 ohms 1"	2-4	4 1/8 x 4 1/8	2 1/8	5.65
5 x 7	PM-57E	2.15	3.2 ohms 3/4"	4-9	4 1/8 x 4 1/8	3 1/8	6.75
5 x 7	PM-57F	3.16	3.2 ohms 3/4"	4-9	4 1/8 x 4 1/8	3 1/8	7.75
*5 x 7	PM-57FC HiFi	3.16	3.2 ohms 3/4"	4-9	4 1/8 x 4 1/8	3 1/8	8.95
6 x 9	PM-69B	1.00	3.2 ohms 3/4"	4-9	4 1/8 x 4 1/8	3 1/8	6.25
6 x 9	PM-69D	1.47	3.2 ohms 3/4"	4-9	4 1/8 x 4 1/8	3 1/8	6.95
6 x 9	PM-69E	2.15	3.2 ohms 3/4"	4-9	4 1/8 x 4 1/8	3 1/8	7.85
6 x 9	PM-69F	3.16	3.2 ohms 1"	4-9	4 1/8 x 4 1/8	3 1/8	8.85
*6 x 9	PM-69FC HiFi	3.16	3.2 ohms 1"	4-9	4 1/8 x 4 1/8	3 1/8	9.50

\*Contains HiFi type diffuser cone.

## TV Replacement Group ELECTRO DYNAMIC SPEAKERS



SIZE INCHES	CATALOG NUMBER	FIELD RESISTANCE	VOICE COIL SIZE & IMPEDANCE	WATTS	MOUNTING CENTERS INCHES	DEPTH INCHES	LIST PRICE
5	ED-5T6	60 ohms	3.2 ohms 1"	2-4	3 1/8 x 3 1/8	2 1/8	\$ 4.75
5	ED-5T10	100 ohms	3.2 ohms 1"	2-4	3 1/8 x 3 1/8	2 1/8	4.75
4 x 6	ED-46T6	60 ohms	3.2 ohms 1"	2-4	3 1/8 x 4 1/8	2 1/8	5.25
4 x 6	ED-46T10	100 ohms	3.2 ohms 1"	2-4	3 1/8 x 4 1/8	2 1/8	5.25
6	ED-6T6	60 ohms	3.2 ohms 1"	2-4	4 1/8 x 4 1/8	2 1/8	5.50
6	ED-6T10	100 ohms	3.2 ohms 1"	2-4	4 1/8 x 4 1/8	2 1/8	5.50
8	ED-8T6	60 ohms	3.2 ohms 1"	4-9	5 1/8 x 5 1/8	3 1/8	8.85

### GENERAL INFORMATION

- 3, 4, 5 1/4, 6, 6 1/4, 8 inch speakers have square type mountings.
- 5, 8, 10, 12, 15 inch speakers have round type mountings.
- Transformer Mounting Brackets and 2 drilled and tapped holes in Pot are provided on all speakers with 1/8" voice coils.
- A CLETRON Universal Mounting Bracket is supplied with each 3 1/8" thru 6 1/8" speaker with a 1/8" voice coil.

**HIGHEST QUALITY ALUMINUM VOICE COIL CONSTRUCTION**

# Cletron *The Choice for Voice*

## WEATHERPROOF GROUP PERMANENT MAGNET SPEAKERS



\*Plastic Cone

SIZE INCHES	CATALOG NUMBER	MAGNET WEIGHT OUNCES	VOICE COIL SIZE & IMPEDANCE	WATTS	MOUNTING HOLE CENTERS INCHES	DEPTH INCHES	LIST PRICE
4	PM-4WA	.68	3.2 ohms $\frac{3}{8}$ "	2-4	$3\frac{1}{8}$ x $3\frac{1}{8}$	2	\$ 4.80
4	PM-4WB	1.00	3.2 ohms $\frac{3}{8}$ "	2-4	$3\frac{1}{8}$ x $3\frac{1}{8}$	2	4.40
4	PM-4WC	1.47	3.2 ohms $\frac{3}{8}$ "	2-4	$3\frac{1}{8}$ x $3\frac{1}{8}$	2	4.80
4	*PM-4WCP	1.47	3.2 ohms $\frac{3}{8}$ "	2-4	$3\frac{1}{8}$ x $3\frac{1}{8}$	2	5.50
4	PM-4WCA5	1.47	4.5 ohms $\frac{3}{8}$ "	2-4	$3\frac{1}{8}$ x $3\frac{1}{8}$	2	5.50
5	PM-5WB	1.00	3.2 ohms $\frac{3}{8}$ "	2-4	$3\frac{1}{8}$ x $3\frac{1}{8}$	2	4.65
5	PM-5WC	1.47	3.2 ohms $\frac{3}{8}$ "	2-4	$3\frac{1}{8}$ x $3\frac{1}{8}$	2	5.05
5 $\frac{1}{4}$	PM-5CWC	1.47	3.2 ohms $\frac{3}{8}$ "	2-4	4 x 4	2	5.45
6	PM-6WC	1.47	3.2 ohms $\frac{3}{8}$ "	2-4	$4\frac{3}{8}$ x $4\frac{3}{8}$	2	5.50
6	PM-6WE	2.15	3.2 ohms $\frac{3}{8}$ "	4-9	$4\frac{3}{8}$ x $4\frac{3}{8}$	2	6.10

## OUTDOOR IN-A-CAR SPEAKERS

### FEATURES:

- Designed for easy access to inside cabinet for repair when necessary.
- Strong and attractive gray cast aluminum cabinet with hanger. Speaker included.
- Light weight—only 2 lbs., 8 ounces.
- High grade, wire wound volume control and durable  $5\frac{1}{2}$ ' cable are furnished.
- High quality • Weatherproof • Low in Price

Model 20... LIST: \$15.50



## AUTO REPLACEMENT GROUP PERMANENT MAGNET SPEAKERS

SIZE INCHES	CATALOG NUMBER	MAGNET WEIGHT OUNCES	VOICE COIL SIZE & IMPEDANCE	WATTS	MOUNTING CENTERS INCHES	DEPTH INCHES	LIST PRICE
5 $\frac{1}{4}$	PM-5CA	1.47	3.2 ohms $\frac{3}{8}$ "	2-4	4 x 4	2 $\frac{1}{2}$	\$ 5.15
*7	PM-7EA	2.15	3.2 ohms $\frac{3}{8}$ "	4-9	$4\frac{1}{4}$ x $5\frac{3}{8}$	$3\frac{3}{8}$	6.95
7	PM-7FA	3.16	3.2 ohms 1"	4-9	$4\frac{1}{4}$ x $5\frac{3}{8}$	$3\frac{3}{8}$	7.95
**8	PM-8EA	2.15	3.2 ohms $\frac{3}{8}$ "	4-9	$5\frac{1}{8}$ x $5\frac{7}{8}$	$3\frac{3}{8}$	7.10
1 $\frac{1}{8}$ x 9"	PM-6911	1.73	3.2 ohms 1"	4-9	$4\frac{5}{8}$ x $6\frac{1}{8}$	3	7.85
**6" x 9"	PM-6912	1.73	3.2 ohms 1"	4-9	$4\frac{5}{8}$ x $6\frac{1}{8}$	3	7.85
• 6" x 9"	PM-6914	1.73	3.2 ohms 1"	4-9	$4\frac{5}{8}$ x $6\frac{1}{8}$	3	7.85
• 6" x 9"	PM-6915	1.73	3.2 ohms 1"	4-9	$4\frac{5}{8}$ x $6\frac{1}{8}$	3	7.85

- †Replacement for DELCO extruded hole type.
- \*\*Replacement for DELCO plain type.
- Replacement for FORD type (leads included).
- Replacement for MERCURY type (leads included).
- \*Rotated pots are not needed on this speaker because of small shell dimensions.

## AUTO REPLACEMENT GROUP ELECTRO DYNAMIC SPEAKERS

SIZE INCHES	CATALOG NUMBER	FIELD RESISTANCE	VOICE COIL SIZE & IMPEDANCE	WATTS	MOUNTING CENTERS INCHES	DEPTH INCHES	LIST PRICE
5 $\frac{1}{4}$	ED-5S6	4 ohms	3.2 ohms $\frac{3}{8}$ "	2-4	4 x 4	2 $\frac{1}{2}$	5.15
6	ED-6Y6	4 ohms	3.2 ohms $\frac{3}{8}$ "	4-9	$4\frac{3}{8}$ x $4\frac{3}{8}$	$3\frac{3}{8}$	5.50
7	ED-7Y6	4 ohms	3.2 ohms $\frac{3}{8}$ "	4-9	$4\frac{1}{4}$ x $5\frac{3}{8}$	$3\frac{3}{8}$	6.75
6 x 9	ED-69Y6	4 ohms	3.2 ohms $\frac{3}{8}$ "	4-9	$4\frac{5}{8}$ x $6\frac{1}{8}$	$3\frac{3}{8}$	7.45

## AUTOMOBILE

### Rear Seat Speaker Kits

A CLETRON automobile rear seat speaker permits clear radio reception to both front and rear seat passengers simultaneously or individually. Now, any car owner can economically have this fine-car luxury. Complete materials and simplified installation instructions are included with each kit. Specialized designs are available to fit all cars and individual tastes.

## COMPLETE KITS... Speaker, Grill and Switch Harness

- Model 19—5" x 7" speaker with 1 oz. magnet and complete accessories. List \$8.95
  - Model 24—6" x 9" speaker with 1.47 oz. magnet and complete accessories. List \$9.95
  - Model 32—5" x 7" speaker with .68 oz. magnet and complete accessories. List \$8.50
  - Model 33—6" x 9" speaker with .68 oz. magnet and complete accessories. List \$8.95
  - Model 34—6" x 9" HI-FI type speaker with extended range tweeter cone, 3.16 oz. magnet and complete accessories. List \$15.95
  - Model 36—5" x 7" HI-FI type speaker with extended range tweeter cone, 3.16 oz. magnet and complete accessories. List \$14.95
  - Model 46—5" x 7" speaker with 1 oz. magnet. All car universal adapter and complete accessories. List \$9.95
- All above speakers have silver-gray grill. For chrome grill... add \$1 to list prices. Cletron Custom Kits are available as tailored for all car makes. Kindly ask distributor for price list and Model numbers.

## SPEAKER GRILL KITS... Grills Only

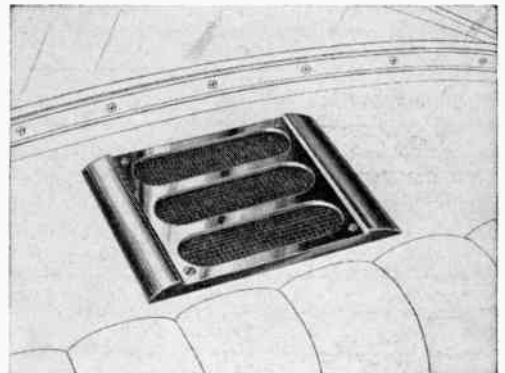
- Model 27—5" x 7" grill with Enameled trim ring. Includes hardware. List \$1.50
- Model 25—6" x 9" grill with Enameled trim ring. Includes hardware. List \$1.75
- Model 27C—5" x 7" grill with Chrome trim ring. Includes hardware. List \$2.50
- Model 25C—6" x 9" grill with Chrome trim ring. Includes hardware. List \$2.75
- Model 27E—5" x 7" Economy, enameled grill complete with hardware. List \$1.00
- Model 27EC—5" x 7" Economy, chrome grill complete with hardware. List \$1.50

## SWITCH-HARNESS KITS...

- Model 29—Includes 3-position, attractive dial type mounting switch and double-wire leads. List \$2.25
- Model 35—Includes 3-position, attractive dial type mounting switch and single-wire leads. List \$1.95
- Model 29F—Similar to Model 29, however, includes wire wound potentiometer to permit "Fading" in either or both speakers. List \$2.40
- Model 35F—Similar to Model 35, however, includes wire wound potentiometer to permit "Fading" in either or both speakers. List \$2.10

## (SWITCH ONLY)

- Model 47—3-position switch. List \$1.00
- Model 48—Fading switch. List \$1.25



All 6" x 9" type kits include this modern and attractive grill.



Switch and Harness Assembly Kits include 3-position, attractive dial-type mounting switch and all necessary leads.



All 5" x 7" type kits are furnished with above type grill.

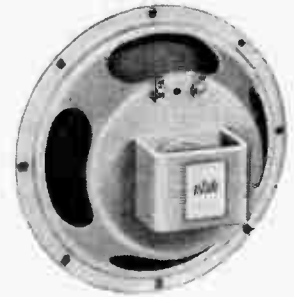


FAMOUS LINE OF HIGH FIDELITY  
REPRODUCERS AND AUTOMOTIVE  
REAR DECK SOUND SYSTEMS

**RADIO PRODUCTS CORP.**  
HUNTINGTON, INDIANA

**UTAH FABULOUS "G" SERIES EXTENDED RANGE AND COAXIAL MODELS**

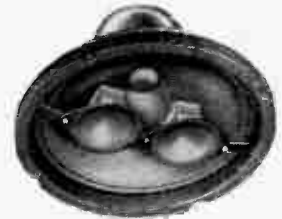
Group Size	Model Number	Voice Coil Impedance Ohms	Voice Coil Diameter Inches	Optimum Audio Watts	Alnico V Weight Ounces	Shipping Weight Pounds	List Price
8"	G8J	8	1	12	6.80	3	\$13.80
8"	G8JP	8	1	12	6.80	3	14.50
8"	CM8J	8	1	12	6.80	3	13.80
8"	CM8JP	8	1	12	6.80	3	15.50
12"	G12J	8	1	12	6.80	5	17.30
12"	G12JP	8	1	12	6.80	5	18.15
12"	G12M	8	1 1/4	25	14.70	6 1/2	33.50
12"	G12P	8	1 1/2	30	21.50	7 3/4	39.50
15"	G15P	8	1 1/2	30	21.50	10 1/2	42.65
15"	G15R	8	2	35	31.50	13 1/2	56.75
12"	G12J3	8	1	12	6.80	6 1/4	39.75
12"	G12P5	8	1 1/2	30	21.50	9 3/4	57.50
5"	G15P5	8	1 1/2	30	21.50	12 3/4	65.00
5"	GT5F	8	1	12	3.16	1 1/2	8.75
5"	GT5FN	12	3/4	30	3.16	1 3/4	12.50



G8J

**UTAH HIGH FIDELITY REPRODUCERS**

Group Size	Model Number	Voice Coil Impedance Ohms	Voice Coil Diameter Inches	Optimum Audio Watts	Alnico V Weight Ounces	Shipping Weight Pounds	List Price
12"	HFD12M	16	1 1/4	20	14.70	8	\$ 97.50
12"	HFC12J	12-16	1	10	6.80	5 3/4	65.00
12"	HFC12P	12-16	1 1/2	25	21.50	9	97.50
15"	HFC15P	12-16	1 1/2	25	21.50	12 3/4	120.00
3 1/2"	HFT35C	12-16	3/4	10	1.47	1 1/4	12.50
5"	HFT5F	12-16	3/4	15	3.16	1 3/4	19.50
8"	HFE8J	12-16	1	10	6.80	3 1/4	30.00
12"	HFM12M	12-16	1 1/4	20	14.70	6	58.00
12"	HF12P	12-16	1 1/2	25	21.50	7 3/4	87.50
15"	HF15R	12-16	2	35	31.60	13 1/4	102.00



HFD12M

**AUTOMOTIVE REAR DECK SOUND SYSTEMS**

**Deluxe Series**

Group Size	Model Number	Speaker Model	List Price
5 x 7"	RF57BZ	C57BZ	\$11.50
5 x 7"	RF57EZ	C57EZ	12.50
6 x 9"	RF69BZ	C69BZ	12.50
6 x 9"	RF69EZ	C69EZ	13.50

**High Fidelity Series**

Group Size	Model Number	Speaker Model	List Price
6 x 9"	RFD69E	SP69E	19.95

FINISHES—Brushed Chrome Standard—Grey finish available at no extra cost.  
ALL THE ABOVE MODELS ARE EQUIPPED WITH UTAH EXCLUSIVE EDGE-OPERATED FADER CONTROL.

Included in the above systems—Edge-Operated Fader control, one piece mounting grill, sufficient wire for any installation, mounting hardware and Utah Automotive speaker and instruction sheet.



RF69EZ

**UTONE "DUO" SERIES REAR DECK KITS**

**Utone "Duo"**

Group Size	Model Number	Speaker Model	List Price
5 x 7"	R57A	SP57A	7.35
5 x 7"	R57B	SP57B	7.70
6 x 9"	R69A	SP69A	8.55
6 x 9"	R69C	SP69C	9.40

**High Fidelity**

Group Size	Model Number	Speaker Model	List Price
6 x 9"	R69DC	SP69DC	12.58

FINISHES—Grey standard—Brushed Chrome 10c extra.  
Included in the above kits are: Standard three position switch, quality Utah Permanent Magnet Automotive speaker, one piece mounting grill, hardware, wire and instruction sheet.  
UTAH FADER CONTROL AVAILABLE AT NOMINAL EXTRA CHARGE.



UTONE "DUO"

EXPORT DEPT. — FIDEVOX INTERNATIONAL CORP., CHICAGO, ILLINOIS



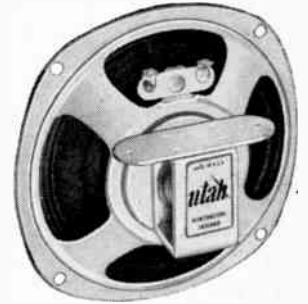


THE WIDEST LINE OF REPLACEMENT  
SPEAKERS AVAILABLE TO THE TRADE

**RADIO PRODUCTS CORP.**  
HUNTINGTON, INDIANA

**STANDARD PERMANENT MAGNET—9/16" Voice Coil**

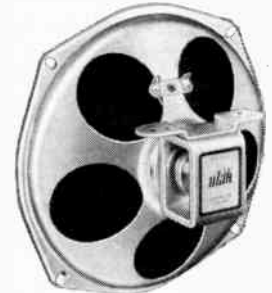
Group Size	Model Number	Voice Coil Impedance Ohms	Optimum Audio Watts	Alnico V Weight Ounces	Shipping Weight Pounds	List Price
3 1/2"	SP35A	3-4	2-4	.68	3/4	\$ 3.95
3 1/2"	SP35B	3-4	2-4	1.00	3/4	3.80
3 1/2"	SP35C	3-4	2-4	1.47	3/4	4.50
4"	SP4A	3-4	2-4	.68	3/4	3.95
4"	SP4B	3-4	2-4	1.00	1	4.35
4"	SP4C	3-4	2-4	1.47	1	4.60
5"	SP5A	3-4	2-4	.68	3/4	4.10
5"	SP5B	3-4	2-4	1.00	1	4.45
5"	SP5C	3-4	2-4	1.47	1	4.90
6"	SP6A	3-4	2-4	.68	1	4.75
6"	SP6B	3-4	2-4	1.00	1 1/4	4.90
6"	SP6C	3-4	2-4	1.47	1 1/4	5.30



SP5A

**STANDARD PERMANENT MAGNET—3/4" Voice Coil**

Group Size	Model Number	Voice Coil Impedance Ohms	Optimum Audio Watts	Alnico V Weight Ounces	Shipping Weight Pounds	List Price
6"	SP6D	3-4	4-9	1.47	1 1/2	5.40
6"	SP6E	3-4	4-9	2.15	1 1/2	5.60
6"	SP6F	3-4	4-9	3.16	1 1/2	6.35
8"	SP8D	3-4	4-9	1.47	1 3/4	6.95
8"	SP8E	3-4	4-9	2.15	2	7.25
8"	SP8F	3-4	4-9	3.16	2	8.55
10"	SP10D	3-4	4-9	1.47	2 1/2	8.75
10"	SP10E	3-4	4-9	2.15	2 1/2	9.85
10"	SP10F	3-4	4-9	3.16	2 3/4	10.35
12"	SP12D	3-4	4-9	1.47	3 1/4	10.00
12"	SP12E	3-4	4-9	2.15	3 1/2	10.50
12"	SP12F	3-4	4-9	3.16	3 3/4	10.95



SP8D

**STANDARD PERMANENT MAGNET—1" Voice Coil**

Group Size	Model Number	Voice Coil Impedance Ohms	Optimum Audio Watts	Alnico V Weight Ounces	Shipping Weight Pounds	List Price
8"	SP8G	3-4	6-12	3.16	3	8.50
8"	SP8H	3-4	6-12	4.64	3	9.25
8"	SP8J	3-4	6-12	6.80	3 1/4	9.55
10"	SP10G	3-4	6-12	3.16	3 1/2	10.50
10"	SP10H	3-4	6-12	4.64	3 1/2	11.60
10"	SP10J	3-4	6-12	6.80	3 3/4	13.35
12"	SP12G	3-4	6-12	3.16	4 1/2	12.50
12"	SP12H	3-4	6-12	4.64	4 1/2	13.50
12"	SP12J	3-4	6-12	6.80	3 3/4	14.55



PA8J

UTAH'S Z-575 exclusive angle mounting bracket for use with models SP35A, SP4A, SP5A, SP6A, SP4B, SP5B, SP6B, SP46A, SP57A, SP69A and SP6D speakers available at 30c each

**PUBLIC ADDRESS SPEAKER GROUP**

**"HE" Series**

Group Size	Model Number	Voice Coil Impedance Ohms	Voice Coil Diameter Inches	Optimum Audio Watts	Alnico V Weight Ounces	Shipping Weight Pounds	List Price
6"	PA6D	8	3/4	4	1.47	1 1/4	\$ 5.95
8"	PA8D	8	3/4	6	1.47	1 3/4	8.10

**Supreme Series**

Group Size	Model Number	Voice Coil Impedance Ohms	Voice Coil Diameter Inches	Optimum Audio Watts	Alnico V Weight Ounces	Shipping Weight Pounds	List Price
8"	PA8M	8	1 1/4	15	14.70	3 3/4	25.95
10"	PA10M	8	1 1/4	15	14.70	4 1/4	27.50
12"	PA12M	8	1 1/4	20	14.70	6	33.50
12"	PA12P	8	1 1/2	25	21.50	7 3/4	39.50
15"	PA15P	8	1 1/2	25	21.50	12 1/4	42.65
15"	PA15R	8	1 1/2	35	31.50	13 1/4	56.75

Finished in gold lacquer over cadmium plating, and complete with pot cover and solderless brass binding posts.

**Deluxe Series**

Group Size	Model Number	Voice Coil Impedance Ohms	Voice Coil Diameter Inches	Optimum Audio Watts	Alnico V Weight Ounces	Shipping Weight Pounds	List Price
6"	PA6F	8	3/4	6	3.16	1 1/2	7.50
8"	PA8J	8	1	8	6.80	3 1/4	13.80
10"	PA10J	8	1	8	6.80	3 3/4	14.95
12"	PA12J	8	1	8	6.80	4 1/2	17.30

Heavy cadmium plating.  
Deluxe Series speakers can be factory mounted in UTONE wall baffles at no extra charge.  
Also available with transformer mounted.

**EXPORT DEPT. — FIDEVOX INTERNATIONAL CORP., CHICAGO, ILLINOIS**



PA8M



THE WIDEST LINE OF REPLACEMENT  
SPEAKERS AVAILABLE TO THE TRADE

**RADIO PRODUCTS CORP.**  
HUNTINGTON, INDIANA

**OVAL PERMANENT MAGNET GROUP—9/16" Voice Coil**

Group Size	Model Number	Voice Coil Impedance Ohms	Optimum Audio Watts	Alnico V Weight Ounces	Shipping Weight Pounds	List Price
4 x 6"	SP46A	3-4	2-4	.68	3/4	\$ 4.50
4 x 6"	SP46B	3-4	2-4	1.00	1	5.00
4 x 6"	SP46C	3-4	2-4	1.47	1	5.20
5 x 7"	SP57A	3-4	2-4	.68	1	4.95
5 x 7"	SP57B	3-4	2-4	1.00	1 1/4	5.50
5 x 7"	SP57C	3-4	2-4	1.47	1 1/4	5.75
6 x 9"	SP69A	3-4	2-4	.68	1 1/4	6.50
6 x 9"	SP69B	3-4	2-4	1.00	1 1/2	6.75
6 x 9"	SP69C	3-4	2-4	1.47	1 1/2	6.95

**3/4" Voice Coil**

5 x 7"	SP57D	3-4	4-9	1.47	1 1/4	6.25
5 x 7"	SP57E	3-4	4-9	2.15	1 1/4	6.75
5 x 7"	SP57F	3-4	4-9	3.16	1 1/2	6.95
6 x 9"	SP69D	3-4	4-9	1.47	1 1/4	7.40
6 x 9"	SP69E	3-4	4-9	2.15	1 3/4	7.95
6 x 9"	SP69F	3-4	4-9	3.16	2	9.00

**1" Voice-Coil**

6 x 9"	SP69G	3-4	6-12	3.16	2 3/4	9.40
6 x 9"	SP69H	3-4	6-12	4.64	2 3/4	9.75
6 x 9"	SP69J	3-4	6-12	6.80	3	10.95

**UTAH SPACE SAVER "Z" Series—5/8" Voice Coil**

Group Size	Model Number	Voice Coil Impedance Ohms	Optimum Audio Watts	Alnico V Weight Ounces	Shipping Weight Pounds	List Price
4"	SP4Z	3-4	2-4	.45	1/2	\$2.95
5"	SP5Z	3-4	2-4	.45	1/2	3.50
6"	SP46Z	3-4	2-4	.45	1/2	3.95
5 x 7"	SP57Z	3-4	2-4	.45	3/4	4.50

**"BZ" Series—3/4" Voice Coil**

5 x 7"	SP57BZ	3-4	4-6	1.00	1	5.25
6 x 9"	SP69BZ	3-4	4-6	1.00	1 1/4	6.75
8"	SP8BZ	3-4	4-6	1.00	1 1/4	6.45

**"EZ" Series—1" Voice Coil**

5 x 7"	SP57EZ	3-4	6-9	2.15	1 1/4	6.50
6 x 9"	SP69EZ	3-4	6-9	2.15	1 1/2	7.50
8"	SP8EZ	3-4	6-9	2.15	1 1/2	7.25

UTAH Z-700 Z Mount—Transformer or speaker mounting bracket for use with "Z" Series speakers available at 25c each.

**AUTOMOTIVE SPEAKER GROUP**

Group Size	Model Number	Voice Coil Impedance Ohms	Voice Coil Diameter Inches	Optimum Audio Watts	Alnico V Weight Ounces	Shipping Weight Pounds	List Price
5 1/4"	C52BZ	3-4	3/4	2-4	.45	1/2	\$5.10
6"	C6BZ	3-4	3/4	4-9	1.00	3/4	5.98
7"	C7BZ	3-4	3/4	4-9	1.00	1 1/4	6.50
5 x 7"	C57BZ	3-4	3/4	4-9	1.00	1	5.95
5 x 7"	C57EZ	3-4	1	4-9	2.15	1 1/4	6.95
6 x 9"	C69BZ	3-4	3/4	4-9	1.00	1 1/4	6.95
6 x 9"	C69EZ	3-4	1	4-9	2.15	1 1/2	7.95

**OUTDOOR SPEAKER GROUP**

4"	SP4BZP	3-4	3/4	2-4	1.00	1/2	6.00
4"	SP4BZO	3-4	3/4	2-4	1.00	1/2	4.60
5"	SP5BZO	3-4	3/4	2-4	1.00	1/2	4.75

**AIRCRAFT INTERCOMMUNICATION SPEAKER GROUP**

5"	A5FI	45	3/4	5-9	3.16	1 1/4	7.75
5"	A5CI	45	3/4	3-5	1.47	1	6.95
5"	A5CI3	30	3/4	3-5	1.47	1	6.95

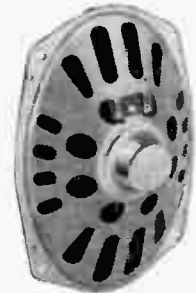
**INTERCOMMUNICATION GROUP • PERMANENT MAGNET**

3 1/2"	SP35AI	45	9/16	2-4	.68	3/4	3.75
4"	SP4AI	45	9/16	2-4	.68	3/4	3.95
5"	SP5AI	45	9/16	2-4	.68	3/4	4.10

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SP57A



C69EZ



A5FI



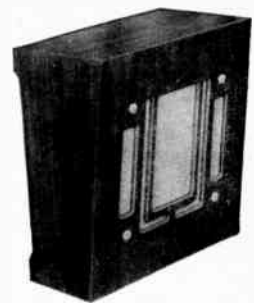
**UTONE FAMOUS LINE  
WALL BAFFLES  
WALL • CORNER • ANGLE CORNER**

**RADIO PRODUCTS CORP.  
HUNTINGTON, INDIANA**

**UTONE STANDARD LINE BAFFLES**

**Wall Style**

SIZE	MODELS		DIMENSIONS—INCHES					List Price
	Mahogany	Blonde	Width	Height	Depth Bottom	Depth Top	Width Bottom	
6"	MB-6	BB-6	8 1/4	9 3/8	2 15/16	4 5/8	8 1/4	\$ 5.95
8"	MB-8	BB-8	9 3/4	10 15/16	3 7/8	5 13/16	9 3/4	7.50
10"	MB-10	BB-10	11 3/8	12 1/2	4 11/16	6 13/16	11 3/8	8.95
12"	MB-12	BB-12	13 7/8	14 7/8	5 11/16	8 5/16	13 7/8	11.50



Standard Wall Style

**Corner Style**

SIZE	MODELS		DIMENSIONS—INCHES					List Price
	Mahogany	Blonde	Width	Height	Depth Bottom	Depth Top	Width Bottom	
8"	CM-8	CB-8	9 1/2	9 1/2	6 1/4	6 1/4	9 1/2	\$ 6.75
12"	CM-12	CB-12	13 1/2	13 1/2	8 3/4	8 3/4	13 1/2	10.50

**DELUXE SERIES BAFFLES**

**Wall Style**

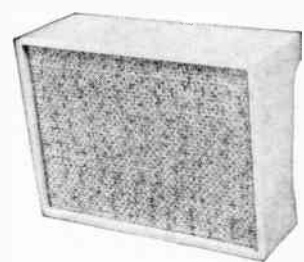
SIZE	MODELS		DIMENSIONS—INCHES					List Price
	Mahogany	Blonde	Width	Height	Depth Bottom	Depth Top	Width Bottom	
8"	DM-8	DBB-8	12	9 1/2	4 5/16	6	12	\$10.50
12"	*DM-812	*DBB-812	17	13 1/2	5 7/8	8 5/16	17	14.95
12"	DM-12	DBB-12	17	13 1/2	5 7/8	8 5/16	17	14.95



Standard Corner Style

**Corner Style**

SIZE	MODELS		DIMENSIONS—INCHES					List Price
	Mahogany	Blonde	Width	Height	Depth Bottom	Depth Top	Width Bottom	
8"	DCM-8	DCB-8	15 1/2	14	4 1/4	8 1/8	7 3/4	\$12.10
12"	DCM-12	DCB-12	19 1/2	17 7/8	6 1/2	10 1/4	10 1/4	16.60



Deluxe Wall Style

**UTONE BAFFLE ADAPTER BOARDS\***

AVAILABLE FOR MOUNTING 5", 6", 8" and 10" speakers in 6", 8" and 12" baffles.

Model Number	Speaker to Baffle	List Price
AD-56	5" speaker to 6" baffle	.75
AD-68	6" speaker to 8" baffle	.90
AD-810	8" speaker to 10" baffle	\$1.10
AD-812	8" speaker to 12" baffle	\$1.25
AD-1012	10" speaker to 12" baffle	\$1.25

\*For use in Standard Corner, Standard and Deluxe wall styles only.

**UTONE SIDE PANEL ADAPTER KIT**

Complete conversion kit for adapting UTONE CORNER BAFFLES to flat wall mounting for directional applications.

Size	Kit Model No.	Finish	Use With Utone Baffle—Model No.	List Price
8"	CP8M	Mahogany	CM-8	\$1.50
12"	CP12M	Mahogany	CM-12	2.25
8"	CP8B	Blonde	CB-8	1.50
12"	CP12B	Blonde	CB-12	2.25

**UTAH CONDUIT BOX ADAPTER KIT**

Mounting bracket designed specifically for installing Utone Standard and Deluxe Wall Baffles to standard acoustical outlet boxes.

Model No.	List Price
Z-701	\$1.00

**EXPORT DEPT. — FIDEVOX INTERNATIONAL CORP., CHICAGO, ILLINOIS**



Deluxe Corner Style

FOR HI-FI, TUNERS, AMPLIFIERS, PREAMPLIFIERS, RECORDERS, SPEAKERS, RECORD CHANGERS, P.A., AUDIO AND RADIO EQUIPMENT.

The L-T MOLDED-ON construction greatly improves the appearance of the cable, makes the connectors virtually indestructible, waterproof, and supplies excellent strain relief. Eliminates unsightly external clamps.

L-T cables are soldered to the plugs before molding, assuring completely noise-free connections.

L-T cable is of a high-quality, low-capacitance type for minimum loss.

L-T Inter-Connecting Cables with Molded Plugs are individually packaged in strong, clear plastic bags, or attractive boxes. They must be seen to be fully appreciated.

Connecting cables with molded-on Phono Pin Plugs and Phono Pin Jacks. Cable is of a high-quality, low-capacitance type for minimum loss. Used for inter-



			<b>NET</b>
Shielded cable with MOLDED-ON Phono Pin Plug each end.	<b>C101</b>	18'	.63
	<b>C102</b>	36'	.72
	<b>C103</b>	72'	.90




			<b>NET</b>
Shielded cable with MOLDED-ON Phono Pin Plug one end, other end stripped and tinned.	<b>C105</b>	18'	.54
	<b>C106</b>	36'	.60
	<b>C107</b>	72'	.75

connecting tuners, pre-amps, amplifiers, record changers, recorders and accessories.



			<b>NET</b>
Shielded cable with MOLDED-ON Phono Pin Plug one end, Phono Pin Jack other end.	<b>C201</b>	18'	.78
	<b>C202</b>	36'	.87
	<b>C203</b>	72'	1.05



			<b>NET</b>
Shielded cable with MOLDED-ON Phono Pin Jack each end.	<b>C401</b>	18'	.93
	<b>C402</b>	36'	1.08
	<b>C403</b>	72'	1.35

A fully *Shielded Molded-On* standard phone plug, available either straight or at right angle, with low-capacitance



			<b>NET</b>
Shielded cable with MOLDED-ON Phono Pin Plug, MOLDED-ON 90° <i>Shielded</i> Phone Plug other end.	<b>C104</b>	72'	1.77

As above, with straight MOLDED-ON <i>Shielded</i> Phone Plug.	<b>C104A</b>	72'	1.77
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			<b>NET</b>
Shielded cable with straight MOLDED-ON <i>Shielded</i> phone plug one end, other end stripped & tinned.	<b>C114A</b>	72'	1.68

As above, with MOLDED-ON 90° <i>Shielded</i> Phone Plug.	<b>C114</b>	72'	1.68
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shielded cable. A variety of "other end" terminations to fit all popular needs.



			<b>NET</b>
Shielded cable with MOLDED-ON Right Angle <i>Shielded</i> Phone Plug. Shielded Phone Jack other end.	<b>C301</b>	10'	3.90

As above, but with straight <i>Shielded</i> Phone Plug.	<b>C301A</b>	10'	3.90
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			<b>NET</b>
Shielded cable with straight MOLDED-ON <i>Shielded</i> Phone Plug one end, spade lugs other end.	<b>C124A</b>	72'	1.71

As above, but with 90° <i>Shielded</i> Phone Plug.	<b>C124</b>	72'	1.71
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Heavy duty co-axial shielded cable, low loss with a nominal capacitance of approximately 25 mmf/ft. For use with microphones, pre-amps, test equipment, VTVM, oscillo-



			<b>NET</b>
Shielded cable with Male and Female microphone connectors.	<b>E906</b>	6'	1.50
	<b>E912</b>	12'	2.10
	<b>E925</b>	25'	3.51



			<b>NET</b>
Shielded cable, microphone connector one end, new small size alligator clips other end.	<b>E1003</b>	3'	1.20
	<b>E1006</b>	6'	1.35

scopes, tape recorders, custom Hi-Fi installations or wherever a microphone connector is used. Screwing back coupling ring converts the connector from female to male.



			<b>NET</b>
Shielded cable with MOLDED-ON Phono Pin Plug one end, microphone connector other end.	<b>E801</b>	12'	.85
	<b>E803</b>	3'	1.05
	<b>E806</b>	6'	1.35



			<b>NET</b>
Shielded cable, microphone connector one end, other end stripped and tinned.	<b>E1106</b>	6'	1.23
	<b>E1110</b>	10'	1.62

# CONNECTING CABLES & ADAPTERS MOLDED with *Lenite*

**LAB-TRONICS INC.**  
CHICAGO 13, U.S.A.

FOR SPEAKER EXTENSIONS, AUDIO RECORDING, PATCHING, PUBLIC ADDRESS, ETC. ADAPTERS FOR ALL TYPES OF INTERCONNECTING CABLES.

L-T molded-on phone plugs and phono pin plugs, Molded adapters and connectors and necessary associated products are of the best construction and virtually indestructible. Complete shielding is used where necessary for non-interference. A variety of terminations are available to meet almost all needs.

L-T Adapters are a necessary convenience for all installers of Hi-Fi equipment, test equipment, repair departments, labs and shops. A single unit or a combination of two units can convert any type of connector to any type of jack or plug. Should be carried in every repair and test kit.

Flexible cable of stranded wire, insulated, for use where shielding is not required, such as recording from voice coil of speaker, speaker out-put, extension speakers, ohm-meters, low voltage lines etc. New type small alligator



Flexible cable with MOLDED-ON Right Angle Phono Pin Plug one end. Alligator Clips other end.	<b>P601</b>	<b>10'</b>	<b>NET 1.35</b>
Flexible cable with MOLDED-ON Phono Pin Plug. Spade Lugs other end.	<b>P602</b>	<b>10'</b>	<b>1.20</b>



Flexible 2 Conductor Cable with Spade Lugs each end.	<b>P501</b>	<b>10'</b>	<b>NET .54</b>
	<b>P502</b>	<b>20'</b>	<b>1.05</b>

spring clips or heavy duty spade lugs firmly attached and soldered to one end, other end with molded-on phono pin plug or molded-on phone plug.



Flexible cable with MOLDED-ON Right Angle Phone Plug one end. Alligator Clips other end.	<b>P701</b>	<b>10'</b>	<b>NET 1.83</b>
As above, with Molded-On Straight Phone Plug.	<b>P701A</b>	<b>10'</b>	<b>1.83</b>



Flexible cable with Molded-On Straight Phone Plug. Spade Lugs other end.	<b>P702A</b>	<b>10'</b>	<b>NET 1.68</b>
As above, with MOLDED-ON Right Angle Phone Plug.	<b>P702</b>	<b>10'</b>	<b>1.68</b>

## ADAPTERS & CONNECTORS



**C400** Phono Pin Jack for connecting 2 Phono Pin Plugs.  
**C400.....NET .60**



**P55A** adapts Phono Pin Plug to Standard Phone Plug.  
**P55A.....NET .75**



**M75P** adapts female microphone connector to phono plug.  
**M75P.....NET .30**



**MP** adapts microphone connector into a phono pin plug.  
**MP.....NET .60**



**C800** connects any two cables equipped with microphone connectors.  
**C800.....NET .60**

## ACCESSORY ITEMS



**TR-36** Transistor Mixer makes any single input amplifier or recorder into a three-channel unit with individual control for each channel. Gain approximately 2 times input. Complete with long-life mercury battery. 5 x 3 x 1 3/4".  
**TR-36.....NET 16.95**



**FM91** FM Twin-line Antenna — Folded dipole type for indoor use. 6 foot lead-in, with spade lugs, may be installed behind cabinet or under rug or any out-of-the way place. Designed to the center of the FM band.  
**FM91.....NET 1.26**



**L-1601** Speaker Selector Switch. Select any one of 3 speakers or any 2 or all 3, from a single location. Maintains impedance match. Screw terminals, no soldering. Fits in standard outlet box or can be mounted on cabinet. Brushed brass plate, molded black escutcheon. Complete with screws.  
**L-1601.....NET 5.95**



**L-1612** Speaker Volume Control. A constant impedance volume control for custom installations. Controls Hi-Fi or PA speaker from any remote location. Rated at 4 watts continuous, 15 watts audio peak. No soldering necessary. Molded escutcheon, brushed brass plate. 8 or 16 ohms. W/screws & instructions.  
**L-1612.....NET 9.75**



**L-1613** Speaker Volume Control. Same as L-1612 but with phone jack on plate. Permits use of headphones or external speaker. Jack also acts as two position switch allowing extension speaker to be used with or without main speaker. No soldering. 8 or 16 ohms. With screws and instructions.  
**L-1613.....NET 10.75**

Ask for specifications and literature on Accessory Items



## ATLAS SOUND CORP. the complete line for all P.A.

### KING COBRA- JECTOR- P. A. SPEAKER



ALL MODELS  
EQUIPPED  
WITH  
OMNI-  
DIRECTIONAL  
MOUNTING  
BRACKETS

### INDESTRUCTIBLE FIBERGLASS

**CJ-44**—All purpose, wide angle, P.A. speaker, complete with built-in "Acoustic-Matched" driver unit. "Controlled Response" offers smooth reproduction, free from peaks which so often create and sustain acoustic feedback.

**CJ-30**—Versatile all purpose speaker in amazing power package for the really "tough jobs". The 30" air column results in an adequate response for industrial type music systems.

**CJ-14**—Excellent for inter-com systems for paging and talk-back. Super efficient when used with low power inter-comms.

Model:	CJ-44	CJ-30	CJ-14
Power:	30 watts	15 watts	5 watts
Impedance:	16 ohms	8 ohms	8 ohms
Frequency:	150-9000 cps.	250-9000 cps.	400-9000 cps.
Dispersion:	90° x 60°	120° x 60°	120° x 60°
Dimension:	Bell 23"x12"	Bell 14"x6"	Bell 9½"x5½"
Overall Length:	19"	14"	8½"
List Price:	72.50	40.00	28.00

\*All models available in 45 ohms—add \$1.00 to list.

### ATLAS SUPER-POWER ALNICO-V-PLUS DRIVER UNITS

All models include Atlas "Alnico-V-Plus" super-efficient magnetic circuit—magnetically shielded, hermetically sealed. One-piece unbreakable, high temperature and fatigue-proof phenolic diaphragm. Deluxe PD-5VT and PD-8VT include built-in "Uni-Match" transformer for universal matching to constant impedance and constant voltage systems. All transformer taps and direct voice coil connections are brought out to waterproof "terminal window" on rear of phenolic unit housing 1¾"-18 thread.



PD-5VH



PD-4V



PD-5VT  
PD-8VT  
PD-8VL



Model	Power	Impedance	Frequency	List
PD-4V	25 watts	16 ohms	90-6000	\$27.50
PD-5VH	25 watts	16 ohms	80-9000	35.00
PD-5VT	25 watts	16 ohms*	80-9000	45.00
PD-8VT	30 watts	16 ohms*	80-10,000	50.00
PD-8VL**	30 watts	16 ohms	80-10,000	42.50

\*Actual voice coil impedance. "Uni-Match" transformer offers 165, 250, 500, 1000, 2000 ohms and variable 70-volt line connections.

\*\*Identical to Model PD-8VT, but supplied less transformer.

### ATLAS 'DR' WEATHERPROOF DOUBLE-REENTRANT PROJECTORS

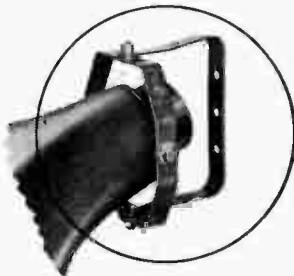


The modified exponential taper has proved most efficient for overall performance. All acoustical paths are clean and uniform. Reflex turns are smooth and flowing. Ruggedly constructed of heavy castings, precision stampings, accurate die castings and uniform metal spinings. Bell rim dampened and mechanically protected with formed rubber rim. All metals specially processed by chemical and electro-chemical means to impart complete weather-protection. Heavy "J" bracket mountings, securely fastened to main body casting of each model, do not fail even under extreme stress, strain or vibration. 1¾"-18 thread.

Model	Air		Low		List Price
	Column	Frequency	Lgth.	Diam.	
DR-32	2½ ft.	175 c.p.s.	12 in.	14 in.	\$26.00
DR-42	3½ ft.	135 c.p.s.	15 in.	21 in.	31.00
DR-54	4½ ft.	105 s.p.s.	18 in.	23 in.	43.00
DR-72	6 ft.	85 c.p.s.	25 in.	31 in.	70.00

### UNIVERSAL MOUNTING BRACKET MODEL GB-1 FOR CJ-44 AND ALL MODELS OF "DR" PROJECTORS

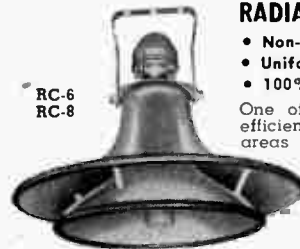
This useful accessory is easily and quickly attached to all Atlas projectors using U type bracket mounting. It permits the speaker to be quickly adjusted in both a horizontal and vertical plane and securely locked in position for the most effective sound coverage. Average adjustment limits 160° on the horizontal and 65° on a vertical direction. Constructed of bonderized steel, finished in baked enamel, all hardware supplied. Shipping weight 3 lbs. Model GB-1 List \$5.00



### RADIAL DRIVER PROJECTORS

- Non-Resonant
- Uniform 360° Coverage
- 100% Stormproof

One of these models often is more efficient for large and high noise level areas than several ordinary projectors. For speech and music. All-aluminum construction—smooth, uniform response. Thread 1¾"-18.



RC-6  
RC-8

	RC-8	RC-6
Air Column	5 feet	4 feet
Bell Diameter	29"	25"
Overall Ht. (incl. bracket)	26"	21½"
Low Frequency Cutoff	120	150
List (horn only)	\$55.00	\$45.00

**ALNICO V-PLUS PAGING and TALK BACK SPEAKERS — all with OMNI-DIRECTIONAL BRACKET.**



Model	HU-12	HU-15V	HU-24V	TP-15V	TP-24V
Power*	5 watts	12 watts	12 watts	12 watts	12 watts
Impedance	8 ohms †	8 ohms †	8 ohms †	8 ohms †	8 ohms †
Frequency	375-9000 c.p.s.	300-7000 c.p.s.	200-7000 c.p.s.	250-7000 c.p.s.	190-7000 c.p.s.
Length	7½ in.	11 in.	14½ in.	15½ in.	22 in.
Diameter	6¼ in.	8½ in.	10 in.	8½ in.	10 in.
Air Column	13½ in.	16½ in.	24 in. ea. side	19½ in. ea. side	27 in. ea. side
List	\$25.00	\$32.50	\$35.75	\$47.50	\$52.00

†All models available in 45 ohms. (Add 45 after Model No. — Example, HU-15V-45.) Add \$1.00 to list price.

This series of speakers includes models suitable for every conceivable industrial application. The Atlas "Alnico V-Plus" feature incorporated in Atlas speakers does much to increase the high conversion efficiency inherent in speakers of this design.

**EFFICIENT**—These speakers are particularly efficient in the voice frequency range and provide the extra "punch" that over-rides high level background noise.

**TALK-BACK**—All of these models have been designed to offer a

maximum sensitivity to voice pickup far in excess to any other speakers.

**MOUNTING**—The mounting bracket design of all models permits both a vertical and horizontal adjustment.

**FINISH**—Weatherproof, high lustre gray enamel protects all parts and results in a fine appearance. The driver units are hermetically sealed and are 100% weatherproof under every conceivable climatic condition.

**MODEL T-13—30 WATT WEATHERPROOF TRANSFORMER**



For use with CJ-44 and all models of high power driver units. Complete with die-cast weatherproof enclosure. Transformer supplied with large non-solder screw terminals. Universal strap mounting for wide choice of mounting.

**Specifications:** Primary 160, 250, 500, 1000 and 2000 ohms. Secondary 8 and 16 ohms Also calibrated in steps of 3 db for use on 70 volt amplifiers. **List Price \$16.50**

**MODEL T-14:** Transformer only—less enclosure. **List Price \$9.50**

**MODEL TH-1:** Enclosure and bracket only, for use in special applications. Inside diameter 3¾" x 3¼" deep. **List Price \$7.00**

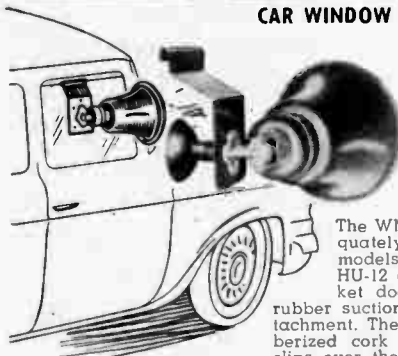
**MODEL T-11—15 WATT WEATHERPROOF TRANSFORMER**



For use with all models CJ, HU and TP speakers. Convenient wall bracket mounts under speaker bracket.

**Specifications:** Primary 500, 1000, 1500 and 2000 ohms. Secondary 4 and 8 ohms. Also calibrated for constant voltage, 70 volt line, in steps of 3db. **List Price \$8.50**

**CAR WINDOW SPEAKER SUPPORT**



This bracket can be quickly attached to any car or truck window without the use of tools. It will not cause damage to the paint finish, window glass or adjustment mechanism.

The WM-1 bracket will adequately support speaker models such as the HU 15V, HU-12 and CJ-14. The bracket does not rely on the rubber suction cup for secure attachment. The bracket has a rubberized cork lined channel that slips over the top of the window glass. Raising the window locks it tightly against the top window slot. **List Price \$5.00**

Model WM-1

**HIGH EFFICIENCY EXPLOSION-PROOF SPEAKERS**

Approved by Underwriters Laboratories for Hazardous Locations



HLE-30



HLE-42

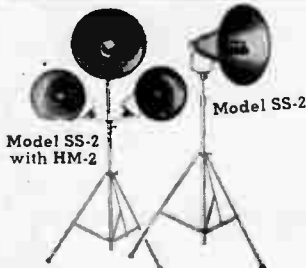
Both models are rated at 30 watts input; voice coil impedance 16 ohms (45 ohms also available). HLE-30 type—overall length 17½", opening 14" x 6". HLE-42 type—overall length 25", bell opening 21" diameter.

Approved T-30 line matching transformer available. **List \$8.50**

**COMPLETE DESCRIPTIVE SHEET ON REQUEST**

HLE-1-30 Class I - List \$110.00 HLE-1-42 Class I - List \$125.00  
HLE-2-30 Class II - List 135.00 HLE-2-42 Class II - List 150.00

**SPEAKER SUPPORT STANDS**



Model SS-2 with HM-2

Model SS-2

**SS-2**—Folding legs automatically level on uneven ground. Supports a cluster of speakers. Double clutch protection against accidental release. "Easy-off" top fitting permits attachment or removal of projector without tools. Ht. extension 5-10 ft. Wt. 20 pounds.

**HM-2 Horn Mounting Accessory**—Permits 3 speakers on SS-2 Stand, and their orientation in any direction.

**MODEL SS-2:** Speaker Support Stand **List Price \$38.00**  
**MODEL HM2:** Two Horn Mounting Fixture **List Price \$15.00**

**TWO-WAY ENCLOSURE for 8" Cone Speaker**



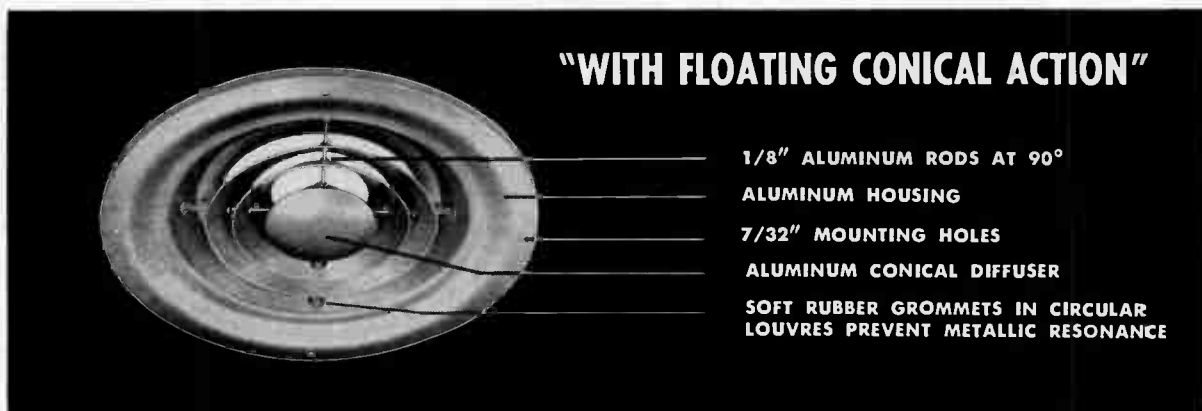
TW-8

Speaker's front and back wave are used for good coverage in long corridors and central locations. Adjustable wall or ceiling mounting brackets and speaker mounting screws supplied. Outside diam. 10", depth 5".

**Model TW-8 List Price \$9.00**

# LOWELL STL SERIES

## New Low Ceiling Type Baffles



### "WITH FLOATING CONICAL ACTION"

- 1/8" ALUMINUM RODS AT 90°
- ALUMINUM HOUSING
- 7/32" MOUNTING HOLES
- ALUMINUM CONICAL DIFFUSER
- SOFT RUBBER GROMMETS IN CIRCULAR LOUVRES PREVENT METALLIC RESONANCE

Model No.	Speaker Size	Will Mount to
STL-6	6"	CP8, XCP8, PR8
STL-7	7"	STP8, XSTP8, XSTPR8
STL-8	8"	STP8, XSTP8, XSTPR8
STL-10	10"	STP1012, XSTP1012, XSTPR12
STL-12	12"	STP1012, XSTP1012, XSTPR12

These new, unusual additions to the Lowell line of speaker baffles are top quality heavy 18 gauge spun aluminum in a buffed satin finish. Designing assures controlled 360° dispersion of undistorted sound. Echo and feedback are at the minimum. Louvres and conical diffuser "float" on very small soft rubber

grommets. Baffles are coated with clear lacquer which also serves as prime coat for on-the-job painting. Wide choice of colored lacquer finishes available on request.

Shipped complete with hardware and instructions for mounting to Lowell Protective Speaker Enclosures illustrated.

From architecture to acoustics, Lowell STL series meets every requirement — in ultra-modern design . . . for even, undistorted low-level sound distribution throughout 360°. Recommended baffle placement is usually 25' from center to axis. Where straight line placement is impossible, triangulating the baffles in the ceiling is highly effective.

STP SERIES



XSTP SERIES



XSTPR SERIES



HEARD EVERYWHERE  
**Lowell** MANUFACTURING COMPANY



# LOWELL HOUSINGS

Cabinet Relay and Delux Cabinet Racks



Completely Assembled  
Mass-Production Prices  
Prompt  
Delivery From Stock

Lowell-designed electronic equipment housings offer every advantage. There's a model for every budget.

**FEATURES:** Constructed of heavy-gauge steel, completely welded to save assembly time and expense.

Panel mounting edges drilled to standard 1 1/4"-1/2" spacings. Finished in silver gray hammertone with bright chrome moulding, unless otherwise specified.

## CABINET RELAY RACKS, for 19" panels. Standard, round-corner and deluxe models

Model	Catalog No.	Height-in.	Width-in.	Depth-in.	Panel Space in.	Ship. Wt. Lb.
	SCR-3675	41 1/8	22 1/4	18 1/2	36 3/4	100
	SCR-4200	46 3/8	22 1/4	18 1/2	42	110
<b>Standard</b>	SCR-6125	65 3/8	22 1/4	18 1/2	61 1/4	130
	SCR-7000	74 3/8	22 1/4	18 1/2	70	140
	SCR-7700	81 3/8	22 1/4	18 1/2	77	150
	RCR-3675	41 1/8	22 1/4	18 1/2	36 3/4	100
	RCR-4200	46 3/8	22 1/4	18 1/2	42	110
<b>Round Corner</b>	RCR-6125	65 3/8	22 1/4	18 1/2	61 1/4	130
	RCR-7000	74 3/8	22 1/4	18 1/2	70	140
	RCR-7700	81 3/8	22 1/4	18 1/2	77	150
	DCR-3675	43	22 1/4	18 1/2	36 3/4	105
	DCR-4200	48 1/4	22 1/4	18 1/2	42	115
	DCR-6125	67 1/2	22 1/4	18 1/2	61 1/4	135
	DCR-7000	76 1/4	22 1/4	18 1/2	70	145
	DCR-7700	83 1/4	22 1/4	18 1/2	77	155

## DELUXE DESK CABINET RACKS for 19" panels. Solid back and hinged-door back models, all with door on top.

Catalog No.	Width-in.	Height-in.	Depth-in.	Panel Space-in.	Ship. Wt. Lbs.
DC-875	22 3/4	10 7/8	15	8 3/4	26
DC-1050	22 3/4	12 3/8	15	10 1/2	28
DC-1225	22 3/4	14 3/8	15	12 1/4	30
DC-1400	22 3/4	16 1/8	15	14	32
DC-1750	22 3/4	19 5/8	15	17 1/2	38
DC-2100	22 3/4	23 1/8	15	21	42
DC-2450	22 3/4	26 3/8	15	24 1/2	46
DC-2625	22 3/4	28 3/8	15	26 1/4	48
DC-3150	22 3/4	33 3/8	15	31 1/2	52
DC-3500	22 3/4	37 1/8	15	35	56

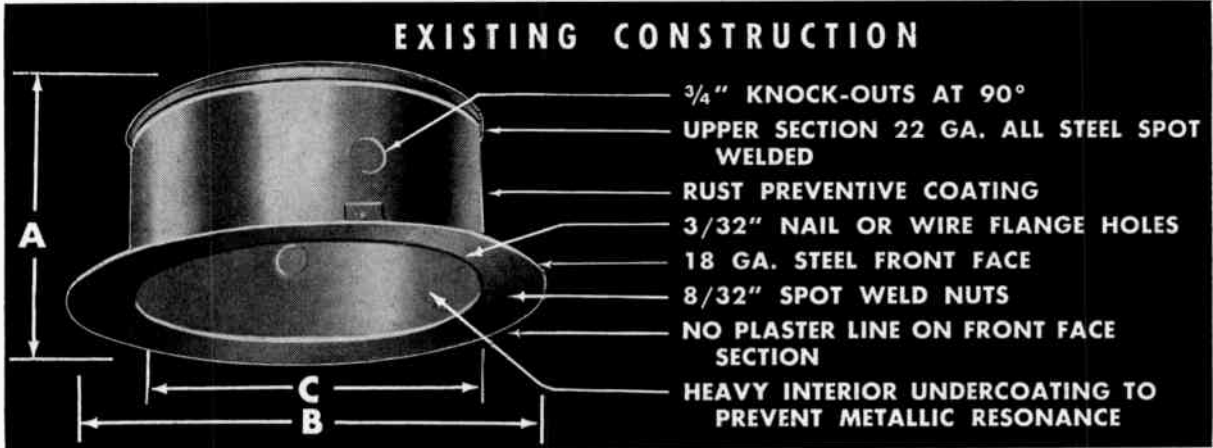
**LOWELL CONSOLES**—Single-, double- and triple-pedestal models for 19" rack panels for industry, schools, airports, broadcasting, recording and testing apparatus.

Special dimensions available, prices on request.

HEARD EVERYWHERE  
**Lowell** MANUFACTURING COMPANY

# LOWELL XCP SERIES

## Back Cover Protective Speaker Enclosure



Model	A	B	C	Speaker Size Accommodation
XCP6	4"	10 1/4"	7 3/8"	6"
XCP8	2 1/2"	11 3/4"	8 1/2"	8"
XCP8	4 1/4"	11 3/4"	8 1/2"	8"
XCP8	7"	11 3/4"	8 1/2"	8"
XCP8	10"	11 3/4"	8 1/2"	8"
XCP1012	7"	16"	12 3/8"	10" & 12"
XCP15	10 3/4"	21 1/4"	14 3/4"	15"
XSTP8	7"	13 3/4"	12 1/2"	8"
XSTP1012	10"	17 1/2"	14 1/2"	10" & 12"

**USES:** Designed for quick labor-saving wall or ceiling installation of sound systems in EXISTING CONSTRUCTION, ready for plastering.

**DESCRIPTION:** All-steel, spot-welded construction of heavy 22 ga. metal complete with-plaster ring attached. 1/2" and 3/4" knock-outs at 90°. Rust preventive coating on exterior. Very heavy undercoating on interior to prevent metallic resonance. Sufficient speaker back pressure relief assures high speaker efficiency. Excellent for high fidelity installations. Complete mounting hardware and mounting instructions furnished to meet problems of various types of installations.

**Note:** Special overall depths (where space in walls and ceilings allow) and additional "loading" may be ordered at slightly higher price.

**IMPORTANT:** When mounting back enclosures in wall or ceiling for slip fit, cut hole to following size in diameter as per model ordered and nail to lath:

- Model XCP6—7 1/4" dia.
- Model XCP8—8 3/8" dia.
- Model XCP1012—12 3/8" dia.
- Model XCP15—14 3/4" dia.
- Model XSTP8—12 3/8" dia.
- Model XSTP1012—14 3/8" dia.

### FOR SUSPENDED CEILINGS:

Mount XCP Series back enclosures to Model SS24 or 48 Steel Support Channels for positive strength.

**FEATURES:** Protects speaker cone from fire, falling mortar and dust. Prevents rodents from damaging speaker cone. Easily serviced without damage to wall or ceiling. Installation time reduced.

### Speaker Baffles That Will Mount to XCP Series Protective Speaker Enclosures:

Enclosure Model No.	Speaker Baffle Model No.
XCP6	AL6-A, R55-A, R56-A,
XCP8	AL7-A, AL8-A, R57-A, R58-A, CE, JG8, M-8 PS8, STL6
XSTP1012	AL10-A, AL12-A, R510-A, R5812-M, AL812-M, R512-A, JG12
XCP15	AL15, R515-A
XSTP8	STL8
XCP1012	STL10, STL12

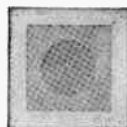
### AL SERIES



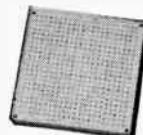
### RS SERIES



### JG SERIES



### M SERIES



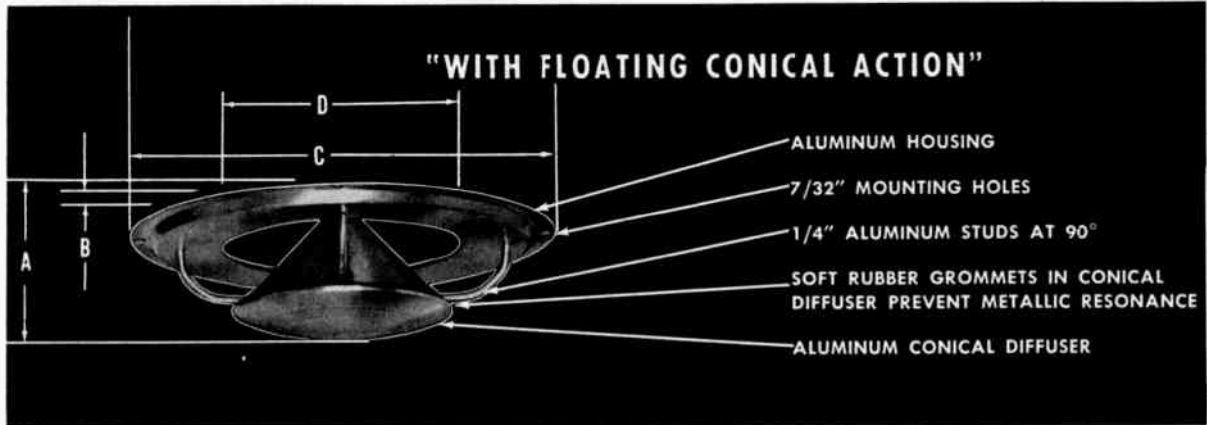
### PS8 BLOCK PAN



HEARD EVERYWHERE  
**Lowell** MANUFACTURING COMPANY

# LOWELL AL SERIES

## Flush Mounting Low Ceiling Baffles



Speaker Baffle Model	Size Speaker Accommodated	Mount to Speaker Enclosure Models	Dimensions				Baffle Flange	No. of Flange Mtg. Holes	Dia. of Required Hole in Ceiling	Weight (lbs.)		No. per Shipping Carton
			A	B	C	D				Net	Shpg.	
AL6-A	6"	CP6, XCP6, PR6 PS	2 1/2"	1/2"	10 3/4"	5 1/4"	1"	4	7"	1/2	3/4	12
AL7-A	7"	CP8, XCP8, PR8 PS	2 1/2"	1/2"	12 3/8"	5 1/4"	1"	4	8 1/2"	3/4	1	15
AL8-A	8"	CP8, XCP8, PR8 PS	2 1/2"	1/2"	12 3/8"	6 3/4"	1"	4	8 1/2"	3/4	1	15
AL10-A	10"	CP1012, XCP1012 PR10	3"	1/2"	16 7/8"	8 1/2"	1"	4	13"	1	1 1/2	6
AL12-A	12"	PR12, CP1012, XCP1012	3"	1/2"	16 7/8"	10 3/8"	1"	4	13"	1	1 1/2	6
AL15-A	15"	PR15, XCP15 CP15	5"	2"	21 3/4"	13"	1 3/4"	8	15 1/2"	3	3 1/2	1
AL812-M	8"	PR12, CP1012 XCP1012	2 1/2"	1/2"	16 7/8"	6 1/4"	2"	4	8 1/2"	3/4	1	6

Top quality, heavy gauge satin finished spun aluminum. Assures controlled 360° diffusion of undistorted "ear-level" sound with minimum of echo and feedback. Conical diffuser "floats" on soft rubber grommets forming a press fit to aluminum support studs which thread to speaker housing ring. Clear lacquer coating also serves as prime coat for on-the-job painting. Wide choice of colored lacquer finishes available on request. Shipped complete with hardware for mounting to Lowell Protective Speaker Enclosures illustrated.

### 360° Coverage Low "Ear-Level" Sound

Even undistorted sound. Recommended baffle placement 25' from center of axis. Where straight line placement is impossible, triangulating baffle in ceiling is highly effective.

CP SERIES



XCP SERIES



PR SERIES



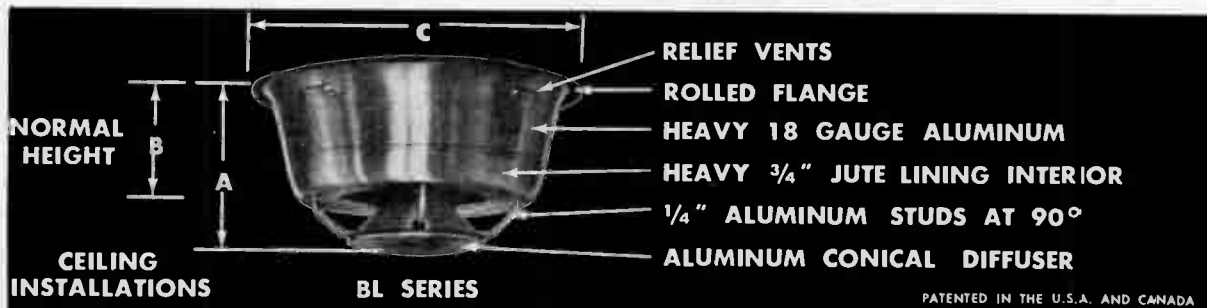
PS BLOCK PAN



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**Lowell** MANUFACTURING COMPANY

# SURFACE MOUNTING CEILING BAFFLES

"WITH FLOATING CONICAL ACTION"



Model No.	Speaker Size	A	B	C	Will Mount To
BL6-A	6"	7 1/4"	4 1/4"	12 3/8"	PL6
BL7-A	7"	8 1/8"	5"	14 3/8"	PL7
BL8-A	8"	8 1/8"	5"	14 3/8"	PL8
BL10-A	10"	9 1/4"	6 3/4"	18 5/8"	PL10
BL12-A	12"	9 1/4"	6 3/4"	18 5/8"	PL12

**IMPORTANT NOTE:** When added cubical area is required, CP or XCP Series may be installed in ceiling. Choose model to suit speaker size selected for installation.



PL Series Steel Discs for mounting BL Series to concrete ceilings. Heavy 18 gauge steel. All holes punched for standard electrical outlet boxes.

**GENERAL INFORMATION:** Designed for surface mounting constructed of heavy gauge aluminum. Accurately engineered for normal ceiling sound reinforcement. Perfect speaker cone loading holds feed-back to minimum. Exclusive "Floating Conical Action" assures controlled 360° sound coverage. High frequency diffuser supported to housing by four 1/4" aluminum studs and threaded on one end mounted to housing. Press fit to diffuser through soft rubber grommets prevents metallic resonance. Recommended placement of baffles under normal ceiling heights is 25' off center of axis in straight line placement. All models finished in brushed satin and coated with colorless lacquer. Acts as excellent base coat or primer for on-the-job painting. All models available in colored lacquers at slightly higher price. Complete information on request.

## TYPE RS recessed wall type directional speaker baffles

### TYPE RS RECESSED WALL TYPE DIRECTIONAL SPEAKER BAFFLES:

Excellent speaker trim for modern installations. Especially recommended for Dress Shops, Department Stores, Night Clubs. Provides concealment of speaker. Easily installed.

**DESCRIPTION:** 18 gauge spun aluminum. 1/2" mounting flange. Mounts to Lowell Model CP or XCP enclosures or to wall with 4 toggle bolts. Furnished with plastic grille cloth. Grille cloth and speaker mount to trim ring with 4 round hand screws. Standard finish—satin aluminum.



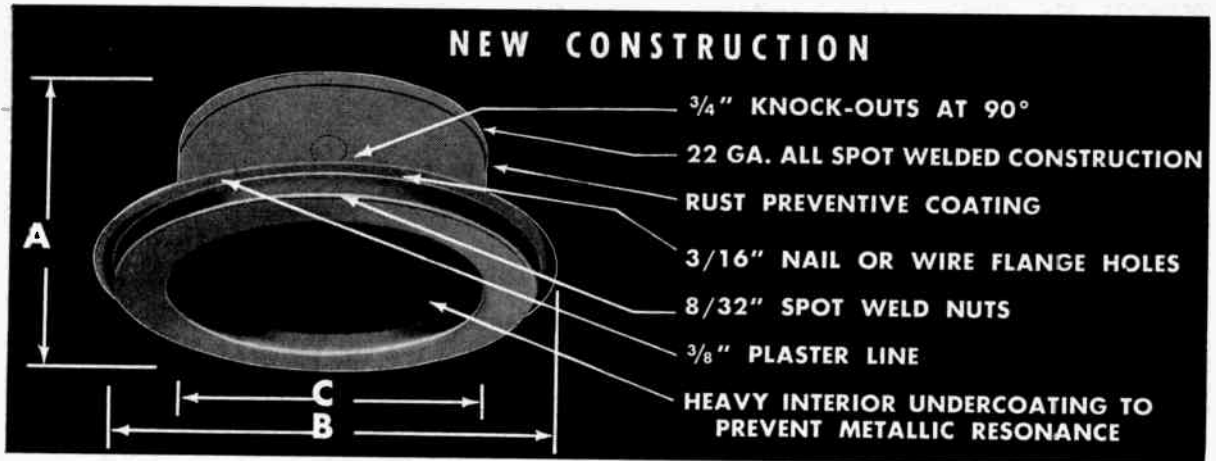
Model No.	Speaker Size	Dimensions	Wall Hole Size
RS4-A	4"	7 1/2" dia. x 7/16" depth	5" dia.
RS5-A	5"	10 3/4" dia. x 7/16" depth	7" dia.
RS6-A	6"	10 3/4" dia. x 7/16" depth	7" dia.
*RS7-A	7"	12 3/8" dia. x 7/16" depth	8 1/2" dia.
RS812-M	8"	16 7/8" dia. x 1/2" depth	8 1/2" dia.
RS8-A	8"	12 3/8" dia. x 1/2" depth	8 1/2" dia.
RS8-A (1 1/2" deep)	8"	12 3/8" dia. x 1 1/2" depth	8 1/2" dia.
RS10-A	10"	16 7/8" dia. x 1/2" depth	12 1/2" dia.
RS12-A	12"	16 7/8" dia. x 1/2" depth	12 1/2" dia.
RS15-A	15"	21 3/4" dia. x 3" depth	17" dia.

\* For RCA 7" Accordion Speaker. Information on colored lacquer furnished on request for both models.

HEARD EVERYWHERE  
**Lowell** MANUFACTURING COMPANY

# LOWELL CP SERIES

## Back Cover Protective Speaker Enclosure



Model	A	B	C	Speaker Size Accommodation
CP6	4"	11 1/4"	7"	6"
CP8	2 1/2"	13 1/8"	8 1/2"	8"
CP8	2 1/2"	13 1/8"	8 1/2"	8"
CP8	7"	13 1/8"	8 1/2"	8"
CP8	10"	13 1/8"	8 1/2"	8"
CP1012	7"	17 1/8"	12 1/2"	10" & 12"
CP15	11"	21 1/2"	14 3/8"	15"
STP8	7"	14 7/8"	12 3/8"	8"
STP1012	10"	18 7/8"	14 3/4"	10" x 12"

**USES:** Designed for quick, labor-saving wall or ceiling installation of sound systems in NEW CONSTRUCTIONS, ready for plastering.

**DESCRIPTION:** All-steel, spot-welded construction of heavy 22 ga. metal complete with plaster ring attached, 3/4" and 1/2" knock-outs at 90°. Rust preventive coating on exterior. Very heavy undercoating on interior to prevent metallic resonance. Sufficient speaker back pressure relief assures high speaker efficiency. Excellent for high fidelity installations. Complete with mounting hardware and mounting instructions to meet problems of various types of installation.

**Note:** Special overall depths (where space in walls and ceilings allow) and additional "loadings" may be ordered at slightly higher price. Available with removable cylinder and stationary front plaster ring in adjustable face models—DCP series.

**IMPORTANT:** When mounting back enclosures in wall or ceiling for slip fit, cut hole to following size in diameter as per model ordered and nail to lath.

Model CP6—7" dia.                      Model CP15—14 3/4" dia.  
 Model CP8—8 1/2" dia.                Model STP8—12 1/2" dia.  
 Model CP1012—12 1/2" dia.        Model STP1012—14 1/2" dia.

### FOR SUSPENDED CEILING:

Mount CP Series back enclosures to Model SS 24 or 48 Steel Support Channels for positive strength.

**FEATURES:** Protects speaker cone from fire, falling mortar and dust. Prevents rodents from damaging speaker cone. Easily serviced without damage to wall or ceiling. Reduces installation time.

### Speaker Baffles That Will Mount to CP Series Protective Speaker Enclosures:

Enclosure Model No.	Speaker Baffle Model No.
CP6	AL6-A, R55-A, R56-A
CP8	AL7-A, AL8-A, R57-A, R58-A, RJ8, M-8, PS8, STL6
CP1012	AL10-A, AL12-A, R510-A, R512-A, JG12, R5812-M, AM812-M
CP15	AL15, R515-A
CTP8	STL8
STP1012	STL10, STL12

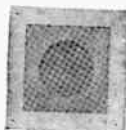
### AL SERIES



### RS SERIES



### JG SERIES



### M SERIES



### PS8 BLOCK PAN



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**Lowell** MANUFACTURING COMPANY



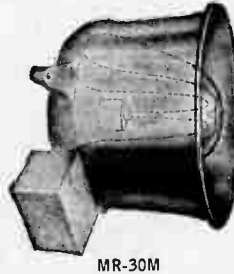
# RACON ACOUSTICAL EXCELLENCE

DOUBLE RE-ENTRANT MARINE SPEAKERS  
RE-ENTRANT PAGING SPEAKERS  
CONE SPEAKER ENCLOSURES

## DOUBLE RE-ENTRANT MARINE SPEAKERS

The Models MR-30M, MG-21J, MG-21B and MN-15B marine speakers are designed primarily to meet the vigorous sound systems requirements aboard ship.

The driver unit and connecting leads are all enclosed, resulting in a completely waterproof speaker. Heavy aluminum spinings are used throughout and back base is a husky, non-corrosive aluminum casting. A baked chromatic undercoat plus an outside lacquer finish is assurance of lasting service under severe conditions of humidity and temperature. Designed for three legged flush rear mounting. All models provided with cast aluminum transformer housing. Model MN-15B supplied with "U" bracket; "U" bracket for other models on request at slight additional cost.



MR-30M



MG-21B  
MG-21J  
MN-15B

Model No.	Frequency Range	Distribution Angle	Bell Diam.	Capacity (watts) Oper. Peak	Imp.	No. Driver Units	Over-all Length	Ship. Wt. lb.	Code	List Price
MR-30-M	250-6000	50°	14"	30 60	15	1	10"	29 3/4	REDIX	\$185.00
MR-32M	250-6000	50°	14"	60 120	8	2	18 1/2"	43	REDIT	275.00
MG-21J	350-5000	55°	9 1/2"	25 50	15	1	6 3/4"	13 3/4	RASOM	76.00
MG-21-B	350-6000	55°	9 1/2"	20 35	15*	1	6 3/4"	9 1/4	RASOB	71.50
MN-15B	450-6000	65°	6 1/4"	20 35	15*	1	4 3/4"	6 1/4	REDUP	56.00
MN-15C	(same as MN-15B, but less "U" bracket)									
MN-15D	(same as MN-15B, but less "U" bracket and less transformer box)									
									REDUT	53.75
									REDUZ	50.00

\* 8 ohms on request at same price. Four or 45 ohm 1.00 list additional.

## RE-ENTRANT PAGING SPEAKERS



RE-15 RE-12



DW-9R

These weatherproof re-entrant paging speakers are capable of high intelligibility in locations where high noise levels prevail. Construction is non-vibratory throughout and consists of heavy aluminum spinings and castings. Voice coils are designed to provide a high degree of efficiency when these speakers are also used as microphones in "talk-back" systems. Ideal for replacing conventional cone speakers. RE-12 and RE-15 provided with heavy cast aluminum ratchet bracket. DW-9R is supplied with flange for flush mounting.

Model No.	Frequency Range	Distribution Angle	Operating Capacity	Imp.	Bell Diam.	Over-all Length	Ship. Wt. lb.	Code	List Price
RE-15	350-8500	60°	20 watts	*15 ohms	9"	9 3/4"	6	REMAC	\$38.50
RE-12	450-10,000	65°	10 watts	*15 ohms	7"	6 1/2"	3 3/4	REMB	30.00
DW-9R	750-10,000	70°	8 watts	*15 ohms	5"	2 1/2"	2	REDOX	37.50

\* 8 ohms on request at same price. Four or 45 ohm 1.00 list additional.

## NEW PAGING AND TALK-BACK SPEAKERS

**RE-20** — Model RE-20 has a nominal rating of 25 watts and incorporates a varnish vacuum impregnated transformer provided with a removable weatherproof aluminum spinning. Primary impedances are 625, 1250, 2500 and 5000 ohms and the secondary is tapped at 4, 8, and 16 ohms. By connecting directly to and between these terminals, the resulting impedances of 310, 625, 1250, 2500, 3650, 5000, 7300, 10000, 14,500 and 29,000 ohms are equivalent to 16, 8, 4, 2, 1.3, 1.0, 0.7, 0.5, 0.34 and 0.17 watts respectively when connected across a 70 volt line. Weatherproof construction throughout.

**RE-11** — Similar to the RE-20, but has a higher cutoff and a nominal rating of 12 watts. The built-in 10 watt transformer has primary impedances of 500, 1000, 1500 and 2000 ohms and a secondary tapped at 8 and 15 ohms.

**RE-18** — This is the economical answer to all paging and "talk-back" applications where low to medium power levels are necessary and where "specs" do not call for line transformers. Bell and back cover are integrally spun of aluminum to assure weatherproof performance of the 12 watt driver unit. Complete with adjustable "U" bracket.

**MODEL NO.**  
**Power Range (cps.)**  
**Dist. Angle**  
**V C Imp.**  
**\*Sensitivity**  
**Bell Dia.**  
**Length**  
**Weight (net)**  
**Weight (ship.)**

### SPECIFICATIONS

RE-20	RE-11	RE-18
25 W.	12 W.	12 W.
350-8,500	450-10,000	350-10,000
60°	65°	60°
†8 ohms	†15 ohms	#15 ohms
107.5 db.	104 db.	104 db.
9"	7"	9"
12.5"	9.75"	9.25"
7 lbs.	4 lbs.	3 lbs.
9 lbs.	5.5 lbs.	3.5 lbs.
List Price \$53.50	List Price \$45.00	List Price \$33.00

\* 4 ft., 1 watt input, warble signal 1,200-2,000 cps.  
# 8 ohm available at same price. 4 and 45 ohm \$1.00 list additional.  
† Built-in transformer. See text.



MODEL RE-20, RE-11



MODEL RE-18



# RACON

ACOUSTICAL EXCELLENCE

STRAIGHT EXPONENTIAL TRUMPETS • COBRA-TYPE HORN  
CELLULAR HORN TWEETERS • CROSSOVER NETWORKS

## STRAIGHT EXPONENTIAL TRUMPETS



Output from any straight trumpet is approximately 2 DB higher than corresponding re-entrant type because it lacks the attenuation inherent in all re-entrant horns. "Stormproof" Trumpets are made of non-vibratory RACON ACOUSTIC CLOTH. Weather-treated for indoor or outdoor use. "All Aluminum" Trumpets are made of

heavy gauge aluminum spinnings with rolled beaded edge and cast aluminum throat sections. "Unbreakable" Trumpets are made of heavy gauge aluminum spinnings reinforced and damped with Patented RACON ACOUSTIC MATERIAL. Large sizes are useful for church chime systems, C-D systems, airports and stadiums, parks, playgrounds, music festivals, for both speech and music. Smaller sizes for railroad and bus terminals, waiting rooms, factories.

Model No.	Air Column (length)	Units Required	Cut-off (cycles)	Distribution Angle	Bell Diam.	Material	Ship. Weight	Code	List Price
*ST-415A	6'	1	115	45°	30"	Unbreakable	37 lb.	REGON	\$160.00
**ST-414A	6'	1	115	45°	30"	Stormproof	39 lb.	RIDER	140.00
**ST-417A	6'	1	115	45°	30"	All Aluminum	35 lb.	RHINO	130.00
*ST-412A	4½'	1	145	50°	25"	Stormproof	34 lb.	RACEY	82.50
*ST-413A	4½'	1	145	50°	25"	All Aluminum	27 lb.	RIANT	80.00
**ST-411A	3½'	1	195	50°	22"	Stormproof	28 lb.	RENEW	52.50
**ST-251A	2'	1	250	55°	12"	Stormproof	6 lb.	RISAT	19.00
*ST-251B	2'	1	250	55°	12"	All Aluminum	5 lb.	RIMAD	18.50

\* Delivery, 4 weeks. \*\* Delivery, 1-2 weeks. NOTE: Models with 2, 4 and 8 unit throats available. Prices on request.

## CAST ALUMINUM HORN TWEETERS

Response is essentially uniform to 20,000 cycles. Horn design permits wide angle distribution. Alnico V magnets, featherweight drawn dural diaphragms and aluminum wound voice coils are a few of their outstanding characteristics.

### SPECIFICATIONS—MODEL CHU-2 AND CHU-5

Model	Response	Power	Imped.	Crossover	Disp.	Dim.	Weight Net	Ship.	Audiophile Net Price
CHU-2	900-20,000 cps	40 W. (program material)	8 ohms*	1000 cps.	120° H x 30° V	10½" W 6¾" H 8¾" D	4.5	6 lbs.	28.50
CHU-5	1500-20,000 cps	40 W. (program material)	8 ohms*	2000 cps.	120° H x 50° V	6½" W 2½" H 6" D	3.5	4.5 lbs.	23.65

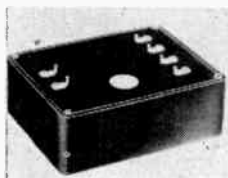
\*15 ohms on request at same price.



CHU-2

CHU-5

CON-30  
CON-20  
CON-6



CON-4M

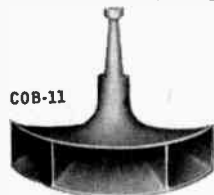
## CROSSOVER NETWORKS

The CON-20 and CON-30 are identical except for crossover and are recommended for the CHU-2 and CHU-5 tweeters respectively. Both are of the ¼ section type, attenuation 6 db per octave. The CON-6 (½ section type) has crossovers at 600 and 5000 cycles, for use in a two or three way system. The CON-4M provides crossovers at 300, 600, 1200 or 5000 cycles for a wide variety of crossovers. Selection of crossover is made by strapping terminals as shown by data on panel.

### CROSSOVER NETWORK SPECIFICATIONS

Model	Impedance (input & output)	Crossover Frequency	Dimensions	Audiophile Net Price
CON-20	8 ohm	1000 cycles	3¾" W, 6¼" D, 2½" H	15.50
CON-30	8 ohm	2000 cycles	3¾" W, 6¼" D, 2½" H	15.50
CON-6	8 ohm	600, 5000 cycles	5¾" W, 6¾" D, 2½" H	18.50
CON-4M	8 ohm	300, 600, 1200, 5000 cycles	5¾" W, 6¾" D, 2½" H	28.50

## COBRA TYPE HORN



COB-11

The RACON COB-11 "cobra" type horn is designed for public address systems requiring high clarity reproduction with maximum concentration of sound in a horizontal plane. It is of "straight" horn design and

exponentially flared for maximum transfer of energy. The low cutoff of 250 cycles results in crisp, highly articulate quality without a trace of boominess. The horn consists of a heavy two-piece non-vibratory aluminum casting and is provided with a two-section serrated mounting bracket. Finish is baked gray hammertone over a zinc chromate primer.

Cut-off	250 cycles
Dispersion	120° H, 40° V
Thread	1¾" — 18
Dimensions	17¾" H, 22¼" W, 13¾" D
Net Wt.	12 lbs.
Shipping Wt.	17 lbs.
Code	ROBON
List Price	\$82.50

\* 1-7/16"-16 on request at same price.

## CONE SPEAKER ENCLOSURES

These housings are strongly constructed, practically abuse-proof. Back spinings are steel and incorporate a watertight overlap seal which eliminates rain leakage at the juncture of front bell and rear housing. Two offset mounting hooks are provided for easy installation. Aluminum Bell; Steel back acoustically damped — cone opening protected by wire screening and silk gauze.

Model No.	CP-12AW	CP-8AW
Cone Size	12"	8"
Bell Diameter	17"	15"
Length	20"	15"
Shipping Wt.	8 lbs.	6 lbs.
Code	ROBOT	RIFLE
List Price	\$21.00	\$17.00



CP-12AW  
CP-8AW



# RACON ACOUSTICAL EXCELLENCE

RE-ENTRANT TRUMPETS  
RADIAL HORNS and SPEAKERS  
PM DRIVER UNITS

## Re-Entrant Trumpets, Radial Horns and Speakers

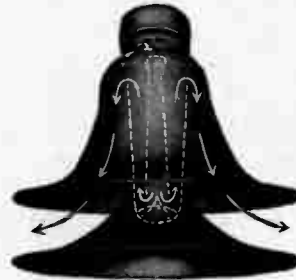


RE-35 RE-50 RE-60

RACON re-entrant horns and speakers are designed to deliver highly concentrated sound with great efficiency over long distances. This is due to true exponential design throughout and the elimination of all vibratory members and sound dissipating devices. The base and inside tone arms are husky aluminum castings and bell is a heavy gauge aluminum spinning. The

RE-35, RE-50 and RE-60 incorporate reflectors made of patented RACON ACOUSTIC MATERIAL to prevent resonant effects. All models are supplied with "U"-bracket mounting (ratchet swivel type on request). Finish is in weatherproof hard baked gray hammertone. RE-60 & RE-50 recommended for maximum low frequency music reproduction. RE-35 and RE-25 best suited for incidental music and high speech intelligibility.

The SR-35R and SR-60R are weatherproof radial re-entrant horns designed to project sound over an area of 360 degrees. The centre reflectors are of patented RACON ACOUSTIC MATERIAL and the deflectors are aluminum spinnings covered with this same non-vibratory material. Standard "U" bracket supplied. Thread size is 1 3/8"-18, permitting the use of any driver unit listed below. 1 7/8"-16 thread on request. The SR-60R is ideal for church tower sound installations and the SR-35R for incidental music and speech.



SR-35R SR-60R



SR-15R SR-12R

The SR-15R and SR-12R are rated at 20 and 10 watts respectively and are supplied complete with built-in 15 ohm\* driver units. These models are intended primarily for speech in paging and "talk back" systems and are completely weatherproof. Supplied with cast swivel ratchet and wall bracket.

Model No.	Acoustic Length	Bell Diam.	Over-all Length	Cut-off (cycles)	Distrib. Angle	Ship. Wt. lb.	Code	List Price
**RE-60	6'	26"	28"	112	45°	21	REMOL	\$75.00
**RE-50	4 1/2'	25 1/4"	23 1/2"	140	60°	19	REMOY	62.50
**RE-35	3 1/2'	19"	16 1/4"	175	55°	12 1/2	REMOX	38.50
**RE-25	2 1/2'	13 1/2"	11"	225	60°	9	REMOD	29.50
**SR-60R	6 1/2'	36"	34 1/2"	115	360°	47	RADAL	130.00
**SR-35R	4'	17"	16"	175	360°	16	RADAK	52.50
SR-15R	20"	9"	12"	350	360°	7	RADAS	39.75
SR-12R	15"	7"	9"	450	360°	4	RADAB	31.50

\* 8 ohms on request at same price. 4 or 45 ohm 1.00 list additional.  
\*\* horn only

## Waterproof Permanent Magnet Driver Units

The driver unit is the most important single element in a successful public address system. In these four new driver units, primary emphasis is on: high continuous power handling capacity with ample reserve

for overload peaks up to 100%, maximum conversion efficiency, response ranges suitable for every type sound system, and waterproof construction.



These four units employ Alnico V magnets and Armco magnetic iron throughout. All soft steel parts are doubly plated to prevent corrosion. An automatic electromagnetic cut-out switch is used in the magnetizing process, assuring maximum flux density in the gap and high uniformity. Units are individually measured for flux density. Each unit is tested with special equipment for power handling capacity as well as a 350-volt ground test.

Long life plastic diaphragms and formers are supplied. Voice coil leads are non-fatiguing beryllium copper, insuring lifetime performance. All units are completely waterproof, yet permit ready replacement of diaphragm where needed.

## NEW SUPER X UNITS USING LATEST ALNICO V MAGNETS

Model No.	Weight		Flux Density per sq. cm.	Frequency Range	Imp.	Diam.	Ht.	Thread	Capacity (watts)		Code	List Price
	Net	Ship.							Peak	Oper.		
PM-623	6 lbs.	6.5 lbs.	15,500 gaussses	30-7000	15	5"	5"	1 3/8"-18	65	35	RETIX	\$52.50
PM-615	6.5 lbs.	7 lbs.	13,500 gaussses	90-7000	15	5"	4 1/2"	1 3/8"-18	60	30	RETIN	40.00
PM-609	4 lbs.	4.5 lbs.	12,000 gaussses	90-7000	15	4"	3 1/4"	1 3/8"-18	60	30	RETEG	31.50
PM-708TR*	6 lbs.	6.5 lbs.	11,000 gaussses	90-7000	15	4 1/4"	5 1/2"	1 3/8"-18	50	25	RETOY	42.75

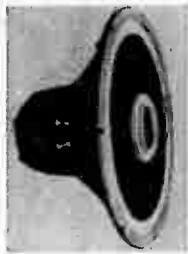
\*NOTE: Contains built-in 25-watt line matching transformer, primary tapped at 500, 1000, 1500, 2000; secondary; secondary 8 and 15 ohms.



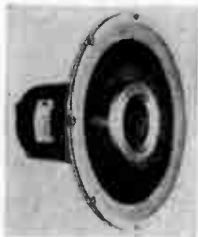


## HIGH FIDELITY LOUDSPEAKERS

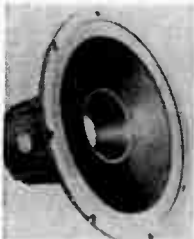
### TRI-CONE, DUAL CONES, WOOFERS



15-HTX 15" Tri-Cone



12-HTX 12" Tri-Cone



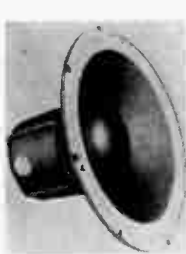
15-HD 15" Dualcone



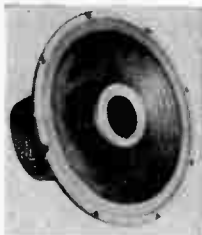
12-HD 12" Dualcone



15-HW 15" Woofer



12-HW 12" Woofer



15-XB 15" Tri-Cone

#### HIGH FIDELITY LOUDSPEAKERS

These radically new 12" and 15" high fidelity loudspeakers reflect every advance in the acoustical art to date and in addition, incorporate a number of unique design features never available heretofore.

Each model uses a special formulated plastic suspension, resulting in practically a free edge cone. Free air resonance is lower than heretofore obtainable, manifesting itself in exceptionally clean bass response to the lowest limits of program material. To prevent cone breakup at high levels, stiffening struts of rigid styrofoam are cemented radially to the cone's rear surface.

Mid range reproduction in

the dual cone and tri-cone models is achieved by a separate cone fastened near the apex of the large cone from which it is decoupled by means of a special resilient compound.

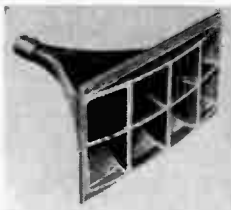
A combined compression and direct radiator tweeter covers the upper band. Highs are silky smooth to the limits of audibility, without the harsh quality usually associated with most horn type tweeters.

**NOTE:** The 15-XB 15" tri-cone, integrated speaker, is the only answer to requests for a true extended range speaker at a net price under \$55.00. Despite this seemingly impossible price goal, no concession has been made to quality.

#### SPECIFICATIONS

Model	15-HTX	15-HD	15-HW	15-XB	12-HTX	12-HD	12-HW
Response	20-20,000	20-14,000	20-4000	30-20,000	35-18,000	35-12,000	35-5000
Power	25 w	25 w	25 w	25 w	20 w	20 w	20 w
Impedance	8 ohm	8 ohm	8 ohm	8 ohm	8 ohm	8 ohm	8 ohm
Res. Freq.	24 cps	24 cps	24 cps	35 cps	40 cps	40 cps	40 cps
Flux	14,500 g.	14,500 g.	14,000 g.	10,500 g.	10,500 g.	10,500 g.	10,500 g.
Crossover	2000 5000	2000		2000 5000	2000 5000	2000	
Dispersion	100°	100°	100°	100°	100°	100°	100°
Dimensions	15 1/8" d x 3 1/2"	15 1/8" d x 8 1/2"	15 1/8" d x 8 1/2"	15 1/8" d x 7 1/2"	12 3/8" d x 7"	12 3/8" d x 7"	12 3/8" d x 7"
Weight	23 lbs.	21 lbs.	21 lbs.	11 lbs.	9.5 lbs.	8 lbs.	8 lbs.
Audiophile Net	109.50	79.50	69.50	54.00	43.50	32.00	30.00

### MODEL COB21 WIDE ANGLE HORN



COB-21

The COB-21 is a one piece cast aluminum horn with a design cutoff of 600 cycles. It incorporates an integrally cast 8 cell configuration to provide a uniform sound pattern. It may be used in a two or three way system or as a midrange and high frequency speaker in a three way system. The CHU high frequency unit is recommended for the COB-21.

#### SPECIFICATIONS—MODEL COB-21

CUTOFF: 600 cycles  
HI-FREQ. DISPERSION: 120°  
DIMENSIONS: 11" W, 6" H, 11" L  
WEIGHT: 5 lbs.  
PANEL OPENING REQ.: 5" x 10 3/8"  
PRICE: \$17.00 AUDIOPHILE NET

### MODEL CHU WIDE RANGE DRIVER UNIT

Although designed to power the COB-21 horn, it may be used in any application requiring uniform response from 600-20,000 cycles. High flux density is obtained from an oversized ALNICO V magnet. Diaphragms are made from cold tempered dural, hydraulically drawn. Voice coils are wound with aluminum wire for low mass.

#### SPECIFICATIONS—CHU DRIVER UNIT

POWER: 40 watts (program material above 600 cycles)  
FREQ. RESPONSE: 600-20,000 cycles  
\*IMPEADANCE: 8 ohms  
DIMENSIONS: 3 1/4" Dia. x 3" H.  
THREAD SIZE: 7/8"-18  
WEIGHT: 3 1/2 lbs.  
PRICE: \$21.50, AUDIOPHILE NET  
\*15 ohms on request at same price.



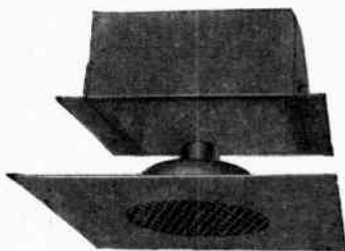
CHU



# METAL SPEAKER ENCLOSURES



## RECESSED CEILING and WALL ENCLOSURE

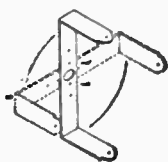


This speaker housing is suitable for an 8" speaker and reduces installation costs considerably. Adjustable brackets make the housing ideal for use in old or new construction. The depth of the box is 4", so that it can be mounted in walls where the studding is 2" x 4".

All of the features of acoustical perfection, durability and economy found in the universal type of speaker enclosure apply to the recessed enclosure as well.

This speaker housing is easily installed in a ceiling where acoustical tile has been used, since the grill plate is a 14" square. This, therefore, perfectly covers the space from which a 12" acoustical tile has been removed.

Primer Coat Only Catalog No.	Hammered Finish Catalog No.	Speaker Size	Type	Height	Width	Depth	Actual Weight Pounds	Dealer Cost	
								Primer	Hammertone
CS-2274	CS-2244	8"	Housing with grill	14"	14"	4-1/16"	8 3/4	\$9.69	\$10.00
(Housing dimension 10" x 10" x 4")									
CS-2275	CS-2245	8"	Grill plate Only	14"	14"	1/16"	4	2.00	2.20

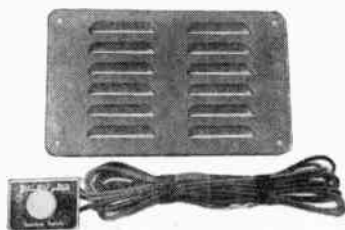


## ADJUSTABLE MOUNTING BRACKET

The adjustable mounting bracket can be used with any of the universal type enclosures. This makes possible an adjustable feature by which the speaker housing can be adjusted in any angle in a horizontal plane. There is a hole in the bracket which will pass a half inch conduit, permitting the speaker housing to be suspended from the ceiling.

Catalog Number	Description	Actual Wt. lbs.	Dealer Cost
AB-2250	Adjustable bracket for CS-2240	3/4	\$1.14
AB-2251	Adjustable bracket for CS-2241	1	1.14
AB-2252	Adjustable bracket for CS-2242	1 1/4	1.41
AB-2253	Adjustable bracket for CS-2243	2 3/4	1.65

## REAR SEAT SPEAKER ASSEMBLY



This unit is available in two types, as shown in the table below. The rear seat speaker grill assembly consists of the rear seat speaker grill, together with mounting screws, switch, bracket for

holding switch and sufficient wire for installation. The switch permits selection of either speaker or use of both speakers simultaneously.

The rear seat speaker grill is a finely louvered unit made from heavy gauge steel, which assures you of having a grill that will "take a beating." The finish is a beautiful silver grey hammertone, which is a fine enough finish to be attractive and yet dull enough to assure you that no glaring sun reflection will be picked up by a rear vision mirror and be a potential blinding flash to the driver.

Catalog Number	Plate Size	Actual Wt. lbs.	Dir. Cost
CS-2260	3/16" x 9" x 5 1/2"	3/4	\$1.67
CS-2261	(Consisting of CS-2260 plus switch, bracket and wire)	1 1/4	3.58

## WALL TYPE SPEAKER CASES



This is a distinctive line of speaker cabinets, for wall or table use. Since these units are made of steel, all troubles with wood warping and splitting are eliminated. Keyway holes are provided for wall mounting and four embossed feet on the bottom are provided to prevent damaging table surfaces. Finished in brown wrinkle enamel only.

Cat. No.	Hole Size	Speaker Size	Height	Width	Depth	Dealer Cost
CS-1948	3 1/2"	4"	7 1/2"	6 1/2"	4 1/4"	\$2.85
CS-1939	4"	5"	7 1/2"	6 1/2"	4 1/4"	3.00
CS-1940	4 3/4"	6"	9 1/2"	8"	5 1/2"	3.40
CS-1941	6 1/2"	8"	11 1/2"	9 1/2"	7"	4.17
CS-1942	8 1/2"	10"	13 1/2"	11 1/2"	8 1/4"	5.25
CS-1943	10 1/2"	12"	15 1/2"	13 1/2"	9 3/4"	6.60

## MINIATURE SPEAKER CASE



A safe, convenient housing for midget 2" and 3" speakers. These units are finished in black wrinkle only.

Catalog Number	Hole Dia.	Fits Speaker Size	Actual Wt. lbs.	Dir. Cost
CS-1685	2-3/16"	2"	3/4	\$1.58
CS-1686	2-13/16"	3"	3/4	1.58

Prices subject to change without notice.

Prices on above slightly higher west of the Mississippi River.

Only a few of many BUD Products are shown. Write for complete catalog.



# METAL SPEAKER ENCLOSURES



## SILVER SONANCE LINE

The Silver Sonance Line is divided into three parts. The first is the Universal Speaker Enclosure. There are many advantages of the Universal type of speaker housing that makes it the most outstanding unit of its type. It can be used in hospitals, schools, factories, auditoriums, stores, airports, railroad stations, stadiums and any other place where a speaker is used.

A prominent feature of this housing is the adjustability that is achieved by mounting our speaker case with an accessory known as the Bud Adjustable Mounting Bracket. Full information on this bracket is given on page 14. When the adjustable feature is not desired, the speaker housing may be attached directly to the wall. There are two holes in the sides of the speaker housing enabling installation in this manner. The holes in the cabinet are so spaced that the housing may be mounted either to an outlet box or screwed directly to the wall.

The new BUD UNIVERSAL speaker enclosures have a bi-lateral feature which permits sound to come from both the front and the back of the speaker housing. This is an ideal feature when speakers are used for paging purposes, or when speakers are used in corridors, hallways, or other places where the intention is to have the sound travel in two directions.

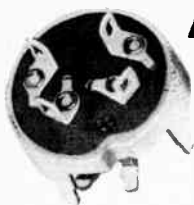
There is no danger of cracking, warping, splitting, or any of the other disadvantages found when a wood speaker baffle is used. Since our speaker enclosure is made of heavy gauge steel, none of these disadvantages are present. Changes in temperature and weather conditions have absolutely no effect on this speaker case. The finish is a beautiful silver grey hammertone. The hammertone finish assures ease of cleaning, as the housing may be cleaned by wiping with a damp cloth.

A special sound-deadening compound is used to eliminate the metallic resonant sound that is present in other metal speaker cases. All screws and nuts are furnished for mounting the speaker in the enclosure. There are no holes to drill and no time will be wasted in the installation.

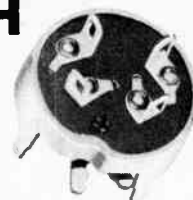


Primer Coat Only Catalog No.	Hammered Finish Catalog No.	Speaker Size	Height	Width	Depth	Actual Weight Pounds	Dealer Cost	
							Primer	Hammertone
CS-2270	CS-2240	4" or 5"	7¼"	6¾"	3-15/32"	2½	\$ 4.58	\$ 4.92
CS-2271	CS-2241	5", 5½" or 6"	8¾"	7½"	4"	2¾	4.84	5.33
CS-2272	CS-2242	6" or 8"	10-37/64"	9½"	5-1/16"	4½	8.16	8.58
CS-2273	CS-2243	10" or 12"	15-1/32"	13½"	7-13/64"	9	11.15	11.67

Prices subject to change without notice.  
Prices on above slightly higher west of the Mississippi River.  
Only a few of many BUD Products are shown. Write for complete catalog.



# AUTO RADIO ON/OFF SWITCH CROSS REFERENCE GUIDE



YEAR	CAR	MANUFACTURER	RADIO MODEL	ORIGINAL PART	D & M LIST	D & M PART
1942/46/47/48	PLYMOUTH DODGE CHRYSLER DE SOTO	PHILCO	MOPAR 802	67-0046	.75	SP-7
1946/47/48	FORD	ZENITH	8MF-880	85-435	.75	SP-4
1948	FORD	ZENITH	8MF-980	85-435	.75	SP-4
1948	FORD TRUCK	ZENITH	8MF-881	85-435	.75	SP-4
1948/49	LINC/MERC	ZENITH	8MM-890	85-435	.75	SP-4
1949	FORD	ZENITH	8MF-983	85-435	.75	SP-4
1949	MERCURY	ZENITH	8MM-990, 8MM-991	85-435	.75	SP-4
1949	LINCOLN	ZENITH	8ML-882, 8ML-985	85-435	.75	SP-4
1949/50	PLYMOUTH DODGE CHRYSLER DE SOTO	PHILCO	MOPAR 803, 805, 806, 807	45-6541	1.00	SP-5
1950	FORD	ZENITH	GF890	85-435	.75	SP-4
1951	PLYMOUTH DODGE CHRYSLER	PHILCO	MOPAR 812, 813, 815, 816, 817	67-0046-1	.75	SP-1
1951	FORD	SYLVANIA	1CF-743, OCF-751-1 1CFT-751-2	571-0004	.75	SP-4
1951	LINCOLN	SYLVANIA	1CH-748	571-0004	.75	SP-4
1951	MERCURY	SYLVANIA	1CM-747	571-0004	.75	SP-4
1951	DE SOTO	MOTOROLA	MOPAR 814	510719	.75	SP-1
1952	MERCURY	SYLVANIA	2CM-752	571-0004	.75	SP-4
1952	LINCOLN	SYLVANIA	2CH-753	571-0004	.75	SP-4
1952	FORD	SYLVANIA	2CF-754	571-0004	.75	SP-4
1953	DE SOTO	MOTOROLA	MOPAR 821	40A-510719	.75	SP-1
1953	FORD	SYLVANIA	35F-755	571-0004	.75	SP-4
1953	LINCOLN	SYLVANIA	35H-756	571-0004	.75	SP-4
1953	MERCURY	SYLVANIA	35M-757	571-0004	.75	SP-4
1953	PLYMOUTH DODGE CHRYSLER	PHILCO	MOPAR 819, 820, 824	67-0046-1	.75	SP-1
1953	HUDSON	SYLVANIA	236486, 238060	571-0004	.75	SP-4
1954	DE SOTO	MOTOROLA	MOPAR 829	40A 510719	.75	SP-1
1954	CHRYSLER	PHILCO	MOPAR 830	67-0046-1	.75	SP-1
1954	FORD	SYLVANIA	45F-765	571-0004	.75	SP-4
1954	LINCOLN	SYLVANIA	45H-764	571-0004	.75	SP-4
			45H-766	571-0004	.75	SP-4
1954	MERCURY	SYLVANIA	45M-767	571-0004	.75	SP-4
1955	PLYMOUTH	PHILCO	MOPAR 832	42-2044	.75	SP-4
1955	CHRYSLER	PHILCO	MOPAR 835	42-2044	.75	SP-4
1955	DODGE	MOTOROLA	MOPAR 833	40K-534023	.75	SP-4
1955	DE SOTO	MOTOROLA	MOPAR 834	40K-534023	.75	SP-4
1955	PLYMOUTH	MOTOROLA	MOPAR 836	40K-534023	.75	SP-4
1955/56	LINCOLN MERCURY	BENDIX	R5BL, R5BM, R6BC R6BL, R6BM, R6BMS	C-218669-1	1.00	SP-6
1956	THUNDERBIRD	MOTOROLA	69MS	40A536283	1.00	SP-6
1956/57	MERCURY	BENDIX	R6BM	C-218805	.75	SP-8
				USING OAK TUNER		
1957	LINCOLN	BENDIX	R78BL	218805-1	.75	SP-8
1957	MERCURY	BENDIX	R77BM, 78BM	218805-1	.75	SP-8
1957	FORD	MOTOROLA	78MF	40A536283	1.00	SP-6
1957	THUNDERBIRD	MOTOROLA	79MS	40A536283	1.00	SP-6



**PRODUCTS • DETROIT 35, MICHIGAN**



# AUTO RADIO VOLUME CONTROL CROSS REFERENCE GUIDE



YEAR	CAR	MANUFACTURER	RADIO MODEL	ORIGINAL PART	D & M LIST	D & M PART
1946/52	PONTIAC	MOTOROLA	PC2A6, PC2M6	18K512740	2.95	M/U-1
1949/50	FORD	BENDIX	M1, M1A, M1A1	L-222808	2.95	FB-49/0
1949/50	CHEVROLET	DELCO	986241, 986389	1218641	3.25	CD-49/0-A
1950	FORD	MOTOROLA	OMF	18B591266	2.95	FM-50
1950/53	STUDEBAKER	MOTOROLA	SR2A6, SR2M6	18K512740	2.95	M/U-1
1951	FORD	MOTOROLA	1MF	18B501153	2.95	FM-51
1951	FORD	BENDIX	M2	C-219586-2	2.95	FB-51
1951/52	CHEVROLET	DELCO	986516	1219708	3.25	CD-51A
1951/53	HENRY J	MOTOROLA	HJ2A, HJ2M HJ3A6, HJ3M6	18K512740	2.95	M/U-1
1951/53	NASH	MOTOROLA	NH1C, NH3C	18B501837	2.95	M/U-2
1952/53	FORD	MOTOROLA	2MF, 3MF	18B511635	2.95	FM-52/3
1952/53	FORD	BENDIX	M4, M4A	C-219586-3	2.95	FB-52/3
1953	DODGE TRUCK	MOTOROLA	610T	18K512740	2.95	M/U-1
1953/54	CHEVROLET	DELCO	986669, 986771	7264211	3.25	CD-53/4A
1954	FORD	MOTOROLA	4MF	18B530018	2.95	FM-54
1954	FORD	BENDIX	M4B	C-219586-7	2.95	FB-54
1954	GMC TRUCK,	DELCO	2233396/98	7264211	3.25	CD-53/4A
1954	BUICK	DELCO	981550, 981551	7264309	3.25	BD-54/5
1955	FORD	BENDIX	R5BF	C-219656-1	1.95	FB-55
1955	FORD	MOTOROLA	5MF	18B531299	1.95	FM-55
1955	BUICK	DELCO	981651, 981652	7265742	3.25	BD-54/5
1955	CHEVROLET	DELCO	987087	7265265	3.25	CD-55
1955	CHEVROLET	DELCO	987086	7265302	3.25	CD-55/6-A
1955	CHEVROLET	DELCO	987088	7265220	3.25	CD-55/6-B
1956	FORD	BENDIX	R6BF	L-219681-1	2.95	FB-56
1956	FORD	MOTOROLA	66MF, 66MFP, 69MF	18B534483	2.95	FM-56
1956	CHEVROLET	DELCO	987364	7265302	3.25	CD-55/6-A
1956	CHEVROLET	DELCO	987366	7265220	3.25	CD-55/6-B
1956/57	CORVETTE	DELCO	3725156	7265302	3.25	CD-55/6-A
1957	FORD	MOTOROLA	75MF	18K539059	2.95	FM-57

ADDITIONAL VOLUME CONTROLS AND  
OTHER AUTO RADIO FUNCTIONAL REPLACEMENT  
PARTS ARE CONSTANTLY BEING ADDED TO OUR LINE

CONSULT YOUR JOBBER FOR LATEST  
INFORMATION AND CROSS-REFERENCE DATA



**PRODUCTS • DETROIT 35, MICHIGAN**

# J. W. DAVIS CO.

## Wattersan SPEAKER Baffles

*\*Americas Most Complete Line*

DELUXE



Model	Speaker Size	List	Net
6-5	6" or 5"	\$7.50	\$4.50
8	8"	9.50	5.70
10	10"	12.00	7.20
12	12"	13.25	7.95

Walnut or Natural Blond

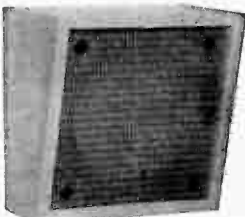
CORNER



Model	Speaker Size	List	Net
C-8	8"	\$15.00	\$9.00
C-12	12"	21.25	12.75

Walnut or Natural Blond

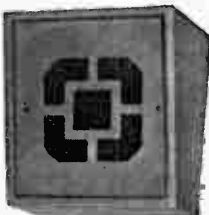
MODERN



Model	Speaker Size	List	Net
80	8"	\$8.75	\$5.25
120	12"	11.90	7.15

Mahogany or Blond Lacquer

STANDARD



Model	Speaker Size	List	Net
8E	8"	\$7.40	\$4.45
12E	12"	10.60	6.35

Brown Hammetone or Blond Color



**HELMHOLTZ** Resonator design. Smooth Bass response. Constructed 3/4" thick material. Contains 4.7 cubic feet area. Available in mahogany or blond modern tone finish. 19" wide, 32 1/2" high, 17" deep. Weight 50#.

Model	Speaker Size	List	Net
W-412	12"	\$68.00	\$40.85
W-415	15"	68.00	40.85



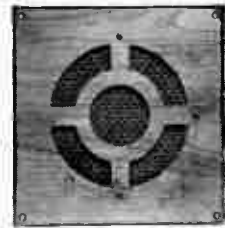
**Bass Reflex** design with distributed ports. Constructed 3/4" Acoustiwood. Baffle contains 6 1/2 cubic feet area. Available in mahogany or blond modern tone finish. 36" side, 26" high, 16" deep. Weight 50#.

Model	Speaker Size	List	Net
W-300	12"	\$70.00	\$41.95
W-315	15"	70.00	41.95

Since 1933 **J. W. DAVIS & CO.**

BOX 35313 DALLAS, TEXAS

WOOD PLATE



Model	Speaker Size	List	Net
P6	6"	\$3.00	\$1.80
P8	8"	3.75	2.25
P12	12"	5.00	3.00

Walnut, Mahogany, or Blond

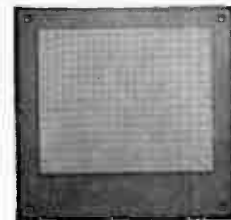
CORRIDOR



Model	Speaker Size	List	Net
CR-88	one 8"	\$13.75	\$8.25

Walnut or Natural Blond

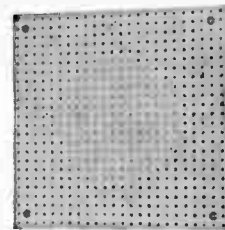
MPEL TALE



Model	Speaker Size	List	Net
MP-68	6" or 8"	\$7.00	\$4.20

White, Gray, Brown, Beige, Blond

ACOUSTICAL



Model	Speaker Size	List	Net
AC-6	6"	\$5.65	\$3.40
AC-8	8"	5.65	3.40

Dull White

# AUDIO Crafters

**DIVISION CALIFORNIA CABINET CO.  
LOS ANGELES, CALIFORNIA**

## Superb High Fidelity Cabinets

All cabinets of genuine 3/4" hardwood veneers\*  
All mitres locked with corrugated steel fasteners.  
All mouldings genuine solid hardwoods.  
All speaker enclosures scientifically padded for ultimate sound reproduction.  
Plastic tone flow grille cloth used exclusively.  
Carriage bolts and nuts pre-installed for all the speaker mountings.  
All finishes are water white hot sprayed lacquers hand rubbed to a rich piano finish.  
Available in the following woods:  
Combed grain oak, African ribbon stripe mahogany, plain sliced walnut or select white birch.  
**FINISHED IN:** limed oak, mahogany, walnut, maple provincial, natural birch, ebony and sived fox OR to match any color sample submitted, at a small additional charge.  
\*Tonettes, remotes and tuner cabinets, see catalogue listing.

**CHF** Chairside Hi Fi. Height without legs 14", Width 32", Depth 20", Ship. Weight 45 lbs.

**Net Price \$90.00**



**T-8** Tonette. Uses any 8" speaker. Height 11", Width 24", Depth 10", Ship. Weight 6 lbs.

**Net Price \$24.00**

**T-8D** TONETTE Deluxe Height 11", Width 24", Depth 10", Ship. Weight 6 lbs.

**Net Price \$30.00**

**TC** Hi Fi Tuner Cabinet. Height 9", Width 17", Depth 10 1/2", Ship. Weight 5 lbs.

**Net Price \$26.00**

**ACB** Automatic Changer Base model. Height 3 1/2", Width 17", Depth 15", Ship. Weight 2 lbs.

**Net Price \$9.00**

**UCB** Universal Changer Base. Height 3 1/2", Width 17", Depth 15", Ship. Weight 1 1/2 lbs.

**Net Price \$7.00**

**TB** Transcription Base. Height 6 1/2", Width 22", Depth 16", Ship. Weight 10 lbs. Packed two per carton.

**Net Price \$20.00**

**TB-J** Transcription base — Junior Size. Height: 4 1/2", Width: 19", Depth: 16". Ship. weight 8 lbs.

**Net Price \$15.00**

**TB-L** Transcription base with lid. Height: 9 1/2", Width: 23 1/2", Depth: 17". Ship. Weight 15 lbs.

**Net Price \$30.00**

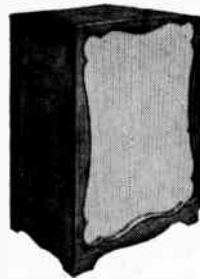
**TB-JL** Transcription base with lid, Junior size. Height: 7 1/2", Width: 20 1/2", Depth: 17". Ship. weight 12 lbs.

**Net Price \$26.25**

**8-LC** 8" Loboy Companion. Height: 12", Width 23 3/4", Depth: 15 1/2". Ship. weight

**Net Price \$55.00**

Available with legs at \$9.00 Extra



**PBR-12** 12" Base Reflex (provincial).

**Net Price \$57.00**

Height 30 1/2", Width 24", Depth 12 1/2", 4.3 cu. ft., Ship. Weight 40 lbs.

**PBR-15** 15" Base Reflex (provincial).

**Net Price \$69.50**

Height 33", Width 24", Depth 16 1/2", 6.2 cu. ft. Ship. Weight 75 lbs.

**PROVINCIAL STYLE SHOWN**

**BR-12** 12" Base Reflex.

**Net Price \$45.00**

**BR-15** 15" Base Reflex.

**Net Price \$57.50**



**810 CFH** 10" Corner Folded Horn. Height 26", Width 18", Depth 13 1/4", 3.2 cu. ft., Ship. Weight 35 lbs.

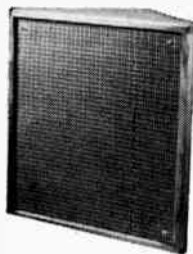
**Net Price \$54.00**

**12CFH** 12" Corner Folded Horn. Height 30 1/2", Width 24", Depth 16 5/8", 5 cu. ft., Ship. Weight 45 lbs.

**Net Price \$70.00**

**15CFH** 15" Corner Folded Horn. Height 29 1/2", Width 33", Depth 20 3/4", 8 cu. ft., Ship. Weight 65 lbs.

**Net Price \$90.00**



**12-CWB** 12" Corner Wall Baffle. Height: 20 3/4", Width: 17 1/2", Depth: 9". Ship. weight: 8 lbs.

**Net Price \$12.95**

**8-CWB** 8" Corner Wall Baffle. Height: 14 1/2", Width: 12 1/2", Depth: 7 1/2". Ship. Weight 5 lbs.

**Net Price \$10.35**



**3 WSL** 3-way system Lobby. Height 33", Width 36", Depth 16 1/2", 8.2 cu. ft., Ship. Weight 65 lbs.

**Net Price \$75.00**



**3-WSLC** 3-way system Loboy companion. Height 33" Width 36", Depth 16 1/2", Ship. Weight 75 lbs.

**Net Price \$150.00**



**DHFC** Deluxe Hi Fi Console. Height 34 1/2", Width 35", Depth 19", Ship. Weight 90 lbs.

**Net Price \$165.00**

**DHFCP** Deluxe Hi Fi Console Provincial.

**Net Price \$195.00**  
**PROVINCIAL STYLE SHOWN**

**CUTOUTS MADE AT NO ADDITIONAL COST — SUBMIT TEMPLATES**

**ALL ENCLOSURES IN PROVINCIAL STYLING AT AN ADDITIONAL CHARGE**  
**ALL ENCLOSURES ARE AVAILABLE HORN LOADED AT AN ADDITIONAL COST OF \$12.00**

**... FOR CRITICAL APPLICATIONS IN BROADCASTING AND RECORDING STUDIOS ... FOR SELECTIVE HIGH FIDELITY ENTHUSIASTS**

**NOW**

only with the new

**STUDIO**

*Dynetic*

PHONO REPRODUCER

PRICE \$79.50

THROUGH THIS NEW PRINCIPLE!

You can obtain superb fidelity—with a new 0.7 mil radius Diamond stylus—at one gram tracking force!

You can completely avoid accidental scratching of your records—and practically eliminate record and stylus wear!

You don't have to worry about groove jumping or leveling turntables!

You obtain the silk-smooth action of a fully jeweled bearing movement!

You obtain the low distortion of a dynamic pickup with the ruggedness and convenience of a magnetic pickup!

**1 GRAM TRACKING—0.7 MIL RADIUS NEEDLE**

The new Studio Dynetic tracks at only 1 gram! This is 1/6 of the usual tracking force—It makes it possible to use the new 0.7 mil radius diamond tip needle, compared to the usual 1 mil radius—which affords a remarkable improvement in fidelity over conventional high fidelity reproducers. The 1 gram force also means that the record will not scratch if you accidentally slide the arm across it. Your mint LP's stay that way . . . no matter how often you play them.

**BALANCED DESIGN**

The Studio Dynetic Phono Reproducer is fully balanced about a ruby pivot on its vertical axis. This means that there is equal mass on both sides of the pivot. The cartridge is mounted on a low-mass beam provided with two sleeve-and-cap ruby bearings of amazing strength and negligible friction—with counter balance adjustment of 1-2 grams. When something causes vibration—be it motor board rumble or heavy-footed people walking by—the balanced design causes the vibration in the front part of the

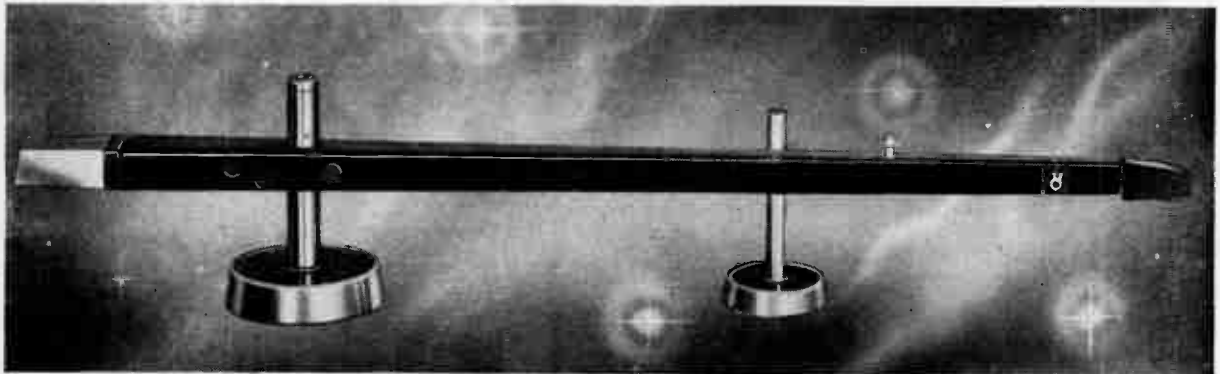
arm to be compensated for in the back, thus *cancelling it out!* Balanced design, combined with low mass cartridge mount, means that the Studio Dynetic at 1 gram is far more stable than most high fidelity reproducers at 4-6 grams.

**BALANCED DESIGN AND THE LAW OF GRAVITY**

When you use the Studio Dynetic, you don't have to worry about leveling your turntable. Balanced design compensates for the law of gravity, and keeps the stylus perfectly in position, even if you tilt the motor board while the record is playing. Yes, and you also get fine reproduction from your warped records.

**PERFECT FIDELITY WITH PERFECT CONVENIENCE**

The Studio Dynetic phono reproducer was designed with your convenience in mind. Exclusive push-button groove selector helps you find the desired groove on the record—avoids the possibility of damage! The stylus can easily be replaced by the user. Adequate output eliminates the need for transformers—will provide full volume from your present high fidelity equipment.



**WHY HAVEN'T WE SAID ANYTHING ABOUT FREQUENCY RANGE?**

Because we felt these other features—being unique to the Studio Dynetic—had more interest. If we didn't have these unique features to talk about, we could still talk about the exceptional performance of the Studio Dynetic. The Studio Dynetic has a Laboratory Verifiable frequency range from 20 to 20,000 cycles per second, plus or minus 2 db, with measurable response to 30,000 cycles! Its straight line shape reduces arm resonance to an absolute minimum; and its Dynamic Damping eliminates "boom," low frequency rumble, and motor noise. Its "groove oriented" stylus gives an optimum tracking condition. Its high vertical compliance and low needle-tip mass practically eliminate "needle talk". For truly high fidelity performance the Studio Dynetic is your best buy.

*For reprints of informative published articles, write to attention of the Sales Department.  
See your hi-fi dealer for a demonstration of this amazing unit.*

**SHURE**

*The Mark of Quality*

"IN ELECTRONICS SINCE 1925"

SHURE BROTHERS, INC.,

EVANSTON, ILLINOIS



# SHURE

## STUDIO MICROPHONES

### UNI-DIRECTIONAL RIBBON MICROPHONE



Model "333"  
Studio Unitron

Here is the dependable "333," a truly fine and rugged microphone created for discriminating users with the most exacting professional requirements. Here, indeed, is a major advance in microphone development and design! This small, ultra-cardioid "333" is highly recommended for motion-picture studios, TV studios, radio stations, professional recording, and all other uses where quality requirements are of the highest. Here is performance never before achieved in such a small and slender microphone! Here is ruggedness and reliability! Here is matchless beauty and striking design to appeal to users who demand the finest! The "333" is ultra-cardioid, uni-directional—reduces the pickup of random noise energy by 73%—prevents the pickup of moving props, scuffling feet and moving "dollies," so common when conventional broadcast microphones are used. Following are the features that make the "333" Studio so outstanding in performance, so dependable in operation: (1) patented, world-famous "Uniphase" system; (2) a true ultra-cardioid pickup pattern; (3) horn-loaded ribbon transducer provides extended smooth response, production uniformity guaranteed to plus or minus 2½ db, 30-15,000 c.p.s.; (4) multi-impedance switch; (5) voice-music switch; (6) anti-"Pff" filter screen; (7) Shure self-adjusting "lifetime" swivel; (8) high output; (9) sturdy, one-piece metal case; (10) vibration-isolation unit mounted in live rubber; (11) Cannon XL connector. All these important features, plus the striking design of the Studio "333," make it ideal for critical studio applications that call for the highest possible broadcast quality, small size and matchless beauty—plus the ability to withstand the rough work-a-day handling by the sound crew. The "333" has two-tone "Baked Bronze" non-reflecting finish. Head dimensions: Width, 1 1/8"; height, 3 9/16"; depth, 1 3/4".

IMPEDANCE TABLE
Low—50 ohms
Medium—150 ohms
High-Medium—250 ohms

OUTPUT LEVEL
60 db below 1 Milliwatt per 10 microbar signal
59 db below 1 Milliwatt per 10 microbar signal



Model 533  
Broadcast  
Desk Stand

For use with Models  
300, 333, 525, 535  
and 556S

List Price \$15.00

MODEL	LIST PRICE
"333"	\$250.00

### OMNI-DIRECTIONAL DYNAMIC MICROPHONE



Model "525"  
Studio Slendyne

The new Studio "525" is an exceptionally fine probe microphone of broadcast quality. It features: (1) frequency response 40-15,000 c.p.s., production uniformity guaranteed to plus or minus 2½ db; (2) a moving-coil mounted in a highly efficient magnetic structure; "Alnico V" magnet; (3) multi-impedance switch; (4) high output; (5) long life "Duracoustic" diaphragm—specially designed to withstand moisture, heat, cold and physical shock. The "525" is furnished with a 20 ft., two-conductor, rubber-covered, shielded cable with Cannon XL-3-11 connector attached; swivel adapter; adjustable lavalier assembly (cord and clip), and a belt clip assembly. The "525" Studio has a non-reflecting "Baked Bronze" finish—which makes it blend into the background, giving the spotlight to the performer. Body diameter, 1"; length, 8 17/32".

IMPEDANCE TABLE	OUTPUT LEVEL
50 ohms	61 db below 1 Milliwatt per 10 microbar signal
150 ohms	
250 ohms	

Model 533  
Broadcast  
Desk Stand

List Price: \$15.00

MODEL	LIST PRICE
"525"	\$200.00

### BI-DIRECTIONAL GRADIENT MICROPHONE



Model "300"  
Studio Gradient

This rugged, high fidelity, multi-impedance microphone is widely used for television, radio broadcasting, professional recording and high-fidelity uses. The "300" reduces reverberation and the pickup of random noise by 66%. The "300" combines the best features of conventional velocity microphones with advanced acoustic design—including an anti-"Pff" filter screen. Its bi-directional polar pattern is effective over a broad frequency range. It provides sound pickup at the front and rear of the microphone, but greatly reduces pickup at the sides. One of the outstanding features of the "300" is the fact that the microphone can be placed at a 73% greater distance from the performer than is possible with omni-directional microphones! The "300" has a non-reflecting "Baked Bronze" finish, so it blends into the background, gives the spotlight to the performer. The "300" has a readily accessible Voice-Music switch, vibration-isolation unit mounted in live rubber, and a multi-impedance switch, providing low medium and high impedance. Extended response, production uniformity guaranteed to plus or minus 2½ db, 40-15,000 c.p.s. Furnished with a 20-foot two-conductor, rubber-covered, shielded cable with Cannon XL-3-11 connector attached.

IMPEDANCE TABLE	OUTPUT LEVEL
L—35-50 ohms	59 db below 1 Milliwatt per 10 microbar signal
M—150-250 ohms	60 db below 1 Milliwatt per 10 microbar signal
H—High	57 db below 1 volt per microbar

Model 533  
Broadcast  
Desk Stand

List Price: \$15.00

MODEL	LIST PRICE
"300"	\$150.00

# GENERAL PURPOSE MICROPHONES

**SHURE**

## OMNI-DIRECTIONAL DYNAMIC MICROPHONES

The new Slendyne 535 is the most versatile fine quality probe microphone ever developed — actually five microphones in one because of its practical design and useful accessories! The "535" is a moving-coil dynamic microphone built to provide wide range reproduction of music and voice. It can be used for indoor or outdoor applications in the following manner: (1) in the hand, (2) on a floor stand, (3) on a desk stand, (4) hung around the neck on a lavalier cord. Add to these factors an on-off switch adaptor and a dual-impedance switch and you have the most completely versatile fine quality probe ever developed. Frequency response is 60 to 13,500 c.p.s..

The Slendyne 535 is ideal for high quality public address, theater-stage sound systems, and all recording applications where an omni-directional microphone is desired. The microphone is ruggedly built to withstand hard usage, and is unaffected by temperature and humidity variations. The 18-foot, high quality, shielded, two-conductor cable is supplied with a microphone plug equivalent to the Amphenol 91-MC3M plug. The "535" meets the requirements for maximum quality and minimum size. It is finished in rich satin chrome. A self-adjusting swivel adaptor is supplied with the microphone, and permits it to be tilted from 90° from vertical to horizontal, making it possible to tilt the microphone at the source of sound. Also includes on-off switch adaptor.

The "535" is specially recommended for "interview-type" use where the "hand-a-bility" is important. Of special interest to P.A. technicians and recording enthusiasts is the quick-disengaging feature that permits the microphone to be instantaneously removed from the stand swivel adaptor, for use as a hand microphone during audience participation shows, interviews, and for home recording sessions.

The Model 530 Slendyne is the deluxe broadcast Slendyne, finished in an attractive black and gold anodized finish. It has a frequency range of 50 to 15,000 c.p.s., and is furnished with a 20-foot, high quality, two-conductor shielded cable with a Cannon XL-3-11 cable connector. Furnished with swivel adaptor, deluxe lavalier cord and belt clip, on-off switch adaptor.



Model "535"  
Slendyne



Model "530"  
Broadcast Slendyne

MODEL	IMPEDANCE TABLE	OUTPUT LEVEL
"535"	L—50-250 ohms	61 db below 1 Milliwatt per 10 microbar signal
	H—High	61 db below 1 volt per microbar
"530"	L—50-250 ohms	61 db below 1 Milliwatt per 10 microbar signal
	H—High	61 db below 1 volt per microbar

MODEL	LIST PRICE
"535"	\$72.50
"530"	\$110.00

## BI-DIRECTIONAL GRADIENT MICROPHONE

This rugged high fidelity multi-impedance microphone is recommended for fine quality general purpose uses. It features a frequency response of 50 to 12,000 cps—will reproduce voice and music in a clear, natural tonal quality, which makes it ideal for use in auditoriums, night clubs, schools and churches. The "315" is similar in features and design to the Studio Model 300. It is ideal for those numerous public address applications where its streamlined design and striking beauty lend dignity and prestige to any setting in which it is used. This gradient microphone is a favorite of professional performers and educators because it provides unusual freedom of motion on the platform—making it possible for the user to stand at a 73% greater distance from the microphone than is possible with omni-directional microphones. Its bi-directional "Fig. 8" pickup pattern extends over a broad frequency range—and it permits the sound system to be operated at a level almost 6 db higher than is possible with non-directional (omni-directional) microphones! The "315" picks up voices and music from front to back—is "dead" at the sides, reduces reverberation and the pickup of random noises by 66%. This feature means the "315" can be used in those critical installations where feedback makes it impossible or impracticable to use conventional microphones. It is "PFF"-proof—filters out the "PFF"-type noises often heard over conventional microphones. Here again is another fine quality Shure microphone made under scientific control conditions, which are your guarantee that it can be used month after month without deviation from its original standards. Dimensions: height 6"; width 1 7/16"; depth 1 3/32". The "315" is furnished with an 18-foot, high quality, two conductor, shielded cable, supplied with the equivalent of the Amphenol 91-MC3M plug.



Model "315"  
Gradient

IMPEDANCE TABLE	OUTPUT LEVEL
L—35-50 ohms	57 db below 1 Milliwatt per 10 microbar signal
M—150-250 ohms	60 db below 1 Milliwatt per 10 microbar signal
H—High	57 db below 1 volt per microbar

MODEL	LIST PRICE
"315"	\$89.50

# GENERAL PURPOSE MICROPHONES

# SHURE

## NEW

### UNI-DIRECTIONAL RIBBON MICROPHONE



Model "330"  
"Professional Unitron"

The striking-looking new 330 "UNITRON" Microphone has been designed to meet the exacting requirements of professional tape recording and highest quality indoor public-address systems. The "UNITRON" is basically a member of the Shure Studio Microphone family, similar in appearance and performance to the Model "333". The "UNITRON" has a super-cardioid pickup pattern—reduces the pickup of undesired random noise energy by 73%!

It has a smooth, peak-free response from 30 to 15,000 cps. The Professional Unitron is equipped with multi-impedance (50, 150 and 250 ohms) switch, life-time swivel, and special vibration-isolation shock mount, as well as Cannon XL-3-11 cable connector and 20 ft. 2-conductor shielded broadcast-type cable. The microphone is finished in beautiful satin-chrome with natural anodized aluminum grill.

IMPEDANCE TABLE	OUTPUT LEVEL
L—50 ohms	59 db below 1 milliwatt per 10 microbars
M—150 ohms	57 db below 1 milliwatt per 10 microbars
H—250 ohms	58 db below 1 milliwatt per 10 microbars

This rugged performer has been developed to achieve optimum operating performance—far those applications where highest quality is essential, yet cost is a factor.

Model "330" List Price \$120.00

### UNI-DIRECTIONAL DYNAMIC MICROPHONES



Model "555"  
"Small Unidyne"

The small Unidynes are the largest selling microphones throughout the world—used consistently by famed celebrities for those important events where the faithfulness of sound reproduction is critical. A sturdy construction provides immunity of the moving-coil system to abnormal atmospheric conditions and severe mechanical shock. Model 555 is highly recommended for fine quality public address, theater-stage sound systems, recording and remote broadcasting. It is also the field-proved standard for fixed station use in the police, fire, transportation, forestry and commercial services. The smooth frequency response of the 555 ranges from 50 to 15,000 c.p.s. It is furnished with an 18-foot, high quality cable and plug assembly. Special Note: Both of the famed Unidynes are now 41% higher in output—can be used with low gain tape recorders and P.A. systems.

Model 556S is specially constructed and tested to meet the requirements of the broadcast and television studio, and is held within close tolerances in frequency response and directivity. It is a moving-coil type microphone with a frequency range of 40 to 15,000 c.p.s., production uniformity guaranteed to plus or minus 2½ db. The Broadcast Unidyne is ideal for high quality station and remote broadcasting, public address, theater-stage sound systems and recording applications. As a further precaution against mechanical vibration pickup, the 556S is provided with an additional isolation unit. This isolation unit is of live rubber construction in combination with the stand connector and a built-in high quality cable connector. The microphone is furnished with a 20-foot, high quality, shielded, 2-conductor cable with a Cannon microphone plug attached. Both the 555 and the 556S feature the world-renowned patented "Uniphase" network system.

IMPEDANCE TABLE	OUTPUT LEVEL
L—35-50 ohms	54 db below 1 Milliwatt per 10 microbar signal
M—150-250 ohms	55 db below 1 Milliwatt per 10 microbar signal
H—High	57 db below 1 volt per microbar

MODEL	LIST PRICE
556S	\$135.00
555	\$ 83.00



Model "556S"  
"Small Broadcast"

### MULTI-IMPEDANCE HIGH OUTPUT DYNAMIC



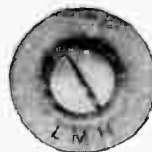
Model "51"  
"Sonodyne"

The "Sonodyne" is ideal for all general purposes, including public address, wire and tape recording, and similar applications. It is widely used by bands, instrumentalists and professional recording artists because of its outstanding reproduction of both voice and music. Widespread usage by home users of tape recorders indicates that the Sonodyne is the ideal high-quality, moderately-priced replacement for the conventional microphone supplied with tape recorders. The wide range frequency response is 60 to 10,000 c.p.s. This rugged microphone is of the pressure type, with conventional semi-directional characteristics, and it may be used for close-talking without undue low frequency emphasis. The Sonodyne is a multi-impedance microphone, providing the versatility of three microphones in one—far low, medium and high impedance. Has built-in receptacle and a 15-foot, two-conductor shielded cable with microphone plug attached. Satin chrome finish.

Model "51"

List Price \$49.50

Multi-Impedance  
Switch on Models  
"555", "556S", "51",  
"300", "315"



IMPEDANCE TABLE	OUTPUT LEVEL
L—35-50 ohms	53.0 db below 1 Milliwatt for 10 microbar signal
M—150-250 ohms	52.5 db below 1 Milliwatt for 10 microbar signal
H—High	52.0 db below 1 volt per microbar

**SHURE****GENERAL PURPOSE MICROPHONES****NEW****"COMMANDO" ALL-PURPOSE MICROPHONES**

The new Commando series represents a significant achievement in providing quality performance at nominal cost. These dramatic looking, rugged microphones can be used indoors or outdoors. Models 415 and 430 provide practical versatility of operation. They can be held in the hand, set on a floor stand or on a desk stand — can be inserted or withdrawn from the stand in a second, without the use of any tools. Model 420 is of more compact design and is intended primarily for use as a lavalier microphone. It is readily detachable from its lavalier clip for use as a hand held unit. Coupled with this versatility of usage, the Commandos are ideal for general-purpose applications where both voice and music reproduction are of critical importance. Commandos can be used for tape recording in the home; theater-restaurant public address systems; lecturing; paging and dispatching systems; interview-type shows; outdoor public address systems for carnivals, picnic and special events.

All three units are ruggedly constructed of attractive, non-reflecting gray, impact resistant polystyrene. The lower part of Models 415 and 430 are of die cast zinc with a satin chrome finish.

The Commandos are omni-directional units with a frequency response of 60-10,000 cps. They are controlled magnetic units and are unaffected by extremes of temperature and humidity. Models 420 and 430 are equipped with readily changeable pin jacks for a choice of two impedances (L — 150 to 250 ohms and H — High), without soldering.

Model 430 includes on-off switch, dual-impedance feature and Amphenol MC2M cable conductor. Furnished with 15 Ft. of 2-conductor shielded cable, black Model A25-type swivel adapter and switch locking plate for keeping switch in "on" position. List Price: \$38.50

Model 420 includes dual impedance feature and lavalier cord and clip assembly. Furnished with 20 ft. of non-detachable 2-conductor shielded cable. List Price: \$30.00

Model 415 includes black Model A25-type swivel adapter and 7 ft. of non-detachable single-conductor shielded cable. High impedance only. List Price: \$27.50

\$388 Desk Stand for use with Models 415 and 430. List Price: \$4.50



Model 430  
in the  
Hand



Model 430  
on Floor  
Stand



Model  
415  
in the  
Hand

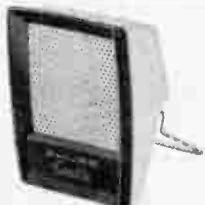
IMPEDANCE	OUTPUT LEVEL
150-250	-54 db below 1 volt per microbar
HIGH	-55 db below 1 milli-watt per 10 microbars



Lavalier Model 420



Model 430  
on \$38  
Desk Stand

**"STARLITE" MICROPHONES**

Model 215 and 715

These beautifully designed microphones are excellent for voice and music reproduction. Their extremely low price and good quality make them a "natural" for home recording, intercom systems and inexpensive public address systems. The "Starlite" microphones can be held in the hand, or used on a desk by simply releasing a built-in retractable stand which is an integral part of the back of the microphone case. They are semi-directional, high impedance units, in impact resistant polystyrene cases.

Model 215, a ceramic unit, has a response from 50-8000 cps; Model 715, a crystal unit has a response range from 50-10,000 cps. Both microphones are supplied with 5 ft. fabric covered single conductor shielded cable.

MODEL	OUTPUT	LIST PRICE
215 Ceramic	56.5 db below 1 volt per microbar	\$8.00
715 Crystal	50 db below 1 volt per microbar	\$8.00

**CABLE TYPE TRANSFORMER**

Model A86A

Model A86A is a high-quality, cable-type transformer which makes it convenient to run a long microphone line from a low impedance microphone to a high impedance amplifier. It is housed in a compact, sturdy and magnetically-shielded case. Connection terminals are easily accessible, and compression fittings crimp the microphone and amplifier inputs. The A86A matches 35-50 ohm and 150-250 ohm microphones to high impedance amplifier inputs. This type of system usually solves the problem of excessive high frequency loss and objectionable hum pickup when long lengths of microphone cable are necessary. The A86A offers additional versatility when used in conjunction with Shure Models 51, 55S, 556S, 300, 315, 330, 333, 525, 530 and 535 Dynamic and Ribbon Microphones. And in addition to these the Model A86A may be used in specialized applications which require high impedance to low impedance circuit connections. The transformer is finished in an attractive two-tone gray and is furnished with a 2-foot cable. Frequency response: 20 to 20,000 c.p.c., plus or minus 1 db. Model —A86A

List Price: \$17.50

# SHURE

## CRYSTAL MICROPHONES

### THE VERSATILE "SLIM-X" ALL-PURPOSE MICROPHONE

FOR:

- Low Cost P. A. Systems
- Home Recording
- Hams
- General Purpose



In Cradle  
On S38  
Desk Stand



On S38  
Desk Stand  
(With A25  
Swivel)



In Cradle  
On Floor Stand



In the Hand

The "777" Slim-X Microphones are rugged little microphones weighing only 6 ounces! They are designed for good-quality voice and music reproduction. Their versatility and "hand-ability" make them ideal for use by lecturers, announcers, instructors, and Hams; for audience participation shows; carnivals; panel and quiz shows; and use with home-recorders. When mounted on either cradle or swivel, the "777" can be removed in a flash (no tools necessary)—simply by lifting it

out of the holder. This makes it an ideal "walk-around" hand-held microphone.

**TECHNICAL INFORMATION:** Smooth frequency response—50 to 10,000 c.p.s.; Moisture-proof "Metal Seal" crystal for long operating life; high impedance; 7 ft. single-conductor cable, disconnect type. Dimensions: (Microphone only) Length, 4½"; Diameter, 1". Finish: Rich satin chrome overall.

Note: All Models are furnished with Lavalier Cord, for suspension of microphone around neck.

#### "SLIM-X" ASSEMBLIES

**MODEL 777A** includes 777 Microphone; A-25 Swivel Adaptor; S-38 Desk Stand; Lavalier Cord.  
Model: 777A List Price: \$33.00  
**MODEL 777SA** includes 777S Microphone; A-25 Swivel Adaptor; S-38 Desk Stand; Lavalier Cord.  
Model: 777SA List Price: \$35.00

#### ACCESSORIES FOR "777"

**MODEL S-38 STAND** is a heavy die-cast base. Includes metal screw machine stud for connecting microphone adaptor to stand base.  
Model: S-38 List Price: \$4.50

**MODEL A-25 SWIVEL ADAPTOR** features a long-life, high-quality swivel connector. Is lined with a long-life nylon sleeve—for noise-free and scratch-free insertion and removal of microphone.  
Model: A-25 List Price: \$5.50

Model	Output	List Price
777		\$25.00
777A	62 db below 1 volt per microbar	\$33.00
777S With Switch		\$27.00
777SA With Switch		\$35.00

\*(Price includes cradle for mounting on stand.)



Fig. A  
"MONOPLEX"

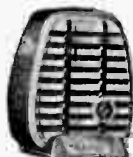


Fig. B  
(Fig. A)

The only Super-Cardioid Crystal Microphone made—far superior to conventional Crystal Microphones! Excellent for high-quality public address, communications, recording, and similar applications. The 737A operates under adverse conditions of background noise and reverberation—where a conventional microphone would be practically useless! Reduces pickup of random sound by 73%! Moisture-proof "Metal Seal" crystal for long operating life. Case pivots at rear, can be pointed toward desired sound or upwards for horizontal plane pickup. Has 15 ft. shielded cable. Rich satin chrome finish. High impedance.

MODEL	OUTPUT	LIST PRICE
737A	55.0 db below 1 volt per microbar	\$46.00

#### THE "REX" (Fig. B)

Its low price makes this hand-held microphone a natural for "Hams" and low-cost public address system. A rugged unit designed for high speech intelligibility. Saves extra costs, as it needs no desk stand! Has a broad base, complete with stand adapter for mount-



Fig. C

ing on floor stand. Sits firmly on a table top without tipping over. Die cast case. Frequency response 60 to 9,000 c.p.s. 5 ft. shielded cable. Beautiful Bergundy-red metallic finish. Only 2¾" wide, 3¼" high, 1⅞" thick. High impedance.

MODEL	OUTPUT	LIST PRICE
710A	50 db below 1 volt per microbar	\$12.00
710S (with switch)	50 db below 1 volt per microbar	\$14.00

#### MODEL 707A (Fig. C)

Ideal for low-cost P.A. systems, amateur 'phone transmitters and similar applications. Good-quality performance at low cost. Has typical semi-directional pickup. Has 7 ft. shielded cable. High impedance. Pearl Gray case with rich satin chrome finish on front grille. Diameter 2⅝".

Model 707A designed to be used with Shure Model S34B or S36A Desk Stands (see page D-179).

MODEL	OUTPUT	LIST PRICE
707A	51.0 db below 1 volt per microbar	\$19.50



Fig. D

#### LAPEL MICROPHONE (Fig. D)

Specially designed unit widely used by lecturers, instructors, speakers, etc. High speech intelligibility. Response from 40 to 6,000 c.p.s. 1⅞" diameter. Has lapel clip. 20-foot shielded single-conductor cable. High impedance.

MODEL	OUTPUT	LIST PRICE
76B	57 db below 1 volt per microbar	\$29.00

#### STRATOLINER (Fig. E)

An expensive-looking crystal microphone at moderate cost. Wide-range response for good reproduction of either voice or music. Placed horizontally, the 708A is semi-directional; used vertically it becomes non-directional. Swivel permits 90° tilting of microphone. 7 ft. shielded cable and plug assembly. High impedance. Pearl Gray finish.

MODEL	OUTPUT	LIST PRICE
708A	51.0 db below 1 volt per microbar	\$31.00

# CONTROLLED MAGNETIC MICROPHONES

# SHURE

## THE "HERCULES"



The "Hercules" is a hand-held unit, ideal for general purpose use in tropical countries and in all coastal areas where heat and humidity are a problem. The "510" provides the ruggedness, clear reproduction and high output for public address, communications and recording where high speech intelligibility is vital. It is recommended for

Announcing; Mobile Public Address Systems; Communications; Home Recording, and High Quality Intercommunication. The Hercules can be used either Indoors or Outdoors, fits snugly in the hand, sits firmly on a desk. High impedance. Frequency response 100 to 7000 c.p.s. Furnished with 7 ft. shielded cable. Green metallic finish. Diecast case. Furnished with stand adapter. Dimensions: 2 2/3" wide, 3 1/4" high, 1 1/2" thick. Model 510 Series designed to be used with S348 or S36A Desk Stands. (See page D-7)

MODEL	OUTPUT LEVEL	IMPEDANCE	LIST PRICE
510C	52.5 db below 1 volt per microbar	HIGH	\$17.00
510S (with switch)	52.5 db below 1 volt per microbar	HIGH	\$19.00

## "1-INCH" MICROPHONES



The MC Series of small microphones are specially designed for use in vacuum-tube devices, such as small, compact amplifiers, transmitters, dictating equipment—wherever size and weight are important factors. They also are highly recommended for use in small transistor-type devices. The MC Series Microphones are furnished with an impedance of 1000 ohms. They are rugged units immune to mechanical shock and to varying conditions of heat and humidity. Both the 1" circular unit, Model MC11, and the rectangular

unit, Model MC 20, are metal-cased for hum protection. They are highly recommended to engineers, technicians and "build-it-yourself" enthusiasts, because their small size and shape make them ideal for various types of custom-made devices. Model MC11 (Circular) Dimensions: diameter 1 1/64", thickness 25/64". List Price \$12.50. Model MC20 (Rectangular) Dimensions: width 10/16", thickness 5/16", length 15/16". List Price \$12.50. (Frequency response is 400 to 3000 c.p.s., output 71 db below 1 volt per microbar.)

## THE "RANGER"

The new Shure "Ranger" is a new development of a similar magnetic unit originally housed in microphones used by the Armed Forces. The "Ranger" is especially recommended for those applications where long lines are used, and a rugged hand-held microphone is needed. It is ideal for outdoor public address (sports arenas, athletic fields), mobile communications, ham, audience participation shows, etc. The "Ranger" is designed for high speech intelligibility. Easy to use, fits snugly in the palm of the hand. Has heavy-duty double-pole, single-throw, leaf-type switch for push-to-talk operation. Phosphor-bronze blades and silver contacts for maximum operating life. Model 505B is furnished with 5 ft. four-conductor shielded cable. Model 505C is furnished with 5 ft. three-conductor shielded cable. Model 505K is the replacement for General Electric Model EMIOA and is furnished with Amphenol MC4M connector and 5 1/2 ft. coiled 3-conductor (1-conductor shielded) cable. Frequency response is 200 to 8,000 cps.

MODEL	OUTPUT LEVEL	IMPEDANCE	SHPG. WT.	LIST PRICE
505B	50.0 db below 1 milliwatt per 10 microbar signal	150-250 ohms	1 5/8 lbs.	\$32.00
505C	50.5 db below 1 volt per microbar	High	1 5/8 lbs.	\$32.00
505K*	50.5 db below 1 volt per microbar	High	1 5/8 lbs.	\$37.50

\* Replacement for General Electric EMIOA

## THE "GREEN BULLET"



The "Green Bullet" is designed to provide quality music and speech reproduction at moderate cost. It is practically immune to the effects of high temperatures and humidity. It features: high output, good response, high impedance without the need of a transformer. The "Green Bullet" has a beautiful modern metallic green finish with a plated grille. Frequency response is 100 to 7000 c.p.s. Furnished with 7 ft. single-conductor shielded cable. High Impedance. The "Green

Bullet" is highly recommended for those public address systems where low cost is a must, good reproduction is essential and ruggedness is a necessity. Model 520 series designed to be used with Shure Model S348 or S36A Desk Stands. (See page D-7)

MODEL	OUTPUT LEVEL	IMPEDANCE	LIST PRICE
520	52.5 db below 1 volt per microbar	HIGH	\$22.50
520B	51 db below 1 milliwatt per 10 microbars	150-250 ohms	\$22.50

## THE "DISPATCHER"



MODEL 520SL

(NOTE: Complete assembly furnished as illustrated.)

MODEL	OUTPUT LEVEL	IMPEDANCE	LIST PRICE
520SL	52.5 db below 1 volt per microbar	High	\$42.50

This new Controlled Magnetic unit is designed to handle the most severe field requirements of paging and dispatching systems. The unit is supplied with 7 feet of 2-conductor shielded cable, and is wired to operate both microphone and relay circuits. The "Dispatcher" is ideal for police, taxi-cab, railroad airport, bus, truck, and all emergency communications work where dependability is vital. Large grip-bar assures positive contact.



505 SERIES



# COMMUNICATIONS MICROPHONES

## MODEL "100" SERIES CARBON MICROPHONES

Used around the world for police, taxi, bus, truck, and commercial applications — more than all other makes combined! Rugged unit with clear, crisp voice response and high output. Heavy duty switch for push-to-talk performance. Furnished with bracket for wall mounting, plus coiled-cord cable. Adopted as standard microphone by G.E., Link, Motorola, R.C.A. and others for 2-way radio communications equipment. Output level: 5db below 1 volt for 100 microbar speech signal.



### REPLACEMENT CHART

MANUFACTURERS MODELS	REPLACEMENT MODEL
CB10, CB10B, CB10C, CB10D, CB15, CB15D,	101C
CB10E	101E
CB12, CB12A, CB12C, CB12D	102C
CB12E	102E
CB15F	103

Model	Cable	Switch Arrangement	List Price
101C	Standard Coiled Cord 11' retracted; 5' extended	Two Wire Relay Switch normally open. (No microphone switch)	\$30.00
101E	Tinsel Coiled Cord 11' retracted; 5' extended with Amphenol MC4M Connector	Relay normally open. Microphone switch normally open.	\$33.00
102C	Standard Coiled Cord 11' retracted; 5' extended	Two Wire Relay Switch normally open. (No microphone switch)	\$30.00
102E	Tinsel Coiled Cord 11' retracted; 5' extended with spade lugs		\$33.00
103	Standard Coiled Cord 11' retracted; 5' extended with Amphenol MC4M Connector		\$31.00

## CARBON MICROPHONE CARTRIDGE



Model R10 and Model 99A149

Rugged microphone cartridge replacement for "CB", "100", and "120" Series Carbon Microphones. Furnished with necessary mounting hardware and complete installation instructions. Direct replacement for the cartridge used in the Models 101A, 101B, 101C, 102A, 102B, 102C, 120, CB10, CB10B, CB10C, SB10E, CB11, CB11B, CB12, CB12A, CB12B, CB12C, CB12D, CB12E, CB14, CB14A, CB15, CB15B, CB15C, CB15D, CB15F, CB20, CB162, 91A27 carbon microphones.

Model: R10 List Price: \$8.50

Model 99A149 is the replacement for cartridges used in microphone models: CB20, CB21, CB50 and 115. Model 99A149 List Price \$8.50

## SWITCHES AND ACCESSORIES

### MICROPHONE REPLACEMENT CARTRIDGES



CONTROLLED MAGNETIC

Model R5 & Model R5B



CRYSTAL

Model R7

Direct replacement for cartridges used in the following Shure microphone models: 510C, 510MD, 510S, 520, 520SL and 505C. Also ideal for replacement of crystal cartridges in Shure cases of the Model 707A and 708A Series, where heat and humidity are a problem. Supplied with rubber mounting ring.

Model: R5 List Price: \$11.00

Model 99C86 is used in models 505B and 520B. Is physically identical to Model R5; but low impedance (150 to 250 ohms).

Model: R5B List Price: \$11.00

Model R7 Crystal Microphone. Available for service installation as a replacement for the cartridges in the Shure Crystal Microphones of the 707A and 708A Series, and other microphones of similar design. High output—48 db below 1 volt per microbar. Cartridge supplied with rubber mounting rings and installation instructions.

Model: R7 List Price: \$8.25

### SLIM-X CARTRIDGE

Model 99A186 for the 777 Series Slim-X Microphones. Crystal element metal-sealed for long life. Requires only one solder connection.

Model: 99A186 List Price: \$10.00

### TAKE-APART STAND



Model 534B

Model 534B. Handy low-cost stand for desk or hand use. One twist of handle locks it securely in base for use as a table stand, or releases handle for use in hand. Metal base, wood handle.

Model: 534B List Price: \$4.50

## "RANGER" TRANSISTOR-AMPLIFIER FOR CARBON MICROPHONE REPLACEMENT

Model 505T is the perfect improvement-replacement for carbon microphones. A self-contained transistor amplifier, powered by the carbon microphone circuit, does not require an additional power source. Provides unusual speech clarity and freedom from ageing under severe vibration conditions. Same size and appearance as "100" series microphones. Output level 1 db below 1 millivolt per 100 microbars.

Model 505T

List Price \$48.50

## CARBON "PACK" MICROPHONE

Designed for use with small portable and mobile transmitters. Only 2" in diameter and 1 1/2" thick. Has 3-conductor coiled cord, metal-spring strain relief, and Push-to-Talk switch. Has same operating characteristics as "100 Series" Carbon Microphones. Replacement for Mfrs. Model Nos. CB20, CB21.

Model 115

List Price: \$31.00



Model 115

## MICROPHONE ASSEMBLY

A Controlled Reluctance Microphone and Desk Stand Assembly—ideal for fixed-station use in all types of communications work. Has a built-in switch for controlling both the microphone circuit and an external relay or control circuit. Replacement for Mfrs. Model No. CR84.

Model 510MD

List Price \$42.50



Model 510MD

## COILED CORD SETS

Tinsel Coiled Cord with trimmed and tinned leads and Amphenol MC4M connector attached (3 conductor shielded) for use with General Electric EM10A and 505K microphones.

Model: C10C List Price \$12.00

Standard Copper Coiled Cord with trimmed and tinned leads. Used in "CB" and "100" Series Microphones.

Model: C15C List Price: \$6.25

Tinsel Coiled Cord with Amphenol MC4M Connector for use with General Electric equipment.

Model: C16C List Price: \$9.50

Tinsel Coiled Cord with spade lugs for use in Motorola equipment.

Model: C17C List Price: \$7.75

Standard Coiled Cord with Amphenol MC4M Connector for use with Motorola equipment.

Model: C18C List Price: \$9.50

Tinsel Coiled Cord with Amphenol MC4M Connector for use with Motorola equipment.

Model: C19C List Price: \$9.50

## "GRIP-TO-TALK SLIDE-TO-LOCK" SWITCH

Heavy-Duty Switch withstands the most severe field requirements of paging and dispatching systems. Ideal for Police, Taxi-Cab, Railroad, Airport, Bus, Truck, and all emergency communications work. Can be used with Shure connector-type crystal, dynamic and carbon microphones of any impedance. Fits handily on Shure S36A Desk Stand. Rich satin chrome finish.

Model: A88A

List Price: \$12.50



Model A88A

## ON-OFF PRESS-TO-TALK SWITCHES



Model A83B. Rotary-type "On-Off" switch. Quickly attached to any cable-connector type Shure microphone.

Model: A83B List Price: \$11.00

Model A84B. Momentary Press-to-Talk "On-Off" switch.

Model: A84B List Price: \$11.00

Model A85C. Momentary Press-to-Talk Relay-Type Switch.

Model: A85C List Price: \$11.50



## MODERN DESK STAND



Model 536A

Model 536A. Streamlined Desk Mount fits all Shure connector-type microphones. Adapter provided for mounting other type microphones. Ideal for use with A88A switch.

Model: 536A

List Price: \$6.50



Fig. A



Fig. B



Fig. C



Fig. D



Fig. E



Fig. F



Fig. G



Fig. H



Fig. J



Fig. K



Fig. L



Fig. M



Fig. N



Fig. O



Fig. P

### FINE GROOVE CARTRIDGES FOR 33 $\frac{1}{3}$ , 45 RPM RECORDS

MODEL NO.	ILLUSTRATION	TYPE	LIST PRICE	OUTPUT LEVEL	MIN. NEEDLE FORCE	RESPONSE TO	NET WEIGHT	SHURE NEEDLE NO.
W21F*	Fig. B	Crystal	\$ 7.75	1.5V	6 grams	10,000 cps	4½ grams	A63MG
W31AR	Fig. A	Crystal	6.50	2.1V	7 grams	7,500 cps	5½ grams	A53MG
WC20‡	Fig. C	Ceramic	9.50	.58V	2½-3 grams	12,000 cps	2¼ grams	A20S

### "TWIN-LEVER" CARTRIDGES FOR 33 $\frac{1}{3}$ , 45 AND 78 RPM RECORDS

MODEL NO.	ILLUSTRATION	TYPE	LIST PRICE	MG.		MIN. NEEDLE FORCE	RESPONSE TO	NET WEIGHT	SHURE NEEDLE NO.	
				.5V	.7V				MG.	STD.
WC6§	Fig. H	Ceramic	\$14.50	.5V	.7V	4-6 grams	15,000 cps	7 grams	A6S	
W9*	Fig. J	Crystal	9.50	3.5V	.5V	11 grams	10,000 cps	7 grams	A9	
WC10§	Fig. H	Ceramic	9.50	.78V	1.0V	7 grams	12,000 cps	7 grams	A10S	
WC10D§	Fig. H	Ceramic	34.00	.78V	1.0V	7 grams	12,000 cps	7 grams	A10DS	

### TURNOVER CARTRIDGES FOR 33 $\frac{1}{3}$ , 45 AND 78 RPM RECORDS

MODEL NO.	ILLUSTRATION	TYPE	LIST PRICE	MG.	STD.	MIN. NEEDLE FORCE	RESPONSE TO	NET WEIGHT	SHURE NEEDLE NO.	SHURE NEEDLE NO.
W22	Fig. D	Crystal	9.50	1.2V	1.4V	8 grams	10,000 cps	4½ grams	A65MG	A61A
W22-T	Fig. E	Crystal	10.00	1.2V	1.4V	8 grams	10,000 cps	12½ grams	A65MG	A61A
WC24	Fig. F	Ceramic	8.75	0.6V	0.6V	8 grams	7,000 cps	4½ grams	A53MG	A52A
WC24-T	Fig. G	Ceramic	9.25	0.6V	0.6V	8 grams	7,000 cps	12½ grams	A53MG	A52A
WC25	Fig. K	Ceramic	9.50	.65V	.7V	8 grams	7,000 cps	6 grams	A65MG	A61A
W72**	Fig. L	Crystal	8.50	3V	4V	10-15 grams	5,000 cps	7 grams	A69A	A70A

### ALL PURPOSE SINGLE NEEDLE CARTRIDGES FOR 33 $\frac{1}{3}$ , 45, 78 RPM RECORDS

MODEL NO.	ILLUSTRATION	TYPE	LIST PRICE	MG.	STD.	MIN. NEEDLE FORCE	RESPONSE TO	NET WEIGHT	SHURE NEEDLE NO.
W26	Fig. 8	Crystal	\$ 6.50	.87V	1.0V	8 grams	8,000 cps	4½ grams	A67U
WC38	Fig. A	Ceramic	6.50	.9V	.92V	9 grams	10,000 cps	5½ grams	A58U
W66B	Fig. O	Crystal	7.00	2.0V	2.3V	8 grams	4,500 cps	12 grams	A66U
W70	Fig. P	Crystal	4.95	3.0V	3.8V	10-15 grams	5,000 cps	16 grams	A77U

### STANDARD CARTRIDGES FOR 78 RPM RECORDS

MODEL NO.	ILLUSTRATION	TYPE	LIST PRICE	OUTPUT LEVEL	MIN. NEEDLE FORCE	RESPONSE TO	NET WEIGHT	SHURE NEEDLE NO.
W68†	Fig. O	Crystal	\$ 7.50	1.6V	1 oz.	4,500 cps	Dual Wt. 25 grams or 12 grams	A62A
W78‡	Fig. M	Crystal	5.55	4.0V or 2.0V	1 oz.	6,000 cps	Dual Wt. 25 grams or 12 grams	None
WS6N	Fig. N	Crystal	8.50	4.3V	1 oz.	10,000 cps	12 grams	A68D

\* With .453 Mount for Oak Changer.

† Dual-Weight Cartridge. With weight-slug, net weight 25 grams. Without weight-slug, net weight 12 grams.

‡ Dual-Weight Cartridge. Has same weight-slug as Model W68, with same net weight differential. In addition, Model W78 has capacitor, furnished as accessory. Without capacitor, output is 4.0 volts. With capacitor, output is 2.0 volts.

§ Not a turnover type. Needles are set into tracking position by ingenious "Twin Lever" needle shift system.

¶ For Columbia 16-2/3 Highway Hi-Fi Records.

\* Model W9 has Capacitor furnished as accessory. Without Capacitor output is as shown above. With Capacitor output is 1.7 volts for 33-1/3, 45 RPM; 2.5 volts for 78 RPM.

\*\* Model W72 has a slip-on Capacitor furnished as an accessory. With the Capacitor, output is 2 volts for 78 RPM, 1.5 volts for 33-1/3, 45 RPM. Without the Capacitor, output is 4 volts for 78 RPM, 3 volts for 33-1/3, 45 RPM.



# MAGNETIC TAPE and WIRE RECORDING HEADS

# SHURE

## NUMERICAL LIST OF SHURE TAPE HEADS USED IN ORIGINAL EQUIPMENT

MODEL	ILLUSTR.	LIST PR.	DESCRIPTION	OPERATING DATA
812	Fig. D	\$17.00	Wire Recording Head.	Not Shown
815	Fig. A	15.00	Upper track recording. Low impedance record-playback coil.	See 815
815H	Fig. A	15.00	Upper track recording. High impedance record-playback coil.	See 815H
816	Fig. B	12.00	Upper track recording. High impedance record-playback coil.	See 816
817	Fig. C	9.00	.093" record track width. Low impedance record-playback coil.	See 817
TR5B	Fig. A	17.00	Upper track recording with 14-inch completely insulated leads. Cinch Plug attached.	See 815*
TR5N	Fig. A	16.00	Special Shield. Special Leads. Special Plug.	See 825*
TR5Z-2	Fig. A		Upper track recording. High impedance record-playback coil.	See 815H
TR6	Fig. B	12.00	Lower track recording. Low impedance record-playback coil.	Not Shown
TR6G	Fig. B	12.00	Lower track recording. High impedance record-playback coil.	See 816**
TR6H	Fig. B	12.00	Upper track recording. Low impedance record-playback coil.	Not Shown
TR16	Fig. C	9.00	.093" record track width. High impedance record-playback coil.	Not Shown
TR26	Fig. C	11.00	.093" record track width (1/4 mil gap). High impedance record-playback coil.	Not Shown
TR30	Fig. E		Microgap .093" record track width (1/4 mil gap). 500 mh	See TR30
TR35	Fig. E		Microgap .093" record track width (1/4 mil gap). 500 mh inductance.	See TR30
TE2	Fig. C	7.00	Erase head. .116" erase track width.	See TE2
TE10	Not Illustr.	7.00	Erase head. .132" erase track width.	Not Shown
TE30	Fig. F		Microgap .110" erase track width.	See TE30
TE35	Fig. F		Microgap .110" erase track width.	See TE30

\*Operating data only. 815 does not replace.

\*\*Operating data only. 816 does not replace.

## TECHNICAL DATA — MAGNETIC TAPE AND WIRE RECORDING HEADS



FIG. A  
RECORD-  
PLAYBACK-  
ERASE



FIG. B  
RECORD-  
PLAYBACK



FIG. C  
RECORD-  
PLAYBACK-  
ALSO ERASE

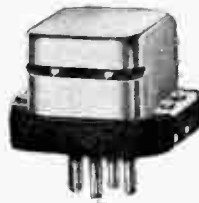


FIG. D  
RECORD-  
PLAYBACK-  
ERASE



FIG. E  
RECORD-  
PLAYBACK-  
ALSO ERASE



FIG. F  
RECORD-  
PLAYBACK-  
ALSO ERASE

Model	Recording Speed	Bias & Erase Frequency	Std* Recording Level	Operating Bias Current	Erase ** Current	Impedance Erase Coil	Impedance Recording Coil
815 (Fig. A)	3.75 per sec 3.75 per sec 7.5 per sec	25KC DC 50KC	.05 ma .095 ma .05 ma	1.25 ma .35 ma 1.5 ma	30 ma 25 ma 35 ma	750 ohm at 25KC 12 ohm 1300 ohm at 50KC	1450 ohm at 1000 cps 180 ohm 1450 ohm at 1000 cps
815H (Fig. A)	3.75 per sec 3.75 per sec	25KC DC	.03 ma .056 ma	.72 ma .24 ma	30 ma 25 ma	750 ohm at 25KC 12 ohm	5800 ohm at 1000 cps 556 ohm
816 (Fig. B)	3.75 per sec 3.75 per sec	25KC DC	.03 ma .07 ma	.80 ma .26 ma			5500 ohm at 1000 cps 556 ohm
817 (Fig. C)	3.75 per sec 3.75 per sec	25KC DC	.06 ma .175 ma	3.6 ma .42 ma			1860 ohm at 1000 cps 180 ohm
TR30 & TR35 (Fig. E)	7.5 per sec 3.75 per sec 1.875 per sec	50KC 50KC 25KC	.057 ma .056 ma .054 ma	.62 ma .57 ma .50 ma			3000 ohm at 1000 cps 3000 ohm at 1000 cps 3000 ohm at 1000 cps
TE2 (Fig. C) Without case	3.75 per sec 3.75 per sec 3.75 per sec	25KC 50KC DC			30 ma 35 ma 25 ma	750 ohm at 25KC 1300 ohm at 50KC 12 ohm	
(Fig. F) TE30 & TE35	3.75 per sec 3.75 per sec 3.75 per sec	25KC 50KC 75KC			12 ma 12.5 ma 12 ma	8000 ohm 14,000 ohm 21,000 ohm	

### RECORDING HEAD DIMENSIONS

Models 815, 815H (Fig. A) & 816 (Fig. B)  
Width 1.240" Depth 1.031" Height .695"

Models TE2 (Fig. C)  
Width .516" Depth .830" Height .715"

Model 817 (Fig. C)  
Width .552" Depth .830" Height .765"

Models TR30 & TE30 (Fig. E) & Models TR35 & TE35 (Fig. F)  
Width .635" Depth 1.13" Height .460"

# Capps

CAPPS & CO., inc.  
valley stream, n.y.

## CAPPS CUTTERS

Patent No. 2187512 and 2530284

CAPPS CUTTERS are the finest examples of precision hand craftsmanship available in this country today. Each one is made by a series of hand shaping and polishing operations on delicate facets so small that they can be covered by a human hair. Each is individually disc tested to assure the highest possible recording standards. PRODUCTION TOLERANCES: Included angle-Plus 7, minus 3 degrees; Radius, plus or minus .0003; Burnishing facet, plus or minus .00025 (measured at radius tip); Noise meter reading of minus 55db or better at an 8" record diameter.



### SAPPHIRE CUTTERS

Cat. No.	Duty	Shank	Shank Matl.	Included Angle (degrees)	Radius (Mils)	List Price	Resharpener List Price
780S	For general course pitch work 78 and LP.	Short	Dural	87	1.5	\$8.25	\$3.75
780L	"	Long	Dural	87	1.5	8.25	3.75
702S	"	Short	Dural	70	2.0	8.25	3.75
702L	"	Long	Dural	70	2.0	8.25	3.75
330S	Routine microgroove	Short	Dural	87	0.5 to 1.0	8.25	3.75
330L	"	Long	Dural	87	0.5 to 1.0	8.25	3.75
B2S	Utility stylus	Short	Brass	87	to 1.0	6.60	3.25
B2L	"	Long	Brass	87	to 1.0	6.60	3.25

### STELLITE CUTTERS

871S	Harder than steel—softer than sapphire	Short	Brass or Dural	87	to 1.0	2.50	1.40
871L	"	Long	Brass or Dural	87	to 1.0	2.50	1.40

### CUSTOM MADE AND SPECIAL DESIGN STYLI AVAILABLE (MRS, ANM and FEATHER EDGE)

Eccentric styli, Advance balls, Shaving knives, Wax points, Embossing styli, Replaceable Sapphire reproducing needles, Cartridge assemblies with Sapphire points.

### CAPPS RESHARPENING SERVICE

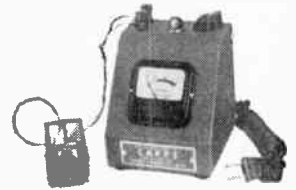
Most CAPPS MADE styli can be resharpened upwards of five times depending on whether they are simply dull or badly chipped (Thermo styli cannot be resharpened this many times because of the wiring which limits the available area of sapphire.) CAPPS "RESHARPS" are given the same exacting care and attention as CAPPS new styli and are returned to the sender promptly.

## HOT STYLUS UNIT

The CAPPS HOT STYLUS UNIT is used for applying heat to disk recording styli, softening the disk material at the point of contact thereby producing smoother more accurate grooves. This results in a substantial reduction in surface noise, especially at the inner diameter and minimizes the mechanical load on the cutting head increasing its efficiency and frequency response.

When ordering specify make and model number of cutter head and stylus requirements.

Model No.	Description	Price
CU-1	Supplied without stylus.....	\$60.00 net
CU-1R	Supplied with regular duty stylus, LP or 78.....	66.50 net
CU-1C	Supplied with custom made stylus to customer's specification.....	70.50 net



## MICROPHONES CONDENSER MICROPHONES

CAPPS CONDENSER MICROPHONES are acoustically faithful, distortion free, omnidirectional, blast proofed, and have a smooth frequency response from 20 to 20,000 c.p.s. Their excellent transient response make them ideal for those who must have the ultimate in acoustical transmission. They are complete with preamplifier, power supply and cable.

CM 2001 "PROFESSIONAL." The lowest priced condenser microphone available. Combines all of the features above with low cost achieved through mass production. Available for high impedance input (Grid Input). A boon to high fidelity enthusiasts.

CM 2001 ..... Net Price \$150.00\*

CAPPS "STUDIO" Condenser Microphones are completely equipped with Cannon Connectors and swivel head.

CM 2030A—30 Ohms ..... Net Price \$225.00\*

CM 2250A—250 Ohms ..... Net Price \$225.00\*

CM 2011A—Hi Imp. (Mic Input) ..... Net Price \$225.00\*

### CRYSTAL MICROPHONE WITH CONTROLLABLE BASS BOOST (Patent Pending)

Designed to compensate for frequency response deficiencies inherent in many tape recorder and p.a. systems, this microphone has a control knob which causes the acoustic chamber of this microphone to increase the bass response of the microphone up to 12 db from 50 to 150 c.p.s. with smooth rise and roll off below peak boost. Smooth frequency response 20-12,000 c.p.s. Output level -55 db re 1V/dyne/CM<sup>2</sup>. Omnidirectional. 5/8"-27 thread for stand mounting or lay flat for desk use. Supplied with 15' of shielded microphone cable.

CR BB ..... List Price \$36.00



CR BB



CM 2030A  
CM 2250A  
CM 2011A

# Electro-Voice MICROPHONES AND STANDS

## BROADCAST-TV DYNAMICS

E-V research engineers have worked closely with national TV and BC networks in determining exactly the requirements for professional microphones. This is your assurance of higher quality, ease of application, and economy in sustained, trouble-free operation.

### CARDIOID UNIDIRECTIONAL MICROPHONES

**Model 666 Super Cardioid Microphone**—Totally new concept in directional microphone design uses Variable D principle. High discrimination against sounds from back hemisphere. Highly resistant to mechanical shock. Model 666 affords another octave of uniform HF response over that found in conventional broadcast cardioids. Permits close talking with no bass accentuation. Increases working distance over pressure microphones by factor of 1.7:1 due to reverberation reduction. Designed for operation on boom, stand or in hand. Uses only one moving element with exclusive, rugged Acoustalloy diaphragm. Response range, typical 30-16,000 cps; output -55 db. Impedance changed on internal terminal board. Wired for 50 ohms, taps at 150 and 250 ohms. Aluminum cast case finished in TV gray. Built-in Cannon UA-3 connector. Clamp-on stand mount included with  $\frac{3}{8}$ "-27 thread and  $\frac{1}{2}$ " pipe thread adapter. 20' cable. Size, 7 $\frac{1}{2}$ " long, 1 $\frac{1}{4}$ " diameter. Net Weight, 11 oz. List Price... **\$255.00**

**Model 667 Variable Response Cardioid**—This all-purpose microphone fulfills requirements of wide-range reproduction under a great variety of acoustic conditions. The 667 combines the same excellent cardioid operations of the Model 666, listed above, with an in-line transistor preamplifier, with bass and treble controls providing 20 distinct frequency response characteristics. Maximum output level: 50 ohms, -30 db; 150 ohms, -32 db; 250 ohms, -33 db. Microphone specifications, accessories, similar to Model 666 except response: 35-16,000 cps; finish brown and gold. Preamplifier noise level -123 db referred to input. Controls: Bass (4-position: +3 db, flat, -5 db, -9 db at 100 cps); Treble (5-position: +9 db, +6 db, -3 db, flat, -8 db at 10 kc); Gain (4-position); Power On-Off switch. Long-life mercury battery supplied. Steel case, brushed chrome finish. Size, 9" l., 3 $\frac{1}{2}$ " w., 3 $\frac{1}{2}$ " h. Net Wt., 3 $\frac{1}{2}$  lb. Supplied with 50' cable, UA-3-11, UA-3-12 connectors; 20' cable with UA-3-11 connector, hardwood carrying case for complete unit. List Price... **\$600.00**

**Model 665 Cardioid**—Similar in design and function to the Model 666, but for less exacting applications. Uniform response 40-15,000 cps. Recessed switch provides 50 or 250 ohms. Pressure-cast zinc case. Nonreflecting gray finish. Diameter, 1 $\frac{1}{4}$ ", length 7 $\frac{1}{2}$ ". 18' cable. Net Weight, 1 lb. 10 oz. List Price... **\$150.00**

### OMNIDIRECTIONAL MICROPHONES

**Model 655C Slim-Trim TV Dynamic**—Frequency response 40-20,000 cps. Output level -55 db. Has widest range response of any microphone commercially available. Used in many laboratories as test standard. Excellent level affords high signal-to-thermal noise ratio. Can be used on stand, in hand or on boom. Easily concealed in studio props. Acoustalloy diaphragm. Pop-proof grille. Impedance 50, 150 and 250 ohms. Impedance easily changed at internal terminal board. Cannon UA-3 connector. Clamp-on stand mount included with  $\frac{3}{8}$ "-27 thread and  $\frac{1}{2}$ " pipe thread adapter. Size, 10 $\frac{1}{2}$ " long w/o connector, 1" diam. 20' cable. Net Wt., 11 oz. List... **\$200.00**

**Model 654 Slim-Trim Broadcast Dynamic**—Frequency Response 50-15,000 cps. Output level -55 db. Recessed selector provides 50 or 250 ohms. Built-in Cannon XL-3 connector. Acoustalloy diaphragm.  $\frac{3}{8}$ "-27 thread. 18' cable. 10" long with stud, 1" diam. Net Weight, 15 $\frac{1}{2}$  oz. TV gray enamel. List Price... **\$100.00**

**Model 646 Lavalier Dynamic**—For chest, desk or hand use. Neck cord and support clips supplied. Response 50-10,000 cps; output level -57 db. Choice of either 50, 150, 250 ohms impedance. Omnidirectional. Acoustalloy diaphragm. Built-in connector. Gray enamel. 30' cable. 6 $\frac{1}{4}$ " x 1" diam. Net Weight, less cable, 7 oz. List... **\$147.50**

**Model 635 Broadcast Dynamic**—Compact, rugged, versatile. Omnidirectional. Response, 40-15,000 cps. Output level -55 db. 50-250 ohms impedance selector. Head tilts through 90° arc. Cannon XL-3 connector.  $\frac{3}{8}$ "-27 thread; size, 2" x 3 $\frac{1}{2}$ ". Satin chrome finish. 18' cable. Net Weight, 1 lb. List Price... **\$82.00**

**Model 649 Miniature Lavalier**—Smallest dynamic lavalier—weighs only 2 oz. without cable; 2 $\frac{1}{4}$ " long x  $\frac{3}{4}$ " diameter. Ideal for programming where unobtrusive or concealed microphone placement is desirable. The 649 may be hidden in corsages, under the eyelid or tie, behind a book—almost anywhere. Frequency response 60-10,000 cps. Output -62 db. Nondirectional. Impedance 50 ohms, easily changed to 150 or 250 ohms by moving one wire in transformer housing located at end of 30' cable. Aluminum case finished in TV gray. UA-3-11 connector in transformer housing. Complete with neck cord assembly and belt clip. List Price... **\$115.00**

### MICROPHONE STANDS

**Model 415 Reclining Desk Stand**—Mounts 615, 715, 915 at 15° tilt. Satin chrome. Size 2 $\frac{3}{8}$ " x 2 $\frac{3}{8}$ " x 1". Net Weight, 4 oz. List Price... **\$1.75**

**Model 416 Stand**—For semipermanent mounting of 646, 647 microphones. Black rubber. Size 3 $\frac{1}{4}$ " diameter, 1" high. Net Weight, 2 oz. List Price... **\$5.00**

**Model 418 Desk Stand**—Use with microphones using small-type stud such as Models 611, 623, 630, 635, 636, 911, and 950. Die cast base. Gray finish. List Price... **\$10.00**  
Model 418-S—With switch... **\$15.00**

**Model 419 Desk Stand**—Similar to Model 418 but for use with microphones using large-type stud such as Models 650, 654, 726, 731, 664 and 665. List Price... **\$10.00**  
Model 419-S—With Switch... **\$15.00**

**Model 420 Desk Stand**—Heavy cast iron stand finished in TV gray. Specifically designed for use with E-V 666, 655C, 646 or microphones with 1" diameter. Clamp attachment for mounting 1" cylindrical mikes, without tools. Base holds

mike in position when subjected to ordinary strain. Net Weight, 3 lbs. List Price... **\$20.00**

**Model 423-A Desk Stand**—Sturdy smartly styled, round die-cast base, 5 $\frac{1}{4}$ " diameter. Rests firmly on rubber base buttons. Rich satin chrome.  $\frac{3}{8}$ "-27 thread. Choice of 3" or 5" matching stem riser. Net Weight, 1 lb. List **\$5.00**

**Model 428 Touch-To-Talk Stand**—Fits standard  $\frac{3}{8}$ "-27 thread. Lever-type switch for relay operation or microphone On-Off—closes or opens instantly or locks in "talk" position. Satin chrome; gray plastic switch lever with locking button. 7" x 5 $\frac{3}{4}$ " base diameter. Net Weight, 1 $\frac{1}{2}$  lbs. S.P.D.T. List Price... **\$17.50**  
D.P.D.T. List Price... **\$17.50**

**Model 425 Deluxe Floor Stand**—Button at top gives one-hand height control from 37" to 66". Locks automatically on release. Shaft can be rotated without any adjustment device. Locking-type adjustable legs permit stand to be placed flush against wall. Modern, die-cast base. Three-leg spread 17". Net Weight, 7 $\frac{1}{2}$  lbs. List Price... **\$30.00**



666



655C



665



654



635



649



664 on 419



420



418



419



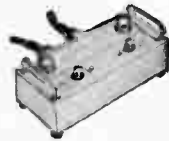
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423A



667



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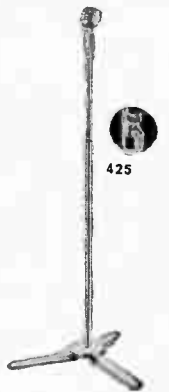
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646



605 on 428



425

# Electro-Voice MICROPHONES AND ACCESSORIES

## DYNAMIC MICROPHONES

### CARDIOID UNIDIRECTIONAL MICROPHONES

**Model 664 Cardioid Dynamic**—Similar to Model 666 in function, but designed specifically for P.A. Cardioid pattern at all frequencies. Permits close talking without "booming" or bass accentuation. Provides better discrimination against unwanted sound. Less feedback than any cardioid P.A. microphone built. Blast filter minimizes wind effect. Acoustalloy diaphragm shielded from dust and magnetic particles. Response 40-15,000 cps. Output -55 db. On-Off switch. 150-ohm and high impedance. Impedance changed by moving one wire in MC-4 cable connector. Pressure cast case. Chrome finish. 18" cable. Size 7 $\frac{1}{2}$ " long, less stand coupler, 1 $\frac{1}{2}$ " diameter. Net Weight, 1 lb. 10 oz. List Price..... **\$85.00**  
**Model 664G**—Gold Finish. List Price..... **\$90.00**



664

### OMNIDIRECTIONAL MICROPHONES

**Model 636 "Slimair" Dynamic**—Exceptionally fine for P.A., recording and general use. Response 60-15,000 cps, output -55 db. Pop-proof head. Wide pickup range. On-Off switch. Satin chrome finish. Tilttable head. Built-in MC-4 connector.  $\frac{3}{8}$ "-27 thread. 18" cable. 10 $\frac{1}{2}$ " long including stud. HI-Z or LO-Z by changing one wire in connector. List Price..... **\$72.50**  
**Model 636G**—Gold Finish. List Price..... **\$77.50**



636



630

**Model 630 High Fidelity, High-Output Dynamic**—Famous for quality at low cost. Response 60-11,000 cps; output level -55 db. Unaffected by heat or humidity. Acoustalloy diaphragm. Tilttable head. Built-in MC-3 connector. On-Off switch. Satin chrome finish. Available in 50, 250 ohms, or HI-Z. Size 2" x 6 $\frac{1}{4}$ ". 18" cable. Net Weight, 1 lb. List Price..... **\$52.50**



647

**Model 647 PA Lavallier Dynamic**—Small, rugged; for chest, desk or hand use. With neck cord, support clips and 18" cable. Response 60-10,000 cps; output level -57 db. Available in 150 ohms or HI-Z. Acoustalloy diaphragm. Built-in connector. Gray enamel finish. 5" long, 1" dia. Net Weight, less cable, 4 oz. List Price..... **\$82.50**



623

**Model 623 Slim Dynamic**—Ideal for P.A., recording and general use. Use on stand or in hand. Omnidirectional. Response 60-12,000 cps; output level -56 db. HI- or LO-Z by changing one wire in connector. Pressure cast, satin chrome finish. Tilttable head. On-Off switch. Built-in MC-4 connector.  $\frac{3}{8}$ "-27 thread. 7 $\frac{1}{2}$ " x 1 $\frac{1}{2}$ ". 18" cable. Net Weight, 15 oz. List Price..... **\$57.00**

**Model 611 "Mercury" Dynamic**—Traditional styling, fine performance for

general sound pickup. Response 50-9000 cps; output level -55 db. Nondirectional. Acoustalloy diaphragm. Tilttable head. On-Off Switch. Built-in MC-3 connector.  $\frac{3}{8}$ "-27 thread. Satin chrome finish. Available in 50, 150, 250 ohms or HI-Z. LO-Z balanced to grd. 2 $\frac{3}{4}$ " x 3 $\frac{3}{4}$ " x 6 $\frac{1}{2}$ " inc. stud. 18" cable. Net Weight, 1 $\frac{1}{4}$  lbs. List Price..... **\$45.00**

**Model 605 Durable Dynamic**—For dependable, general purpose use. Response 65-8000 cps. Output level -55 db. Nondirectional, becoming directive at higher frequencies. Acoustalloy diaphragm. Head at 22° fixed tilt. Built-in MC-1 connector. Satin chrome. Choice of 50, 250 ohms or HI-Z. Low impedance not balanced to ground. Net Weight, 12 oz. With 18" cable. List Price..... **\$32.50**



605

**Model 615 "Century" Dynamic**—Incomparable for paging, home recording, amateur, or any low-cost applications. Can be used in hand, on table, on stand, or overhead. Nondirectional. Acoustalloy diaphragm. Withstands extreme temperature, humidity, corrosion and shock. Response 50-8000 cps. Output -55 db. 50 ohms or HI-Z. LO-Z not balanced to ground. 5' cable. Pressure cast case, satin chrome. Rugged, lightweight. Size 3" x 2 $\frac{1}{4}$ " x 1". With  $\frac{3}{8}$ "-27 thread stand adapter. AC-DC insulated. List Price..... **\$25.50**



615



615 on 415

### MICROPHONE ACCESSORIES

**Model 366 Suspension Shock Mount**—Extremely light boom suspension shock mount. Combined weight of 366 and 666 microphone is 17 oz. Designed for use with 666 microphone. No tools required for installing mike. Pigtail cable connection with UA-3 connectors provides cable loop isolating boom shock noises. Made for any microphone with 1" diameter. List Price..... **\$40.00**



366

**Model 345 Shock Mount**—Dual-type external shock mount prevents reproduction of external shocks and stand vibrations. Permits tilting microphone head.  $\frac{3}{8}$ "-27 thread. Easily attached or removed. Satin chrome. 1 $\frac{1}{2}$ " x 3 $\frac{3}{4}$ ". Net Weight, 10 oz. List Price..... **\$15.00**



345

**Model 346 Shock Mount**—Designed specifically for use with Model 666 microphone. Similar in every feature to Model 345, but constructed for 11 oz. microphone. List Price..... **\$15.00**



300

**Model 300 Detachable Microphone Clamp**—Light weight adapter fits any cylindrical microphone with 1" diameter. Provides positive means to mount on stand. Easily installed without tools with finger operated clamp. Rubber insert prevents slippage on mike.  $\frac{1}{2}$ " pipe thread adapter for  $\frac{3}{8}$ "-27. List Price..... **\$10.00**

**Model 524 Wind Screen**—Designed specifically for use with Model 666 microphone. Minimizes wind effect on boom operation or when used outdoors. Made of Acoustifoam rubber. Net Weight, 2 oz. List Price..... **\$8.00**



524

**Model 335 Blast Filter**—Acoustically treated, scientifically curved grille stops wind and breath blasts. Does not affect frequency response. Easily fits over head of E-V Models 630, 635, and 605 mikes. Satin chrome finish. List Price **\$5.50**



335

**Model 448 Swivel Boom Mount**—Designed specifically for use with Model 648 microphone. Holds mike 11 $\frac{1}{2}$ " off mounting surface. 62° elbow bend. MC-2M connector. Satin chrome finish. Extends 4" below mounting surface. 2 $\frac{1}{2}$ " diam. mounting base. Net Weight, 1 lb., 5 oz. List Price..... **\$24.00**



448 with 648

**Model 502 Matching Transformer**—Designed for mounting on amplifier chassis or in series with mike line. Transformer windings have low distributed capacity and are amply shielded against inductive hum by a shield inside pressure cast case. Designed for 50, 250 and 500 ohms—to HI-Z. Broadcast fidelity. Response 40-20,000 cps = 1 db for speech or music. MC-4 input connector. List Price..... **\$17.50**



502

# Electro-Voice MICROPHONES

## CRYSTAL AND CERAMIC MICROPHONES



911

**Model 911 Cardioid Crystal**—Uses same new Variable D principle as E-V's RC-TV cardioids to obtain uniform directivity at all frequencies, high discrimination against unwanted sound. The 911 is an excellent wide-range, all-purpose P.A. microphone for a great variety of acoustic conditions, and especially useful where background noise and reverberation are a problem. Response 50-11,000 cps. Output — 55 db. HI-Z. On-Off switch. Pressure-cast case, satin chrome finish. 18' cable, MC-1 connector. 5½" l. (excluding stud), 1¼" dia. overall. Net wt., less cable, 1¼ lbs. List. **\$49.50**



926

**Model 911 "Mercury" Crystal**—Same smart design and fine performance as Model 611. Response 50-8000 cps. Output — 50 db. Metal Seal Crystal, MC-1 connec for HI-Z. 18' cable. Net Weight 1¼ lbs. List Price **\$32.50**

**Model 926 Slim Crystal**—Level and response ideal for general purpose use. Response 60-8000 cps; output level — 60 db. HI-Z. Pressure cast case, satin chrome finish. Tilttable head, ¼"-27 thread. 6¼" x 1¼" 18' cable with integral strain relief. Net Weight 11 oz. List Price **\$29.50**



920

**Model 920 "Spherex" Crystal**—All-direction pick-up. Response 60-7000 cps; output level — 50 db. Strong wire-mesh head acoustically treated for wind and moisture protection. High capacity, moisture sealed crystal. HI-Z. Satin chrome. ¼"-27 thread. Diam. 2¼". 18' cable. Net Weight 8 oz. List. **\$27.50**

**Multi-Purpose Century**—Use in any position—in hand, on table, on stand or overhead. Nondirectional. Satin chrome finish. Rugged, lightweight. 3" x 2¼" x 1". With ¼"-27 adapter, AC-DC insulated.



915 on 415

**Model 915 "Century"**—Moisture sealed crystal. Response 60-7000 cps. Output — 50 db. HI-Z. 5' cable. 10 oz. List Price **\$13.00**

**Model 915S**. With switch. List Price **\$15.00**

**Model 715 "Century" Ceramic**—Ceramic element. 60-7000 cps, output — 50 db. HI-Z. 5' cable. 6 oz. List. **\$13.00**



6225KK

**Model 6225KK Dynamic Handset**—For paging, intercom and communications. Light, sturdy bakelite, 150-ohm magnetic receiver with response 200-1000 cps. Switch closes mike and relay circuit. Response 100-5000 cps, output level — 55 db. Impedance 250 ohms. 5' 5-conductor cable. List Price **\$78.00**



6255KK

**Model 6255KK Dynamic Differential Handset Microphone**—Noise-cancelling microphone designed for use where background noise is at high level. Enables user to speak in a normal voice. Appearance and characteristics similar to Model 6225KK. Supplied with five-conductor, unshielded cable. DPST switch also will handle relay or other remote control in addition to turning on mike. Press button to talk. Size 9" x 3" x 2". Net Weight, 1¼ lbs. List Price **\$85.00**



805

**Model 805 Contact**—For guitar, banjo, etc. HI-Z. Sealed crystal. Chrome finish. 15' cable. List Price **\$20.00**



606

**Model 606 Differential Dynamic**—Close-talking, noise-cancelling. Response 100-5000 cps. Output (at ½") — 55 db. Acoustalloy diaphragm. Head at 22° fixed tilt. ¼"-27 thread. Built-in MC-1 connector. Satin chrome. 2" x 3¼" x 2¼" inc. stud. 50, 250 ohms or HI-Z. Low impedances not balanced to ground. 18' cable. List Price **\$52.50**

**Model 648 Intercom Microphone**—Extremely versatile paging, intercom, or P.A. mike. Can be mounted on desk or floor stand, boom, gooseneck, or special fixtures. Cable is concealed when used with Model 448 swivel boom. Response 50-10,000 cps. Output — 58 db. Choice of 50, 150, 250-ohm impedance. Omnidirectional. Acoustalloy diaphragm. Nonreflecting gray. Less cable. Size 6¼" x 1" (including ¼"-27 thread adapter). Net Weight (with adapter), 8½ oz. List Price **\$56.00**

**Model 600TR Microphone**—Has compact, one-stage transistor amplifier built into case. Complete circuit including transistor, transformers, and associated equipment. Spiralcord, four-wire lead, press-to-talk switch may also actuate relay to control transmitter. Same sensitivity as carbon mike without change in auxiliary equipment. Output — 21 db. Amplifier power gain approximately 34 db. Size 2¼" x 2" x 4". Black phenolic case with mounting bracket, 5' cable. Net Weight less cable 13 oz. List Price **\$82.50**

**Model 602TR Microphone**—Similar in type and appearance to Model 600TR, but designed for close-talking, noise-cancelling work. Speech is clear, crisp, distinct. May be used to replace carbon microphone with no change in auxiliary equipment. Net Weight less cable 13 oz. List Price **\$93.00**



927

**Model 927 Slim Crystal**—A new approach to the design of crystal microphones for P.A. recording and general use. Response 60-8000 cps. Output — 50 db. High impedance only. 5' cable. Available with or without "on-off" switch. Metallure gray front with medium gray back. Size 7¼" x 1¼" x 1¼". Supplied with attractive stand. Net Weight less cable, stand, 9 oz. List Price **\$22.50**

**Model 927S**—With switch. List Price **\$24.50**

**Model 727 Slim Ceramic**—Response 60-6000 cps. Output — 59 db. HI-Z. List Price **\$22.50**

**Model 727S**—With switch. List Price **\$24.50**

**Model 924 Lavalier Crystal**—Unique crystal lavalier for chest or hand use. Supplied with neck cord, support clips and 18' cable, satin chrome finish. Wire mesh head acoustically treated for wind and moisture protection. Output — 60 db. Response 60-8000 cps. HI-Z. 3¼" x 1¼". Cable has integral strain relief. Net Weight 8 oz. List Price **\$20.00**

**Model 912 Crystal**—Low cost crystal microphone. Fits need of limited P.A., home recording, paging and general use. Handheld. Moisture sealed crystal. Response 70-7000 cps. High output — 50 db. HI-Z. Attractive gray Styron case. Size 3" x 2¼" x 1¼". 5' cable. Net Weight 4 oz. List Price **\$10.00**



927



924



912

**Model 600D Dynamic Mobile-Mike**—Lightweight, hand-held, extra-rugged. Output — 55 db. Press-to-talk switch. Acoustalloy diaphragm. 2¼" x 2" x 4". 50, 250 ohms or HI-Z. 5' cable. Net Weight, less cable 8 oz. List. **\$47.50**

**Model 210KK Carbon**—Similar to Model 600D but single-button carbon. Output — 50 db. Press-to-talk switch. 5' coiled cord. List Price **\$35.00**

**Model 602 Differential Dynamic**—Similar to 600D but close-talking, noise-cancelling. List Price **\$57.50**

**Model 205KK Differential Carbon**—Close-talking, noise-cancelling, single button carbon. Maximum intelligibility under high ambient noise. Blastproof, waterproof, shock resistant. Output at ¼" — 50 db. Black phenolic case. Press-to-talk switch. Mounting bracket. 5' coiled cord. Size 2¼" x 2¼" x 4". Net Weight less cable 8 oz. List. **\$45.00**

**Model 205STCKK**—CAA Type approved certificate No. 1040 with coiled cord. List Price **\$56.50**

**Model 205STCKKP**—Similar to above with WE-309 plug. List Price **\$61.25**



600D



205KK

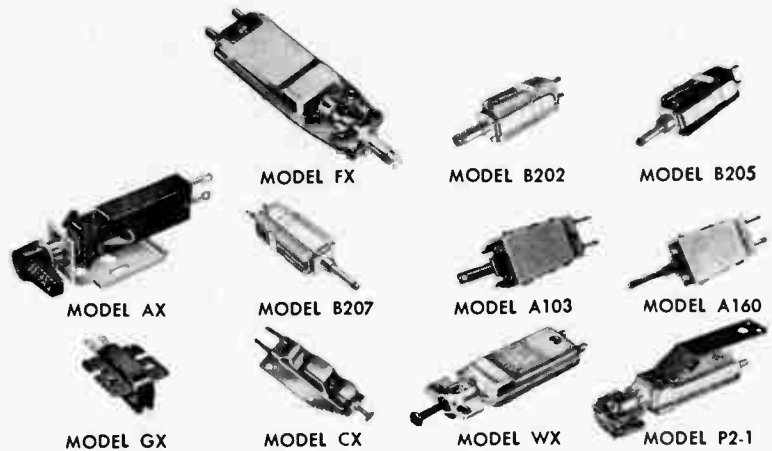


600TR

# WEBSTER REPLACEMENT CARTRIDGES

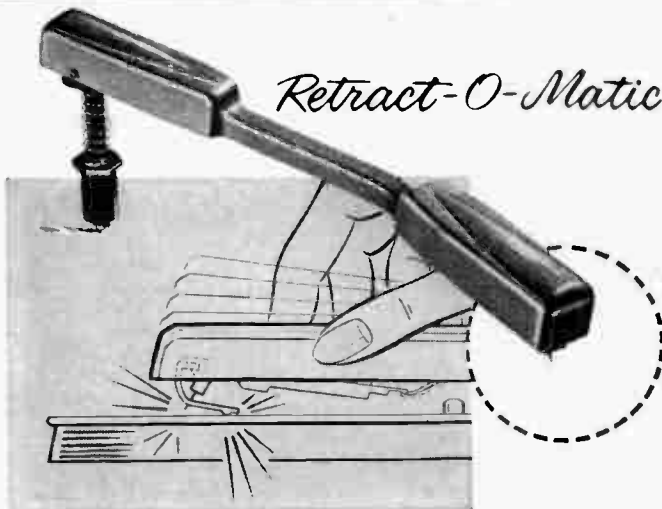
"The best friend a record ever had"

Fast-moving! Profitable! Webster replacement cartridges make an ideal stock item because they fit practically any model on the market today, install easily in a few minutes. They offer high compliance, yet track with a feather touch . . . assure longer record life, greater customer satisfaction. Shown are just a few of a wide variety of available Featheride Replacement Cartridges.



## WEBSTER REPLACEMENT CARTRIDGE DATA AND PRICES

Model No.	Average Output at 1000 C.P.S. Volts		Tracking Pressure	Approximate Cut-Off Frequency C.P.S.	Suggested List Price
	R.P.M. 33 1/3 - 45	R.P.M. 78			
AX	0.8	1.5	7.0 gr.	8,000	\$8.50
A103	0.6	1.2	7.0 gr.	10,000	6.95
A160	0.6	1.2	7.0 gr.	10,000	6.95
B202	1.8	4.0	10.0 gr.	8,000	6.95
B205	1.8	4.0	10.0 gr.	8,000	6.95
B207	1.8	4.0	10.0 gr.	8,000	6.95
CX	2.0	3.5	12.0 gr.	4,500	4.95
FX	2.5	4.5	10.0 gr.	4,500	8.50
GX	0.5	—	7.0 gr.	10,000	5.45
P2-1	2.0	5.0	12.0 gr.	5,000	4.95
WX	2.0 or .75	5.0 or 1.5	14.0 gr.	5,000	4.95



### *Retract-O-Matic* replacement pickup

Advanced crystal pick-up design! Special spring-mounted construction protects both record and needle when pick-up is dropped or slid across the record surface. Slight pressure on the arm automatically lifts needle from playing position—"dome" absorbs the shock. Practical replacement for any manual player.

List price, Model M-3, complete (tone arm, cartridge, arm rest and all parts for installation) . . . . . \$6.95

ELECTRONICS DIVISION

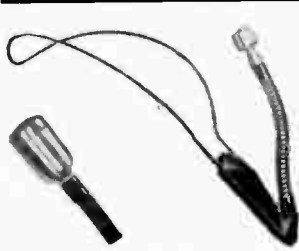
WEBSTER



ELECTRIC

RACINE · WIS

# Turner specialty microphones and stands



Model 132

Model 82-3H



Model L-100



Model 142



Model G-12



Model C-3



Model G-7

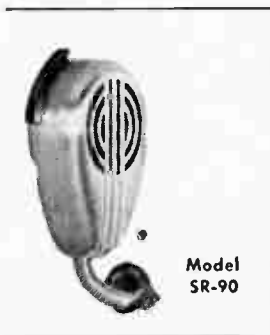


Model C-4



Model BL-6

A variety of Turner stands are available. All bases are made of heavy die-cast zinc alloy and have standard  $\frac{3}{8}$ " — 27 thread terminals.



Model SR-90



Model 52



Model 139

## MODEL 132—DYNAMIC

A new mike for applications calling for a minimum size dynamic on the Turner Third Hand. Model 95 head permanently installed on gooseneck, with transformer concealed in breastplate, 20-ft. cable. Available in high impedance, 200 ohm, or 50 ohm models. Response 100-10,000 cps. Level. —58 db.

List Price, mounted on Turner Third Hand ..... \$42.50

## MODEL 82-3H—CRYSTAL

Tiny Model 80 microphone head. Permanently installed on Turner "Third Hand." Attached 20-ft. single conductor shielded cable permits freedom of movement.

List Price ..... \$22.75  
Third Hand alone ..... \$ 5.00

## MODEL L-100—CRYSTAL

Excellent speech reproduction characteristics, chest sounds damped out. Grey plastic case. Strong rubber-padded clip adjusts to any desired position. 20-ft. single conductor shielded cable attached. Response, 50-10,000 cps. Level, —52 db.

List Price ..... \$12.50  
Replacement Cartridge No. 26, ..... \$ 6.50

## MODEL 142—DYNAMIC

Here's the first lavalier dynamic in its field to be list-priced under \$50. Tops in economy and performance. Response, 70-12,000 cps. Level, —59 db. Impedance, 2 models; high and 50/200 ohm.

List Price, complete with lavalier assembly ..... \$45.00  
#G-14 matching stand, List Price .. \$ 5.75

## MODEL SR-90R CARBON.

Ideal hand-held mikes for mobile communications. Clear voice reproduction. Designed to fit hand comfortably with switch in normal grip. Zinc alloy case in permanent satin chrome. Furnished with hook for hanging and bracket for wall or dash mounting. Standard Model SR-90R Carbon—Response, 200-4,000 cps. Level, —38 db. 11-inch retracted unshielded Koiled Kord.

List Price, SR-90R .... \$26.50  
Replacement Cartridge No. 25, List Price ..... \$ 8.00

MODEL SR-90D—Dynamic Response, 800-9,000 cps. Level, —48 db. at high impedance. 5-ft. shielded straight cable.

List Price, SR-90D.... \$29.50  
Replacement Cartridge No. 13C, List Price ..... \$11.00

## MODEL 52—CRYSTAL

Designed as a hand microphone, the Model 52 features slim modern lines, excellent performance. Recommended for tape recorder and general public address work. Response, 60-8,000 cps. Level, —45 db. 6-ft. single conductor shielded cable. Brown finish.

List Price ..... \$12.00

## MODEL 139—DYNAMIC

First modern-styled slender dynamic which offers advantages of multi-impedance switch. Select 50, 200, 500 ohm or high impedance by turning the built-in switch on back of mike. Response, 60-10,000 cps. Level, —52 db at high impedance.

## TURNER MICROPHONE STANDS

Model	Finish	Upright	List Price	Style
C-2	Chrome	1"	\$ 5.50	C-3
C-3	Chrome	4 $\frac{3}{4}$ "	5.50	C-3
C-4	Chrome	—	6.50	C-4
C-5	Chrome	2 $\frac{3}{8}$ "	5.50	C-3
* C-7	Chrome	None	9.50	BL-6
B-3	Brown	4 $\frac{3}{4}$ "	4.50	C-3
G-3	Gunmetal	4 $\frac{3}{4}$ "	4.50	C-3
G-4	Grey	Clip	5.75	C-4
* G-6	Grey	None	7.50	BL-6
* G-7	Light Grey	None	8.00	G-7
* G-8	Gunmetal	None	8.00	G-7
G-10	Grey	Clip	6.50	Not Shown
G-12	Chrome	35"–65"	15.00	Floor Stand
G-14	Grey	—	5.75	C-4
BL-5	Black	2 $\frac{3}{8}$ "	4.50	C-3
BL-6	Black	None	7.50	BL-6
I44	Light Grey	Clip	4.50	Not Shown

\* Shock-mount base.

List Price ..... \$45.00  
Model S-139 (with on-off switch)  
List Price ..... \$49.00  
Matching G-8 stand, List Price ..... \$ 8.00

# TURNER MICROPHONES FOR SOUND PERFORMANCE

THE TURNER COMPANY  
CEDAR RAPIDS, IOWA

IN CANADA: Canadian Marconi Co. • Toronto, Ontario and Branches  
EXPORT: Ad Auriema, Inc. • 85 Broad Street, New York 4, N. Y.





# TURNER BROADCAST & TV MICROPHONES



Model  
124



Model  
57



Model  
95



Model  
58



Model  
51



Model  
98



Model  
33

## MODEL 124—DYNAMIC

A slender, modern mike which sells for much less than other mikes of comparable quality. Impressive performance makes the Turner 124 an excellent buy for broadcast, recording, or P.A. work. Spring-clip stand adapter permits instant conversion to hand use. Response, 50-13,000 cps. Level, —58 db. 12-ft. cable. Impedance specify 50 ohm, 200 ohm or high. Gunmetal grey finish, chrome trim. Matching G-8 stand available.

List Price ..... \$49.00

## MODEL 57—DYNAMIC

Smooth, high-level response at a reasonable price makes the Model 57 the best buy on the market. Hinged coupler with  $\frac{3}{8}$ "—27 thread. Dynaflex diaphragm. Satin black finish. Quick disconnect Cannon XL-4 connector, 20-ft. 3-conductor shielded cable. Response, 50-15,000 cps. Level, —55 db. Impedance, wired for selection of high or 150 ohm. (Model 57A wired for selection of 50 or 200 ohm only. Same price.) Matching BL-6 stand available.

List Price ..... \$65.00

List Price (with on-off slide switch)  
5-57 ..... \$69.00

## MODEL 58—DYNAMIC

High performing, compact, miniature lavalier-type. Hides discreetly behind necktie or handkerchief, may be concealed in table decorations or props. Support clip and neck cord are furnished. Non-directional sensitivity. Turner Dynaflex diaphragm. Neutral grey finish. Wired for high or low (150 ohm) impedance. 25-ft. 3-conductor shielded cable. Response, 60-13,000 cps. Level, —57 db.

(Model 58A wired for selection of 50 or 200 ohm. Same price.) Model G-4 desk stand and G-10 floor stand adapter available.

List Price ..... \$57.00

## MODEL 51—DYNAMIC

High output interior and advanced circuit design for ultra wide range high fidelity. No closely associated auxiliary equipment needed. Hinged coupler with  $\frac{3}{8}$ "—27 thread mounting . . . quick disconnect. Finished in amber grey 12-ft. balanced line cable. Response, 50-15,000 cps. Level, —55 db. at high impedance. Specify high impedance or low (wired for selection of 50 or 200 ohm.) Matching G-6 stand available.

List Price ..... \$72.50

## MODEL 98—CARDIOID

Combines modern, compact design with excellent directional characteristics. These characteristics make it live to sounds originating in front of it, dead to sounds from the rear. This feature reduces unwanted audience noises, mechanical equipment noises and background noise from ventilating, heating or air conditioning equipment. In P.A. work it eliminates acoustical feedback. Truly outstanding performance for very little cost. Single dynamic element construction. Includes 20-ft. cable. Response, 65-11,000 cps. Front-to-back ratio: 20 db. Level, —52 db. Matching G-7 stand available.

List Price (Light grey) ..... \$59.50

List Price (Satin chrome) ..... \$69.50

For on-off switch models, specify S-98 and add \$4.00 to above prices.

## MODEL 95D—DYNAMIC

Beautiful styling, good performance, and attractive price make this a popular P.A. mike. High impedance wired single ended (single-conductor shielded 20-ft. cable). 50 and 200 ohm models wired for balanced line (two-conductor shielded 20-ft. cable). Response, 100-10,000 cps. Level, —58 db.

List Price ..... \$37.50

List Price (with on-off switch) 5-95D \$41.00

Replace with Cartridge No. 66,  
List Price ..... \$24.00

## MODEL 33X—CRYSTAL

High output over wide frequency range gives fine reproduction. Head tilts 90°. Satin chrome finish.  $\frac{3}{8}$ "—27 thread coupler mounting. 20-ft. removable cable set. Moisture sealed crystal. Response, 60-9,000 cps. Level, —52 db. Also available at same price with ceramic interior. Specify Model 33C.

List Price ..... \$27.50

List Price (with on-off slide switch)  
5-33X ..... \$30.00

Model 33X Replacement Cartridge  
No. 2B, List Price ..... \$ 8.00

Model 33C Replacement Cartridge  
No. 2BC, List Price ..... \$ 8.00

## MODEL 33D—DYNAMIC

Same general design as 33X, but with dynamic interior. 50 ohm, 200 ohm, or high impedance. Complete with 20-ft. removable cable. High impedance wired single ended. Low impedances balanced line (2-conductor shielded). Response 100-9,000 cps. Level, —54 db. at high impedance.

List Price ..... \$31.90

List Price (with on-off slide switch)  
5-33D ..... \$34.40

Replacement Cartridge No. 13C, List  
Price ..... \$11.00

## TURNER MICROPHONES FOR SOUND PERFORMANCE

THE TURNER COMPANY

Cedar Rapids, Iowa



# TURNER GENERAL PURPOSE MICROPHONES



## MODEL 22X—CRYSTAL

Popular P.A. and amateur radio model. Head tilts 90°. 20-ft. removable cable set. Satin chrome finish  $\frac{3}{8}$ "—27 thread coupler mounting. Humidity protected crystal in mechanical shock-proof mounting. Response, 60-9,000 cps. Level, —52 db. Also available as ceramic microphone at same price. Specify Model 22C.

List Price ..... \$29.50  
List Price (with on-off switch 5-22X) \$32.50

Model 22X Replacement Cartridge No. 2B, List Price ..... \$ 8.00

Model 22C Replacement Cartridge No. 2BC, List Price ..... \$ 8.00

## MODEL 22D—DYNAMIC

Dynamic version of 22X. 50 ohm, 200 ohm, or high impedance. High impedance wired single ended (20-ft. single-conductor shielded cable). Low impedance wired for balanced line (two conductor shielded cable). Response, 100-9,000 cps. Level, —54 db. at high impedance.

List Price ..... \$ 35.00

List Price (with on-off slide switch) 5-22D ..... \$37.50

Replacement Cartridge No. 6, List Price ..... \$11.00

## MODEL U95—DYNAMIC

Sturdy all-purpose mike with multi-impedance transformer. Select 50, 200, 500 ohms or high impedance with built-in switch. Unaffected by heat, cold, or humidity. Adjustable saddle with  $\frac{3}{8}$ "—27 thread coupler. Gunmetal metaluster finish. 3-pin polarized locking connector. 20-ft. balanced line low-capacity cable. Response, 80-9,000 cps. Level, —52 db. at high impedance.

List Price ..... \$49.50

Replacement Cartridge No. 9, List Price ..... \$12.50

## MODEL BX—CRYSTAL

Low-cost crystal microphone. Attractive streamlined case with brown metaluster finish.  $\frac{3}{8}$ "—27 thread mounting. 7-ft. single-conductor attached cable. Response, 60-7,000 cps. Level, —48 db.

List Price ..... \$11.75

Replacement Cartridge No. 17, List Price ..... \$ 6.50

## MODEL BD—DYNAMIC

Same appearance and finish as BX. High output dynamic interior. Complete with 7-ft. single conductor attached cable. High impedance wired single ended; Low impedance balanced line (2-conductor shielded) 50 ohm, 200 ohm or high impedance. Response, 100-6,000 cps. Level, —52 db. at high impedance.

List Price ..... \$21.00

Replacement Cartridge No. 10, List Price ..... \$10.00

## MODEL 9D—DYNAMIC

Rugged, handy microphone. Balanced for hand; has hook for hanging.  $\frac{5}{8}$ "—27 thread stand mounting. Die cast zinc alloy case, satin chrome finish. Standard model equipped with on-off slide switch. Wide choice of interiors and switch arrangements (write for details). Response, 150-7,000 cps. Level, —52 db. at high impedance.

List Price ..... \$32.50

Replacement Cartridge No. 13C, List Price ..... \$11.00

## MODEL 141—CRYSTAL

Highest output small microphone on the market. Easily adapts to hand, stand or lavalier use for P.A. and intercom systems, tape recording or demonstration work. Response, 60-10,000 cps. Level, —52 db. 6-ft. single conductor shielded cable. Light grey case.

List Price ..... \$13.50

## Model 141

## Model 80

Model C-4 Stand

## MODEL 80—CRYSTAL

Small, inconspicuous satin chrome plated mike. Slender, compact and graceful. Can be adapted for stand or hand use. Total weight: 5 oz. Equipped with 7-ft. attached single conductor shielded cable. Response, 80-7,000 cps. Level, —54 db.

List Price ..... \$15.95

Replacement Cartridge No. 23, List Price ..... \$ 8.00

C-4 Stand ..... \$ 6.50

## MODEL 808—CRYSTAL AND 807 CERAMIC

Die cast alloy case finished in baked-on grey enamel. 3-7/16" high x 2-3/8" wide x 1-11/32" thick.  $\frac{5}{8}$ "—27 thread adapter for stand mounting. 6-ft. attached fabric-covered cable. Response, 60-8,500 cps. Level, —45 db. (With ceramic interior, same price. Response, 80-7,000 cps. Level, —57 db. Specify Model 807.)

List Price ..... \$10.85

List Price (with on-off slide switch) 5-808 ..... \$12.85

## MODEL 809—MAGNETIC

Same as Model 808 but with magnetic interior. Excellent for use under extreme climatic conditions. Response, 100-8,000 cps. Level, —52 db. High impedance.

List Price ..... \$14.95

List Price (with on-off slide switch) 5-809 ..... \$16.95

## MODEL 908—CRYSTAL

A new Turner microphone with high sensitivity for tape recorder use. The microphone is priced to meet modest budgets. Durable polystyrene case, designed for hand or desk use—weighted to avoid tipping. Response, 60-8,500 cps. Level, —45 db. (Microphone also available with ceramic interior at the same price. Same response. Level, —55 db. Specify Model 907.)

List Price ..... \$ 8.00

**TURNER MICROPHONES FOR SOUND PERFORMANCE**

**THE TURNER COMPANY**  
Cedar Rapids, Iowa



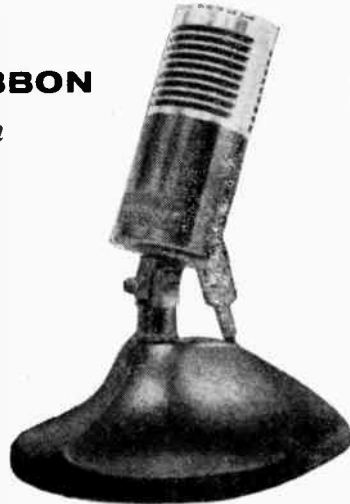
a complete line of

**BROADCAST MICROPHONES**

**DR330 DYNAMIC CARDIOID AND RIBBON**

*variable low-medium impedance—variable polar pattern*

A versatile microphone of exceptional quality, made to fulfill the most exacting requirements of radio-television broadcast and motion picture recording. Cardioid, bi-directional or omni-directional polar patterns. Smooth frequency response from 40 to 15,000 c.p.s. Polar patterns and impedance are quickly changed by removing nameplate and adjusting linkage bars. Combined, matched ribbon and dynamic units incorporate a new principle in the relative placement of pressure and velocity units, resulting in electrical cancellation over an extended frequency range. Built-in, shock-proof mount gives extra protection. "Slide-Lock" permits easy removal from stand for suspension use or storage.



**DR330 LIST PRICE: (Code REBID).....\$250.00**

Shown on ND base (available at small additional cost).  
Antihalation satin black finish available at no extra cost. Specify Model DR330AH.

**D33 DYNAMIC -- OMNI-DIRECTIONAL**

*variable impedance—low and medium*



A versatile microphone for radio-television broadcast, sound recording and public address. Response is essentially flat from 40-15,000 c.p.s. "Slide-Lock" permits easy removal of the 8-ounce D33 from the stand for hand or suspension use and storage. Simple adjustment of linkage bars under nameplate changes impedance. Modern, attractive Full-Vision styling.

**D33 LIST PRICE: (Code: DOING).....\$125.00**

Shown on ND stand (available at small additional cost).  
Antihalation satin black finish available at no extra cost. Specify Model D33AH.

**D22 DYNAMIC -- OMNI-DIRECTIONAL**

*variable impedance—low and high*

A high-efficiency, studio quality microphone for public address, sound recording and general audio pickup. "Slide-Lock" permits easy removal from stand for hand or suspension use and storage. Modern, attractive styling in black and gold. Smooth frequency response from 50-12,000 c.p.s. Simple linkage bar adjustment under nameplate quickly varies impedance from 50 to 40,000 ohms.

**D22 LIST PRICE: (Code: DOALL).....\$82.50**



**ELECTRONICS DIVISION**

**ELGIN NATIONAL WATCH COMPANY**

ELGIN, ILLINOIS



a complete line of **PUBLIC ADDRESS AND GENERAL PURPOSE MICROPHONES**

**DYNAMIC HIGH QUALITY MICROPHONE**

Outstanding in ruggedness and in quality of reproduction. Provides excellent pickup of orchestral or solo work and straight announcing. Swivel mount permits non-directional or semi-directional pickup. Polished chrome finish.



**D8A low impedance**

**FREQUENCY RESPONSE:** Substantially flat 40-7,000 c.p.s.  
**OUTPUT LEVEL:** Minus 56 db at 50 ohms impedance (0 db = 1 MW/10 dyne/cm<sup>2</sup>).  
**IMPEDANCE:** 50 ohms.  
**MICROPHONE TERMINATION:** Amphenol PC2MK receptacle.  
**CABLE:** 12½ feet two-conductor shielded with Amphenol MC2F1 plug.  
**STANDARD COUPLING:** ¼" -27 thread on swivel.  
**DIMENSIONS:** Height 3¼"; diameter 2".  
**WEIGHT:** 13 ounces.

**D8A LIST PRICE:** (Code: DATA) ..... **\$27.00**

**D8AT high impedance**

**FREQUENCY RESPONSE:** Substantially flat 40-7,000 c.p.s.  
**OUTPUT LEVEL:** Minus 52 db at high impedance. (0 db = 1 volt/dyne/cm<sup>2</sup>).  
**IMPEDANCE:** 40,000 ohms (200 or 500 ohms available).  
**MICROPHONE TERMINATION:** Amphenol PC1MK receptacle.  
**CABLE:** 12½ feet single-conductor shielded with Amphenol MC1F plug.  
**STANDARD COUPLING:** ¼" -27 thread on swivel.  
**DIMENSIONS:** Height 3¼"; diameter 2".  
**WEIGHT:** 13 ounces.

**D8AT LIST PRICE:** (Code: DATA) ..... **\$30.00**

**DYNAMIC CARDIOID MICROPHONE**

Cardioid pattern minimizes feedback and extraneous pickup. Broad frequency response, high output. Modified velocity section allows close talking. The ideal microphone for public address and general sound installations. Available with slide switch.



**D9A low impedance**

**FREQUENCY RESPONSE:** 100-7,000 c.p.s.  
**OUTPUT LEVEL:** Minus 57 db at 50 ohms impedance. (0 db = 1 MW/10 dyne/cm<sup>2</sup>).  
**IMPEDANCE:** 50 ohms.  
**MICROPHONE TERMINATION:** Cannon XL-3-50 receptacle.  
**CABLE:** 25 feet two-conductor shielded with Cannon XL-3-11 "Latch-Lock" plug.  
**STANDARD COUPLING:** ¼" -27 thread.  
**DIMENSIONS:** Height 7"; breadth 2½".  
**WEIGHT:** 2½ pounds.

**D9A LIST PRICE:** (Code: LOWEL) ..... **\$47.50**  
 With slide switch D9AS (Code: LOWES) ..... **\$51.75**

**D9AT high impedance**

**FREQUENCY RESPONSE:** 100-7,000 c.p.s.  
**OUTPUT LEVEL:** Minus 52 db at 50 ohms impedance. (0 db = 1 volt/dyne/cm<sup>2</sup>).  
**IMPEDANCE:** 40,000 ohms (200 or 500 ohms available).  
**MICROPHONE TERMINATION:** Cannon XL-3-50 receptacle.  
**CABLE:** 25 feet single-conductor shielded with Cannon XL-3-11 "Latch-Lock" plug.  
**STANDARD COUPLING:** ¼" -27 thread.  
**DIMENSIONS:** Height 7"; breadth 2½".  
**WEIGHT:** 2½ pounds.

**D9AT LIST PRICE:** (Code: HIWEL) ..... **\$52.50**  
 With slide switch D9ATS (Code: HIWES) ..... **\$55.00**

**CRYSTAL MICROPHONES**

**C7H Crystal Microphone**  
*high impedance, high quality crystal*

**FREQUENCY RESPONSE:** 100-6,000 c.p.s.  
**OUTPUT LEVEL:** Minus 55 db at high impedance. (0 db = 1 volt/dyne/cm<sup>2</sup>).  
**IMPEDANCE:** 40,000 ohms.  
**MICROPHONE TERMINATION:** Amphenol PC1MK receptacle.  
**CABLE:** 12½ feet single-conductor shielded with Amphenol MC1F plug.  
**STANDARD COUPLING:** ¼" -27 thread on swivel.  
**DIMENSIONS:** Length 3½"; diameter 2½".  
**WEIGHT:** 15 ounces.

**C7H LIST PRICE:** (Code: CSEVN) ..... **\$18.50**



**CL2 Crystal Lapel Microphone**  
*high impedance*

**FREQUENCY RESPONSE:** 150-5,000 c.p.s.  
**OUTPUT LEVEL:** Minus 55 db. at high impedance. (0 db = 1 volt/dyne/cm<sup>2</sup>).  
**IMPEDANCE:** 40,000 ohms.  
**CABLE:** 25 feet single-conductor shielded.  
**DIMENSIONS:** Diameter 2¼"; depth ½"  
**WEIGHT:** 6¼ ounces.

**CL2 LIST PRICE:** (Code: LATAL) ..... **\$15.00**



**RC Crystal Microphone**  
*high impedance*

Complete with non-breakable plastic stand.

**FREQUENCY RESPONSE:** 100-6,000 c.p.s.  
**OUTPUT LEVEL:** Minus 55 db at high impedance. (0 db = 1 volt/dyne/cm<sup>2</sup>).  
**IMPEDANCE:** 40,000 ohms.  
**CABLE:** 6 feet single-conductor shielded.  
**STANDARD COUPLING:** Base easily removed by ½ turn of bayonet lock for use as hand microphone. Handle has ¼" -27 thread, microphone unit ½" -27 thread for mounting on floor stand.  
**DIMENSIONS:** Height 10".  
**WEIGHT:** 1 pound.

**RC LIST PRICE:** (Code: ARCEE) ..... **\$10.90**  
 With slide switch RCS (Code: ARCEX) ..... **\$13.60**



**ELECTRONICS DIVISION**

**ELGIN NATIONAL WATCH COMPANY**

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a complete line of **PUBLIC ADDRESS AND GENERAL PURPOSE MICROPHONES**



**504 SERIES**

*new, extra rugged carbon microphone for motorcycle two-way equipment; unidirectional, low impedance*

Built particularly for motorcycle use, the rugged new 504 has applications wherever mobile equipment must withstand extreme vibration and shock, yet perform with unflinching dependability. The 504 has high output and is used as a close-talking microphone. Functional detent-type switch is extremely sturdy. Entire microphone is moisture proof; with switch assembly protected by a rubber boot. Molded Bakelite case withstands rough handling.

*specifications*

**C504A**

**FREQUENCY RESPONSE:** 200-5,000 c.p.s.  
**IMPEDANCE:** 40 ohms.  
**OUTPUT:** Minus 13 db (1 volt/100 dyne/cm<sup>2</sup>).  
**WEIGHT:** 9 ounces.  
**FINISH:** Black Bakelite.  
**DIMENSIONS:** 2 1/4" x 1 3/8".  
**CABLE:** 5 ft. 3 conductor.

- C504A:** LIST PRICE: (Code MOSTR) ..... **\$24.50**
- C504B:** C504A with 5 ft. extended, 11 inches retracted Koil Kord LIST PRICE: (Code: MOKKA) ..... **\$27.00**
- C504C:** C504A with Koil Kord and PL68 or PJO68 plug. LIST PRICE: (Code: MOPLA) ..... **\$32.50**
- C504D:** C504C with 100 ohms impedance. LIST PRICE: (Code: MOVIA) ..... **\$32.50**
- C504H:** C504A with PL68 or PJO68 plug. LIST PRICE: (Code: MOBUP) ..... **\$28.00**

*all models furnished with mounting bracket and screws.*

**D4 DYNAMIC -- OMNI-DIRECTIONAL**

*low impedance, extra rugged*



Used widely in public address, paging and other applications requiring a pressure-operated dynamic microphone of rugged construction and smooth response. Shock resistant, with guarded grill and swivel head.

- D4 LIST PRICE Code: (DEFOR)..... \$26.50**
- With slide switch, D4S: (Code: DEFOS)..... **\$29.50**

*specifications*

**FREQUENCY RESPONSE:** 50-8,000 c.p.s.  
**OUTPUT LEVEL:** Minus 56 db at 50 ohms impedance. (0 db = 1 MW/10 dyne/cm<sup>2</sup>).  
**IMPEDANCE:** 50 ohms.  
**MICROPHONE TERMINATION:** Amphenol PL2MK receptacle.  
**CABLE:** 12 1/2 ft. two-conductor shielded with Amphenol MC2F1 plug.  
**STAND COUPLING:** 3/4" -27 thread on swivel.  
**DIMENSIONS:** Height 4", diameter 2".  
**WEIGHT:** 12 ounces.

**D4T DYNAMIC -- OMNI-DIRECTIONAL**

*high impedance, extra rugged*



Broad versatility permits use in public address work, amateur applications, home recording, paging, communications and as a booster microphone for single instrument pickup. Smooth response approaches studio and broadcast requirements. Shock resistant, guarded grill, swivel head.

- D4T LIST PRICE: (Code: DFORT)..... \$29.50**
- With slide switch, D4TS: (Code: DEFORS)..... **\$34.00**

*specifications*

**FREQUENCY RESPONSE:** 50-8,000 c.p.s.  
**OUTPUT LEVEL:** Minus 52 db at high impedance. (0 db = 1 volt/dyne/cm<sup>2</sup>).  
**IMPEDANCE:** 40,000 ohms. (200 or 500 ohms available).  
**MICROPHONE TERMINATION:** Amphenol PC1MK receptacle.  
**CABLE:** 12 1/2 ft. single-conductor shielded with Amphenol MC1F plug.  
**STAND COUPLING:** 3/4" -27 thread on swivel.  
**DIMENSIONS:** Height 4" diameter 2".  
**WEIGHT:** 13 ounces.



**ELECTRONICS DIVISION**

**ELGIN NATIONAL WATCH COMPANY**

ELGIN, ILLINOIS



a complete line of  
**PHONOGRAPH CARTRIDGES**

Elgin's well-known precision miniaturization skills are reflected in the compactness and in the exacting performance of American cartridges. Light weight reduces needle hiss and drag on recordings, permitting the full brilliance of the recorded performance to be realized. New, exclusive "spider bearing" design in all crystal cartridges permits friction-free transmission of force from record to crystal. Chuck design minimizes breakage from rough use.



Fig. 1



Fig. 2



Fig. 3



Fig. 4



Fig. 5

Illustration	Osmium Needle		Sapphire Needle		Output Level		Response To	Needle Pressure	Needle Data		Speed Application	
	Model No.	List Price	Model No.	List Price	Std.	Mg.			Std.	Mg.		
<b>SINGLE NEEDLE CRYSTAL CARTRIDGES</b>												
Fig. 1	CR1 (1)	3.50			3.0 Volts		8,000 c.p.s.	1 1/4 oz.	None Supplied (1)		78 RPM	
Fig. 1	CR2 (1)	3.50			1.5 Volts		7,000 c.p.s.	1 1/8 oz.	None Supplied (1)		78 RPM	
Fig. 3	X105B	6.00	X105C	6.50		1.0 Volt	15,000 c.p.s.	6 Grams		1 Mil Point	45-33 1/2 RPM	
Fig. 3	X106B	6.00			1.2 Volts		7,000 c.p.s.	8 Grams	3 Mil Point		78 RPM	
Fig. 3	X107B	6.00	X107C	6.50	1.2 Volts		1.0 Volt	15,000 c.p.s.	8 Grams	2 Mil Point		78-45-33 1/2 RPM
Fig. 2	X108 (2)	4.50			6.0 Volts		4.0 Volts	8,000 c.p.s.	12 Grams	None Supplied (2)		78-45-33 1/2 RPM
Fig. 1	X109 (2)	4.50			4.0 Volts		3.0 Volts	8,000 c.p.s.	12 Grams	None Supplied (2)		78-45-33 1/2 RPM
Fig. 4	X111B	5.50	X111C	6.00		4.0 Volts	6,000 c.p.s.	10 Grams		1 Mil Point	45-33 1/2 RPM	
Fig. 4	X112B	5.50	X112C	6.00	6.0 Volts		4.0 Volts	6,000 c.p.s.	10 Grams	2 Mil Point		78-45-33 1/2 RPM
Fig. 4	X113B	5.50			6.0 Volts			5,000 c.p.s.	10 Grams	3 Mil Point	78 RPM	
<b>TURNOVER CRYSTAL CARTRIDGES</b>												
Fig. 5	X101B	8.00	X101BC (3)	8.50	6.0 Volts	4.0 Volts	7,000 c.p.s.	10 Grams	3 Mil Point	1 Mil Point	78-45-33 1/2 RPM	



Fig. A



Fig. B



Fig. C

Illustration	Osmium Needle		Sapphire Needle		Output Level		Response To	Needle Pressure	Needle Data		Speed Application	
	Model No.	List Price	Model No.	List Price	Std.	Mg.			Std.	Mg.		
<b>SINGLE NEEDLE CERAMIC CARTRIDGES</b>												
Fig. A	B101B	5.50	B101C	6.00		1.0 Volts	12,000 c.p.s.	8 Grams		1 Mil Point	45-33 1/2 RPM	
Fig. A	B102B	5.50	B102C	6.00	1.2 Volts		1.0 Volts	8 Grams	2 Mil Point		78-45-33 1/2 RPM	
Fig. A	B103B	5.50			1.2 Volts			8 Grams	3 Mil Point		78 RPM	
<b>TURNDYER CERAMIC CARTRIDGES</b>												
Fig. B			B110C (4)	5.95	1.2 Volts		1.0 Volts	12,000 c.p.s.	8 Grams	3 Mil Point	1 Mil Point	78-45-33 1/2 RPM
Fig. C			B810C (5)	4.95	1.2 Volts		1.0 Volts	12,000 c.p.s.	8 Grams	3 Mil Point	1 Mil Point	78-45-33 1/2 RPM

NOTES: (1) No needle supplied. Best operation is obtained with offset type needle.  
 (2) No needle supplied. Permo #B310, Jensen #J752 or Equal recommended.  
 (3) Sapphire needle supplied on LP side only. Osmium needle supplied on 78 RPM side.  
 (4) Includes mounting bracket.  
 (5) Replacement "throwaway" element for B110C cartridge.



**ELECTRONICS DIVISION**

**ELGIN NATIONAL WATCH COMPANY**

ELGIN, ILLINOIS

# THE ASTATIC CORPORATION

KNOW THE WORLD OVER  
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## ASTATIC PROFESSIONAL AND GENERAL PURPOSE MICROPHONES



### FAMOUS FUTURA SERIES — A NEW CONCEPT IN MICROPHONES

**METRO 788**—Superbly Styled Wide Range General Purpose Dynamic. High in quality—low in cost. Complete with lavalier and belt clip, 360° swivel adaptor for 5/8"-27 thread, 20 ft. two conductor shielded cable. Internal high-low impedance selector, on-off switch with "lock-on" position. Response 50-13,000 cps, output level -55 db, pressure cast housing, DuPont Mylar high tensile weatherproof, pop-proof, blast-proof diaphragm. Finish: non-reflecting satin black with brushed gold trim. Net weight: 8 oz. List Price \$79.50

**TEMPO 888**—Superior Wider Range Versatile Dynamic. A brilliant performer for universal applications. Complete with lavalier and belt clip, 360° swivel adaptor for 5/8"-27 thread, 20 ft. two conductor shielded cable with exclusive "latch-lock" connector containing Cannon XLR-3. Internal impedance selector 50-200 ohms balanced and high impedance. Response 50-15,000 cps, output -56 db, pressure cast housing, DuPont Mylar high tensile weatherproof, pop-proof, blast-proof diaphragm. Finish: non-reflecting satin black with brushed chrome trim. Net weight: 9 oz. List Price \$110.00

**VOGUE 988**—World's Most Beautifully Styled Professional Dynamic Microphone. Ruggedly constructed. Exceptionally flat response 40-20,000 cps. For TV broadcasts, professional tape recording—for exactness of reproduction and flawless response. Output level -58 db. Internal impedance selector 50, 150 or 250 ohms balanced. Complete with 20 ft. two conductor anti-microphonic shielded cable with exclusive "latch-lock" connector containing Cannon XLR-3, 360° swivel adaptor for 5/8"-27 thread, lavalier assembly and belt clip. Pressure cast housing, DuPont Mylar high tensile weatherproof, pop-proof, blast-proof diaphragm. Finish: non-reflecting satin black with brushed gold trim. Net weight: 8 3/4 oz. List Price \$150.00

**Fig. D, "The Commentator,"** Models DN-50, GDN-50, UGDN-50, DN-HZ, GDN-HZ—Famous Astatic Dynamic Communication and General Purpose Microphones. Now available separately or in combination with exclusive Astatic "G" Grip-to-Talk Stand. Ruggedly constructed, tilting head swivel mount for semi or non directional applications. Finish: opalescent grey baked enamel, bright chrome grille and trim. Response 50-7,000 cps. Models UGDN-50 and DN-50 low impedance 50 ohms (balanced). GDN-50 (unbalanced). Output level -51 db. Cable length—GDN-50 and UGDN-50, 6 ft.; DN-50, 10 ft. two conductor shielded. Models GDN-HZ and DN-HZ, high impedance, output level -55 db. Cable length—GDN-HZ, 6 ft.; DN-HZ, 10 ft., single conductor shielded. Net weight: 1 lb. (microphone only).

#### List Prices

DN-50 (low impedance)	\$27.50
UGDN-50 (low impedance)	48.95
GDN-50 (low impedance)	45.60
DN-HZ (high impedance)	29.50
GDN-HZ (high impedance)	48.80

**Fig. E, "The Velvet Voice,"** Models 200, 200-S and 241-S—An Astatic Exclusive. All purpose, low cost, hand held, desk-floor stand crystal microphone for P.A., home recording, paging and amateur communication applications. Gold finish die cast housing and handle with bright chrome grille. Quick lock detachable base, standard 5/8"-27 thread mounting. Model 200, High Impedance—wide range 30-10,000 cps—Output -50 db—10 ft. single conductor shielded cable. Model 200-S, Same as above, with lock-type switch. Model 241-S, Same as Model 200-S except frequency response 1500 to 5500 cps.

#### List Prices

Model 200	\$16.95	Model 200-S	\$18.00
		Model 241-S	\$18.00



**Fig. A, Model M-332 and M-332-S**—New Astatic Slim, High Fidelity Crystal Microphone. Lowest cost, widest response—30-15,000 cps. Improves tape recordings. Excellent for P.A. Designed for hand, stand and lavalier use. Smartly styled—precision made—pressure cast housing finished in smooth satin chrome with satin black grille. Supplied with lavalier cord and desk-floor stand adaptor with 5/8"-27 thread. Output level -57 db, high impedance, 8 ft. extra flexible highly shielded single conductor cable. Model M-332-S has on-off switch. Net weight: 6 oz.

#### List Prices

M-332	\$17.00	M-332-S (with switch)	\$19.90
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**Fig. B, "The Dynamike,"** Models M-350 and M-352—Low Cost Wide Range Dynamic Microphone. Versatile, all around high or low impedance dynamic microphone for P.A., tape recording, communications. Industrial applications. Model M-350, High impedance, output level -56 db, response 50-10,000 cps, complete with adaptor for 5/8"-27 thread, 18 ft. single conductor shielded cable. Finish: non-reflecting satin black with brushed chrome trim. Model M350-S. Same as above with switch adaptor. Model M-352. Same as M-350 but low impedance 50 ohms balanced and 18 ft. two conductor shielded cable. Model M-352-S. Same as Model M-352 but with switch adaptor. Net weight: 16 oz.

#### List Prices

M-350 (high impedance)	\$39.95
M-350S (with switch)	42.70
M-352 (low impedance)	37.50
M-352S (with switch)	40.25

**Fig. C, "The Spokesman,"** Models JT-30 and JT-30-S—The Standard of the Industry. High quality—low price—specially-designed for general P.A., recording and communications. Includes handle and interlocking base. Threaded for 5/8"-27 mounting on standard desk-floor stands. Opalescent grey baked Hammerlin finish with bright chrome grille and industry standard cable connector. Model JT-30 (crystal). High impedance—range 30-10,000 cps—output -50 db—10 ft. single conductor shielded cable. Model JT-30-C (ceramic). High impedance—range 30-8,000 cps—output -57 db—5 ft. single conductor shielded cable.

#### List Prices

Model JT-30-C (ceramic)	\$16.15
Model JT-30 (crystal)	16.95

# THE ASTATIC CORPORATION

KNOW THE WORLD OVER  
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## ASTATIC MICROPHONES (Cont'd)

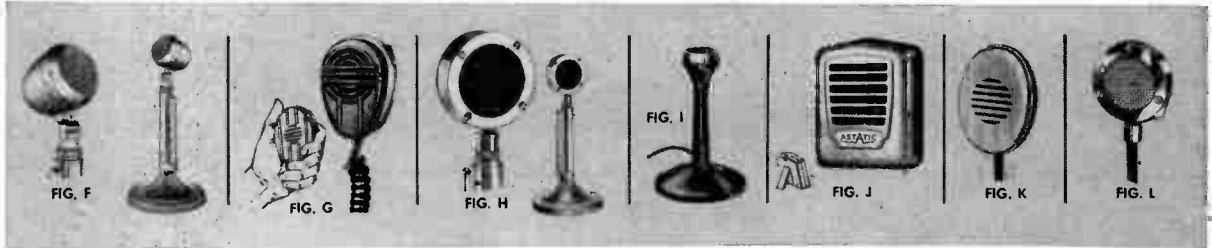


Fig. F, "The Pioneer," Model T-3, GT-3—An Astatic Industry Standard. Now available separately or in combination with exclusive Astatic "G" Grip-to-Talk Stand. The all application METAL-SEAL crystal microphone. A top performer for P.A., industrial and amateur communications. Swivel hinge provides tilting action for semi to non-directional pickup, aids in controlling acoustic feed-back. Streamline appearance. Finish: bright chrome with mesh grille. Complete with adaptor for  $\frac{5}{8}$ "-27 thread. Response 30-10,000 cps, output level -52 db, high impedance. Cable length—T-3, 15 ft. single conductor shielded; GT-3, 6 ft. two conductor shielded. Net weight: 1 lb. (microphone only).

T-3 \$27.35                      List Prices                      GT-3 \$45.75

Fig. G, "The Communicator," Model 10M5—Popular Rugged Carbon Communications Microphone. Widely used for mobile, marine and aircraft communications. Light weight pressure cast housing, heavy duty thumb switch, high sensitivity. Complete with 5 ft. four conductor coiled cord and anti-rattle hang-up bracket. Frequency response flat from 100-1500 cps. Power level approx. 2 db above 6 MW for 100 microbar sound pressure, operating current 10 to 100 M.A. Net weight: 1 lb. 2 1/4 oz.

List Price \$29.50

Fig. H, "The Premier," Models D-104, D-104-C, GD-104 and GD-104-C—The Radio Amateur's First Choice. Now available separately or in combination with exclusive Astatic "G" Grip-to-Talk Stand. Balanced performance for maximum intelligibility throughout the voice range. Machined brass parts and heavy mesh grille finished in bright chrome. Complete with adaptor for  $\frac{5}{8}$ "-27 thread. D-104 and GD-104 use metal-seal crystal for protection against moisture and dryness. Output level -47 db. D-104-C and GD-104-C use ceramic element, immune to moisture and humidity. Output level -53 db. Frequency response 30-7,500 cps with rising characteristics 500-4,000 cps, both models. Cable length—D-104 and D-104-C, 5 ft. single conductor shielded; GD-104 and GD-104-C, 6 ft. two conductor shielded.

List Prices	
D-104 (crystal) .....	\$29.95
D-104-C (ceramic) .....	29.95
GD-104 (crystal) .....	50.15
GD-104-C (ceramic) .....	50.15

Fig. I, "The Universal," Model 54-M3—Low Cost. Versatile. Crystal microphone. Non-directional, designed for conference, P.A. and recording. Pressure cast housing. Finish: Brown baked Hammerlin, brushed gold head and grille. Complete with interlocking base. Handle threaded  $\frac{5}{8}$ "-27 for floor stand mounting. 5 ft. single conductor shielded cable. Response 30-10,000 cps, output level -51 db. Weight: 15 oz.

List Price \$14.95

Fig. J, "The Gold Standard," Models M-301, M-302—High Quality, Low Cost. Unique modern styling with pressure cast housing. Finished in metallic gold. Desk standard hinges in and out of the back. Available with ceramic or metal seal crystal element. Designed primarily for home recording. Can be used to replace many hand held and desk type high impedance microphones. 8 ft. single conductor shielded cable. Model M-301 (ceramic). Output -54 db. Range 30-8,000 cps. Model M-302 (metal seal crystal). Output -47 db. Range 30-10,000 cps.

List Prices	
Model M-301 (ceramic) .....	\$10.50
Model M-302 (crystal) .....	11.00

Fig. K, "The Economike," Models M-101, M-102—Lowest Cost, Wide Range. Designed for hand held use. For home recording, paging. Durable, light-weight plastic housing. Choice of crystal or ceramic models. M-101 (ceramic) response 30-8,000 cps, output level -54 db. M-102 (crystal) response 30-10,000 cps, output level -46 db. High impedance, 5 ft. single conductor shielded cable both models. Net weight: 4 oz.

List Prices	
M-101 (ceramic) .....	\$7.50
M-102 (crystal) .....	8.00

Fig. L, "The Lecturer," Model L-1—Small and efficient—High quality—Inconspicuous crystal microphone Spring clip for attachment to speaker's coat lapel or other garment. Precision built, wide range performance. Wire mesh front and rear grilles. Black melamine finish. 15 ft. small diameter single conductor shielded cable. High impedance. Output -62 db. Range 30-10,000 cps.

List Price \$27.35

## ASTATIC PICKUP CARTRIDGES

### LEADER WITH ORIGINALS—FIRST WITH REPLACEMENTS

Astatic designs and manufactures THE WORLD'S MOST COMPLETE LINE OF PICKUP CARTRIDGES FOR BOTH ORIGINAL EQUIPMENT MANUFACTURERS AND DISTRIBUTORS. As the pioneer of the pickup cartridge industry, and as its largest single supplier for OVER A QUARTER OF A CENTURY, Astatic leadership continues unabated through constant research and product development for business and industry.



## MICROPHONES

### Ronomike

A new slim hand microphone in a compact, sturdy die-cast housing.



#### Technical Specifications:

Sensitivity: -55.4 db. Flat response: 30-10,000 cycles  $\pm$  3 db., peak-free when matched to a  $\frac{1}{2}$  to 1 Meg. input of triad stage. Intermodulation distortion is so low that it is immeasurable with existing equipment. Complete with 8 ft. 90% shielded gray vinyl cable and fully shielded phone plug.

### Studio Microphone



model G-210

Can be custom tailored to exactly fit most requirements. Chromium plated die-cast alloy housing swiveling 100° for semi- or omni-directional use. Can be supplied with or without an on-off switch. There is a choice of two curves. G-210 fits any standard desk, banquet or floorstand.

#### Technical specifications:

Effective output level: -51 db; Frequency response: 30-7500 cps. or -55db 30-1300 cps. Output impedance: equal to 2200 uuf. Diaphragm: annealed corrosion-resistive aluminum. Crystal unit: vacuum sealed, precision ground and optically inspected. Diameter:  $1\frac{3}{8}$ " ; height:  $4\frac{1}{8}$ " ; depth:  $3\text{-}9/64$ ". Supplied with standard shielded microphone connector.

List— G-210 . . . \$26.00  
G-210S . . . 30.00 with switch

### Table Microphone

This Ronette microphone, handsomely styled, is housed in a modern plastic case, and is virtually unbreakable. Designed as a table model, it is equally suited as a hand microphone. Incorporated metal-loaded base.

Designed for tape recorders, the standard insert is the Ronette type "DX-12." Includes 6 ft. shielded cable.

#### Technical specifications:

Output: -55 db. Frequency response: DX-12: 30-13,000 cps.; Output impedance: equal to 2,200 uuf. Suggested load: 2-5 megohm. Directional characteristic: semi-directional; diaphragm: annealed, corrosion resistive aluminum; crystal unit: vacuum sealed, precision ground and optically inspected.

List— model 44 . . . \$10.50



model 44

### Reporter Microphone

model B-110



Rugged construction, ivory color Polapas moulding. Shielded against strong R. F. Frequency response: 30-13000 with rising high end for crisp speech qualities. Complete with standard Ronette shielded microphone connector.

Decreasing load resistance from 5 MOhms to 220 KOhms attenuates bass response and gives that "DX" quality wanted by amateur radio operators. Fits regular  $\frac{3}{8}$ " -27 threaded microphone stand.

List Model B-110 . . . \$10.50

### Ronette Replacement Styli

Ronette standardized styli fit all Ronette cartridges. Ronette supplies only sapphire or diamond styli.

#### STYLI SIZES

SIZE	SAPPHIRE List	DIAMOND List	RECORDING SPEEDS
1.0 Mil.	\$1.70	\$8.35	33 $\frac{1}{3}$ , 45 R.P.M.
2.0 Mil.	1.70	—	33 $\frac{1}{3}$ , 45, 78 R.P.M.
2.5 Mil.	1.70	8.35	78 R.P.M.

All Ronette styli are individually boxed including mounting instructions and spare screw.

#### General Information Concerning RONETTE Microphones:

Load resistance: As all piezo-electric devices, such as our microphones, are small capacitors. They are high-impedance instruments and require a

high value of load resistance. Microphones should preferably be used with load resistance of values between 2 and 10 MOhms.

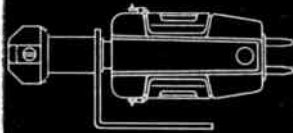
ALL RONETTE PIEZO-ELECTRIC PRODUCTS ARE GUARANTEED FOR TROPICAL CLIMATES.

All prices subject to change without notice.



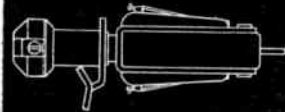
**Model TX-88**

High fidelity cartridge requires no preamp. Stylomatic\* stylus assembly snaps in. Range: 30-24000 cps. Output: .4 volt on Columbia RD-103. 1/2" mounting centers.



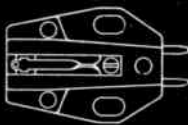
**Model TC-200**

High-grain turnover cartridge for manual tone arms; press-fit bracket mounting; 5 volts.



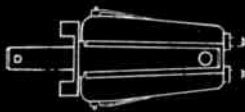
**Model MT-67-2**

1/2" Mounting single stylus model, high-grain, 5 volt, wide range, low distortion.



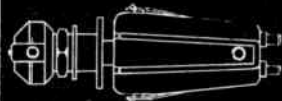
Shaft mounting model for changers with wide die cast arm

Models:  
TO-284-P/9234,  
TO-222/9655,  
TO-284-OV/9121



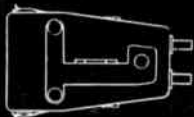
Front mounting type with one plate and nut for changers with plastic arms.

Models:  
TO-284-OV/6045,  
TD-222/7825



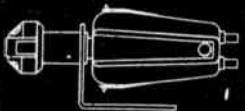
Turnover type DT-60 for changers with built-in turnover mechanism.

Models:  
DT-60-OV, DT-60-222,  
DT-60-P



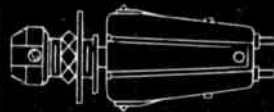
Standard turnover type, 1/2" mounting centers.

Models:  
TO-284-OV, TO-222,  
TO-284-P



Front mounting type with two plates and nut for manual tone arm.

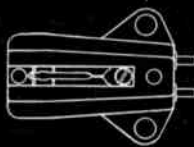
Models:  
TO-284-P/FF,  
TO-222/FF,  
TO-284-OV/FF



**Type RA**

Single stylus changers and tone arm, 5/8" mounting centers.

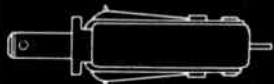
Models:  
RA-284-P, RA-284-OV,  
RA-395-1 w/1.0 mil  
styli (-2 w/2.0 mil)



**Type TO-400**

Shaft mounting model for changers with narrow arms.

Models:  
TO-400-OV, TO-400-P,  
TO-400-222



\* trade mark



*Ronette*

**CARTRIDGES and PICKUP ARMS**

**FONOFLUID CARTRIDGES**

**Electrical Specifications:**

**STUDIO MODEL TX-88.** Frequency response 30-24000 cycles, distortion and peak free, with compliance of 5. Output .4 volts on Col RD103. May be operated as constant velocity device when loaded with 120K and Preampifier or as conventional crystal cartridge with .5 meg.

**PROFESSIONAL MODEL "P".** Lowest I.M. distortion, requires only 2-4 grams stylus pressure — wide range. May be operated as constant velocity device with 120 K ohm load and preampifier as replacement for magnetic cartridge; or with conventional crystal cartridge circuits without preampifier. No Hum problem or Turntable pulling.

**HIGH FIDELITY MODEL "OV."** For converting small and medium sized amplifiers for better reproduction. Low IM distortion and high compliance. Will drive most amplifiers through high level input. Stylus pressure: 5 grams.

**HIGH OUTPUT MODELS TO-222, RA-395.** Designed for worn and older types of records. Produces a high order of brilliance with a minimum of needle scratch. Will drive all small amplifiers. Stylus pressure: 9 grams.

Cartridge	Voltage
OV .....	.750 volts
222 .....	5.0 volts
RA395 .....	5.0 volts
P .....	.150 volts

RA395 replaces all previous RA-284-T, US, V, VS, V Max cartridges.

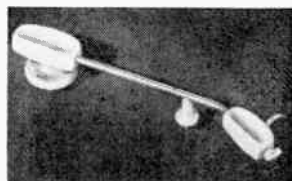
TO222 replaces the following cartridges: TO-284, -T, US, VS, V.

**RONETTE has standardized the replacement market — All RONETTE styli fit all RONETTE cartridges.**

*Ronette*

**ACOUSTICALLY MATCHED FONOFUID TURNOVER PICKUP ARM**

For use with 12" and 16" Manually Operated Precision Turntables.



Achieves the ultimate in performance with the Ronette 284-P Fonofluid cartridge, with 2 non-interacting sapphire\* styli. Newly developed stylus pressure adjusting mechanism allows fine pressure adjustment from one to eight grams. Double ball-bearing swivel imparts high stability and is virtually torsion free; essential qualities for perfect tracking at high needle velocities and very low stylus pressures. The arm is of chromium plated tubing. Standard arm length for use with 12" turntables, is 7 7/8 inches from bearing center to stylus tip. It can be supplied in other arm lengths to manufacturers specifications.

MODEL FFP-12— With P cartridges for 12" turntables .....	\$22.75 List
Model FFOV-12— With OV cartridges for 12" turntables .....	19.25 List
Model FFP-16— With P cartridge for 16" turntables .....	27.50 List

\*Diamond Styli Available at Additional Cost.

*Ronette* **REPLACEMENT ARMS**

High-Quality, Moderately Priced Pickup Arms designed for resonance-free performance with smooth pivot action for accurate tracking.



**TURNOVER MODEL**



**SINGLE STYLUS MODEL**

The expert design of this arm makes for low tracking error, negligible needle talk, and tasteful appearance. Specifically designed for the Ronette cartridge with low I.M. distortion, the low stylus pressure extends the life of records and stylus.

MODEL ART— With 1.0 mil sapphire—2.5 mil sapphire styli .....	\$5.40 List
MODEL ARS-1— With 1.0 mil sapphire stylus .....	4.50 List
MODEL ARS-2— With Playall sapphire stylus .....	4.50 List

# RCA STYLI AND CARTRIDGES

## INDEX OF CARTRIDGES VS. STYLI

### 45 RPM

### 78 RPM

Cartridge			Stylus		
Stock No.	Type	Fig. No.	Stock No.	Type	Fig. No.
74067	Crystal	1	74068	Sapphire <sup>■</sup>	101
74466	Magnetic	2	74622	Diamond	102
75575	Crystal	3	75770	Sapphire <sup>■</sup>	103
76257	Crystal	4 or 5	76323 <sup>Δ</sup>	Osmium	104
			76374 <sup>○</sup>	Osmium	105
76297	Ceramic	6	74985	Sapphire <sup>■</sup>	106
79791	Ceramic	7	79849	Sapphire <sup>■</sup>	107
103238A	Crystal	3	102352	Sapphire <sup>■</sup>	104

<sup>Δ</sup>Use with cartridge marked 988370-2.  
<sup>○</sup>Use with cartridge marked 988370-1.

<sup>■</sup>Synthetic.

### 3-SPEED

Cartridge			Stylus		
Stock No.	Type	Fig. No.	Stock No.	Type	Fig. No.
75044	Crystal	8	75046 <sup>▲</sup>	Osmium	108
			75045 <sup>*</sup>	Osmium	108
77779	Crystal	9	75497 <sup>▲</sup>	Osmium	109
			77899 <sup>*</sup>	Sapphire <sup>■</sup>	109
78478	Ceramic	10	78479 <sup>▲</sup>	Osmium	110
			78480 <sup>*</sup>	Osmium	110
78769A	Magnetic	11	78770A <sup>†</sup>	Sapphire <sup>■</sup>	111
79895	Crystal	12	*		
100329	Ceramic	13	100330	Osmium	113
100653	Ceramic	14	78827	Sapphire <sup>■</sup>	112
100793 <sup>*</sup>	Magnetic	37	†	Diamond	
101316	Crystal	38	101318 <sup>▲</sup>	Osmium	104
			102352 <sup>*</sup>	Sapphire <sup>■</sup>	104
			102353 <sup>▲</sup>	Sapphire <sup>■</sup>	104
102321	Crystal	39	102352 <sup>*</sup>	Sapphire <sup>■</sup>	104

<sup>▲</sup>78 RPM. <sup>\*</sup>33 $\frac{1}{3}$ -45 RPM. <sup>†</sup>Fixed, non-replaceable stylus.  
<sup>\*</sup>Use standard-shank steel needle; Stock No. 79898 is recommended.

<sup>■</sup>Synthetic.

<sup>†</sup>Stock No. 78770A is a complete stylus assembly which includes styli Stock Nos. 101671 for 33 $\frac{1}{3}$ -45 RPM and 101672 for 78 RPM. Stock Nos. 101671 and 101672 are available separately.

### 45 RPM

Discontinued Cartridge		Stylus <sup>▲</sup>	Suggested Replacement Cartridge
Stock No.	Fig. No.	Stock No.	Stock No.
74625	1	74818	75575
74984	29	74985	76297
75476	30		74067
76318	1	74068	74067

### 3-SPEED

Discontinued Cartridge		Stylus <sup>▲</sup>	Suggested Replacement Cartridge
Stock No.	Fig. No.	Stock No.	Stock No.
75475	9	75497 <sup>Δ</sup>	77779
		77899 <sup>○</sup>	
78634	11	78770	78769A
78748	31	78827	100653
79807	31	78827	100653
79850	12	79898	79895
93409	11	78770	78769A

<sup>▲</sup>Styli for which stock numbers are shown, are available for discontinued cartridges. <sup>Δ</sup>78 RPM. <sup>○</sup>33 $\frac{1}{3}$ -45 RPM.

Cartridge			Stylus		
Stock No.	Type	Fig. No.	Stock No.	Type	Fig. No.
9890	Crystal	15	72345	Sapphire <sup>■</sup>	114
34225	Crystal	20	*		
34710	Crystal	21	*		
38598	Crystal	22	70915	Sapphire <sup>■</sup>	115
38610	Crystal	23	39564	Osmium	116
39919	Crystal	24	70915	Sapphire <sup>■</sup>	115
55391	Crystal	25	*		
57330	Magnetic	3	†		
70198	Crystal	26	*		
70220	Crystal	25	*		
70338	Crystal	27	72345	Sapphire <sup>■</sup>	114
70338A	Crystal	27	72345	Sapphire <sup>■</sup>	114
70339	Crystal	27	70915	Sapphire <sup>■</sup>	115
73839	Crystal	28	73840	Osmium	117
75976	Crystal	15	72345	Sapphire <sup>■</sup>	114
100566	Magnetic	37	†	Sapphire <sup>■</sup>	

<sup>\*</sup>Use standard-shank steel needle; Stock No. 79878 is recommended

<sup>†</sup>Fixed, non-replaceable stylus.

<sup>■</sup>Synthetic.

### SUGGESTED REPLACEMENT FOR DISCONTINUED CARTRIDGES

#### 78 RPM

Discontinued Cartridge		Stylus <sup>▲</sup>	Suggested Replacement Cartridge
Stock No.	Fig. No.	Stock No.	Stock No.
9953	16	72345	75976
14820	17	*	None
31050	18	*	9890
31156	19	*	None
33122	21	*	9890
33217	20	*	9890
33905	34	*	9890
34307	33	*	9890
35171	34	*	9890
37158	35	*	9890
38453	24	70915	39919
39550	24	70915	39919
39686	36	*	9890
39851	16	72345	75976
70332	16	70915	75976
70777	26	*	79895
71173	26	*	70338A
72551	27	72345	70338


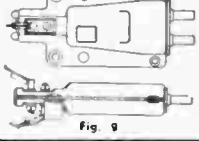


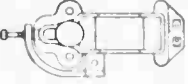

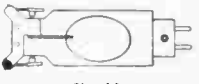
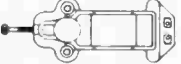
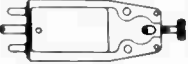
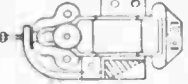

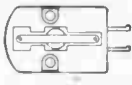
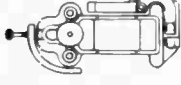








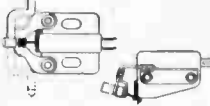
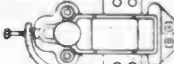

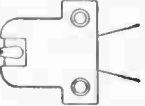

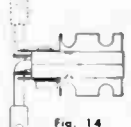


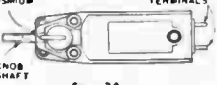


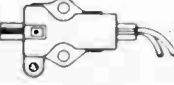
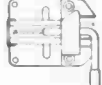

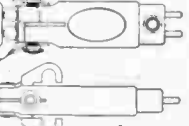
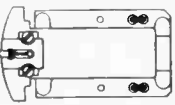
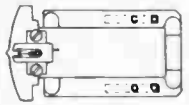

<sup>\*</sup>Use standard-shank steel needle; Stock No. 79878 is recommended.

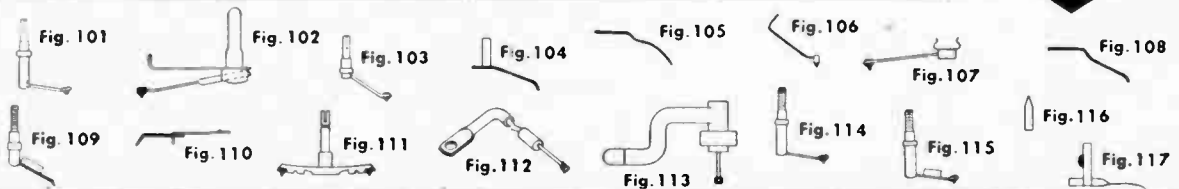
<sup>▲</sup>Styli for which stock numbers are shown are available for discontinued cartridges.

## RCA COMPONENTS DIVISION, Camden, N. J.

# RCA STYLI AND CARTRIDGES

## CARTRIDGE OUTLINE DRAWINGS

 Fig. 1	 Fig. 9	 Fig. 17	 Fig. 25	 Fig. 33
 Fig. 2	 Fig. 10	 Fig. 18	 Fig. 26	 Fig. 34
 Fig. 3	 Fig. 11	 Fig. 19	 Fig. 27	 Fig. 35
 Fig. 4	 Fig. 12	 Fig. 20	 Fig. 28	 Fig. 36
 Fig. 5	 Fig. 13	 Fig. 21	 Fig. 29	 Fig. 37
 Fig. 6	 Fig. 14	 Fig. 22	 Fig. 30	 Fig. 38 OSMIUM TERMINALS KNOB SHAFT
 Fig. 7	 Fig. 15	 Fig. 23	 Fig. 31	 Fig. 39
 Fig. 8	 Fig. 16	 Fig. 24	 Fig. 32	<b>STYLUS OUTLINE DRAWINGS</b>



**RCA COMPONENTS DIVISION, Camden, N. J.**



# ATLAS SOUND CORP. the complete line for all P.A.

MICROPHONE STANDS featuring SPECIAL FULL-GRIP

VELVET ACTION CLUTCHES — maximum STABILITY, QUIET and EASE



The "Full-Grip" Clutch offers an extended length clutch body, permitting a secure, full-hand grip. The clutch mechanism is inner-lined with a wearproof bakelite locking collet which grips without jamming, slipping, or sudden dropping. All bases are functionally designed to offer maximum stability for a given base weight. The maximum base mass is located at the outer periphery of the casting where the concentrated weight is most useful. All bases include self-leveling, shock-absorbent base pads, plus three additional "anti-tip" points located between the base pads. The complete tube assemblies of all models are "super-chrome" plated, assuring "life-time" wear. All models terminate in a  $\frac{5}{8}$ "-27 carefully machined thread.

MODEL	Weight	Base Finish	Height Adj.	Base Diam.	LIST PRICE
MS-10C	9 lbs.	Gray Shrivel	35" to 64"	10"	\$ 9.75
MS-12C	12 lbs.	Gray Shrivel	35" to 65"	10"	10.50
MS-11C	12 lbs.	Full Chrome	35" to 65"	10"	13.00
†MS-20	15 lbs.	Gray Shrivel	42" to 72"	12"	15.50
†MS-25	24 lbs.	Chrome & Gray Shrivel	42" to 72"	17"	24.00
§CS-1	5 lbs.	Cadmium Plated	23" to 62"	Collapsible	17.00
*CS-32	4 lbs.	Chrome & Gray	36" to 64"	Demountable	10.25
*CS-33	3 lbs.	Hammerloid	28" to 64"	Demountable	11.75

All telescoping tube assemblies finished in full chrome.

\*Each stand is individually packed complete in a single carton.

†The MS-20 and MS-25 use large diameter, oversize, telescoping tube assemblies ( $\frac{7}{8}$ " telescoping tube —  $1\frac{1}{2}$ " base tube) resulting in a handsome and fine-appearing stand that supplements the professional appearance of high quality microphones.

§Collapsible to a minimum overall length of 23 inches.



## DESK STAND

Modern — Attractive — Functional  
Stable!

"THE STREAMLINER" Desk Stand Compliments appearance of any mike. Conceals mike cable in slot beneath center section of chromium trim and directs it out at rear of base. Adequate space under base for installation of "on-off" or "press-to-talk" switch.

Model DS-10 List Price \$5.00



## ADJUSTABLE BANQUET STAND

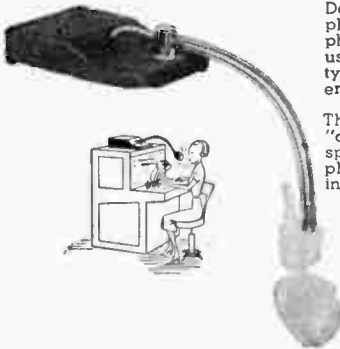
Features "Full-Grip Velvet-Action" adjustment. Tube and base handsome super-chrome finished. Adjustable  $14\frac{1}{2}$ " to 26". Base diameter 8". Wt. 5 lbs.  
Model TS-6 List Price \$9.00

## 'VELVET ACTION' DESK STAND

DS-5 and DS-7 Desk Stands—Same fine finish and workmanship as floor models. Adjustable DS-7 has heavy duty  $\frac{5}{8}$ " and  $\frac{7}{8}$ " tubing. Felt base pads included. Base diameter 6", gray shrivel finish; tube chromium plated.

Model	Adj. Height	List Price
DS-5	Fixed 6"	\$3.00
DS-7	8" to 13"	5.00

## DISPATCHER AND SWITCHBOARD MICROPHONE SUPPORT



Designed for use in supporting a microphone over conventional types of telephone switch boards, and many other useful applications for a stand of this type, such as a desk support, dispatcher's office, dais, banquet table, etc.

The 12 inch long, flexible, chrome plated "goose neck" arm is mounted on a spring loaded swivel so that the microphone can be swung aside when not in use.

The heavy, functionally designed, 13 Lb. base casting is rear loaded so that the base will not tip forward. Rubber bumpers fastened to the base prevents "skidding" and protects against damage to fine furniture finishes.

Model SB-1 List Price \$13.00

## MIKE "FOOT SWITCH"

FOR ALL MIKES HAVING SINGLE-ENDED INPUTS  
Shielded—Noise Free  
Dependable



The FS-1 can also be hand operated on table top, switchboard, etc. The long life micro-switch is supplied as a "press to open". It is normally in a closed position, thereby shorting the mike until depressed. The mike plug is attached to either of the male connectors. Remaining connector goes to amplifier input. Can be easily rewired for "press to close" circuit operation. Cork base prevents skidding. Size:  $2\frac{1}{2} \times 3$ ".

Model FS-1 List Price \$12.00

**BS-36W Mobile**

Model — Identical to BS-36 but features DeLuxe base having ball-bearing swivel castors that permit entire stand to be wheeled about.

List Price \$70.00



**PROFESSIONAL BOOM STAND**

New model! All advantages of "Floating Action" and "Safety Air-Lock Cushion" that prevents accidental slippage. All parts "Velvet Smooth" in operation. Boom easily removable to use upright as a conventional floor stand. Gyromatic swivel joint assures mike always hangs in proper position.

Specifications: Boom length 62" (more extension addable). Adjustable vertical extension 48"-72". Base diam. 17". Tubular sections super-chrome plated. Modernistic base finished in chrome and gun metal shrivel. "Snap On" hangers furnished to hold mike cable to boom section. Ship. wt. 33 lbs.

List Price \$60.00

**'SNAP ON' MICROPHONE ATTACHMENT**



Permits any mike to be attached to or removed from any floor stand — instantly, safely, without on-and-off threading. SO-1 is ball-bearing spring sleeve attachment: one section is attached to mike, other section is permanently fastened to stand.

Model SO-1

List Price \$2.75

**FLEXIBLE GOOSE NECK**



Attachable to any mike stand or fixture. Ends have 5/8"-27 male and female threads. GN-6 is 6" long; GN-13 is 13" long; GN-19 is 19" long. Finished in polished chrome.

Model GN-13—List Price \$2.75

Model GN-19—List Price \$3.75

Model GN-6—List Price \$2.00

**'BABY BOOM' ATTACHMENT**



Easily attached to any mike stand and locked in any position. Also effectively used with bracket clamps BC-1 and SK-1. Boom length 32", chrome plated. Castings in gun metal shrivel. 5/8"-27 threads. Ship. wt. 4 lbs.

Model BB-1

List Price \$7.50

**SKY HOOK**



Answers many mike positioning problems. Fastens securely to ledges, round pipes, stanchions\*. Has 5/8"-27 thread for any mike. Can also be used in combination with SW-1, GN-13, etc. Casting finish, gun metal shrivel; 3" long tube, chrome.

\*Excellent for attaching an extra mike to a conventional floor stand.

Model SK-1

List Price \$3.50

**TS-7 BANQUET STAND (Only)**

For use with TB-1. Heavy base, 10" diam. All parts super-chrome plated. Adjustable tube assembly. Easily placed on and moved along speaker's table. Ship. wt. 11 lbs.

Model TS-7

List Price \$10.00



**GYROMATIC SWIVEL**



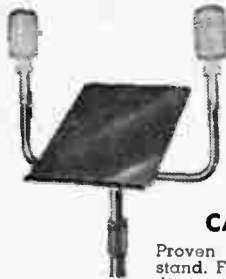
Permits any mike to be adjusted and locked into any angle on any floor or desk stand. Also useful with SK-1, BC-1, etc. Precision die castings, super-chrome finish. 4 1/2" long. 5/8"-27 male and female threads.

Model SW-1

List Price \$4.00

**DUPLEX MIKE MOUNT**

**With Desk Attachment**



Permits use of 2 mikes on any single stand. Reduces "off mike" possibility. Desk attachment and mike support arms detachable. Thus one mike alone may be used—to one side or rear of desk. Finished in chrome and cadmium. Moulded composition desk, 9" x 11". Ship wt. 2 1/2 lbs.

TB-1 List \$10.00

**CABLE HANGER**

Proven necessity on every mike stand. Fits all tubes, 7/8" to 1 1/4" diam.; attached and removed by 1 screw. All parts chrome finish.

Model CH-1

List Price \$2.50



**NECK SUPPORTED MIKE HOLDER**

FULFILLS EVERY PRACTICAL REQUIREMENT FOR A MICROPHONE CHEST SUPPORT



The "Chesty" permits a quick and simple "three way" adjustment. Mike is always in a suitably "close talking" position reducing acoustic feed back problems caused by excessive spacing between mike and speakers mouth.

Wide comfortable chest support prevents rolling due to sudden movement. Flexible goose neck quickly removed if desired for use as hand held mike. Entire assembly can be placed on table top and used as conventional desk stand. Cool and lightweight weighing only 6 oz.

Model NS-1

List Price \$5.00

**BRACKET CLAMP**

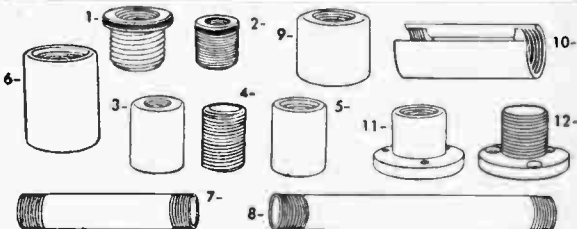


Very versatile. Usable with BB-1, GN-13, etc. Clamp can be removed and top flange screwed or bolted into position. Chrome tube 6" long. 5/8"-27 thread.

Model BC-1

List Price \$3.50

**MICROPHONE ADAPTORS & FITTINGS**



MODEL	Description	LIST PRICE
AD-1	5/8"-27 female to 1/2" pipe thread male (RCA Adaptor)	\$ .85
AD-2	1/8" pipe female to 5/8"-27 male	.60
AD-3	1/8" pipe female to 3/8"-27 female	.60
AD-4	3/4" long, 3/8"-27 male running thread	.30
AD-5	3/8"-27 female to 5/8"-27 female coupling	.60
AD-6	7/8"-27 female to 7/8"-27 female coupling	1.00
AD-7	3" long tube 5/8"-27 male each end	.60
AD-8	6" long tube 3/8"-27 male each end	.70
AD-9	7/8"-27 female to 5/8"-27 female	.70
AD-10	5/8"-24 female to 5/8"-27 female (W. E. Adaptor)	1.20
AD-11	Flange, 3/8"-27 female. Base Diameter 1 1/4"	.60
AD-12	Flange, 5/8"-27 male. Base holes on 7/8" mounting centers	.60
AD-13	7/8"-27 male to 3/8"-27 female	.85
AD-14	Right angle bent tube: 5/8"-27 male and female each end	1.50

Note: Thread sizes specified as 1/8" pipe is I.P.S. (Electrical fitting) Measures Approx. 3/8" dia. All adaptors chrome plated.

# TRIMM

## HEADSETS AND ACCESSORIES



### FEATHERWEIGHT

The original light weight headset. Extensively used by amateurs, dx listeners, commercial operators, etc. Bakelite shell and cap; 6 ft. water-resistant cord, concealed terminals; choice of variety of headbands. Weight 4½ oz. Available in all standard ohmage.

#### AMATEUR SPECIAL — 24,000 Ohm Impedance

No. 106—Double headset, single metal-band headband (as pictured above) 5M ohms d.c. resistance ..... \$11.00

No. 107—Double, fabric covered double wire band headband (as pictured at right) 5M ohms d.c. resistance ..... \$11.00

**STANDARD** — Specify Ohmage in Ordering Standard Featherweight headsets available in 4, 152, 2M and 4M ohms d.c. resistance — (Impedance approx. 5 times d.c. resistance)

No. 100—Double headset, single metal band headband (as pictured above) ..... \$11.00

No. 104—Double, fabric covered double wire band headband (as pictured to right) ..... \$11.00



### PROFESSIONAL

The original TRIMM headset, and the choice of countless users. Watch case bi-polar design. Cap and shell of molded bakelite. Tinsel conductor, braided cord, 5 ft. long, enclosed terminals. Adjustable vinyl plastic covered wire headband. Recommended for general radio communication, electronic testing applications, etc. Standard resistances for double headsets 4, 78, 2M, 3M, and 4M ohms d.c. (Impedance approx. 7 times resistance.)

No. 70—Double (4M ohms furnished if not specified) ..... \$5.80

No. 72—Single (2M ohms max.) ..... 3.30

No. 76—Single (2M ohms max.) 4 ft. cord. Has eyelet attached to unit to permit hanging on hook. No headband supplied. Used on intercom systems, etc. .... 3.30



### ACME

The superior low-cost, light weight headset. Used on crystal sets, educational electronic kits, Geiger counters, etc. Cap and shell of molded bakelite. Cord, 4½ ft. long; double headsets, braided cord sets, single earphones, flexible vinyl covered cord, concealed terminals. Several headband styles. Specify ohmage.



No. 24 —Double 2M ohms, vinyl covered headband .....	\$4.20
No. 24 —Double 4M ohm, vinyl covered headband .....	4.35
No. 24-5—Double 4 ohm, vinyl covered headband .....	4.10
No. 25 —Double 2M ohm, metal headband (as pictured) .....	3.60
No. 25 —Double 4M ohm, metal headband .....	3.90
No. 25-5—Double 4 ohm, metal headband .....	3.50
No. 27 —Single 1M ohm, metal headband .....	2.15
No. 27 —Single 2M ohm, metal headband .....	2.35
No. 27-5—Single 2 ohm, metal headband .....	2.10

### DEPENDABLE

When a high grade headset is desired, but price must be considered, choose the Dependable. Used by institutions, on general radio applications, etc. Bi-polar construction, bakelite cap and shell. Forged magnet. Tinsel conductor braided cord, 5 ft. long, concealed terminals. Vinyl covered wire headband, adjustable.



No. 65 —Double, 2M ohms .....	\$4.80
No. 65-5—Double, 4 ohms .....	4.80
No. 67 —Single, 1M ohm .....	2.60
No. 65-3—Double, 2M ohms, similar to No. 65 except uses special 6 ft. plastic covered cord No. 890. Designed especially for use on institutional radio systems as cord can be washed, etc. ....	5.75

### REX

The lowest cost TRIMM bi-polar headset. Bakelite shell and cap. Cord 4½ ft. long; double headsets braided, single earphones vinyl covered, concealed terminals. Adjustable headband. Specify ohmage.



No. 30 —Double 2M ohms .....	\$4.35
No. 30 —Double 3M ohms .....	4.70
No. 30-5—Double 4 ohms .....	4.35
No. 32 —Single 1M ohms .....	2.55
No. 32 —Single 1½M Ohms .....	2.75
No. 32-5—Single 2 ohms .....	2.55

### COMMERCIAL



Extremely light weight yet one of the most rugged headsets built. Originally developed for marine and aircraft service. Recommended for heavy duty commercial radio service, amateur radio, etc. High impact bakelite cap and shell. Cord, 6 ft. long, tinsel, plus rubber insulation, plus high grade mercerized cotton outer braid, enclosed terminals. No. 156 and 157 have 501 plug attached, others without plug. No. 151 and 152 have off-the-shoulder cords. Rubber covered headband.

No. 156—Double (600 ohms impedance).. \$15.00

No. 157—Double (17M ohms impedance).. 15.00

No. 158—Double (600 ohms impedance).. 13.50

No. 159—Double (17M ohms impedance).. 13.50

No. 151—Double (specify ohmage). Headband similar to type used on No. 100 12.10

No. 152—Double (specify ohmage). Headband fabric covered wire type similar to type used on No. 104 ..... 12.10

### EAR CUSHIONS



Provide the user with maximum comfort in wearing headsets, also exclude outside disturbing noises if present. All prices per pair.

No. 654 —Sponge rubber, fits TRIMM Featherweight, Commercial, Acme, Rex, and "E" types ..... \$ 1.50

No. 655 —Solid rubber, military type MC-162A. Fits TRIMM "S" and Permo-flux headsets, military type ANB-H-1 units ..... 2.75

No. 656 —Sponge rubber face, solid rubber back, military type MX-41/AR. Fits same types as No. 655 but recommended as being better choice ..... 4.20

No. 658 —Chamois donut type cushion, military type NAF 48490-1. Fits same types as No. 655 ..... 8.50

No. 658-2—Same general design as No. 658 but fits Brush type A headset.... 11.00

No. 660—Sponge rubber. Fits TRIMM Dependable, Professional, "K", and "W" headsets ..... 2.00

Ohmage given are d.c. resistance unless specifically indicated as Impedance which is about 4-7 times the d.c. resistance.

### ARMY-NAVY



Built for severe use. Design has been accepted standard in years past. Bakelite cap, metal shell. Rubber covered headband. Waterproof cord. Available in two impedances:

No. 28—Double, 112 ohms d.c.— 600 ohms impedance ..... \$20.00

No. 29—Double, 2200 ohms d.c.— 20M ohms impedance ..... 20.00

See Facing Page for TRIMM hearing aid equipment and other headsets and accessories.

See Pages L-38, L-39 for listing of TRIMM Plugs, Jacks, Patch Cords, and Jack Panels. For complete listing see Trimm General Catalog.

Prices subject to change without notice.

# — TRIMM —

## HEADSETS AND ACCESSORIES

### GROUP HEARING AID COMPONENTS

#### Single Earphones



The most widely used single earphones for group hearing aid systems in churches, theatres, mortuaries, etc. are of the TRIMM Featherweight type. Available with either lorgnette handles, or with single headbands. Standard ohmages: 76, 1000, and 2000 ohms d.c. For use with low (less than 100 ohm), medium (100-500 ohm) and high (500 ohms and over) lines respectively. Require phone plug such as TRIMM No. 512 for use with Outlet Boxes described below.



- No. 110—Headband type (specify ohmage) ..... \$7.15  
 No. 120—Lorgnette type (specify ohmage) ..... 8.25

### OUTLET BOXES and CONTROLS

Boxes No. 460 and 461 are recommended for the majority of installations, combines volume control and jack in one unit. Box has all rounded corners and edges. No. 460 has brown hammertone finish, No. 461 glossy ivory for improved visibility in theatres. Standard ohmages: 1000 ohms for low impedance lines, 10,000 for high. Other ohmages available, i.e. 500M ohms for crystal earphones, at slightly higher cost.



A large variety of variations of basic box and volume controls, switches, jacks, etc. available to order for centralized radio systems.

- No. 460—Outlet Box (specify ohmage) ..... \$4.40  
 No. 461—Outlet Box (specify ohmage) ..... 4.40  
 No. 477—Outlet Box, dual jacks, no control, brown finish ..... 3.85  
 No. 478—Outlet Box, dual jacks, no control, ivory finish ..... 3.85  
 No. 484—Outlet Box, single jack, no control, brown finish ..... 3.30  
 No. 485—Outlet Box, single jack, no control, ivory finish ..... 3.30

### FLAT NON-PROTRUDING PLUG

TRIMM No. 512 provides a compact, non-protruding design widely used in group hearing aid installations. Bakelite body practically non-breakable. Fits standard jacks. Cord pin tips held by set screws.



- No. 512—Black ..... \$0.90  
 No. 512-1—Red ..... 0.90  
 No. 512-2—Black with hook for hanging headset ..... 1.35

### PILLOW-PHONE

Designed for use as a miniature speaker for under pillow use at home, in hospitals, etc. Very thin disc shaped, 2" dia. x 27/64" thick. Sealed unit is entirely moisture-proof and tamper-proof. Face of stainless steel, back of molded high impact bakelite. Flexible vinyl cord, 6 ft. long, is anchored to unit under terminal cover plate that cannot be readily removed by user. Normally furnished with standard TRIMM No. 501 plug, but other types available. May be cleaned in disinfecting solutions. Supplied in 8, 300, and 2000 ohms impedance.

- No. 85 — (Specify ohmage) ..... \$9.75

### HANDSET

Several types of handsets meeting military specifications are produced. Write for specific information and availability.

### "S" HEADSET

Designed particularly for broadcast stations and other high fidelity applications. Response is substantially flat through all essential frequencies.

Shell and cap of molded plastic, Alnico V magnet, floating diaphragm with controlled compliance provide uniform response unaffected by temperature. Units usually provided with TRIMM No. 656 ear cushions, but other types available. Headband leather covered double band with mounting for unit providing restricted rotation to prevent cord snarl.

Available for military applications in modified form under various code numbers such as HS-33A, etc.



- No. 35 —Double Headset, 8 or 600 ohms impedance, two conductor off-the-shoulder type flexible neoprene cord terminated with TRIMM No. 501 plug ..... \$24.50  
 No. 35-4—Binaural Headset, 4 or 300 ohms impedance per unit. Split circuit three conductor off-the-shoulder type braided cord terminating with TRIMM No. 509 plug ..... 28.75

### BINAURAL HEADSET

All TRIMM headsets in addition to No. 35-4 listed above can be supplied with special cords for binaural reception. Below are two other commonly produced types.

- No. 187 —Commercial Series, with No. 509 plug attached ..... \$19.80  
 No. 70-14—Professional Series with No. 513 plug attached ..... 10.50

### "B" HEADSET

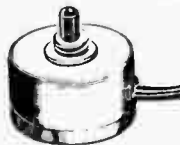


Suggested for hospital installations. Bakelite shell and cup. Forged bar magnet. Fabric covered wire band headband. Cord, tinsel, moisture-proof, braided of mercerized cotton, 5 ft. long.

- No. 42—Double, 2M ohms ..... \$9.50  
 No. 43—Double, 600 ohms impedance ..... 9.50  
 No. 44—Single, 1M ohms ..... 5.50  
 No. 45—Single, 300 ohms impedance ..... 5.50

### "STOP-IT" COMMERCIAL TRIMMER

Permits user to turn off audio signal of TV or radio set without getting up from chair, giving listener freedom to choke off unwanted commercials. Other uses that suggest themselves are to suppress loudspeaker when phone rings, etc.



- No. 639—"STOP-IT" (illustrated at left) consists of housing containing switch to which is attached 15 ft. cord ready to install in accordance with instructions with each unit ..... \$3.40

### HEADSET KITS for TV and RADIO

Kits described provide simple means of attaching headset or extension speaker to TV or radio sets. Consists of one of several types of headsets and a small outlet box with attached 15 ft. cord. Box has remote on-off switch for loudspeaker and volume control for headset. Two jacks provided for multiple listening.



- No. 631—Outlet Box only ..... \$ 7.15  
 No. 632—Kit—Outlet Box plus one double Acme headset and plug ..... 12.15  
 No. 632-1—Kit—Outlet Box plus one single Acme earphone and plug ..... 10.35  
 No. 633—Kit—Outlet Box plus one double Dependable headset and plug ..... 12.75  
 No. 634—Kit—Outlet Box plus one double Featherweight headset and plug ..... 18.95  
 No. 635—Kit—Outlet Box plus one single Commercial earphone and plug. Recommended for hard of hearing ..... 15.10  
 No. 637—Kit—Outlet Box plus one Pillow-Phone and plug ..... 16.90

See General Catalog for added information on "STOP-IT" and Headset Attachment Kits.

# BRUSH ELECTRONICS

## Brush Headphones...

*for Hi-Fi and Binaural Listening*

Brush crystal phones possess wider range response with more uniform output. They furnish smooth, airtight fit for excellent bass response. The Bimorph\* crystal drive element is of such high impedance that line or circuit characteristics are not affected when monitored by Brush phones. Light-weight, rugged, shock-proof construction is standard. All headphone models are available with special cords for binaural listening.



### HIGH FIDELITY

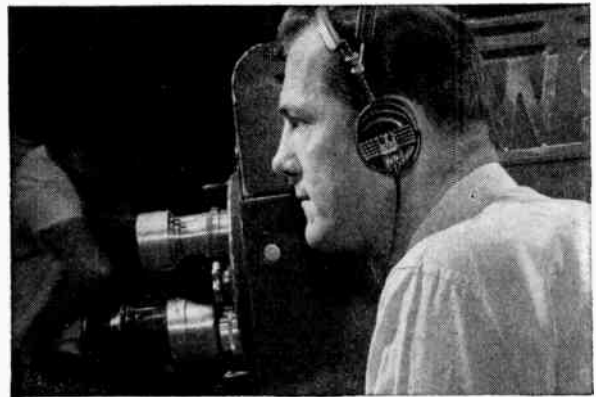
Designed for use in exacting applications where smooth, exceptionally flat frequency response is of paramount importance. Impedance of 50,000 ohms at 1000 cps; no transformer required. Line or circuit characteristics not affected when monitored by these phones. High sensitivity... ideal for multiple installation. Low distortion... smooth, comfortable, airtight fit. Available in single, double, and lorgnette models.

**BA-206 . . . . . Double . . . . . \$33.00 list**  
**Net Wt. 8 oz. . . . . Shipping Wt. 2 lbs.**

### BRUSH BINAURAL HEADPHONES

All Brush headphones are available with special cords for binaural applications. These feature the same high quality performance provided by all Brush headphones.

- 1. **BA-206B . . . . . \$34.80**
- 2. **BA-205B . . . . . 33.30**
- 3. **BA-200B . . . . . 22.30**



### Extended Range

For use where extended frequency response is of paramount importance. (100 to 10,000 cps.) Especially suited to monitoring, sound measurement, audiometry, and similar applications. Impedance over 75,000 ohms at any frequency within audio range. Headset complete with 5' cord and headband.  
**BA-205 . . . . . \$31.50 list**  
**Net Wt. 6 oz. . . . . Shipping Wt. 2 lbs.**



### General Purpose

For laboratory, studio and skilled amateur home use. Wide range response (100 to 8,000 cps.) High impedance; high sensitivity, ideal for multiple installations. Headset complete with 5' cord and adjustable headband.

**BA-200 . . . . . \$20.50 list**  
**Net Wt. 6 oz. . . . . Shipping Wt. 2 lbs.**



### Single Phone

Particularly adapted to individual or group hearing aid and radio applications. Light-weight, good ear seal, and comfortable to wear. Spring steel headband with soft rubber cushion to eliminate slipping. Single phone complete with 5' cord and headband.

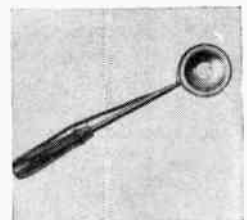
**BA-201 . . . . . \$12.75 list**  
**Net Wt. 3 oz. . . . . Shipping Wt. 1 lb.**



### Lorgnette Phone

Designed for use in group hearing aid sound systems installed in churches, concert halls, theatres and auditoriums. Telescope extension from 12" to 17". Attractively finished in satin black. Light-weight, easy to handle, and complete with 5' cord and lorgnette handle.

**BA-202 . . . . . \$16.00 list**  
**Net Wt. 5 oz. . . . . Shipping Wt. 1 lb.**



PRICES SUBJECT TO CHANGE WITHOUT NOTICE • SOLD BY QUALITY-CONSCIOUS DEALERS EVERYWHERE

## BRUSH ELECTRONICS

Cleveland 14, Ohio



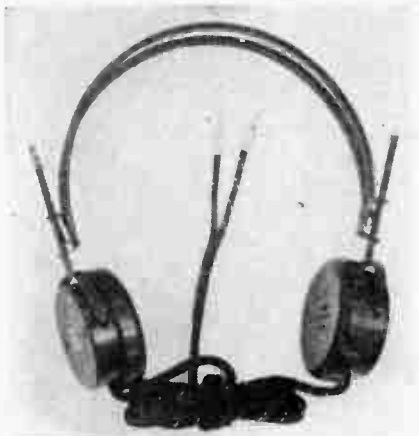
## COMPANY

DIVISION OF





# HEADPHONES By C. F. CANNON



**THE "CHIEF"  
Cannon-Ball Bakelite Headset**

A high quality headset of durable molded black plastic. Attractive in appearance, it is a sensitive and practical phone for every headset use. Inside terminals. Diameter of diaphragm is  $2\frac{1}{8}$ ". Double coils, two in each receiver. Alnico permanent magnets. Supplied with vinyl plastic covered headband with permanent adjustment and no removable parts. Cotton covered cord,  $4\frac{1}{2}$  ft. long.

CC-2—2000 ohms D.C.	.....	List \$4.00
CC-3—3000 ohms D.C.	.....	List 4.25
CC-5—5000 ohms D.C.	.....	List 5.75
CC-11—11 ohms D.C.	.....	List 4.00

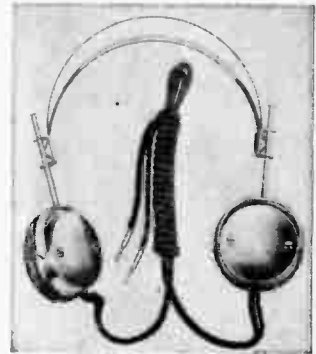


**CANNON-BALL  
ALNICO MAGNETIC No. 25**

A New Headset of Unusual Quality, Efficiency and Durability, powered by Alnico V magnets.

The headband is covered by attractive black extruded vinylite and provides utmost wearing comfort. Limits turn of phone to prevent twisting of cord. Cap and case of molded plastic. Large size diaphragm  $2\frac{1}{8}$ ". Equipped with sanitary moisture-resistant plastic cord with riveted catch piece.

AM-25-2	.....	List \$6.50
AM-25-3	.....	List 7.00
AM-25-5	.....	List 8.50



**THE "MASTER"  
Cannon-Ball Headset**

Used extensively in hospitals and other institutions as well as for general purposes, and is especially recommended for institutions. Inside terminals Aluminum cases with black bakelite caps. Spring steel adjustable headband with no removable parts. Diaphragm  $2\frac{1}{8}$ " diameter. Double coils. Chrome steel magnets.  $4\frac{1}{2}$  ft. cotton-covered cord.

MC-2—2000 ohms D.C.	.....	List \$4.15
MC-3—3000 ohms D.C.	.....	List 4.50
MC-5—5000 ohms D.C.	.....	List 5.75

**CANNON-BALL "EMPIRE"  
Lightweight Headset**

A low-priced light-weight headset with large magnet and double coils. Reproduces with clarity and good volume. Diameter of diaphragm is  $1\frac{1}{8}$ ". Polished aluminum cases with bakelite caps. Steel adjustable headband,  $4\frac{1}{2}$  ft. cord. Inside terminal connections.

EC-2—2000 ohms D.C.	.....	List \$3.65
EC-3—3000 ohms D.C.	.....	List 3.90

**THE "DIXIE"  
Cannon-Ball Headset**

The "Dixie" is of the same general construction as the "Master" headset except that the terminals are on the outside. Bakelite case Alnico magnets.

CD-2—2000 ohms D.C.	.....	List \$3.75
CD-3—3000 ohms D.C.	.....	List 4.00



**BRANDES "SUPERIOR"  
Matched Tone Headset**

A rugged headset, millions of which are in use all over the world. Large size diaphragms of  $2\frac{3}{8}$ " diameter assure efficient performance. Outside terminals, with polished aluminum cases and bakelite caps. Double coils, two in each receiver. Chrome steel magnets. Steel headband with permanent adjustment.  $4\frac{1}{2}$  ft. cotton covered cord.

BS-2—2000 ohms D.C.	.....	List \$4.15
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**BRANDES "ADMIRAL"  
Matched Tone Headset**

The Brandes "Admiral" is of the same general construction as the Brandes Superior, but has terminals on the inside.

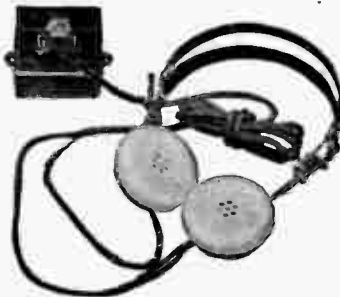
BA-2—2000 ohms D.C.	.....	List \$4.15
BA-3—3000 ohms D.C.	.....	List 4.65
BA-5—5000 ohms D.C.	.....	List 6.00

Phones can be supplied with any resistance required or with variations to meet special requirements. Sanitary plastic covered cords available for institutional use. Write for special quotation.

**ALNICO MAGNETIC No. 15**

A new, small size, extra sensitive double headset, light in weight. Diameter of diaphragm  $1\frac{3}{8}$ ". Molded cap and case. Steel adjustable headband,  $4\frac{1}{2}$  ft. cord.

AM-15-2	.....	List \$3.50
AM-15-3	.....	List 3.75

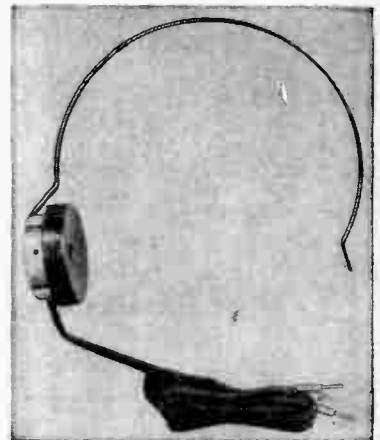


**CANNON-BALL HEARING AID  
FOR RADIO OR TELEVISION**

Provides private listening without disturbing others. Excellent for persons hard of hearing. Can be attached to any radio or television set and permits listening to phones alone, speaker alone, or both together.

FOR RADIO	
With single phone	.....List \$5.75
With double phones	.....List 8.00

FOR TELEVISION	
Kit complete with 15 foot cord, phone volume control and two sets of phones	.....List \$16.50
With one headset	.....List 12.50



**CANNON-BALL "ALNICO"  
Single Headphone**

Equal in clarity and volume to most double headsets, efficient and attractive. Permits listening while being addressed by others. Concealed terminals. Diaphragm  $1\frac{3}{8}$ ". Bakelite case and caps. Alnico magnet, double coils,  $4\frac{1}{2}$  ft. cord. Spring steel headband permanently attached.

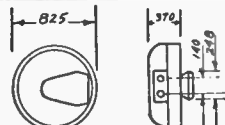
AM-15-1—1000 ohms D.C.	.....	List \$2.00
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# RYE SOUND ear sets

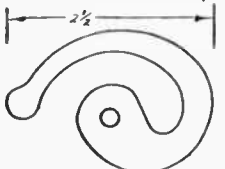
CORP., Rye, N. Y.

for transistor radios, television sets,  
dictating machines, aircraft and other electronic uses.

High quality moving iron type earphone available in the following impedances:  
15 - 50 - 90 - 120 - 150 - 1000 - 2000 - 8000



Soft polyethylene ear clip for holding earphone firmly in place. Adaptable for left or right ear.



Colorful carton serves as a counter display and contains 6 earsets.

Each earset is packed in a plastic box, labeled by code and type radio; each box contains one superquality MAGNETIC receiver with plastic earloop for use on either ear, and one cord and plug.

## FOR SET DISTRIBUTORS

## RADIO and TV EARSETS

## FOR PARTS DISTRIBUTORS

CODE #	TYPE	LIST
R-30.....	Zenith 500 .....	\$6.95
R-31.....	Regency .....	6.95
R-32.....	RCA .....	6.95
R-33.....	GE (Plastic Case) .....	6.95
R-34.....	Motorola .....	6.95
R-35.....	Admiral .....	6.95
R-36.....	Magnavox .....	6.95
R-37.....	Philco .....	6.95
R-38.....	Bulova .....	6.95
R-39.....	Roland .....	6.95
R-40.....	Traveler .....	6.95
R-41.....	Westinghouse .....	6.95
R-42.....	Emerson .....	6.95
R-43.....	GE (Leather Case) .....	6.95
R-44.....	DeWald .....	6.95
R-45.....	Sonora .....	6.95
R-46.....	Revere 400 .....	7.50
R-47.....	Arvin .....	6.95
R-48.....	Sylvania .....	6.95
R-49.....	.....	.....
R-50.....	Zenith 800 .....	6.95

CODE #	TYPE	LIST
R-80.....	Zenith 500 & Philco .....	\$6.95
R-81.....	Regency, Admiral, Roland, Zenith 800, DeWald, Traveler & Hoffman .....	6.95
R-82.....	RCA & Arvin .....	6.95
R-83.....	Magnavox, Sonora, Bulova & Sparton .....	6.95
R-84 (R48).....	Sylvania .....	6.95
R-85 (R34).....	Motorola .....	6.95
R-86 (R33).....	GE (Plastic Case) .....	6.95
R-87.....	GE (leather case) & Emerson .....	6.95
R-88 (R41).....	Westinghouse .....	6.95
R-89.....	Motorola TV .....	7.50
R-90.....	Revere 400 & Emerson TV .....	7.50
R-91.....	Zenith TV .....	7.50

R-200 Universal TV Earset, 20' Cord with Alligator Clips, List \$7.95

## EARSETS FOR DICTATING MACHINES, AIRCRAFT, HAM RADIO AND OTHER ELECTRONIC USES

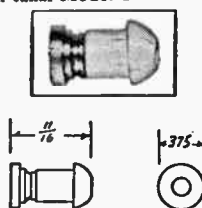
CODE #	OHMAGE	PLUG	CORD LENGTH	LIST
R-100	120	standard phone plug	5-6'	\$7.50
R-101	1000	standard phone plug	5-6'	7.50
R-102	2000	standard phone plug	5-6'	7.50
R-104	50	standard phone plug	5-6'	7.50
R-105	15	standard phone plug	5-6'	7.50
R-108	8000	standard phone plug	5-6'	7.95
R-109	90	standard phone plug	5-6'	7.50
R-120 series (R-128)	(120, 1000, 2000, 50, 15, 90) 8000	right angle 9/16" x 9/64"	3'	6.95
R-130 series (R-138)	(120, 1000, 2000, 50, 15, 90) 8000	right angle 5/8" x 9/64"	3'	7.50
R-140 series (R-148)	(120, 1000, 2000, 50, 15, 90) 8000	right angle 3/4" x 9/64"	3'	6.95
R-150 series (R-158)	(120, 1000, 2000, 50, 15, 90) 8000	right angle 13/64" x 9/64"	3'	7.50
R-160 series (R-168)	(120, 1000, 2000, 50, 15, 90) 8000	right angle 27/32" x 9/64"	3'	6.95
R-170 series (R-178)	(120, 1000, 2000, 50, 15, 90) 8000	open end cord	4'	6.50
R-180 series (R-188)	(120, 1000, 2000, 50, 15, 90) 8000	phone tips	5'	6.95
				7.50
				7.95

### EXTRA LENGTH CORDS

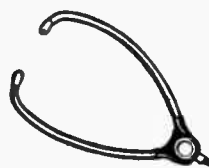
are available in lots of 12 of a length for any of the above as well as for our R-30, R-40, R-50, R-80 & R-90 series earsets as follows:

Length of Cord	Additional Amount Per Cord to be added to List Price
3'	—
6'	\$.50
9'	1.00
12'	1.50
15'	2.00
24'	3.00

EARTIP, for use instead of earloop, fits into ear and directs entire output into ear-canal Model T-11 List \$1.00



STETHOSCOPE-TYPE attachment, for use instead of earloop, to direct output into both ear-canals. Model S-57 List \$6.95



# MURDOCK HEADPHONES



**P-23 Aviation Headphone**  
C.A.A.T.C. 1200

**Specifications:**

*Receivers:* "Solid-Built" type. Best quality Alnico magnets. Moulded bakelite coil forms impregnated to resist moisture. Moulded bakelite case and cap. Standard impedance 600 ohms. Lightweight sponge rubber cushions.

*Headband:* All metal parts stainless steel and passivated to prevent corrosion. Headband and earphones are easily adjusted by cleverly designed guide and plate.

*Cord:* Phones connected within band, making a single cord to instrument panel. Standard set has 5 foot plastic-covered tinsel cord with phone plug attached.

**LIST \$12.00**



**No. 111 Institutional Headphone**

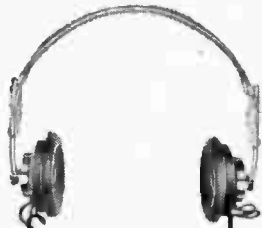
**Specifications:**

*Receivers:* "Solid-Built" one-eleven type. Magnets are fine quality chrome steel. Moulded black bakelite case and cap. Standard set has 10,000 ohms impedance. Standard concealed terminals.

*Headband:* Stainless steel bands covered with plastic. Guides and yokes are solid brass, nickel plated.

*Cord:* Six foot Y type plastic-covered tinsel cord with pin tips.

**LIST \$7.50**



**No. 131 "CW" Designed for Code Communication**

**Specifications:**

*Receivers:* Same "Solid-Built" construction as P-23. Standard impedance 10,000 ohms. Equipped with wafer-thin rubber cushions.

*Headband:* Double stainless steel bands with plastic covering. Stainless steel guides and yokes permit adjustment on vertical and horizontal planes.

*Cord:* Six foot Y type plastic-covered tinsel cord with phone plug attached.

**LIST \$15.00**



**Magnetic Underpillow Speaker**

**Specifications:**

*Speaker:* Rugged, durable bakelite case in walnut or gray finish. 3½" diameter. Alnico V magnet.

*Cord:* Six foot plastic extension cord and phone plug. Mounting jack supplied with switch in jack. Available in impedances from 5 ohms to 10,000 ohms or higher.

**LIST \$10.95**



**No. 112 Lightweight Headphone**

*Lightness and scientific fit of these headphones make them comfortable to wear for a considerable length of time.*

**Specifications:**

*Receivers:* "Solid-Built" one-twelve type with Alnico magnet. Standard set has 10,000 ohms impedance. Standard concealed terminals.

*Headband:* Easy operating controls permit adjustment of the earphones. Bands are ¼" stainless steel.

*Cord:* Six foot Y type plastic-covered tinsel cord with pin tips.

**NO. 112 LIST \$5.50**  
**NO. 116 Single LIST \$3.50**



**No. 115 Laboratory Headphone**

**Specifications:**

*Receiver:* "Solid-Built" one-eleven type.

*Headband:* Special one-fifteen. Yoke is spring brass, nickel plated. Covered with fine quality plastic.

*Cord:* Five foot single type, plastic-covered tinsel with pin tip.

**LIST \$5.50**

HEADSET impedances are available up to 17,000 ohms. Cotton-covered or other special cords and special terminals are available to meet individual requirements.

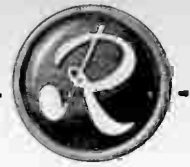
Write today for complete information and FREE CATALOG.

**WM. J. MURDOCK CO.**



**CHELSEA, MASS.**

# REK-O-KUT COMPANY



Manufacturers of Fine Recording and Playback Equipment, and Specialized Sound Systems.

## ALL REK-O-KUT RECORDING TURNTABLES

are made of cast aluminum, lathe-turned for accuracy and driven with shock-mounted hysteresis synchronous motors equipped with lamitex pulleys.

### MODEL R-16H DELUXE 2 SPEED (33-78) 16" RECORDING TURNTABLE With Accessory Idler For 45 rpm Speed

The outstanding value in the recording field. Ruggedly constructed and precisely machined, the Model R-16H turntable will maintain the constant, wow-free speed and smoothness demanded in broadcast work. The Model M-5S Overhead Cutting Mechanism mounts to the R-16H turntable in a matter of moments.

**CHASSIS:** Radial-ribbed aluminum casting. Designed for flush mounting in rectangular cut-out.

**IDLERS:** Neoprene compound for maximum traction and silent operation.

**OILING:** Shafts and bearings are self-oiling. Require infrequent lubrication.

**SPEED CHANGE:** Mastermatic self-locking instantaneous speed shift.

**FINISH:** Gray wrinkle.

**DIMENSIONS:** 18 3/4" x 20". Fits existing consoles and cabinets with slight modification.

**TURNTABLE:** Solid cast aluminum-Lathe turned.

**SHIPPING WT:** 34 pounds.

**NOTE:** Model R-16H Recording Turntable mounts directly on Model C-7B Console without use of either screw or bolts. (E-8)



NET PRICE:  
**\$250.00\***

### MODEL TR-43H 2 SPEED (33-78) 12" RECORDING TURNTABLE With Accessory Idler for 45 rpm Speed

Design and construction of the Model TR-43H is similar to the Rek-O-Kut 16" professional recording tables. The Model M-12S Overhead Recording mechanism is mounted to the chassis in a few moments.

**CHASSIS:** Cast ribbed aluminum drilled to accommodate the M-12S Lathe.

**IDLERS:** Neoprene compound for maximum traction.

**OILING:** Shafts and bearings are self-oiling. Require infrequent lubrication.

**SPEEDS:** Instantaneous speed shift engages either 78 or 33-1/3 rpm idlers.

**FINISH:** Gray wrinkle.

**DIMENSIONS:** Front to back 16 1/2"; width 16"; height above motor board 1 3/4"; depth below motor board 5".

**SHIPPING WEIGHT:** 20 lbs.



NET PRICE:  
**\$149.95\***

### LEADSCREWS FOR OVERHEAD LATHES

Lines/Inch	Model	Net Price
120	MS-120	\$39.95
150	MS-150	39.95
210	MS-210	49.95
216		
240	MS-240	49.95
270	MS-270	49.95

Lines/Inch	Model	Net Price
120	M12S-120	\$35.95
150	M12S-150	35.95
210	M12S-210	44.95
216		
240	M12S-240	44.95
270	M12S-270	44.95

Lines/Inch	Model	Net Price
120	M12-120	\$19.95
150		
210		
216	M12-216	29.95
240	M12-240	29.95
270		

Leadscrews of 310 lines/inch or more = microgrooves.

## MASTER-PRO OVERHEAD RECORDING LATHES

### MODEL M-5S 16" OVERHEAD LATHE

A precise tool for professional work. Working surfaces and moving parts are hardened, ground and polished to a micro finish. The Master-Pro is a universal machine that can be readily attached to all 12" and 16" recording turntables as well as the Rek-O-Kut model R-16H recording table.

**HANDCRANK:** For run-in and run-off spiral grooves.

**DUAL CLUTCH SPIRALING CONTROL:** Eliminates danger of disc spollage while crank handle is in motion.

**ANGLE OF CUT:** Controlled by simple adjustment.

**DIMENSIONS:** Length 16"; width 6 1/2"; height 9".

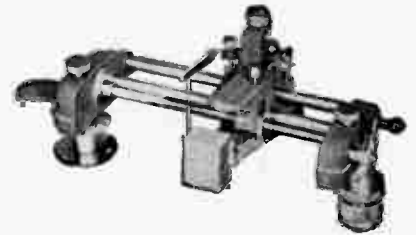
**WEIGHT:** 16 lbs

Supplied with 120-line leadscrew.

MODEL M-5S less cutter **NET PRICE \$200.00\***

MODEL M-5S with R-56 cutter (50-10,000 cycles) **\$260.00\***

MODEL R-56 Cutter Only **\$60.00**



### MODEL M-12S 12" OVERHEAD LATHE

This professional lathe is designed to very exacting specifications and features the following:

- Interchangeable Leadscrews
- Hand-crank for run-in and run-off Spiral Grooves.
- Timing Scale
- Accommodate Standard Cutting Heads.
- Depth of Cut Adjustment.

**LIFT-O-MATIC:** Automatically lifts cutter from disc as it approaches end of lead-screw.

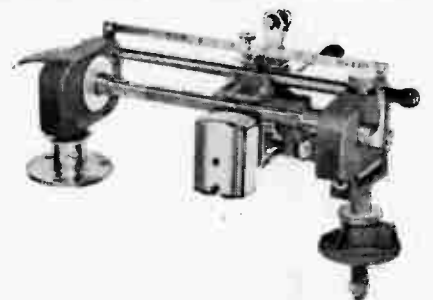
Designed for instantaneous replacement of the M-12.

Supplied with 120-line leadscrew

MODEL M-12S less cutter **NET PRICE \$150.00\***

MODEL M-12S with R-56 cutter (50-10,000 cycles) **\$210.00\***

MODEL R-56 Cutter Only **\$60.00**



## ALL REK-O-KUT OVERHEAD LATHES

have micrometer depth-of-cut controls and tilt-level adjustments. Leadscrews are stainless steel and lapped to matched feed-nuts. Drive gears are enclosed and protected.

\* All prices slightly higher West of Rockies.

The MASTER — 22nd Edition

Net

Copyright by U. C. P., Inc.



# REK-O-KUT COMPANY

Manufacturers of Fine Recording and Playback Equipment, and Specialized Sound Systems.

## DISC RECORDING EQUIPMENT Imperial



The "Imperial," America's finest professional 13 1/4" disc recorder, is built to meet the respective needs of the Professional Recordist, Musician, Educator and Recording Enthusiast who wants to make permanent, professional recordings. The "Imperial" embodies the most advanced design, engineering and production techniques in the disc recording industry. The many exclusive operating features incorporated in the "Imperial" simplify and improve the art of disc recording.

### PROFESSIONAL DISC RECORDER AND PLAYBACK REPRODUCER

**FREQUENCY RESPONSE:** ± 1db from 30 to 20,000 cycles at normal setting of equalizer controls.  
**POWER OUTPUT:** 13.5 watts at less than 3% total harmonic distortion into resistive load.  
**TREBLE EQUALIZER:** Boost of 14 db and attenuation of 15 db above 8000 cycles, continuously variable.  
**BASS EQUALIZER:** Boost of 14 db and attenuation of 14 db below 50 cycles, continuously variable.  
**INPUT CHANNELS:** Two for high impedance microphone, one for phono (magnetic cartridge) and one high level for radio and tape.  
**GAIN:** Microphones — 120 db; Phono — 90 db; Radio — 80 db.  
**OUTPUT IMPEDANCES:** 4, 8, 15 and 500 ohms for cutter and speaker.  
**OUTPUT SELECTOR:** Three positions providing — recording, playback and public address. Microphones are muted in play-back position.  
**MONITORING:** A switch is provided giving three positions of monitor level—off, medium, loud. Speaker or headphones may be used. Meter on front panel indicates correct recording level.  
**HUM AND NOISE:** 64 db below 13.5 watts with all controls turned for maximum hum and noise output.  
**CONTROLS:** Microphone "1", microphone "2", radio-phonograph fader, output selector, treble equalizer, bass equalizer, monitor.  
**TUBE COMPLEMENT:** (2) 6SJ7; (2) 6SL7; (1) 6SC7; (2) 6VC; (1) 6Y5.  
**POWER REQUIREMENTS:** 105-125 volts, 50-60 cycles.  
**POWER CONSUMED:** 100 watts.  
**SPEAKER:** 10" PM type. Custom-built rigid REK-O-KUT specifications for extra power and wide range. Mounted into detachable cover of case.  
**CASE:** Sturdy plywood cover with rich gray leatherette. Built to withstand rough usage. **DIMENSIONS:** 25 x 22 x 12 inches.  
**WEIGHT:** 77 lbs.  
Equipped with 120-line Leadscrew

### SPECIFICATIONS:

**MOTOR:** Hysteresis Synchronous motor fitted with lamitex drive pulley. Suspended in shock mounts to prevent transmission of motor vibration.  
**RECORDING AREA:** Records from 6" up to 13 1/4" masters.  
**SPEEDS:** Simple, finger-tip speed control. Records at both 33-1/3 & 78 R.P.M. Includes idler and Adapter for 45 R.P.M. recordings.  
**OVERHEAD RECORDING LATHE: Model M-128 Lathe.**  
• **HAND CRANK** for run-in and run-off spiral grooves.  
• **PROVISION FOR INTERCHANGING LEADSCREWS** for Standard and Microgroove.  
• **LIFTOMATIC SAFETY CAM** prevents double cutting and stylus damage. Automatically raises cutter as center of disc is approached.  
• **CALIBRATED SCALE FOR TIMING.**  
**RECORDING HEAD:** Model R-56 — response from 50-10,000 cycles.  
**PLAYBACK ARM:** Model 160 for records up to 16" — with dual-sapphire magnetic cartridge.  
**AMPLIFIER:** Model R-8A Universal Recording Amplifier.

**IMPERIAL  
NET PRICE \$599.95\***

Model R-8A Available Separately ..... **\$159.95\***  
Model C-85 Portable Amplifier Case ..... **22.95\***

LEADSCREWS—for Imperial—See Model M-128, page E-212

### RECORD PLAYERS

These record players are designed to operate into any amplifier or for dubbing records onto tape, wire or disc. May be used with radio, TV receiver, sound projector, recorder, etc. Models with magnetic

cartridges require preamplifiers. Mounted in sturdy plywood, leatherette-covered case with detachable covers.



P-34C with 2-speed L-34 (33-45) Turntable and A-120 Arm with dual sapphire needles and ceramic cartridge. NET PRICE. **\$124.95\***

P-37C with 2-speed L-37 (33-78) Turntable and A-120 Arm with dual sapphire needles and ceramic cartridge. NET PRICE. **\$124.95\***

P-34M with 2-speed L-34 (33-45) Turntable and A-120 Arm with dual sapphire needles and magnetic cartridge. NET PRICE. **\$129.95\***

P-37M with 2-speed L-37 (33-78) Turntable and A-120 Arm with dual sapphire needles and magnetic cartridge. NET PRICE. **\$129.95\***

P-VC with Variable Speed CVS-12 Turntable and A-120 Arm with dual needles and ceramic cartridge. NET PRICE..... **\$139.95\***

P-VM with Variable Speed CVS-12 Turntable and A-120 Arm with dual sapphire needles and magnetic cartridge. NET PRICE. **\$144.95\***

NOTE: All Rek-O-Kut Players and Turntables are supplied for 110-120 volts, 60-cycle AC operation. Available for other voltages and frequencies at additional cost.



### VARIABLE-SPEED TURNTABLE CVS-12

The CVS-12 permits continuous speed variation from 25 rpm to 100 rpm without resetting or stopping the record. It can therefore be used with 33-1/3, 45 and 78 rpm records, and permits them to be slowed down to as little as 1/3 normal tempo or speeded up to as much as 300%. It is standard equipment with the P-VC and P-VM players. NET PRICE. **\$89.95\***

NOTE: This turntable operates at either 50 or 60 cycles. At 50 cycles speed can be varied from 20 rpm to 85 rpm.  
Shipping Weight: 15 lbs.

\* All prices slightly higher West of Rockies.

# REK-O-KUT COMPANY



Manufacturers of Fine Recording and Playback Equipment, and Specialized Sound Systems.



## 16" ... ..PRECISION TURNTABLE

### The MODEL B-16H 3 Speeds

Offers the broadcaster and recording studio the finest professional performance at the lowest cost. The turntable itself is precision lathe-turned, non-magnetic, cast aluminum — dynamically balanced — and with an extra-heavy rim for effective flywheel action. Turntable diameter is standardized at 15¾ inches to allow a ½-inch overhang for cueing. It is internally rim-driven by means of neoprene compound idlers. All inter-moving parts are case-hardened and ground to a micro finish. Rotates on a single-ball pivot which takes the entire thrust of the turntable shaft.

Extremely low distortion has been achieved through effective acoustical damping — through special attention to motor bearings, motor suspension, idler design, concentricity of pulleys and all the other elements essential to smoothness, quiet and overall quality of performance. Rumble, wow and flutter and speed regulation are well within NARTB standards. Requiring no more than routine maintenance, all parts are readily and easily accessible.

#### SPECIFICATIONS:

**SPEEDS:** 33 ⅓, 45 and 78 rpm.

**SPEED SELECTION:** Mastermatic, self-locking, instantaneous shift. Engages either idler without stopping turntable or removing disc.

**STARTING:** From standing start to operating speed —  
at 78 rpm. .... ¼ turn  
at 33 ⅓ and 45 rpm ..... ¼ turn

**MOTOR:** Self-lubricating, custom-built hysteresis synchronous.

**NOISE LEVEL:** 50 db below average recording level.

**45 RPM HUB:** Built-in — retractable — requires no external adapter.

**STROBE DISC:** Permanently affixed — permits instantaneous checking of all speeds.

**CHASSIS DECK:** Radial-ribbed aluminum casting. Designed for flush mounting in rectangular cut-out. **PRE-DRILLED:** For ready mounting of Rek-O-Kut Turntable Arm Model 160.

**DIMENSIONS:** 18 ¾" x 20". Fits existing consoles and cabinets with slight modification.

**CLEARANCE REQUIRED:** Above Deck — 1 ½". Below deck — 6 ½".

**FINISH:** .....Wrinkle gray.

**SHIPPING WEIGHT:** .....34 pounds.

NET PRICE **\$250.00\***

**NOTE:** All Rek-O-Kut Turntables are supplied for 110-120 volt, 60-cycle AO operation. Available in other voltages and frequencies at additional cost.

#### CONSOLE CABINET

for B-16H & other REK-O-KUT Turntables



Designed to accommodate the B-16H Turntable without the use of either screws or bolts. Floats on felt. Has 2 storage compartments and piano-hinged doors with flush ring-latches. Includes built-in electrical outlet and adjustable leveling domes. Metallic gray finish. Dimensions: 33" high x 22" wide x 20 ½" deep.

MODEL C-7B NET PRICE... **\$115.00\***

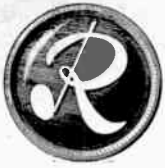
Shipping weight: 65 lbs.

Identical to C-7B but with the addition of a ¼" motor board to accommodate various REK-O-KUT turntables.

MODEL C-7BT NET PRICE... **\$124.95\***

Shipping weight: 70 lbs.

\*All prices slightly higher West of Rockies.



# REK-O-KUT COMPANY

Manufacturers of Fine Recording and Playback Equipment, and Specialized Sound Systems.

## Rondine<sup>\*</sup> SERIES

### 12 and 16-inch TURNTABLE ARMS



Both arms are identical in design and construction except for length and offset angle. Non-ferrous metal alloys are used throughout.

#### SPECIFICATIONS and FEATURES:

- Tubular Arm Body
- Interchangeable cartridge shell secured to arm body by bayonet lock
- Silver-plated, spring-loaded pin terminals establish positive contact between shell and arm.
- Shells accommodate all standard cartridges.
- Arm resonance well below audible band.
- Adjustable for turntable height.
- Dual ball bearing races for horizontal movement.
- Vertical movement pivots in 1mm. chrome-steel ball bearings.
- Stylus pressure adjusted by means of self-locking, threaded counterweight.
- Dual-function arm rest clamps and secures arm when not in use.

#### NET PRICES

MODEL 120 for records up to 12" **\$26.95\***

MODEL 160 for records up to 16" **29.95\***

Extra Cartridge Shell, Model PA-20.....\$4.95 ea.

Note: prices less cartridge

### RONDINE TURNTABLE BASES



#### FOR 12" & 16" ARMS

Constructed of solid, seasoned Walnut or Korina wood—rabbet-mitered and hand rubbed. Pre-cut ledge nests turntable deck. Rubber ball-feet provide acoustical isolation.

For B-12 and B-12H (16 1/2"x17"x6") with A-120 Arm.

Model RW, American Walnut..... **\$26.95\***

Model RK, Blonde Korina..... **\$28.95\***

For L-34 & L-37 (16 1/2"x17"x4 1/2") with A-120 Arm.

Model LW, American Walnut..... **\$26.95\***

Model LK, Blonde Korina..... **\$28.95\***

For B-12 and B-12H (21"x17 1/2"x6") with A-160 Arm.

Model RW-16, Walnut..... **\$32.95\***

Model RK-16, Korina..... **\$35.95\***

SHIPPING WEIGHTS: Models L & R Bases...10 lbs.  
16" Bases .....13 lbs.

### 12" PRECISION TURNTABLES

#### RONDINE Deluxe

Model B-12H 3 Speeds

The aristocrat of the RONDINE Series. As a record reproducing device, it represents the closest approach to perfection ever attained. It has less rumble, wow and flutter than any 12-inch turntable on the market today.

#### SPECIFICATIONS:

NOISE LEVEL: Better than 55 db below average recording level.

MOTOR: Self-lubricating, custom-built HYSTERESIS SYNCHRONOUS.

SPEEDS: 33-1/3, 45 and 78 rpm.

SPEED SELECTION: Single selector knob. Switching to speed position starts motor. Setting to 'off' position adjacent to speed shuts off motor and disengages idler.

STROBE DISC: Permanently affixed — permits instantaneous checking of all speeds. 45 RPM HUB: Built-in — retractable — requires no external adapter.

PILOT LIGHT: Jewelled neon light acts as 'on/off' indicator.

CHASSIS DECK: Cross-ribbed cast aluminum. Designed for flush-mounting in rectangular cut-out.



MINIMUM DIMENSIONS FOR CABINET INSTALLATION: Left to Right 17 3/4"; Front to Back 16"; Height above Deck 3"; Height below Deck 6 1/2".

TURNTABLE: Solid Cast Aluminum-Lathe Turned.

FINISH: .....Silvertone Aluminum

SHIPPING WEIGHT: .....19 lbs.

NET PRICE **\$129.95\***

#### RONDINE Model B-12

3 Speeds

A notable example of the merits of the new design that enables quality to be retained at moderate cost. The Rondine has all of the features of the Rondine deluxe. All specifications are the same with the following exceptions:

NOISE LEVEL: Better than 45 db below average recording level.

MOTOR: Induction — 4-pole — built to Rek-O-Kut specifications.

MINIMUM DIMENSIONS FOR CABINET INSTALLATION: Left to Right 17 3/4"; Front to Back 16"; Height above Deck 3"; Height below Deck 5 1/2".

TURNTABLE: Solid Cast Aluminum-Lathe Turned.

NET PRICE **\$84.95\***

#### RONDINE Jr.

Model L-34: 33 1/3 & 45 rpm

Model L-37: 33 1/3 & 78 rpm

Because of the different requirements among those who desired a 2-speed unit, two models were developed pairing 33-1/3 and 45 rpm in the Model L-34, and 33-1/3 and 78 rpm in the Model L-37.



#### SPECIFICATIONS:

NOISE LEVEL: 40 db below average recording level.

MOTOR: Induction — 4-pole — built to Rek-O-Kut specifications.

SPEEDS: Model L-34 — 33-1/3 and 45 rpm; Model L-37 — 33-1/3 and 78 rpm.

SPEED SELECTION: Slide shift with intermediate 'off.' Locks in either speed position. STROBE DISC: Permanently affixed — permits instantaneous checking of both speeds.

45 RPM HUB: Built-in — retractable — requires no external adapter on L-34.

MINIMUM DIMENSIONS FOR CABINET INSTALLATION: Left to Right 16 1/2"; Front to Back 16 1/4"; Height above Deck 3"; Height below Deck 5 1/4".

TURNTABLE: Solid Cast Aluminum Lathe Turned.

FINISH: .....Silvertone Aluminum

SHIPPING WEIGHT: .....15 pounds

NET PRICE **\$59.95\***

\*All prices slightly higher West of Rockies.

# PRESTO

## HIGH-FIDELITY TURNTABLES



### THE NEW PROMENADE

### 2-speed turntable

Now a two-speed turntable (33 1/3 and 45 rpm) that offers you superb performance at substantial savings. The heavy, well-balanced aluminum turntable, and the simple, but rugged drive system eliminate wow, flutter and rumble. Additional features include: interchangeable idler wheels, built-in strobe disc, built-in 45 rpm adapter, heavy-duty 4-pole motor, simple shift-lever speed selector, and a cushion-grip record mat.

Model T-2, high-fidelity turntable: **\$59.50**



### THE POPULAR PIROUETTES 3-speed, 12" & 16" turntables

Model T-18 is a fine three-speed high-fidelity turntable that offers you the same features as the Promenade, plus the 78 rpm speed. It is available with a 4-pole induction motor (Model T-18), or with a specially designed hysteresis synchronous motor (Model T-18H). The balanced turntable is cast of aluminum. The speed selector has five positions (45, Off, 33 1/3, Off, 78). The three idler wheels (each serves one speed) are interchangeable. They disengage in OFF positions, and are easily replaced.

Model T-18, high-fidelity turntable with 4-pole induction motor: **\$ 75.00**

Model T-18H, with hysteresis synchronous motor: **\$131.00**

Model T-68, the three-speed professional turntable that offers all of the important features of the Promenade and T-18, plus a 16" transcription turntable with a mat specially designed for cueing. Perfect for recording studios, broadcast stations, schools and other installations that require absolute accuracy and completely noiseless operation.

Model T-68, with 4-pole induction motor: **\$ 99.00**

Model T-68H, with special hysteresis synchronous motor: **\$170.00**

#### SPECIFICATIONS

SPEEDS:  
WOW AND FLUTTER:  
RUMBLE (below recording level):  
MOTOR:  
TURNTABLE DIAMETER:  
TURNTABLE WEIGHT:  
OVERALL SIZE:

#### T-2 PROMENADE

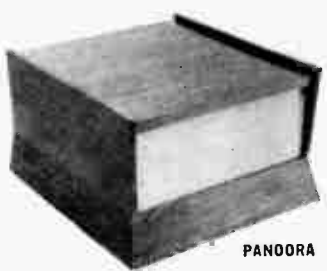
33 1/3, 45 rpm  
Less than 0.2%  
—47 db  
4-pole induction  
11 7/8"  
4 1/2 lbs.  
11 7/8" x 14 1/4" x 5 7/8"

#### T-18, T-18H PIROUETTE

33 1/3, 45, 78.26 rpm  
T-18: less than 0.2%  
T-18H: less than 0.15%  
T-18: —47 db  
T-18H: —55 db  
T-18: 4-pole induction  
T-18H: hysteresis synchronous  
11 7/8"  
4 1/2 lbs.  
11 7/8" x 14 1/4" x 5 7/8"

#### T-68, T-68H PIROUETTE

33 1/3, 45, 78.26 rpm  
T-68: less than 0.2%  
T-68H: less than 0.15%  
T-68: —48 db  
T-68H: —55 db  
T-68: 4-pole induction  
T-68H: hysteresis sync.  
15 3/4"  
6 1/4 lbs.  
11 7/8" x 16 1/4" x 5 7/8"



**PANDORA DELUXE TURNTABLE CABINET.** A beautiful cabinet styled in hand-worked walnut and textured cloth. Precut for Promenade or the 12" Pirouette. Provides adequate space for all modern tone arms. Four adjustable feet insure perfect leveling on all surfaces. Overall size: 22" deep, 18 1/2" wide, 12" high. The gracious, modern Pandora is yours for .....only **\$49.50**

**PEDESTAL TURNTABLE BASE.** This rugged base is specially designed, and precut for Presto high-fidelity turntables. It will accommodate any modern tone arm, and has four adjustable feet of leveling. Choose from two rich, hand-rubbed finishes, mahogany or Korina blonde. Overall size: 18 1/4" deep, 17" wide, 6" high (less turntable and tonearm) .....only **\$24.95**

**SEE YOUR PRESTO DISTRIBUTOR FOR DETAILS ON:**

- Disc Recorders • Tape Recorders • Long Playing Tape Recorders • Tape Duplicators  
Recording Discs and Needles • Recording Amplifiers and Accessories



# PRESTO

## RECORDING DISCS AND STYLI

### PRESTO RECORDING DISCS

	Type Number	Overall Thickness In Inches	Diameter in Inches	Net Price
<b>GREEN LABEL</b>				
Presto Green Label discs are, without question, the finest for instantaneous recording—discs to be played back without processing. The extremely clean lacquer and carefully selected flat aluminum base assure perfect cuts for standard or microgroove recording. The surface noise, even after many playings, is virtually inaudible and, what is most important, the consistently high quality is the recording engineer's guarantee of perfect results. Both sides of the Green Label are warranted flawless. Packed 25 per box—a spacer between each disc—with separate envelopes—no labels.	610-A	.040	10	\$1.55
	611-A	.050	11 $\frac{7}{8}$	2.55
	616-A	.050	16	4.60
<b>BROWN LABEL</b>				
Brown Label discs are identical to the perfect Green Label except that only one side is warranted to be flawless. They are offered to those who intend to cut on only one side of the disc. In other respects all of the superior qualities of the Green Label are present in the Brown Label disc. Packed 25 per box—a spacer between each disc—with separate envelopes—no labels.	810-B	.040	10	1.30
	811-B	.050	11 $\frac{7}{8}$	2.00
	816-B	.050	16	3.70
<b>WHITE LABEL</b>				
The White Label disc represents a quality disc at a saving. Both surfaces are warranted to be useable without danger of breaking a sapphire cutting stylus. The White Label is perfectly suited for reference recordings, playbacks, tests and rehearsals. Packed 25 per box—a spacer between each disc, with separate envelopes—no labels.	510-A	.040	10	1.30
	511-A	.050	11 $\frac{7}{8}$	2.00
	516-A	.050	16	3.70
<b>ORANGE LABEL</b>				
Orange Label Discs differ from other Presto types in that the aluminum base is of a lighter gauge. The fine lacquer, however, is the same as that used on all other Presto discs and is responsible for the very high quality of the Orange Label disc. It is designed specifically for educational institutions where good quality must be available at a reasonable cost. The fine surface of the Orange Label disc has made it popular also with recording studios as a "playback" where good quality at low cost is desired. Packed 50 per box in jackets of five discs each—in envelopes and with labels attached.	306-A	.035	6 $\frac{1}{2}$	.50
	308-A	.035	8	.75
	310-A	.035	10	1.05
	311-A	.040	11 $\frac{7}{8}$	1.55
<b>DOUBLE SIDED MASTERS</b>				
Double sided masters are truly the most perfect discs that can be produced for processing work. They are warranted to silver plate quickly and uniformly. Masters are packed with a spacer between each disc. Individual envelopes are not included. However, envelopes when required may be had on request. The 10, 11 $\frac{7}{8}$ and 16 inch discs are packed 25 discs to the box. The 17 $\frac{1}{4}$ inch disc is packed 20 to a box, because of its additional thickness. The 13 $\frac{3}{4}$ inch disc is packed 30 to a box.	620-A	.050	10	2.50
	621-A	.050	11 $\frac{7}{8}$	3.20
	623-A	.050	13 $\frac{1}{4}$	4.05
	626-A	.050	16	5.95
	627-A	.064	17 $\frac{1}{4}$	6.95
<b>SINGLE SIDED MASTERS</b>				
Single sided masters are identical to double sided masters except that only one side is warranted perfect. The primary side is flawless. Single sided discs represent a definite saving since only one side of a master can be processed. In all other respects the single and double sided discs are similar.	820-B	.050	10	1.95
	821-B	.050	11 $\frac{7}{8}$	2.50
	823-B	.050	13 $\frac{1}{4}$	2.95
	826-B	.050	16	4.70
	827-B	.064	17 $\frac{1}{4}$	5.10

### PRESTO RECORDING STYLI

	Number	Type	Net Price Each
<b>DURAL SHANK SAPPHIRE CUTTING NEEDLES</b>			
Sapphire cutting needles—dural shank—are for use where the very best is demanded. This needle cuts sharp, clean grooves which play back with the least possible surface noise. Long shank sapphires are for use with the Presto type 1-D cutting head. Short shank sapphires are for use with all other types of cutting heads. If needles for microgrooves are required, simply add the word "micro" after the regular type number. Each Presto needle is individually tested and consistently uniform results are assured. Sapphire life varies considerably but 8 to 10 hours may generally be expected. Needles are packed individually or in boxes of six individual units.	Short shank 603-A 603-M Long shank 604-A 604-M	Standard Micro Standard Micro	\$8.25 8.25 8.25 8.25 3.75
	Resharpenting		
<b>BRASS SHANK SAPPHIRE CUTTING NEEDLES</b>			
Brass shank cutting needles are generally similar to dural shank needles except that the high frequency response is not as good due to the increased weight of the shank. For this reason they are not supplied for microgroove. Both long and short brass shank needles are available. Needles are packed individually or in boxes of six individual units.	Short shank 320-A Long shank 321-A	Standard Standard	6.60 6.60 3.25
	Resharpenting		
<b>STELLITE NEEDLES</b>			
Stellite needles produce a clean, quiet cut but their life is limited to 2 or 3 hours. They are useful in schools where inexperienced students might break the tips from the shanks of the more expensive sapphire needles. Also packed individually or in boxes of six.	Short shank 330-A Long shank 331-A	Standard Standard	2.50 2.50 1.40
	Resharpenting		

PRESTO EXPORT: 25 Warren Street, New York 7, N. Y.

Cable: SIMONTRICE

PRESTO IN CANADA: Instantaneous Recording Service, 42 Lombard St., Toronto, Ontario

The  
**METZNER**

# Starlight

## HIGH FIDELITY TURNTABLE



### SPECIFICATIONS and MOUNTING DATA

**SPEEDS:** Continuously variable from 16 to 83 RPM with exact settings for 16 $\frac{2}{3}$ , 33 $\frac{1}{3}$ , 45 and 78.26 RPM.

**WOW AND FLUTTER:** Less than 0.2% RMD. Conforms to N.A.R.T.B standards.

**RUMBLE AND NOISE:** Better than 40db below N.A.R.T.B. Standard Reference Level of 7 cm/sec. at 500 cps.

**MOTOR AND DRIVE ASSEMBLY:** Hum shielded for use with ANY make magnetic cartridge. No dust or lubrication problems. Horizontally mounted 4-pole motor has laminations cast in lead and center drive system has no metal-to-metal contact — cannot transmit motor pulsations to the turntable.

**SPEED CONSTANCY:** No warm up time needed. Speed remains constant from cold start through continuous operation.

**STROBOSCOPE:** Built-in, illuminated and shows precise speed at 16 $\frac{2}{3}$ , 33 $\frac{1}{3}$ , 45 and 78.26 RPM while record is playing.

**TURNTABLE:** Aluminum, precision-cast in balance and carefully machined for stabilizing flywheel effect. Weight 3 lbs., 6 oz. Nominal diameter, 12 inches.

#### POWER REQUIREMENTS

Model 60, 110-120V, 60 cycles, 8 watts

Model 70, 110-120V, 50 cycles, 8 watts

Model 60-220, 220V, 60 cycles, 16 watts

Model 70-220, 220V, 50 cycles, 16 watts

**45 RPM CENTER HUB:** Built-in, automatically retracting. No external gadgets to lose!

**MOUNTING DATA:** Full mounting plate for easy custom installation. Dimensions—11 $\frac{3}{4}$ " x 13 $\frac{1}{4}$ "; 4" required below the mounting plate. Mounting board should be 15 $\frac{1}{2}$ " x 14 $\frac{1}{2}$ " with vertical clearance of 6" when using the Starlight Push-Button Transcription Arm. A cut-out mounting template is available at no charge from the Sales Department at the Factory.

SHIPPING WEIGHT: 15 lbs.

#### PRICES

Model 60, \$59.50

Model 60-220, \$64.50

Model 70, \$69.50

Model 70-220, \$74.50



### COMPLETE HIGH FIDELITY TRANSCRIPTION UNIT

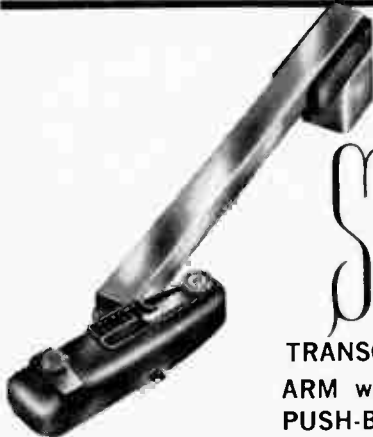
Consisting of model 60 turntable, specially designed base of 1" laminated hardwood and the model 07 push-button arm.

Model 672, with blonde finished base . . . \$97.00

Model 674, with ebony finished base . . . 97.00

Model 002, Base only, blonde finish . . . 17.50

Model 004, Base only, ebony finish . . . 17.50



# Starlight

## TRANSCRIPTION ARM with PUSH-BUTTON HEAD

A gentle touch with one finger controls all arm functions. Forever ends record damage caused by lifting and lowering the arm!

- Instant weight adjustment from 4 to 14 grams.
- Easy one-hole mounting.
- Rigid cantilever arm raises to upright position.
- Ball bearing arm swivel.

Model 07, black satin & chrome finish **\$22.50**  
Prices include Fed. excise tax where applicable

Metzner **GOLDEN**

# Starlight

## ULTRA PRECISION TRANSCRIPTION TURNTABLE

Made expressly for the professional user and for audiophiles who demand only the best! Aluminum mounting plate has rich, anodized Gold finish.

#### FEATURES and OPERATING DATA

- Positive detent with micrometric vernier adjustment at 16 $\frac{2}{3}$ , 33 $\frac{1}{3}$ , 45 and 78.26 RPM.
- Continuously variable speed control from 16 to 83 RPM
- Precision built-in illuminated Stroboscope reads while record is playing.
- Wow & Flutter: less than 0.1% RMS.
- Rumble. Better than 50 db below NARTB Standard Reference Level of 7 cm/sec. at 500 CPS.
- Incorporates all features of the Model 60 plus those listed above

MOUNTING DATA identical with the Model 60.

MODEL	DESCRIPTION	PRICE
GS100	110V, 60 cycles, 8 watts	\$ 89.50
GS100-220	220V, 60 cycles, 16 watts	94.50
GS200	110V, 50 cycles, 8 watts	99.50
GS200-220	220V, 50 cycles, 16 watts	104.50

AVAILABLE APPROXIMATELY SEPT. 1, 1957

**Metzner ENGINEERING CORPORATION • HOLLYWOOD 38, CALIF.**



**Model 301** — "Professional" Transcription Turntable, 100/130, 200/250 volts, 60 cycles A.C. (50 cycle pulley available).  
**M301**—Unfinished 2-piece mounting board, takes any 12" or 16" arm, with spirit level indicator.  
**B301E**—2-piece ebony finished base, takes any 12" or 16" arm, with spirit level indicator and adjustable feet.



**RC88**—"Triumph II" Deluxe 4-Speed Auto-Manual Changer, less cartridge, 100/130, 200/250 volts, 60 cycles A.C. (50 cycle pulley available).  
**RC88/GE**—Same as RC88 but with GE Sapphire twist cartridge.  
**RC88/GED**—Same as RC88 but with GE Diamond LP Sapphire 78 twist cartridge.



**RC98**—"Crown II" 4-Speed Super-Auto - Manual Changer, less cartridge, 100/130 volts, 60 cycles A.C. (50 cycle pulley available).  
**RC98/GE**—Same as RC98 but with GE Sapphire twist cartridge.  
**RC98/GED**—Same as RC98 but with GE Diamond LP Sapphire 78 twist cartridge.



**RC121**—"Renown" 4-Speed Auto-Manual - Mixer Changer, less cartridge, 100/130, 200/250 volts, 60 cycles A.C. (50 cycle pulley available).  
**RC121/GE**—Same as RC121 but with GE Sapphire twist cartridge.  
**RC121/GED**—Same as RC121 but with GE Diamond LP Sapphire 78 twist cartridge.

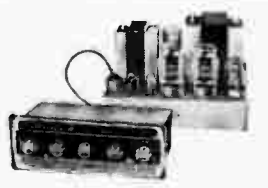


**Model TmK II** "Crest" 4-Speed Manual Player, less cartridge, 100/130, 200/250 volts, 60 cycles A.C. (50 cycle pulley available).  
**TmK II/GE**—Same as Model TmK II but with GE Sapphire twist cartridge.  
**TmK II/GED**—Same as Model TmK II but with GE Diamond LP Sapphire 78 twist cartridge.



Garrard accessories include bases, motor boards, carrying case.

**STYLUS PRESSURE GAUGE**—Accurately measures the weight exerted by a stylus upon a record. Use with any tone arm, any pickup.



**LEAK AMPLIFIERS**  
**TL/50 PLUS**—0.1% dist. at 50 w.  
**TL/25 PLUS**—0.1% dist. at 25 w.  
**TL/12 PLUS**—0.1% dist. at 12 w.  
**LEAK PREAMPLIFIERS**  
**Variatone III**—Features exclusive filter and slope control with turnover infinitely adjustable.  
**"POINT ONE"**—Features 6 position input selector (for 4 record equalizations, plus tuner and tape).



**WHARFEDALE SPEAKERS**  
**Super 3-3"**—treble speaker  
**8" Bronze-8"**—full range  
**Super 8/FS/AL**—8" full range (also for use as tweeter).  
**W10/FSB**—10" full range (also for use as tweeter).  
**Super 12/FS/AL**—12" full range.  
**W12/FS**—12" low frequency driver.  
**W15/FS**—15" low frequency driver.  
 1000 cycle crossover.  
 3000 cycle crossover.  
 3 way crossover (800 & 5,000 cycles).



**R-J ENCLOSURES**  
**S-8-U**—For 8" speaker, Single-Shelf model to fit in bookcase 11" high x 10" deep x 23½" long. Finish sanded, unpainted.  
**S-8-MC**—8" enclosure, complete with 8" Wharfedale speaker. 11" high x 10" deep x 23½" long. Mahogany finish.  
**S-8-BC**—Same as above. Blonde finish.  
**S-12-U**—For 12" speaker. Double-Shelf model to fit in bookcase 24" high x 21" long x 10" deep. Finish sanded, unpainted.  
**F-12-M**—For 12" speaker. Floor Model. 20" high x 20" long x 16" deep. Hand rubbed. Mahogany finish.  
**F-15-M**—Same as above. For 15" speaker.  
**F-12-B**—For 12" speaker. Floor Model. 20" high x 20" long x 16" deep. Hand rubbed, Blonde, Korina Wood.  
**F-15-B**—Same as above. For 15" speaker.  
**F-12-U**—For 12" speaker. Floor Model. 20" high x 20" long x 16" deep. Finish sanded, unpainted.  
**F-15-U**—Same as above. For 15" speaker.



**RIVER EDGE CUSTOMIZED CABINETS & DO-IT-YOURSELF KITS**  
 29 basic cabinets, crafted of fine woods, meticulously finished, made to hold components of all manufacturers. Panels and pull-out drawers factory pre-cut for easy installation.

**BRITISH INDUSTRIES CORPORATION • PORT WASHINGTON, N. Y.**

# World's Most Distinguished Hi-Fi Family

FROM START TO STOP, FULLY AUTOMATIC 4 SPEED  
RECORD CHANGER AND MANUAL PLAYER IN ONE PRECISION INSTRUMENT

**NEW! 4-SPEEDS**

## MIRACORD XA-100

WITH PUSHBUTTON CONTROLS  
AND THE MAGIC WAND SPINDLE

To critical listeners everywhere, the amazingly versatile Miracord XA-100 symbolizes full automatic operation in both a changer and player. Every requisite for perfect performance has been incorporated into this beautifully designed, precision instrument. **EXCLUSIVE: 5 Buttons control all operations automatically** — from beginning to end. No need ever to touch tone arm. **EXCLUSIVE: Magic Wand spindle intermixes 10" and 12" records in any sequence.** Prolongs record life by eliminating pusher arm and stabilizing plates. Isolated 4-pole induction motor provides constant pitch for all 4 speeds.

Shipped complete and ready for operation with all plugs attached. Audiophile Net **\$67.50**

with GE RPX-050A (dual sapphire) Cartridge, Net \$74.50  
with GED RPX/052A (LP DIA. & Stand. Sapph.) Cartridge, Net \$86.25



5 Buttons control all operations automatically

**REPEAT:** allows record to finish then repeats without dropping new record. Also allows any portion of record to be repeated.

**PAUSE:** controls wait period between records.

**STOP:** permits stopping any time during record play. Tone arm lifts up automatically and returns to rest position.

**START:** begins operation and is reject control as well.

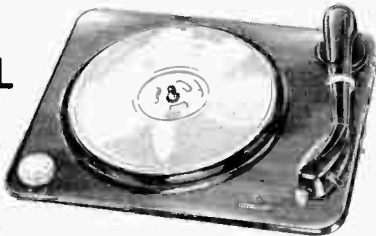
**FILTER:** screens out surface noises.

**SPECIFICATIONS:** AC, 110 or 220 volts, 60 cycles (50 cycles available); Chassis, 12½" x 10¼"; Height above mounting plate, 2½"; below, 2¼"; Clearance above mounting plate, 4½"; below, 2¾"; Net weight (approx.), 11 lbs; Gross weight (approx.), 14 lbs.

## MIRAPHON XM-110A

MANUAL  
PLAYER

**NEW!**  
4-SPEEDS



For transcription-quality reproduction and moderate cost, music lovers choose the outstanding performance of the 4-speed Miraphon-XM-110A manual player. Its specially designed heavy duty, 4-pole motor is isolated and suspended by isomodes to eliminate outside interference totally. Balanced turntable "floats" in high precision bearing assembly. Plug-in Head accommodates choice of cartridges. Tone arm, mounted in double row of ball bearings, provides maximum lateral compliance. Stylus pressure adjustment requires no tools. Motor shuts off automatically at end of record.

**SPECIFICATIONS:** AC, 110 or 220 volts, 60 cycles (50 cycles available); Chassis, 12½" x 10¼"; Clearance above mounting plate, 4½"; below, 2¾"; Height above mounting plate, 2½"; below, 2¼"; Net weight (approx.), 7 lbs.; Gross weight (approx.), 10 lbs.

Shipped complete and ready for operation, with all plugs and leads attached. Audiophile Net **\$37.50**

with GE RPX-050A (dual sapphire) Cartridge, Net \$44.50  
with GED RPX/052A (LP DIA. & Stand. Sapph.) Cartridge, Net \$56.25

## MIRATWIN

*fits all standard  
tone arms*

Designed with unusual wide-range response and sensitivity, the Miratwin MST-2 variable reluctance magnetic cartridge brings out the best in ANY system. Sturdy and compact, its body consists of 2 independent and non-reacting movements, mounted back to back. Other features include a turnover mount and instant fingertip stylus replacement. For LP and Standard records.



Miratwin MST-1 is a single cartridge; has MST-2 specs.

**SPECIFICATIONS:** Response — within 2 db from 30 to over 18,500 cps at 33½ rpm; within 4 db to 22,500 cps at 78 rpm; Output — at 1,000. 55 mv for 33½ rpm; 45 mv for 78 rpm at a recorded velocity of 10 cm/sec; Magnetic Pull — too small to measure with either magnetic or non-magnetic turntables; Tracking — perfect even at very high amplitude peaks with all speeds; Needle Chatter — completely negative; Mounting—unusually simple, removable without tools.

**MST-2:** MST-2D turnover cartridge; sapphire stylus for standard and DIAMOND stylus for microgroove... **\$31.50**  
MST-2A—turnover cartridge; TWO sapphire styl... **15.00**

**MST-1:** MST-1D —Single cart. with diamond stylus for LP **\$26.50**  
MST-1S —Single cart. with sapphire stylus for LP **10.00**  
MST-1DN—Single cart. with stand. diamond stylus **26.50**  
MST-1SN—Single cart. with stand. sapphire stylus **10.00**

replacement DM-2—Micro-Dia... **\$16.50** SM-2—Micro-Sap... **5.00**  
stylus DN-2—Stand.Dia... **16.50** SN-2—Stand.Sap... **3.00**

### ACCESSORIES FOR MIRACORD XA-100 AND MIRAPHON XM-110A



**NO. 38 AUTOMATIC SPINDLE**  
For 45 rpm on MIRACORD XA-100 only. Constructed of durable plastic, finished in maroon. Complete with clips for attachment to base when not in use. Audiophile Net **\$4.50**



**PLUG-IN HEAD**  
Accepts any standard cartridge. Made of specially dampened plastic. Complete with turn-button and standoffs, wires attached. Fits XA-100 and XM-110A. Audiophile Net **\$2.50**  
**AUDAX ADAPTER.** Audiophile Net **\$2.50**



**FINISHED BASE**  
Ideal complement to both XA-100 and XM-110A decors. Audiophile Net **\$5.95**



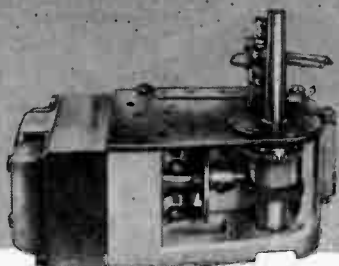
**MOUNTING BOARD**  
Ready for staining. K'n dried and sanded. All holes drilled. Audiophile Net **\$2.50**  
**BRASS TURNTABLE,** specify XA-100 or XM-110A. Audiophile Net **\$10.00**



**PORTABLE CASE**  
Handsomely fashioned and covered in burgundy leatherette. Stainless continental hardware. All accessories clip onto case. Hinged bottom permits quick installation. Special hinge on cover allows its use as a base, if desired. Audiophile Net **\$24.50**

Exclusive Distributors in the U.S. for Elac Record Players and Cartridges  
**AUDIOGERSH CORPORATION NEW YORK 12, N. Y.**  
In Canada: ATLAS RADIO CORP., Ltd. TORONTO





preferred... in the finest hi-fi systems

Swiss-Crafted **THORENS**

CHANGERS - PLAYERS - TURNTABLES

with direct gear drive!

Massive Swiss-Precision Direct Drive Motor in CD-43, CBA-83, CB-33 and E-53PA units! Noise level of -48db!

- Huge 4-pole direct-drive motor has separate gear for each speed.
- Speed selector has integral fine-tuning knob for "exact pitch" adjustment.
- No rubber belts, pulleys, other intermediary elements common to rim or friction drive units. These elements cause undesirable noise or speed variation.
- Rugged cast-iron frame and mechanical filter further act to reduce rumble content.
- Flyball governor on the electronically-balanced rotor shaft provides freedom from undesirable wow.

**MODEL CD-43**  
The Only "True"  
**HI-FI CHANGER**

Achieves optimum speed constancy and silence. Intermixes 12", 10" and 7" records and will replay any record size. Has control for completely manual operation. Includes pause and reject control permitting immediate record reject plus adjustable pauses between the records on the stack. Automatically shuts off after last record is played. **\$79.95 net.**



**PORTETTE PORTABLE**  
... self-powered ...  
console-quality sound!  
For LP records!  
A completely independent portable phono with sound that really surprises! Swiss-made spring-wound motor operates the turntable for a full side of an LP record without rewinding! Amplifier is battery-operated (standard batteries) but an outlet cord is provided for AC operation. Incorporates the largest speaker found in any portable. Complete volume and tone controls, automatic shut-off. 12 lbs. **\$67.50 net.**



**MODEL CB-33P**  
**MANUAL PLAYER**  
rated with costlier turntables — immediate installation!  
Has finer-tracking pre-assembled tonearm, with tracking weight and cartridge alignment adjustments. Automatically shut-offs at end of record. Condenser switch prevents transmission of switch noise to speaker. Because of direct-drive motor, equals the performance of costlier turntables. CB-33P is a "must" for those who want top quality sound at lowest cost. **\$48.00 net.**



**MODEL CBA-83**  
**AUDIOMATIC PLAYER**  
turntable performance automatic operation!  
The hand never touches the tonearm. A button for each record size (12", 10", 7") actuates turntable, tonearm lowers into lead-in groove. After play, arm returns and motor shuts off. Has record reject, control for complete manual operation, condenser to prevent switch noise to speaker. With 2 plug-in shells for all popular cartridges, and 45 rpm adaptor. **\$59.95 net.**



**MODEL E-53PA**  
**TRANSCRIPTION TURNTABLE**  
E-53PA maintains a noise level at least -48db below average recording level! That's the kind of performance you'd expect from turntables costing twice as much. Aluminum turntable has foam-rubber cover—is machined and balanced to eliminate distortion. Thick mounting plate affords excellent shielding, allows orientation for correct relationship between cartridge and motor. Manual on-off switch. **\$59.95 net.**

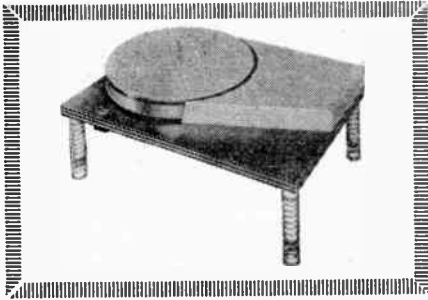
**ACCESSORIES**

- WB-B** wooden base, blond (13" x 16").
- WB-M** same as above but mahogany.
- MB** mounting board (unfinished) (16" x 15").
- 4S-5** 45 rpm spindle for CD-43.
- MB-PA** mounting board for E-53PA turntable.
- WB-PA** wooden base for E-53PA (mahogany finish).
- BTT** brass turntable for all units.



Prices slightly higher West of Rockies.

# PROFESSIONAL TURNTABLES and ACCESSORIES by COMPONENTS



## MODEL PBT4 — 4 SPEED PROFESSIONAL TURNTABLE

The Professional PBT turntables are designed for the finest turntable performance available. They are shock mounted and have a 25 pound turntable.

### Specifications:

**Noise Level:** Better than 70 db below average recording level.  
**Motor:** Precision Bodine constant speed two phase capacitor run induction motor.  
**Speeds:** 16 $\frac{2}{3}$ ; 33 $\frac{1}{3}$ ; 45; 78 rpm

**Speed Accuracy:**  $\frac{1}{4}$  of 1%  
**Wow and Flutter:** 1/20 of 1%  
**Dimensions:** 13 $\frac{1}{2}$ " x 19 $\frac{1}{2}$ " x 8 $\frac{1}{2}$ "  
**Shipping Weight:** 45 lbs.

Blonde or Mahogany Audiophile Net: \$109.00

## MODEL PBT — 3 SPEED PROFESSIONAL TURNTABLE

### Specifications:

**Noise Level:** Better than 70 db below average recording level.  
**Motor:** Precision Bodine constant speed two phase capacitor run induction motor.  
**Speeds:** 33 $\frac{1}{3}$ ; 45; 78 rpm  
**Speed Accuracy:**  $\frac{1}{4}$  of 1%

**Wow and Flutter:** 1/20 of 1%  
**Dimensions:** 13 $\frac{1}{2}$ " x 19 $\frac{1}{2}$ " x 8 $\frac{1}{2}$ "  
**Shipping Weight:** 45 lbs.

Blonde or Mahogany Audiophile Net: \$99.50

**BELT-DRIVEN**

## PROFESSIONAL DUO-SPEED TURNTABLE

An extremely fine two-speed turntable engineered to the quality standards of the Professional line.

### Specifications:

**Speed Control:** Positive action lever. Does not touch belt except during change of speed.

**Noise Level:** Better than 65 db below average recording level.

**Motor:** 4-pole, constant speed motor with special magnetic shielding.

**Speeds:** 33 $\frac{1}{3}$  and 45 rpm or 33 $\frac{1}{3}$  and 78 rpm

**Speed Accuracy:**  $\frac{1}{2}$  of 1%

**Wow and Flutter:** less than 1/10 of 1% r.m.s.

**Dimensions:** 12" x 12" x 3 $\frac{1}{2}$ "

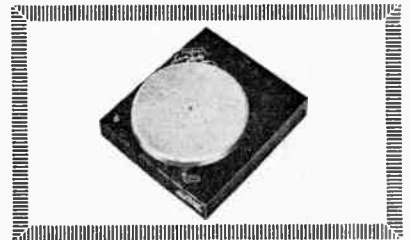
**Shipping Weight:** 9 lbs.

Model 45: for 33 $\frac{1}{3}$  and 45 rpm, features pop up 45 center, Audiophile Net:

\$49.50  
\$49.50

Model 78: for 33 $\frac{1}{3}$  and 78 rpm. Audiophile Net:

**BELT-DRIVEN**



## PROFESSIONAL JUNIOR TURNTABLE

While the Junior is basically a single speed turntable, pulleys are easily interchanged permitting operation at all 4 speeds.

### Specifications:

**Noise Level:** Better than 60 db below average recording level.

**Motor:** Constant speed 4 pole induction motor.

**Speeds:** 33 $\frac{1}{3}$  standard, also 16 $\frac{2}{3}$ ; 45; 78 rpm available

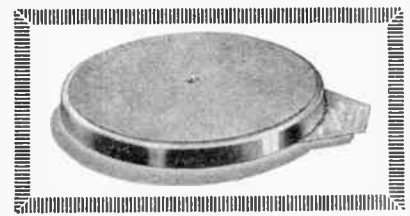
**Speed Accuracy:**  $\frac{1}{2}$  of 1%

**Wow and Flutter:** Under  $\frac{1}{4}$  of 1%

**Dimensions:** 12" x 12" x 3 $\frac{1}{2}$ "

**Shipping Weight:** 9 lbs.

Audiophile Net: \$39.50 — extra pulleys \$2.50 each



## TURNTABLE BASES

### JUMBO BASE

For Duo-Speed and Junior Turntables — cut out for turntable and drilled for power switch.

**Dimensions:** 15" x 15" x 3"

**Shipping Weight:** 3 $\frac{1}{2}$  lbs.

**Finish:** Blonde or Mahogany

Audiophile Net:

\$10.00

### DELUXE WALNUT BASE

For Duo-Speed and Junior Turntables — cut out for turntable and drilled for power switch.

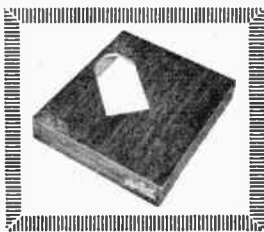
**Dimensions:** 14 $\frac{1}{2}$ " x 16 $\frac{1}{4}$ " x 3"

**Shipping Weight:** 4 lbs.

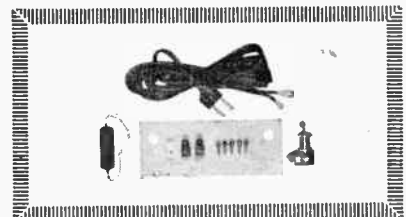
**Finish:** Hand Rubbed Walnut

Audiophile Net:

\$16.50



## POWER CORD SET — TYPE LCP



An easy to use, do-it-yourself power cord set. Installs with a screwdriver and pair of pliers. Contains 9 ft. cord, toggle switch, click suppressor filter, nylon strain relief, two wire nuts, turntable mounting screws. Audiophile Nets: \$4.50

## TEST RECORDS

Six Professional test records are now available to test your turntable, stylus and pickup.

No. 1106 Wow! and Flutter, Too! Wow and Flutter Test.

No. 1107 How's Your Stylus? Stylus Wear Test.

No. 1108 Quiet Please! Turntable Rumble Test.

No. 1109 Tracking Special. Pickup Arm Resonance Test.

No. 1110 Vertical/Lateral Response. Pickup Response Test.

No. 1111 What? No Hum? Location and Cure of Hum.

—89c each

# COMPONENTS

CORPORATION  
DENVER, NEW JERSEY

# FAIRCHILD

RECORDING EQUIPMENT COMPANY  
Long Island City 1, New York

## SUPERIOR ELECTRO-ACOUSTIC PRODUCTS for:

- High Fidelity Systems
- Recording Studios
- Broadcasting Stations

### CARTRIDGES

Latest version of the famous Moving Coil Cartridge incorporating many advances in the cartridge design which FAIRCHILD has supplied to the Recording & Broadcasting Indus-

tries for over 20 years. New MICRADJUST construction and reduction of moving mass result in unbelievably accurate record reproduction. Used wherever top results are required.

Model 225A — 1.0 mil stylus ... for all microgroove ... \$37.50 net  
Model 225B — 2.5 mil stylus ... for professional transcriptions and standard 78's ... \$37.50 net  
Model 216A — 2.0 mil stylus ... for vertical recordings ... \$50.00 net

### TRANSCRIPTION ARMS

Precision designed for professional performance, yet modest in cost, these arms satisfy every requirement for LP record reproduction. The logical choice for the Fairchild Cartridge

but will accommodate all other standard cartridges. Perfect tracking, cartridges mount on easily interchanged slides. No arm rest needed.

Turret-Head Arm for broadcast and professional use. Only arm made that holds 3 FAIRCHILD Cartridges in a knob-rotating turret head — easily selects cartridge by control

Model 280A ... \$37.50 net      Model 281A ... \$39.95 net  
knob while automatically adjusting stylus pressure. Viscous damped about vertical axis only. Automatic temperature control of viscous damping.      Model 202 ... \$75.00 net

### TURNTABLES

Famed broadcast 3-speed direct-drive turntable. Fully synchronous, extremely rugged. Specs exceed NARTB play-

back requirements. Fast cueing (either record or platter may be slipped). Ideal for laboratory conditions, dubbing, etc.

Revolutionary new turntable for high fidelity or professional use — single speed (33 $\frac{1}{3}$ ) unit with hysteresis motor using belt drive. Dynamically balanced 15-lb. turntable. Advanced

Model 530 ... \$629.50 net      Model 530GM less cabinet ... \$534.50 net  
motor suspension. Acoustically silent. Top performance for those requiring 33 $\frac{1}{3}$  speed. For 60 cycle operation. 4 speed operation by adding 412-ED.

4-speed table using Model 412-1 plus new Electronic Drive — a plug in, variable frequency electronic power supply to

Model 412-1 ... \$99.50 net  
directly feed hysteresis motor. Speed vernier adjustment. For 50 or 60 cycle operation.

Electronic Drive available separately for those who purchase

412-1 first and wish 4 speeds at later date.      Model 412-4 ... \$186.50 net  
Model 412-ED ... \$94.00 net

### EQUALIZERS

Passive Equalizer for professional use. 4 lateral, 2 vertical positions including RIAA. 250 ohms in and out.

Model 205E ... \$60.00 net

### AMPLIFIERS

Compact 30-watt audio amplifier delivers full output ( $\pm 1$  db) from 20 to 20,000 cycles with 1M distortion of 0.5% or

less. Perfect for home installations and commercial applications.

The ultimate in power amplifiers — tremendous reserve power (130 watts peak) uses massive, grain-oriented core output transformer. Simple adjustments for balancing of output

Model 255 ... \$99.50 net  
tubes. Variable damping at low frequencies. 65-watts of continuous power at all frequencies.

Model 275 ... \$213.00 net

### ACCESSORIES

A. Shielded input transformer for use with 225 Cartridge feeding low gain preamplifiers. 5:1 stepup ratio.

Model 235 ... \$11.95 net

B. Slide kits to fit 280A, 281A Arms — mounts most popular cartridges —

Model 830A ... \$2.35 net      Model 830U — Universal type for non standard cartridges ... \$3.50 net

C. High quality felt and foam rubber pads to cushion records and reduce turntable rumble and noise. Ideal for changers.

Model 831-10 ... 9 $\frac{3}{4}$ " dia. ... \$1.98 net      Model 831-12 ... 12" diameter ... \$1.98 net

### DISK RECORDING PRODUCTS & ACCESSORIES

New 3-speed console recorder available with accessories.

Model 539-K3 ... \$2623.00 net

New Cutterhead, range to 12,000 cycles — excellent transient response for improving performance of existing systems.

Model 546 ... \$350.00 net

Thermo Stylus Kits & Styli (for Fairchild, RCA & Presto Heads). Write for details.

# Technological Leadership

# Rigid Quality Control

# Assured Sales for You!



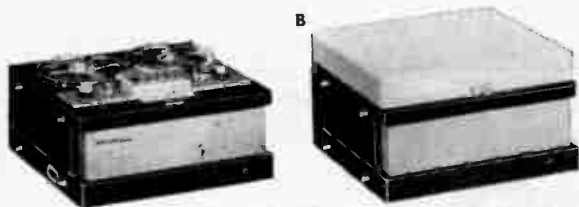
V-M's position of leadership results from product pioneering and a dedicated approach to the vital matter of quality control. When you sell a V-M product, you sell the newest and the best in its price range. What better basis exists for continuing sound business for you?



#### V-M MODEL 1225 AUTOMATIC RECORD CHANGER

America's standard of quality. Metal-base-mounted 'Super-Fidelis'® changer plays all record sizes, all four speeds—78, 45, 33 and 16 rpm. Siesta-Matic® feature retracts turntable drive-idler, preserves hi-fi performance indefinitely. Jam-proof mechanism, patented spindle, automatic shut-off and dual-needle, ceramic cartridge tone-arm are plus-features. Charcoal and white with rubber turntable mat. Complete with 6' AC plug and 4' phono cord with plugs. 13½" x 12" x 8¾".

Also available, unmounted, as Model 1200. Models 1200GE and 1225GE are equipped with GE variable reluctance cartridge, 4-pole motor and muting switch. Available with diamond stylus.



#### V-M TAPE-O-MATIC® TAPE RECORDER with STEREO PLAYBACK

**A**—Portable, professional-quality dual track, dual speed monaural tape recorder with PLUS of stereo! Check these features: 6" x 9" woofer and 3.5" tweeter, 5 watts output, external amplifier jack, high signal-to-noise ratio, flat response on center, automatic shut-off, push-button controls, monitor switch, pause button, safety switch, three-way input AND Stere-O-Matic® output jack with 12' cord and plugs. Professional microphone, stereo demonstration tape included.

**B**—Matching V-M StereoVoice speaker with amplifier, Model 166, has same styling, same speaker complement, same dimensions as Model 711. Includes V-M Model 8810 5-watt amplifier with volume, bass and treble controls, output jack and stereo input jack.

the **Voice**  of **Music**®

V-M CORPORATION • BENTON HARBOR, MICHIGAN

WORLD'S LARGEST MANUFACTURER OF  
PHONOGRAPHS AND RECORD CHANGERS



# Electro-Voice PHONOGRAPH CARTRIDGES

## ELECTRO-VOICE POWER POINT CARTRIDGES

Power Point is a totally new concept in phonograph transducers, combining integrally both cartridge and needle, functioning to give widest range with lowest distortion and minimum record wear. Using two sapphire playing tips connected directly to the ceramic element, this unique design results in high compliance with excellent tracking ability. After quick mounting mechanism installation, replacement is easy slip-out, slip-in operation. Response flat from 20 cps to beyond 10 kc; output 1 volt; tracking force 5 to 8 grams. Diecast nylon case  $\frac{3}{8}$ " long,  $\frac{1}{4}$ " diameter.

### FOR 45 AND 33½ RPM

**Model 51-1**—Power Point cartridge only. Red nylon case. With two .001" sapphire tips. List Price..... **\$3.95**

### FOR 78 RPM

**Model 53-3**—Power Point cartridge only. Black nylon case. With two .003" sapphire tips. List Price..... **\$3.95**

Fixed, turnover and turnunder mechanisms have  $\frac{1}{4}$ ",  $\frac{1}{8}$ " and  $\frac{3}{16}$ " mounting hole centers. All necessary hardware is included for simple, quick installation.

**Model PFT-1**—Fixed mounting mechanism. Accepts any model Power Point cartridge. List Price..... **50c**

**Model PT-1**—Lever-action turnover mounting mechanism. For use with Models 56 and 56DS Power Point cartridges. List Price..... **\$1.00**

**Model PT-2**—Lever-action turnunder mounting mechanism. Replaces all standard turnunder cartridges. For use with Models 56 and 56DS Power Point cartridges. List Price..... **\$1.00**

### FOR 45, 33½ AND 78 RPM

**Model 52-2**—Power Point cartridge only. Green nylon case. With two .0023" sapphire tips. List Price..... **\$3.95**

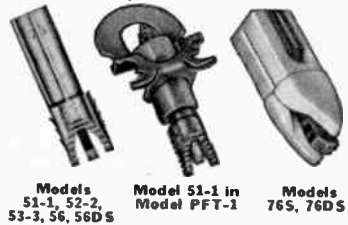
**Model 56**—Power Point cartridge only. Blue nylon case. One .001" sapphire tip and one .003" sapphire tip. List Price..... **\$3.95**

**Model 56DS**—Power Point cartridge only. Orange nylon case. With one .001" natural diamond tip and one .003" sapphire tip. List Price..... **\$21.50**

### EXACT REPLACEMENTS FOR WEBCOR PHONOGRAPHS

**Model 76DS**—Turnover cartridge only. Pink plastic case. With one .001" diamond tip and one .003" sapphire tip. List Price..... **\$21.50**

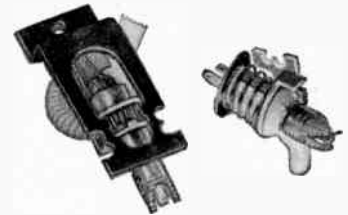
**Model 76S**—Turnover cartridge only. White plastic case. With one .001" sapphire tip and one .003" sapphire tip. List Price..... **\$4.25**



Models 51-1, 52-2, 53-3, 56, 56DS

Model 51-1 in Model PFT-1

Models 76S, 76DS



Model 56 in Model PT-1

Model 56 in Model PT-2

## E-V HIGH-OUTPUT CARTRIDGES

### MODEL 60 CRYSTAL DUO-VOLT BIMORPH CARTRIDGE

Uses any standard 3-mil, 1-mil or all-purpose needle (not supplied). Output, 4 or 2 volts on I.P. 6 or 3 volts on 78 rpm. No soldering, no accessories required.  $\frac{1}{2}$ " mounting centers, aluminum case. For varied replacement needs. Less needle. List..... **\$4.95**

### MODEL 50 BIMORPH CRYSTAL CARTRIDGE

High level cartridge, supplied less needle. Use with any 1-mil, 3-mil or all-purpose needle. Output level with straight shank is 2.5 volts. Aluminum case. Less Needle. List..... **\$4.50**



Model 60

## HIGH-FIDELITY ULTRA-LINEAR CERAMIC CARTRIDGES

### 80 SERIES ULTRA-LINEAR CERAMIC CARTRIDGE COMBINES BEST FEATURES OF ALL PICKUPS

This true high-fidelity cartridge embodies the most advanced concept in pickups; combines all the benefits of ceramic and magnetic cartridges (with none of the disadvantages) in one pickup that fits any arm or plug-in head (adapter for Fairchild and Gray slide-in arms included).

The Model 80 series ceramic cartridge is a displacement or amplitude-actuated device. It may be used with HI-Z phono amplifier input, or magnetic preamp input, without circuit modification, by using adapter supplied. (Adapter de-equalizes magnetic input and reduces ceramic cartridge output to conform, without degradation of reproduction.) Housed in a resonant-free die-cast case, attractively styled with black and gold or silver finish, the Model 80 embodies the most advanced concepts in phono-pickups.

The Model 80 cartridges complement the recording characteristic of modern microgroove recordings without recourse to equalizing circuits. The 80 series cartridge output will be flat,  $\pm 2\frac{1}{2}$  db, from 20 to 15,000 cps when referred to the popular RIAA-Orthophonic recording characteristic. Low-frequency response, determined by the magnitude of the input load, will be sensibly flat to DC when the cartridge is working into an infinitely high impedance.

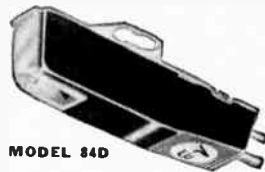
The Model 80 series ultra-linear ceramic cartridge has a high compliance of a  $3 \times 10^{-4}$  cm/dyne. Such a high compliance practically eliminates record wear and reduces tracking problems to a minimum when used with specified stylus pressures. Because the ultra-linear ceramic cartridge is a piezo-electric device, inductive pickup of hum from motors or stray fields is eliminated. Vertical response is the lowest of any cartridge now on the market, which results in a very high signal-to-noise ratio. Turntable rumble and room vibration pickup are reduced to the lowest possible value in the design of this cartridge. Temperature variations do not affect cartridge; in higher temperature ranges, even at the boiling point of water, performance is uniform and the cartridge will operate with full efficiency.

The 80 series turnover models have two independent generating elements. Full output from stylus and element in use... no distortion or resonance from unused stylus. Smooth acting turnover mechanism accurately positions needle.

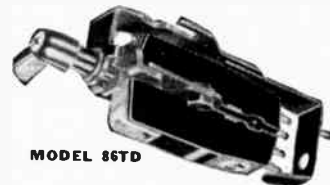
**Unequal response.** 20 to 15,000 cps. **Lowest intermodulation distortion.** Less than 3% at 18 cm/sec. **High output.** 80 series, 500 millivolts; 80M Series, 25 millivolts. **No hum.** Absolutely noninductive. Not sensitive to motor and transformer fields. **High compliance.**  $3 \times 10^{-4}$  cm/dyne—several times the average hi-fi pickup compliance. **No preamp required.** 80 series works into any amplifier input.

Model	Type	Stylus	Record Speed	Net
82S	Single Play	3-Mil Sapphire	78 rpm	\$ 9.60
82D	Single Play	3-Mil Diamond	78 rpm	23.10
84S	Single Play	1-Mil Sapphire	*16 rpm Talking Book, 33, 45 rpm	9.60
84D	Single Play	1-Mil Diamond	*16 rpm Talking Book, 33, 45 rpm	23.10
86TD	Turnover	3-Mil Diamond	78 rpm	48.00
86T	Turnover	1-Mil Diamond	*16 rpm Talking Book, 33, 45 rpm	34.50
		3-Mil Sapphire	78 rpm	
86TS	Turnover	1-Mil Sapphire	*16 rpm Talking Book, 33, 45 rpm	21.00
		3-Mil Sapphire	78 rpm	

\*Also 78 rpm Microgroove.



MODEL 84D



MODEL 86TD

### REPLACEMENT STYLI FOR MODEL 80 SERIES CARTRIDGES

**Model 503**—0.3-Mil Sapphire Stylus (White Dot). Net..... **\$ 1.50**

**Model 51**—1-Mil Sapphire Stylus (Red Dot) for Models 84S, 86TS. Net..... **1.50**

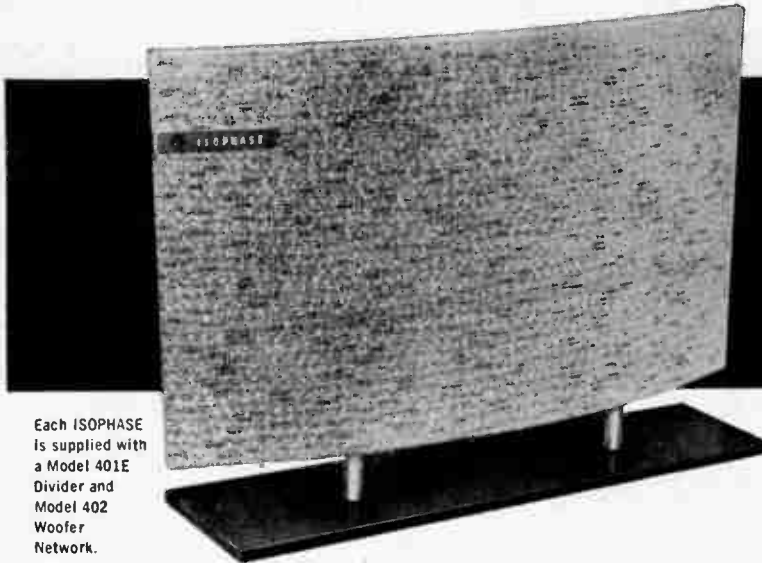
**Model 53**—3-Mil Sapphire Stylus (Blue Dot) for Models 82S, 86T, 86TS. Net..... **1.50**

**Model D03**—0.3-Mil Diamond Stylus (Black Dot). Net..... **15.00**

**Model D1**—1-Mil Diamond Stylus (Orange Dot) for Models 84D, 86TD, 86T. Net..... **15.00**

**Model D3**—3-Mil Diamond Stylus (Silver Dot) for Models 82D, 86TD. Net..... **15.00**

# The New ISOPHASE Sound!



Each ISOPHASE is supplied with a Model 401E Divider and Model 402 Woofer Network.

*More Efficient!  
Greater Power!  
Sweetest Sound!*

The PICKERING ISOPHASE Speaker—an entirely new concept utilizing the electrostatic principle. Here is music and sound . . . recreated with amazing "lifelike" fidelity . . . a fullness of natural quality never before attained.

## SPECIFICATIONS

### 581-B ISOPHASE SPEAKER

Maximum Power Rating	50 Watts @ 8 Ohms
Crossover Frequency	500 Cycles
Frequency Range	200 to 35,000 Cycles
Dimensions	36" x 28" x 8 1/2"
Weight	22 lbs.

### 401E DIVIDER

Maximum Signal Voltage	27 Volts
Polarizing Voltage	1500 Volts
Impedance	8 Ohms
Power Requirements	117 Volts, 50-60 Cycles AC, 10 Watts
Dimensions	9 1/4" x 5 3/8" x 2 7/8"
Weight	7 lbs.

### 402 WOOFER NETWORK

Crossover	500 Cycles
Impedance	8 Ohms
Dimensions	3" x 4" x 5"
Weight	2 1/4 lbs.

The PICKERING ISOPHASE is a revolutionary new speaker with a single, virtually massless, curved diaphragm. Conventional cone or dynamic speakers reproduce sound by moving only small amounts of air at high velocities. The ISOPHASE, with its *large* sound-generating surface, is a radical departure from this older concept. Sound is reproduced at constant level over the entire surface of the curved diaphragm . . . *more than 1000 square inches!* Here is *truly* wide-range treble dispersion.

The PICKERING ISOPHASE diaphragm is vibrated as a unit by an electrostatic field. Sound is generated into the air at a low velocity, closely approximating the unit area energy of the sound at the microphone in the concert hall or studio. The result is a startling quality of "presence" that is breathtakingly realistic.

The PICKERING ISOPHASE covers the musical range from 400 cycles per second to well beyond the limits of human hearing. The response over this range is consistent and absolutely uniform—without the slightest hump, peak, or resonance of any kind. This in itself—is an *unprecedented characteristic for a loudspeaker!*

## Model 190D PICKUP ARM

*...for Optimum Performance on Microgroove and Standard Records*

Designed to overcome deficiencies of conventional arms, so severely accentuated by LP microgroove recordings, the Model 190D Pickup Arm embodies all of the features which enable a high-quality magnetic cartridge to deliver distortion-free tracking performance.

Studies by audio engineers have revealed that pickup arms which perform well on 78 rpm records and standard transcriptions often do not produce satisfactory results on microgroove recordings. Regardless of cartridge quality, inadequate pickup arms will cause considerable tracking distortion.

The Model 190D is designed specifically for microgroove records; and, is equally effective for 78 rpm record reproduction. The Model 190D provides distortion-free tracking while maintaining the correct relationship between the lateral and vertical moments of inertia. This characteristic is of great importance in order to faithfully reproduce both LPs and 78s with minimum record and stylus wear.

### OUTSTANDING FEATURES OF THE MODEL 190D

For use with any single cartridge that has standard RETMA 1/2" spaced mounting holes; and, the Series 350 or 370 FLUXVALVE cartridge. • The vertical mass has been minimized in order to track any record without imposing extra vertical load on the grooves. Plays badly warped records as well as flat ones. • No spurious arm resonance at any frequency. • Pivot friction is lower than 3 gram centimeters—bearings are rugged and trouble-free. • Statically balanced about the vertical axis—eliminates tendency to jump grooves when bumped or jarred. • Lowest possible ratio of vertical-to-lateral moment of inertia. • Offset head reduces tracking error to less than  $\pm 2 1/2^\circ$ . • Stylus point is protected against contact with anything but the record groove. It cannot strike the turntable mat or center-pin.



MODEL 190D



**PICKERING** and company incorporated • Oceanside, L. I., New York

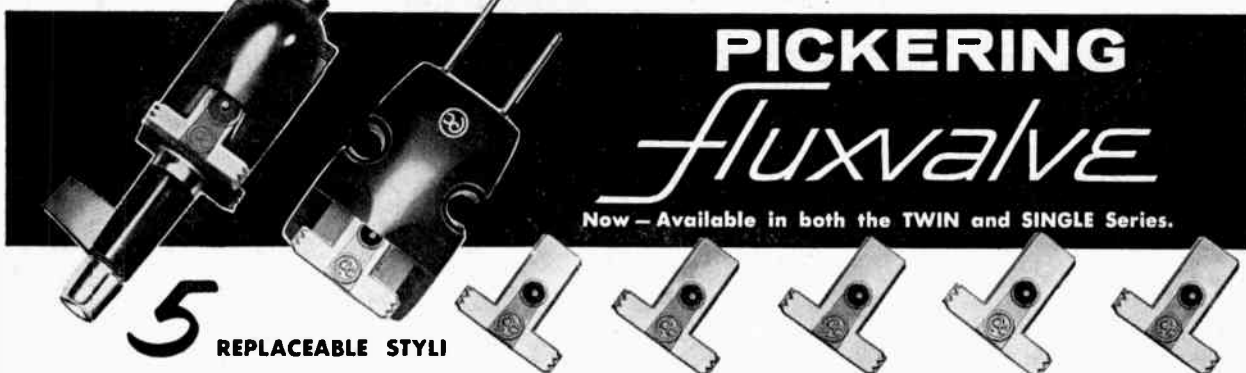
Professional Audio Components

*"For those who can hear the difference"*

EXPORT: AD. AURIEMA, INC., 89 BROAD ST., NEW YORK / CANADA: CHARLES W. POINTON LTD., 6 ALCINA AVE., TORONTO

# The Most Flexible Cartridge in the World!

... for the finest quality of record reproduction



**5** REPLACEABLE STYLI

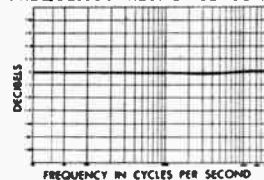
The FLUXVALVE pickup was originally developed for professional applications, particularly recording studios where accurate correlation between lacquer, master, and pressing is essential and has always been difficult.

Now—this remarkable pickup is manufactured for the music lover and record collector with the same exacting precision. Here is a pickup with virtually no frequency discrimination in the audio spectrum . . . a pickup intended for a new era in phonograph reproduction . . . the *only* pickup with the amazing 1/2 mil stylus.

The FLUXVALVE is a *truly* modern cartridge, featuring the exclusive PICKERING "T-Guard" stylus which eliminates precarious  *fingernail fumbling*. This quick-change slip-in assembly permits the user a comfortable and firm grip when changing styli. With five replaceable styli available, the FLUXVALVE will play any record at any speed.

SPECIFICATIONS OF THE PICKERING FLUXVALVE		
Characteristic	350	370
Frequency Response	Flat $\pm 2$ db from 10-30,000 cps. (see curve)	
Recommended Load Resistance	27,000 Ohms	
Output	15 mv	25 mv
DC Resistance	3600 Ohms	2700 Ohms
Inductance	325 Millihenries	
Tracking Pressure	2-6 grams depending upon arm used	

FREQUENCY RESPONSE CURVE



**SERIES 370 SINGLE FLUXVALVE**

370-1S	1 mil Sapphire
370-2S	2.7 mil Sapphire
370-1D	1 mil Diamond
370-2D	2.7 mil Diamond
370-5D	1/2 mil Diamond

**SERIES 350 TWIN FLUXVALVE\***

350-DO	1 mil Diamond
350-.5DO	1/2 mil Diamond
350-DS	1 mil Diamond/2.7 mil Sapphire
350-DD	1 mil Diamond/2.7 mil Diamond
350-D.5D	1 mil Diamond/1/2 mil Diamond

**SERIES 3500 "T-Guard" STYLI\*\***

S-3510	1 mil Sapphire
S-3527	2.7 mil Sapphire
D-3510	1 mil Diamond
D-3527	2.7 mil Diamond
D-3505	1/2 mil Diamond

\*Available in many other combinations of styli. \*\*Other stylus radii available on special order.

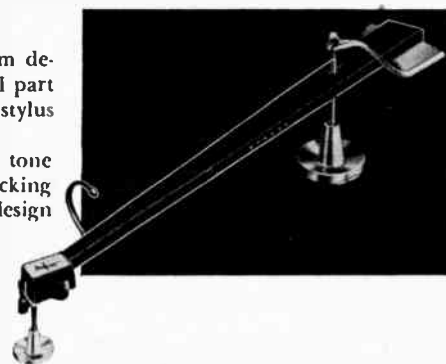
## Model 194D UNIPOISE Pickup Arm

... new ... lightweight ... integrated arm and pickup assembly

The PICKERING Unipoise Pickup-Arm consists of a light-weight tone arm designed specifically to complement the Fluxvalve Cartridge which is an integral part of the assembly. The complete unit, tone arm, Fluxvalve Cartridge and stylus assembly is only a fraction of the weight of traditional tone arms.

The high compliance of the Fluxvalve stylus assembly with the light-weight tone arm and single friction-free pivot bearing is ideally suited for distortionless tracking of microgroove and standard groove recordings. This advanced mechanical design and functional styling combine to provide these all important features:

- Flat frequency response
- High Compliance
- Low distortion
- Replaceable styli
- Small size
- Absence of resonances
- Single friction-free pivot bearing
- Adjustable tracking force
- Minimum tracking error
- Sealed cartridge body



**PICKERING** and company incorporated • Oceanside, L. I., New York

Professional Audio Components

*"For those who can hear the difference"*

EXPORT: AD. AURIEMA, INC., 89 BROAD ST., NEW YORK / CANADA: CHARLES W. POINTON LTD., 6 ALCINA AVE., TORONTO



**Electro-Sonic Laboratories, Inc.**

FOR LISTENING AT ITS BEST • Long Island City 6, New York

*Phono arms and cartridges  
Transformer accessories*

### ESL PROFESSIONAL SERIES ARM & CARTRIDGE

Breathtaking perfection of reproduction for the most critical broadcast, recording, and laboratory use is now made possible by this superlative reproducer. The ultimate in compromise-free design, plus matchless Danish hand craftsmanship. The precision machined, ball bearing arm fits this cartridge only.

Frequency response: 16-30,000+ cps • IM distortion: almost immeasurably small • Minimum compliance:  $6.8 \times 10^{-6}$  cm/dyne • Dynamic mass: .001 grams • Vertical force: 1-3 grams  
Output impedance: 1.5 ohms • Minimum output voltage: 2.0 mv (1 kc at 10 cm/sec)

ESL-310 arm (15 $\frac{3}{4}$ " ) without cartridge \$57

Diamond stylus: ESL-P1 (.001"), P2.5 (.0025"), P2.7 (.0027"), P3 (.003") \$49.50

*Acknowledged as the world's finest*



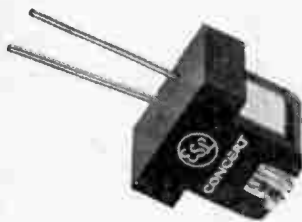
### ESL CONCERT SERIES CARTRIDGE

The most advanced electronic technology and mechanical skills have devised this magnificent instrument which can improve the finest music reproducing systems. Used for quality control by leading record manufacturers. It greatly prolongs record and stylus life, and will fit any standard mounting arrangement.

Frequency response: 16-30,000+ cps • IM distortion: almost immeasurably small • Minimum compliance:  $6.8 \times 10^{-6}$  cm/dyne • Dynamic mass: .001 grams • Vertical force: 2-5 grams  
Output impedance: 1.5 ohms • Minimum output voltage: 1.5 mv (1 kc at 10 cm/sec)

Diamond stylus: ESL-C1 (.001") or ESL-C3 (.003") \$35.95

*For the audio connoisseur*



### ESL/BJ 'SUPER 90' TANGENTIAL ARM

Highly improved, studio model of the world-famous BJ tangential arm which overcomes tracking error, reduces distortion, and increases record life. Self-lubricating ball bearings insure friction-free movement; twin arms virtually cancel resonances. Complete with two plug-in heads accommodating almost all cartridges, including turnover and triple-play models. Counter-weights variable over 40-gram range. Calibrated pedestal permits instant selection of correct stylus overhang. Made in England under the personal supervision of its inventor.

ESL/BJ 'Super 90/12' (12 $\frac{1}{2}$ " ) \$33 • ESL/BJ 'Super 90/16' (14" ) \$36.50

*Overcomes tracking error*



### ESL TRANSFORMER ACCESSORIES

The ESL cartridge requires with some amplifiers a high quality ESL voltage step-up transformer (or ESL transistor amplifier): the 201 Series for low level magnetic inputs, 301 Series for low or high level magnetic inputs, or the 211 with insensitive amplifiers.

ESL-201 Shielded, unmounted transformer, 1:11 voltage step-up \$7.50

ESL-201M An ESL-201, mounted and wired for plug-in connection \$11

ESL-201F Same as 201M, plus supersonic filter and switch \$15

ESL-301 Shielded, unmounted transformer, 1:30 voltage step-up \$9

ESL-301M An ESL-301, mounted and wired for plug-in connection \$12.50

ESL-301F Same as 301M, plus supersonic filter and switch \$16.50

ESL-211 Shielded, unmounted transformer, 1:244 voltage step-up \$6.25

*For flexibility of application*



ESL-201F ESL-301F



**Electro-Sonic Laboratories, Inc.**

FOR LISTENING AT ITS BEST • Long Island City 6, New York

Microphones • Record cleaners  
Transistor amplifiers

### ESL DUST BUG

The problems of dust, lint, and static buildup on phonograph records and pickup styli have been solved by this ingenious new invention which cleans the record as it is being played. The plush pad is slightly moistened with special, harmless activating fluid supplied in a replaceable applicator. This helps to loosen groove dust and dirt, which is then collected by the pad. It also neutralizes the static charge present in all records. Every point on an LP record is cleaned by the wide pad approximately one hundred times during a single play.

ESL Dust Bug, complete with Dust Bug Fluid in applicator \$5.75

*The automatic record cleaner*



### ESL MOVING COIL MICROPHONES



*Highest fidelity at moderate cost*

Electro-Sonic Laboratories is pleased to announce a complete new line of superb moving coil microphones, microphone transformers, and miniature earphones. For every application—broadcasting, professional recording, home recording, dictating machine, and public address—there is a low impedance ESL microphone specifically designed to provide the highest quality of performance at sensible cost.

A brochure describing the entire line of ESL moving coil microphones and accessories is available free upon request.

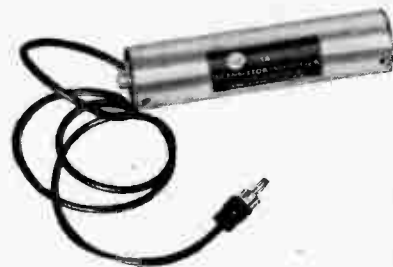
### ESL TRANSISTOR AMPLIFIER

This hum-free, low-distortion amplifier can provide improved performance with moving coil microphones, for which it is a preamplifier and with ESL electrodynamic cartridges, for which it is a pre-preamplifier. As its frequency response is flat and unequalized, it does not replace the conventional phono preamplifier. It permits use of greatly superior low-impedance microphones—such as the ESL—with medium-price tape recorders.

Voltage gain: 20-30 db (1:10-1:20 voltage step-up) • Signal-to-noise ratio: minus 50 db  
Frequency response: 20-20,000 cps  $\pm$  1/2 db • IM distortion: 1/10 of 1% • Input impedance: 100 ohms • Output impedance: 2,000 ohms • Battery life: 1 year • Hum level: zero

ESL-1 A, complete with battery \$16.50

*Hum-free low impedance amplification*



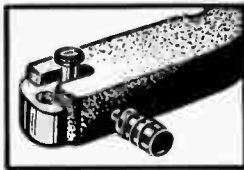
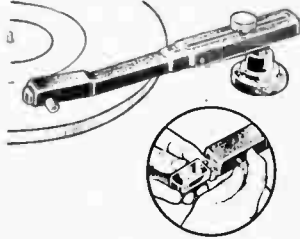
# CLARKSTAN

FINE ELECTRONIC & INDUSTRIAL EQUIP.

## BEST FOR LP MICROGROOVE AND STANDARD DISCS

**MODEL 213** — The new Clarkstan 12" record arm offers the best in standard disc and microgroove reproduction. Heavy aluminum casting eliminates audible resonance point. The slide-in cartridge holder allows instantaneous mounting of all types of standard cartridges. Silver-plated, spring loaded plungers maintain positive electrical contact without necessity of soldering. Quick acting weight adjustment is positive and accurate for change from microgroove to standard records. Arm has adjustable height, fits all standard turntables. Vertical roller bearing and thrust ball bearing minimize cramping — no mechanical bias on the pickup. Finish grey wrinkle and brushed chrome.

Net Price \$22.00



**MODEL 212** — 18" Transcription arm. This high quality professional arm is built on same proven engineering principles as the Clarkstan Model 213. Has slide-in cartridge holder and quick adjusting weight for accurate needle force. Accommodates both LP microgroove and standard records — any size up to 17" diameter. Overall length of arm is 14 3/8". Has adjustable height for all turntable conditions. Vertical roller bearings and ball thrust bearings eliminate mechanical bias on the pickup. Attractively finished in grey wrinkle and brushed chrome.

Net Price \$22.50

**MODEL 213G** — Same arm slotted to accommodate G.E. cartridge RPX-050.

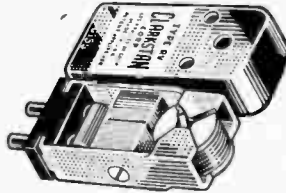
Net Price \$22.00

**MODEL 212G** — Same arm slotted to accommodate G.E. cartridge RPX-050.

Net Price \$22.50

### WIDE RANGE RV PICKUP

**MODEL 201** — Clarkstan RV wide range variable reluctance cartridge for best reproduction of LP microgroove and standard records. Instantaneously replaceable and interchangeable needles. Frequency velocity responsive to above 12,000 cps. Needle force 5-7 grams for LP microgroove, as low as 10 grams for conventional records. Output 60 millivolts. High impedance — 5, 50, 250 and 500 ohm models available. 1/2" mounting centers. Supplied with sapphire needle. Specify .0012" for LP microgroove or .0030" tip radius for standard records. Tip radii of .0015", .0022", .0025" also available. (Can also be supplied with diamond needle of any of above tip radii.) Net Price \$15.00



### CLARKSTAN MAGNETIC PICKUP

**MODEL 204** "RV-Jr." variable reluctance pickup has a removable and replaceable stylus. It weighs only one-half ounce and fits all popular makes of record changers having standard mounting holes 1/2" between centers. It is 1 1/2" overall length. This magnetic pickup with balanced armature is velocity responsive (flat ± 2 db) from 50 cps to 10,000 cps. It delivers .030 volt from the average record.

#204 "RV-Jr." Cartridge only (with 1 sapphire needle) Net Price \$5.40

#204D "RV-Jr." Cartridge only (with 1 diamond needle) Net Price \$21.00  
(Specify whether .0012" or .0030" radius needle desired.)



### CLARKSTAN KNOBS

These solid, one-piece, distinctive knobs — hand-machined from Dural — add a custom or professional appearance to fine equipment. Harmonize perfectly with precision-engineered units. Supplied with or without pointer. All knobs have fluted sides with screw-type mounting for standard 1/4" round or flat shafts. Backs of all knobs recessed 3/4" dia. by 5/64" deep for panel mounting... height of all knobs 11/16". Constructed to withstand hard usage.

MODEL	DESCRIPTION	KNOB DIA.
275-0A	Plain	3/4"
275-0B	With Pointer	3/4"
275-1A	Plain	1"
275-1B	With Pointer	1"
275-12A	Plain	1 1/4"
275-12B	With Pointer	1 1/4"
275-2A	Plain	1 1/2"
275-2B	With Pointer	1 1/2"
275-3A	Plain	2"
275-3B	With Pointer	2"
275-4A	Plain	2 1/2"
275-4B	With Pointer	2 1/2"

### SPECIAL ENGRAVING

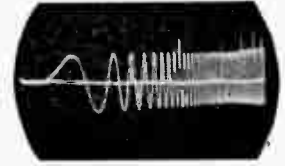
Words, inscriptions or symbols can be engraved on face of knob, with any color or color combination in the recesses of the engravings.

### SPECIAL COLOR FINISHES

Special color finishes available in any of the over-all color anodized finishes such as alumilite.

**PACIFIC TRANSDUCER CORP., Los Angeles 64, California**  
(formerly CLARKSTAN CORP.)

## AUDIO SWEEP FREQUENCY TRANSCRIPTION



The Sweep Frequency Transcription is a new method of making instantaneous frequency response runs. It has been designed with all correction factors included in the original recording, therefore, no charts or graphs are needed. Before the development of the Sweep Frequency Transcription, the tone record was used for frequency response measurements on playback systems. This method was both time consuming and laborious. If adjustments were required, a new frequency run was required after each adjustment. Now all that is needed is a cathode ray oscilloscope and a Sweep Frequency Transcription for instantaneous response measurements. Only a few quick adjustments on the equalizer circuits and the job is done. For complete frequency checking of all broadcast transmission equipment and components for production testing of phonographic reproducers, filter networks, audio amplifiers, preamplifiers, tone control systems and components.

**MODEL 1000A** — 12" Vinylite transcription, 78 RPM, 70 to 10,000 cps. recorded flat ± 1 db. Net Price \$6.60

**MODEL 1000D** — 12" Vinylite transcription, 78 RPM, 5 KC to 15 KC, recorded flat ± 1 db. Net Price \$6.60

**MODEL 102M** — 12" Vinylite, for microgroove testing, 33-1/3 RPM, 70 to 10,000 cps. modified NAB recording. Net Price \$6.60

**MODEL 115** — audio sweep frequency film, 35mm, positive print, variable density, 10 ft. lengths. Net Price \$10.00

**MODEL 116** — audio sweep frequency film, 35mm, positive print, variable area, in 10 ft. lengths. Net Price \$10.00

### STEADY STATE

#### FREQUENCY RECORDS



A series of new test records in which all the information for the engineer is annotated for both the cutting and reproduction. In recording these records harmonic distortion was kept to the lowest possible figure. Extreme care throughout the processing cycle was used. Careful reproduction, using the latest techniques insures exact duplication of the original recordings in each pressing.

**MODEL 2005S** — Steady State Frequency Record, 12" Vinylite, 78.26 RPM 50 cps. to 10,000 cps. flat recording (1 side only). Net Price \$3.90

**MODELS 2001S & 2002S** — Microgroove Steady State Frequency Record, 12" Vinylite, 33-1/3 RPM, 50 cps. to 10,000 cps. one side NAB, other side flat recording. Net Price \$3.90

**MODEL 101** — Intermodulation Test Record, 12" Vinylite, 33-1/3 RPM, standard groove, 1/4 ratio, 7 KC and 100 cps. (1 side only). Net Price \$3.90

# SONOTONE CERAMIC CARTRIDGES

The most widely used quality cartridge in the phono industry

High compliance...high output without preamplification...flat response without equalization...no deterioration from

temperature or moisture...fits virtually all phono arms. Needles snap out, snap in, for easy replacement without tools.



1P Single Needle



2T Turnover

## SPECIFICATIONS

Response ..... 30 to 15,000 cycles  
 Output Voltage ..... 1.0 volt  
 Compliance .....  $1.0 \times 10^{-6}$  cm/dyne  
 Recommended Load ..... 1-5 megohms  
 Tracking Force ..... 8-10 grams  
 Cartridge Weight ..... 5.5 grams  
 Mounting dimensions..... Standard  $\frac{1}{2}$ -inch or  $\frac{5}{8}$ -inch centers

Needle.....1P, single. 2T, dual. Sapphire or diamond—see listing at right.

### 1P CARTRIDGES

	List Price
1P-1S (1-mil sapphire)	\$7.50
1P-2S (2-mil sapphire)	7.50
1P-3S (3-mil sapphire)	7.50
1P-1D (1-mil diamond)	21.00
1P-3D (3-mil diamond)	21.00

### 1P-LB CARTRIDGES

Bracketless Types  
 (Identical to above, except less mounting brackets)

1P-LB-1S (1-mil sapphire)	\$7.50
1P-LB-2S (2-mil sapphire)	7.50
1P-LB-3S (3-mil sapphire)	7.50
1P-LB-1D (1-mil diamond)	21.00
1P-LB-3D (3-mil diamond)	21.00

### N-1P REPLACEMENT NEEDLES

N-1P-1S (1-mil sapphire)	\$2.50
N-1P-2S (2-mil sapphire)	2.50
N-1P-3S (3-mil sapphire)	2.50
N-1P-1D (1-mil diamond)	15.50
N-1P-3D (3-mil diamond)	15.50

### 2T CARTRIDGES

	List Price
2T-S (2 sapphires)	\$8.50
2T-SD (1-mil diamond, 3-mil sapphire)	22.00
2T-D (2 diamonds)	39.50

### 2T-LB CARTRIDGES

Bracketless Types  
 (Identical to above, except less mounting brackets)

2T-LB-S (2 sapphires)	\$8.50
2T-LB-SD (1-mil diamond, 3-mil sapphire)	22.00
2T-LB-D (2 diamonds)	39.50

### N-2T REPLACEMENT NEEDLES

N-2T-S (2 sapphires)	\$3.50
N-2T-SD (1-mil diamond, 3-mil sapphire)	16.50
N-2T-D (2 diamonds)	32.00

## Now—the SONOTONE "3" SERIES

### Super-Fidelity Ceramic Cartridge

Outperforms top quality 'velocity' cartridges...with all the advantages of ceramic cartridges, including lower cost.



3P Single Needle



3T Turnover

## SPECIFICATIONS

Response ..... 20 to 20,000 cycles  
 Output Voltage ..... 0.5 volts  
 Compliance .....  $2.0 \times 10^{-6}$  cm/dyne (minimum)  
 Recommended Load ..... 2-3 megohms  
 Tracking Force ..... 7 grams  
 Cartridge Weight ..... 12 grams  
 Mounting Dimensions.... Standard  $\frac{1}{2}$ -inch centers or  $\frac{5}{8}$ -inch centers

Needle ..... Dual jewel tips (3T)  
 Jewel tip as listed (3P)  
 Housing.....Die-cast housing with grounding tab for complete shielding  
 Finish.....Dull jet black and rich gold

### 3P CARTRIDGES

	List Price
3P-1D (1-mil diamond)	\$23.00
3P-3D (3-mil diamond)	23.00
3P-1S (1-mil sapphire)	12.50
3P-3S (3-mil sapphire)	12.50

### 3P-LB CARTRIDGES

Bracketless Types  
 (Identical to above, except less mounting brackets)

3P-LB-1D (1-mil diamond)	\$23.00
3P-LB-3D (3-mil diamond)	23.00
3P-LB-1S (1-mil sapphire)	12.50
3P-LB-3S (3-mil sapphire)	12.50

### N-3P REPLACEMENT NEEDLES

N-3P-1D (1-mil diamond)	\$16.50
N-3P-3D (3-mil diamond)	16.50
N-3P-1S (1-mil sapphire)	3.00
N-3P-3S (3-mil sapphire)	3.00

### 3T CARTRIDGES

	List Price
3T-D (2 diamonds)	\$42.50
3T-SD (1-mil diamond, 3-mil sapphire)	24.00
3T-S (2 sapphires)	14.50

### 3T-LB CARTRIDGES

Bracketless Types  
 (Identical to above, except less mounting brackets)

3T-LB-D (2 diamonds)	\$42.50
3T-LB-SD (1-mil diamond, 3-mil sapphire)	24.00
3T-LB-S (2 sapphires)	14.50

### N-3T REPLACEMENT NEEDLES

N-3T-D (2 diamonds)	\$34.00
N-3T-SD (1-mil diamond, 3-mil sapphire)	17.50
N-3T-S (2 sapphires)	4.00



For performance without problems...

# SONOTONE® CERAMIC CARTRIDGES

ELMSFORD, N. Y.

In Canada, contact Atlas Radio Corporation, Ltd., 50 Wingold Avenue, Toronto

# ALLIANCE PHONOMOTORS

THE ALLIANCE MANUFACTURING CO., INC. • ALLIANCE, OHIO

## Phonomotors

New three-speed phonomotors for record players 33 $\frac{1}{3}$ , 45 and 78 RPM records  
New single speed 78 RPM phonomotors

## General Purpose Motors

Alliance makes a variety of fractional horse-power, shaded pole induction motors to service many specific small load applications. Millions are used not only in the radio-phonograph and recording industry, but in a wide range of product classifications. The motors illustrated here are standard models designed for practical utility and to meet the maximum number of mechanical and electrical requirements for motors in this class.

(Typical uses are electronic, mechanical, electric controls — radio tuning and turn-table drives — disc tape and wire recorders — fans — heating controls — cam operated mechanisms — miscellaneous uses.)



MODEL JT — Deluxe Alliance Single speed phonomotor — 78 RPM  
List Price .....\$6.80

This deluxe 78 RPM phonomotor assembly is quiet and extremely smooth in operation. It embodies all of the superior features which made the original Model 80 famous, with a new, more powerful motor.

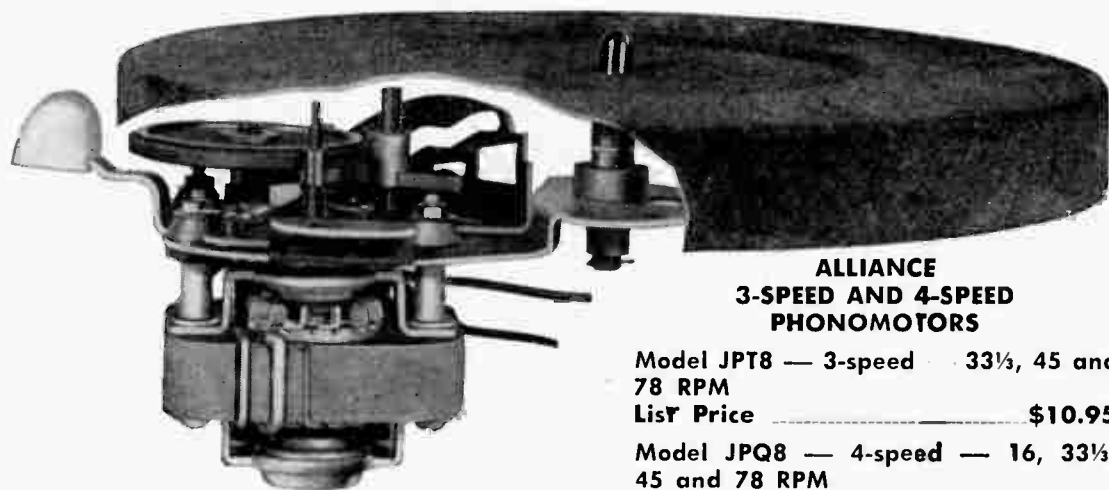
### ALLIANCE 78 RPM PHONOMOTOR MODEL JT

*Low Cost — Ideal for Hi-Fi*

Model JT is available with 8 inch and 9 inch turn-table diameters and has the same basic motor as used on Model JPT with turn-tables available in color choice. Also available for motor winding for use in series with 25L6 vacuum tube filament. Rotating spindle revolves with turntable. Features shockproof vibration mounting — a truly fine performing unit made to highest precision standards.



# ALLIANCE PHONOMOTORS



## ALLIANCE 3-SPEED AND 4-SPEED PHONOMOTORS

Model JPT8 — 3-speed — 33 $\frac{1}{3}$ , 45 and 78 RPM

List Price ..... \$10.95

Model JPQ8 — 4-speed — 16, 33 $\frac{1}{3}$ , 45 and 78 RPM

List Price ..... \$11.86

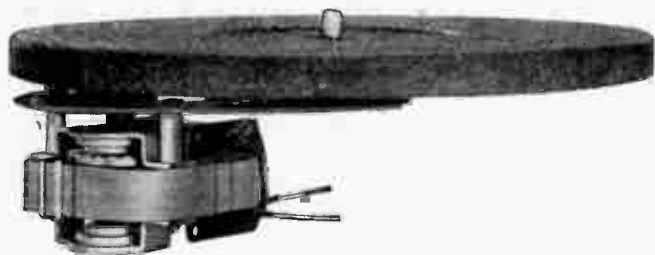
## THREE AND FOUR SPEED PHONOMOTORS

### THE LARGEST SELLING PHONOMOTORS IN THE WORLD

MODEL JPT — A completely new design. Retains all of the features of original model, which became the standard of the industry, with many added improvements. Adequate reserve power in motor. Elimination of stepped pulley reduces possibility of wow and rumble. Added neutral position on shifter lever removes drive shaft from contact with rubber tire when instrument is not in use. Attractive plastic knob on shifter lever available in color. **TURNTABLES AVAILABLE IN CHOICE OF COLORS.** Furnished with plastic 45 RPM center disc. Can be furnished with winding for operation in series with 25 L6 tube

filament if desired. Furnished with speed indicator escutcheon plate. Same mounting plate cut-out as single speed 78 RPM unit illustrated, thus providing greater versatility for manufacturers of phonograph equipment.

The model JPT provides unimpaired performance at all speeds. Single lever shifts and indexes speeds with freer movement. Electronic dynamically balanced rotor. Vibration-proof mountings. Minimum rumble and hum. Unexcelled speed regulation. Designed to meet U. L. requirements. Occupies minimum space. Millions have been sold.



## ALLIANCE SINGLE-SPEED PHONOMOTOR MODEL JP

List Price ..... \$6.05

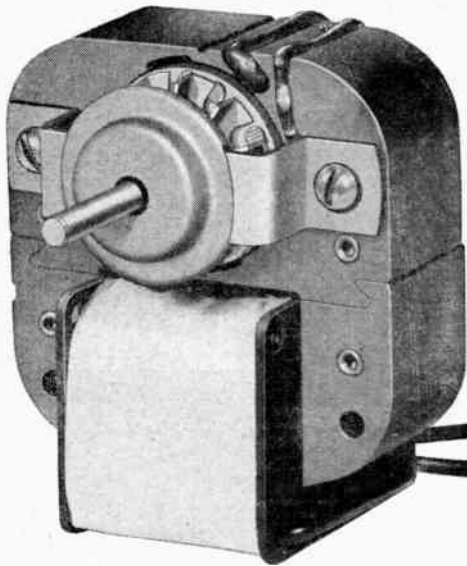
MODEL JP — The most economical player motor on the market. Available with 6 $\frac{1}{2}$ " , 8" and 9" turntable diameters. Same basic motor as used on JPT model. Same mounting cutout as three speed unit illustrated. Turntables available in color choice. Also available with motor winding for use in series with 25L6 vacuum tube filament. Turntable spindle revolves with record.

Deluxe unit also available. Uses rotating turntable spindle. Shock proof vibration mounting. Same mounting cut-out requirements as other units shown. A truly fine performing unit. Highest quality — lowest price.

# ALLIANCE MOTORS

## MODEL JS MOTOR —

This new model is an extremely versatile motor of high efficiency and compact design. In reality JS is a "big brother" power-wise to our famous, popular MS illustrated below.



Model JS

Prices vary with stack thickness

### SPECIFICATIONS

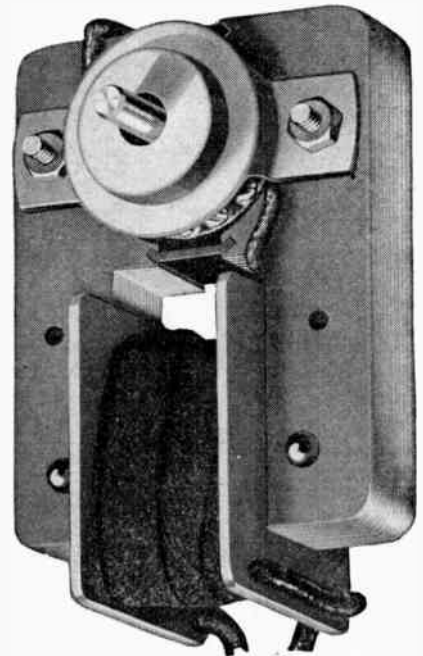
	JS 0.600	JS 0.800	JS 1.100
Stack Thickness, Inches	0.600	0.850	1.100
Locked Amps. - Cold	0.710	0.920	0.930
Locked Watts - Cold	35	50	55
Starting Torque oz. in Cold	1.75	2.7	2.95
Idle Amps. - Hot	0.540	0.670	0.600
Idle Watts - Hot	22	30	30
Idle R.P.M. - Hot	3470	3475	3500
Full Load Amps.	0.575	0.760	0.725
Full Load Watts	29.0	41.5	44.0
Full Load Torque oz. in.	2.7	4.2	5.1
Full Load R.P.M.	2900	2900	2900
Full Load H. P.	0.008	0.012	0.13
Overall Dimensions	2-53/64 x	2-53/64 x	2-53/64 x
(Less Shaft Extension)	2-13/32 x 2	2-13/32 x 2 1/4	2-13/32 x 3 1/2
Weight	1# 2 oz.	1# 8 oz.	1# 13 oz.
Rotor Shaft In.	0.181	0.181	0.181
Shaft Ext. W.	.750	.750	.750

117 volts 60 cycles, continuous open rating with 65° centigrade temperature rise. Motor can be supplied with internal fans for mechanical duty. Mounting hole 1 1/8" center.

## MODEL MS MOTOR

A LEADER FOR MANY YEARS

The Alliance Model MS motor is ideal for driving fans, timers, or rotisseries, and other applications. It is an adaptation of the quiet, smooth running motor which is used to power the Models MP8, MP9, and MP10 Phonomotors. It measures 3 1/8" x 2" x 1 3/4" not including the 7/16" long shaft extension which has a 3/16" diameter. Rotation is clockwise facing the shaft extension. Its self aligning bearings are of the porous bronze oilless type. Operating over a wide range of AC voltages from 24 to 250 and frequency of 40, 50, or 60 cycles, this compact lightweight motor can be incorporated as the vital power source in all kinds of electrical and mechanical devices. Large oil wicks provide lifetime lubrication.



Model MS

List Price .....\$4.35

# ALLIANCE MOTORS

## GENERAL TYPES FOR SMALL LOADS

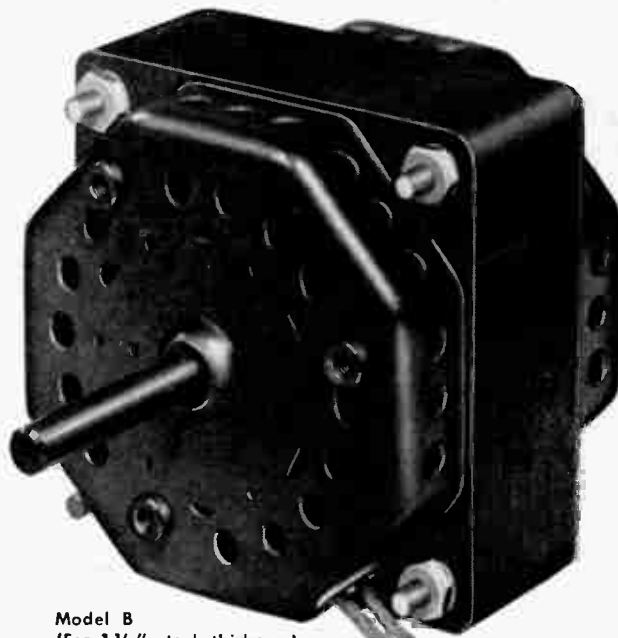
### MODEL B

## Shaded Pole Induction Motor

**FOR HI FIDELITY PLAYERS  
FANS — RECORDERS — HEATERS  
and OTHER DEVICES**

Model B is a 4-pole shaded pole induction motor, especially adapted for such devices as fans, unit heaters, blowers, air circulators, disc, tape and wire recorders. Comes in three standard lamination stack thicknesses. The range of power is from 1/100 h.p. up to 1/25 h.p. Where necessary the motor can be supplied completely enclosed.

Important advantages for Model B are economy of operation, low induced hum, low magnetic field, cool running, flexible power range and compactness. A real Hi-Fi power plant.



Model B  
(For 1 1/4" stack thickness)  
List Price .....\$15.10

### SPECIFICATIONS

#### MECHANICAL

3 3/8" square, with length of 2 1/8" over the end bracket for the 1 1/4" stock. 5/16" diameter shaft.

Porous bronze, oiliness type, self oiling bearings — amply proportioned, with large oil reserves.

Semi-open or fully enclosed construction. Can be supplied with oil tubes if required.

Four No. 10-32 bolts equally spaced for end mounting or motor can be supplied with mounting bushings on end covers.

3/4", 1 1/4" and 1 3/4" lamination stocks depending on rating required.

Max. weight — approx. 5.6 lbs. for largest stock thickness.

Single Phase, 4-pole, shaded pole induction motor with squirrel cage rotor.

Approx. 1/25 h.p. for fans — approx. 1/40 h.p. for mechanical loads without external cooling. Entire power range runs from 1/100 h.p. to 1/25 h.p. for semi-enclosed construction.

Starting torque approx. 40% of torque of full load rating. 1550 r.p.m. full load speed.

A. C. only — 115 volts, 60 cycles. Clockwise or counter clockwise rotation — not reversible. Can be wound for 50 cycles and other voltages.

Internal cooling fans on each end.

**FOR DETAILED INFORMATION . . . CATALOG SHEETS  
OR ADVICE ON SPECIAL PROBLEMS WRITE THE FACTORY.**

**ALLIANCE MANUFACTURING COMPANY**  
**ALLIANCE, OHIO**



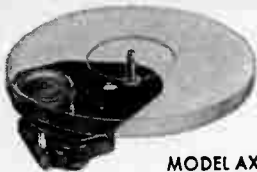
# GENERAL INDUSTRIES Co.

ELECTRIC PHONOMOTORS • HOME RECORDING & PHONOGRAPH ASSEMBLIES • RECORDING MOTORS

*Rely on G.I.*

Suitable for every phonograph instrument where low cost, dependable performance, compactness, light weight and quietness of operation are important considerations. GI phonomotors are even in speed and have ample power to play 10" and 12" records. Fan cooling permits use in partially closed cabinets. Designed to comply with Underwriters' Laboratories' requirements.

## CONSTANT SPEED ELECTRIC PHONOMOTORS



MODEL AX

**MODEL AX**—78 R. P. M. . . . . List Price, \$6.25  
115 volts a. c., 60 cycles

A low-priced 78 R.P.M. 2-pole, rim drive motor suitable for installation where size and cost are prime factors. Furnished with 8" turntable and mounting plate ready for installation.

Dimensions: Length—3½"; width—2½"; depth—1¾" below mounting plate.  
Packed in individual cartons. Shipping weight 3-lbs.

**MODEL RM4** —78 R. P. M. . . . . List Price, \$20.15  
**MODEL RM4-3** —33-1/3 R. P. M. . . . . List Price, 20.95  
**MODEL RM4-45**—45 R. P. M. . . . . List Price, 20.95

115 volts a. c., 60 cycles

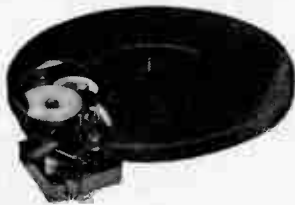
Heavy duty, rim drive, 4-pole motor. Rubber insulated from both mounting plate and turntable for exceptionally quiet operation. Turntable shaft revolves with turntable and is grooved for holding clip. Retractable pin in turntable permits playing standard records without adjustment. Efficient performance is assured by positive alignment of driving pulleys, idler and turntable in one plane. Furnished 10" weighted turntable and complete plate ready for installation.

Dimensions: Length—3¾"; Width—3¾"; Depth—2½" below mounting plate.  
Packed in individual cartons. Shipping weight—9 lbs.



Model RM4 Model RM4-3  
Model RM4-45

## DUAL-SPEED PHONOGRAPH MOTORS



**MODEL DS**—45, 33-1/3 R. P. M.

115 volts a. c., 60 cycles

A novel 45-33-1/3 R.P.M. rim drive, 2-pole motor. Very compact. Employs a Neoprene belt for the 33-1/3 R.P.M. speed. 45 R.P.M. speed is obtained direct from motor shaft. Speed is changed by a simple external lever movement. Specially designed and manufactured to hold wow and rumble to a minimum for excellent reproduction for new records. Turntable shaft revolves with turntable, and is grooved for turntable clip. Available with 8" or 9" turntable, using same mounting plate.

List Price, \$10.40

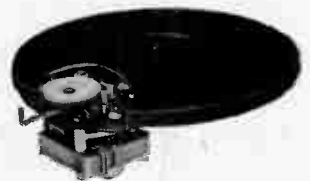
Dimensions: Length—3¾"; Width—2¼"; Depth—2½" below mounting plate. Furnished complete with turntable and mounting plate ready for installation. Shipping weight—4 lbs.

**MODEL DM**—33-1/3, 78 R. P. M.      **MODEL DE**—45, 78 R. P. M.  
115 volts a. c., 60 cycles

Novel and ingenious rim drive, 2-pole motors. Very compact. Employs a Neoprene belt for slow speeds. 78 R. P. M. speed is obtained direct from rotor shaft. Speed is changed by a simple external lever movement. Specially designed and manufactured to hold wow and rumble to a minimum for excellent reproduction for new records. Turntable shaft revolves with turntable, and is grooved for turntable clip. Available with 9" turntable.

List Price, \$10.40

Dimensions: Length—3¾"; Width—2¼"; Depth—2¾" below mounting plate. Furnished complete with 9" turntable and mounting plate ready for installation. Shipping weight—4 lbs.



**MODEL DR** — 78, 33-1/3 R. P. M.      • **MODEL DZ** — 78, 45, R. P. M.  
**MODEL DV** — 45, 33-1/3 R. P. M.      115 volts a. c., 60 cycles

Deluxe rim drive, 4-pole motors with a simple and positive mechanism for shifting from one speed to the other. Speed change is accomplished by means of an external push-pull lever. An ingenious mechanism raises and lowers the entire idler assembly, disengages the idler wheel from the two-diameter motor shaft and moves the idler wheel from one diameter to the other. At the slow speed the idler wheel engages the small diameter of the motor shaft; at the fast speed it engages the large diameter.

List Price, \$21.75

Dimensions: Length—6"; Width—5¾"; Depth—2¾" below mounting plate. Furnished complete with 10" turntable and mounting plate ready for installation. Shipping weight—6½ lbs.





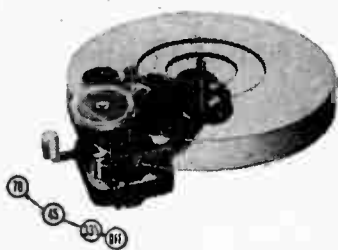
# GENERAL INDUSTRIES Co.

ELECTRIC PHONOMOTORS • HOME RECORDING & PHONOGRAPH ASSEMBLIES • RECORDING MOTORS

*Rely on G.I.*

## PLURAL-SPEED PHONOGRAPH MOTORS

### 3 & 4 SPEED TWO POLE PHONOGRAPH MOTORS



Model SS

**MODEL SS 3** — 78, 45, 33-1/3 R. P. M.

115 volts a. c., 60 cycles

**MODEL SS 4** 78, 45, 33-1/3 and 16 2/3 R. P. M. 115 volts a. c., 60 cycles

Very compact, three or four speed, phonograph motors using the vertical idler shifting principle. Idler wheel drives the turntable directly from the appropriate step on the motor shaft. Precision construction throughout. Uses a ribbed main mounting plate to assure stability and proper relationship of all components. Rumble and wow are held to a minimum. Motor uses oilless bearing and dynamically balanced rotor. Turntable shaft revolves with turntable and is grooved for turntable clip. Available with 8 inch turntable. A 45 R P M record adapter and a speed indicator dial are furnished with each motor.

List Price SS 3, \$10.95

List Price SS 4, \$11.75

Dimensions: Length—5"; width—4<sup>3</sup>/<sub>16</sub>"; Depth—2<sup>1</sup>/<sub>4</sub>" below mounting plate. Furnished complete with turntable and mounting plate ready for installation. Packed in individual cartons. Shipping weight—.4 lbs.

### DELUXE THREE-SPEED RIM DRIVE FOUR POLE MOTOR

**MODEL DSS** — 78, 45, 33-1/3 R. P. M.

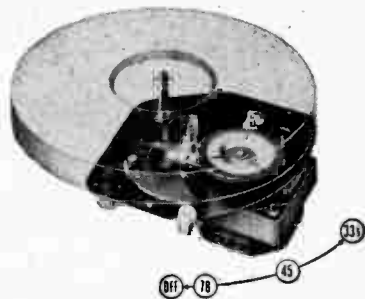
115 volts a. c., 60 cycles

Simple speed change is accomplished by shifting the idler wheel vertically to the appropriate diameter on the motor shaft for desired turntable speed. When shifting speed selector to off position, a switch turns the motor off and the idler wheel is disengaged from the motor shaft. The driving motor is of the four-pole, shaded-pole type resulting in absolute minimum of stray field radiation—ideally suited for use with all types of pickups including magnetic. Motor uses oilless bearings and motor is dynamically balanced to a fine degree.

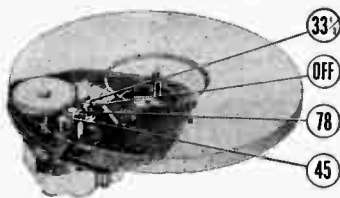
Precision construction throughout — low friction oilless turntable bearing—radially operated shift lever—10 inch turntable.

List Price, \$24.50

Dimensions: Length—6<sup>3</sup>/<sub>4</sub>"; width—6<sup>1</sup>/<sub>16</sub>"; Depth—2<sup>3</sup>/<sub>4</sub>" below mounting plate. Furnished complete with 10 inch turntable, speed indicator dial. 45 RPM record adapter, off-on switch, and mounting plate ready for installation. Packed in individual cartons. Shipping weight—6<sup>1</sup>/<sub>2</sub> lbs.



Model DSS



Model TR

**MODEL TR** — 45, 78, 33-1/3 R. P. M.

115 volts a. c., 60 cycles

Deluxe three speed rim drive, 2-pole motor. Turntable speeds of 33<sup>1</sup>/<sub>3</sub>, 45 and 78 R.P.M. are secured through three separate pulleys running on oil-impregnated bearings and mounted on a turret plate. By means of a simple lever, the desired pulley is brought into contact with the idler wheel. The two pulleys not in contact with the idler wheel remain stationary. Symmetrical electrical and mechanical design results in minimum stray field and maximum performance. Ingenious locking device holds turret plate firmly in driving position at any of the three speeds. Available with 8" or 9" turntable. A 45 R.P.M. record adapter and speed indicator dial are furnished with each motor.

List Price, \$12.45

Dimensions: Length—3<sup>1</sup>/<sub>4</sub>"; Width—2<sup>1</sup>/<sub>4</sub>"; Depth—2<sup>1</sup>/<sub>4</sub>" below mounting plate. Furnished complete with turntable and mounting plate ready for installation. Shipping weight—4 lbs.



# GENERAL INDUSTRIES Co.

ELECTRIC PHONOMOTORS • HOME RECORDING & PHONOGRAPH ASSEMBLIES • RECORDING MOTORS

*Rely on G.I.*

## SINGLE & 3-SPEED BATTERY POWERED PHONOGRAPH MOTORS



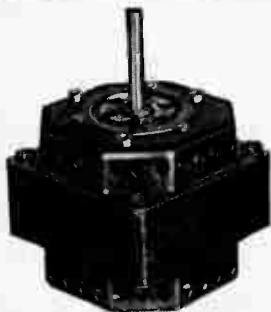
**Model BX**

**MODEL BX** 45, 33-1/3, 16-2/3 R. P. M. List Price ..... \$14.50  
**MODEL BX-45** 45 R. P. M. .... \$12.75  
**GI "firsts"**

These extremely compact low-current drain phonomotors give up to 135 hours normal service from 4 flashlight cells. All-new non-slip plastic turntables, enclosed motors, rubber-grammet mounts, self-aligning, self-lubricating bearings, low radio interference level. Ball thrust shafts. Model BX has feather-touch speed control which can be located either side of turntable; neutral "off" position. Special turntable adaptor.

Dimensions: Length 6 1/2"; Width 4 1/2"; Height 2 3/4". Depth below mounting surface 2" Shipping weight 1 pound.

## TAPE, WIRE AND DISC RECORDING MOTORS



**MODEL D-10**

Heavy duty 4-pole, shaded pole induction motors. 1/70 H. P. Free speed: 1740 R.P.M. Maximum running torque: 11 ounce-inches.

Features include: A locating and locking arrangement for both top and bottom covers which assures high accuracy in alignment of rotor within the stator bore; new air intake; dual cooling fans and self-aligning, oil-impregnated sleeve bearings.

These high torque motors are used in practically all tape, wire and disc recorders now being manufactured. **List Price, \$15.75**

Dimensions: Length—3 3/4"; Width—3 3/4"; Depth—3" below mounting plate. Shaft diameter—5/16"

115 volts a. c., 60 cycles

## HOME RECORDING AND PHONOGRAPH ASSEMBLIES

**MODEL GI-R85L** LP, 78 and 33-1/3 R. P. M.  
 with conversion spring for changing the 33-1/3 R. P. M. speed to 45 R. P. M.

**MODEL GI-R90L** 78 & 33-1/3 R. P. M.  
 Standard

115 volts a. c.,  
60 cycles



Model GI-R90L is the standard model which has been in the GI line for several years. It cuts 120 lines per inch, and plays back records with the standard needle pressure.

The model GI-S85L incorporates a dual purpose pickup cartridge and an excellent and simple adjustment for playing the LP records and standard records. It cuts 160 lines per inch. In a separate envelope is furnished a conversion spring for changing the 33 1/3 R.P.M. with mounting instructions printed thereon.

Both models cut records up to 10" diameter. To shift motor from one speed to the other, merely turn the speed change dial. Beautiful walnut wood grain on steel base plate. Streamline plastic trim on pickup and cutter arm attractively engraved with legends "Reproducer" and "Recorder". Turntable recessed into well in base plate. Merely lower cutting arm over record disc to start recording. Convenient, depth-of-cut adjustment. Dynamically-balanced, rim drive, 4-pole motor.

**MODEL GI-R85L LP** List Price, \$56.50  
**MODEL GI-R90L STANDARD** List Price, 52.00

Assembly includes dual speed motor, 10" weighted turntable, crystal cutter, crystal pickup, pickup and cutter arm rests; drawn steel base plate with formed down edges.

Above prices include crystal cutter for (M41 10) magnetic cutter add \$2.00 each

Dimensions: Base Plate—15" wide; 11 1/2" front to back; height above lower edge of base plate—2 3/4"; depth below lower edge of base plate —3 3/4". Packed in individual cartons. Shipping weight—17 lbs.

REG. U.S. PAT. OFF.

# SCOTCH Magnetic Tape

BRAND

"SCOTCH" Brand Magnetic Tape, the acknowledged international standard of the recording industry. Stock the leader, promote the leader. "SCOTCH" Brand Magnetic Tapes made in U.S.A. by Minnesota Mining and Manufacturing Company, St. Paul 6, Minnesota.

**SCOTCH** Magnetic Tape No. 111  
BRAND Plastic Base—Red Oxide Coating

High fidelity plastic tape for every recording need, the acknowledged international standard of the recording industry. Dry lubricated.



TYPE	LENGTH	REEL	LIST PRICE
111A-1.5	150 ft. Plastic	3"	\$ .85
111A-3	300 ft. Plastic	4"	1.50
111A-6	600 ft. Plastic	5"	2.25
111A-12	1200 ft. Plastic	7"	3.50
111A-24H	2400 ft. (NARTB Hub)	10 1/2"	8.50
111A-24R	2400 ft. (NARTB Reel)	10 1/2"	10.90
111A-24RPS	2400 ft. (RETMA Plastic)	10 1/2"	10.90
111A-48H	4800 ft. (NARTB Hub)	14"	17.00
111A-48R	4800 ft. (NARTB Reel)	14"	22.10

**SCOTCH** Magnetic Tape No. 120  
BRAND *High Output* Plastic Base—Green color for easy recognition

Unequalled performance in difficult recording applications, giving at least 6 db more output with no increase in noise or harmonic distortion. Dry lubricated. Colored green for easy recognition.



120A-3	300 ft. Plastic	4"	\$ 1.75
120A-6	600 ft. Plastic	5"	3.50
120A-12	1200 ft. Plastic	7"	5.50
120A-24H	2400 ft. (NARTB Hub)	10 1/2"	10.00
120A-24R	2400 ft. (NARTB Reel)	10 1/2"	12.85
120A-24RPS	2400 ft. (RETMA Plastic)	10 1/2"	12.85
120A-48H	4800 ft. (NARTB Hub)	14"	20.00
120A-48R	4800 ft. (NARTB Reel)	14"	26.00

**SCOTCH** Magnetic Tape No. 190  
BRAND *Extra Play* Plastic Base Tape

50% more recording time on one single reel means new freedom from reel change. Exclusive feature is a thinner coating of high potency oxide which gives an appreciably extended high frequency range. Dry lubricated.



190A-9-100G	900 ft. Plastic	5"	\$ 3.50
190A-18-100G	1800 ft. Plastic	7"	5.50
190A-36H-100G	3600 ft. (NARTB Hub)	10 1/2"	10.00
190A-36R-100G	3600 ft. (NARTB Reel)	10 1/2"	12.85
190A-36RPS-100G	3600 ft. (RETMA Plastic)	10 1/2"	12.85
190A-72H-100G	7200 ft. (NARTB Hub)	14"	20.00
190A-72R-100G	7200 ft. (NARTB Reel)	14"	26.00

**SCOTCH** Magnetic Tape No. 150  
BRAND *Extra Play PE* backing (Polyester) Weather balanced

Extra strong "PE" polyester backing assures physical stability in extremes of temperature and humidity. "Weather Balanced", 150 tape is coated with super-sensitive, high potency oxide, offers 50% more recording time on a single reel.



150-9	900 ft. Plastic	5"	\$ 4.40
150-18	1800 ft. Plastic	7"	7.95
150-36H	3600 ft. (NARTB Hub)	10 1/2"	16.00
150-36R	3600 ft. (NARTB Reel)	10 1/2"	17.95
150-36RPS	3600 ft. (RETMA Plastic)	10 1/2"	17.95
150-72H	7200 ft. (NARTB Hub)	14"	30.00
150-72R	7200 ft. (NARTB Reel)	14"	36.00

**SCOTCH** Magnetic Tape No. 111AM  
BRAND *PE* backing (Polyester)

High impact strength "PE" polyester backing is coated with standard 111 red oxide. This tape exhibits remarkable physical stability despite sharp changes in temperature and humidity. Dry lubricated.



111AM-6	600 ft. Plastic	5"	\$ 5.25
111AM-12	1200 ft. Plastic	7"	9.75
111AM-24H	2400 ft. (NARTB Hub)	10 1/2"	16.95
111AM-24R	2400 ft. (NARTB Reel)	10 1/2"	19.80
111AM-24RPS	2400 ft. (RETMA Plastic)	10 1/2"	19.80
111AM-48H	4800 ft. (NARTB Hub)	14"	33.90
111AM-48R	4800 ft. (NARTB Reel)	14"	39.90

**SCOTCH** Magnetic Tape No. 120AM  
BRAND *High Output PE* backing (Polyester)

Super-sensitive "High Output" oxide is coated on "PE" polyester backing.



120AM-6	600 ft. Plastic	5"	\$ 5.75
120AM-12	1200 ft. Plastic	7"	10.75
120AM-24H	2400 ft. (NARTB Hub)	10 1/2"	18.95
120AM-24R	2400 ft. (NARTB Reel)	10 1/2"	21.80
120AM-24RPS	2400 ft. (RETMA Plastic)	10 1/2"	21.80
120AM-48H	4800 ft. (NARTB Hub)	14"	37.90
120AM-48R	4800 ft. (NARTB Reel)	14"	43.90



MINNESOTA MINING AND MANUFACTURING COMPANY, ST. PAUL 6, MINN.

# ROBINS INDUSTRIES CORP.

Bayside 61, New York

## GIBSON GIRL\* TAPE SPLICERS AND TAPE ACCESSORIES

ROBINS GIBSON GIRL tape splicers are the accepted standard of the professional and industrial users of recording tape. They have gained this reputation because of their ease and reliability of operation, high standards of workmanship and because they are the only splicers which actually cut a diagonal lap joint in the tape and trim the splicing tape and tape edges with an indented trim cut, making THE SPLICE WITH

### THE GIBSON GIRL SHAPE.

The slight "waists" formed in the tape prevent adhesive from contacting critical parts of the recording mechanism and prevent layer to layer adhesion. Adhesive deposited on tape guides, etc. is a frequent cause of wow, flutter, and erratic performance. GIBSON GIRL TAPE SPLICERS ARE AVAILABLE IN SIX MODELS.

\*Patented and Pats. Appld.  
For—T.M. Reg. U.S. Pat. Off.

### GIBSON GIRL "TS" SERIES PROFESSIONAL SPLICES IN SECONDS!

The "TS" series splicers have cutter cartridges which house 3 long-life blades. The cartridge has two operating positions, miter cut and trimming cut. These are selected by moving the knob back and forth. **NO SCISSORS—NO RAZOR BLADES NEEDED!**

**TS-4DLX GIBSON GIRL DELUXE** — Our finest, a complete splicing unit. Splicer plus roll of ROBINS SPLICING TAPE mounted in an integral tape dispenser. Supplied with clear plastic dust cover. List \$11.50

**TS-4STD GIBSON GIRL STANDARD** — Our basic moderately priced professional model, same as the TS-4DLX except without tape dispenser or splicing tape. Supplied with clear plastic dust cover. List \$8.50

**TS-4JR GIBSON GIRL JUNIOR** — Low cost, small and compact. This is a handy carrying size model. Similar to TS-4STD except tape is held in tape guide by friction. List \$6.50

### GIBSON GIRL INDUSTRIAL TAPE SPLICERS

For Computer, TV, Industrial & Special Purpose Tapes up to 1" wide GIBSON GIRL INDUSTRIAL TAPE SPLICERS have all of the features of the TS-4STD. They are ruggedly constructed for industrial use, mounted on a heavy cast base. Precise blade centering adjustment. Long life blades easily replaceable.

Model TS-250 for 1/4" tapes .....	Net \$55.00
Model TS-500 for 1/2" tapes .....	Net 55.00
Model TS-625 for 5/8" tapes .....	Net 55.00
Model TS-750 for 3/4" tapes .....	Net 55.00
Model TS-1000 for 1" tapes .....	Net 55.00

CUSTOM BUILT SPLICERS FOR SPECIAL TAPES AND APPLICATIONS AVAILABLE — SEND FOR QUOTATION.

### NEW! SEMI-PRO AND HOBBYIST SPLICERS

With Self-Stick Adhesive Backs for Fastening to Recorders

**SP-4 GIBSON GIRL "SEMI-PRO"** — This hand held splicer consists of three parts, a tape alignment guide, a cutting unit which has a diagonal cutter on one side and GIBSON GIRL cutters on the other side, and a blade cover to protect the blades, designed for semi-professional use. List \$3.50

**H-4 GIBSON GIRL "HOBBYIST"**—A simple inexpensive tape splicer consisting of a tape and blade guide and a unique curved blade. It is designed to produce uniform GIBSON GIRL type splices for hobbyists who require its services less frequently. List \$2.00

**TT-1 ROBINS TAPE THREADER** — The perfect solution to an old nuisance! No more awkward fumbling. Just place the tape against the reel, slip on your threader to hold it in place, turn the crank and presto — you're ready to use your recorder. List 98¢

**ST-500 ROBINS SPLICING TAPE** — Specifically made for splicing recording tape. Tackiness, thickness, strength and cold flow are carefully controlled. Individually packed in crystal clear plastic container. List 39¢

**NEW! HC-2 ROBINS RECORDING HEAD CLEANER** — A fast efficient solvent for cleaning recording heads. Will not injure plastic parts of the head or recording tape. In brush applicator bottle. List \$1.00

**NEW! JCT-2 JOCKEY CLOTH FOR TAPES** — Revitalizes tapes. Reduces head wear. Reduces tape wear. Eliminates "grime distortion". Reduces tape squeal and chatter. Cleans, lubricates and protects by depositing a microscopic film of SILICONE on the tape. List \$1.00



Standard TS-4STD



Junior TS-4JR



Semi-Pro SP-4



Splicing Tape ST-500



Head Cleaner HC-2



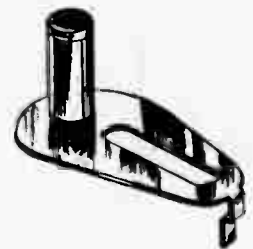
Deluxe TS-4DLX



Industrial TS-250-1000



Hobbyist H-4



Tape Threader TT-1



Tape Cleaner JCT-2



# ROBINS INDUSTRIES CORP.

Bayside 61, New York

## PHONOGRAPH EXTRAS FOR BETTER LISTENING



KLeeNeedLE NB-1

**AF-50 AUD-O-FILE** — An entirely new method for storing fine records. Fifty heavy gauge transparent plastic envelopes for storing fifty records are suspended from an attractive, sturdy, black wrought iron frame. Each bag closes securely, hence, dust-free, scratch-free storage. Record labels are visible eliminating the need for cumbersome indexes, and endless insertion of records in sleeves, jackets and albums (Pat. Pend.) .....Net **\$22.99**

**NB-1 KLeeNeedLE** — Automatic Changer Needle Brush. Automatically keeps needle clean by removing "dust blob" each time tone arm passes over brush. Adjustable height fits most record changers. Pressure sensitive adhesive for mounting supplied .....List **\$1.50**

**SE-90 ATOMIC JEWEL** — Radioactive Static Eliminator for Records. Contains a small amount of radioactive material which ionizes the air at the surface of records to provide a leakage path for static electricity. Neutralized static charges prevent the records from attracting dust. 9mm dia., 1/50 oz. ....List **\$5.00**

**CHANGER COVERS** — Transparent plastic covers fit many models of the makes listed. (Not for portable units)  
 Cat. No. CC-1 (VM & Webcor) .....List **\$2.00**  
 Cat. No. CC-2 (Garrard, Thorens, Audiogersh) .....List **2.00**  
 CC-3 TURNABLE COVER — 22" x 16½" x 9" .....List **\$2.50**

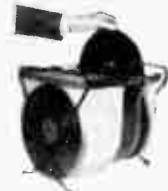
**PHONO-CUSHION** — Polyester foam mat fits most changers and players. Cushions record fall, reduces motor rumble, reduces magnetic pull of pickup, eliminates record slip, covers worn tables. In attractive colors.

Cat. No. PC-10, 10 inch .....List **\$1.20**  
 Cat. No. PC-12, 12 inch .....List **1.50**

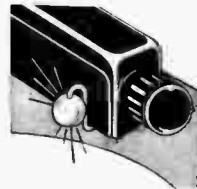
**JC-1 JOCKEY CLOTH FOR RECORDS** — Anti-Static Record cleaning cloth — cleans, lubricates and eliminates static charges which attract dust by depositing a microscopic hydrophilic film on the record .....List **\$1.00**

**DISCLOSURES** — Virgin polyethylene envelopes for record storage—Protects records from dust, grime, lint, etc.

Cat. No. E-10, 10 inch (pkg. of 12) .....List **\$1.20**  
 Cat. No. E-12, 12 inch (pkg. of 10) .....List **1.20**



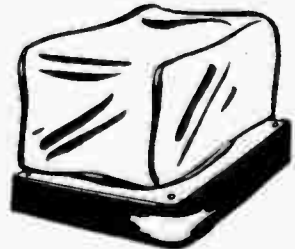
Aud-O-File AF-50



Atomic Jewel SE-90



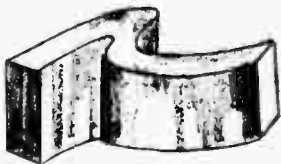
Record Cleaner JC-1



Changer Covers CC-1, 2, 3



Phono-Cushion PC-10, 12



Acoustic Insulation AM-9

### AM-9 ROBINS FIBERGLASS ACOUSTIC INSULATION

For lining speaker cabinets, record changers, tape decks, etc. 18" x 72" x 1" thick. Reduces high and medium frequency reverberation and standing waves in speaker cabinets and enclosures. Reduces motor noise and rumble in record and tape mechanisms .....List **\$2.75**



DisClosures E10, 12

Work or Play. Get better results from any audio system with . . . **ROBINS ACCESSORIES.** If its New and Worthwhile, **ROBINS** makes it

### MPT-1 ROBINS FLEXIBLE MAGNETIC PICK-UP-TOOL

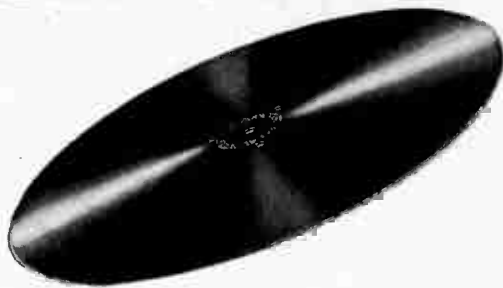
INDISPENSABLE TIME SAVER TO SERVICE MEN, MECHANICS & HOME DO-IT-UR SELF HANDY MEN

Finds and retrieves elusive nuts, bolts, washers, pins, screws, tacks, nails, etc. Powerful alnico magnet. Tremendous pulling and pick-up power. Will pick-up from any angle. Stays put at any desired angle. Compact—fits any tool chest. ....List **\$2.00**



Retrieving Tool MPT-1

# audiodiscs®



*For truly fine recording and reproduction*

For more than a decade, Audiodiscs have consistently maintained their position of eminent leadership in every field of instantaneous disc recording.

A superior lacquer coating, applied to the mirror-smooth aluminum base by a patented process, gives these outstanding advantages: maximum uniformity of coating, permanent resistance to humidity, longer stylus life, freedom from audible background scratch, long playback life, brilliant frequency response, and freedom from deterioration with age.

Type	Diameter	List Price per Disc	Box Contains	
<b>RED LABEL Audiodiscs</b> for professional use. Exceed the most exacting demands for highest quality professional recordings. The finest discs obtainable. Aluminum base. Double sided. Embossed labels.	7"	\$1.40	25	
	8"	1.10		
	10"	1.55		
	12"	2.55		
	16"	4.60		
<b>SINGLE FACE RED LABEL Audiodiscs.</b> Same quality as double sided Red Label Audiodiscs, listed above.	12"	2.00	25	
	16"	3.70		
<b>YELLOW LABEL Audiodiscs</b> for general use. High uniform quality. The popular choice for all general purpose recording. Aluminum base. Double sided. Yellow paper labels.	8"	.93	25	
	10"	1.24		
	12"	2.00		
	16"	3.70		
<b>REFERENCE LABEL Audiodiscs.</b> Provide maximum economy for test cuts, filing, reference recordings, auditions and equipment adjustments. Aluminum base. Double sided. White paper labels.	10"	1.05	25	
	12"	1.55		
	16"	2.77		
<b>BLUE LABEL Audiodiscs</b> for amateur use. Same high quality lacquer as professional discs, but on thinner aluminum base. Ideal for schools, homes, and general amateur use. Double sided. Blue paper labels.	6½"	.50	50	
	8"	.70		
	10"	1.00		
<b>MASTER Audiodiscs.</b> The outstanding choice of professional recordists for use where pressings are to be made. Give fine results with either silvering or gold sputterings. Aluminum base. Double sided or single face.	Double Sided	10"	2.50	25
		12"	3.20	
		13¼"	4.05	
		16"	5.95	
		17¼"	6.95	
	Single Face	10"	2.00	25
		12"	2.50	
		13¼"	2.95	
	16"	4.70		
	17¼"	5.10		

\*Standard 45 rpm disc with 1½" center hole. Center-hole adapters included for recording on conventional turntable.

Prices slightly higher in Pacific Coast and Southwestern Areas.



### AUDIODISC CHIP-CHASER

A simple but perfect solution to the thread removal problem in recording. The felt-lined wiper blade is set on the disc before starting the recording. The Chip-Chaser automatically and infallibly brushes the thread toward the center, winding it up on the overbead post or drive pins, as the case may be.

List Price { for 16" turntables, \$7.00  
for 12" turntables, \$6.00



### "HOW TO MAKE GOOD RECORDINGS"

A complete, authoritative and non-technical handbook on all phases of disc recording—materials, equipment and techniques. Contains 140 pages, profusely illustrated with photographs, charts and diagrams. Includes a glossary of recording terms. Now in its 11th printing. List price \$2.00

# audiopoints®

*microscopically matched  
recording and playback  
styli*

The complete line of Audiopoints covers the full range of recording and playback needs—for professional and as well as general use. Audiopoints are made by skilled craftsmen, and conveniently packaged in cards, boxes or envelopes.

### RECORDING AUDIPOINTS



**SAPPHIRE No. 14**—long recognized as the finest recording stylus made. Short or long dural shank, and 87° or 70° included angle.

List Price—\$8.25  
(Resharpener cost, 87°—\$3.75)  
(Resharpener cost, 70°—3.75)

**SAPPHIRE No. 20**—especially designed for professional microgroove recording. Short or long dural shank.

List Price—\$8.25  
(Resharpener cost—\$3.75)

**SAPPHIRE No. 202**—a high-quality professional stylus. Short or long brass shank.

List Price—\$6.60  
(Resharpener cost—\$3.25)

**STELLITE No. 34**—a favorite with many professional and non-professional users. Short or long shank. 87° included angle.

List Price \$2.50  
(Resharpener cost—\$1.40)

**DIAMOND LAPPED STEEL No. 50**—most practical and economical stylus for non-professional use.

List Price—3 for \$1.75

### PLAYBACK AUDIPOINTS



**SAPPHIRE No. 113**—meets the requirements of the most critical professional recordists. Straight dural shank.

List Price—\$4.50  
(Resharpener cost—\$2.00)

**SAPPHIRE No. 123**—for professional use with microgroove recordings.

List Price—\$2.00

**"RED CIRCLE" SAPPHIRE No. 103**—for professional use with instantaneous recordings or vinyl transcriptions. Straight dural shank.

List Price—\$2.00

**"RED CIRCLE" SAPPHIRE No. 303**—same as No. 103, except with bent dural shank. Ideal for phonograph records.

List Price—\$2.00

**STEEL TRANSCRIPTION NEEDLE No. 151**—finest steel needles made. 100% shadowgraphed to assure perfection of every needle.

List Price—100 for \$1.25  
20 for \$0.25

### RESHARPENING SERVICE

Established years ago, our Resharpener Service materially reduces the over-all cost of using sapphire and stellite Audiopoints. Each resharpener point is disc-tested. Special cards and envelopes are available for returning Audiopoints for resharpener.

Audiotape, in 5" and 7" sizes, now comes on the new "C-slot" reel... the fastest-threading reel ever developed.



# audiotape

TRADE MARK

*it speaks for itself*

Description	Type No.*	Length	Reel†	List Price	
<b>PLASTIC-BASE AUDIOTAPE</b> The finest, professional-quality recording tape obtainable — with maximum fidelity, uniformity, frequency response and freedom from noise and distortion. Base material, 1½-mil acetate.	151	150 ft.	3" Plastic	\$0.70	
	351	300 ft.	4" Plastic	1.35	
	651	600 ft.	5" Plastic	2.25	
	1251	1200 ft.	7" Plastic	3.50	
	2551H	2500 ft.	NARTB Hub	8.50	
	2551R	2500 ft.	10½" Aluminum Reel	10.90	
	‡2551FS	2500 ft.	10½" Fiberglass (RETMA)	10.90	
	5051H	5000 ft.	NARTB Hub	17.00	
	5051R	5000 ft.	14" Aluminum Reel	22.10	
	<b>COLORED AUDIOTAPE</b> Same professional quality as above, but on blue or green plastic base. Used in conjunction with standard red-brown tape, it provides instant visual identification of recorded selections spliced into a single reel — fast, easy color cueing and color coding.	Green	Blue		
151G		151B	150 ft.	3" Plastic	.70
351G		351B	300 ft.	4" Plastic	1.35
651G		651B	600 ft.	5" Plastic	2.25
1251G		1251B	1200 ft.	7" Plastic	3.50
2551HG		2551HB	2500 ft.	NARTB Hub	8.50
2551RG		2551RB	2500 ft.	10½" Aluminum Reel	10.90
‡2551FSG		‡2551FSB	2500 ft.	10½" Fiberglass (RETMA)	10.90
5051HG		5051HB	5000 ft.	NARTB Hub	17.00
5051RG		5051RB	5000 ft.	14" Aluminum Reel	22.10
<b>"LR" (Longer Recording) AUDIOTAPE</b> Made on 1-mil Mylar® polyester film, it provides 50% more recording time per reel. Polyester film base material has exceptional strength and durability, plus longer storage life. © Du Pont Trade Mark	261	225 ft.	3" Plastic in Self-Mailer Pkg	1.00	
	961	900 ft.	5" Plastic	3.75	
	1861	1800 ft.	7" Plastic	6.50	
	3661H	3600 ft.	NARTB Hub	12.50	
	3661R	3600 ft.	10½" Aluminum Reel	15.00	
	‡3661FS	3600 ft.	10½" Fiberglass (RETMA)	15.00	
	7261H	7200 ft.	NARTB Hub	26.00	
7261R	7200 ft.	14" Aluminum Reel	32.00		
<b>PLASTIC-BASE "LR" AUDIOTAPE</b> Provides 50% more recording time per reel, on low-cost 1-mil cellulose acetate base, affording maximum economy for applications where high strength is not required.	941	900 ft.	5" Plastic	\$ 3.50	
	1841	1800 ft.	7" Plastic	5.50	
	3641H	3600 ft.	NARTB Hub	10.00	
	3641R	3600 ft.	10½" Aluminum Reel	12.85	
	3641FS	3600 ft.	10½" Fiberglass (RETMA)	12.85	
	7241H	7200 ft.	NARTB Hub	20.00	
	7241R	7200 ft.	14" Aluminum Reel	26.00	
<b>AUDIOTAPE ON 1½-MIL "MYLAR"</b> High-strength, super-durable magnetic tape that meets the highest professional standards of performance. Withstands extreme temperatures, is virtually immune to humidity, and gives maximum tape life under any conditions of use or storage.	671	600 ft.	5" Plastic	4.25	
	1271	1200 ft.	7" Plastic	7.00	
	2571H	2500 ft.	NARTB Hub	12.75	
	2571R	2500 ft.	10½" Aluminum Reel	15.15	
	‡2571FS	2500 ft.	10½" Fiberglass (RETMA)	15.15	
	5071H	5000 ft.	NARTB Hub	30.30	
	5071R	5000 ft.	14" Aluminum Reel	36.30	
<b>SUPER-THIN AUDIOTAPE</b> Made on ½-mil "Mylar," it gives twice as much recording time per reel as standard plastic-base tape. Suitable for extended-play applications where tape tension is not excessive.	1231	1200 ft.	5" Plastic	5.00	
	2431	2400 ft.	7" Plastic	9.25	

**"HOW TO MAKE GOOD TAPE RECORDINGS"**

The completely new handbook of tape recording. Contains 145 pages of up-to-the-minute information of interest and real practical value to every tape recordist. Paper-bound: \$1.50. Cloth-bound: \$2.50.

\* Type Numbers listed cover red oxide tape wound on reels with OXIDE IN. For tape wound with Oxide Out, change last digit of Type No. from "1" to "0."

† COLDRED REELS. Audiotape 5" and 7" plastic reels are available in attractive, jewel-tone colors: red, yellow, green and blue, at no extra cost.

‡ "FS" in Type No. indicates Fiberglass reel with solid hub and 3/4" center hole.

Type EP AUDIOTAPE, extra precision magnetic recording tape for telemetering, electronic computers and other specialized applications, is also available. Ask for bulletin on EP AUDIOTAPE.

AUDIOFILM on 35mm, 17½mm and 16mm base, and AUDIO MAGNETIC DISCS are also available. Ask for information.

**AUDIO SELF-TIMING LEADER TAPE**—Durable plastic material with spaced markings for accurate timing at all standard speeds. Individually boxed in 100 ft. rolls. List Price, \$0.55

**ADHESIVE REEL LABELS**—Convenient press-on adhesive labels for positive identification of tape reels. Easy to apply or remove. List Price per pack of 30, \$0.20

**AUDIO HEAD DEMAGNETIZER**—A 110-115 volt A-C electromagnet assembly for removing permanent magnetism from magnetic recording heads. List Price, \$10.00

**AUDIO HEAD ALIGNMENT TAPE**—Recorded with perfect alignment at 2,000, 10,000 and 15,000 cps, 15" per sec. Three hundred ft. on 5" reel, individually boxed. List price, \$10.00



**REEVES  
SOUNDCRAFT  
CORP.**  
New York, New York    West Coast: Los Angeles, Calif.

**MAGNETIC RECORDING TAPES  
AND TAPE RECORDING  
ACCESSORIES**

**TAPE RECORDING ACCESSORIES**

DESCRIPTION	Type	Std. Pkg.	Sug. Con. Net
<b>EMPTY SOUNDCRAFT REELS</b>			
3" Plastic Reel	3SR	10	\$ .15
4" Plastic Reel	4SR	10	.30
5" Plastic Reel	5SR	10	.50
7" Plastic Reel	7SR	10	.60
10½" Complete Aluminum Reel	10SAR	5	3.30
10½" Fiberglass Reel—5/16" Center Opening	10RF	5	3.30
10½" Fiberglass Reel—3" Center Opening	10RF3	5	3.30

DESCRIPTION	Type	Std. Pkg.	Sug. Con. Net
<b>EMPTY SOUNDCRAFT BOXES</b>			
For 3" Reel (Mailer)	3SB	10	.15
For 4" Reel (Mailer)	4SB	10	.15
For 5" Reel	5SB	10	.18
For 7" Reel	7SB	10	.18
For 10½" Reel	10SB	5	.70

DESCRIPTION	Type	Std. Pkg.	Sug. Con. Net
<b>EMPTY REELS IN BOXES</b>			
3" Plastic Reel in Box (Mailer)	3SRB	10	.23
4" Plastic Reel in Box (Mailer)	4SRB	10	.40
5" Plastic Reel in Box	5SRB	10	.57
7" Plastic Reel in Box	7SRB	10	.70
10½" Complete Aluminum Reel in Box NARTB	10SRBA	5	3.75
10½" Fiberglass Reel (5/16" Center Opening) in Box	10RFB	5	3.75
10½" Fiberglass Reel (3" Center Opening) in Box NARTB	10RF3B	5	3.75

DESCRIPTION	Type	Std. Pkg.	Sug. Con. Net
<b>LEADER, TIMING AND SPLICING TAPE</b>			
150' Soundcraft Leader & Timing Tape	TT150	10	.60
Splicing Tape—½" x 66'	ST5	10	.76
Splicing Tape—¾" x 66'	ST75	10	1.01
150' Colored Mylar Base Leader Tape—Gold	GL-1	12	1.10
150' Colored Mylar Base Leader Tape—Blue	BL-1	12	1.10
150' Colored Mylar Base Leader Tape—Red	RL-1	12	1.10
150' Colored Mylar Base Leader Tape—White	WL-1	12	1.10
300' Colored Mylar Base Leader Tape—Gold	GL-3	12	1.80
300' Colored Mylar Base Leader Tape—Blue	BL-3	12	1.80
300' Colored Mylar Base Leader Tape—Red	RL-3	12	1.80
300' Colored Mylar Base Leader Tape—White	WL-3	12	1.80

DESCRIPTION	Type	Std. Pkg.	Sug. Con. Net
<b>ADDITIONAL REEL PARTS</b>			
Standard NARTB Hub	SHB	2	.65
Pair 10½" Aluminum Side Flanges & Screws	SFS	2	3.35

DESCRIPTION	Type	Std. Pkg.	Sug. Con. Net
<b>EMPTY TAPE CHESTS</b>			
5" Tape Chest	5STC	2	1.35
7" Tape Chest	7STC	2	1.50

DESCRIPTION	Type	Std. Pkg.	Sug. Con. Net
<b>VINYL CARRYING CASES</b>			
5" Tape Chest Carrying Case	5SCC	2	1.50
7" Tape Chest Carrying Case	7SCC	2	1.75

**MICROLAC RECORDING DISCS**

DESCRIPTION	Size	Code	App. Thick.	Std. Pkg.	Wt. per Pkg.	List Ea.
<b>"MAESTRO"—DOUBLE FACE</b>						
Designed for use as original masters. Because "Maestros" are not embossed they can be silvered perfectly to produce perfect masters from which distortion-free masters and stampers may be processed. Best disc for regular or Microgroove recording. Available with one drive hole or center hole only—please specify.	10"	10M2	.050	25	8	\$2.50
	12"	12M2	.050	25	14	3.20
	13¼"	13M2	.065	20	19	4.05
	16"	16M2	.050	25	26	5.95
	17¼"	17M2	.065	20	31	6.95

DESCRIPTION	Size	Code	App. Thick.	Std. Pkg.	Wt. per Pkg.	List Ea.
<b>"MAESTRO"—SINGLE FACE</b>						
For application where only one side of the disc need be recorded. Same fine quality disc as the double face "Maestro." Available with one drive hole or center hole only—please specify.	10"	10M1	.050	25	8	2.00
	12"	12M1	.050	25	14	2.50
	13¼"	13M1	.065	20	19	2.95
	16"	16M1	.050	25	26	4.70
	17¼"	17M1	.065	20	31	5.10

DESCRIPTION	Size	Code	App. Thick.	Std. Pkg.	Wt. per Pkg.	List Ea.
<b>"BROADCASTER"—DOUBLE FACE</b>						
A premium disc for vitally important and critical recordings. Manufactured to the same standards as the "Maestro" disc. The only difference is that the "Broadcaster" is punched with three drive holes and embossed.	10"	10B2	.040	25	8	1.70
	12"	12B2	.050	25	14	2.65
	16"	16B2	.050	25	26	4.85

DESCRIPTION	Size	Code	App. Thick.	Std. Pkg.	Wt. per Pkg.	List Ea.
<b>"PLAYBACK"—DOUBLE FACE</b>						
For broadcast quality—high volume production work in radio stations, recording and motion picture studios. High signal-to-noise ratio, wide frequency range and a flawless surface are features of the "Playback" disc. Punched with three drive holes, and Soundcraft emblem embossed in red.	6½"	6P2	.040	25	4	.90
	8"	8P2	.040	25	6	1.10
	10"	10P2	.040	25	8	1.55
	12"	12P2	.050	25	14	2.55
	16"	16P2	.050	25	26	4.60

DESCRIPTION	Size	Code	App. Thick.	Std. Pkg.	Wt. per Pkg.	List Ea.
<b>"PLAYBACK"—SINGLE FACE</b>						
For standard broadcast work where only one side is needed for recording. Both sides are coated and the side to be recorded is embossed with the Soundcraft label. The "Playback" has a center pin with three drive holes.	10"	10P1	.040	25	8	1.25
	12"	12P1	.050	25	14	2.00
	16"	16P1	.050	25	26	3.70

DESCRIPTION	Size	Code	App. Thick.	Std. Pkg.	Wt. per Pkg.	List Ea.
<b>"AUDITION"—DOUBLE FACE</b>						
For recording applications not requiring the higher professional qualities of the "Broadcaster" or "Playback" types. Punched with three drive holes. The 10" size comes in special resale packages of 5 discs each—5 packs to the carton.	6½"	6A2	.040	25	4	.80
	8"	8A2	.040	25	6	.95
	10"	10A2	.040	25	8	1.25
	12"	12A2	.050	25	14	2.00
	16"	16A2	.050	25	26	3.70

DESCRIPTION	Size	Code	App. Thick.	Std. Pkg.	Wt. per Pkg.	List Ea.
<b>"BLUE DIAMOND"—DOUBLE FACE</b>						
For use where recording perfection is not necessary and economy is important. Perfect for reference work, test cuts, filing and other such applications. Center pin with three drive holes and paper label.	10"	10BD2	.040	25	8	1.05
	12"	12BD2	.050	25	14	1.55
	16"	16BD2	.050	25	26	2.75

DESCRIPTION	Size	Code	App. Thick.	Std. Pkg.	Wt. per Pkg.	List Ea.
<b>SOUNDCRAFT "45"</b>						
For recording popular music or repetitive announcements. The "45" is available either double or single face. Each disc is equipped with a removable adaptor for use on the 45 rpm or regular spindle.	Double 7"	S452	.050	25	5	1.40
	Single 7"	S451	.050	25	5	1.15



**REEVES  
SOUNDCRAFT CORP.**  
New York, New York West Coast: Los Angeles, Calif.

**MAGNETIC RECORDING TAPES  
AND TAPE RECORDING  
ACCESSORIES**

**SOUNDCRAFT MYLAR\* BASE RECORDING TAPES**

\*Du Pont Trademark

Description	Type	Length	Reel	Std. Pkg.	Sug. Con. Net
<b>Soundcraft "LIFETIME"</b> <b>1½ Mil "MYLAR" Base</b> For use where maximum strength, professional fidelity, permanence and accurate timing are important. Insures accurate timing in film, radio and recording work. Guaranteed for a "Lifetime".	L-1	150'	3"	10	\$ 1.00
	L-6	600'	5"	10	3.50
	L-12	1200'	7"	10	6.30
	L-24RM•	2400'	10½"	5	13.80
	L-24RF†	2400'	10½"	5	13.80
	L-24RF‡	2400'	10½"	5	13.80
	L-24H	2400'	Hub	5	11.40
	L-48R	4800'	14"	2	28.60
	L-48H	4800'	Hub	2	25.00
	<b>Soundcraft "PLUS-50"</b> <b>1 Mil "MYLAR" Base</b> Offers best combination of long play with tape strength. Has durability of "Lifetime" but is somewhat less rugged because of its thinner base.	PL-2	225'	3"	10
PL-9		900'	5"	10	3.50
PL-18		1800'	7"	10	6.00
PL-36RF†		3600'	10½"	5	14.00
PL-36RF‡		3600'	10½"	5	14.00
PL-36H		3600'	10½"	5	11.75
PL-72R		7200'	14"	3	30.00
PL-72H	7200'	14"	3	24.50	
<b>Soundcraft "PLUS-100"</b> <b>½ Mil "MYLAR" Base</b> Provides extra long play (twice the length of standard play tapes) for the recordist who knows how to handle tape.	XP-12	1200'	5"	10	4.75
	XP-24	2400'	7"	10	8.50
	XP-52RM•	5280'	10½"	5	21.00
	XP-52RF†	5280'	10½"	5	21.00
	XP-52RF‡	5280'	10½"	5	21.00
	XP-52H	5280'	Hub	5	19.35
<b>For These Tapes in the Soundcraft TAPE CHEST</b> 5" and 7" reels of Soundcraft "Mylar" base tapes are available at no extra cost in the famous Soundcraft Tape Chest—ideal for storage and indexing. 5 reels to a Tape Chest.	LC-5	600'	5"	2	19.50
	LC-7	1200'	7"	2	31.50
	PLC-5	900'	5"	2	17.50
	PLC-7	1800'	7"	2	30.00
	XPC-5	1200'	5"	2	23.75
	XPC-7	2400'	7"	2	42.50

**SOUNDCRAFT ACETATE BASE RECORDING TAPES**

<b>Soundcraft "RED DIAMOND"</b> <b>1½ Mil "ACETATE" Base</b> Economical "workhorse" tape—standard for many applications in business, schools, government, professional work—where long, hard usage and low cost is important.	SPN-1	150'	3"	10	\$ .65	
	SPN-3	300'	4"	10	1.25	
	SPN-6	600'	5"	10	2.10	
	SPN-12	1200'	7"	10	3.50	
	SPN-24RF†	2400'	10½"	5	8.50	
	SPN-24RF‡	2400'	10½"	5	8.50	
	<b>Soundcraft "PROFESSIONAL"</b> <b>1½ Mil "ACETATE" Base</b> Engineered for the professional—carries this guarantee: Uniformity at 1000 cps, as tested on Ampex #307, is ±¼db in a reel and ±¾db from reel to reel. Minimum response at 10,000 cps is guaranteed within 1 db of response at 1000 cps.	P-12	1200'	7"	10	4.40
P-24RM•		2400'	10½"	5	10.25	
P-24RF†		2400'	10½"	5	10.25	
P-24RF‡		2400'	10½"	5	10.25	
P-24H		2400'	Hub	5	8.00	
P-48R		4800'	14"	3	20.75	
P-48H		4800'	Hub	3	12.50	
<b>For These Tapes in the Soundcraft TAPE CHEST</b> 5" and 7" reels of "Red Diamond" and 7" reels of "Professional" are available in the Tape Chest—5 reels to the chest.		SPNC-5	600'	5"	2	10.50
		SPNC-7	1200'	7"	2	17.50
	PC-7	1200'	7"	2	22.00	
	<b>Soundcraft DISPLAY PACKS</b> Red Diamond and Plus-50 are available in 5" and 7" reel sizes in an attractive display carton, 5 reels to the package.	SPN-1D10	150'	3"	10	6.50
SPN-6D5		600'	5"	2	10.50	
SPN-12D5		1200'	7"	2	17.50	
PL-2D10		225'	3"	10	10.50	
PL-9D5		900'	5"	2	10.50	
PL-18D5		1800'	7"	2	17.50	
L-1D10		150'	3"	10	30.00	
L-10D5		150'	3"	10	10.00	
<b>The Soundcraft DEALER PACK</b> The Complete Package for the Tape Dealer. Contains one SPN-6D5, one SPN-12D5, one PL-9D5, and one PL-18D5.	DP	600'	5"	2	75.50	
		1200'	7"			
		900'	5"			
		1800'	7"			
		1800'	7"			

• Metal Reel

† Fiberglass Reel (5/16" center opening)

‡ Fiberglass Reel (3" center opening)

# IF YOU THINK THAT ALL BRANDS OF RECORDING TAPE ARE ALIKE...

## Wait Till You Try **irish FERRO-SHEEN!**

BRAND



### irish FERRO-SHEEN SHAMROCK #300

The ultimate in professional recording tape for broadcast and studio use. Manufactured by the exclusive IRISH FERRO-SHEEN process, which results in an unprecedentedly smooth tape surface that never sheds gummy, abrasive oxide — making for reduced head and tape wear, easier recorder maintenance, better frequency response, lower background noise and reduced print-through and drop-outs. Comes with 5' Mylar leader, in dust-proof polyethylene bag, on 1.5-mil pre-selected premium-quality acetate base.

Length	Reel	
600'	5" plastic	\$ 2.70
1200'	7" plastic	4.25
2400'	hub only, NARTB	8.50
2400'	10 1/2" fiberglass* or metal	10.90
4800'	hub only, NARTB	17.00
4800'	14" metal	22.10



### irish FERRO-SHEEN LONG-PLAY #600

A FERRO-SHEEN process tape on 1-mil Mylar base. Same extraordinary characteristics as SHAMROCK #300, plus 50% more playing time than conventional tape on the same size reel.

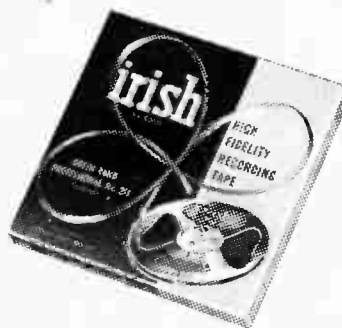
Length	Reel	
225'	3" plastic	\$ 1.00
450'	4" plastic	1.90
900'	5" plastic	3.75
1800'	7" plastic	6.45
3600'	hub only, NARTB	12.35
3600'	10 1/2" fiberglass* or metal	14.75
7200'	hub only, NARTB	25.60
7200'	14" metal	30.00



### irish FERRO-SHEEN SOUND-PLATE #220

The super-tough recording tape pioneered by IRISH, now made by the FERRO-SHEEN process on a 1.5-mil Mylar base. Same extraordinary characteristics as other irish FERRO-SHEEN process tapes, plus the additional safeguard of very great physical strength, desirable in tape masters, telemetering tape, etc. Highly resistant to adverse climate.

Length	Reel	
600'	5" plastic	\$ 4.00
1200'	7" plastic	6.55
2400'	hub only, NARTB	11.65
2400'	10 1/2" fiberglass* or metal	13.65
4800'	hub only, NARTB	23.30
4800'	14" metal	29.40



### irish FERRO-SHEEN GREEN-BAND #211

Now, for the first time, a premium-quality recording tape at the standard price. Produced by the exclusive IRISH FERRO-SHEEN process — for the same price as ordinary coated tape. Standard 1.5-mil acetate base.

Length	Reel	
150'	3" plastic	\$ .70
300'	4" plastic	1.35
600'	5" plastic	2.25
1200'	7" plastic	3.50
2400'	hub only, NARTB	7.30
2400'	10 1/2" fiberglass* or metal	9.27
4800'	hub only, NARTB	14.90
4800'	14" metal	19.80

# irish

BRAND

## SOUND RECORDING TAPE

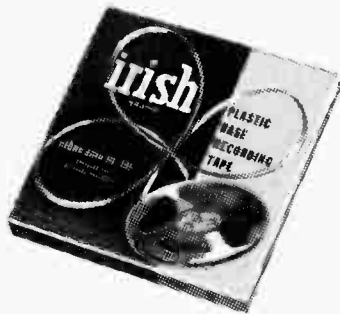
Whatever the application — professional sound recording . . . broadcasting . . . home, school or office use . . . industrial or scientific instrumentation — there is an *irish* tape that meets every requirement in quality, dependability and value.



### irish FERRO-SHEEN DOUBLE-PLAY #7-2400

A FERRO-SHEEN process tape on 1/2-mil Mylar base. Some extraordinary characteristics as SHAMROCK #300 or LONG-PLAY #600, plus twice as much playing time as with conventional tape on the same size reel. To be used only on tape recorders operating without excessive tape tension.

Length	Reel	
1200'	5" Standard	\$ 4.75
2400'	7" Standard	8.75



### irish BROWN-BAND #195

An economy-priced quality tape on plastic base (1.5-mil), guaranteed to reproduce faithfully the range from 100 to 8,000 cps. Specifically designed for non-critical applications where economy has a priority over extended frequency response. Recommended for speech recording, home or office use, schools, churches, etc.

Length	Reel	
600'	5" plastic	\$ 1.75
1200'	7" plastic	2.95



### irish FERRO-SHEEN LONG-PLAY #600-AB

Identical to LONG-PLAY #600 but on 1-mil acetate base.

Length	Reel	
900'	5" plastic	\$ 3.25
1800'	7" plastic	4.95
3600'	hub only, NARTB	9.30
3600'	10 1/2" fibreglas* or metal	11.50
7200'	hub only, NARTB	18.00
7200'	14" metal	23.00

## ACCESSORIES

### EMPTY REELS

3" 150' plastic reel w/box	\$ .25
4" 300' plastic reel w/box	.40
5" 600' plastic reel w/box	.50
7" 1200' plastic reel w/box	.65
10 1/2" fibreglas reel w/box	3.75
10 1/2" metal reel w/box	3.75
14" metal reel w/box	6.90
Metal hub for 10 1/2" and 14" reels	.70

### EMPTY BOXES

3" and 4" empty boxes	.15
5" and 7" empty boxes	.20
10 1/2" empty boxes	.65
5" 600' mailing boxes	.15
7" 1200' mailing boxes	.20

### IRISH DEMONSTRATION TAPE

600' speed 7 1/2" i.p.s.	4.15
1200' speed 15" i.p.s.	5.83

### LEADER TAPE

1/4" x 150'	.60
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### IRISH REEL-TABS

No longer is it necessary to guess what is on a reel of tape. Tab it with an IRISH Reel-Tab. For 7" reels — 100 Reel-Tabs, \$2.65. For 5" reels — 100 Reel-Tabs, \$1.90.

### NO. 141 IRISH SPLICING TAPE

1/2" x 100'	.39
3/4" x 100'	.49
1/2" x 66'	1.00
3/4" x 66'	1.25

\*Also available with 3/8" hole, requiring no NARTB adapter.

Made in U. S. A. by ORRADIO INDUSTRIES, Inc., Opelika, Alabama

World's Largest Exclusive Magnetic Tape Manufacturer

Export Division: Morhan Exporting Corp., 458 Broadway, New York

In Canada: Atlas Radio Corp., Ltd., 50 Wingold Ave., Toronto



**Regular Needles, Diamond Needles, Microscopes, Record Accessories, Electro-Wipe Cloths, 45 Adapters**

**No. 12—SERVICE MAN'S KIT**  
List \$25.00

Consisting of the following most popular needles:

- No. 503 No. 535 No. 660 No. 673  
No. 517 No. 515 No. 590  
No. 570 No. 585 No. 594

Included Free: One 75X Microscope, Professional Tools, Jeweler's Screw-driver, Plastic Case.



**MIRO-POINT No. 21**

"Low surface" specialist. Brings out the highs. Outstanding needle in this field today.

- Needle list price, each ..... \$ .50  
Cat. No. 21-B—Carton of 18 needles... 9.00  
Cat. No. 21-C—Display card of 18... 9.00  
Cat. No. 21-AC—Card of 18 All Speed 9.00



**NEW DUOTONE KLEEN-SWEEP RECORD BRUSH**

Brush of static-resistant sable hair. Cleans records as they play. Adds life to records.

- List Price  
1 Kleen-Sweep Brush ..... \$ 1.00  
Display Card of 12 ..... 12.00



**DFP LIFETIME OSMIUM TIPPED No. 20**

Perfect for record changers. Gives brilliant performance coupled with low surface noise. Each needle in plastic container.

- Needle list price, each ..... \$ 1.50  
Cat. No. 20-B—Carton of 12 needles 18.00  
Cat. No. 20-C—Display card of 12..... 18.00  
Cat. No. 20-C(M)—Micro-groove ..... 18.00  
Cat. No. 20-AC—All Groove ..... 18.00



**DFP SHOCKPROOF NYLON NEEDLE No. 25**

Perfect for children. Osmium tip on a spring steel set into a Nylon bumper. No damage to needle or record if arm is dropped. Individually packed in lucite container. Demonstration card for counter.

- Needle list price, each ..... \$ 1.75  
Cat. No. 25-C—Display card of 12... 21.00  
Cat. No. 25—(M) Micro-Groove ..... 21.00  
Cat. No. 25—(A) All Groove ..... 21.00



**THE DFP REPLACEMENT KIT No. 150 FREE, LUCITE PERMANENT CASE WITH DRAWERS**

A file for 30-second finding of needle you want. Automatic inventory control. Contains 90% of all popular needles.

Kit No. 500—8-drawer. At list price, \$500 of most popular needles—2 Free "75 Power" microscopes.

Kit No. 1000—12-drawer. At list price, \$1,000 of every type needle. 4 free scopes.

Kit No. 2500—16-drawer. \$2,500 worth of every needle. 10 free scopes. Free quick-find, every-brand catalogue.



**THE DFP STAR LINE — NATURAL SAPPHIRE. ONLY \$5 NEEDLE SO PERFECT IT'S GUARANTEED 6 FULL MONTHS.**

Guaranteed unconditionally for six months. We make good. Doubles your profit with each sale—a \$5.00 needle instead of the usual \$2.50 sapphire needle—No servicing time on any complaints, we handle them direct. Needle is registered and guaranteed at factory. Packed in lucite snap case with needle-test card enclosed. Double tipped needles—\$7.50.



**ELECTRO-WIPE MAGIC RECORD CLOTH — OVER 1 MILLION SOLD SO FAR.**

This is the most effective record cloth in the world. The original record cloth, it removes dust and electrical static with a wipe. Protects records from damage. Adds months to record life. Used by leading broadcast stations and record companies. One cloth lists for \$1.00—packed 24 cloths to colorful display box—\$24.00 list.



**THE DFP DIAMOND NEEDLE BY DUOTONE. ONE OF THE LARGEST SELLERS.**

For true high fidelity reproduction. Laboratory tests prove this Duotone Diamond needle is far gentler because it retains its roundness, long after other needles have been worn into rough, destructive shapes. Beautifully packaged in jewel type box with plastic protective shield.



**JEWEL TIP 3-SPEED NEEDLE**

Hand-crafted Sapphire for all types of records. Full brilliance and tone. 3-speed for long play and standard play. Cat. No. 36—All Groove. Each needle in lucite box—List 2.50  
Cat. No. 36-C—18 to giant lucite case ..... List \$45.00



**DUOTONE WIDE-ANGLE 50 POWER HI-FI MICROSCOPE**

Special slot on end of this microscope lets you check needle without removing from cartridge. Easily focused. Pocket clip. 75 power lens.

- List Price  
1 Hi-Fi Microscope ..... \$ 5.00  
6 to a display card ..... 30.00



**DEAL No. 2**

Attractive display card containing three most popular replacement needles:

- 5 Duotone #585 Columbia Dual Sapphire #360 Needles  
5 Duotone #660 New Replacement Slide in GE Needles  
10 Duotone #594 Ronette-Collaro Long Play Sapphire Needles  
Total List \$72.25



**DFP ANNIVERSARY DEAL A COMPLETE NEEDLE DEPARTMENT IN ONE.**

Sensational deal, instituted a few years back to celebrate Duotone's anniversary—So popular we kept it in the line. A complete needle department at great saving. Full card in brilliant colors.

- 8 Lifetone needles at \$1.50—\$12.00  
12 Dupoint needles at \$1.00— 12.00  
12 Mirapoint needles at \$.50— 6.00  
Total List .....\$30.00

Available in standard 78 RPM No. 30C.  
Available in all speed—33-1/3—45—78—No. 30AC.



**45 RPM ADAPTERS**

Literally millions sold Easily put into center of record. Won't slip. Won't chip record. Won't slow down the turntable. Guaranteed concentric. 5 adapters to a clear envelope—25c list. 24 envelopes on bright, colorful display card—\$6.00 list.



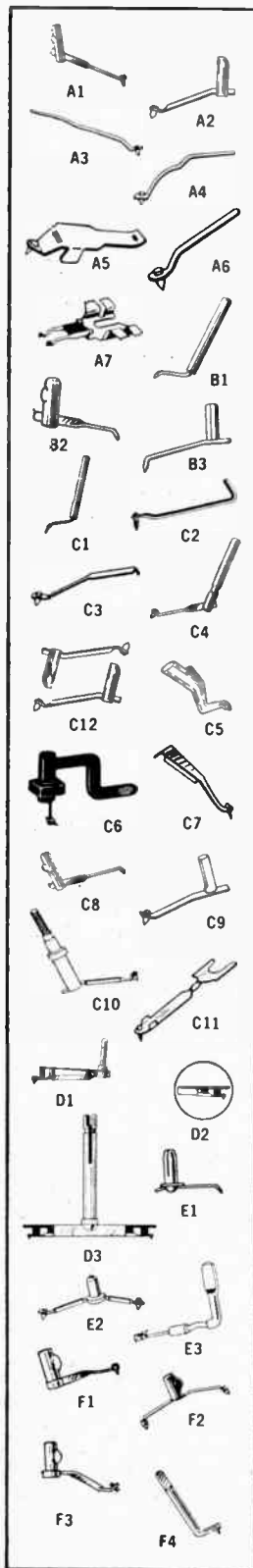
**45RPM Record Centers for Manually Operated Machines**

With this plastic center on spindle. 45 RPM records just glide on — one after another. Trouble-free. 1 to a package—25c. 24 to a bright, colorful display card—\$6.00 list.



# Walco REPLACEMENT NEEDLE GUIDE

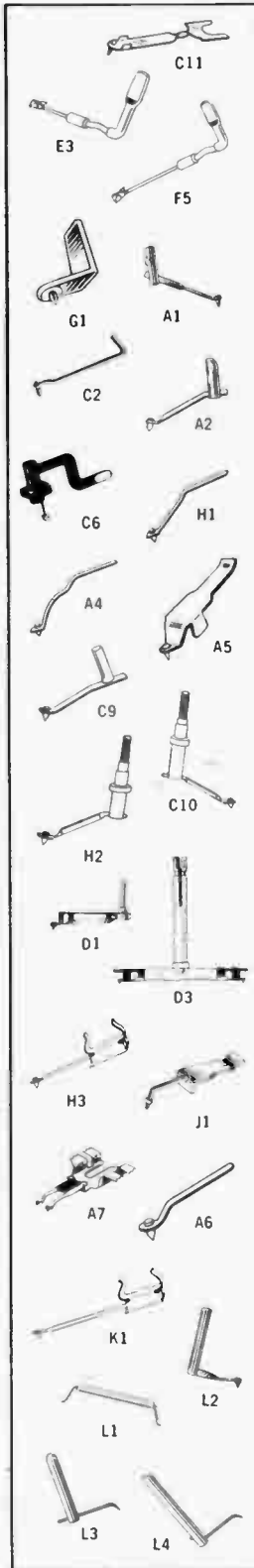
PRICE	WALCO NO.	FIG.	CARTRIDGE
<b>FOR ADMIRAL CARTRIDGES</b>			
2.50	W-2MGS	A1	
15.95	W-2MGD*	A1	409A301
2.50	W-5AGS	A2	
15.95	W-5AGD*	A2	409A16
2.50	W-21S	A3	
14.95	W-21D*	A3	
2.50	W-21MGS	A3	409A13-1, 409A14,
14.95	W-21MGD*	A3	409A15-1, 409A15-2
2.50	W-21AGS	A3	
14.95	W-21AGD*	A3	
2.50	W-30S	A4	
14.95	W-30D*	A4	
2.50	W-30MGS	A4	98A54-1, 409A11, 409A13,
14.95	W-30MGD*	A4	409A13-2, 409A300, 409B19-9
2.50	W-30AGS	A4	
14.95	W-30AGD*	A4	
2.50	W-32AGS	A5	
14.95	W-32AGD*	A5	409A17
2.50	W-34S	A6	
14.95	W-34D*	A6	
2.50	W-34MGS	A6	409B19-8
14.95	W-34MGD*	A6	
3.50	W-35TPS	A7	
4.25	W-35TPS-1†	A7	
15.95	W-35DS	A7	409B20
29.95	W-35TPD*	A7	
<b>FOR AMERICAN MICROPHONE CARTRIDGES</b>			
1.50	W-55A	B1	S-1, S-1A, S-2, S-2A
1.50	W-56A	B2	
1.50	W-56MGA	B2	CR5, CR6, CR7
1.50	W-56AGA	B2	
1.50	W-57A	B3	X101B, X101C,
1.50	W-57MGA	B3	X-105, X-106, X-107
1.50	W-57AGA	B3	
<b>FOR ASTATIC CARTRIDGES</b>			
1.50	W-1A	C1	
1.50	W-1MGA	C1	LT-1M, LT-2M, LT-3M
2.50	W-2S	A1	
15.95	W-2D*	A1	403-J, CAC-D, CAC-AG, CQ-AG,
2.50	W-2MGS	A1	CAC-78, CQ-78, CAC-78X,
15.95	W-2MGD*	A1	CAC-78-W
2.50	W-2AGS	A1	CAC-1, QT, CQ, CAC-X, LQD,
15.95	W-2AGD*	A1	LQO-1, LQO-1B
2.50	W-3S	C2	
14.95	W-3D*	C2	
2.50	W-3MGS	C2	51-2, 53-1, 53-2, 53-3, 59-1,
14.95	W-3MGD*	C2	59-2, 59-3, GC-1-AG, 402-M,
2.50	W-3AGS	C2	GC, GC-AG, GC-78
14.95	W-3AGD*	C2	
2.50	W-4S	C3	
14.95	W-4D*	C3	
2.50	W-4MGS	C3	U, U-78
14.95	W-4MGD*	C3	
2.50	W-5S	A2	
15.95	W-5D*	A2	
2.50	W-5MGS	A2	10L3(JorM), 11L3(JorM), 90-TB,
15.95	W-5MGD*	A2	90-TJB, 90-TS, 90-TJS, AC, AC-C,
2.50	W-5AGS	A2	ACR, AC-AG, AC-C-AG, AC-78,
15.95	W-5AGD*	A2	AC-C-78,
5.00 pr.	W-5S-H	C12	ACD, ACD-C, ACD-1, ACD-C1,
29.90 pr.	W-5D-H*	C12	MD-1
5.00 pr.	W-5MS-H	C12	MD-3, MD-5, MD-6
29.90 pr.	W-5MGD-H*	C12	
2.50	W-6S	C4	
14.95	W-6D*	C4	
2.50	W-6MGS	C4	LT-3DM, LT-4DM, LT-4D-1M,
14.95	W-6MGD*	C4	LT-4-M, LT-4-AG, LT-4-78
2.50	W-6AGS	C4	
14.95	W-6AGD*	C4	
2.50	W-7S	C5	Nylon1J, Nylon1M
3.50	W-8TPS	C6	
4.25	W-8TPS-1†	C6	
15.95	W-80S	C6	55-T, GCD
29.95	W-8TPD*	C6	
2.50	W-19S	C7	
14.95	W-19D*	C7	MD-1, MD-3,
2.50	W-19MGS	C7	MD-5, MD-6
14.95	W-19MGD*	C7	
1.50	W-25A	C8	14L3-M, 15L3-M, 14L3-AG-M,
1.50	W-25MGA	C8	15L3-AG-M, 14L3-78-M,
1.50	W-25AGA	C8	14L3-DM, 14L3-DMB,
			15L3-DM, 15L3-DMB
2.50	W-30S	A4	
14.95	W-30D*	A4	PT
3.50	W-38TPS	C6	
4.25	W-38TPS-1†	C6	
15.95	W-38DS	C6	55-T, GCD, 57-T
29.95	W-38TPD	C6	



PRICE	WALCO NO.	FIG.	CARTRIDGE
<b>For Astatic Cartridges (Continued)</b>			
2.50	W-39S	C9	12L3-M, 62-1M, 64-TMS,
15.95	W-39D*	C9	66-1M, 68-1M, 66-2M, 66-2M,
2.50	W-39MGS	C9	66-3M, 68-3M, 66-TMS, 66-TMY,
15.95	W-39MGD*	C9	66-TMB, 68-TMS, 68-TMY,
2.50	W-39AGS	C9	68-TMB,
15.95	W-39AGD*	C9	94-TB, 94-TMB, 405, 406
2.50	W-42MGS	C10	
14.95	W-42MGD*	C10	408, 410
2.50	W-64S	C11	
14.95	W-64D	C11	
2.50	W-64MGS	C11	310-2, 310-T, 310-TB, 310-TS,
14.95	W-64MGD	C11	414-1, 420-TS, 422-TS, 424-TS
2.50	W-64AGS	C11	
14.95	W-64AGD	C11	
<b>FOR COLLARO CARTRIDGES</b>			
2.50	W-64S	C11	
14.95	W-64D	C11	
2.50	W-64MGS	C11	Studio Types "P" & "O",
14.95	W-64MGD	C11	"PD" & "OD"
2.50	W-64AGS	C11	
14.95	W-64AGD	C11	
<b>FOR ELECTRO-VOICE CARTRIDGES</b>			
			14, 14S, 14S4, 20, 22, 34,
			34S, 44, 44S, 46, 46T,
			47, 74, 74S, 13, 33, 33-2,
2.50	W-21S	A3	33-3, 33-4, 33B, 33-S, 33-S2,
14.95	W-21D*	A3	33-S4E, 43, 43-S, 73, 10, 12,
2.50	W-21MGS	A3	12S, L-12, M-12, 20, 22, 32,
14.95	W-21MGD*	A3	32-S,
2.50	W-21AGS	A3	42, 42-S, 46, 46-T, 47, 72, 82,
14.95	W-21AGD*	A3	82D, 82DM, 82S, 82SM, 84, 84D,
			84DM, 84S, 84SM, 85D, 85DM,
			86S, 86M, 86D, 86DM, 96, 96-T,
			96-O, 96-OT, 96-S, 96ST
<b>FOR GENERAL ELECTRIC CARTRIDGES</b>			
3.50	W-67S	D1	
15.95	W-67D	D1	
3.50	W-67MGS	D1	RPX-040, RPX-041,
15.95	W-67MGD	D1	RPX-042, RPX-046,
3.50	W-67Tr	D1	RPX-061, RPX-063, 90
15.95	W-67TrD	D1	
3.50	W-68S	D2	
15.95	W-68D	O2	
3.50	W-68MGS	D2	
15.95	W-68MGD	D2	RPX-050A
3.50	W-68Tr	D2	
15.95	W-68TrD	D2	
5.95	W-68TPS	D3	
5.95	W-68TPTrS	D3	
6.95	W-68TPS-1†	D3	RPX-050A, RPX-052A,
16.95	W-68DS	D3	RPX-053A, RPX-047,
32.00	W-68TPD	D3	RPX051, RPX-052,
32.00	W-68TPTrD	D3	RPX-053, 120, UXP-111 Head
32.00	W-68TPD-1†	D3	
<b>FOR MAGNAVOX CARTRIDGES</b>			
2.50	W-2S	A1	
15.95	W-20*	A1	560052
5.95	W-33TPS	A7	
6.95	W-33TPS-1†	A7	
16.95	W-33DS	A7	560207-1
29.95	W-33TPD	A7	
3.50	W-35TPS	A7	
4.25	W-35TPS-1†	A7	
15.95	W-35DS	A7	560188-2
29.95	W-35TPD	A7	
1.50	W-50A	E1	560101
2.50	W-51TPA	E2	560133, 560170
3.50	W-52TPS	E2	
16.95	W-52DS	E2	560151 Series
29.95	W-52TPD*	E2	
2.50	W-64S	C11	
14.95	W-64D*	C11	
2.50	W-64MGS	C11	560176
14.95	W-64MGD*	C11	
3.50	W-75TPS	E3	
16.95	W-75DS	E3	560161
29.95	W-75TPD	E3	
<b>FOR PHILCO CARTRIDGES</b>			
1.50	W-30A	A4	
2.50	W-30S	A4	35-2671-1
2.50	W-45MGS	F1	35-2682, 45-1609,
14.95	W-45MGD*	F1	45-1612, 76-4053
3.50	W-46TPS	F2	425-0009, 425-0014,
15.95	W-46DS	F2	45-9785, 45-9612,
29.95	W-46TPD*	F2	76-4649
2.50	W-47MGS	F3	
14.95	W-47MGD	F3	45-9792
2.50	W-48S	F4	45-1844, 76-1622,
14.95	W-48D	F4	76-1622-1

# Walco REPLACEMENT NEEDLE GUIDE

PRICE	WALCO NO.	FIG.	CARTRIDGE
<b>For Philco Cartridges (Continued)</b>			
2.50	W-64S	C11	
14.95	W-64D	C11	
2.50	W-64MGS	C11	325-8014
14.95	W-64MGD	C11	325-8021
2.50	W-64AGS	C11	
14.95	W-64AGD	C11	
3.50	W-75TPS	E3	
15.95	W-75DS	E3	325-8018
29.95	W-75TPD	E3	
4.00	W-77TPS	F5	
16.95	W-77DS	F5	325-8016
29.95	W-77TPD	F5	
<b>FOR PICKERING CARTRIDGES</b>			
2.50	W-53S	G1	
14.95	W-53D	G1	
2.50	W-53MGS	G1	
14.95	W-53MGD	G1	R-150
2.50	W-53AGS	G1	
14.95	W-53AGD	G1	
2.50	W-53Tr	G1	
14.95	W-53TrD	G1	
<b>FOR RCA CARTRIDGES</b>			
2.50	W-2S	A1	
15.95	W-2D*	A1	73839
2.50	W-3MGS	C2	
14.95	W-3MGD*	C2	74984, 76297
2.50	W-5S	A2	
15.95	W-5D*	A2	76257 (988370-2),
2.50	W-5MGS	A2	101955
15.95	W-5MGD*	A2	
3.50	W-8TPS	C6	
4.25	W-8TPS-1†	C6	
15.95	W-8DS	C6	100329
29.95	W-8TPD*	C6	
2.50	W-29S	H1	
14.95	W-29D*	H1	75044
2.50	W-29MGS	H1	
14.95	W-29MGD*	H1	
2.50	W-30MGS	A4	
14.95	W-30MGD*	A4	76257 (988370-1)
2.50	W-32S	A5	
14.95	W-32D	A5	
2.50	W-32MGS	A5	78478, 162A001
14.95	W-32MGD*	A5	
2.50	W-39S	C9	
15.95	W-39D*	C9	
2.50	W-39MGS	C9	102321
15.95	W-39MGD*	C9	101316
2.50	W-39AGS	C9	
15.95	W-39AGD*	C9	
2.50	W-42S	C10	9890, 9953, 38453, 38598,
14.95	W-42D*	C10	39550, 39851, 39919, 70332,
2.50	W-42MGS	C10	70338, 70338-A, 70339, 72551,
14.95	W-42MGD*	C10	75976, 74067, 74625, 76318
2.50	W-44S	H2	
14.95	W-44D*	H2	75475, 75575, 77779
2.50	W-44MGS	H2	
14.95	W-44MGD*	H2	
3.50	W-67MGS	D1	
15.95	W-67MGD	D1	74466
5.95	W-68TPS	D3	
6.95	W-68TPS-1†	D3	78634 SPC-1, M1-12110,
16.95	W-68DS	D3	SPC-2, M1-12112
32.00	W-68TPD	D3	
32.00	W-68TPD-1†	D3	
3.50	W-75TPS	E3	
4.25	W-75TPS-1†	E3	
16.95	W-75DS	E3	79807, 100653
29.95	W-75TPD	E3	
29.95	W-75TPD-1†	E3	
3.00	W-76S	H3	
15.95	W-76D	H3	
3.00	W-76MGS	H3	79791
15.95	W-76MGD	H3	
3.00	W-76AGS	H3	
15.95	W-76AGD	H3	
4.00	W-77TPS	F5	
4.25	W-77TPS-1†	F5	
16.95	W-77DS	F5	103422
29.95	W-77TPD	F5	
29.95	W-77TPD-1†	F5	
<b>FOR RONETTE CARTRIDGES</b>			
2.50	W-64S	C11	
14.95	W-64D	C11	DT60-P, DT60-OV, DT60-T,
2.50	W-64MGS	C11	DT60-US, RA-284P, RA-284-OV,
14.95	W-64MGD	C11	RA-284-T, RA-284-US, TO-284-P,
2.50	W-64AGS	C11	TO-284-OV, TO-284-T, TO-284-US
14.95	W-64AGD	C11	

















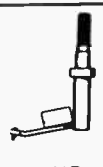
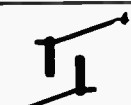





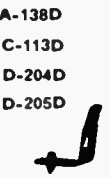
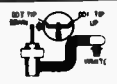





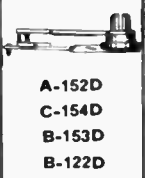





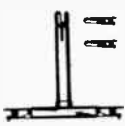


PRICE	WALCO NO.	FIG.	CARTRIDGE
<b>FOR SEEBURG CARTRIDGES</b>			
2.50	W-53S	G1	
14.95	W-53D	G1	
2.50	W-53MGS	G1	245789, A251620
14.95	W-53MGD	G1	
<b>FOR SHURE CARTRIDGES</b>			
2.50	W-29S	H1	P72, P72A, P72AF, P72AFV,
14.95	W-29D*	H1	P72T, P72V, P76, P76A, P76AF,
2.50	W-29MGS	H1	P76AFT, P76AT, P76F, P76T,
14.95	W-29MGD*	H1	P76AV, P76V, P77, P77A,
			P77AT, P77AV, P77T, P77V,
			P79, P79AF, P79T, PC72V,
			W22A, W22AB, W22ABT,
			WC24, WC24-T
2.50	W-30S	A4	P73, P73A, P73AR, P73R,
14.95	W-30D*	A4	P75, P75A, P80, P37, P37A
2.50	W-30MGS	A4	P37C, P37CA, P71, P71A,
14.95	W-30MGD*	A4	P71B, P71C, P71CA, P81, P81A,
2.50	W-30AGS	A4	P81AD, P81C, P81CA, P81D,
14.95	W-30AGD*	A4	P81E, P30, P30B, P30C,
			P30D, P30E, P30G,
			P30HS, P30S, P30W, P35,
			PC30, PN30, PN30S, PN31S,
			P35S, P70, P70A, P85, PC30,
			PN30, PN30S, PN31S, W21A,
			W21AR, W21E, W21F, W26A,
			W26B, W66A, W66B, W23A,
			W23B, W60A, W60B, W60HS,
			W60PN, W61B, W65B,
			WC60B, W6B
2.50	W-31S	J1	PC9, PC10, PC11, PC13,
14.95	W-31D*	J1	PC14, PS20, P31ADH, PC40,
2.50	W-31MGS	J1	PC41, PC40T, PC40C-T, PC41-T,
14.95	W-31MGD*	J1	WC22AB-T, W31AR, WC31AR,
2.50	W-31AGS	J1	WC33B, W36B, WC36B
14.95	W-31AGD*	J1	
5.95	W-33TPS	A7	
6.95	W-33TPS-1†	A7	ML44 SS)
16.95	W-33DS	A7	ML44 DS)
29.95	W-33TPD	A7	ML44 D0)
2.50	W-34S	A6	
14.95	W-34D*	A6	
2.50	W-34MGS	A6	PC42AD
14.95	W-34MGD*	A6	
3.50	W-35TPS	A7	
4.25	W-35TPS-1†	A7	PC2 Series, PC3 Series,
15.95	W-35DS	A7	PC4 Series, PC5 Series,
29.95	W-35TPD	A7	WC10, WC100
<b>FOR SONOTONE CARTRIDGES</b>			
2.50	W-3S	C2	7590-1S, 7590-LB-1S,
14.95	W-3D*	C2	7590-2M,
2.50	W-3MGS	C2	7590-2S, 7590-LB-2M,
14.95	W-3MGD*	C2	7590-LB-2S,
2.50	W-3AGS	C2	7590-3S, 7590-LB-3S
14.95	W-3AGD*	C2	
3.50	W-75TPS	E3	
4.25	W-75TPS-1†	E3	2T-D, 2T-S, 2T-SD, 2T-LB-D,
16.95	W-75DS	E3	2T-LB-S, 2T-LB-SD, 9980-S,
29.95	W-75TPD	E3	9980-SD, 9980-D
29.95	W-75TPD-1†	E3	
2.50	W-76S	H3	
15.95	W-76D	H3	IP-1S, IP-1D, IP-LB-1S,
2.50	W-76MGS	H3	IP-LB-1D, IP-2S, IP-LB-2S,
15.95	W-76MGD	H3	IP-3S, IP-3D, IP-LB-3S,
2.50	W-76AGS	H3	IP-LB-3D
15.95	W-76AGD	H3	
4.00	W-77TPS	F5	
4.25	W-77TPS-1†	F5	
16.95	W-77DS	F5	3-T, 3-TSD, 3-TDD
29.95	W-77TPD	F5	
29.95	W-77TPD-1†	F5	
3.00	W-78S	K1	
15.95	W-78D	K1	
3.00	W-78MGS	K1	3P-1, 3P-3
15.95	W-78MGD	K1	
3.00	W-78AGS	K1	
15.95	W-78AGD	K1	
<b>FOR WEBSTER ELECTRIC CARTRIDGES</b>			
2.50	W-9TPA	L1	F-14 F-14-1, F-14-2, F-14-3,
			F-14-4
2.50	W-10S	L2	
14.95	W-10D	L2	A1, A1-8, A7, A7-1, A7-5,
2.50	W-10MGS	L2	A7-8, A8, A10
14.95	W-10MGD	L2	
1.50	W-11A	L3	A1M, A1M1, A2M, A5M,
1.50	W-11MGA	L3	A6M, A7M, A8M, A10M,
			AB1M, AX
1.50	W-16A	L4	
1.50	W-17A	L4	F15, F15-1, F16, F16-1,
1.50	W-16MGA	L4	F16-2, F18, F18-1, F19, F19-1
1.50	W-17MGS	L4	



# FIDELITONE<sup>®</sup> PHONOGRAPH NEEDLES AND ACCESSORIES

## Diamond Needles

 A-1D C-24D B-49D	 C-3D	 A-7D A-139D	 A-11D C-34D B-35D	 AC-20D3	 C-23D	 A-30D C-29D B-132D	 AC-31D3 AC-6D1 AC-6D2 AC-6D
 A-46D C-37D B-48D	 A-53D C-58D B-59D	 A-60D C-61D B-62D	 A-68D C-67D D-201D	 A-77D C-76D B-81D	 A-97D C-102D	 A-98D C-103D	 A-99D
 C-101D	 AA-105D CC-107D	 A-109D C-110D D-203D	 A-142D C-143D B-181D	 AA-130D AC-130D1 AC-130D2 AC-130D	 AC-134D AC-134D1 AC-134D2	 A-136D	 A-138D C-113D D-204D D-205D
 AC-140D AC-140D1 AC-140D2 AA-140D	 A-15D B-144D	 A-145D C-146D D-208D	 A-117D C-119D B-118D B-147D	 AC-148D1 AC-148D2 AC-148D	 A-155D C-156D	 A-152D C-154D B-153D B-122D	 AC-159D1 AC-159D2 AC-159D
 A-171D C-174D	 A-179D C-180D D-210D	 A-182D C-184D B-183D	 AC-186D1 AC-187D1 AC-186D AC-187D	 AC-111DA AC-111D1A AC-111D2A AA-111DA DA-202DA			

world's finest phonograph needles

Complete line available with jewel or precious metal tips

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# Miller DIAMONDS

For the Finest

Miller Diamond Needles will give your customers the finest HIGH FIDELITY reproduction because every needle is checked to the original manufacturer's needle specifications. The World's largest line of Long Life playback and recording needles provides you with tips of diamond, sapphire (syn), osmium or steel as well as recording (groove cutting) needles.

Cartridge No.	Needle Illustration	Miller No.	Speed	Mfr's List Price	Cartridge No.	Needle Illustration	Miller No.	Speed	Mfr's List Price
<b>ASTATIC</b>					<b>MAGNAVOX</b>				
LT-33; LT-3D; LT-4D; LT-4DI		A-11(D)	33-45	25.00	560133		M-213(DS)	33-78	27.50
LT-1M; LT-2M; LT-3M; LT-4DI;		A-13(D)	78	25.00	560153		M-213(DD)	33-78	50.00
LT-4D; LT-3D		A-113(D)	33-45-78	25.00			M-313(DS)	33-45-78	27.50
LT-4AG; LT-5AG;							M-313(DD)	33-45-78	50.00
Columbia Model 105					<b>PHILCO</b>				
QT-33; CAC; CQM;		A-21(D)	33-45	25.00	45-1609, 45-1612,		PH-21(D)	33-45	25.00
LQD Series;		A-23(D)	78	25.00	35-2682, 76-4053				
QT Series;		A-213(D)	33-45-78	25.00					
CQ Series									
QT-J Series; CAC Series;		A-31(D)	33-45	25.00	76-4949, 76-4648,		PH-313(DS)	33-45-78	27.50
LQD Series; 403-J; CQ Series		A-33(D)	78	25.00	45-9785, 45-9612		PH-313(DD)	33-45-78	50.00
QT Series; CAC-AG-J;		A-313(D)	33-45-78	25.00					
CQ-AG-J									
GC-J		A-41(D)	33-45	25.00	<b>RCA</b>				
GC-AG-J		A-43(D)	78	25.00	74067		RC-11(D)	45	25.00
GC-78-J		A-413(D)	Transc.	25.00	70338, 72551, 9890,		RC-13(D)	78	25.00
					39851, 75976				
UJ; UM; MD-1		A-41(D)	33-45	25.00	77779, 75475, 70332,		RC-31(D)	33-45	25.00
U78M; U78J; MD-3		A-43(D)	78	25.00	38453, 38598, 39550		RC-33(D)	78	25.00
U-TR; U-TRX		A-413(D)	Transc.	25.00	74625, 75575				
AC; ACD Series; 10L3; 11L3		A-61(D)	33-45	25.00	75475, 76318, 77779		RC-51(D)	45	25.00
AC-78; ACD Series; AC-C-78		A-63(D)	78	25.00					
AC-AG-J; AC-C-AG-J		A-613(D)	33-45-78	25.00					
K-D		A-81(D)	33-45	25.00	<b>RONETTE-COLLARO</b>				
K-78-D		A-83(D)	78	25.00	TO-284-P; -US; -OV		GB-21(D)	33-45	25.00
K-AG-D		A-813(D)	33-45-78	25.00			GB-23(D)	78	25.00
						GB-213(D)	33-45-78	25.00	
N8-1D		A2-11(D)	33-45	25.00	<b>SHURE</b>				
N8-3D		A2-13(D)	78	25.00	W22A; W22AB; P72; P72A;		P-41(D)	33-45	25.00
N8-2D		A2-113(D)	33-45-78	25.00	P72AF; P72V; P76; P77;		P-43(D)	78	25.00
					Admiral 409A-11	P-413(D)	33-45-78	25.00	
GD-J; 55J; 55TM		A-T0(55)DS	33-45-78	30.00	P30; P57; P70; P76;				
		A-T0(55)DD	33-45-78	50.00	P77; P88; P92; W22				
57J; 57TM; WEBCOR		A-T0(57)DS	33-45-78	30.00	P37; P71; P81; W26A;				
Lark & Holiday		A-T0(57)DD	33-45-78	50.00	W66A; P81; Admiral; 409A-13				
<b>AUDAK</b>		AU-11(D)	33-45	27.50	W31AR; WC31AR,		P-51(D)	33-45	25.00
R-2; R-6		AU-13(D)	78	27.50	PC-11; WC-24		P-53(D)	78	25.00
					WC24; WC33B,	P-513(D)	33-45-78	25.00	
					PC40, PC9				
<b>ELECTRO-VOICE</b>		E-21(D)	33-45	25.00	W36B, WC36B; PC10;		P-113(DS)	33-45-78	30.00
14; 14S; 44S; 44; 46;		E-23(D)	78	25.00	PC12, Admiral		P-113(DD)	33-45-78	50.00
87; 96; 96-T		E-213(D)	33-45-78	25.00	PC2; PC3, PC4,	P-81(D)	33-45	25.00	
10, 12, 32, 42, 96T, 87,					WC10, WC10D	P-83(D)	78	25.00	
10S, 32S, 42S				PC5, ML-44					
12, 30, 33, 33-B, 33-2,		E-413(DS)	33-45-78	27.50	PC42AD (Admiral 409B19-8)				
43, 33S, 13, 43S		E-413(DD)	33-45-78	50.00					
ADMIRAL 409A13-1									
16, 16TT, 16-0, 16-OTT,					<b>SONOTONE</b>				
16S, 16-STT, 22TT					W9980		SA-113(DS)	33-45-78	30.00
					IP-1S		SA-113(DD)	33-45-78	50.00
					IP-3S	SA-21(D)	33-45	25.00	
<b>GENERAL ELECTRIC</b>		GE-61(D)	33-45	27.50	IP-2S	SA-23(D)	78	25.50	
New GE Slide-In Stylus:		GE-63(D)	78	27.50	W7590-1	SA-213(D)	33-45-78	25.00	
RPX-040A; RPX-041A;		GE-613(D)	Transc.	27.50	W7590-3				
RPX-061A; RPX-063A;					W7590-2				
RPX-050A; RPX-052A;		GE-713(DS)	33-45-78	31.00	3T-SD		SA-413(DS)	33-45-78	30.00
RPX-053A;		GE-713(DD)	33-45-78	49.95	3T-D		SA-413(DD)	33-45-78	50.00
RPJ-007A; RPJ-010A;									
RPJ-011A; RPJ-012A									
New Slide-In		GE-31(D)	33-45	27.50	<b>WEBSTER ELECTRIC</b>				
Assemblies: RPJ-013A		GE-33(D)	78	27.50	A-1; A1-8; AIM; A2;		WE-31(D)	33-45	25.00
New Slide-In		GE-313(D)	Transc.	27.50	A2-4; A2-8; A7; A7-5;		WE-33(D)	78	25.00
Assemblies: RPJ-012A					A8; A10; A10M; AX	WE-313(D)	33-45-78	25.00	
9D, RPX-040; -41, -042;					<b>Conventional Type</b>				
-046, -061, -063					Needles for		581D(MG)	33-45	25.00
					Thumbcrew Cartridges		581D(STD)	78	25.00
						581D(AG)	33-45-78	25.00	

Legend: D: Designates a single diamond. DD: Designates a dual diamond. DS: Designates a diamond for 33-45 and a sapphire for 78 RPM.

MILLER PresTest is the MILLER way to check needles without removing the needle from the phonograph. PresTest cards are available at no charge. Check diamond needles at least every six months, and osmium or sapphire needles every three months to protect your valuable records.

**Remember**  
**WORN NEEDLES RUIN RECORDS**  
MILLER Diamond craftsmen are the finest in the world. Experienced diamond cutters and experienced needle manufacturers have combined their skill to help you enjoy the finest of recorded music. MILLER DIAMOND Needles are unconditionally guaranteed from defects of workmanship and material for one full year.



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Cable: Uniontex



## CINCH SOCKETS ARE STANDARD

### MOLDED OCTAL 1-5/16" MOUNTING CENTERS



Molded from high dielectric black bakelite or mica-filled low loss bakelite. Solder coated brass contacts and sturdy steel press-on type saddle with 4 ground lugs. Mounts in 1" chassis hole.

No.	Description	List Price
8AB	Black	Each \$ .14
8AM	Mica-Filled	Each .20

### MOLDED OCTAL 1 1/2" MOUNTING CENTERS



Same as 8A series molded octal above except has clinch-on type saddle with 4 ground lugs and mounts in 1 1/2" chassis hole. Available in black, mica-filled bakelite, or ceramic.

No.	Description	List Price
8EB	Black	Each \$ .15
8EM	Mica-Filled	Each .21
8EC	Ceramic	Each .39

### RING MOUNT OCTAL



Molded from high dielectric black bakelite. Solder coated brass contacts. Used extensively on test equipment, public address amplifiers and on other apparatus where sockets are exposed. Molded keyway in side engages key in chassis hole, preventing socket from turning. Mounts in 1 1/2" chassis hole. Crimped retainer ring is furnished with these sockets.

No.	Description	List Price
8R1	For 1/16" Chassis Black	\$ .24
8R2	For 1/8" Chassis Black	.24
8R3	For 1/16" Chassis Mica-Filled	.35
8R4	For 3/32" Chassis Black	.24
8R5	For 3/32" Chassis Mica-Filled	.35
8R6	For 1/8" Chassis Mica-Filled	.35

### RETAINER RING



A crimped retaining ring formed of spring steel that will securely anchor sockets designed for ring mounting, such as the one above. Standard finish is cadmium.

No.	Description	List Price
8R0	.020 Spring Steel	Each \$ .06

### MOLDED LOKTAL



Steel mounting saddle with solder coated brass contacts and center guide clip with locking spring. 1 1/8" mounting centers.

Molded from high dielectric black bakelite or mica-filled low loss bakelite. Mounts in 1" chassis hole.

No.	Description	List Price
8LB	Black	Each \$ .25
8LM	Mica-Filled	Each .33

### MOLDED LOKTAL



Has same characteristics as molded loktal shown above, except saddle has 4 ground lugs.

No.	Description	List Price
8LB1	Black	Each \$ .25
8LM1	Mica-Filled	Each .33

### WAFER OCTAL



Laminated bakelite sockets with solder coated brass positive grip contacts. Designed to fit all standard eight prong tubes. Available with 1 1/8" or 1 1/2" mounting centers. Both styles have .136 diameter mounting holes.

No.	Description	List Price
8W1	1 1/8" Mounting Centers	Each \$ .17
8W2	1 1/2" Mounting Centers	Each .17

### GLASS TUBE SOCKETS



Laminated bakelite sockets with solder coated positive grip brass contacts. 1 1/2" diameter mounting

holes. Designed to fit four, five and seven prong tubes.

No.	Description	List Price
4WX	4 Prong	Each \$ .15
5WY	5 Prong	Each .15
6WZ	6 Prong	Each .16
7WU	7 Prong	Each .17
7WA	7 Prong (Large)	Each .17

### MOLDED OCTAL 1 1/2" MOUNTING CENTERS



Molded from mica-filled low loss bakelite. Silver plated Beryllium copper contacts with hot tinned tails. Heavy brass saddle nickel plated with 4 ground lugs hot tinned. Conforms to JAN-S-28A Specs.

No.	Description	Mtg. Hole	Jan Type No.	List Price
8JC	Ceramic	.156 Dia.	TS101C01	\$ .70
8JCN	Ceramic	6-32 Tap	TS101C02	.95
8JM	Mica	.156 Dia.	TS101P01	.50
8JMN	Mica	6-32 Tap	TS101P02	.75

### VIBRATOR SOCKET



Laminated bakelite socket with solder coated brass positive grip contacts. Fits Mallory #4549 and 725C vibrators in addition to others. 1 1/2" mounting centers. 140 diameter mounting holes.

No.	List Price
7VS	\$ .36

## CINCH CAPACITOR "PLUG-IN" SOCKETS

Motion picture, telephone, airborne radio, broadcasting equipment, electric organs, and other electrical equipment need instant replacement when failures in electronic circuits occur at the capacitor connections. Cinch "Know How" has solved this problem.



SMALL

Designed for use with Mallory and Magnavox 1" FP type condensers. Molded from high dielectric black bakelite. Sturdy steel mounting saddle has 4 ground lugs. 1 1/2" mounting centers. 3 recessed center contacts for extended prongs of condenser and two outer contacts flush with surface for short prongs of condenser. All contacts are solder coated for fast, easy soldering.

No.	List Price
2C5	Each \$ .63



LARGE

Designed for use with Mallory and Magnavox 1 1/8" FP type condensers. Molded from high dielectric black bakelite. Sturdy steel saddle has 1 1/2" mounting centers. Four recessed center contacts for extended prongs of condenser and three outer contacts flush with surface for short prongs of condenser. All contacts are solder coated.

No.	List Price
2C7	Each \$ .78

## CRYSTAL SOCKETS

### 2 PRONG 31/64" CENTERS



Molded from high dielectric black bakelite or mica-filled low loss bakelite. Silver plated beryllium copper contacts on 31/64" centers. .120" diameter recessed mounting hole. Socket body is 3/8" long, 3/8" thick, and 3/8" high. For use with FT243 type crystal.

No.	Description	List Price
2KB	Black	Each \$ .38
2KM	Mica-Filled	Each .43

### 4 PRONG



Molded from mica-filled low loss bakelite. Silver plated beryllium copper contacts on 1/4" centers. .140 diameter mounting hole recessed 1/8" from surface in 1/8" diameter hole. Socket body is 3/8" long, 3/8" wide, and 1/2" high. Designed for use with two No. FT243 type crystals.

No.	List Price
2K4	Each \$ .51



### 2 PRONG 1/2" CENTERS

Molded from high dielectric black bakelite or mica-filled low loss bakelite. Silver plated phosphor bronze contacts on 1/2" centers. No. 4-40 tap mounting hole. 1 1/8" long, 3/8" wide and 7/8" high. For No. CR-1 and CR-7 type crystals.

No.	Description	List Price
2K1B	Black	Each \$ .51
Made of ceramic material. Silver plated beryllium copper contacts with hot tinned tails, mounted on .486" centers. 1/8" mounting hole, 7/8" long, 3/8" wide and 3/8" high overall. Similar to above except the tails extend straight down. For No. CR-7 and BH-6 crystals.		
2K2C	Ceramic	Each .37



## 7 PIN MINIATURE SOCKETS AND SHIELDS



### MOLDED SADDLE TYPE Top Mount

Molded from high dielectric black bakelite, mica-filled low loss bakelite, or ceramic material. Cadmium plated steel saddle with  $\frac{7}{8}$ " mounting centers and .093 diameter mounting holes. Solder coated brass contacts. Designed for mounting through top of chassis in  $\frac{5}{8}$ " diameter hole. Will securely hold all standard seven pin miniature tubes.

No.	Description	List Price
7AB1	Black	Each \$ .15
7AM1	Mica-Filled	Each .18



### MOLDED SADDLE TYPE Bottom Mount

Molded from high dielectric black bakelite or mica-filled low loss bakelite. Cadmium plated steel saddle with  $\frac{7}{8}$ " mounting centers. .093 diameter mounting holes. Solder coated positive grip brass contacts. Designed for mounting through bottom of chassis in  $\frac{5}{8}$ " diameter hole. For use with all standard seven pin miniature tubes.

No.	Description	List Price
7EB	Black	Each \$ .15
7EM	Mica-Filled	Each .18



### WAFER TYPE SOCKET

Laminations consist of  $\frac{1}{32}$ " top plate and  $\frac{3}{64}$ " bottom plate made from high grade chocolate XP Bakelite. Solder coated brass contacts and center shield.

No.	Mtg. Centers	Mtg. Hole	List Price
7W2A	7/8"	.093	\$ .15
7WL2	1"	.093	.18
7WL4	1-5/16"	.136	.19



### SHIELD BASE TYPE

Shield base is attached to socket body for mounting through top of chassis. Molded from high dielectric black bakelite, mica-filled low loss bakelite or ceramic material. Solder coated brass contacts and center shield. Cadmium plated steel shield base with  $\frac{7}{8}$ " mounting centers. Use No. 7S2, 7S3, or 7S4 shields illustrated below with these sockets.

No.	Description	List Price
7XB1	Black	Each \$ .28
7XM1	Mica-Filled Bakelite	Each .33
7XC	Ceramic	Each .53

Molded from mica filled low loss bakelite or ceramic material. Shield base is attached to socket body for mounting through top of chassis. Same type as illustrated at the left. Materials and finishes are those required by JAN-S-28A Specifications. Shield base has  $\frac{7}{8}$ " mounting centers.

Use No. 7S2, 7S3 or 7S4 shields as shown below.

No.	Description	JAN Type No.	List Price
7JC	Ceramic	TS102C01	.55
7JM	Mica	TS102P01	.40

### SHIELD BASES — Snap-On Type



Base is made of hardened carbon steel supplying adequate spring retentivity on shield. Base has  $\frac{7}{8}$ " mounting centers with mounting holes that coincide with those for miniature 7 pin sockets as established by R. M. A. standards. For use with saddle type sockets with  $\frac{7}{8}$ " mounting centers illustrated on this page.

No.	Description	List Price
7SB3	11/32" High	Each \$ .07



### For J Slot Type

Durable steel shield bases designed for use with "J" slot type shields illustrated at left. Available in two sizes:  $\frac{7}{16}$ " high or  $\frac{5}{8}$ " high. Both types have  $\frac{7}{8}$ " mounting centers.

No.	Description	Material	List Price
7SB1	5/8" High	Steel	.22
7SB2	5/8" High	Brass	.44



### TUBE SHIELDS — "J" Slot Type

Durable steel shields complete with tube securing spring. "J" slot feature designed to fit securely with Cinch shield base type sockets, such as 7X series shown above. Also fit 7SB type shield bases shown in end column at right. Available in three lengths:

No.	Description	List Price
7S2	1 $\frac{3}{8}$ " Long	Each \$ .21
7S3	1 $\frac{3}{4}$ " Long	Each .22
7S4	2 $\frac{1}{4}$ " Long	Each .32

Durable brass nickel plated shields complete with tube securing spring. "J" slot feature designed to fit securely with the shield base type sockets listed above. Materials and finishes are those required by JAN-S-28A Specifications. Available in the sizes listed below.

No.	Description	JAN Type No.	List Price
7SJ2	1 $\frac{3}{8}$ " Long	TS102U01	\$ .23
7SJ3	1 $\frac{3}{4}$ " Long	TS102U02	.25
7SJ4	2 $\frac{1}{4}$ " Long	TS102U03	.28



### TUBE SHIELD Snap-On Type

Shield fits over and outside of shield base. Indentation on shield locks into ridge on base of 7SB3 as shown above.

No.	Description	List Price
7S1	1-53/64" High	Each \$ .14

## 9 PIN MINIATURE SOCKETS AND SHIELDS

### MOLDED — SADDLE TYPE Bottom Mount



Molded from high dielectric black bakelite or mica-filled low loss bakelite. Designed for mounting through bottom of chassis in  $\frac{3}{4}$ " diameter hole.  $1\frac{1}{8}$ " mounting centers with .093 diameter mounting holes. Solder coated brass contacts and center shield.

No.	Description	List Price
9EB	Black	Each \$ .20
9EM	Mica-Filled Bakelite	Each .23



### TUBE SHIELDS

Made from durable steel. Complete with tube securing spring. "J" slot feature designed to fit securely with Cinch 9X series shield base type sockets illustrated to the right. Will also fit No. 9SB shield base shown at left. Available in three lengths.

No.	Description	List Price
9S1	1 $\frac{1}{2}$ " Long	Each \$ .33
9S2	1 $\frac{3}{4}$ " Long	Each .36
9S3	2 $\frac{3}{8}$ " Long	Each .46



### SHIELD BASE TYPE

Molded from high dielectric black bakelite, mica-filled low loss bakelite, or ceramic material. One-piece cadmium plated steel shield base and saddle with .093 diameter mounting holes on  $1\frac{1}{8}$ " centers. Solder coated brass contacts and center shield. Mounts through top of chassis in  $\frac{3}{4}$ " diameter hole. Use Cinch 9S type shields with these sockets.

No.	Description	List Price
9XB	Black	Each \$ .40
9XM	Mica	Each .45
9XC	Ceramic	Each .75



### SHIELD BASE

Durable steel shield base designed for use with shields illustrated to right.  $1\frac{1}{8}$ " mounting centers. May be used with any 9 pin wafer or saddle type sockets shown at the right.

No.	List Price
9SB1	Each \$ .28



### MOLDED—SADDLE TYPE Top Mount

Molded from high dielectric black bakelite or mica-filled low loss bakelite. Designed for mounting through top of chassis in  $\frac{3}{4}$ " diameter hole.  $1\frac{1}{8}$ " mounting centers with .093 diameter mounting holes. Solder coated brass contacts and center shield.

No.	Description	List Price
9AB	Black	Each \$ .20
9AM	Mica-Filled	Each .23



### WAFER TYPE

Has two laminations consisting of  $\frac{1}{16}$ " top plate and  $\frac{3}{64}$ " bottom plate made from  $1\frac{1}{8}$ " mounting centers with .093 diameter holes. Solder coated brass contacts and center shield.

No.	Mtg. Centers	List Price
9W1	1-1/8"	Each \$ .21
9W2	1-5/16"	Each .22



## MOLDED CONNECTOR PLUGS AND SOCKETS

### 8 CONTACT PLUG



Molded from high dielectric black Bakelite. Pins are nickel-plated and have tapered ends for easy insertion. Mounts on  $\frac{1}{8}$ " chassis using No. 1018 retaining ring, or can be used with No. 16F cap shown below. Will fit any standard octal socket.

No. **8PB** List Price Each \$ .36

### 11 CONTACT PLUG



Molded from high dielectric black Bakelite. Pins are nickel-plated and have tapered ends for easy insertion. Mounts on  $\frac{1}{8}$ " chassis using No. 1018 retaining ring. Can be used with No. 16F cap shown below. Will fit No. 11RB socket shown at right.

No. **11PB** List Price Each \$ .41

### 11 CONTACT SOCKET



Molded from high dielectric black Bakelite. Solder coated brass contacts. Mounts on  $\frac{1}{8}$ " chassis using No. 1018 retaining ring. Can be used with No. 16F Cap shown below. Used with No. 11PB plug shown at left.

No. **11RB** List Price Each \$ .48

## CONNECTOR PLUGS AND SOCKETS



18G



6K2



5K2



18E



Assembled

These low cost plugs and sockets are ideal for a multitude of applications. A "Cinch" where space is at a premium. Complete assembly of plug, socket, male and female shell will close to a compact unit of  $1\frac{1}{2}$ " long. Polarized—Nickel plated brass tube pins—Solder coated brass contacts. Plugs, sockets and shells have lock feature which prevents turning in shells.

### PLUGS

Part No.	No. Prongs	Use Skt. No.	Use Shell No.	List Price
5K2	2	6K2	18E	.09 ea.
5K3	3	6K3	18E	.10 ea.
5K4	4	6K4	18E	.12 ea.
5K5	5	6K5	18E	.13 ea.
5K6	6	6K6	18F	.15 ea.

### SOCKETS

Part No.	No. Prongs	Use Skt. No.	Use Shell No.	List Price
6K2	2	5K2	18G	.08 ea.
6K3	3	5K3	18G	.09 ea.
6K4	4	5K4	18G	.10 ea.
6K5	5	5K5	18G	.12 ea.
6K6	6	5K6	18H	.13 ea.

## PLUG CAPS AND SHELLS

For above Battery Plugs and for Connector Plugs and Sockets on page F-34.



No. **18A** List Price Each \$ .05

Cadmium plated brass shell with rolled edge on  $\frac{5}{16}$ " diameter neck opening. Outside diameter at base .625. Four  $\frac{1}{8}$ " prongs coincide with notches on plugs. Designed for use with Cinch No. 5A1, 5B1, 5A2, and 5A3 type battery plugs.



No. **16F** List Price Each \$ .49

Made of steel, cadmium plated. Designed to snap on 8 and 11 prong sockets which are grooved for a  $\frac{1}{16}$ " chassis. There is a screwdriver slot at the bottom to facilitate easy removal. Rubber grommet has a  $\frac{25}{64}$ " dia. hole.



No. **18E** List Price Each \$ .09  
 No. **18F** List Price Each .09

Cadmium plated brass shells complete with fibre insulator. Available with  $\frac{3}{8}$ " or  $\frac{1}{2}$ " diameter hole with rolled edge. Inside diameter  $\frac{31}{32}$ ".  $\frac{1}{2}$ " high. For use with Cinch No. 5C1, 5C2, 5AB6, 5AB7, 5AB8, 5K2, 5K3, 5K4, 5K5, and 5K6 type plugs.



No. **18J** List Price Each \$ .13

Cadmium plated brass shell complete with fibre insulator. Same as Cinch No. 18B shell except has  $\frac{1}{2}$ " neck with  $\frac{3}{8}$ " hole riveted to base. For use with same plugs as No. 18B.



No. **18B** List Price Each \$ .05

Cadmium plated brass shell with  $\frac{23}{64}$ " diameter opening on top of shell. Outside diameter at base .625. Four  $\frac{1}{8}$ " prongs coincide with notches on plugs.  $\frac{1}{2}$ " high. Designed for use with Cinch No. 5A1, 5B1, 5A2, and 5A3 type battery plugs.



No. **18G** List Price Each \$ .09  
 No. **18H** List Price Each .09

Cadmium plated steel shells complete with fibre insulator. Available with  $\frac{3}{8}$ " or  $\frac{1}{2}$ " diameter hole with rolled edge. Inside diameter  $\frac{31}{32}$ ".  $\frac{29}{32}$ " high. For use with Cinch No. 6K2, 6K3, 6K4, 6K5, and 6K6 type sockets.





## MAGNAL-11 PRONG

Molded from mica-filled low loss bakelite. Socket is 1 3/8" wide and 1 1/4" high. Full floating silver plated beryllium copper contacts designed to insure easy insertion of tubes and yet provided excellent electrical connections. For use with 5BP1 and 2AP1 type cathode ray tubes.

No.	Description	List Price
3M11	Mica Socket	Each \$7.60
3R11	Steel Mounting Ring	Each .53



## DIHEPTAL 14 PRONG

Molded from high dielectric black bakelite or mica-filled low loss bakelite. 2 3/8" wide and 1 1/8" high. Possesses same features as Cinch Magnal socket shown at left.

No.	Description	List Price
3B14	Black Socket	Each \$2.53
3M14	Mica Socket	Each 3.16
3R14	Steel Mounting Ring	Each .53



## SECOND ANODE CONNECTORS

For television tubes—Silver plated snap button type plug well insulated by 1 1/2" diameter rubber protective cap. Snaps into opening on side of tube. Available in three lengths wire leads.

No.	Description	List Price
3A2	12" Wire Lead	Each \$1.14
3A3	15" Wire Lead	Each 1.33
3A4	18" Wire Lead	Each 1.59



## SECOND ANODE CONNECTOR

For diheptal based tubes. Cadmium plated brass contact surrounded by rubber insulator 3/4" wide and 1 3/8" long. Snaps over .098 diameter prong on side of diheptal tubes.

No.	List Price
3A1	Each \$ .95



## CORONA SHIELDS

Specifically designed for Television and high voltage wiring. These cadmium plated brass shields will provide excellent protection at proper positions in electrical connections. Outside diameter .470. Hole diameter .136. Thickness .172.

No.	List Price
3C1	Each \$ .04

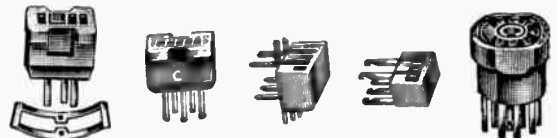


## 110-250 VOLT SOCKET (Underwriters Listed)

When space is at a premium use this 110-250 volt 2 prong socket. Rated at 15 Amp., 110 V. or 10 Amp., 250 V. Molded from high dielectric black bakelite. Solder coated brass contacts on 1/2" centers designed to accept any 2 prong standard electric plug. Mounts in 3/4" x 3/8" hole. .144 diameter mounting holes on 1 1/8" centers. Ideal for radio chassis and many other applications.

No.	List Price
2R2	Each \$ .25

## SUB-MINIATURE SOCKETS



Use extensively for hearing aids, radios and other electronic apparatus which require sub-miniature tubes. Molded from mica-filled low loss bakelite with silver plated beryllium copper contacts. Available with 3, 5, 6, 7 or 8 contacts. Four prong tubes use No. 2H5 five prong socket. No. 2H5 can be used as a transistor socket. No. 5PC for printed circuits. No. 5WC for wired circuits.

No.	Description	List Price
*2H3	3 Prong	Each \$ .325
*2H5	5 Prong	Each .47
*2H6	6 Prong	Each .49
*2H7	7 Prong	Each .52
5PC	5 Prong	Each .62
5WC	5 Prong	Each .67
*8SM	8 Prong	Each .89

\*Mtg. Ring included.

## PIN PLUGS — JACKS — CONNECTORS — STRIPS — TERMINALS



### PHONO PLUGS

R.C.A. type. For a multitude of applications: record players, auto radios, receivers, recording and reproducing equipment, experimental units, etc. Nickel plated 1/8" diameter tube pin. Available in two lengths: 3/8" and 1/2". Use No. 13A with type 81A and 81B phono jacks. Use No. 13E with type 81E extension jack.

No.	Description	List Price
13A	3/8" Pin	Each \$ .10
13E	1/2" Pin	Each .10

### SINGLE PHONO JACK



Precision engineered for many uses, such as: R.C.A. type recording units, receivers, and auto sets. Single prong positive grip phono jack mounted on 1/8" chocolate bakelite disc with 1/8" mounting centers Use Cinch No. 13A phono plug with this jack.

No.	List Price
81A	Each \$ .15

### ANTENNA CONNECTOR

#### Flange Type



Motorola type shielded jack. Sturdy steel flange with 1/8" mtg. centers with .136 dia. mtg. holes. Solder coated shell, flange and contact. Can be mounted with screws or rivets. Used extensively on auto radios. Use Cinch No. 13B antenna plug with this jack.

No.	List Price
81F	Each \$ .23



### DOUBLE PHONO JACK

Two positive grip phono jacks mounted on 1/8" bakelite panel with 1/8" mounting centers. Jacks are spaced on 1/2" centers. Panel is 1 1/2" x 1/2". Used on recording units, receivers, etc. Use Cinch No. 13A phono plug with this jack.

No.	List Price
81B	Each \$ .21



### ANTENNA PLUG

Motorola type. Nickel plated 1/8" tube pin extends 1 1/2" from cadmium plated split brass shell whose 8 cutting edges provide positive grounded connection when inserted into a Cinch No. 81C or 81F connector.

No.	List Price
13B	Each \$ .15

### ANTENNA CONNECTOR Shell Type



Same as No. 81F on right except without flange. This connector may be soldered in position. Use Cinch No. 13B antenna plug with this jack.

No.	List Price
81C	Each \$ .15



### INSULATED PIN PLUG

Nickel plated 1/8" brass tube pin 3/8" long, assembled to 1 1/2" long fibre insulator. May be used with Cinch No. 81A and 81B type phono jacks or with No. 49 series contact strips illustrated on page F-35.

No.	List Price
13C	Each \$ .12



### SHIELDED EXTENSION JACK

Cadmium plated brass shell 2 1/8" long with black bakelite insert providing insulation for solder coated brass positive grip contact. Use Cinch No. 13E Phono plug with this jack.

No.	List Price
81E	Each \$ .32



# CINCH-JONES SALES • DIVISION OF CINCH MANUFACTURING CORPORATION

## DUODECAL — 12 PRONG



No larger in diameter than the tube base and only slightly longer than the tube pin. A new feature incorporates wire strain relief as an integral part of the contact. Molded from high dielectric black bakelite. For use with 10BP4, 2BR1, 5TP4, etc., type tubes. Also RCA 6199 tube.

No. 3B12 Black  
3M12 Mica

List Price Ea.  
\$1.00  
3.50

## RECESSED PLUG



Recessed subpanel mounting type plug. Underwriter approved for 125 Volts 7 amperes. Perfect for current supply for Television sets. 1 1/4" mounting centers. Overall length 1 5/8". Width 7/8". Body depth 1/4".

No. 2RP  
List Price Ea. \$ .25

## CETRON TUBE SOCKET



This socket is designed for use with Cetron Tubes CE701 and CE702 in such applications as electric eye doors and motion picture projectors. Contacts are of special alloy spring brass. May be mounted by press fit, gluing or by means of mounting ring 2MR.

### Casting Material

No. 2B2 Black Ea. \$ .80  
No. 2M2 Mica Ea. 1.75

## SUB-MINIATURE SOCKET



This socket is the same as No. 8SM shown on page F4 except that it is furnished with a mounting plate.

No. 8SM-P Ea. \$ .98

## RECESSED PLUG



Recessed sub-panel mounting type plug similar to No. 2RP except that the contact is one piece.

Underwriter Approved for 125 Volts 7 amperes. Same dimensions as 2RP.

No. 2RP-1 Ea. \$ .25

## RELAY SOCKET



A 14 contact relay socket. Casting is of mica insulation. Contacts are of beryllium copper, silver plated with hot tinned tails. Overall length of top mount saddle 1-11/32". Mounting centers 1 1/4".

No. 14RS

Ea. \$1.00

## 7 PIN MINIATURE PLUG



Designed for use as a cable connector. Plug pins are of brass with Cinch solder coat. Can be supplied with black or mica bakelite casting. Will fit standard 7 contact sockets.

### Casting Material

No. 7PB Black Ea. \$1.50  
No. 7PM Mica Ea. 2.76

## CONNECTOR PLUG

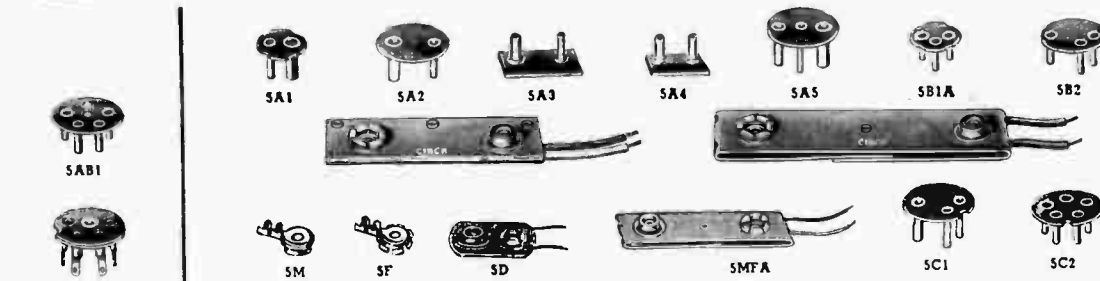


This plug consists of two prongs mounted on a piece of Bakelite. The prongs are the same as used in No. 2RP-1. Mounting plate is of 1/16" natural XP Bakelite 1 5/8" x 3/4". The .135 mounting holes are on 1 1/4" centers. An inexpensive current supply connector for TV sets.

No. 2FP

Ea. \$1.15

## CINCH BATTERY PLUGS



THIS REFERENCE CHART WILL ASSIST YOU IN SELECTING THE CORRECT PLUG FOR POPULAR BATTERIES

Part Number	Voltage	For Burgess No.	For Eveready No.	For R.C.A. No.	For Philco No.	For Ray-O-Vac No.	List Price
5A1	1 1/2 "A"	4F, 4FL, 6F, 8F, 8FL, TE	741, 742, 743, 10S2P	V5004, V5005, V5007, V5008	P94, P96, P8F1	P94A, P94L, PX, P96A, P98A, P98L	Ea. \$ .07 Ea. .08
5A2	3 "A"	20F2	X125	V5025	P8024	P9403	Ea. .07
5A3	4 1/2 "A"	G-3	746	V5002	P100	P-83A	Ea. .07 Ea. .10
5A4	6 "A"	2F4, 2F4L, F4P1, T5	A509, 71B, 744, 747	V5009, V5010, V5011	P4F4R	P694A, P696L, P698A, P698L	Ea. .07 Ea. .10
5A5	7 1/2 "A"	G-5	687	V5003		P85A	Ea. .08
5B1A	45 "B" Small	M30, Z30, A30, B30,	482, 738, 762	V5012, V5013, V5014, V5015	P210, P305	430P, P7830, P5303	Ea. .09 Ea. .05
5B2	45 "B" Large	M30, Z30, A30, B30,	482, 738, 762	V5012, V5013, V5014, V5015	P210, P305	430P, P7830, P5303	Ea. .06 Ea. .05
5M	67 1/2 "B"	XX30, XX45	455, 467	V5016, V5056		P4367	Ea. .06
5F	67 1/2 "B"	XX30, XX45	455, 467	V5016, V5056		P4367	Ea. .35
5MFA	67 1/2 "B"	XX30, XX45	455, 467	V5016, V5056		P4367	Ea. .12
5C1	4 1/2 "C"	2370P1	X771	V5030	P3D	P231W	Ea. .13
5C2	22 1/2 "C"	5156P1	768	V5031	P15B5	P5151	Ea. .60
5D	45 "B"	U30	415	V5086			Ea. .27
5D1	67 1/2 "B"	P45	477	V5218	P149	946	Ea. .35
5D2	90 "B"	N60	490	V5090	P132	4390	Ea. .12
5A81	1 1/2 "A"-90 "B"	17G60, 5DA60, 6TA60	758	V5022, V5043	P60D11L	AB82, 10793	Ea. .10
6K4	9 "A"-90 "B"	G6B60	752	V5047			Ea. .10
5A82	1 1/2 "A"-63-90 "B"	6FA60, 4GA41, 4GA42		V5037	P60A-4L, P41A4G	AB419	Ea. .09
5A83	6 "A"-90 "B"	2FA60		V5044	P60ABF4	AB694	Ea. .10
5A84	6 "A"-90 "B"	F4B60		V5048			Ea. .15
5A85	6 "A"-90 "B"	D4A60, 2F4B60, F4A41		V5046	P41AFL	10896, AB648	Ea. .12
5A86	7 1/2 "A"-90 "B"	G5A42, F5A60		V5038	P87, PB41	AB794	Ea. .13
5A87	9 "A"-90 "B"	F6A60, G6M60	753, 754	V5018, V5019	P841A	AB878, AB994	Ea. .15
5A88	9 "A"-90 "B"	4FA60					Ea. .13



# CINCH-JONES SALES • DIVISION OF CINCH MANUFACTURING CORPORATION



## STAND-OFF TERMINALS

These rugged Stand-Off Terminals consist of two heavily hot tinned metal caps insulated from each other by a solid Grade L-5 Ceramic Steatite spacer. One of the metal caps is shaped for riveting into a small chassis hole. The cap at the opposite end provides a junction point for solder connection of wire leads.

No.	Length	Body Each	List Price
SOT-2	$\frac{3}{8}$ "		\$ .225



Insulated terminals for television and other high voltage electronic equipment. Provides excellent insulation for passing high voltage wires through chassis. Molded from mica-filled low loss bakelite. Available in two lengths:  $\frac{9}{32}$ " or  $\frac{13}{32}$ ". Diameter of cylinder is .110. Mounts in  $\frac{5}{32}$ " dia. hole.

No.	Length	List Price Ea.
16S	$\frac{9}{32}$ "	\$ .65
16L	$\frac{13}{32}$ "	.65

## METAL SPACER SLEEVES



Zinc plated cold rolled steel spacer sleeves. Six (6) popular sizes for spacing chassis, panels, etc. Illustrations are full size.

No.	Length	Dia.	Out-side side	In-side side	Price
43A	$\frac{3}{8}$ "	$\frac{1}{4}$ "	$\frac{3}{8}$ "	$\frac{3}{8}$ "	\$.02
43B	$\frac{1}{2}$ "	$\frac{1}{4}$ "	$\frac{3}{8}$ "	$\frac{3}{8}$ "	.02
43C	$\frac{3}{4}$ "	$\frac{1}{4}$ "	$\frac{3}{8}$ "	$\frac{3}{8}$ "	.02
43D	$\frac{1}{2}$ "	$\frac{1}{4}$ "	$\frac{3}{8}$ "	$\frac{3}{8}$ "	.02
43E	$\frac{3}{4}$ "	$\frac{1}{4}$ "	$\frac{3}{8}$ "	$\frac{3}{8}$ "	.03
43F	$\frac{1}{2}$ "	$\frac{1}{4}$ "	$\frac{3}{8}$ "	$\frac{3}{8}$ "	.03

## SCREEN TYPE PLUG BUTTON

For portable radios, transmitters, amplifiers, etc. Provides ventilation wherever required in radio, television and electronic equipment. Bright zinc plated steel button snaps in 1" diam. hole. Half size illustration.



No.	Description	List Price
41V	for 1" Hole	Ea. \$ .19



## GRID CAP SHIELD

Fits firmly over the grid cap, completely shielding the tube. Cadmium plated shield is 1" high with  $\frac{7}{8}$ " slot opening for grid leads.

No.	List Price Each
60S	\$ .13

## CABLE CLAMPS



Cadmium plated sturdy steel cable clamps designed for securing cables ranging from  $\frac{1}{16}$ " diameter to  $\frac{5}{8}$ " diameter. Illustrations are half size.

No.	Dia. of arc	Hole Dia.	Over-all Width	Length	Hole cent. to arc cent.	List Price Ea.
85A	$\frac{1}{8}$ "	.149	$\frac{1}{8}$ "	$\frac{1}{8}$ "	$\frac{1}{4}$ "	\$ .04
85B	$\frac{3}{16}$ "	.140	$\frac{3}{16}$ "	$\frac{3}{16}$ "	$\frac{3}{8}$ "	.03
85C	$\frac{1}{4}$ "	.144	$\frac{1}{4}$ "	$\frac{1}{4}$ "	$\frac{3}{8}$ "	.03
85D	$\frac{5}{16}$ "	.136	$\frac{5}{16}$ "	$\frac{5}{16}$ "	$\frac{1}{2}$ "	.02
85E	$\frac{3}{8}$ "	.147	$\frac{3}{8}$ "	$\frac{3}{8}$ "	$\frac{3}{4}$ "	.03
85F	$\frac{1}{2}$ "	.171	$\frac{1}{2}$ "	$\frac{1}{2}$ "	1"	.02

## SCREW TYPE TERMINAL STRIPS

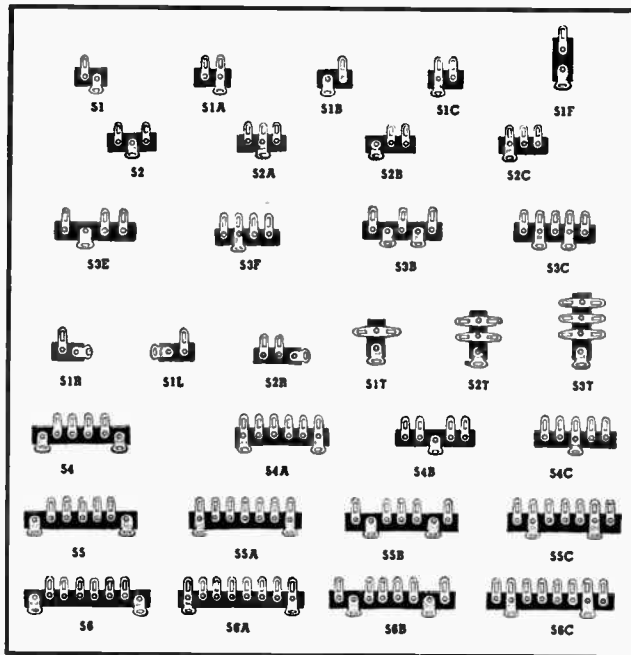


Ideal for chassis or breadboard layouts. Solder coated brass terminals. .136 diameter mounting holes. Strips with 1 to 6 lugs are of  $\frac{1}{4}$ " bakelite; 7 to 10 terminals mounted on  $\frac{3}{8}$ " bakelite. Ends of screws are captivated to prevent removal. Terminals are spaced on  $\frac{1}{8}$ " centers.

No.	Lugs	Mounting Centers	List Price
17-1	1	$\frac{7}{8}$ "	Each \$ .07
17-2	2	$1\frac{1}{8}$ "	Each .10
17-3	3	$1\frac{1}{4}$ "	Each .15
17-4	4	$2\frac{1}{8}$ "	Each .20
17-5	5	$2\frac{3}{8}$ "	Each .23
17-6	6	$3\frac{1}{8}$ "	Each .28
17-7	7	$3\frac{1}{2}$ "	Each .35
17-8	8	$3\frac{3}{8}$ "	Each .39
17-9	9	$4\frac{1}{8}$ "	Each .45
17-10	10	$4\frac{1}{2}$ "	Each .49

## LUG TYPE TERMINAL STRIPS

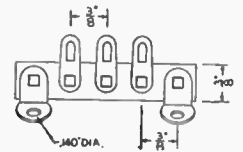
These bakelite strips are handy for neatly supporting resistors, condensers, etc., in circuit wiring. Solder coated brass lugs are spaced on  $\frac{9}{8}$ " centers with .140 diameter mounting holes. Chocolate bakelite strips are  $\frac{1}{4}$ " thick and  $\frac{3}{8}$ " wide.



## CONTACT STRIPS

For connections which must be changed quickly and easily. Solder coated spring steel contacts spaced on  $\frac{9}{8}$ " centers and mounted on  $\frac{1}{8}$ " bakelite. Contacts are sized for  $\frac{1}{8}$ " diameter tube pins such as Cinch No. 13C illustrated on page F-33.

No.	Con-tacts	Mounting Centers	List Price
49-1	1	$\frac{3}{4}$ "	Ea. \$ .07
49-2	2	$1\frac{1}{8}$ "	Ea. .10
49-3	3	$1\frac{1}{2}$ "	Ea. .13
49-4	4	$1\frac{3}{8}$ "	Ea. .16
49-5	5	$2\frac{1}{4}$ "	Ea. .20
49-6	6	$2\frac{3}{8}$ "	Ea. .23



No.	Mtg. Centers	List Price Each
S1		\$ .03
S1A		.03
S1B		.03
S1C		.03
S1R		.04
S1L		.04
S1F		.04
S1T		.04
S2		.04
S2A		.04
S2B		.04
S2C		.04
S2R		.05
S2T		.05
S2B	$\frac{3}{4}$ "	.07
S2C	$\frac{3}{4}$ "	.07
S3E		.06
S3F		.06
S3T		.07
S4	$1\frac{7}{8}$ "	.09
S4A	$1\frac{7}{8}$ "	.09
S4B		.07
S4C		.07
S5	$2\frac{1}{4}$ "	.10
S5A	$2\frac{1}{4}$ "	.10
S5B	$1\frac{1}{2}$ "	.10
S5C	$1\frac{1}{2}$ "	.10
S6	$2\frac{3}{8}$ "	.12
S6A	$2\frac{3}{8}$ "	.12
S6B	$1\frac{7}{8}$ "	.12
S6C	$1\frac{7}{8}$ "	.12

## PLUG BUTTONS

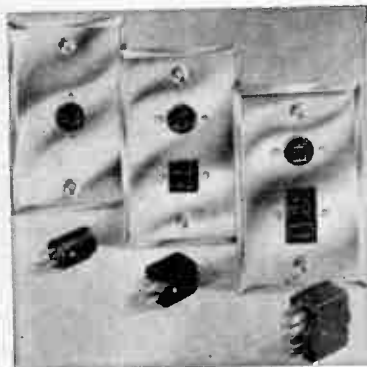


Used to cover punched or drilled holes in metal, wood, fibre, tubes, plastic, cardboard, etc. Nickel plated steel plug buttons for eight popular size holes. Other sizes available, let us know your requirements. Spring tension prongs hold plug bottom firmly in position. Illustrations are 1/3 actual size.

No.	For hole Diameter	Cap Diameter	List Price Ea.
41A	$\frac{1}{4}$ "	$\frac{3}{8}$ "	\$ .04
41B	$\frac{3}{8}$ "	$\frac{1}{2}$ "	.04
41C	$\frac{1}{2}$ "	$\frac{5}{8}$ "	.04
41D	$\frac{5}{8}$ "	$\frac{3}{4}$ "	.04
41E	$\frac{3}{4}$ "	$\frac{7}{8}$ "	.04
41F	$\frac{7}{8}$ "	1"	.05
41G	1"	$1\frac{1}{8}$ "	.07
41H	$1\frac{1}{4}$ "	$1\frac{3}{8}$ "	.08



## TELEVISION WALL PLATES



### 302 SERIES

The 302 series wall plates are made of steel with a heavy chrome plate and provide a convenient junction between antenna lead in and television set. They all fit a standard outlet box. Mounting screws furnished. S-302-WPC provides connection for antenna lead in. S-302-4WPC provides connections for antenna lead in and up to 8 contact rotor. Jones P-302-FHT plug can be used for the antenna socket and a P-304-FHT or P-308-FHT for the rotor socket.

	List Price Each	S-302-WPC	S-302-4WPC	S-302-WPC
S-302-8WPC	\$2.09	\$2.53	\$2.76	

### LOW LOSS POLYSTYRENE

This plate covers every requirement for an up-to-date TV connector. Molded of Polystyrene, it assures perfect reception in fringe areas where low loss is of vital importance. One plate provides connections for UHF and VHF and has a knock out provision for the mounting of a standard S-308-AB socket in case a rotor is used. Fits a standard outlet box or can be attached to the wall. Mounting screws for both the plate and socket are furnished. Supplied in brown or Ivory.

Code	Color	List Price Ea.
WPI	Ivory	\$1.55
WPB	Brown	1.55

### POLYSTYRENE PLUG

The plug is molded of clear polystyrene and matches the 300 Ohm transmission line assuring maximum performance.



No. WPB

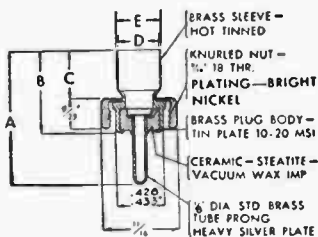


No. TVP-2

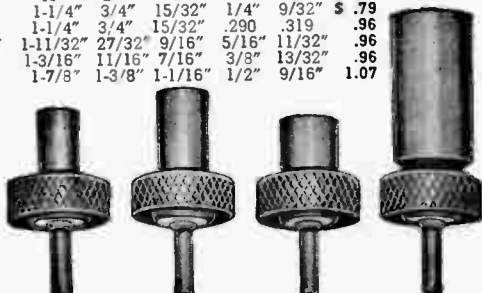
List Price Plug  
\$ .35

## SERIES 101 PLUGS

The entire No. 101 Series of Plugs are identical with the exception of the cable ferrule which is furnished in four sizes as listed below. All metal parts are of brass. These Plugs fit all of the No. 101 Series Sockets. A low loss Plug and Socket ideal for high frequency connections.



Code No.	A	B	C	D	E	List Price Ea.
P-101-1/4"	1-1/4"	3/4"	15/32"	1/4"	9/32"	\$ .79
P-101-290	1-1/4"	3/4"	15/32"	.290	.319	.96
P-101-5/16"	1-11/32"	27/32"	9/16"	5/16"	11/32"	.96
P-101-3/8"	1-3/16"	11/16"	7/16"	3/8"	13/32"	.96
P-101-1/2"	1-7/8"	1-3/8"	1-1/16"	1/2"	9/16"	1.07



P-101-1/4" P-101-5/16" P-101-3/8" P-101-1/2"

## SERIES 101 SOCKETS

The No. 101 Series Sockets are furnished in three types as shown below. Base is of Brass with Bright Nickel Plated finish. Brass contact is Silver Plated. Insulation is of low loss natural color XXX Bakelite. Meets Navy Specifications. The S-101-D is similar to the S-101 except that the Bakelite is recessed in the base. S-101-D Mod. is the same as S-101-D except that two sides of the base are milled as shown. Mounting Holes No. 101—No. 41 drill on 1/8" centers. Mounting holes No. 101-D and 101-D Mod. No. 30 drill on 1/8" centers.



S-101 List Price Each \$0.70  
S-101-D List Price Each \$1.07  
S-101-D Mod List Price Each 1.07  
(Above Illustrations are Actual Size)

## SERIES 201



PLUGS

SOCKETS

The No. 201 Series Plugs are of the same design as the No. 101 but are of heavier stock and larger. Made in one size only with 3/8" ferrule. All metal parts are of Brass, same finish as No. 101 Series and Wax Impregnated Ceramic insulation. Overall length 1 1/8". Prong diameter 3/32". Fits only the 201 Socket.

The 201 Socket is similar to the S-101-D except larger. Brass base is Bright Nickel Plated. Brass contact is Silver Plated. Insulation is of low loss natural color XXX Bakelite.

Mounting holes — No. 30 drill on 1" centers.

Code	List Price Ea.	Code	List Price Ea.
P-201-3/8"	\$1.24	S-201	\$1.33

## SERIES 202

PLUGS

SOCKETS

The 202 Series Plugs and Sockets are made in two contacts only. Metal parts are of Brass with Bright Nickel Plate. Insulation is of Molded Bakelite. Phosphor Bronze "Knife Switch" type Socket Contacts engage both sides of flat Plug Contacts—double contact area. Formed Fibre linings in caps. Polarized. Knurled nut has 3/4"—27 thread. Socket Mounting Holes. No. 30 drill on 1" centers. The S-202-CCT-THR has been added to this series and when used with the P-202-CCT will make an ideal microphone connector.



P-202-CCT—\$0.98 (as shown above)

S-202-CCT—\$1.00 (Socket instead of Plug)

P-202-FHT—\$0.79 (Same as above less Cable Clamps)

S-202-FHT—\$0.81 (Same except Socket)

S-202-B—\$1.16 (Socket for Base Mtg.)

P-202-B—\$1.12 (Same as above except with Plug)

S-202-CCT-THR—\$1.33 (as shown above)

Used with P-202-CCT as an extension connection



## "300" SERIES PLUGS AND SOCKETS

### General Specifications

Small in size with good separation between contacts. Made in sizes of 2 to 33 contacts. All Plugs and Sockets are polarized so that Plugs of one size cannot fit into Sockets of another size. Body of Molded Bakelite. Phosphor bronze "knife-switch" type Socket contacts engage both sides of flat Plug contacts—double contact area. Plug prongs are  $\frac{5}{32}$ " wide by  $\frac{3}{64}$ " thick. Formed metal caps are finished in Black Crystal. Fibre linings for caps

are also formed. Plugs and Sockets arranged for either cap or panel mounting. Two contact Plugs and Sockets are round as shown at the right, all others are rectangular. Illustrated are the P-302-CCT and S-302-AB. Standard 24 to 33 contact Plugs have a special long polarizing pin in approximate center position to assist in correct insertion and removal.



#### Plug with Angle Brackets



P-306-AB

No.	Contacts	List Price Each
P-302-AB	2	\$0.32
P-303-AB	3	.40
P-304-AB	4	.44
P-306-AB	6	.54
P-308-AB	8	.64
P-310-AB	10	.73
P-312-AB	12	.81

#### Socket with Angle Brackets



S-306-AB

No.	Contacts	List Price Each
S-302-AB	2	\$0.35
S-303-AB	3	.42
S-304-AB	4	.47
S-306-AB	6	.58
S-308-AB	8	.73
S-310-AB	10	.86
S-312-AB	12	1.00

#### Plug with Deep Bracket



P-306-DB

No.	Contacts	List Price Each
P-302-DB	2	\$0.81
P-303-DB	3	.87
P-304-DB	4	.94
P-306-DB	6	1.02
P-308-DB	8	1.11
P-312-DB	12	1.29

#### Socket with Deep Bracket

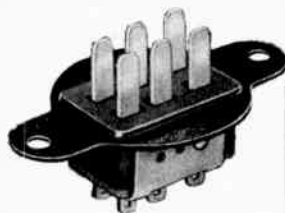


S-306-DB

No.	Contacts	List Price Each
S-302-DB	2	\$0.84
S-303-DB	3	.90
S-304-DB	4	.96
S-306-DB	6	1.08
S-308-DB	8	1.21
S-312-DB	12	1.49

The ten contact is not available in this series

#### Plug with Flush Plate



P-306-FP

No.	Contacts	List Price Each
P-302-FP	2	\$0.56
P-303-FP	3	.61
P-304-FP	4	.67
P-306-FP	6	.75
P-308-FP	8	.85
P-310-FP	10	.94
P-312-FP	12	1.02

#### Socket with Flush Plate



S-306-FP

No.	Contacts	List Price Each
S-302-FP	2	\$0.57
S-303-FP	3	.64
S-304-FP	4	.69
S-306-FP	6	.79
S-308-FP	8	.94
S-310-FP	10	1.07
S-312-FP	12	1.21

#### Plug, Flared Hole in Cap



P-306-FHT

No.	Contacts	List Price Each
P-302-FHT	2	\$0.54
P-303-FHT	3	.59
P-304-FHT	4	.66
P-306-FHT	6	.75
P-308-FHT	8	.85
P-310-FHT	10	.96
P-312-FHT	12	1.09

#### Socket, Flared Hole in Cap



S-306-FHT

No.	Contacts	List Price Each
S-302-FHT	2	\$0.56
S-303-FHT	3	.61
S-304-FHT	4	.67
S-306-FHT	6	.79
S-308-FHT	8	.95
S-310-FHT	10	1.10
S-312-FHT	12	1.25

#### Plug with Recessed Plate



P-306-RP

No.	Contacts	List Price Each
P-302-RP	2	\$0.65
P-303-RP	3	.70
P-304-RP	4	.77
P-306-RP	6	.87
P-308-RP	8	1.01
P-310-RP	10	1.16
P-312-RP	12	1.28

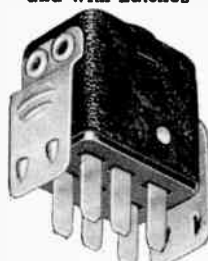
#### Socket with Recessed Plate



S-306-RP

No.	Contacts	List Price Each
S-302-RP	2	\$0.67
S-303-RP	3	.74
S-304-RP	4	.79
S-306-RP	6	.95
S-308-RP	8	1.11
S-310-RP	10	1.28
S-312-RP	12	1.46

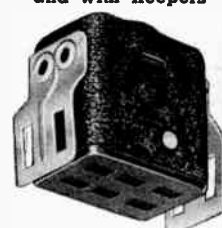
#### Plug, Flared Hole in Cap and with Latches



P-306-FHT-L

No.	Contacts	List Price Each
P-302-FHT-L	2	\$0.74
P-303-FHT-L	3	.79
P-304-FHT-L	4	.86
P-306-FHT-L	6	.95
P-308-FHT-L	8	1.05
P-310-FHT-L	10	1.17
P-312-FHT-L	12	1.28

#### Socket, Flared Hole in Cap and with Keepers



S-306-FHT-K

No.	Contacts	List Price Each
S-302-FHT-K	2	\$0.75
S-303-FHT-K	3	.81
S-304-FHT-K	4	.87
S-306-FHT-K	6	1.00
S-308-FHT-K	8	1.16
S-310-FHT-K	10	1.30
S-312-FHT-K	12	1.46



## "300" SERIES PLUGS AND SOCKETS

Plug, Flared Hole in End



P-306-FHE

No.	Contacts	List Price Each
P-306-FHE	6	\$0.75
P-308-FHE	8	.85
P-310-FHE	10	.96
P-312-FHE	12	1.08

Socket, Flared Hole in End

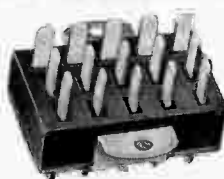


S-306-FHE

No.	Contacts	List Price Each
S-306-FHE	6	\$0.79
S-308-FHE	8	.95
S-310-FHE	10	1.10
S-312-FHE	12	1.25

Small size of caps of 302, 303 and 304 will not permit FHE type.

Plug with Angle Brackets



P-315-AB

No.	Contacts	List Price Each
P-315-AB	15	\$1.07
P-318-AB	18	1.33
P-321-AB	21	1.67
P-324-AB	24	2.02
P-327-AB	27	2.38
P-330-AB	30	2.73
P-333-AB	33	3.07

Socket with Angle Brackets



S-315-AB

No.	Contacts	List Price Each
S-315-AB	15	\$1.24
S-318-AB	18	1.50
S-321-AB	21	1.85
S-324-AB	24	2.20
S-327-AB	27	2.55
S-330-AB	30	2.92
S-333-AB	33	3.26

Plug, Cable Clamp in Cap



P-306-CCT

No.	Contacts	List Price Each
P-302-CCT	2	\$0.74
P-303-CCT	3	.79
P-304-CCT	4	.86
P-306-CCT	6	.95
P-308-CCT	8	1.05
P-310-CCT	10	1.17
P-312-CCT	12	1.28

Socket, Cable Clamp in Cap



S-306-CCT

No.	Contacts	List Price Each
S-302-CCT	2	\$0.75
S-303-CCT	3	.81
S-304-CCT	4	.87
S-306-CCT	6	1.00
S-308-CCT	8	1.16
S-310-CCT	10	1.30
S-312-CCT	12	1.46

Plug with End Brackets



P-315-EB

No.	Contacts	List Price Each
P-315-EB	15	\$1.07
P-318-EB	18	1.33
P-321-EB	21	1.67
P-324-EB	24	2.02
P-327-EB	27	2.38
P-330-EB	30	2.73
P-333-EB	33	3.07

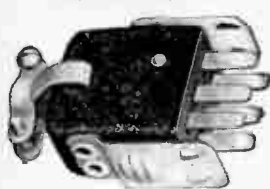
Sockets with End Brackets



S-315-EB

No.	Contacts	List Price Each
S-315-EB	15	\$1.24
S-318-EB	18	1.50
S-321-EB	21	1.85
S-324-EB	24	2.20
S-327-EB	27	2.55
S-330-EB	30	2.92
S-333-EB	33	3.26

Plug, Cable Clamp in Cap and with Latches



P-306-CCT-L

No.	Contacts	List Price Each
P-302-CCT-L	2	\$0.94
P-303-CCT-L	3	.99
P-304-CCT-L	4	1.07
P-306-CCT-L	6	1.16
P-308-CCT-L	8	1.24
P-310-CCT-L	10	1.36
P-312-CCT-L	12	1.50

Socket, Cable Clamp in Cap and with Keepers



S-306-CCT-K

No.	Contacts	List Price Each
S-302-CCT-K	2	\$0.95
S-303-CCT-K	3	1.01
S-304-CCT-K	4	1.08
S-306-CCT-K	6	1.20
S-308-CCT-K	8	1.35
S-310-CCT-K	10	1.51
S-312-CCT-K	12	1.66

Plug with Shallow Brackets



P-315-SB

No.	Contacts	List Price Each
P-315-SB	15	\$1.58
P-318-SB	18	1.95
P-321-SB	21	2.30
P-324-SB	24	2.73
P-327-SB	27	3.07
P-330-SB	30	3.51
P-333-SB	33	3.87

Sockets with Shallow Brackets



S-315-SB

No.	Contacts	List Price Each
S-315-SB	15	\$1.78
S-318-SB	18	2.12
S-321-SB	21	2.48
S-324-SB	24	2.92
S-327-SB	27	3.26
S-330-SB	30	3.71
S-333-SB	33	4.06

Plug, Cable Clamp in End



P-306-CCE

No.	Contacts	List Price Each
P-306-CCE	6	\$0.95
P-308-CCE	8	1.05
P-310-CCE	10	1.17
P-312-CCE	12	1.28

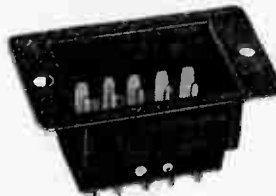
Socket, Cable Clamp in End



S-306-CCE

No.	Contacts	List Price Each
S-306-CCE	6	\$1.00
S-308-CCE	8	1.16
S-310-CCE	10	1.30
S-312-CCE	12	1.46

Plug with Deep Bracket



P-315-DB

No.	Contacts	List Price Each
P-315-DB	15	\$1.58
P-318-DB	18	1.95
P-321-DB	21	2.30
P-324-DB	24	2.73
P-327-DB	27	3.07
P-330-DB	30	3.52
P-333-DB	33	3.87

Socket with Deep Bracket



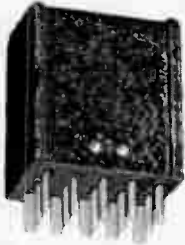
S-315-DB

No.	Contacts	List Price Each
S-315-DB	15	\$1.78
S-318-DB	18	2.12
S-321-DB	21	2.48
S-324-DB	24	2.92
S-327-DB	27	3.26
S-330-DB	30	3.71
S-333-DB	33	4.06



## "300" SERIES PLUGS AND SOCKETS

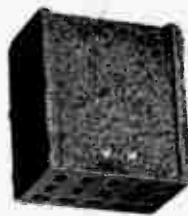
Plug with Flared Hole in Top of Cap



P-315-FHT

No.	Contacts	List Price Each
P-315-FHT	15	\$1.41
P-318-FHT	18	1.77
P-321-FHT	21	2.11
P-324-FHT	24	2.55
P-327-FHT	27	2.92
P-330-FHT	30	3.36
P-333-FHT	33	3.71

Socket, Flared Hole in Top of Cap



S-315-FHT

No.	Contacts	List Price Each
S-315-FHT	15	\$1.58
S-318-FHT	18	1.95
S-321-FHT	21	2.30
S-324-FHT	24	2.75
S-327-FHT	27	3.09
S-330-FHT	30	3.53
S-333-FHT	33	3.88

Plug, Cable Clamp in Top of Cap



P-315-CCT

No.	Contacts	List Price Each
P-315-CCT	15	\$1.67
P-318-CCT	18	2.02
P-321-CCT	21	2.38
P-324-CCT	24	2.81
P-327-CCT	27	3.18
P-330-CCT	30	3.71
P-333-CCT	33	3.97

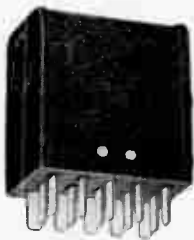
Socket, Cable Clamp in Top of Cap



S-315-CCT

No.	Contacts	List Price Each
S-315-CCT	15	\$1.85
S-318-CCT	18	2.20
S-321-CCT	21	2.55
S-324-CCT	24	3.01
S-327-CCT	27	3.36
S-330-CCT	30	3.88
S-333-CCT	33	4.15

Plug with Flared Hole in End of Cap



P-315-FHE

No.	Contacts	List Price Each
P-315-FHE	15	\$1.41
P-318-FHE	18	1.77
P-321-FHE	21	2.11
P-324-FHE	24	2.55
P-327-FHE	27	2.92
P-330-FHE	30	3.36
P-333-FHE	33	3.71

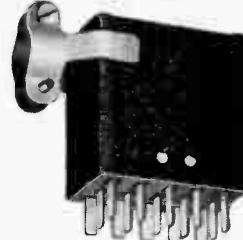
Socket, Flared Hole in End of Cap



S-315-FHE

No.	Contacts	List Price Each
S-315-FHE	15	\$1.58
S-318-FHE	18	1.95
S-321-FHE	21	2.30
S-324-FHE	24	2.75
S-327-FHE	27	3.09
S-330-FHE	30	3.53
S-333-FHE	33	3.88

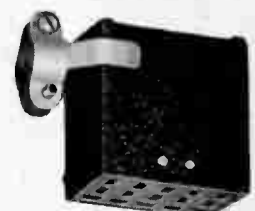
Plug, Cable Clamp in End of Cap



P-315-CCE

No.	Contacts	List Price Each
P-315-CCE	15	\$1.67
P-318-CCE	18	2.02
P-321-CCE	21	2.38
P-324-CCE	24	2.81
P-327-CCE	27	3.18
P-330-CCE	30	3.71
P-333-CCE	33	3.97

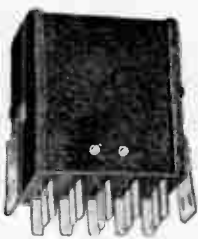
Socket, Cable Clamp in End of Cap



S-315-CCE

No.	Contacts	List Price Each
S-315-CCE	15	\$1.85
S-318-CCE	18	2.20
S-321-CCE	21	2.55
S-324-CCE	24	3.01
S-327-CCE	27	3.36
S-330-CCE	30	3.88
S-333-CCE	33	4.15

Plug, Flared Hole in Top of Cap with Latches



P-315-FHT-L

No.	Contacts	List Price Each
P-315-FHT-L	15	\$1.58
P-318-FHT-L	18	1.95
P-321-FHT-L	21	2.30
P-324-FHT-L	24	2.75
P-327-FHT-L	27	3.09
P-330-FHT-L	30	3.53
P-333-FHT-L	33	3.88

Socket, Flared Hole in Top of Cap and with Keepers



S-315-FHT-K

No.	Contacts	List Price Each
S-315-FHT-K	15	\$1.78
S-318-FHT-K	18	2.12
S-321-FHT-K	21	2.48
S-324-FHT-K	24	2.93
S-327-FHT-K	27	3.28
S-330-FHT-K	30	3.72
S-333-FHT-K	33	4.07

Plug, Cable Clamp in Top of Cap and with Latches



P-315-CCT-L

No.	Contacts	List Price Each
P-315-CCT-L	15	\$1.85
P-318-CCT-L	18	2.20
P-321-CCT-L	21	2.55
P-324-CCT-L	24	3.01
P-327-CCT-L	27	3.36
P-330-CCT-L	30	3.88
P-333-CCT-L	33	4.15

Socket, Cable Clamp in Top of Cap and with Keepers



S-315-CCT-K

No.	Contacts	List Price Each
S-315-CCT-K	15	\$2.04
S-318-CCT-K	18	2.39
S-321-CCT-K	21	2.75
S-324-CCT-K	24	3.19
S-327-CCT-K	27	3.53
S-330-CCT-K	30	4.07
S-333-CCT-K	33	4.32

## "400" SERIES PLUGS AND SOCKETS

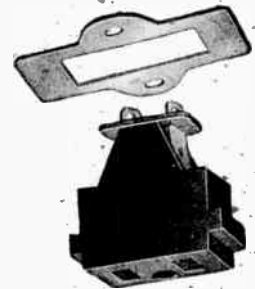
(Formerly "Heavy Duty")

### General Specifications

Made in 2, 4, 6, 8, 10 and 12 contacts. All Plugs and Sockets are polarized. Body of molded Bakelite. Phosphor bronze "knife-switch" type Socket contacts engage both sides of flat Plug Contacts—double contact area. Plug prongs are 1/4" wide by 1/8" thick. Caps are finished in Black Crystal and equipped with fibre lining. Plugs and Sockets arranged for cap or panel mounting.

Note: Standard angle brackets cannot be attached to S-402-AB due to narrow block and insufficient material for screw threads. A special bracket is supplied (Type 46) See illustration. The Socket fits into this bracket which is attached to panel.

Check the No. 2400 Series Plugs and Sockets listed on pages F-42 and F-43 which are similar to the 400 Series except their design increases the creepage distances and therefore can take higher voltages.



S-402-AB (No. 46 Bracket)

### PLUG — Less Angle Brackets

Drilled and Tapped Unless Otherwise Specified



P-406-LAB

Code	Contacts	List Price Each
P-402-LAB	2	\$0.44
P-404-LAB	4	.61
P-406-LAB	6	.79
P-408-LAB	8	.96
P-410-LAB	10	1.16
P-412-LAB	12	1.33

### SOCKET — Less Angle Brackets

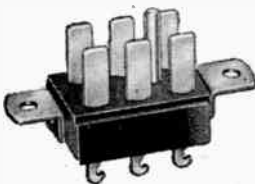
Drilled and Tapped Unless Otherwise Specified



S-406-LAB

Code	Contacts	List Price Each
S-402-LAB	2	\$0.54
S-404-LAB	4	.79
S-406-LAB	6	1.07
S-408-LAB	8	1.33
S-410-LAB	10	1.58
S-412-LAB	12	1.85

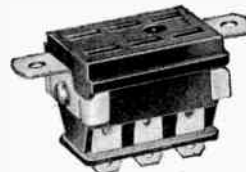
### PLUG — With Angle Brackets



P-406-AB

Code	Contacts	List Price Each
P-402-AB	2	\$0.79
P-404-AB	4	.96
P-406-AB	6	1.16
P-408-AB	8	1.33
P-410-AB	10	1.51
P-412-AB	12	1.67

### SOCKET — With Angle Brackets



S-406-AB

Code	Contacts	List Price Each
S-402-AB	2	\$0.89
S-404-AB	4	1.16
S-406-AB	6	1.41
S-408-AB	8	1.67
S-410-AB	10	1.95
S-412-AB	12	2.20

### PLUG — With Shallow Bracket for Flush Mounting



P-406-SB

Code	Contacts	List Price Each
P-402-SB	2	\$0.96
P-404-SB	4	1.24
P-406-SB	6	1.51
P-408-SB	8	1.77
P-410-SB	10	2.04
P-412-SB	12	2.30

### SOCKET — With Shallow Bracket for Flush Mounting



S-406-SB

Code	Contacts	List Price Each
S-402-DB	2	\$1.07
S-404-DB	4	1.41
S-406-DB	6	1.77
S-408-DB	8	2.11
S-410-DB	10	2.46
S-412-DB	12	2.81

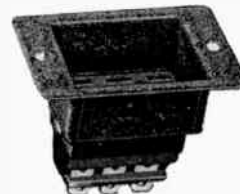
### PLUG — With Deep Brackets for Recessed Mounting



P-406-DB

Code	Contacts	List Price Each
P-402-DB	2	\$0.96
P-404-DB	4	1.24
P-406-DB	6	1.51
P-408-DB	8	1.77
P-410-DB	10	2.04
P-412-DB	12	2.30

### SOCKET — With Deep Bracket for Recessed Mounting



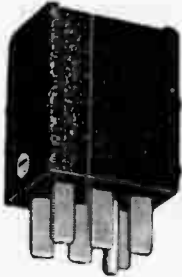
S-406-DB

Code	Contacts	List Price Each
S-402-SB	2	\$1.07
S-404-SB	4	1.41
S-406-SB	6	1.77
S-408-SB	8	2.11
S-410-SB	10	2.46
S-412-SB	12	2.81





**“400” SERIES PLUGS AND SOCKETS**  
(Formerly “Heavy Duty”)



P-406-FHT

**PLUG — With Flared Hole  
in Top**

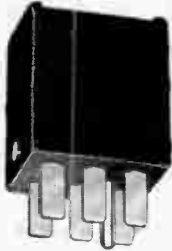
Code No.	Contacts	List Price Each
P-402-FHT	2	\$0.89
P-404-FHT	4	1.16
P-406-FHT	6	1.41
P-408-FHT	8	1.67
P-410-FHT	10	1.94
P-412-FHT	12	2.19



S-406-FHT

**SOCKET — With Flared Hole  
in Top**

Code No.	Contacts	List Price Each
S-402-FHT	2	\$0.98
S-404-FHT	4	1.34
S-406-FHT	6	1.68
S-408-FHT	8	2.04
S-410-FHT	10	2.39
S-412-FHT	12	2.75



P-406-FHE

**PLUG — With Flared Hole  
in End**

Code No.	Contacts	List Price Each
P-402-FHE	2	\$0.89
P-404-FHE	4	1.16
P-406-FHE	6	1.41
P-408-FHE	8	1.67
P-410-FHE	10	1.94
P-412-FHE	12	2.19



S-406-FHE

**SOCKET — With Flared Hole  
in End**

Code No.	Contacts	List Price Each
S-402-FHE	2	\$0.98
S-404-FHE	4	1.34
S-406-FHE	6	1.68
S-408-FHE	8	2.04
S-410-FHE	10	2.39
S-412-FHE	12	2.75



P-406-CCT

**PLUG — With Cable Clamp  
in Top**

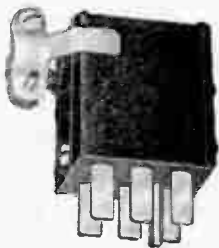
Code No.	Contacts	List Price Each
P-402-CCT	2	\$1.24
P-404-CCT	4	1.51
P-406-CCT	6	1.77
P-408-CCT	8	2.02
P-410-CCT	10	2.28
P-412-CCT	12	2.54



S-406-CCT

**SOCKET — With Cable Clamp  
in Top**

Code No.	Contacts	List Price Each
S-402-CCT	2	\$1.34
S-404-CCT	4	1.68
S-406-CCT	6	2.04
S-408-CCT	8	2.39
S-410-CCT	10	2.75
S-412-CCT	12	3.09



P-406-CCE

**PLUG — With Cable  
Clamp in End**

Code No.	Contacts	List Price Each
P-402-CCE	2	\$1.24
P-404-CCE	4	1.51
P-406-CCE	6	1.77
P-408-CCE	8	2.02
P-410-CCE	10	2.28
P-412-CCE	12	2.54



S-406-CCE

**SOCKET — With Cable  
Clamp in End**

Code No.	Contacts	List Price Each
S-402-CCE	2	\$1.34
S-404-CCE	4	1.68
S-406-CCE	6	2.04
S-408-CCE	8	2.39
S-410-CCE	10	2.75
S-412-CCE	12	3.09



## “2400” SERIES PLUGS AND SOCKETS

The 2400 Series Plugs and Sockets are designed for highest electrical and mechanical efficiency, and although they carry the same rating as the 400 Series, they will actually handle considerably higher currents due to their improved construction.

An entirely new type of socket contact has been designed. Four individual flexing surfaces make positive contact over practically their entire length. Note in the illustration how they exert maximum pressure at every point. Also note unique method of anchoring terminals in the block—they cannot be moved up or down.

This design provides greater contact surface, increased pressure, with smoother action.

Socket contacts are of phosphor bronze, cadmium plated. Male contacts are of heavy brass  $\frac{1}{4} \times \frac{1}{8}$ ", cadmium plated.



The contact to contact, and contact to ground distance has been considerably increased by mounting the contacts into recessed pockets with a Bakelite barrier surrounding and extending above. This method is used on both the top and bottom sides of both plugs and sockets, greatly increasing the leakage path.

The outside dimensions of corresponding plug and socket bodies are the same and can, therefore, be changed from brackets to caps, or vice versa.

Two styles of brackets are furnished "SB" (shallow bracket) for flush mounting and "DB" (deep bracket) for recessed mounting. Caps are furnished with flared hole in top or end, or with cable clamps in top or end. Unless otherwise specified the following size cable entrance holes will be supplied:

2402— $\frac{3}{8}$ "	2406— $\frac{7}{8}$ "	2410— $\frac{1}{2}$ "
2404— $\frac{1}{8}$ "	2408— $\frac{1}{8}$ "	2412— $\frac{5}{8}$ "

As noted above, the 2400 Series is furnished in 2, 4, 6, 8, 10, and 12 contacts. All plugs and sockets are polarized.

Plug and socket bodies are of molded Bakelite. The fibre linings in the caps are the same for both plugs and sockets.

A shoulder extends around the face side of plug and socket presenting a finished appearance when mounted in bracket or cap.

On account of this shoulder extending around the entire face of the body blocks, angle brackets cannot be used with the 2400 Series Plugs or Sockets.

The entire 2400 Series is interchangeable with the 400 Series as 2400 Plugs fit corresponding 400 Sockets, and 400 Plugs fit corresponding 2400 Sockets.



Solder connecting side of Plug Body showing Recessed Pockets with Barriers around contacts. Plug contacts are also in Recessed Pockets on opposite side.



Solder connecting side of Socket Body showing Recessed Pockets with Barriers around contacts. Socket contacts are also in Recessed Pockets on opposite side.

### PLUG—Less Mounting Bracket

Drilled and Tapped Unless Otherwise Specified



P-2406

Code	Contacts	List Price Each
P-2402	2	\$0.61
P-2404	4	.81
P-2406	6	1.01
P-2408	8	1.21
P-2410	10	1.41
P-2412	12	1.63

### SOCKET—Less Mounting Bracket

Drilled and Tapped Unless Otherwise Specified



S-2406

Code	Contacts	List Price Each
S-2402	2	\$0.70
S-2404	4	.92
S-2406	6	1.12
S-2408	8	1.35
S-2410	10	1.55
S-2412	12	1.78

### PLUG—With Shallow Bracket for Flush Mounting



P-2406-SB

Code	Contacts	List Price Each
P-2402-SB	2	\$1.09
P-2404-SB	4	1.28
P-2406-SB	6	1.49
P-2408-SB	8	1.69
P-2410-SB	10	1.93
P-2412-SB	12	2.12

### SOCKET—With Shallow Bracket for Flush Mounting



S-2406-SB

Code	Contacts	List Price Each
S-2402-SB	2	\$1.19
S-2404-SB	4	1.40
S-2406-SB	6	1.62
S-2408-SB	8	1.84
S-2410-SB	10	2.08
S-2412-SB	12	2.30

### PLUG—With Deep Bracket for Recessed Mounting



P-2406-DB

Code	Contacts	List Price Each
P-2402-DB	2	\$1.19
P-2404-DB	4	1.38
P-2406-DB	6	1.57
P-2408-DB	8	1.79
P-2410-DB	10	2.00
P-2412-DB	12	2.22

### SOCKET—With Deep Bracket for Recessed Mounting



S-2406-DB

Code	Contacts	List Price Each
S-2402-DB	2	\$1.27
S-2404-DB	4	1.50
S-2406-DB	6	1.69
S-2408-DB	8	1.94
S-2410-DB	10	2.17
S-2412-DB	12	2.39



**“2400” SERIES PLUGS AND SOCKETS**



P-2406-FHT

**PLUG—With Flared Hole in Top**

Code No.	Contacts	List Price Each
P-2402-FHT	2	\$1.19
P-2404-FHT	4	1.38
P-2406-FHT	6	1.57
P-2408-FHT	8	1.79
P-2410-FHT	10	2.00
P-2412-FHT	12	2.24



S-2406-FHT

**SOCKET—With Flared Hole in Top**

Code No.	Contacts	List Price Each
S-2402-FHT	2	\$1.27
S-2404-FHT	4	1.50
S-2406-FHT	6	1.69
S-2408-FHT	8	1.94
S-2410-FHT	10	2.17
S-2412-FHT	12	2.39



P-2406-FHE

**PLUG—With Flared Hole in End**

Code No.	Contacts	List Price Each
P-2402-FHE	2	\$1.19
P-2404-FHE	4	1.38
P-2406-FHE	6	1.57
P-2408-FHE	8	1.79
P-2410-FHE	10	2.00
P-2412-FHE	12	2.24



S-2406-FHE

**SOCKET—With Flared Hole in End**

Code No.	Contacts	List Price Each
S-2402-FHE	2	\$1.27
S-2404-FHE	4	1.50
S-2406-FHE	6	1.69
S-2408-FHE	8	1.94
S-2410-FHE	10	2.17
S-2412-FHE	12	2.39



P-2406-CCT

**PLUG—With Cable Clamp in Top**

Code No.	Contacts	List Price Each
P-2402-CCT	2	\$1.53
P-2404-CCT	4	1.72
P-2406-CCT	6	1.94
P-2408-CCT	8	2.13
P-2410-CCT	10	2.35
P-2412-CCT	12	2.59



S-2406-CCT

**SOCKET—With Cable Clamp in Top**

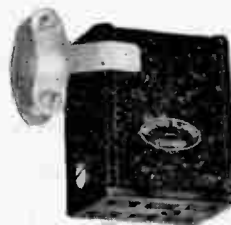
Code No.	Contacts	List Price Each
S-2402-CCT	2	\$1.65
S-2404-CCT	4	1.84
S-2406-CCT	6	2.05
S-2408-CCT	8	2.28
S-2410-CCT	10	2.51
S-2412-CCT	12	2.75



P-2406 CCE

**PLUG—With Cable Clamp in End**

Code No.	Contacts	List Price Each
P-2402-CCE	2	\$1.53
P-2404-CCE	4	1.72
P-2406-CCE	6	1.94
P-2408-CCE	8	2.13
P-2410-CCE	10	2.35
P-2412-CCE	12	2.59



S-2406-CCE

**SOCKET—With Cable Clamp in End**

Code No.	Contacts	List Price Each
S-2402-CCE	2	\$1.65
S-2404-CCE	4	1.84
S-2406-CCE	6	2.05
S-2408-CCE	8	2.28
S-2410-CCE	10	2.51
S-2412-CCE	12	2.75



## “500” SERIES PLUGS AND SOCKETS

Designed for 3,000 volts and 25 amperes per contact. Circuit characteristics, however, may alter this rating one way or the other.

Long leakage path from terminal to terminal, and terminal to ground. Contacts are brass and phosphor bronze, silver plated. Metal parts of caps and brackets are steel, parkerized (rust-proofed). Plug and socket blocks are interchangeable in caps and brackets.

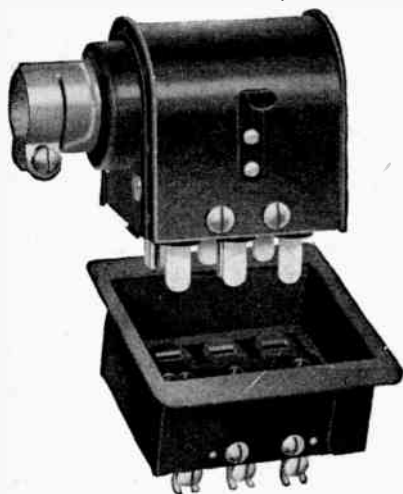
All sizes are polarized in a manner to prevent a smaller plug being inserted in a larger socket. Thus different sizes may be used on one installation, without danger of making wrong connections.

Extreme care has been taken to make terminal connections under cap very accessible both for original wiring and subsequent inspection. The cap is insulated with canvas bakelite. Plug prong cross section  $\frac{1}{8}$ " x  $\frac{3}{32}$ ".

**IMPORTANT:** For safety with high voltages DEEP BRACKETS should always be used on one plug or socket, when the other plug or socket has a CAP. SHALLOW BRACKETS are for use only in connecting two units, each unit having plug or socket with SHALLOW BRACKET.

**Cable entrance:** Because of the great variation in type and size of cables, we have considered it best not to supply cable clamps of any kind. The cap end is made to accommodate standard BX clamps which may be obtained at any electrical jobbing house. The cap end will be furnished with round hole from  $\frac{1}{2}$ " diameter and  $1\frac{1}{4}$ " diameter in steps of  $\frac{1}{8}$ ", if the size required is given on order. If no size is given, plain cap end with center punch locating center will be shipped.

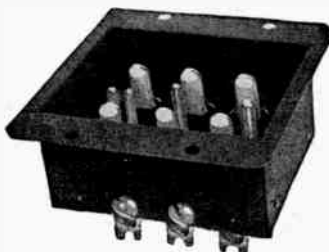
**P-506-CE**  
(Plug with Cap)  
(BX Clamp shown but not furnished)



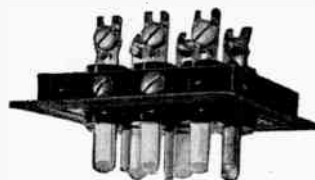
**S-506-DB**  
(Socket with Deep Bracket)



**S-506-CE**  
(Socket with Cap)



**P-506-DB**  
(Plug with Deep Bracket)

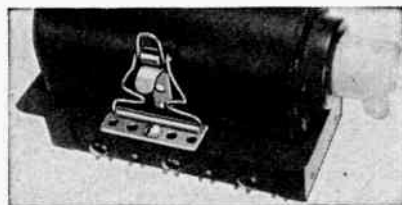


**P-506-SB**  
(Plug with Shallow Bracket)



**S-506-SB**  
(Socket with Shallow Bracket)

### LOCKS FOR 500 SERIES PLUGS AND SOCKETS



No. 500-L Locks

Locks shown above are used in connection with any DEEP BRACKET and cap combination.

The locks securely hold the units together, but they can be released instantly.

The mounting plates are made to fit all DEEP BRACKETS, and are fastened by the same screws or rivets that hold the deep brackets to the panel. Can not be used on shallow brackets. Sold in pairs only.

#### PLUG With Cap

Code	Contacts	List Price Each
P-502-CE	2	\$3.83
P-504-CE	4	5.51
P-506-CE	6	7.19
P-508-CE	8	8.88
P-510-CE	10	10.56
P-512-CE	12	12.24

#### PLUG With Deep Bracket

Code	Contacts	List Price Each
P-502-DB	2	\$3.37
P-504-DB	4	4.83
P-506-DB	6	6.27
P-508-DB	8	7.74
P-510-DB	10	9.19
P-512-DB	12	10.65

#### PLUG With Shallow Bracket

Code	Contacts	List Price Each
P-502-SB	2	\$3.37
P-504-SB	4	4.83
P-506-SB	6	6.27
P-508-SB	8	7.74
P-510-SB	10	9.19
P-512-SB	12	10.65

#### SOCKET With Cap

Code	Contacts	List Price Each
S-502-CE	2	\$3.83
S-504-CE	4	5.51
S-506-CE	6	7.19
S-508-CE	8	8.88
S-510-CE	10	10.56
S-512-CE	12	12.24

#### SOCKET With Deep Bracket

Code	Contacts	List Price Each
S-502-DB	2	\$3.37
S-504-DB	4	4.83
S-506-DB	6	6.27
S-508-DB	8	7.74
S-510-DB	10	9.19
S-512-DB	12	10.65

#### SOCKET With Shallow Bracket

Code	Contacts	List Price Each
S-502-SB	2	\$3.37
S-504-SB	4	4.83
S-506-SB	6	6.27
S-508-SB	8	7.74
S-510-SB	10	9.19
S-512-SB	12	10.65



# CINCH-JONES SALES • DIVISION OF CINCH MANUFACTURING CORPORATION

## BARRIER TYPE TERMINAL STRIPS

Increased insulation is provided by having Barriers placed between each Terminal. These Barriers follow around the edge of the Strips and terminate at the base. They not only make a long leakage path but prevent direct shorts from frayed wires at the terminals. Mounting holes are at the ends as illustrated. The base is molded Bakelite. The Eyelets and Binder Screws are of brass, nickel plated. The 3/4 W or Y terminals are of brass, hot tin finish.

### No. 140 TERMINAL STRIPS

5-40 x 3/16 Binder Head Screws. Metal to Metal Spacing over Bakelite 1/4"



No. 2-140

No. 140

Code	List Price Each
1-140	\$0.15
2-140	.24
3-140	.33
4-140	.42
5-140	.51
6-140	.59
7-140	.68
8-140	.77
9-140	.86
10-140	.95
11-140	1.03
12-140	1.12
13-140	1.21
14-140	1.31
15-140	1.40
16-140	1.49
17-140	1.57
18-140	1.66
19-140	1.75
20-140	1.84
21-140	1.93



No. 2-140-3/4 W

No. 140-3/4 W

Code	List Price Each
1-140-3/4 W	\$0.19
2-140-3/4 W	.32
3-140-3/4 W	.44
4-140-3/4 W	.57
5-140-3/4 W	.69
6-140-3/4 W	.83
7-140-3/4 W	.95
8-140-3/4 W	1.08
9-140-3/4 W	1.21
10-140-3/4 W	1.33
11-140-3/4 W	1.45
12-140-3/4 W	1.58
13-140-3/4 W	1.71
14-140-3/4 W	1.84
15-140-3/4 W	1.96
16-140-3/4 W	2.09
17-140-3/4 W	2.21
18-140-3/4 W	2.34
19-140-3/4 W	2.46
20-140-3/4 W	2.60
21-140-3/4 W	2.72



No. 2-140-Y

No. 140-Y

Code	List Price Each
1-140-Y	\$0.19
2-140-Y	.32
3-140-Y	.44
4-140-Y	.57
5-140-Y	.69
6-140-Y	.83
7-140-Y	.95
8-140-Y	1.08
9-140-Y	1.21
10-140-Y	1.33
11-140-Y	1.45
12-140-Y	1.58
13-140-Y	1.71
14-140-Y	1.84
15-140-Y	1.96
16-140-Y	2.09
17-140-Y	2.21
18-140-Y	2.34
19-140-Y	2.46
20-140-Y	2.60
21-140-Y	2.72

### No. 164 TERMINAL STRIPS

6-32 x 1/4 Binder Head Screws. Metal to Metal Spacing over Bakelite 1/4"



No. 2-164

No. 164

Code	List Price Each
1-164	\$0.16
2-164	.26
3-164	.36
4-164	.46
5-164	.56
6-164	.65
7-164	.75
8-164	.85
9-164	.95
10-164	1.05
11-164	1.14
12-164	1.24
13-164	1.34
14-164	1.45
15-164	1.55
16-164	1.65
17-164	1.74
18-164	1.84
19-164	1.94
20-164	2.04
21-164	2.14



No. 2-164-3/4-W

No. 164-3/4 W

Code	List Price Each
1-164-3/4 W	\$0.20
2-164-3/4 W	.34
3-164-3/4 W	.47
4-164-3/4 W	.61
5-164-3/4 W	.74
6-164-3/4 W	.89
7-164-3/4 W	1.02
8-164-3/4 W	1.16
9-164-3/4 W	1.39
10-164-3/4 W	1.43
11-164-3/4 W	1.56
12-164-3/4 W	1.70
13-164-3/4 W	1.84
14-164-3/4 W	1.98
15-164-3/4 W	2.11
16-164-3/4 W	2.25
17-164-3/4 W	2.38
18-164-3/4 W	2.52
19-164-3/4 W	2.65
20-164-3/4 W	2.80
21-164-3/4 W	2.93



No. 2-164-Y

No. 164-Y

Code	List Price Each
1-164-Y	\$0.20
2-164-Y	.34
3-164-Y	.47
4-164-Y	.61
5-164-Y	.74
6-164-Y	.89
7-164-Y	1.02
8-164-Y	1.16
9-164-Y	1.30
10-164-Y	1.43
11-164-Y	1.56
12-164-Y	1.70
13-164-Y	1.84
14-164-Y	1.98
15-164-Y	2.11
16-164-Y	2.25
17-164-Y	2.38
18-164-Y	2.52
19-164-Y	2.65
20-164-Y	2.80
21-164-Y	2.93

### No. 141 TERMINAL STRIPS

6-32 x 1/4 Binder Head Screws. Metal to Metal Spacing over Bakelite 3/8"



No. 2-141

No. 141

Code	List Price Each
1-141	\$0.20
2-141	.31
3-141	.42
4-141	.54
5-141	.65
6-141	.75
7-141	.88
8-141	.99
9-141	1.10
10-141	1.22
11-141	1.33
12-141	1.44
13-141	1.56
14-141	1.67
15-141	1.78
16-141	1.90
17-141	2.01
18-141	2.12
19-141	2.24
20-141	2.35



No. 2-141-3/4-W

No. 141-3/4 W

Code	List Price Each
1-141-3/4 W	\$0.24
2-141-3/4 W	.41
3-141-3/4 W	.57
4-141-3/4 W	.74
5-141-3/4 W	.90
6-141-3/4 W	1.07
7-141-3/4 W	1.23
8-141-3/4 W	1.40
9-141-3/4 W	1.56
10-141-3/4 W	1.73
11-141-3/4 W	1.89
12-141-3/4 W	2.06
13-141-3/4 W	2.22
14-141-3/4 W	2.39
15-141-3/4 W	2.55
16-141-3/4 W	2.72
17-141-3/4 W	2.88
18-141-3/4 W	3.05
19-141-3/4 W	3.21
20-141-3/4 W	3.38



No. 2-141-Y

No. 141-Y

Code	List Price Each
1-141-Y	\$0.24
2-141-Y	.41
3-141-Y	.57
4-141-Y	.74
5-141-Y	.90
6-141-Y	1.07
7-141-Y	1.23
8-141-Y	1.40
9-141-Y	1.56
10-141-Y	1.73
11-141-Y	1.89
12-141-Y	2.06
13-141-Y	2.22
14-141-Y	2.39
15-141-Y	2.55
16-141-Y	2.72
17-141-Y	2.88
18-141-Y	3.05
19-141-Y	3.21
20-141-Y	3.38

### No. 142 TERMINAL STRIPS

8-32 x 5/16" Binder Head Screws. Metal to Metal Spacing over Bakelite 9/16"



No. 2-142

No. 142

Code	List Price Each
1-142	\$0.23
2-142	.36
3-142	.51
4-142	.65
5-142	.78
6-142	.92
7-142	1.07
8-142	1.20
9-142	1.34
10-142	1.49
11-142	1.62
12-142	1.76
13-142	1.90
14-142	2.04
15-142	2.18
16-142	2.32
17-142	2.45



No. 2-142-3/4 W

No. 142-3/4 W

Code	List Price Each
1-142-3/4 W	\$0.30
2-142-3/4 W	.50
3-142-3/4 W	.70
4-142-3/4 W	.90
5-142-3/4 W	1.11
6-142-3/4 W	1.31
7-142-3/4 W	1.52
8-142-3/4 W	1.72
9-142-3/4 W	1.93
10-142-3/4 W	2.12
11-142-3/4 W	2.33
12-142-3/4 W	2.53
13-142-3/4 W	2.74
14-142-3/4 W	2.94
15-142-3/4 W	3.15
16-142-3/4 W	3.34
17-142-3/4 W	3.54



No. 2-142-Y

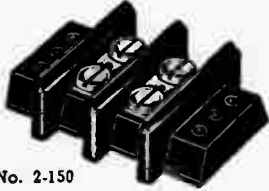
No. 142-Y

Code	List Price Each
1-142-Y	\$0.30
2-142-Y	.50
3-142-Y	.70
4-142-Y	.90
5-142-Y	1.11
6-142-Y	1.31
7-142-Y	1.52
8-142-Y	1.72
9-142-Y	1.93
10-142-Y	2.12
11-142-Y	2.33
12-142-Y	2.53
13-142-Y	2.74
14-142-Y	2.94
15-142-Y	3.15
16-142-Y	3.34
17-142-Y	3.54



## BARRIER TYPE TERMINAL STRIPS

### No. 150 TERMINAL STRIPS



No. 2-150

1-13/16" wide by 25/32" high. Terminals are mounted on 11/16" centers. Screws: 10-32 x 5/16" brass, burnished nickel plate. Fits standard 50 Amp. solder lug for 6 Ga. stranded wire. Metal to metal spacing over bakelite 3/8".

Code	List Price Each	Code	List Price Each
1-150	\$0.55	6-150	\$2.48
2-150	.94	7-150	2.86
3-150	1.32	8-150	3.25
4-150	1.71	9-150	3.63
5-150	2.09	10-150	4.02

### No. 151 TERMINAL STRIPS

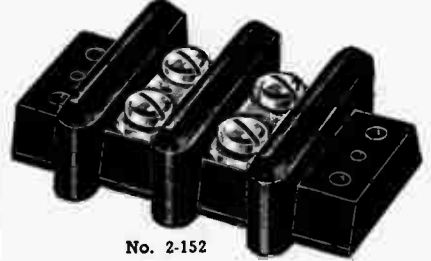


No. 2-151

2" wide by 15/16" high. Terminals are mounted on 7/8" centers. Screws: 12-32 x 3/8" brass, burnished nickel plate. Fits standard 70 Amp. solder lug for 4 Ga. stranded wire. Metal to metal spacing over bakelite 3/4".

Code	List Price Each	Code	List Price Each
1-151	\$0.94	5-151	\$4.02
2-151	1.71	6-151	4.79
3-151	2.48	7-151	5.56
4-151	3.25	8-151	6.33

### No. 152 TERMINAL STRIPS



No. 2-152

2 1/2" wide by 1 1/8" high. Terminals are mounted on 1 1/4" centers. Screws: 1/4"-28 x 1/2" brass, burnished nickel plate. Fits standard 90 Amp. solder lug for 2 Ga. stranded wire. Metal to metal spacing over bakelite 1".

Code	List Price Each	Code	List Price Each
1-152	\$1.27	4-152	\$4.73
2-152	2.42	5-152	5.89
3-152	3.58	6-152	7.04



3/4 W Solder Terminal



Y Terminal

Code	List Price Each	Code	List Price Each
3/4 W-140	140	Y-140	140
3/4 W-141	141	Y-141	141
3/4 W-142	142	Y-142	142

Code	List Price Each	Code	List Price Each
For Barrier Strip	140	For Barrier Strip	150
141	.059	151	.18
142	.072	152	.26

Code	List Price Each	Code	List Price Each
3/4 W-150	150	3/4 W-151	151
3/4 W-152	152		

### Jumpers



Code	List Price Each	Code	List Price Each
141-J	140	95-B	142
141-J	141		
141-J	.04		
95-B	.138		

### No. 170 TERMINAL STRIPS

Terminal .032" Brass, Tin Plated



No. 2-170

A heavy solder Terminal. Insulation: Black molded Bakelite, 5/16" wide, 1/4" thick. Terminals mounted on 3/8" centers. Mounting holes are 3/8" from center of ends Terminals.

Code	List Price Each	Code	List Price Each
No. 1-170	\$0.25	No. 6-170	\$0.56
No. 2-170	.31	No. 7-170	.61
No. 3-170	.36	No. 8-170	.67
No. 4-170	.43	No. 9-170	.74
No. 5-170	.50	No. 10-170	.79

### No. 172-W and 172-3/4 W TERMINAL STRIPS



No. 3-172-3/4 W

Code	Contacts	List Price Each
1-172-W	1	\$0.47
2-172-W	2	.68
3-172-W	3	.89
4-172-W	4	1.10
5-172-W	5	1.31
6-172-W	6	1.52
7-172-W	7	1.73
8-172-W	8	1.94
9-172-W	9	2.15
10-172-W	10	2.36
11-172-W	11	2.57
12-172-W	12	2.78
13-172-W	13	2.99
14-172-W	14	3.20

### No. 171 TERMINAL STRIPS



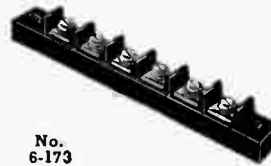
No. 6-171

A Miniature Barrier Terminal Strip with Single Screw Terminals. 3/8" wide by 5/8" overall height. Terminals are mounted on 1/4" centers. 2-56 x 1/4" Binder Head Screws. 1/8" Dia. Mtg. Holes.

Code	Contacts	List Price Each	Code	Contacts	List Price Each
1-171	1	\$0.46	5-171	5	\$0.94
2-171	2	.58	6-171	6	1.06
3-171	3	.70	7-171	7	1.18
4-171	4	.82	8-171	8	1.30

### No. 173 TERMINAL STRIPS

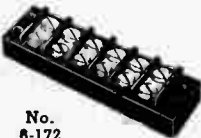
Single Screw Terminals, 3/8" wide by 1/2" overall height. Terminals mounted on 3/8" centers. 4-40 x 1/4" Sems Type Binder Head Screws. 3/8" Dia. Mtg. Holes.



No. 6-173

Code	Contacts	List Price Each
1-173	1	\$1.00
2-173	2	1.45
3-173	3	1.90
4-173	4	2.35
5-173	5	2.80
6-173	6	3.25
7-173	7	3.70
8-173	8	4.15
9-173	9	4.60
10-173	10	5.05

### No. 172 TERMINAL STRIPS



No. 6-172

Double Screw Terminals. 5/8" wide by 1 1/8" overall height. Terminals mounted on 1/4" centers. 2-56 x 1/4" Binder Head Screws. 1/8" Dia. Mtg. Holes.

Code	Contacts	List Price Each	Code	Contacts	List Price Each
1-172	1	\$0.43	8-172	8	\$1.62
2-172	2	.60	9-172	9	1.79
3-172	3	.77	10-172	10	1.96
4-172	4	.94	11-172	11	2.13
5-172	5	1.11	12-172	12	2.30
6-172	6	1.28	13-172	13	2.47
7-172	7	1.45	14-172	14	2.64

### No. 2000 TERMINAL STRIPS

Terminal .019" Brass, Tin Plated



No. 2005

Mounting hole—9/54"

Compact and sturdy junction terminal strip. Useful in assembling radio chassis, wiring, etc.

Insulation: Bakelite, Brackets: Steel, cadmium plated. Terminals spaced on 5/16" centers.

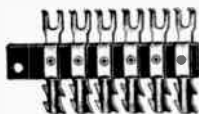
Code	Mounting Hole Centers	List Price Each	Code	Mounting Hole Centers	List Price Each
No. 2002	1"	\$1.00	No. 2008	2-7/8"	\$1.19
No. 2003	1-5/16"	.115	No. 2009	3-3/16"	.205
No. 2004	1-5/8"	.13	No. 2010	3-1/2"	.22
No. 2005	1-15/16"	.145	No. 2011	3-13/16"	.235
No. 2006	2-1/4"	.16	No. 2012	4-1/8"	.25
No. 2007	2-9/16"	.175	No. 2013	4-7/16"	.265



# CINCH-JONES SALES • DIVISION OF CINCH MANUFACTURING CORPORATION

## FANNING STRIPS FOR CONNECTING TO BARRIER TERMINAL STRIPS

Jones Fanning Strip Terminals are of .032" Brass, Cadmium Plated. The Bakelite strips are furnished with a hole in either the right or left end for fastening the cable with a cable clamp or lacing twine. Simplifies cable or harness wiring, assuring positive connections. Makes replacement of units an easy matter and assures correct connections after servicing.



6-160-L

### THE 160 SERIES

The following Fanning Strips fit the 140 Series Barrier Strips. Terminals are mounted on 3/32" Bakelite, 1/2" wide and on 3/8" centers.

The B type fits the 140 and 164 series. If desired add suffix B to Code No.

Code	List Price Each	Code	List Price Each
2-160-L	\$0.13	2-160-R	\$0.13
3-160-L	.20	3-160-R	.20
4-160-L	.25	4-160-R	.25
5-160-L	.32	5-160-R	.32
6-160-L	.39	6-160-R	.39
7-160-L	.45	7-160-R	.45
8-160-L	.51	8-160-R	.51
9-160-L	.57	9-160-R	.57
10-160-L	.64	10-160-R	.64
11-160-L	.70	11-160-R	.70
12-160-L	.76	12-160-R	.76
13-160-L	.83	13-160-R	.83
14-160-L	.89	14-160-R	.89
15-160-L	.96	15-160-R	.96
16-160-L	1.01	16-160-R	1.01
17-160-L	1.08	17-160-R	1.08
18-160-L	1.16	18-160-R	1.16
19-160-L	1.21	19-160-R	1.21
20-160-L	1.28	20-160-R	1.28
21-160-L	1.33	21-160-R	1.33



6-161-L (Cable Clamp on Left)

### THE 161 SERIES

The following Fanning Strips fit the 141 Series Barrier Strips. Terminals are mounted on 3/32" Bakelite, 5/8" wide and on 7/16" centers.

Code	List Price Each	Code	List Price Each
2-161-L	\$0.14	2-161-R	\$0.14
3-161-L	.21	3-161-R	.21
4-161-L	.26	4-161-R	.26
5-161-L	.33	5-161-R	.33
6-161-L	.40	6-161-R	.40
7-161-L	.46	7-161-R	.46
8-161-L	.52	8-161-R	.52
9-161-L	.58	9-161-R	.58
10-161-L	.65	10-161-R	.65
11-161-L	.72	11-161-R	.72
12-161-L	.77	12-161-R	.77
13-161-L	.84	13-161-R	.84
14-161-L	.91	14-161-R	.91
15-161-L	.97	15-161-R	.97
16-161-L	1.03	16-161-R	1.03
17-161-L	1.09	17-161-R	1.09
18-161-L	1.17	18-161-R	1.17
19-161-L	1.22	19-161-R	1.22
20-161-L	1.29	20-161-R	1.29



6-162-R (Cable Clamp on Right)

### THE 162 SERIES

The following Fanning Strips fit the 142 Series Barrier Strips. Terminals are mounted on 3/32" Bakelite, 5/8" wide and on 9/16" centers.

Code	List Price Each	Code	List Price Each
2-162-L	\$0.17	2-162-R	\$0.17
3-162-L	.23	3-162-R	.23
4-162-L	.29	4-162-R	.29
5-162-L	.35	5-162-R	.35
6-162-L	.43	6-162-R	.43
7-162-L	.48	7-162-R	.48
8-162-L	.55	8-162-R	.55
9-162-L	.61	9-162-R	.61
10-162-L	.68	10-162-R	.68
11-162-L	.74	11-162-R	.74
12-162-L	.80	12-162-R	.80
13-162-L	.86	13-162-R	.86
14-162-L	.94	14-162-R	.94
15-162-L	.99	15-162-R	.99
16-162-L	1.06	16-162-R	1.06
17-162-L	1.11	17-162-R	1.11



### CABLE CLAMPS

Cable Clamps are available for the Fanning Strips listed at the left and are furnished in 6 different sizes as listed below. Cable Clamp is of Brass Nickel Plated, with 6-32 round head Nickel Plated Brass Screws. For convenience the Cable Clamps are furnished un-assembled.

### CABLE CLAMP SIZES AVAILABLE

No.	I. D.
CC-161-4	1/4"
CC-161-6	3/8"
CC-161-8	1/2"
CC-161-10	5/8"
CC-161-12	3/4"
CC-161-14	7/8"

List Price Each \$0.14

Be sure to give code number when ordering.

On small sizes Lacing Twine can be used for anchoring cable to the Fanning Strip instead of Cable Clamp.

## ANGLE TYPE



3-160-AL

### THE 160A SERIES

The following Fanning Strips fit the 140 Series Barrier Strips.

Code	Code	List Price Each
2-160-AR	2-160-AL	\$0.19
3-160-AR	3-160-AL	.29
4-160-AR	4-160-AL	.37
5-160-AR	5-160-AL	.47
6-160-AR	6-160-AL	.57
7-160-AR	7-160-AL	.66
8-160-AR	8-160-AL	.75
9-160-AR	9-160-AL	.84
10-160-AR	10-160-AL	.94
11-160-AR	11-160-AL	1.03
12-160-AR	12-160-AL	1.12
13-160-AR	13-160-AL	1.22
14-160-AR	14-160-AL	1.31
15-160-AR	15-160-AL	1.41
16-160-AR	16-160-AL	1.49
17-160-AR	17-160-AL	1.59
18-160-AR	18-160-AL	1.70
19-160-AR	19-160-AL	1.78
20-160-AR	20-160-AL	1.88
21-160-AR	21-160-AL	1.96



3-160-BAL

### THE 160BA SERIES

The following Fanning Strips fit the 164 Series Barrier Strips.

Code	Code	List Price Each
2-160-BAL	2-160-BAR	\$0.19
3-160-BAL	3-160-BAR	.29
4-160-BAL	4-160-BAR	.37
5-160-BAL	5-160-BAR	.47
6-160-BAL	6-160-BAR	.57
7-160-BAL	7-160-BAR	.66
8-160-BAL	8-160-BAR	.75
9-160-BAL	9-160-BAR	.84
10-160-BAL	10-160-BAR	.94
11-160-BAL	11-160-BAR	1.03
12-160-BAL	12-160-BAR	1.12
13-160-BAL	13-160-BAR	1.22
14-160-BAL	14-160-BAR	1.31
15-160-BAL	15-160-BAR	1.41
16-160-BAL	16-160-BAR	1.49
17-160-BAL	17-160-BAR	1.59
18-160-BAL	18-160-BAR	1.70
19-160-BAL	19-160-BAR	1.78
20-160-BAL	20-160-BAR	1.88
21-160-BAL	21-160-BAR	1.96



3-161-AR

### THE 161A SERIES

The following Fanning Strips fit the 142 Series Barrier Strips.

Code	Code	List Price Each
2-161-AR	2-161-AL	\$0.20
3-161-AR	3-161-AL	.30
4-161-AR	4-161-AL	.38
5-161-AR	5-161-AL	.48
6-161-AR	6-161-AL	.58
7-161-AR	7-161-AL	.67
8-161-AR	8-161-AL	.76
9-161-AR	9-161-AL	.85
10-161-AR	10-161-AL	.95
11-161-AR	11-161-AL	1.05
12-161-AR	12-161-AL	1.13
13-161-AR	13-161-AL	1.23
14-161-AR	14-161-AL	1.33
15-161-AR	15-161-AL	1.42
16-161-AR	16-161-AL	1.51
17-161-AR	17-161-AL	1.60
18-161-AR	18-161-AL	1.71
19-161-AR	19-161-AL	1.79
20-161-AR	20-161-AL	1.89



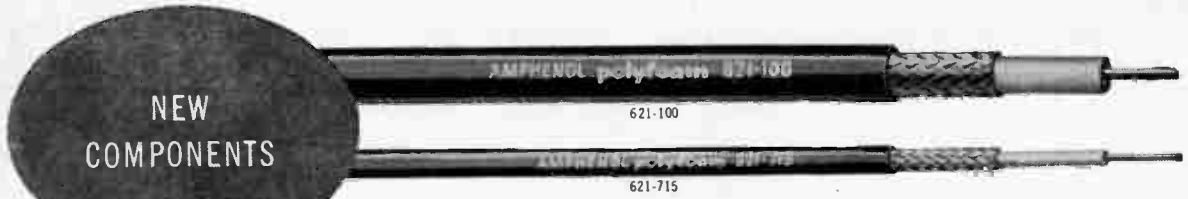
3-162-AR

### THE 162A SERIES

The following Fanning Strips fit the 141 Series Barrier Strips.

Code	Code	List Price Each
2-162-AL	2-162-AR	\$0.23
3-162-AL	3-162-AR	.32
4-162-AL	4-162-AR	.41
5-162-AL	5-162-AR	.50
6-162-AL	6-162-AR	.61
7-162-AL	7-162-AR	.69
8-162-AL	8-162-AR	.79
9-162-AL	9-162-AR	.89
10-162-AL	10-162-AR	.98
11-162-AL	11-162-AR	1.07
12-162-AL	12-162-AR	1.16
13-162-AL	13-162-AR	1.25
14-162-AL	14-162-AR	1.36
15-162-AL	15-162-AR	1.44
16-162-AL	16-162-AR	1.54
17-162-AL	17-162-AR	1.62

# NEW COMPONENTS



## POLYFOAM CABLES

To meet special requirements for cables with lower attenuation, lower capacity, lower cost and lighter weight than standard RG cables, AMPHENOL has developed a new and versatile dielectric material—Polyfoam. It is a cellular polyethylene which utilizes an inert gas as an expanding agent to form completely enclosed cells within the polyethylene. Polyfoam has a dielectric constant of 1.50 as compared to 2.25 for solid polyethylene.

Polyfoam 621-100-101 provides approximately 35% less attenuation than that of standard RG-11/U and is sweep-tested over the VHF channels. Except for the solid center conductor, the 621-100-101 is dimensionally equivalent to standard RG-11/U and can be used with UHF series connectors. It has a specially compounded non-contaminating black polyethylene jacket providing improved weathering properties and abrasion resistance.

Polyfoam 621-100 is identical to 621-100-101 except that it is

not sweep-tested for the VHF channels and, therefore, is less in cost.

For greater shielding effectiveness, where radiation of the cable presents a problem, the 621-102-101 Polyfoam triaxial cable is available. It is equivalent to the 621-100-101 with an added full coverage shield and jacket.

The Polyfoam version of RG-59/U (621-715) provides lower cost, but retains the same electrical characteristics. Utilizing the same center conductor as standard RG-59/U, the Polyfoam dielectric diameter was reduced approximately 25%. The 621-715 can be used with UHF series connectors (using Reducing Adapter 83-185) and with BNC connectors. It has a specially compounded non-contaminating black polyethylene jacket providing improved weathering and abrasion resistance.

Polyfoam 621-700 and 621-701 are similar to 621-715 except that 621-700 has a Type IIa non-contaminating black vinyl jacket and 621-701 has a Type I black vinyl jacket.

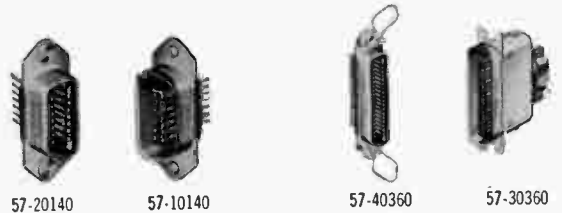
AMPHENOL Number	RG Equivalent	Impedance Ohms	Inner Conductor	Dielectric O.D.	Jacket Type	Jacket O.D.	Capacity MMF FT	Maximum Oper. Volts RMS	Weight
621-100*	11 U	75	Solid Copper #14 AWG	.285	Black Polyethylene	.405	16.5	3,000	80
621-102-101	11 U (triaxial)	75	Solid Copper #14 AWG	.285	Black Polyethylene	.460	16.5	3,000	120
621-700	59A U	73	Solid Copperweld #22 AWG	.107	Black Vinyl Type IIa	.195	17.0	1,000	18½
621-701	59 U	73	Solid Copperweld #22 AWG	.107	Black Vinyl Type I	.195	17.0	1,000	20½
621-715	59 U	73	Solid Copperweld #22 AWG	.107	Black Polyethylene	.195	17.0	1,000	21½

\* add Suffix (-101) for Sweep Testing

These extremely small connectors were designed to allow utilization of the unique 'ribbon' contact features in miniaturization programs, particularly in airborne electronics and computer projects, for increased reliability. The smooth, easy insertion and extraction action, the self-wiping, self-cleaning features and the double-sided, flexing action of both mating contact members make Micro-Ribbons the first miniature connectors to provide reduction in size with added reliability. Available in as many as 50 contacts, Micro-Ribbons make possible the routing of a great many circuits through one or more small connectors at a great saving of space and weight.

New cable-to-chassis types in the Micro-Ribbon family broaden the application possibilities of these superior connectors. Contact arrangements are the same as the shell types.

## Micro RIBBON CONNECTORS



Bodies are molded of an improved diallyl phthalate with extremely high impact strength and excellent dielectric features. Contacts are gold-plated over silver. Shells are cadmium-plated brass with clear chromate treatment. Receptacle shells have float bushings allowing a float of .020 in each direction. Pretinning wires before soldering is recommended.

Contacts	Shell Types			Cable-to-Chassis Types		
	Plugs	Mating Receptacles		Plugs	Mating Receptacles	
14	57-10140	57-20140		57-30140	57-40140	
24	57-10240	57-20240		57-30240	57-40240	
36	57-10360	57-20360		57-30360	57-40360	
50	57-10500	57-20500		57-30500	57-40500	



AMPHENOL ELECTRONICS CORPORATION *chicago 50, illinois*



## for Power, Signal and Control Circuits in Electronic Equipment

"AN" stands for Army-Navy and these services have provided the official definition of the AN connector: to provide a detachable connection in one or more electrical circuits; a complete AN connector consists of two mating units—a plug assembly and receptacle assembly.

AMPHENOL AN connectors, although designed and approved under government specifications for use by the armed forces, are ideal for commercial and industrial use where the same dependability is mandatory. These modern, efficient connectors are being used by practically every part of the giant electronics industry.



### CABLE CLAMP

AN3057



Sturdy AMPHENOL AN3057 Cable Clamp supports cable or wire at the plug or receptacle, prevents twisting or pulling at soldered connections.

"AN" Number	Fits Shell Size
3057-3	8S, 10S
3057-4	12, 12S
3057-6	14, 14S
3057-8	16, 16S
3057-10	18
3057-12	20, 22
3057-16	24, 28
3057-20	32
3057-24	36
3057-28	40
3057-32	44
3057-40	48

### CAP & CHAIN ASSEMBLY

9760



Fits AN and 97 type receptacles and plugs. Provides protection against live circuits, dirt and dust when connector is not in use. Add P to the part number for plug cap & chain.

Part Number	Fits Shell Size
9760-8	8S
9760-10	10S, 10SL
9760-12	12, 12S, 12SL
9760-14	14, 14S
9760-16	16, 16S
9760-18	18
9760-20	20
9760-22	22
9760-24	24
9760-28	28
9760-32	32
9760-36	36

### features of AMPHENOL AN CONNECTORS

**CONTACTS.** Non-rotating contacts are gold-over-silver plated for improved appearance and better electrical and mechanical surface. Socket contacts are of an improved closed-entry design to prevent damage from oversized test probes.

**DIELECTRIC MATERIAL.** All inserts are molded of diallyl phthalate—the "AMPHENOL Blue" material with dimensional stability, high insulation resistance and high arc resistance.

**FINISH.** Shells are cadmium-plated with an olive drab chromate conversion coating—non-reflective, corrosion-resistant.

**COUPLING RINGS.** Made from solid aluminum bar stock for greater strength.

**ORDERING AN CONNECTORS.** The AN series of connectors includes thousands of combinations, but the functional numbering system permits easy and accurate ordering. To illustrate the system employed a typical part number, AN3100A-16-11P, is exploded and analyzed.

AN	STANDARD	"AN" indicates Army-Navy part number has been assigned. "97" indicates deviation from AN specifications or exclusive Amphenol design. 3100 wall receptacle, 3101 cable receptacle, 3102 box receptacle, 3106 straight plug, 3107 quick-disconnect plug, 3108 angle plug. A solid, B split, C pressurized, K fireproof. 8S, 10S, 10SL, 12S, 12, 14S, 14, 16S, 16, 18, 20, 22, 24, 28, 32, 36, 40, 44, 48. 1 2, 3 and up INSERT STYLE P for pin contacts, S for socket contacts.
3100	SHELL TYPE	
A	SHELL DESIGN	
16	SIZE	
11	INSERT	
P	INSERT STYLE	

**AN CONNECTOR AVAILABILITY.** The latest issue of the Distributor AN Connector Price List is the authoritative source for connector availability.

**AN CONNECTORS FOR POTTING.** Potting, injecting a synthetic rubber sealant in a mold on the back of a connector, is a superior method of weatherproofing. AMPHENOL AN Connectors for potting may be ordered through your AMPHENOL Distributor, who has complete information.

### WALL MOUNTING RECEPTACLES



### CABLE RECEPTACLES



### BOX MOUNTING RECEPTACLES



### STRAIGHT PLUGS



### QUICK DISCONNECT PLUGS



### ANGLE PLUGS



*"Building to the future of Electronics"*



## MINIATURE "AN" TYPE CONNECTORS



LARGE RECEPTACLE & PLUG



SMALL RECEPTACLE & PLUG



CABLE RECEPTACLE



PLUG FOR POTTING

Compact in size, extremely efficient in operation, the AMPHENOL 165 series offers many new possibilities to design engineers who have long requested a miniature version of standard "AN" connectors for aircraft instrumentation.

The 165 series connectors are pressure-proof and completely waterproof, mated or apart. Weights average about one third that of standard "AN" connectors. These miniature "AN" type connectors withstand government specified salt-spray tests by many hours in excess of standards. The female connectors feature a sandwich construction with the insert spun into the cartridge and the connector sealed at the factory to prevent leakage. A highly efficient "O" ring is used on both the plug and receptacle as a sealer.

The 165 Series is available in two connector sizes and six contact configurations. The smaller size has 5, 9 and 12 contacts; the larger size, 11, 14 and 24. All plugs, receptacles and cable receptacles may be ordered with either male or female inserts. Shells are aluminum with a grey anodic finish. The dielectric material is diallyl phthalate—the famous AMPHENOL "Blue" material with its superior mechanical and electrical characteristics. Contacts are high conductivity bronze with gold-plating over silver.

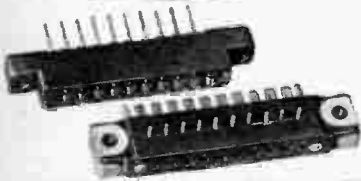
The standard plugs feature a built-in cable clamp which provides positive cable strain-relief. All plugs (male or female inserts) are also available in a special construction for potting. Potting increases circuit reliability by assuring a positive moisture-proofing around the soldered leads at the back of the connector. Complete information is available from AMPHENOL as to methods and materials.

To order any 165 Series Miniature AN-type plug for potting simply add the suffix (-1000) to the part number: 165-33-1000 for example.

		Part Number						Description			
		Male			Female			Contacts		Current Rating Amperes	Volts*
Plug	Receptacle	Cable Receptacle	Plug	Receptacle	Cable Receptacle	20	16				
165-33	165-35	165-35-1002	165-34	165-36	165-36-1002	5	---	7.5	600		
165-13	165-15	165-15-1002	165-14	165-16	165-16-1002	9	---	7.5	500		
165-9	165-11	165-11-1002	165-10	165-12	165-12-1002	12	---	7.5	500		
165-17	165-19	165-19-1002	165-18	165-20	165-20-1002	7	4	7.5 and 17	500		
165-29	165-31	165-31-1002	165-30	165-32	165-32-1002	---	14	17	500		
165-25	165-27	165-27-1002	165-26	165-28	165-28-1002	24	---	7.5	500		

\*Voltage rating RMS at sea level

## RACK & PANEL CONNECTORS



### Printed Circuit Board Receptacles & Plugs

A complete line of printed circuit connectors. Receptacles mate with standard boards; plugs solder to boards to form connector plug for increased reliability. Gold-plated contacts, diallyl phthalate bodies; nylon guide pins on plugs.

Receptacles	Contacts	Adapters
143-006	6	
143-010	10	133-010
143-015	15	133-015
143-018	18	133-018
143-022	22	133-022

Average Voltage Breakdown between Contacts  
Receptacle: 5,400 Volts D.C. at Sea Level  
Adapters: 2,300 Volts D.C. at Sea Level

### RECTANGULAR CONNECTORS



Versatile group available in 11, 15 and 20 contacts, with or without protective can and cable clamp. Rated at 900 volts RMS, 60 CPS at sea level. Bodies mica-filled phenolic; contacts gold-plated.

AMPHENOL Number Insert Only	Description	Contacts		Mounting Screw Size	AMPHENOL Number With Can
		No. 16	No. 20		
126-804	Male	2	9	No. 4	126-809
126-805	Female	2	9	No. 4	126-808
126-151	Male	3	12	No. 6	126-152
126-150	Female	3	12	No. 6	126-153
126-806	Male	4	16	No. 4	126-811
126-807	Female	4	16	No. 4	126-810
126-813	Male	20	---	No. 4	---
126-812	Female	20	---	No. 4	---



AMPHENOL ELECTRONICS CORPORATION *chicago 50, illinois*

These unique spring-ribbon contact connectors are finding increasing popularity throughout every part of the electronics industry. As a result of continuing AMPHENOL development work the Blue Ribbon line has been expanded to include keyed shells and latch-lock type cans—the complete line now offers the following outstanding features:

- Visual alignment is not required; ideal for multi-circuit connection, switching or re-routing.

- Spring contacts provide quick disconnect with low insertion and withdrawal force requirements.
- Insert material is famous AMPHENOL diallyl phthalate blue which meets government specifications MIL-P-4389 and MIL-P-14D.
- Contacts are finished with gold over a silver base plate, will not corrode, are easy to solder.
- Molded-in mounting plates are corrosion resistant passivated stainless steel.
- Available in latch-lock cans for cable-to-chassis applications.



#### Pin Polarization

Plugs	Contacts	Mating Receptacles
26-159-16	16	26-190-16
26-159-24	24	26-190-24
26-159-32	32	26-190-32

#### Barrier Polarization

Plugs	Contacts	Mating Receptacles
26-182	8	26-183
26-4100-8P	8	26-4200-8S
26-4100-16P	16	26-4200-16S
26-4100-24P	24	26-4200-24S
26-4100-32P	32	26-4200-32S

#### Barrier Polarization With Keyed Shells

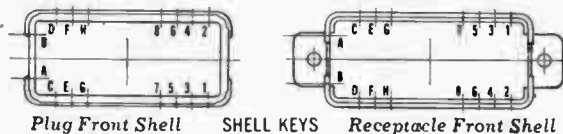
Plugs	Contacts	Shell Keys*		Mating Receptacles
		Letters	Numbers	
26-4101-8P	8	A	1	26-4201-8S
26-4102-8P	8	A	2	26-4202-8S
26-4101-16P	16	A-C	3-6	26-4201-16S
26-4102-16P	16	A-D	2-5	26-4202-16S
26-4101-24P	24	A-C	3-6	26-4201-24S
26-4102-24P	24	A-D	4-7	26-4202-24S
26-4101-32P	32	A-C	3-6	26-4201-32S
26-4102-32P	32	A-D	4-7	26-4202-32S

#### Barrier Polarization With Keyed Latch-Lock Shells

Male and female inserts interchangeable; add P for plug contacts or S for socket contacts to part number when ordering.

Plugs		Contacts	Shell Keys*		Mating Receptacles
End Cable Outlet	Side Cable Outlet		Letters	Numbers	
26-4301-8	26-4501-8	8	A	1	26-4401-8
26-4302-8	26-4502-8	8	A	2	26-4402-8
26-4301-16	26-4501-16	16	A-C	3-6	26-4401-16
26-4302-16	26-4502-16	16	A-D	2-5	26-4402-16
26-4301-24	26-4501-24	24	A-C	3-6	26-4401-24
26-4302-24	26-4502-24	24	A-D	4-7	26-4402-24
26-4301-32	26-4501-32	32	A-C	3-6	26-4401-32
26-4302-32	26-4502-32	32	A-D	4-7	26-4402-32

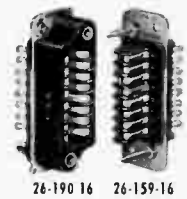
\*Other shell key combinations available on special order. For complete availability listing see your AMPHENOL distributor.



Plug Front Shell

SHELL KEYS

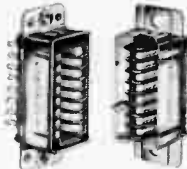
Receptacle Front Shell



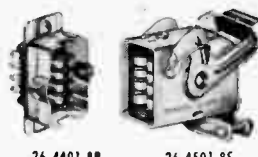
26-190-16 26-159-16



26-4200-8S 26-4100-8P



26-4201-24S 26-4101-24P



26-4401-8P 26-4501-8S

#### Voltage Ratings: 5 Amp.

Pin Polarization	Barrier Polarization
750 Volts D.C. at Sea Level	800 Volts D.C. at Sea Level
300 Volts D.C. at 60,000 Feet Alt.	300 Volts D.C. at 70,000 Feet Alt.

#### MINIATURE HEXAGON CONNECTORS

Contacts	With Hex. Nut	With Locking Clip	With Hood & Clamp
4 pin	---	126-214	---
4 socket	---	---	126-215
5 pin	126-010	126-216	126-217
5 socket	126-011	126-218	126-223
7 pin	126-191	126-197	126-195
7 socket	126-192	126-198	126-196
9 pin	126-012	126-219	126-220
9 socket	126-013	126-221	126-222

Voltage Rating: 7.5 Amp.—500 Volts R.M.S. at Sea Level.

For interconnection of miniature electronic equipment; interchangeable hardware and contacts. 1-501 dielectric, gold-plated contacts; all hardware is solid brass, nickel-plated.



*"Building to the future of Electronics"*





AMPHENOL RF connectors are available in every popular series designation—the most complete line ever offered for military and commercial use. There are literally thousands of applications existing for these versatile connectors and more are being discovered every day. Any company engaged in electronics will concur.

Finest materials, craftsmanship assembly, strict quality-control are the reasons for the outstanding reputation of AMPHENOL RF connectors—plus a complete engineering service that is always available to our customers.

SUBMINAX—50 OHM			
	AMPHENOL Number	Description	For RG-U Cables
Push-on	27-1	Plug	187, 188, 21-598
	27-2	Jack	
	27-3	Receptacle	
	27-4	Jack, Bulkhead	
	27-5	Cable Feed-Thru	
Screw-on	27-6	Plug, Right Angle	
	27-27	Receptacle, Hermetic	
	27-7	Plug	
	27-8	Jack	
	27-9	Receptacle	
	27-10	Jack, Bulkhead	
	27-11	Cable Feed-Thru	
	27-12	Receptacle, Hermetic	
	27-26	Plug, Right Angle	
	27-28	Adapter to BNC	
	27-800	Receptacle, Prin. Cir.	
27-801	Cable Term.		

SUBMINAX—50 OHM			
	AMPHENOL Number	Description	For RG-U Cables
Push-on	27-30	Plug	196
	27-31	Jack	
	27-32	Jack, Bulkhead	
	27-33	Plug, Right Angle	
Screw-on	27-34	Plug	
	27-35	Jack	
	27-36	Jack, Bulkhead	
	27-37	Plug, Right Angle	

SUBMINAX—75 OHM			
	AMPHENOL Number	Description	For RG-U Cables
Push-on	27-13	Plug	195, 21-597, 421-637
	27-14	Jack	
	27-15	Receptacle	
	27-16	Jack, Bulkhead	
	27-17	Feed Through	
Screw-on	27-18	Plug, Right Angle	
	27-19	Plug	
	27-20	Jack	
	27-21	Receptacle	
	27-22	Jack, Bulkhead	
	27-23	Feed Through	
	27-24	Receptacle, Hermetic	
	27-25	Plug, Right Angle	

SERIES BNC			
Military Number	AMPHENOL Number	Description	For RG-U Cables
UG-83 U	31-002	Plug	55 58
UG-88B U	31-018	Plug	55 58
UG-83C U	31-202	Plug	55 58
UG-89 U	31-005	Jack	55 58
UG-89A U	31-019	Jack	55 58
UG-89B U	31-205	Jack	55 58
CW-123 U	31-036	Cap and Chain	---
CW-123A U	31-026	Cap and Chain	---
CW-155 U	31-007	Cap	---
CW-155A U	31-027	Cap	---
CW-159 U	31-017	Shorting Plug	---
UG-254A U	31-016	Receptacle Press.	---
UG-260 U	31-012	Plug	59 62 71
UG-260A U	31-021	Plug	59 62 71
UG-260B U	31-212	Plug	59 62 71
UG-261 U	31-015	Jack	59 62 71
UG-261A U	31-022	Jack	59 62 71
UG-261B U	31-215	Jack	59 62 71
UG-262 U	31-011	Panel Jack	59 62 71
UG-262A U	31-023	Panel Jack	59 62 71
UG-262B U	31-211	Panel Jack	59 62 71
UG-274 U	31-038	Adapter, Tee	---
UG-274A U	31-208	Adapter, Tee	---
CW-282 U	31-210	Cap and Chain	---
UG-290 U	31-003	Receptacle	---
UG-290A U	31-203	Receptacle	---
UG-291 U	31-001	Panel Jack	55 58
UG-291A U	31-020	Panel Jack	55 58
UG-291B U	31-201	Panel Jack	55 58
UG-306 U	31-029	Adapter, Right-Angle	---
UG-306A U	31-209	Adapter, Right-Angle	---
UG-447 U	31-817	Receptacle	---
UG-491A U	31-218	Adapter	---
UG-492A U	31-220	Adapter Press	---
UG-657 U	31-102	Receptacle, Press	---
UG-909 U	31-206	Jack, Bulkhead	55 58
UG-910 U	31-207	Jack, Bulkhead	59 62 71
UG-913 U	31-204	Plug, Right-Angle	55 58
UG-914 U	31-219	Adapter, Straight	---
UG 1034 U	31-221	Receptacle, Bulk.	---
UG 1039 U	31-222	Receptacle, Right Angle	---
---	31-300	Panel Jack, Cap Con	55 58, 141, 142
---	31-301	Plug Cap Con	55 58, 141, 142
---	31-302	Jack Cap Con	55 58, 141, 142
---	31-303	Panel Jack, Cap Con	59 62, 71, 140
---	31-304	Plug Cap Con	59 62 71 140
---	31-305	Jack Cap Con	59 62 71 140
---	31-759	Shield Grounding Lug	---
---	31-842	Receptacle	---
---	31-850	Plug, Right Angle	59 62 71
---	31-851	Cable Feed-Thru	55 58

SERIES BN			
Military Number	AMPHENOL Number	Description	For RG-U Cables
UG-85 U	82-21	Plug	55 58, 59 62, 71
UG-87 U	82-42	Receptacle	---
UG-114 U	82-25	Panel Jack	55 58, 59 62, 71
UG-115 U	82-26	Jack	55 58, 59 62, 71
UG-206 U	31-101	Receptacle, Bulk Gold Plated	---
---	31-759	Shield Grounding Lug	---

SERIES N			
Military Number	AMPHENOL Number	Description	For RG-U Cables
UG-18B U	82-86	Plug	5 6 21
UG-18C U	82-203	Plug	5 6 21
UG 19B U	82-87	Panel Jack	5 6 21
UG 19C U	82-207	Panel Jack	5 6 21
UG 20B U	82-88	Jack	5 6 21
UG-20C U	82-210	Jack	5 6 21
UG 21B U	82-61	Plug	8 9 10
UG 21C U	82 76	Plug	8 9 10
UG-21D U	82-202	Plug	8 9 10
UG 22B U	82 62	Panel Jack	8 9 10
UG 22C U	82 95	Panel Jack	8 9 10
UG-22D U	82 208	Panel Jack	8 9 10
UG-23B U	82 63	Jack	8 9 10
UG-23C U	82-94	Jack	8 9 10
UG-23D U	82 209	Jack	8 9 10
UG-27A U	82-64	Adapter, Right-Angle	---
UG-27B U	82-98	Adapter, Right-Angle	---
UG-27C U	82-213	Adapter, Right-Angle	---
UG-28A U	82-99	Adapter, Tee	---
UG-29A U	82-65	Adapter, Straight	---
UG-29B U	82-101	Adapter, Straight	---
UG-30 U	82-66	Adapter, Bulk, Pressurized	---
UG-30C U	82-201	Adapter, Bulk, Pressurized	---
UG-57B U	82-100	Adapter, Straight	---
UG 58 U	82-24	Receptacle	---
UG-58A U	82-97	Receptacle	---
UG-94A U	82-84	Plug	11, 12, 13
UG-95A U	82-89	Jack	11, 12, 13
UG-96A U	82-90	Panel Jack	11, 12, 13
UG-106 U	83-1H	Hood	8, 9, 10, 11, 12, 13
UG-107A U	82 36	Adapter, Tee	---
UG-107B U	82 102	Adapter, Tee	---
UG-160A U	82-67	Jack, Bulkhead	8 9 10
UG-160B U	82 93	Jack, Bulkhead	8 9 10
UG-167A U	82-104	Plug	17, 18
UG-167D U	82-215	Plug	17, 18
UG-204A U	82-105	Plug	14, 74
UG-204B U	82-205	Plug	14, 74
UG-204C U	82-214	Plug	14, 74
MX-564 U	82-48	Armor Clamp	10 12
MX-564A U	82-09	Armor Clamp	10 12
UG-680 U	82-811	Receptacle, Bulk, Herm. Press	---
MX-913 U	82 106	Cap and Chain	---
UG-935A U	82-211	Panel Jack	10 12
UG-940A U	82-212	Jack	10 12
UG-941A U	82-204	Plug	10 12
UG-1185 U	82-312	Plug, Cap Con.	8 9 10 87A, 115 115A
UG-1186 U	82-313	Jack, Cap Con.	8 9 10 87A, 115 115A
UG-1187 U	82-314	Panel Jack, Cap Con	8 9 10 87A, 115 115A
---	82-835	Angle Plug	8 9 10
---	82-849	Adapter, Straight, Pressurized	---
---	82-1275	Shield Grounding Lug	---
---	83-1H	Hood	8 9 10 11 12 13
---	83-18C	Cap and Chain	---

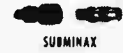
SERIES C			
Military Number	AMPHENOL Number	Description	For RG-U Cables
UG-566A U	82 536	Adapter, Tee	---
UG 567A U	82 535	Adapter, Right Angle	---
UG-568 U	82 504	Receptacle	---
UG 569 U	82 505	Receptacle Bulk	---
UG-570 U	82 502	Jack, Bulkhead	8 9 10
UG 571 U	82 501	Panel Jack	8 9 10
UG 572 U	82 503	Jack	8 9 10
UG 573A U	82 530	Plug	8 9 10
UG 624A U	82 532	Plug High Voltage	8 9A
UG-632 U	82 521	Jack, Bulkhead, High Voltage	8 9A
UG-634 U	82-515	Receptacle, Bulk High Voltage	---
UG-643 U	82-514	Adapter, Straight	---
UG 705 U	82-511	Receptacle, Bulk Pressurized	---



AMPHENOL ELECTRONICS CORPORATION *chicago 50, illinois*

Military Number	AMPHENOL Number	Description	For RG-U Cables
UG-707A U	82-533	Plug	14, 74
UG-709A U	82-534	Plug	55, 58
UG-710A U	82-531	Plug, Right-Angle	8, 9
UG-937 U	82-522	Jack, Bulkhead	10, 12
UG-938 U	82-523	Panel Jack	10, 12
UG-939 U	82-524	Jack, Bulkhead, High-Voltage	10, 12
UG-942A U	82-539	Plug, High-Voltage	10, 12
UG-943A U	82-538	Plug	10, 12
UG-944 U	82-526	Jack	10, 12
UG-945A U	82-537	Plug, Right-Angle	10, 12
MX-1142 U	82-512	Cap and Chain for Plugs	---
MX-1143 U	82-513	Cap and Chain for Plugs	---
MX-1286 U	82-517	Armor Clamp	10, 12
---	82-510	Hood	8, 9, 10
---	82-519	Adapter, Tee	13 (74G)
<b>SERIES MN</b>			
UG-58A U	82-38	Plug	8, 9, 10
UG-58B U	82-804	Plug	8, 9, 10
UG-60A U	82-39	Jack	8, 9, 10
UG-60B U	82-814	Jack	8, 9, 10
UG-61A U	82-40	Panel Jack	8, 9, 10
UG-61B U	82-815	Panel Jack	8, 9, 10
MX-103 U	103-301	Tapering Tool	---
UG-212A U	82-91	Adapter, Right-Angle	---
UG-212C U	82-115	Adapter, Right-Angle	---
UG-333 U	82-56	Jack	17, 18
UG-333A U	82-107	Jack	17, 18
UG-334 U	82-57	Panel Jack	17, 18
UG-334A U	82-108	Panel Jack	17, 18
UG-495A U	82-111	Plug	17, 18
UG-496 U	82-92	Receptacle	---
UG-560 U	82-805	Receptacle	---
MX-564 U	82-48	Armor Clamp	10
MX-564A U	82-109	Armor Clamp	10
UG-929 U	82-114	Panel Jack	10, 116
---	82-91A	Adapter, Right-Angle	---
---	82-130	Cap & Chain Jacks	---
---	82-320	Plug, Cap Con.	8, 9, 10, 67A, 115, 115A
---	82-321	Jack, Cap Con.	8, 9, 10, 67A, 115, 115A
---	82-324	Panel Jack, Cap Con.	8, 9, 10, 67A, 115, 115A
---	82-816	Plug	54A
---	82-833	Angle Plug	8, 9, 10
---	82-836	Receptacle, Press.	---
---	82-843	Receptacle, High-Voltage	---
---	82-856	Angle Plug	8, 9, 10
<b>PUSH-ON</b>			
---	82-830	Plug	58
---	82-831	Receptacle, Bulk.	---
---	82-832	Plug	59, 62, 71
---	82-841	Receptacle, Bulk.	---
---	82-842	Plug	58
---	82-845	Plug, Bulk.	58
---	82-846	Jack, Bulk.	58
<b>SERIES UHF</b>			
<b>Small Single Contact Connectors</b>			
UG-106 U	83-17x	Hood	8, 9, 10, 11, 12, 13, 63, 65
UG-111 U	83-750	Plug	59, 62, 71
UG-175 U	83-185	Adapter, Reducing	58
UG-176 U	83-168	Adapter, Reducing	59, 62, 71
UG-177 U	83-765	Hood	29, 55, 58
UG-203 U	83-776	Plug	55, 59, 62, 71
SO-239	83-1R	Receptacle	---
SO-239A	83-798	Receptacle	---
PL-258	83-1J	Adapter, Straight	---
PL-259	83-1SP	Plug	8, 9, 10, 11, 12, 13, 63, 65
PL-259A	83-1SPN	Plug (Mica-Filled Bakelite)	8, 9, 10, 11, 12, 13, 63, 65
PL-259A	83-756	Plug (Teflon)	8, 9, 10, 11, 12
PL-274	83-1F	Adapter, Bulk.	---
M-358	83-1T	Adapter, Tee	---
M-359	83-1AP	Adapter, Right-Angle	---
M-359A	83-58	Adapter, Right-Angle	---
M-360	83-1H	Hood	8, 9, 10, 11, 12, 13, 63, 65
UG-363 U	83-1F	Adapter, Bulk.	---
UG-372 U	83-1HP	Hood	8, 9, 10, 11, 12, 13, 63, 65
UG-646 U	83-1AP	Adapter, Right-Angle	---

Military Number	AMPHENOL Number	Description	For RG-U Cables
49190	83-1SP	Plug	8, 9, 10, 11, 12, 13, 63, 65
49191	83-1J	Adapter, Straight	---
49192	83-1AP	Adapter, Right-Angle	---
49192A	83-58	Adapter, Right-Angle	---
49193	83-1H	Hood	8, 9, 10, 11, 12, 13, 63, 65
49194	83-1R	Receptacle	---
49195	83-1SPN	Plug (Mica-Filled Bakelite)	8, 9, 10, 11, 12, 13, 63, 65
49195	83-756	Plug (Teflon)	8, 9, 10, 11, 12
49199	83-1T	Adapter, Tee	---
49482	83-776	Plug	55, 59, 62, 71
491949	83-1F	Adapter, Bulk.	---
---	83-1AC	Cap and Chain	---
---	83-1BC	Cap and Chain	---
---	83-1ATY	Receptacle	---
---	83-59	Plug, Right-Angle	8, 9, 10, 11, 12, 13, 63, 65
---	83-716	Receptacle, Pressure Proof	---
---	83-786	Hood & Gang Nut	29, 55, 58
---	83-812	Receptacle	---
---	83-822	Plug	8, 9
---	83-850	Plug, Solderless	11
---	83-851	Plug, Solderless	8, 9, 10, 11, 12, 13, 63, 65
<b>Small Twin Contact Connectors</b>			
UG-102 U	83-22SP	Plug	22
UG-103 U	83-22R	Receptacle	---
UG-104 U	83-22AP	Adapter, Right-Angle	---
UG-105 U	83-22J	Adapter, Straight	---
UG-106 U	83-1H	Hood	22
UG-196 U	83-22T	Adapter, Tee	---
SO-264	83-22R	Receptacle	---
PL-275	83-22F	Adapter, Straight, Bulkhead	---
PL-284	83-22SP	Plug	22
PL-285	83-22J	Adapter, Straight	---
PL-293	83-22AP	Adapter, Right-Angle	---
M-360	83-1H	Hood	22
49193	83-1H	Hood	22
---	83-1AC	Cap and Chain	---
---	83-1BC	Cap and Chain	---
---	83-65	Adapter, Reducing	.250 Diam.
---	83-821	Plug	22
<b>Large Single Contact Connectors</b>			
UG-357 U	83-21R	Receptacle	---
UG-358 U	83-21SP	Plug	34
49208	83-2H	Hood	34
---	83-767	Plug	34
<b>Large Twin Contact Connectors</b>			
SO-265	83-2R	Receptacle	---
PL-295	83-2SP	Plug	57, 130
PL-305	83-2J	Adapter, Straight	---
49188	83-2SP	Plug	57, 130
49189	83-2J	Adapter, Straight	---
49196	83-2R	Receptacle	---
49208	83-2H	Hood	57, 130
<b>SERIES LC</b>			
UG-184 U	82-59	Plug	17, 18
UG-352 U	82-80	Receptacle	---
UG-352A U	82-110	Receptacle	---
<b>BETWEEN SERIES ADAPTERS</b>			
<b>Mates With</b>			
UG-201 U	31-830	N Female and BNC Male	---
UG-201A U	31-216	N Female and BNC Male	---
UG-273 U	31-028	BNC Male and UHF 49134 or Equivalent	---
UG-349A U	31-217	N Male and BNC Female	---
UG-564 U	82-508	C Male and N Female	---
UG-565A U	82-540	C Female and N Male	---
<b>CABLE TRANSITION</b>			
		From RG-U Cable	To RG-U Cable
	82-150	17, 18	8, 9 or 10
<b>CABLE SPLICE</b>			
			For RG-U Cables
	82-152		35, 164



SUBMINAX



SERIES BNC



SERIES BN



SERIES N



SERIES C



SERIES HH



PUSH-ON



SERIES UHF



SERIES LC



SERIES LC

"Building to the future of Electronics"



# MICROPHONE CONNECTORS

**Ⓐ MODERN DESIGN QWIKS** Newest, most efficient, most attractive connectors ever offered for microphone use. Gold-plated contacts, 1-501 Blue dielectric, satin-nickel finish contribute to the beauty, the efficiency of the new QWIKs. Instant connect, disconnect—just click them in!

Three Contacts AMPHENOL Number	Description	Four Contacts AMPHENOL Number
91-853	Male plug	91-857
91-854	Female plug	91-858
91-855	Male receptacle	91-859
91-856	Female receptacle	91-860

## Ⓑ SERIES 75

Coupling-ring connectors available with a complete line of accessory fittings. Easy to use, versatile in application, these connectors provide mating connections at every junction through the use of slip-off, slip-on coupling rings. Single contact.

AMPHENOL Number	Description
75-CCC1	Cap and chain
75-MC1F	Straight plug
75-MC1FA	Angle plug
75-MC1M	Cable jack
75-MC1P	Phone plug adapter
75-MC1S	Microphone switch
75-PC1M	Locknut receptacle
75-CL-PC1M	Locknut receptacle, closed circuit



## Ⓒ SERIES 80

One and two contact connectors designed for microphone applications; assure positive connections free from noise, leaks or shorts.

One Contact AMPHENOL Number	Description	Two Contact AMPHENOL Number
80-M	Male plug	80-MC2M
80-F	Female jack	80-MC2F
80-C	Female receptacle	80-PC2F
80-F1	Female plug	80-MC2F1
80-M1	Male jack	80-MC2M1
80-C1	Male receptacle	80-PC2M



## Ⓓ SERIES 91

Three and four contact connectors for audio or any type of portable sound equipment. Screw-on connection. Connectors polarized.

Three Contacts AMPHENOL Number	Description	Four Contacts AMPHENOL Number
91-MC3M	Male plug	91-MC4M
91-MC3F	Female jack	91-MC4F
91-PC3F	Female receptacle	91-PC4F
91-MC3F1	Female plug	91-MC4F1
91-MC3M1	Male jack	91-MC4M1
91-PC3M	Male receptacle	91-PC4M



# MISCELLANEOUS ELECTRONIC COMPONENTS

## Ⓐ SINGLE PRONG PLUGS

Bakelite plugs, black or red; for use with Tip Jacks.

AMPHENOL Number	Description
71-IS	For 3/32" socket
71-1M	For 1/8" socket
71-1L	For 3/16" socket

## Ⓒ CRYSTAL HOLDER SOCKET

Mica-filled bakelite; for crystal holders having 2 1/2" prongs on 3/4" centers.

AMPHENOL Number	Description
33-2	Black bakelite
33-2T	Mica-filled

## Ⓑ TIP JACKS

Bakelite, black or red. Mount in 3/8" hole.

AMPHENOL Number	Description
78-IS	For 3/32" plug
78-1L	For 3/16" plug
78-1M	For 1/8" plug
78-1P	For .080" phone tip

## Ⓒ MAGIC EYE ASSEMBLIES

Completely wired with escutcheon and hardware. Tube not included with either.

AMPHENOL Number	Description
58-MEA6	6 contact type
58-MEA8	8 contact octal type

## Ⓓ UNIVERSAL GRID CAP.

For use with tube grid caps from 1/4" to 3/8" diameter.

AMPHENOL Number	Description
63-1	Black grid cap

## Ⓔ TAP CHANGE SWITCH

8-position single pole continuous switch with white markings clearly visible in window cap. Side set-screw for locking switch arm.

AMPHENOL Number	Description
36	Numerals 1 to 8, internal solder lugs
36-1	Numerals 1 to 8
36-2	Imp. marks 0-2-4-8-16-250-500

## Ⓒ COIL FORMS

Molded of AMPHENOL 912-A polystyrene for use in receivers and low-powered transmitters.

AMPHENOL Number	Description
24	Miniature, for self-tapping screw
24-4P	Plug-in, 4 prong
24-5P	Plug-in, 5 prong
24-6P	Plug-in, 6 prong
24-5H	Plug-in, miniature, 5 prong
24-6H	Plug-in, miniature, 6 prong

## POLYWELD & ACRYWELD CEMENTS & THINNERS

Polyweld 912 and Acryweld 901 are perfect cements for their respective materials—provide an actual weld.

AMPHENOL Polyweld 912	AMPHENOL Acryweld 901	Description
53-912-2	53-901-2	2 ounce bottle
53-912-4	53-901-4	4 ounce bottle
53-912-P	53-901-P	Pint container
53-912-Q	53-901-Q	Quart container
53-912-G	53-901-G	1 gallon can
53-912-5G	53-901-5G	5 gallon can

AMPHENOL Polyweld Thinner	AMPHENOL Acryweld Thinner	Description
53-916-2T	53-901-2T	2 ounce bottle
53-916-4T	53-901-4T	4 ounce bottle
53-916-PT	53-901-PT	Pint container
53-916-QT	53-901-QT	Quart container
53-916-GT	53-901-GT	1 gallon can
53-916-5GT	53-901-5GT	5 gallon can

**POLYSTYRENE SHEET STOCK**  
Optical clarity suitable for dial window and gauge glass applications.

AMPHENOL Number	Description
19-0628	4" x 8" x 1/16"
19-0938	4" x 8" x 3/32"
19-1258	4" x 8" x 1/4"
19-1878	4" x 8" x 3/8"
19-2508	4" x 8" x 1/2"



AMPHENOL ELECTRONICS CORPORATION *chicago 50, illinois*

**Ⓐ TUBE SHIELDS FOR MINIATURE SOCKETS**

Protects tubes from damage, promotes circuit stability, integral spiral spring.

AMPHENOL Number	Description
5-401	For 7 pin—1 1/4"
5-402	For 7 pin—1 1/4"
5-405	For 9 Pin—1 1/2"
5-408	For 9 pin—1 3/4"
5-409	For 9 pin—2 1/4"

**Ⓑ "CP" TYPE PLUGS**

Black bakelite plugs, extremely compact and useful for multi-wire applications. Quickly, easily installed. Mate with "S" type sockets.

AMPHENOL Number With Mtg. Plate	AMPHENOL Number Without	Description
86-RCP4	86-CP4	4 contact
86-RCP5	86-CP5	5 contact
86-RCP6	86-CP6	6 contact
86-RCP7L	86-CP7L	7 large
86-RCP7S	86-CP7S	7 small
86-RCP8	86-CP8	8 octal
86-RCP9	86-CP9	9 octal style
86-RCP11	86-CP11	11 octal style

**Ⓒ SHIELDED MULTI-WIRE CABLE CONNECTORS**

Consist of "S" type sockets and "CP" plugs. Accommodates cable up to 3/8" diameter.

With Grommet Cap 3-13		
AMPHENOL Number Female	AMPHENOL Number Male	Description
78-PF4	86-PM4	4 contact
78-PF5	86-PM5	5 contact
78-PF6	86-PM6	6 contact
78-PF8	86-PM8	8 octal
78-PF9	86-PM9	9 octal style
78-PF11	86-PM11	11 octal style

With Cable Clamp 3-24		
AMPHENOL Number Female	AMPHENOL Number Male	Description
78-PF4-11	86-PM4-11	4 contact
78-PF5-11	86-PM5-11	5 contact
78-PF6-11	86-PM6-11	6 contact
78-PF7S-11	86-PM7S-11	7 small
78-PF8-11	86-PM8-11	8 octal
78-PF9-11	86-PM9-11	9 octal style
78-PF11-11	86-PM11-11	11 octal style

**Ⓓ RECEPTACLE SHELLS**

For "S" type sockets or "CP" type plugs. 61-61 lowers below surface; others extend above or below surface.

AMPHENOL Number	Description
23-1S	Shell only, small
23-1L	Shell only, large
61-61	Shell only

**Ⓔ UNSHIELDED SPEAKER PLUGS**

Molded-in-prongs that cannot work loose. For test panels, inter-communication systems, etc.

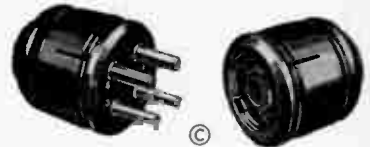
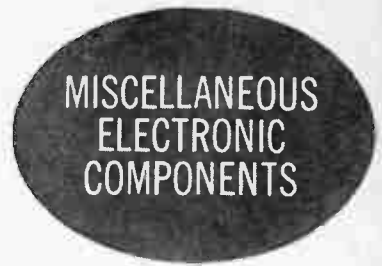
AMPHENOL Number	Description
71-4	4 contact, finger grip
71-5	5 contact, finger grip
71-6	6 contact, finger grip
71-7	7 contact, finger grip
70-8	8 contact
70-9	9 contact
70-12	12 contact
70-20	20 contact
71-3S	3 contact, miniature cable plug
71-4S	4 contact, miniature cable plug
71-5S	5 contact, miniature cable plug
71-6S	6 contact, miniature cable plug
86-CP-3S	3 contact miniature chassis plug
86-CP-4S	4 contact, miniature chassis plug



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**Ⓔ MINIATURE CABLE CONNECTORS**

Black bakelite bodies, cad. plated brass shells. Polarized.

SHORT SHELL		
AMPHENOL Number Male	Description	AMPHENOL Number Female
91-MPM3S	3 contact	91-MPF3S
91-MPM4S	4 contact	91-MPF4S
LONG SHELL		
91-MPM3L	3 contact	91-MPF3L
91-MPM4L	4 contact	91-MPF4L
91-MPM5L	5 contact	---
91-MPM6L	6 contact	---
FLARED SHELL		
---	3 contact	91-MPF3
---	4 contact	91-MPF4
91-MPM5	5 contact	91-MPF5
91-MPM6	6 contact	91-MPF6

**Ⓕ SHIELDED CHASSIS UNITS**

Economical chassis receptacles for connecting shielded or unshielded cables. Mounts on surface or behind chassis or panel. Female only.

AMPHENOL Number	Description
78-PCG3	3 contact
78-PCG4	4 contact
78-PCG5	5 contact
78-PCG6	6 contact

**Ⓖ 110-VOLT PLUG & RECEPTACLE INSERTS**

UL approved; black bakelite bodies. Rated at 15 amps.

AMPHENOL Number Retainer Ring Type	Receptacles Description	AMPHENOL Number Mounting Plate Type
61-F	2 pole, universal	61-F1
60-F	3 pole, polarized	60-F1
	2 pole, universal	61-MIP-61F
Plugs		
61-M	2 pole, standard	61-M1
61-MP	2 pole, polarized	61-MP1
60-M	3 pole, polarized	60-M1

**Ⓖ 110-VOLT SHIELDED CABLE CONNECTORS**

Fully shielded cable terminals; black bakelite bodies.

AMPHENOL Number		
With Cable Clamps	With Grommet	Description
60-F1	60-F4	3 pole receptacle
60-M11	60-M4	3 pole polarized plug
61-F1	61-F4	2 pole universal receptacle
61-M11	61-M4	2 pole standard plug
61-MP11	61-MP4	2 pole polarized plug

*"Building to the future of Electronics"*



**Ⓐ HIGH-VOLTAGE SOCKETS**

Above or below mounting. Provide finest performance under high-voltage contact-to-chassis conditions.

AMPHENOL Number	Description
77A-4T	4 contacts, mica-filled bakelite
146-101	8 contacts, melamine

**Ⓑ STEATITE TRANSMITTING TUBE SOCKETS**

Low-loss steatite, Clover Leaf contacts—permanently secured mounting plate.

AMPHENOL Number	Description
148-101	Small and medium 4 pin
148-111	Octal

**Ⓒ BRACKET TYPE SOCKETS**

For upright panel mounting. Available in combinations as follows:

AMPHENOL Number	With Retaining Clip	With Terminal Block	With Bottom Cover	With Underwriters' Shield	For Super Jumbo 4-pin Tubes	For UX4-pin Tubes
146-105	X		X		X	
146-106	X				X	
146-107	X	X	X		X	
146-109				X		X
146-110						X

**Ⓓ ADAPTER SOCKETS**

For miniature tubes; modernize tube checkers and analyzers!

AMPHENOL Number	Description
78-A7P	7 pin
78-A9P	9 pin

**Ⓔ MAGNAL & DUODECAL SOCKETS**

For cathode ray and television tubes.

AMPHENOL Number	Description
49-SS11L	11 contact magnal
59-402	12 contact

**Ⓕ ETHYLON "A" SOCKETS**

Miniature 7 and 9 pin sockets, molded of AMPHENOL Ethylon-A with exceptionally high "Q" factor and low-loss properties.

AMPHENOL Number	Description
59-305	8 pin octal, Zip-in
59-307	7 pin miniature, Zip-in
59-309	9 pin miniature, Zip-in
59-355	8 pin octal, with mounting plate
59-357	7 pin miniature with mounting plate
59-359	9 pin miniature with mounting plate
59-367	7 pin miniature with tube shield base
59-369	9 pin miniature with tube shield base

**Ⓖ MINIATURE RETAINER RING SOCKETS**

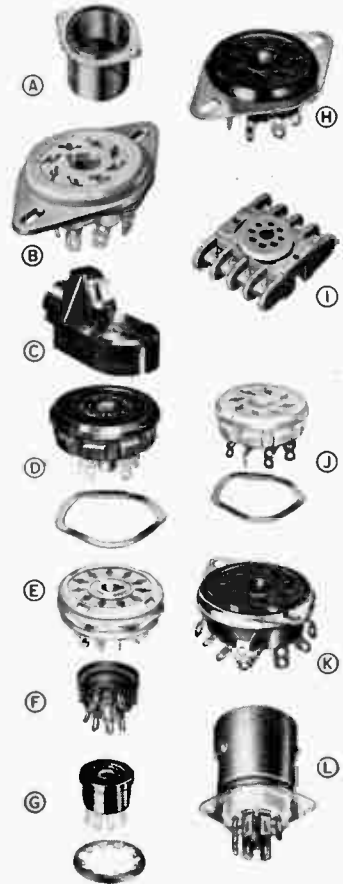
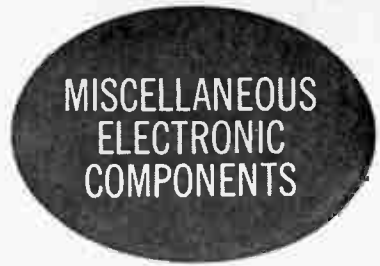
Requiring a minimum of space, these sockets are especially designed for installation in compact electronic equipment.

AMPHENOL Number	Description
78-S3S	3 contact
78-S4S	4 contact
78-S5S	5 contact
78-S6S	6 contact
78-5P	5 contact
78-7P	7 contact
78-7PT	7 contact, mica-filled bakelite

**Ⓖ MOLDED-IN-PLATE SOCKETS**

Famous AMPHENOL "Mips", molded of high strength black bakelite with sturdy steel mounting plate molded-in. Contacts grip tube prongs firmly—retain their resilience indefinitely.

AMPHENOL Number	Description
77-MIP-4	4 contact
77-MIP-5	5 contact
77-MIP-6	6 contact
77-MIP-7L	7 large
77-MIP-7S	7 small
77-MIP-8	8 octal
77-MIP-9	9 octal style
77-MIP-11	11 octal style
77-MIP-12	12 octal style
88-8	8 octal compact
88-8X	8 loktal compact
77-MIP-8FK	8 octal, with 11-3K floating socket kit
11-3K	Kit for converting any "Mip" to floating socket



**Ⓖ BARRIER TYPE SOCKETS**

Long creepage paths, Patented Clover-Leaf contacts, melaminé bodies—above or below chassis mountings; top quality throughout.

AMPHENOL Number	Description
146-103	Octal, top mounted
146-104	Octal, threaded inserts, top mounted
146-111	7 pin, miniature
146-203	146-103, bottom mounted
146-204	146-104, bottom mounted

**Ⓖ "S" TYPE REPLACEMENT SOCKETS**

Convenient and versatile; assembled with retainer rings to chassis of sturdy mounting plate with slotted holes.

AMPHENOL Number	Black Bakelite	
	With Mtg. Pit.	Without
78-RS4	78-S4	4 contact
78-RS5	78-S5	5 contact
78-RS6	78-S6	6 contact
78-RS7L	78-S7L	7 large
78-RS7S	78-S7S	7 small
78-RS8	78-S8	8 octal
78-RS8L	78-S8L	8 loktal
78-RS9	78-S9	9 octal
78-RS11	78-S11	11 octal

AMPHENOL Number	Steatite	
	49-RSS4	49-SS4
49-RSS4	49-SS4	4 contact
49-RSS5	49-SS5	5 contact
49-RSS6	49-SS6	6 contact
49-RSS7L	49-SS7L	7 large
49-RSS7S	49-SS7S	7 small
49-RSS8	49-SS8	8 octal

**Ⓖ SADDLE TYPE OCTAL SOCKETS**

Economical below-chassis mounting sockets. Black bakelite.

AMPHENOL Number	Description
168-001	8 contact, wrap-around, 4 grounding lugs
168-015	8 contact, tuning-fork, 4 grounding lugs

**Ⓖ MINIATURE 7 & 9 PIN SOCKETS**

For tv, fm and radio use—sockets available for any miniature application. All have .095" rivet holes unless marked.

AMPHENOL Number	Bottom Mounting—No Shield Base	
	Description	Center Shield
59-409	9 contact, black bakelite	L
59-410	9 contact, mica-filled	L
147-500	7 contact, black bakelite	L
* 147-502	7 contact, black bakelite	L
147-504	7 contact, black bakelite	O
147-505	7 contact, mica-filled	S
AMPHENOL Number	Top Mounting—Tube Shield Base	
	Description	Center Shield
† 59-403	9 contact, mica-filled	L
59-406	9 contact, black bakelite	L
59-407	9 contact, mica-filled	L
147-905	7 contact, black bakelite	L
147-913	7 contact, mica-filled	S
147-916	7 contact, mica-filled	S
147-921	7 contact, steatite	S
† 147-924	7 contact, steatite	S
† 147-925	7 contact, steatite	L

\*Rubber mounted †.125 dia. rivet holes.



AMPHENOL ELECTRONICS CORPORATION *chicago 50, illinois*



# POLYETHYLENE DIELECTRIC

RG-/U coaxial cables made to MIL-C-17B, except where noted. Non-contaminating low temperature black jackets are standard under this Specification; temperature limits are -40° C to +80° C.

Non-Contaminating Low Temp. Black Jacket		Vinyl & Poly. Jackets				
Mil No. RG-/U	AMPHENOL Number	Formerly RG- U	AMPHENOL Number	O.D.	Max. Oper. Volts	Nom. Imp. Ohms
		5	21-001	.332	3000	52.5
5B	21-294			.332	3000	50
6A	21-330			.332	2700	75
		7	21-003	.370	1000	97
		8	21-004	.405	4000	52
8A	21-290			.405	4000	50
		9	21-005	.420	4000	51
		9A	21-731	.420	4000	51
9B	21-332			.425	4000	50
10A	21-338			.475	4000	50
11A	21-296	11	21-007	.405	4000	75
12A	21-340			.475	4000	75
13A	21-334	13	21-009	.425	4000	75
14A*	21-336	14	21-010	.545	5500	52
14A	21-336 (819)			.545	5500	50
17*	21-298	17	21-013	.870	11000	52
17A	21-298 (819)			.870	11000	50
18A*	21-300	18	21-014	.945	11000	52
18A	21-300 (819)			.945	11000	50
		19	21-015	1.120	14000	52
19A	21-303			1.120	14000	50
20A	21-305			1.195	14000	50
		21	21-017	.332	2700	53
21A	21-308			.332	2700	50
		22	21-038	.405	1000	95
22B	21-310			.420	1000	95
23A	21-516			.650X 9.45	3000	125
24A	21-518			.735X 1.034	3000	125
		29	21-018	.184	1900	53.5
		34	21-019	.625	5200	71
34A	21-429			.630	5200	75
35A*	21-311	35	21-020	.945	10000	71
35A	21-311 (819)			.945	10000	75
		54A	21-022	.250	3000	58
		55	21-023	.206	1900	53.5
55A	21-703			.216	1900	50
57A	21-313			.625	3000	95
		58	21-024	.195	1900	53.5
58C	21-316	58A	21-199	.195	1900	50
		59	21-025	.242	2300	73
59A	21-291			.242	2300	75
62A	21-318	62	21-026	.242	750	93
63B	21-320	63	21-027	.405	1000	125
71A	21-723	71	21-029	.250	750	93
74A*	21-321			.615	5500	50
74A	21-321 (819)			.615	5500	50
79B	21-325			.475	1000	125
108A	21-327	108	21-261	.235	1000	78
111A	21-329			.490	1000	95
114A	21-520	114	21-440	.405	1000	185
122	21-441			.160	1900	50
177	21-708			.895	11000	50
164	21-720			.870	10000	75

\*Made to specification JAN-C-17A, Amend. 3, to avoid possible difficulty in cable to connector fit. See (819) version for same cable made to new specification MIL-C-17B.

RG TYPE  
COAXIAL CABLE

## TEFLON DIELECTRIC

Made to MIL-C-17B, these Teflon cables operate at temperatures from -73° C to +200° C. These superior cables feature low loss operation, high voltage breakdown, and no measurable water absorption characteristics. See Subminax cable listing for miniature Teflon RG-/U types.

Military Number RG-/U	AMPHENOL Number	O.D.	Max. Oper. Volts	Nom. Imp. Ohms
62C	421-100	.242	750	93
87A	421-250	.430	4000	50
94A	421-705	.470	5000	50
115	421-641	.375	5000	50
115A	421-699	.415	5000	50
116	421-378	.430	5000	50
117	421-377	.730	7000	50
118	421-374	.795	7000	50
119	421-398	.465	6000	50
120	421-399	.525	6000	50
126	421-443	.280	3000	50
140	421-379	.233	2300	75
141	421-382	.190	1900	50
142	421-385	.206	1900	50
143	421-388	.325	3000	50
144	421-391	.410	5000	75
165	421-710	.410	5000	50
166	421-713	.460	5000	50

## SUBMINAX COAXIAL CABLE

Mate with AMPHENOL Subminax connectors. Combine full-size reliability with miniature size for every miniaturized application.

### Teflon Dielectric & Teflon Jacket

Military Number RG-/U	AMPHENOL Number	O.D.	Nom. Imp. Ohms
187	421-106	.110"	75
188	421-105	.110"	50
195	421-111	.115"	95
196	421-109	.080"	50
-	421-637	.150"	75

### Polyethylene Dielectric & Vinyl Jacket

AMPHENOL Number	O.D.	Nom. Imp. Ohms
21-597	.150"	75
21-598	.105"	50

## MICROPHONE CABLE

AMPHENOL Number	Description
21-146	Poly dielectric, low capacitance

"Building to the future of Electronics"







**XLR-11C PLUG (Socket Insert)**

Type XLR-11C is equipped with latchlock device and polarizing boss. Insulators are resilient polychloroprene. Shells are diecast zinc, with bright nickel finish. Integral cable clamp and bushings. Cable accommodation is 7/32". Overall dimensions: Length: (with bushing) 2-15/16"; Max. Diameter: 0.750. Mates with XLR-12C, XLR-32 and other corresponding XLR types.

Contacts	Capacity	Wt. Lbs.	Cat. No.	List Pr.
3	10-amp.	0.117	XLR-3-11C	\$1.55
4	15-amp.	0.117	XLR-4-11C	2.15

**XLR-12C RECEPTACLE (Pin Insert)**

Type XLR-12C has polarizing groove. Insert is removable for wiring, soldering, and inspection. Insulation material is phenolic. Shells are diecast zinc, with bright nickel finish. Integral clamp and bushings. Cable accommodation is 7/32". Overall dimensions: Length: (with bushing) 2-21/32"; Max. Diameter: 0.750. Mates with XLR-11C, XLR-31 and other corresponding XLR types.

Contacts	Capacity	Wt. Lbs.	Cat. No.	List Pr.
3	10-amp.	0.088	XLR-3-12C	\$1.65
4	15-amp.	0.088	XLR-4-12C	1.80

**"XLR-13" RECEPTACLE (Socket Insert)**

A wall mounting receptacle similar to XLR-14 except that it has socket insert assembly and latch locking device. Overall dimensions: flange diameter, 1 7/8"; flange thickness 3/8"; rear of flange to solder pot extension 1 3/8"; barrel dia., 1 1/8"; three 0.136" dia. mounting holes.

Contacts	Capacity	Wt. Lbs.	Cat. No.	List Pr.
3	15-amp.	.142	XLR-3-13	\$1.55
4	10-amp.	.142	XLR-4-13	2.15

**"XLR-13N" RECEPTACLE (Socket Insert)**

Insulators are resilient polychloroprene, with latchlock device, and polarizing boss on insert barrel. No. 1 contact engages before Nos. 2 and 3 and may be used for grounding circuit if desired. Overall dimensions: flange and barrel and nut are identical to XLR-14N, length from face of flange including solder pot extension 1-17/64". Bright nickel finish.

Contacts	Capacity	Wt. Lbs.	Cat. No.	List Pr.
3	15-amp.	.211	XLR-3-13N	\$1.55
4	10-amp.	.211	XLR-4-13N	2.15

**"XLR-14" RECEPTACLE (Pin Insert)**

This wall mounting receptacle has three mounting holes having 0.136" diameter. Overall dimensions: flange diameter, 1 7/8"; flange thickness, 3/8"; length behind flange to solder pot extension, 1 1/4"; barrel diameter, 3/4". Bright nickel plated zinc shell.

Contacts	Capacity	Wt. Lbs.	Cat. No.	List Pr.
3	15-amp.	.059	XLR-3-14	\$1.20
4	10-amp.	.059	XLR-4-14	1.70

**"XLR-14N" RECEPTACLE (Pin Insert)**

Designed to be mounted in a panel and has lock nut, accommodating up to 1/8" panel. Two fittings may be mounted on a single gang plate. Overall dimensions: flange diameter, 1 7/8"; barrel diameter, 1"; width flange to barrel, 3/4", with 1/2" max. solder pot extension; flange thickness, 3/8".

Contacts	Capacity	Wt. Lbs.	Cat. No.	List Pr.
3	15-amp.	0.205	XLR-3-14N	\$1.45
4	10-amp.	0.205	XLR-4-14N	1.95

**XLR-31 RECEPTACLE (Socket Insert)**

Type XLR-31 New narrow flange and Push-Lever Release. Insulation is resilient polychloroprene. Overall dimensions: Flange: 1-7/16" X 1-1/16"; Flange Thickness: 3/32"; Length Skirt: 31/32". Shell is zinc, with bright nickel finish. Mates with XLR-32, XLR-12C and other corresponding XLR types.

Contacts	Capacity	Wt. Lbs.	Cat. No.	List Pr.
3	10-amp.	0.098	XLR-3-31	\$2.10
4	15-amp.	0.098	XLR-4-31	2.40

**XLR-32 RECEPTACLE (Pin Insert)**

Type XLR-32 New narrow flange. Insulation is phenolic. Insert is removable for inspection and soldering. Shell is diecast zinc with bright nickel finish. Overall dimensions: Flange: 1-1/16" X 7/8"; Flange Thickness: 3/32"; Skirt: 3/4". Mates with XLR-31, XLR-11C and other corresponding XLR types.

Contacts	Capacity	Wt. Lbs.	Cat. No.	List Pr.
3	10-amp.	0.065	XLR-3-32	\$1.30
4	15-amp.	0.065	XLR-4-32	1.50

Note: All illustrations are not shown in same scale reduction.



The Cannon Electric XLR connectors are a newly expanded audio connector series... the most modern addition to the long line of Cannon Connectors featured on all top-quality microphones. It's really quiet, too!

New resilient insulator and specialized construction of socket contact assembly protects against disagreeable mechanical interference... noise problems encountered with connectors when their cables are moved, pulled, or subjected to shock.

Features streamline design, satin nickel finish, integral cable clamp, neoprene cable relief, and the time-tested latchlock that Cannon pioneered on the first audio connectors. Available with three 15-amp. or four 10-amp. contacts. Available in panel receptacle type, providing same continuous characteristics.

# CANNON PLUGS



CANNON ELECTRIC COMPANY

(XL Series continued)

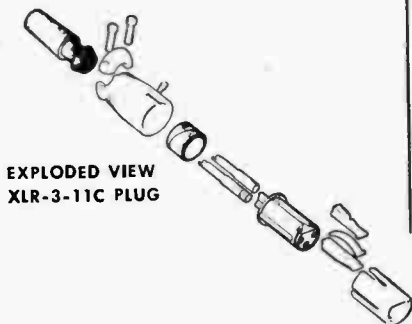
## XLR DUST CAPS



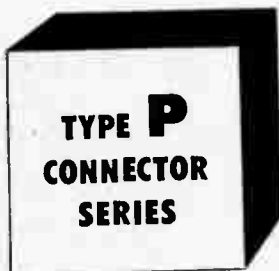
**XLR-13N-RC**  
FOR SOCKET ASSEMBLIES  
List Pr. 2.55



**XLR-14N-PC**  
FOR PIN ASSEMBLIES  
List Pr. 2.55



EXPLODED VIEW  
XLR-3-11C PLUG



**TYPE P**  
**CONNECTOR**  
**SERIES**

(P Series continued on next page)



**XLR-35 SINGLE GANG WALL RECEPTACLE (Socket Insert)**  
One XLR-13N receptacle, with resilient socket insert, mounted on face plate. Satin nickel finish.

Contacts	Capacity	Wt. Lbs.	Cat. No.	List Pr.
3	15-amp.	0.750	XLR-3-35	\$4.40
4	10-amp.	0.750	XLR-4-35	4.85



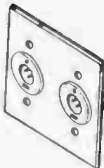
**XLR-36 SINGLE GANG WALL RECEPTACLE (Pin Insert)**  
One XLR-14N receptacle, with pin insert, mounted on face plate. Satin nickel finish.

Contacts	Capacity	Wt. Lbs.	Cat. No.	List Pr.
3	15-amp.	0.715	XLR-3-36	\$4.45
4	10-amp.	0.715	XLR-4-36	4.95



**XLR-35-2G TWO GANG WALL RECEPTACLE (Socket Insert)**  
Takes two XLR-13N receptacles. Can accommodate three and/or four contact resilient inserts. Specify which is desired on left and on right.

Contacts	Capacity	Cat. No.	List Pr.
6	15-amp.	XLR-3-35-2G (2 socket inserts)	\$ 9.60
8	10-amp.	XLR-4-35-2G (2 socket inserts)	10.55



**XLR-36-2G TWO GANG WALL RECEPTACLE (Pin Inserts)**  
Takes two XLR-14N receptacles. Can accommodate three and/or four contact resilient inserts. Specify which is desired on left and on right.

Contacts	Capacity	Cat. No.	List Pr.
6	15-amp.	XLR-3-36-2G (2 pin inserts)	\$ 9.30
8	10-amp.	XLR-4-36-2G (2 pin inserts)	10.95



**XLR-42 RECEPTACLE (Pin Insert)**  
The XL-42 receptacle is similar to the X-42 shown under "X" fittings, except that it has the XLR type insert. For angle 90° mounting purposes.

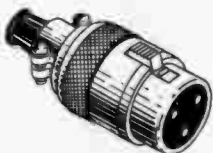
Contacts	Capacity	Wt. Lbs.	Cat. No.	List Pr.
3	15-amp.	0.063	XLR-3-42	\$1.50
4	10-amp.	0.063	XLR-4-42	1.65

### " ADAPTER RECEPTACLES



	List Pr.		List Pr.		List Pr.
XLR-3-50	\$1.75	XLR-3-50N	\$2.15	XLR-3-50T	\$1.90
XLR-4-50	2.40	XLR-4-50N	3.15	XLR-4-50T	2.60

**TYPE P-CG-115 CORD PLUG COMBINATION STEEL & ZINC (With Socket Insert)**—This new type plug with steel shell and integral zinc clamp has an overall length of 3-3/16". 11/64" shorter than the old type. The new rubber bushing allows a 9/32" D. cable entry, and on P4, P5, P6 and P8 1/2" D. max. cable entry. Satin chrome finish.



Poles	Capacity	Wt. Lbs.	Cat. No.
2	30-amp.	0.202	P2-CG-115
3	30-amp.	0.202	P3-CG-115
4	30-amp.	0.198	P4-CG-115
5	30-amp.	0.203	P5-CG-115
6	30-amp.	0.208	P6-CG-115
8	15-amp.	0.208	P8-CG-115

**TYPE P-CG-125 CORD PLUG COMBINATION STEEL & ZINC (With Pin Insert)**—Similar construction and materials to the -115, except for pin insert. New rubber bushing on P4 to P8 fittings is contained within the shell and lines the solder pot cavity. Same cable entry sizes as -115. Satin chrome finish.



Contacts	Capacity	Wt. Lbs.	Cat. No.
2	30-amp.	0.165	P2-CG-125
3	30-amp.	0.168	P3-CG-125
4	30-amp.	0.164	P4-CG-125
5	30-amp.	0.168	P5-CG-125
6	30-amp.	0.172	P6-CG-125
8	15-amp.	0.168	P8-CG-125



**TYPE P  
CONNECTOR  
SERIES**



**TYPE "P-23" STRAIGHT CORD PLUG (with Socket Insert), HEAVY DUTY**—Shell is die-cast zinc for severe service, but employs features such as the latch type locking device which is standard on "Type P." It has integral clamp for  $\frac{3}{4}$ " cable. Also made for  $\frac{1}{8}$ " and  $\frac{5}{8}$ " cable if specified. Satin chrome finish.

Contacts	Capacity	Wt. Lbs.	Cat. No.
2	30-amp.	0.166	P2-23
3	30-amp.	0.170	P3-23
4	30-amp.	0.174	P4-23
5	30-amp.	0.178	P5-23
6	30-amp.	0.182	P6-23
8	15-amp.	0.178	P8-23



**TYPE "P-24" STRAIGHT CORD PLUG (with Pin Insert), HEAVY DUTY**—Corresponds with "Type P-23" plug (socket insert). Built for hard service. The skirt is steel, body is die-cast zinc. Has integral clamp, for  $\frac{3}{4}$ ",  $\frac{5}{8}$ " or  $\frac{1}{8}$ " cable, if specified. Satin chrome finish.

Contacts	Capacity	Wt. Lbs.	Cat. No.
2	30-amp.	0.170	P2-24
3	30-amp.	0.173	P3-24
4	30-amp.	0.176	P4-24
5	30-amp.	0.179	P5-24
6	30-amp.	0.182	P6-24
8	15-amp.	0.179	P8-24



**TYPE "P-CG-15" 90° CORD PLUG (with Socket Insert)** Has split shell and all other "Type P" features found in Type P-15, 90° plug except cable connection, which is an integral clamp for cable 17/32" or smaller. Satin chrome plated zinc shell. New, heavier clamp.

Contacts	Capacity	Wt. Lbs.	Cat. No.
2	30-amp.	0.220	P2-CG-15
3	30-amp.	0.224	P3-CG-15
4	30-amp.	0.228	P4-CG-15
5	30-amp.	0.232	P5-CG-15
6	30-amp.	0.236	P6-CG-15
8	15-amp.	0.232	P8-CG-15



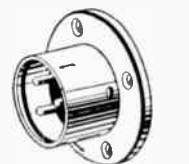
**TYPE "P-CG-16" 90° CORD PLUG (with Pin Insert)** Corresponds to Type P-CG-15 90° plug (Socket insert), having integral clamp for 17/32" or smaller cable. Barrel is of steel and shell of cast aluminum alloy, satin chrome finish. Removable cap for easy access to contacts for wiring or inspection. New heavier clamp.

Contacts	Capacity	Wt. Lbs.	Cat. No.
2	30-amp.	0.195	P2-CG-16
3	30-amp.	0.198	P3-CG-16
4	30-amp.	0.201	P4-CG-16
5	30-amp.	0.204	P5-CG-16
6	30-amp.	0.207	P6-CG-16
8	15-amp.	0.204	P8-CG-16



**TYPE "P-17" PANEL RECEPTACLE (with Socket Insert) Surface Mounting**—P-17 has latch locking device and all other "Type P" features. Made of die-cast zinc. Satin chrome finish. Flange is 2" in diameter, drilled and countersunk at four points 90° apart on  $\frac{1}{2}$ " radius for four No. 4-40 machine screws. Body extends 1" in front of  $\frac{1}{8}$ " mounting flange.

Contacts	Capacity	Wt. Lbs.	Cat. No.
2	30-amp.	0.125	P2-17
3	30-amp.	0.129	P3-17
4	30-amp.	0.133	P4-17
5	30-amp.	0.137	P5-17
6	30-amp.	0.141	P6-17
8	15-amp.	0.137	P8-17



**TYPE "P-18" PANEL RECEPTACLE (with Pin Insert) Surface Mounting**—Corresponds to "Type P-17," Panel Receptacle. Shell is made of zinc, with satin chrome finish. Flange is 2" in diameter, drilled and countersunk at four points on  $\frac{1}{2}$ " radius for four No. 4-40 machine screws.

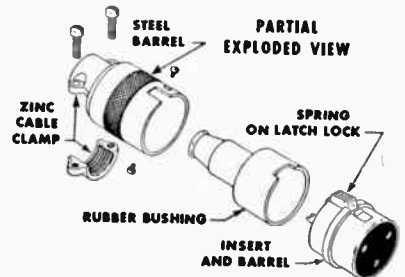
Contacts	Capacity	Wt. Lbs.	Cat. No.
2	30-amp.	0.156	P2-18
3	30-amp.	0.159	P3-18
4	30-amp.	0.162	P4-18
5	30-amp.	0.165	P5-18
6	30-amp.	0.168	P6-18
8	15-amp.	0.165	P8-18



**TYPE "P-13" PANEL RECEPTACLE (with Socket Insert) Flush Mounting**—Has latch locking device which operates from front of panel. Made of die-cast zinc with satin chrome finish. Flange is 2" in diameter, drilled and countersunk at four points on  $\frac{1}{2}$ " radius for four No. 4-40 machine screws.

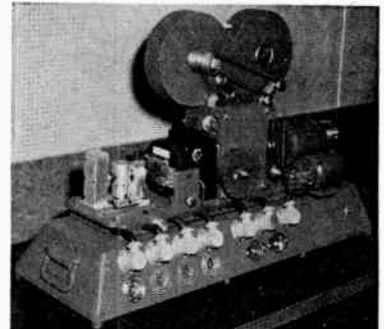
Contacts	Capacity	Wt. Lbs.	Cat. No.
2	30-amp.	0.202	P2-13
3	30-amp.	0.206	P3-13
4	30-amp.	0.210	P4-13
5	30-amp.	0.214	P5-13
6	30-amp.	0.218	P6-13
8	15-amp.	0.214	P8-13

CANNON "TYPE P" FITTINGS. Universally used in sound and allied applications. "Type P" Fittings include a size and type for every requirement, with a high standard of quality. All 90° Plugs have split-shell construction for quick, easy access for wiring or inspection. Splash-proof but not weather-proof. Plug and receptacle dust caps are available. Laboratory tests show an average voltage-drop of not more than 10 millivolts, with current flowing at the rated capacity. Insulating material is black phenolic which has a 0.7% absorption in 24 hours of immersion in water and a dielectric strength of 550 volts per mil at 60 cycles. Two to 6 contact inserts accommodate No. 10 B&S stranded wire; 8 contact insert No. 14 wire. Shell designs of the P-CG-11S and P-CG-12S, cord plugs have such improvements as shorter length, new rubber bushing, improved latch and spring, integral clamp. Shell of plug material is steel, integral clamp zinc.



NEW TYPES WILL MATE WITH SAME CORRESPONDING FITTINGS AS OLD DESIGN

**APPLICATION**



"P" series connectors used on 16 mm. sound recorder, Mfg. by Reeves Sound Studios Inc.

(P Series continued on next page)

# CANNON PLUGS



CANNON ELECTRIC COMPANY

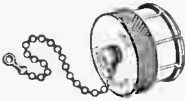
## TYPE P CONNECTOR SERIES

SEE AUDIO BULLETIN FOR  
COMPLETE DETAILS

### ACCESSORY ITEMS

#### DUST CAPS

Fits all "Type P" fittings with pin inserts. Made of brass, cadmium plated, with nickel silver bead chain.



Lbs.	Cat. No.	List
0.081	PPC	\$2.80
0.082	PCI*	3.30

\*Type PCI is insulated inside for application where contacts are "hot".

#### TYPE PRC DUST CAP

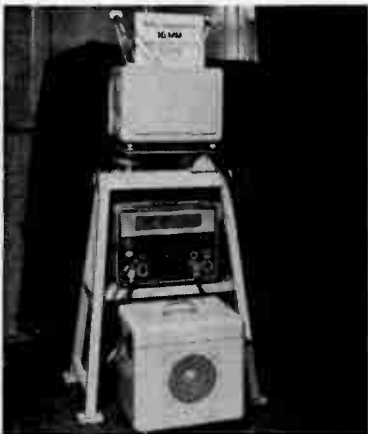
Fits all "Type P" fittings with socket inserts. Made of brass, cadmium plated with nickel silver bead chain.



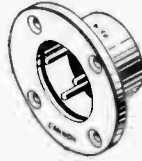
Lbs.	Cat. No.	List
0.095	PRC	\$2.37

MINIMUM FLASHOVER  
VOLTAGES ON P INSERTS  
P2—1600v, P3—1600v  
P4—1900v, P5—1600v  
P6—1600v, P8—1300v

### APPLICATION



TYPE "XL" AND "P" CONNECTORS SHOWN ON 16 MM. SOUND MOTION PICTURE PROJECTOR MFG. BY DeVRY CORPORATION.



TYPE "P-14" RECEPTACLE (Pin Insert), FLUSH MOUNTING  
Flange is 2" in diameter, drilled with four 0.120" diameter holes to take four No. 4-40 mounting screws, arranged 90° apart on a radius of 1 1/8". Shell is die-cast zinc, satin chrome finish.

Contacts	Capacity	Wt. Lbs.	Cat. No.
2	30-amp.	0.104	P2-14
3	30-amp.	0.107	P3-14
4	30-amp.	0.110	P4-14
5	30-amp.	0.113	P5-14
6	30-amp.	0.116	P6-14
8	15-amp.	0.113	P8-14



TYPE "P-35" SINGLE GANG WALL RECEPTACLE (with Socket Insert)—Furnished with brackets for standard switch box. Shell has satin chrome finish on brass plate. Plate is 4 1/2" high and 2 3/4" wide. Latch Locking Device operates from front of panel.

Contacts	Capacity	Wt. Lbs.	Cat. No.
2	30-amp.	0.341	P2-35
3	30-amp.	0.345	P3-35
4	30-amp.	0.349	P4-35
5	30-amp.	0.353	P5-35
6	30-amp.	0.357	P6-35
8	15-amp.	0.353	P8-35



TYPE "P-35-2G" TWO-GANG WALL RECEPTACLE (With Socket Inserts)—Furnished with brackets for standard switch box. Plate is 4 1/2" high and 4 3/8" wide. Both receptacles have latch locking device, operated from front of panel. Plate has satin chrome finish on brass plate.

Contacts	Capacity	Wt. Lbs.	Cat. No.
2	30-amp.	0.448	P2-35-2G
3	30-amp.	0.456	P3-35-2G
4	30-amp.	0.464	P4-35-2G
5	30-amp.	0.472	P5-35-2G
6	30-amp.	0.480	P6-35-2G
8	15-amp.	0.472	P8-35-2G



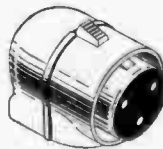
TYPE "P-36" SINGLE GANG WALL RECEPTACLE (With Pin Insert)—Plate is 4 1/2" high and 2 3/4" wide. Furnished with brackets for standard switch box. Satin chrome finish on brass plate.

Contacts	Capacity	Wt. Lbs.	Cat. No.
2	30-amp.	0.277	P2-36
3	30-amp.	0.280	P3-36
4	30-amp.	0.283	P4-36
5	30-amp.	0.286	P5-36
6	30-amp.	0.289	P6-36
8	15-amp.	0.286	P8-36



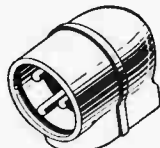
TYPE "P-36-2G" TWO-GANG WALL RECEPTACLE (With Pin Insert)—Plate is 4 1/2" high and 4 3/8" wide. Furnished with brackets for standard switch box. Satin chrome finish on brass plate.

Contacts	Capacity	Wt. Lbs.	Cat. No.
2	30-amp.	0.554	P2-36-2G
3	30-amp.	0.563	P3-36-2G
4	30-amp.	0.572	P4-36-2G
5	30-amp.	0.579	P5-36-2G
6	30-amp.	0.588	P6-36-2G
8	15-amp.	0.579	P8-36-2G



TYPE "P-41" 90° MICROPHONE OR PANEL RECEPTACLE (With Socket Insert)—Can be mounted in equipment or instrument panel. Equipped with latch locking device. Cap is removable for easy wiring. Shell is die-cast zinc, finished in black wrinkle enamel.

Contacts	Capacity	Wt. Lbs.	Cat. No.
2	30-amp.	0.249	P2-41
3	30-amp.	0.253	P3-41
4	30-amp.	0.257	P4-41
5	30-amp.	0.261	P5-41
6	30-amp.	0.265	P6-41
8	15-amp.	0.261	P8-41



TYPE "P-42" 90° MICROPHONE OR PANEL RECEPTACLE (With Pin Insert)—For mounting on equipment or instrument panel. Cap is removable for easy wiring. Shell is made of die-cast zinc with black wrinkle enamel finish.

Contacts	Capacity	Wt. Lbs.	Cat. No.
2	30-amp.	0.176	P2-42
3	30-amp.	0.179	P3-42
4	30-amp.	0.182	P4-42
5	30-amp.	0.185	P5-42
6	30-amp.	0.188	P6-42
8	15-amp.	0.185	P8-42



**TYPE "03-42" MICROPHONE OR PANEL RECEPTACLE (with Pin Insert)**—Has flat base, with two lugs for mounting with #4-40 machine screws. Made of die-cast zinc, and chromium plated.

Contacts	Capacity	Wt. Lbs.	Cat. No.
3	30-amp.	0.271	03-42



**TYPE "03-41" 90° MICROPHONE OR PANEL RECEPTACLE (Socket Insert)**—Flat base is flanged and is attached to microphone or panel by means of two #4-40 machine screws. Made of die-cast zinc, cadmium plated.

Contacts	Capacity	Wt. Lbs.	Cat. No.
3	30-amp.	0.274	03-41



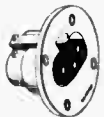
**TYPE "03-11" STRAIGHT CORD PLUG (with Socket Insert)**  
Has integral clamp for 9/32" or smaller cable. Made of die-cast zinc, chromium plated.

Contacts	Capacity	Wt. Lbs.	Cat. No.
3	30-amp.	0.113	03-11



**TYPE "03-12" STRAIGHT CORD PLUG (with Pin Insert)**  
Mates with No. 03-11, 03-13 and 03-41. Has integral cable clamp for 9/32" or smaller cable. Made of die-cast zinc, chromium plated.

Contacts	Capacity	Wt. Lbs.	Cat. No.
3	30-amp.	0.104	03-12



**TYPE "03-13" FLUSH WALL RECEPTACLE (with Socket Insert)**  
Flange is 2" in diameter, drilled with four holes to take No. 4-40 mounting screws, 90° apart on a radius of 13/16". Made of die-cast zinc, chromium plated. Latch locking device is operated from panel front.

Contacts	Capacity	Wt. Lbs.	Cat. No.
3	30-amp.	0.148	03-13



**TYPE "03-14" FLUSH WALL RECEPTACLE (with Pin Insert)**  
The flange is 2" in diameter, drilled with four holes to take No. 4-40 oval-head machine screws, 90° apart, on a radius of 13/16". Made of die-cast zinc, chromium plated.

Contacts	Capacity	Wt. Lbs.	Cat. No.
3	30-amp.	0.107	03-14



**TYPE "X-11" CORD PLUG (with Socket Insert)**  
Sturdily built for dependable service. Light in weight. Shell is die cast zinc, nickel finish. Will take 13/16" to 9/32" cable. Mates with: X-14 wall receptacle, X-12 straight cord plug, X-42 microphone receptacle and X-44L receptacle.

Contacts	Capacity	Wt. Lbs.	Cat. No.
1	15-amp.	0.081	X-1-11
3	15-amp.	0.083	X-3-11
4	{3-10-amp.} {1-15-amp.}	0.085	X-4-11



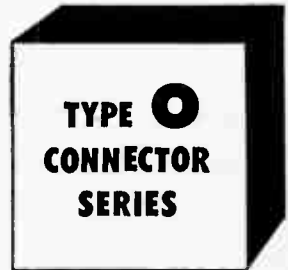
**TYPE "X-12" CORD PLUG (with Pin Insert)**  
Mates with: X-11 straight cord plug (socket insert) or X-13 wall receptacle (socket insert). Shell is die-cast zinc, nickel finish. Will take 3/16" to 9/32" cable.

Contacts	Capacity	Wt. Lbs.	Cat. No.
1	15-amp.	0.061	X-1-12
3	15-amp.	0.063	X-3-12
4	{3-10-amp.} {1-15-amp.}	0.065	X-4-12



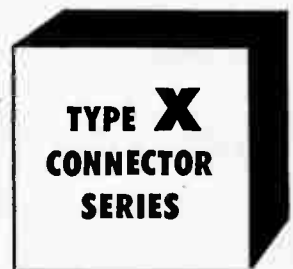
**TYPE "X-13" WALL RECEPTACLE (with Socket Insert)**  
Body fits in 7/8" hole and extends 1-1/8" behind flange. Flange is 1-3/8" in diameter and drilled for three No. 4-40 screws 120° apart. Shell is die-cast zinc, nickel finish. Mates with X-12.

Contacts	Capacity	Wt. Lbs.	Cat. No.
1	15-amp.	0.081	X-1-13
3	15-amp.	0.083	X-3-13
4	{3-10-amp.} {1-15-amp.}	0.085	X-4-13



CANNON "TYPE O" PLUGS AND RECEPTACLES. This series consists of a line of 3-contact oval-shaped plugs and receptacles, equipped with Latch Locking Device. Contacts are silver-plated, full-floating, non-twisting, with a 30 a. current rating. Solder terminals are tinned for ease of wiring. 30 a. contacts accommodate No. 10 stranded wire. 2400 v. flashover.

**APPLICATION**

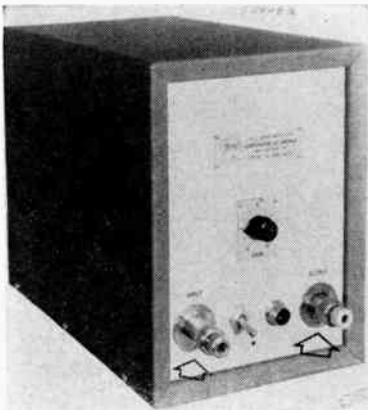


CANNON "TYPE X" PLUGS AND RECEPTACLES. The "Type X" Series of small connectors offers inexpensive fittings of reliable quality for sound service, radio, public address systems and geophysical research. In addition to compactness, many exclusive Cannon features are embodied in this series, such as full floating contacts in all socket inserts. Solder pot cable connections are easily accessible. Cable glands are removable. Contacts are so positive that no latching device is needed for ordinary uses. Operating voltages X-1, 500v, X-3, 200v, X-4, 133v.

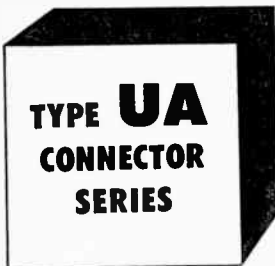


(Continued from previous page)

## APPLICATION

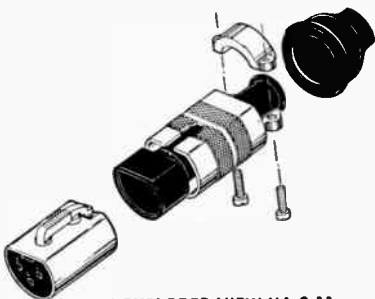


X connectors used on 60-cycle servo amplifier for laboratory and general use, manufactured by Servo Corp. of America.



The UA Series of audio connectors, designed in co-operation with the RETMA Committee, has all the features of Type P, O, and XL plus the following: (1) gold-plated contacts for long life and "no noise" (2) double protection rubber relief collar and rubber bushings (3) flat-top polarization for finger-touch action (4) stronger and better latch lock (5) steel plug shells and insert barrel (6) spring-action insert removal — no screws.

Insulators are high dielectric, molded general-purpose phenolic, 15 a. contacts with 2400 v minimum flashover; for No. 14 stranded wire. Max. cable entry is 1/2". Shown in Audio Bulletin.



SEMI-EXPLODED VIEW UA-3-11

showing rubber cushion that fits over pin contacts to avoid shocks, provide protection from moisture, improve insulation factors.

(UA Series continued next page)

### TYPE "X-14" WALL RECEPTACLE (With Pin Insert)

Body fits in 3/4" hole and extends 23/32" behind the flange, which is 1-3/8" in diameter and drilled for three No. 4-40 machine screws, 120° apart. Shell is zinc, nickel plated finish. Mates with X-11. Solder pots extend 1/4" beyond rear skirt.



Contacts	Capacity	Wt. Lbs.	Cat. No.
1	15-amp.	0.040	X-1-14
3	15-amp.	0.042	X-3-14
4	{3-10-amp.} {1-15-amp.}	0.044	X-4-14

### TYPE "X-42" MICROPHONE RECEPTACLE (With Pin Insert)

Has all the features of "Type X" straight cord plugs and wall receptacles but it is mounted on a flat base. Shell is die-cast zinc, nickel finish. Mates with X-11. Mounting holes are 0.144" in diameter and 1" apart.



Contacts	Capacity	Wt. Lbs.	Cat. No.
3	15-amp.	0.063	X-3-42

### TYPE UA-3-11 PLUG (Socket Insert)

The UA-11 plug is approximately 3-1/2" long (including rubber bushing); 1-3/16" wide and 1-1/32" thick. Steel shell and barrel. Mates with UA-12, UA-32, and UA-42.



Contacts	Capacity	Wt. Lbs.	Cat. No.
3	15-amp.	0.15	UA-3-11

### TYPE UA-3-12 PLUG (Pin Insert)

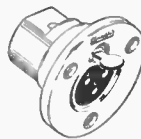
The UA-12 plug is approximately 3-1/4" long, including rubber relief collar. Steel shell. Mates with UA-3-11, UA-3-13, and UA-3-31.



Contacts	Capacity	Wt. Lbs.	Cat. No.
3	15-amp.	0.11	UA-3-12

### TYPE UA-3-13 RECEPTACLE (Socket Insert)

The UA-13 receptacle has a round flange compared to the rectangular flange of the UA-31. Three mounting holes are provided, 0.120" diameter countersunk for No. 4 machine screws. Mates with UA-3-12.



Contacts	Capacity	Wt. Lbs.	Cat. No.
3	15-amp.	0.14	UA-3-13

### TYPE UA-3-14 RECEPTACLE (Pin Insert)

The UA-14 receptacle, like the UA-13, has a round flange. Barrel extends 25/32" behind flange with 15/64" solder pot extension. A 1" hole is required to mount. Mates with UA-3-11.



Contacts	Capacity	Wt. Lbs.	Cat. No.
3	15-amp.	0.08	UA-3-14

### TYPE UA-3-31 RECEPTACLE (Socket Insert)

The UA-31 receptacle has a rectangular flange construction, extends 1-3/32" behind flange plus 3/16" max. solder pot extension, and requires a 1" clearance hole. Mates with UA-3-12.



Contacts	Capacity	Wt. Lbs.	Cat. No.
3	15-amp.	0.13	UA-3-31

### TYPE UA-3-32 RECEPTACLE (Pin Insert)

The UA-3-32 Receptacle is similar to UA-31. Barrel extends 25/32" plus 15/64" max. solder pot extension behind flange, and requires a 1" clearance hole. Mates with XL-3-11.



Contacts	Capacity	Wt. Lbs.	Cat. No.
3	15-amp.	0.07	UA-3-32



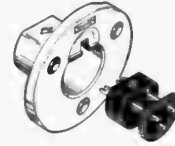


**TYPE UA-3-42 RECEPTACLE (Pin Insert)**



The UA-42 is a special mounting receptacle adaptable to microphones and other applications where it is advisable to mount receptacle parallel to the equipment, etc. Similar to XL-42 and X-42 types.

Contacts	Capacity	Wt. Lbs.	Cat. No.
3	15-amp.	0.08	UA-3-42



UA-3-14  
EXPLODED VIEW

**TYPE "XK-11" STRAIGHT CORD PLUG (With Socket Insert)**



Shell is of die-cast zinc, bright nickel plated finish. Equipped with quick-acting coupling ring. Solder pot connections are easily accessible. Takes  $\frac{3}{8}$ " to  $\frac{5}{8}$ " cable. Built for long, dependable service. Mates with -12, -14.

Contacts	Capacity	Wt. Lbs.	Cat. No.	List Pr.
1	15-amp.	0.081	XK-1-11	\$5.50
3	15-amp.	0.083	XK-3-11	5.50
4	{ 3-10-amp. } { 1-15-amp. }	0.085	XK-4-11	7.80

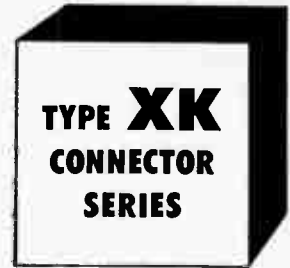
Note: All illustrations are not shown in same scale reduction.

**TYPE "XK-12" STRAIGHT CORD PLUG (With Pin Insert)**



For use in conjunction with straight cord plug (socket insert) or wall receptacle (socket insert) with coupling nut. Shell is made of die-cast zinc, bright nickel plated finish. Takes  $\frac{3}{8}$ " to  $\frac{5}{8}$ " cable.

Contacts	Capacity	Wt. Lbs.	Cat. No.	List Pr.
1	15-amp.	0.081	XK-1-12	\$3.15
3	15-amp.	0.083	XK-3-12	3.15
4	{ 3-10-amp. } { 1-15-amp. }	0.085	XK-4-12	4.75



**TYPE "XK-14" WALL RECEPTACLE (With Pin Insert)**



Body fits in a  $\frac{3}{4}$ " hole and extends  $\frac{1}{8}$ " behind a  $\frac{1}{4}$ " flange. Flange is  $1\frac{1}{2}$ " in diameter, drilled for four No. 4-40 mounting screws on a  $\frac{5}{8}$ " radius, 90° apart. Shell is made of bright nickel plated brass. Solder pots extend  $\frac{1}{4}$ " beyond body. Has external Acme thread on shell and mates with straight cord plug XK-11.

Contacts	Capacity	Wt. Lbs.	Cat. No.	List Pr.
1	15-amp.	0.045	XK-1-14	\$3.40
3	15-amp.	0.047	XK-3-14	3.65
4	{ 3-10-amp. } { 1-15-amp. }	0.049	XK-4-14	4.75

**TYPE "XK-13L" WALL RECEPTACLE (With Socket Insert)**



Body fits in  $1\frac{1}{4}$ " hole and extends  $1\frac{1}{2}$ " behind flange. Flange is  $1\frac{1}{2}$ " in diameter and drilled for four No. 4-40 flat-head mounting screws on a  $\frac{5}{8}$ " radius, 90° apart. Shell is made of brass, nickel finish. Solder pots on contacts extend  $\frac{1}{8}$ " beyond body. Mates with corresponding straight cord plug (pin insert) XK-12.

Contacts	Capacity	Wt. Lbs.	Cat. No.	List Pr.
1	15-amp.	0.144	XK-1-13L	\$11.88
3	15-amp.	0.146	XK-3-13L	12.18
4	{ 3-10-amp. } { 1-15-amp. }	0.148	XK-4-13L	12.42



EXPLODED VIEW XK-4-11

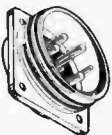
**TYPE SK -M7-21C-1/2 PLUG (With Socket Insert)**



$\frac{1}{2}$ " clamp entry, mates with receptacle shown below.

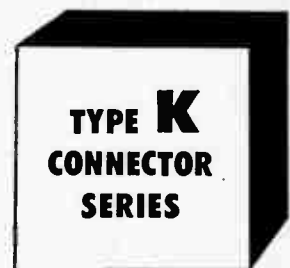
Contacts	Capacity	Wt. Lbs.	Cat. No.	List Pr.
7	{ 3-10-amp. } { 4-30-amp. }	0.66	SK-M7-21C-1/2	\$4.79

**Type SK -M7-32S RECEPTACLE (With Pin Insert)**



Mounting receptacle for SK-M7-21C-1/2" plug shown above. Center line to center line mounting holes 1.038". Clearance hole, 1-5/16".

Contacts	Capacity	Wt. Lbs.	Cat. No.	List Pr.
7	{ 3-10-amp. } { 4-30-amp. }	0.04	SK-M7-32S	\$2.63



For telephone recording connectors made by large suppliers of telephone equipment.

**TEST POINT JACKS**



High quality phone tip jack to accommodate standard RETMA 0.081" dia. phone tip for laboratory use. Rugged construction, nylon insulator for maximum life under hard usage. In 7 colors. See Bulletin TJ-2 for details.

Contacts	Capacitance	Wt. Lbs.	Cat. No.	List Pr.
1	5-7ufd	0.006	45E	\$0.60

**45-E  
TEST POINT JACK**

# CANNON PLUGS



CANNON ELECTRIC COMPANY

## TYPE LK & LKT (TV) CONNECTOR SERIES

The LK & LKT (TV) connectors are used on television cameras and related equipment and are a part of the Cannon "K" series. The assemblies with the "LK" prefix are standard "K," those prefixes with "LKT" have special shells or cable entry construction.

The R24C insert has the following arrangement of 24 contacts: 3 No. 16 coaxials, 21 No. 14 contacts. Shells are aluminum alloy cadmium plated; insulators are melamine, contacts are silver-plated brass.

### LKT DUST CAPS



For pin insert assemblies. Chain 6 $\frac{3}{4}$ " long, Eyelet 1 $\frac{1}{2}$ " dia.

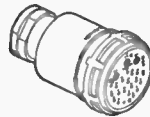
Cat. No.	Wt. Lbs.	List Price
LKT-60A-2	0.113	\$3.80

For socket insert assemblies.

Cat. No.	Wt. Lbs.	List Price
LKT-59A-2	0.147	\$3.03

MATING SOCKET ASSEMBLIES SHOWN ON FOLLOWING PAGE

## TYPE D subminiature HERMETICALLY SEALED



### TYPE LKT-R24C-21-7/8 PLUG (With Socket Insert)

Special long end bell and coupling means include gland nut, friction washer, bushing, gland washer and packing ring to support cable.

Contacts	Cat. No.	Wt. Lbs.	List Pr.
24	LKT-R24C-21-7/8	1.01	\$20.47



### TYPE LKT-R24C-22-7/8 PLUG (With Pin Insert)

Same basic construction as LKT-R24C-21-7/8, except for: pin insert, exterior thread, rubber bumper ring.

Contacts	Cat. No.	Wt. Lbs.	List Pr.
24	LKT-R24C-22-7/8	0.860	\$19.43



### TYPE LKT-R24C-23-7/8 ANGLE 90° PLUG (With Socket Insert)

Similar to above fittings except for shell style which is a special 90° type shell. 7/8" cable entry.

Contacts	Cat. No.	Wt. Lbs.	List Pr.
24	LKT-R24C-23-7/8	1.04	\$29.51



### TYPE LKT-R24C-24-7/8 ANGLE 90° PLUG (With Pin Insert)

Similar to above except for pin insert, exterior thread and rubber bumper ring.

Contacts	Cat. No.	Wt. Lbs.	List Pr.
24	LKT-R24C-24-7/8	0.772	\$33.05



### TYPE LK-R24C-31S RECEPTACLE (With Socket Insert)

Wall- or box-mounting receptacle with four 0.169 dia. mounting holes 2.077" center to center, 2-9/16" square flange.

Contacts	Cat. No.	Wt. Lbs.	List Pr.
24	LK-R24C-31S	0.372	\$11.00



### TYPE LK-R24C-32S RECEPTACLE (With Pin Insert)

Similar to above receptacle except for exterior thread.

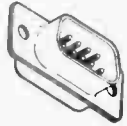
Contacts	Cat. No.	Wt. Lbs.	List Pr.
24	LK-R24C-32S	0.183	\$8.67

### HERMETICALLY SEALED PIN ASSEMBLIES With solder-pot terminals

Contacts	Cat. No.	Wt. Lbs.	List Pr.
9	DEH-9P-002	....	\$ 6.25
15	DAH-15P-002	0.021	6.45
25	DBH-25P-002	0.027	10.10
37	DCH-37P-002	0.037	14.65
50	DDH-50P-002	0.041	19.85

### With eyelet terminals

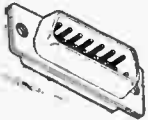
Contacts	Cat. No.	Wt. Lbs.	List Pr.
9	DEH-9P-001	....	5.45
15	DAH-15P-001	0.021	5.55
25	DBH-25P-001	0.027	7.50
37	DCH-37P-001	0.037	9.90
50	DDH-50P-001	0.041	12.80



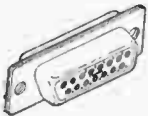
**TYPE DE-9P CONNECTORS (Pin Insert)**  
 Contacts 9      Cat. No. DE-9P      Wt. Lbs. 0.011      List Pr. \$2.29



**TYPE DE-9S CONNECTORS (Socket Insert)**  
 Contacts 9      Cat. No. DE-9S      Wt. Lbs. 0.012      List Pr. \$3.04



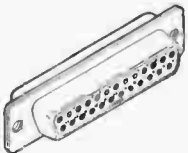
**TYPE DA-15P CONNECTOR (Pin Insert)**  
 (approx. actual size)  
 Contacts 15      Cat. No. DA-15P      Wt. Lbs. 0.013      List Pr. \$2.19



**TYPE DA-15S CONNECTOR (Socket Insert)**  
 Contacts 15      Cat. No. DA-15S      Wt. Lbs. 0.014      List Pr. \$3.41



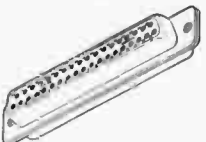
**TYPE DB-25P CONNECTOR (Pin Insert)**  
 Contacts 25      Cat. No. DB-25P      Wt. Lbs. 0.023      List Pr. \$3.35



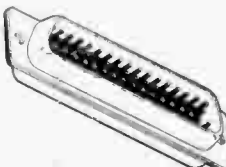
**TYPE DB-25S CONNECTOR (Socket Insert)**  
 Contacts 25      Cat. No. DB-25S      Wt. Lbs. 0.031      List Pr. \$5.38



**TYPE DC-37P CONNECTOR (Pin Insert)**  
 Contacts 37      Cat. No. DC-37P      Wt. Lbs. 0.035      List Pr. \$4.73

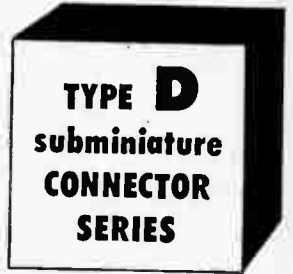


**TYPE DC-37S CONNECTOR (Socket Insert)**  
 Contacts 37      Cat. No. DC-37S      Wt. Lbs. 0.035      List Pr. \$7.73



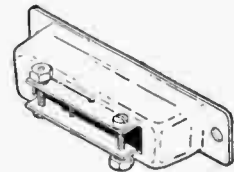
**TYPE DD-50P CONNECTOR (Pin Insert)**  
 Contacts 50      Cat. No. DD-50P      Wt. Lbs. 0.035      List Pr. \$6.34

**TYPE DD-50S CONNECTOR (Socket Insert)**  
 Contacts 50      Cat. No. DD-50S      Wt. Lbs. 0.040      List Pr. \$10.40



**TYPE D  
 subminiature  
 CONNECTOR  
 SERIES**

Type "D" sub-miniatures are small, compact, lightweight connectors in 4 sizes, having 15, 25, 37, or 50 gold-plated contacts with 5 a current rating; flashover; 1700 v dc, 1200 v ac rms. Wire size No. 20; Cadmium plated steel shell. Rack type can be used to connect and make a movable plug with addition of junction shell. Insulation is high dielectric Nylon FM 10001, key-stone polarization. Average contact resistance 4.56 (8 max.) milliohms per ampere. See "D" Bulletin for complete data.

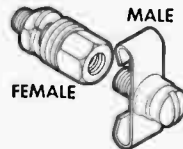


**"D" JUNCTION SHELLS**

Fit Pin or Socket Assemblies.

Cat. No.	Wt. Lbs.	List Pr.
DA-J/5	0.010	\$ .68
DB-J/5	0.014	.70
*DC-J/5	0.014	.97
*DD-J/5	0.016	.99

\*Sizes DC and DD have 3 Clamp Screws.



**LOCKING DEVICES FOR D TYPES**

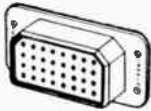
Cat. No.	List Pr.
20418-2 (Female screw lock assembly for all sizes)	\$ .33
20419 (Male screw lock assembly for sizes DA, DB, DC, DE)	.28
20420 (Male screw lock assembly for size DD)	.42

# CANNON PLUGS

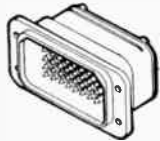


CANNON ELECTRIC COMPANY

## DPA ASSEMBLIES



DPA-33S  
SOCKET  
ASSEMBLY



DPA-34P  
PIN  
ASSEMBLY

ORDER NUMBERS	LIST PRICE
DPA-24-33S	9.29
DPA-24-34S	9.29
DPA-24-33P	7.36
DPA-24-34P	7.36
DPA-24C2-33S	10.97
DPA-24C2-34S	10.97
DPA-24C2-33P	9.40
DPA-24C2-34P	9.40
DPA-B24C2-33S	12.05
DPA-B24C2-34S	12.05
DPA-B24C2-33P	10.48
DPA-B24C2-34P	10.48
DPA-C24C2-33S	11.95
DPA-C24C2-34S	11.95
DPA-C24C2-33P	10.38
DPA-C24C2-34P	10.38
DPA-D24C2-33S	11.53
DPA-D24C2-34S	11.53
DPA-D24C2-33P	11.10
DPA-D24C2-34P	11.10
DPA-24C1HV1-33S	11.33
DPA-24C1HV1-34S	11.33
DPA-24C1HV1-33P	10.48
DPA-24C1HV1-34P	10.48
DPA-24HV2-33S	11.69
DPA-24HV2-34S	11.69
DPA-24HV2-33P	11.56
DPA-24HV2-34P	11.56
DPA-29C1-33S	10.43
DPA-29C1-34S	10.43
DPA-29C1-33P	7.90
DPA-29C1-34P	7.90
DPA-29HV1-33S	10.79
DPA-29HV1-34S	10.79
DPA-29HV1-33P	8.98
DPA-29HV1-34P	8.98
DPA-32-33S	9.71
DPA-32-34S	9.71
DPA-32-33P	6.26
DPA-32-34P	6.26

### DPA ACCESSORIES

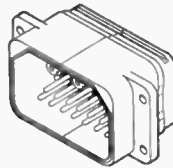
### JUNCTION SHELLS

ORDER NUMBERS	LIST PRICE
DPA-CG-21/32	2.40
DPA-CG-21/32	2.40
DPA-33 & 34* (For Potting)	.95

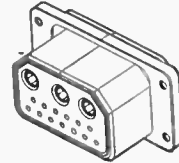
### DUST CAPS

DPA-59	.18
DPA-68	.18

## DPX ASSEMBLIES



DPX-34P  
PIN  
ASSEMBLY



DPX-33S  
SOCKET  
ASSEMBLY

ORDER NUMBERS	LIST PRICE	ORDER NUMBERS	LIST PRICE
DPX-C7-33S	19.13	DPX-E16C3-33S	17.48
DPX-C7-34S	19.13	DPX-E16C3-34S	17.48
DPX-C7-33P	26.63	DPX-F16C3-33S	13.37
DPX-C7-34P	26.63	DPX-F16C3-34S	13.37
DPX-C7A-33S	25.72	DPX-G16C3-33S	15.06
DPX-C7A-34S	25.72	DPX-G16C3-34S	15.06
DPX-C7A-33P	21.38	DPX-G16C3-33P	13.54
DPX-C7A-34P	21.38	DPX-G16C3-34P	13.54
DPX-C7B-33S	16.62	DPX-G16C3-33S (F32)	15.32
DPX-C7B-34S	16.62	DPX-G16C3-33P (F32)	13.80
DPX-C7B-33P	21.31	DPX-G16C3-34P (F32)	13.80
DPX-C7B-34P	21.31	DPX-J16C3-33S	17.94
DPX-C7D-33S	31.11	DPX-J16C3-34S	15.28
DPX-C7D-34S	31.11	DPX-J16C3-33P	15.28
DPX-C7D-34S	31.11	DPX-J16C3-34P	15.28
DPX-C7E-33S	22.10	DPX-J16C3-33S (F32)	18.20
DPX-C7E-34S	22.10	DPX-J16C3-34S (F32)	18.20
DPX-8-33S	6.42	DPX-J16C3-33P (F32)	15.54
DPX-8-34S	6.42	DPX-J16C3-34P (F32)	15.54
DPX-8-33P	5.10	DPX-K16C3-33S	18.74
DPX-8-34P	5.10	DPX-K16C3-34S	18.74
DPX-13-33S	5.63	DPX-17-33S	6.07
DPX-13-34S	5.63	DPX-17-34S	6.07
DPX-13-33P	4.85	DPX-17-33P	4.23
DPX-13-34P	4.85	DPX-17-34P	4.23
DPX-13-33S (F32)	5.89	DPX-23-33S	7.36
DPX-13-34S (F32)	5.89	DPX-23-34S	7.36
DPX-13-33P (F32)	5.11	DPX-23-33P	4.89
DPX-13-34P (F32)	5.11	DPX-23-34P	4.89
DPX-B16C2-33S	12.31	DPX-24C2-33S	12.04
DPX-B16C2-34S	12.31	DPX-24C2-34S	12.04
DPX-B16C2-33P	10.31	DPX-24C2-33P	11.82
DPX-B16C2-34P	10.31	DPX-24C2-34P	11.82
DPX-B16C2-33S (F32)	12.57	DPX-A24C2-33S	15.36
DPX-B16C2-34S (F32)	12.57	DPX-A24C2-34S	15.36
DPX-B16C2-33P (F32)	10.57	DPX-25C3-33S	14.35
DPX-B16C2-34P (F32)	10.57	DPX-25C3-34S	14.35
DPX-16C3-33S	12.38	DPX-25C3-33P	15.29
DPX-16C3-34S	12.38	DPX-25C3-34P	15.29
DPX-16C3-33P	14.30	DPX-A25C3-33S	19.45
DPX-16C3-34P	14.30	DPX-A25C3-34S	19.45
DPX-A16C3-33S	13.64	DPX-26-33S	8.73
DPX-A16C3-34S	13.64	DPX-26-34S	8.73
DPX-A16C3-33P	15.77	DPX-26-33P	7.28
DPX-A16C3-34P	15.77	DPX-26-34P	7.28
DPX-B16C3-33S	15.63	DPX-26-33S (F32)	9.25
DPX-B16C3-34S	15.63	DPX-26-34S (F32)	9.25
DPX-B16C3-33P	13.03	DPX-26-33P (F32)	7.80
DPX-B16C3-34P	13.03	DPX-26-34P (F32)	7.80
DPX-B16C3-33S (F32)	15.89	DPX-40-33S	10.89
DPX-B16C3-33S (F32)	15.89	DPX-40-34S	6.76
DPX-B16C3-33P (F32)	13.29		
DPX-B16C3-34P (F32)	13.29		
DPX-C16C3-33S	11.73		
DPX-C16C3-34S	11.73		
DPX-C16C3-33P	13.00		
DPX-C16C3-34P	13.00		
DPX-G16C3-34S (F32)	15.32		
DPX-C16C3-33S (F32)	11.99		
DPX-C16C3-34S (F32)	11.99		
DPX-C16C3-33P (F32)	13.26		
DPX-C16C3-34P (F32)	13.26		
DPX-D16C3-33S	11.27		
DPX-D16C3-34S	11.27		
DPX-D16C3-33P	12.82		
DPX-D16C3-34P	12.82		

### DPX ACCESSORIES

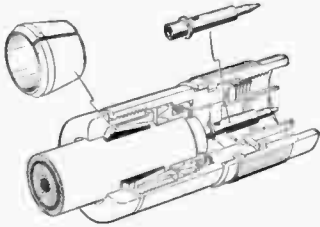
### JUNCTION SHELLS

ORDER NUMBERS	LIST PRICE
DPX-CG-25/32	1.81
DPX-CG-25/32	2.65
DPX-CG-1/4-58	2.07
DPX-CG-3/16	2.21
DPX-21 & 22 LC-15/16 CG	2.64
DPX-23 & 24 LC-15/16 CG	2.74
DPX-21 & 22 LC-15/16 CG-1	2.56



**CANNON RF CO-AXIALS**

Cannon RF co-axial connectors (formerly manufactured by Diamond Mfg. Co.) combine weatherproofing and locked-pin contact with a new collet clamping device designed to withstand twice the standard pull-out force required by MIL specifications.



**BNC SERIES**

Small bayonet lock. Cable types RG-55, 58, 59, 62, 71, 122 and 142/U.

Military Number	Cannon Number	List Price
UG-88/U	DIC 723	\$ 1.90
UG-88-B/U	DIC 2210	1.95
UG-88-C/U	DIC 2303	2.40
UG-89/U	DIC 867	2.15
UG-89-B/U	DIC 2337	2.85
UG-90/U	DIC 874	2.90
CU123-A/U	DIC 2047	.95
CU155-A/U	DIC 2048	.80
CU159/U	DIC 2088	1.60
UG-185/U	DIC 870	1.85
UG-254-A/U	DIC 2023	5.95
UG-260/U	DIC 822	2.10
UG-260-A/U	DIC 2212	2.00
UG-260-B/U	DIC 2314	2.50
UG-261/U	DIC 823	2.25
UG-261-B/U	DIC 2338	2.75
UG-262/U	DIC 824	2.05
UG-262-B/U	DIC 2335	2.75
UG-274/U	DIC 861	4.90
UG-274-A/U	DIC 2423	6.35
UG-290/U	DIC 811	1.75
UG-290-A/U	DIC 2364	2.00
UG-291/U	DIC 875	1.95
UG-291-B/U	DIC 2336	2.60
UG-306/U	DIC 862	4.00
UG-306-A/U	DIC 2457	5.20
UG-414/U	DIC 975	2.70
UG-447/U	DIC 2248	2.00
UG-491/U	DIC 977	3.85
UG-492-A/U	DIC 2351	6.10
UG-492-B/U	DIC 2870	10.80
UG-535/U	DIC 994	3.75
MX554/U	DIC 2299	3.80
UG-604/U	DIC 952	1.85
UG-625/U	DIC 2137	1.80
UG-657/U	DIC 2621	3.30
UG-909/U	DIC 2588	4.10
UG-910/U	DIC 2589	3.90
UG-912/U	DIC 2339	4.00
UG-913/U	DIC 2861	7.40
UG-932/U	DIC 2428	3.95
UG-1094/U	DIC 2558	2.15
UG-1098/U	DIC 2557	5.05
MX1530/U	DIC 2591	1.15
MX1684/U	DIC 2038	.95
...	DIC 951	2.60
...	DIC 960	1.40
...	DIC 997	.95
...	DIC 2005	6.50
...	DIC 2039	3.05
...	DIC 2110	1.10
...	DIC 2150	4.35
...	DIC 2162	.90
...	DIC 2163	.90
...	DIC 2192	2.20
...	DIC 2193	2.40
...	DIC 2503	6.45
...	DIC 2507	3.15
...	DIC 2511	3.75
...	DIC 2551	3.30
...	DIC 2678	1.00
...	DIC 2741	2.10
...	DIC 2753	2.30
...	DIC 2880	4.50

**C SERIES**

Medium bayonet lock. Cable types RG-8, 9, 10, 11, 12, 13/U.

Military Number	Cannon Number	List Price
UG-566-A/U	DIC 5002	\$11.55
UG-567-A/U	DIC 5003	10.35
UG-573-A/U	DIC 5021	7.25
MX1142/U	DIC 5022	2.65

**HN SERIES**

Screw type coupling. High voltage. Cable types RG-8, 9, 10, 11, 17, 18/U.

Military Number	Cannon Number	List Price
UG-59-A/U	DIC 801	\$ 6.30
UG-59-B/U	DIC 2482	7.25
UG-59-D/U	DIC 2854	11.80
UG-212-A/U	DIC 775	6.45
UG-212-C/U	DIC 2850	15.70
UG-494-A/U	DIC 2478	16.95
UG-496/U	DIC 1077	4.05
UG-1019/U	DIC 2011	16.35

**LC SERIES**

Large size. Cable types RG-17, 18/U.

Military Number	Cannon Number	List Price
UG-532/U	DIC 2464	\$24.70
...	DIC 2624	29.95

**LN SERIES**

Screw type coupling. Cable types RG-14/U and 74/U.

Military Number	Cannon Number	List Price
UG-97-A/U	DIC 1015	\$12.25
UG-100-A/U	DIC 1004	7.80

**MB SERIES**

Small bayonet lock. Cable types RG-55, 58, 59, 62, 71/U, 3/32" DOD.

Military Number	Cannon Number	List Price
...	DIC 2900	\$2.10
...	DIC 2901	1.75
...	DIC 2903	2.20
...	DIC 2907	2.10
...	DIC 2908	1.60
...	DIC 2915	2.00
...	DIC 2916	2.60
...	DIC 2904	1.50
...	DIC 2905	1.45
...	DIC 2906	1.40
...	DIC 2902	1.35
...	DIC 2909	3.20
...	DIC 2914	1.40
...	DIC 2910	2.95
...	DIC 2911	4.00
...	DIC 2912	1.15
...	DIC 2913	3.80

**MINIATURES**

Screw type coupling. Cable types 50, 70, and 93 ohm miniature.

Military Number	Cannon Number	List Price
...	DIC 2243	\$2.10
...	DIC 2499	1.85
...	DIC 2710	4.95
...	DIC 2835	9.00
...	DIC 2844	6.50

**N SERIES**

Screw type coupling. Cable types RG-5, 6, 8, 9, 10, 11, 14, 17, 18, 21, 74, 87, 116/U.

Military Number	Cannon Number	List Price
UG-18-B/U	EIC 828	\$ 4.10
UG-21-B/U	EIC 790	3.80
UG-21-D/U	EIC 2138	5.45
UG-22-B/U	EIC 794	4.25
UG-22-D/U	EIC 2139	3.90
UG-23-B/U	EIC 795	3.50
UG-23-D/U	EIC 2140	3.60
UG-27-B/U	DIC 1002	7.15
UG-27-C/U	DIC 2291	8.50
UG-28-A/U	DIC 980	7.25
UG-29-B/U	DIC 979	3.60

Military Number	Cannon Number	List Price
UG-30-D/U	DIC 2292	11.00
UG-57-B/U	DIC 2003	6.10
UG-58-A/U	DIC 2004	2.20
UG-107-B/U	DIC 935	8.85
UG-167-B/U	DIC 2538	11.55
UG-204-C/U	DIC 3016	7.90
UG-536/U	DIC 2297	4.95
UG-536-A/U	DIC 2689	5.50
UG-594/U	DIC 972	10.30
MX913/U	DIC 2063	1.40
UG-1186/U	DIC 2891	4.80

**PULSE TYPES**

Ceramic insert. High voltage pulse and dc usage. Cable types RG-25, 26, 27, 28, 64, 77, 78, 88/U.

Military Number	Cannon Number	List Price
UG-37-A/U	DIC 893	\$54.35
UG-174/U	DIC 895	35.40
UG-350/U	DIC 963	28.75
UG-180-A/U	DIC 2572	18.05

**SKL TYPE**

For connection to Klystron Tube.

Military Number	Cannon Number	List Price
UG-276/U	DIC 2013	\$14.40

**SM SERIES**

Small screw type coupling. Cable types RG-55, 58, 59, 62, 71/U.

Military Number	Cannon Number	List Price
UG-692/U	DIC 2642	\$1.65
UG-693/U	DIC 2643	2.15
UG-699/U	DIC 2649	1.80
UG-698/U	DIC 2648	1.75
UG-700/U	DIC 2650	1.50
UG-923/U	DIC 2651	1.15
UG-694/U	DIC 2644	1.80
UG-696/U	DIC 2646	2.85
UG-697/U	DIC 2647	1.10
UG-690/U	DIC 2640	2.65
UG-691/U	DIC 2641	4.90
UG-695/U	DIC 2645	1.30

**UHF TYPE**

Reducing Adapters.

Military Number	Cannon Number	List Price
UG-175/U	DIC 2719	\$5.40
UG-176/U	DIC 2718	.40

**ADAPTERS BETWEEN SERIES**

For coupling between various cable connector series.

Military Number	Cannon Number	List Price
UG-83/U	DIC 858	\$ 5.20
UG-201/U	DIC 859	4.40
UG-201-A/U	DIC 2393	5.40
UG-255/U	DIC 863	5.95
UG-273/U	DIC 866	3.65
UG-349/U	DIC 2302	4.75
UG-349-A/U	DIC 2673	6.55
UG-606/U	DIC 1017	7.40
UG-971/U	DIC 2246	11.45
UG-1107/U	DIC 2361	10.75
...	DIC 1093	6.05
...	DIC 2537	3.60

**PANEL TEST JACKS**

For standard 0.080" test prod.

Colors	Cannon Number	List Price
Natural	DIC 2780	\$ .95
Red	DIC 2781	.95
Black	DIC 2782	.95
Green	DIC 2783	.95
Blue	DIC 2784	.95
Orange	DIC 2785	.95
Yellow	DIC 2786	.95
Brown	DIC 2787	.95

**CRYSTAL HOLDER**

Military Number	Cannon Number	List Price
...	DIC 1005	\$33.50

# EBY SALES CO. of NEW YORK

## INSULATED BINDING POSTS

Knob and base are molded bakelite, with brass inserts and have non-removable tops. Following have knurled base to prevent post twisting.

Spec's.	No. 37 Ensign	No. 40 Commander	No. 43 Admiral
Knob Diam.	1/2" x 7/16" H.	9/16" x 1/2" H.	5/8" x 17/32" H.
Base Diam.	3/2" x 3/4" H.	5/8" x 3/4" H.	23/32" x 3/4" H.
Stem	6-32, 3/8"	8-32, 7/8"	8-32, 3/4"
Neck Diam.	3/16"	13/64"	13/64"
Neck Hole	3/32"	3/32"	None
List Price	\$.44 Ea.	\$.61 Ea.	\$.77 Ea.



Following have boss on base to insulate stem from metal panel.  
Boss is flat on two sides. Stem length is from bottom of boss.

Spec's.	No. 38 Ensign	No. 41 Commander	No. 44 Admiral	No. 46 Admiral
Knob Diam.	1/2" x 7/16" H.	9/16" x 1/2" H.	5/8" x 17/32" H.	11/16" x 19/32" H.
Base Diam.	17/32" x 3/4" H.	5/8" x 3/4" H.	23/32" x 3/4" H.	23/32" x 3/4" H.
Stem	6-32, 1/2"	8-32, 5/8"	8-32, 9/16"	8-32, 9/16"
Neck Diam.	3/16"	13/64"	13/64"	13/64"
Neck Hole	3/32"	3/32"	None	None
List Price	\$.48 Ea.	\$.66 Ea.	\$.66 Ea.	\$.83 Ea.



Following have dowel pin on base.

Spec's.	No. 39 Ensign	No. 42 Commander	No. 45 Admiral	No. 47 Admiral
Knob Diam.	1/2" x 7/16" H.	9/16" x 1/2" H.	5/8" x 17/32" H.	11/16" x 19/32" H.
Base Diam.	1/2" x 3/4" H.	5/8" x 3/4" H.	23/32" x 3/4" H.	23/32" x 3/4" H.
Stem	6-32, 9/16"	8-32, 3/4"	8-32, 3/4"	8-32, 3/4"
Neck Diam.	3/16"	13/64"	13/64"	13/64"
Neck Hole	3/32"	3/32"	None	None
List Price	\$.48 Ea.	\$.66 Ea.	\$.66 Ea.	\$.83 Ea.



### UNIVERSAL TYPE

**Model No. 51**—New convenient multi-type binding post for simple rapid connection. Banana plug can be inserted at top. Rated at 30 amps at 1000 volts. Similar to Superior binding post DF30C. Available in red or black. List \$0.67 ea.

**Model No. 55**—Same as the 51 binding post with the exception that it is designed to accommodate the standard .080 phonotip. List \$1.50 ea.

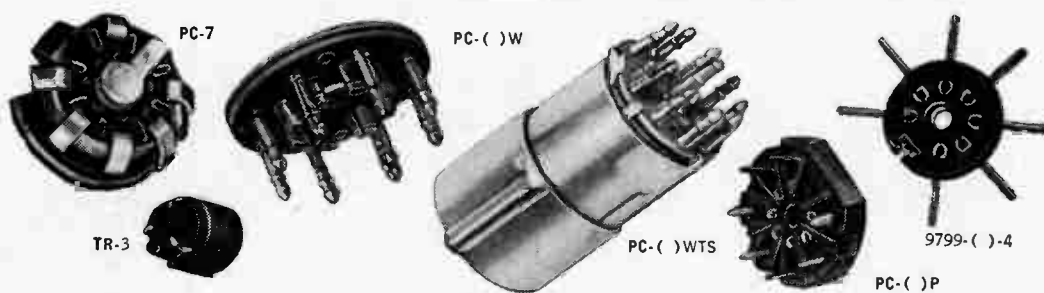
**E-1357**—Compact light duty fully insulated universal binding post. Rated at 10 amps. Available in red or black. List \$0.45 ea.

## TRANSISTOR SOCKET

**SM3.** Low loss phenolic casting (Grade MTS-E-4 per Jan P14) three contacts of beryllium copper silver plated tin dipped to facilitate soldering. Supplied with push on mounting bracket. List. ea. \$0.30



- SM-5.** Same as above but with 5 contacts. List, ea. \$0.34
- SM-6.** Same as above but with 6 contacts. List, ea. .37
- SM-7.** Same as above but with 7 contacts. List, ea. .40
- SM-8.** Round subminiature socket made of the same low loss phenolic as the rectangular sockets. Nickel plated saddle for mounting. List, ea. \$0.65
- SH-1.** Brass nickel plated round metal shield for SM-8 socket. List, ea. \$0.18



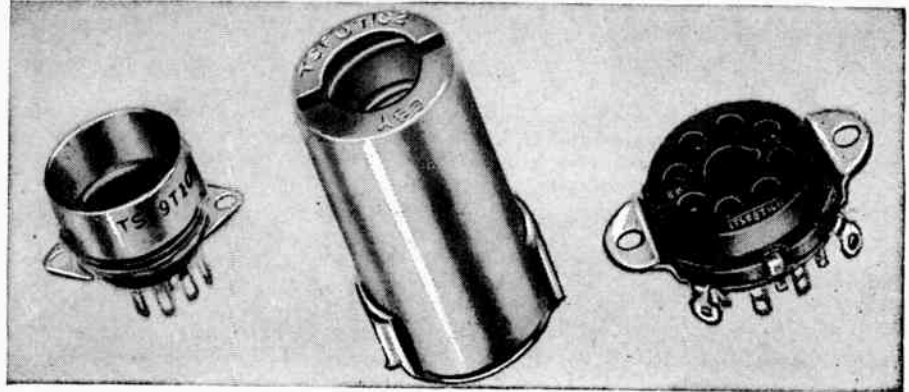
## EBY PRINTED CIRCUIT SOCKETS

Model	Description	List Price	Model	Description	List Price
TR-3S	Newly designed 3 prong round sockets with pyramid contact layout for Philco type of Silicon transistors. List \$0.35 ea.		PC-7P	7 pin all molded printed circuit socket. Is supplied with mounting tabs for individual hole insertion or can be mounted for tube insertion from either end of socket. List \$0.21 ea.	
TR-3L	Same as above except for Philco Surface Barrier type transistor. List \$0.40 ea.		PC-8P	Same as above except octal type. List \$0.35 ea.	
PC-7	7 pin general purpose phenolic miniature socket for printed and etched circuit requirements. Rapid mounting with snap action contacts to secure socket. List \$0.18 ea.		PC-9P	Same as above except for 9 pin. List \$0.28 ea.	
PC-9	Same as above but 9 pin socket. List \$0.25 ea.		PC-7WTS	7 pin wafer printed circuit tube socket supplied with collapsible metal tube shield. List \$0.45 ea.	
PC-7W	7 pin wafer socket designed for rapid assembly in printed circuitry. Contacts snap into individual holes with positive retention of socket. List \$0.13 ea.		PC-9WTS	Same as above except for 9 pin. List \$0.50 ea.	
PC-8W	Same as above except for octal type. List \$0.30 ea.		9799-21-4	7 pin all molded printed circuit socket supplied with tabs for easy top board mounting. List \$0.16 ea.	
PC-9W	Same as above except for 9 pin. List \$0.18 ea.		9799-22-4	Same as above except for 9 pin. List \$0.20 ea.	
			9799-23-4	Same as above except octal type. List \$0.23 ea.	



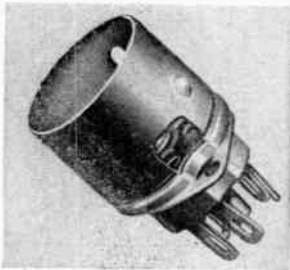
# EBY SALES CO. of N. Y

## JAN SOCKETS and SHIELDS



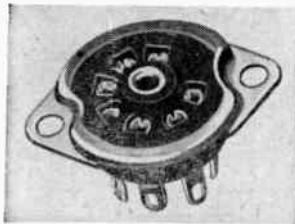
<u>S128A</u>	<u>S-28A1</u>	<u>DESCRIPTION</u>	<u>Eby No.</u>	<u>List</u>
TSE7T102	TS102C01	7 pin shield base ceramic	9715	\$0.50
	TS102C02	7 pin Cer. Top. Sad. Mt.	9726-6C	\$0.40
	TS102C03	7 pin Cer. Bot. Sad. Mt.	9727-160	\$0.40
TSE7T101	TS102P01	7 pin shield base mica filled	9736	\$0.40
	TS102P02	7 pin mica filled top mt. sad.	9726-61	\$0.26
	TS102P03	7 pin mica filled bot. mt. sad.	9727-161	\$0.26
TSE9T102	TS103C01	9 pin shield base ceramic	9717	\$0.66
	TS103C02	9 pin Cer. Top Mt. Saddle	9739-36	\$0.55
	TS103C03	9 pin Cer. Bot. Mt. Saddle	9713-160	\$0.55
TSE9T101	TS103P01	9 pin shield base mica filled	9718	\$0.44
TSF0T101	TS102U01	7 Pin Tube Shield—1 $\frac{3}{8}$ "	9700	\$0.25
TSF0T102	TS102U02	7 Pin Tube Shield—1 $\frac{3}{4}$ "	9701	\$0.27
TSF0T103	TS102U03	7 Pin Tube Shield—2 $\frac{1}{4}$ "	9702	\$0.30
TSF0T104	TS103U01	9 Pin Tube Shield—1 $\frac{1}{2}$ "	9703	\$0.28
TSF0T105	TS103U02	9 Pin Tube Shield—1 $\frac{3}{8}$ "	9704	\$0.30
TSF0T106	TS103U03	9 Pin Tube Shield—2 $\frac{3}{8}$ "	9710	\$0.35
	TS103P02	9 pin mica filled top mt. Sad.	9739-32	\$0.32
	TS103P03	9 pin mica filled bot. mt. sad.	9713-161	\$0.32
TSB8T102	TS101C01	Octal saddle ceramic	9756	\$0.77
TSB8T101	TS101P01	Octal saddle mica filled	9753	\$0.54
	TS101P02	Octal, Saddle, Mica-filled w/Pem Nut	9751-18	\$0.85
	TS101P02	Octal mica w/tapped saddle	9751-21	\$0.75
	TS101C02	Octal ceramic w/tapped saddle	9751-20	\$1.10
	TS101C02	Octal ceramic w/pem nut	9751-36	\$1.15

## STANDARD MINIATURE SOCKETS & SHIELDS



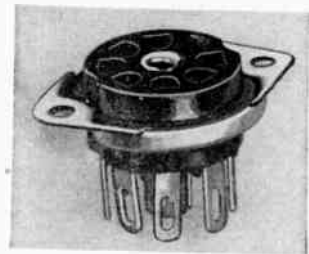
### SHOCK SHIELD TYPE

Cat. No.	Description	List each
8322	7 Pin, black bake., $\frac{7}{8}$ " M.C.	\$0.30
8329	7 Pin, mica-filled, $\frac{7}{8}$ " M.C.	.35
8328	7 Pin, ceramic, $\frac{7}{8}$ " M.C.	.50
9723	9 Pin, black bake., $1\frac{1}{8}$ " M.C.	.45
9714	9 Pin, mica-filled, $1\frac{1}{8}$ " M.C.	.40
9716	9 Pin, ceramic, $1\frac{1}{8}$ " M.C.	.66



### SADDLE TYPE, TOP MOUNT

Cat. No.	Description	List each
8323	7 Pin, black bake., $\frac{7}{8}$ " M.C.	\$0.15
8327	7 Pin, mica-filled, $\frac{7}{8}$ " M.C.	.20
8326	7 Pin, ceramic, $\frac{7}{8}$ " M.C.	.40
9001	9 Pin, black bake., $1\frac{1}{8}$ " M.C.	.20
9430	9 Pin, mica filled, $1\frac{1}{8}$ " M.C.	.25
9735	9 Pin, ceramic, $1\frac{1}{8}$ " M.C.	.55



### SADDLE TYPE, BOTTOM MOUNT

Cat. No.	Description	List each
8578	7 Pin, black bake., $\frac{7}{8}$ " M.C.	\$0.15
9064	7 Pin, mica-filled, $\frac{7}{8}$ " M.C.	.20
9012	9 Pin, black bake., $1\frac{1}{8}$ " M.C.	.20
9401	9 Pin, mica-filled, $1\frac{1}{8}$ " M.C.	.25
9713	9 Pin, ceramic, $1\frac{1}{8}$ " M.C.	.55

### SHIELDS FOR SADDLE TYPE SOCKET

8757	Shield for 7 pin, $1\frac{3}{4}$ " high	List Price, ea. \$0.10	8759	Shield for 9 pin, 2-1/16" high	List Price, ea. \$0.15
8758	Adaptor for above	.05	8760	Adaptor for above	.05

See JAN table above for shields for shock shield type sockets.



### OCTAL SADDLE SOCKETS

No. 9067—Black bake., cadmium plated steel saddle, 4 grd. lugs. Cadmium plated brass contacts.  $1\frac{3}{8}$ " M.C. List, ea. \$0.14  
 No. 8451—Loctal type, same specifications as above List, ea. .17

### OCTAL ALL-MOLDED SOCKETS

No. 8490—Black bake., cadmium plated brass contacts.  $1\frac{3}{8}$ " mounting centers. List, ea. \$0.15  
 No. 8191—Loctal type, same specifications as above List, ea. .15

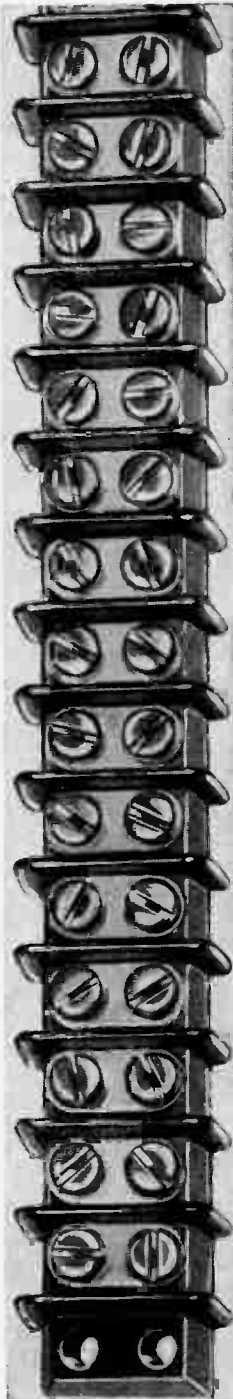
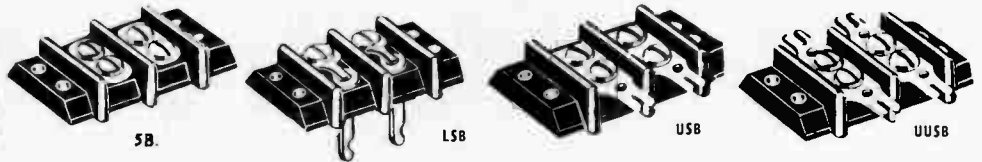


**EBY**

# EBY SALES CO. of N. Y.

## EXCELLEX BARRIER STRIPS

— All stock barriers are supplied in black bakelite for commercial use. Other materials such as Black "CF", Mica "MF", Melamine "CM", Mineral Melamine "MM" and Acme Resin "MD" are also available upon request. The following materials will meet the latest military specifications Mil P-14C.



**SERIES 14** Height 13/32" — Width 14/16" — Thickness 1/4" — Terminals 3/8" — Centers 5/16" — Binding Head Screws 5/40 x 1/4" Long.

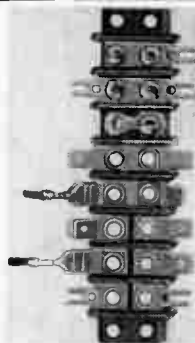
EBY No.	LIST PRICE	EBY No.	LIST PRICE	EBY No.	LIST PRICE	EBY No.	LIST PRICE
1CF14-5B	\$0.15	1CF14-L5B	\$0.19	1CF14-U5B	\$0.19	1CF14-UU5B	\$0.19
2CF14-5B	0.25	2CF14-L5B	0.32	2CF14-U5B	0.32	2CF14-UU5B	0.32
3CF14-5B	0.33	3CF14-L5B	0.44	3CF14-U5B	0.44	3CF14-UU5B	0.44
4CF14-5B	0.42	4CF14-L5B	0.57	4CF14-U5B	0.57	4CF14-UU5B	0.57
5CF14-5B	0.51	5CF14-L5B	0.69	5CF14-U5B	0.69	5CF14-UU5B	0.69
6CF14-5B	0.59	6CF14-L5B	0.83	6CF14-U5B	0.83	6CF14-UU5B	0.83
7CF14-5B	0.68	7CF14-L5B	0.95	7CF14-U5B	0.95	7CF14-UU5B	0.95
8CF14-5B	0.77	8CF14-L5B	1.08	8CF14-U5B	1.08	8CF14-UU5B	1.08
9CF14-5B	0.86	9CF14-L5B	1.21	9CF14-U5B	1.21	9CF14-UU5B	1.21
10CF14-5B	0.95	10CF14-L5B	1.33	10CF14-U5B	1.33	10CF14-UU5B	1.33
11CF14-5B	1.03	11CF14-L5B	1.45	11CF14-U5B	1.45	11CF14-UU5B	1.45
12CF14-5B	1.12	12CF14-L5B	1.58	12CF14-U5B	1.58	12CF14-UU5B	1.58
13CF14-5B	1.21	13CF14-L5B	1.71	13CF14-U5B	1.71	13CF14-UU5B	1.71
14CF14-5B	1.31	14CF14-L5B	1.84	14CF14-U5B	1.84	14CF14-UU5B	1.84
15CF14-5B	1.40	15CF14-L5B	1.96	15CF14-U5B	1.96	15CF14-UU5B	1.96
16CF14-5B	1.49	16CF14-L5B	2.09	16CF14-U5B	2.09	16CF14-UU5B	2.09
17CF14-5B	1.57	17CF14-L5B	2.21	17CF14-U5B	2.21	17CF14-UU5B	2.21
18CF14-5B	1.66	18CF14-L5B	2.34	18CF14-U5B	2.34	18CF14-UU5B	2.34
19CF14-5B	1.75	19CF14-L5B	2.46	19CF14-U5B	2.46	19CF14-UU5B	2.46
20CF14-5B	1.84	20CF14-L5B	2.60	20CF14-U5B	2.60	20CF14-UU5B	2.60

**SERIES 18** Height 1/2" — Width 1-1/8" — Thickness 5/16" — Terminals 7/16" — Centers 27/64" — Binding Head Screws 6/32 x 1/4" Long.

EBY No.	LIST PRICE	EBY No.	LIST PRICE	EBY No.	LIST PRICE	EBY No.	LIST PRICE
1CF18-6B	\$0.20	1CF18-L6B	\$0.24	1CF18-U6B	\$0.24	1CF18-UU6B	\$0.24
2CF18-6B	0.31	2CF18-L6B	0.41	2CF18-U6B	0.41	2CF18-UU6B	0.41
3CF18-6B	0.42	3CF18-L6B	0.57	3CF18-U6B	0.57	3CF18-UU6B	0.57
4CF18-6B	0.54	4CF18-L6B	0.74	4CF18-U6B	0.74	4CF18-UU6B	0.74
5CF18-6B	0.64	5CF18-L6B	0.90	5CF18-U6B	0.90	5CF18-UU6B	0.90
6CF18-6B	0.75	6CF18-L6B	1.07	6CF18-U6B	1.07	6CF18-UU6B	1.07
7CF18-6B	0.88	7CF18-L6B	1.23	7CF18-U6B	1.23	7CF18-UU6B	1.23
8CF18-6B	0.99	8CF18-L6B	1.40	8CF18-U6B	1.40	8CF18-UU6B	1.40
9CF18-6B	1.10	9CF18-L6B	1.56	9CF18-U6B	1.56	9CF18-UU6B	1.56
10CF18-6B	1.22	10CF18-L6B	1.73	10CF18-U6B	1.73	10CF18-UU6B	1.73
11CF18-6B	1.33	11CF18-L6B	1.89	11CF18-U6B	1.89	11CF18-UU6B	1.89
12CF18-6B	1.44	12CF18-L6B	2.06	12CF18-U6B	2.06	12CF18-UU6B	2.06
13CF18-6B	1.56	13CF18-L6B	2.22	13CF18-U6B	2.22	13CF18-UU6B	2.22
14CF18-6B	1.67	14CF18-L6B	2.39	14CF18-U6B	2.39	14CF18-UU6B	2.39
15CF18-6B	1.78	15CF18-L6B	2.55	15CF18-U6B	2.55	15CF18-UU6B	2.55
16CF18-6B	1.90	16CF18-L6B	2.72	16CF18-U6B	2.72	16CF18-UU6B	2.72
17CF18-6B	2.01	17CF18-L6B	2.88	17CF18-U6B	2.88	17CF18-UU6B	2.88
18CF18-6B	2.12	18CF18-L6B	3.05	18CF18-U6B	3.05	18CF18-UU6B	3.05
19CF18-6B	2.24	19CF18-L6B	3.21	19CF18-U6B	3.21	19CF18-UU6B	3.21
20CF18-6B	2.35	20CF18-L6B	3.38	20CF18-U6B	3.38	20CF18-UU6B	3.38
21CF18-6B	2.47	21CF18-L6B	3.55	21CF18-U6B	3.55	21CF18-UU6B	3.55
22CF18-6B	2.59	22CF18-L6B	3.72	22CF18-U6B	3.72	22CF18-UU6B	3.72
23CF18-6B	2.71	23CF18-L6B	3.89	23CF18-U6B	3.89	23CF18-UU6B	3.89
24CF18-6B	2.83	24CF18-L6B	4.06	24CF18-U6B	4.06	24CF18-UU6B	4.06
25CF18-6B	2.95	25CF18-L6B	4.23	25CF18-U6B	4.23	25CF18-UU6B	4.23

**SERIES 10** Height 5/16" — Width 5/8" — Binding Head Screws — 2/56 x 3/16" Long.

EBY No.	LIST PRICE
1CF10-2B	\$0.47
2CF10-2B	0.74
3CF10-2B	0.99
4CF10-2B	1.25
5CF10-2B	1.53
6CF10-2B	1.79
7CF10-2B	2.05
8CF10-2B	2.32
9CF10-2B	2.59
10CF10-2B	2.83
11CF10-2B	3.11
12CF10-2B	3.33
13CF10-2B	3.64
14CF10-2B	3.90
15CF10-2B	4.17
16CF10-2B	4.42
17CF10-2B	4.69
18CF10-2B	4.96
19CF10-2B	5.23
20CF10-2B	6.50



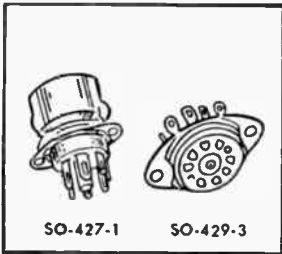
A full range of contact terminals and jumpers as shown in the adjoining photograph are also available. Contact termination strips are available upon request. Order by EBY part number for stock barriers. For information on special materials or terminals write for information and price.

Lugs L, U, UU available at \$4.40/C.





### ERIE TEFLON TUBE SOCKETS



**ADVANTAGES.** Teflon tube sockets offer ultra superior electrical advantages. Its extremely low dielectric constant and dissipation factor result in a capacity, between pins, only twice that of air, and a circuit Q better than 5,000. Contributing to circuit

**ENGINEERING DATA.**

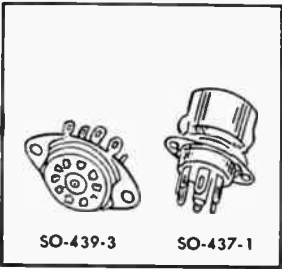
Capacity between two adjacent pins.....	0.4MMF
Q.....	5000
Loss Factor.....	.0002
Surface Resistance.....	10 <sup>13</sup> OHMS
Dielectric Strength, 60 cps.....	6500V, RMS
Floshover Voltage, between exposed metal surfaces, 60 cps.....	2500V, RMS
	of Sea level
	60,000 ft. 650V, RMS

stability is the fact that the capacity and Q remain constant; the actual change is negligible, over a frequency range of 60 cps to 30,000 Megacycles and a temperature range of minus 110° F to plus 500° F. Sockets meet all RMA and JAN Specifications.

**HOW TO ORDER** Teflon miniature tube sockets by type number.

7-Pin Type No.	Mounting	9-Pin Type No.
SO-427-1	Con	SO-429-1
SO-427-2	Saddle	SO-429-2
SO-427-3	Saddle with lugs	SO-429-3

### ERIE KEL-F\* TUBE SOCKETS



**ADVANTAGES.** Erie Kel-F Insulated 7 and 9-Pin Miniature Tube Sockets are designed to fill the need of the electronics industry for high performance tube sockets for use where high or low ambient temperatures or frequency stability are problems. Kel-F, a thermoplastic Fluorocarbon Polymer, is readily molded to accurate dimensions. It is dimensionally stable throughout its wide service temperature range from a

**ENGINEERING DATA.**

Capacity between two adjacent pins.....	0.45 MMF
Loss Factor.....	.01
Surface Resistance.....	10 <sup>13</sup> OHMS
Dielectric Strength, 60 cps.....	6500V, RMS
Floshover Voltage, between exposed metal surfaces, 60 cps.....	3000V, RMS
	of 60,000 ft. 650V, RMS

low of -320° F to +390° F, and there is no appreciable change in its electrical and physical properties. Water absorption is zero by ASTM Test — hence it is unaffected by extreme humidity.

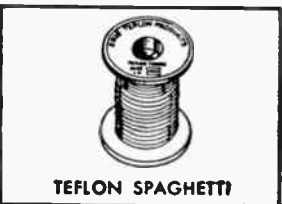
All metal parts of sockets are precision made and plated to JAN Specifications. Contacts exceed all JAN Specifications for tube retention, tab flexing and pin contact resistance.

**HOW TO ORDER** Kel-F miniature tube sockets by type number.

7-Pin Type No.	Mounting	9-Pin Type No.
SO-437-1	Con	SO-439-1
SO-437-2	Saddle	SO-439-2
SO-437-3	Saddle with lugs	SO-439-3

\*M. W. Kellogg Trademark.

### ERIE TEFLON SPAGHETTI



**DIELECTRIC STRENGTH** — 500 volts per mil.

**COLORS** — Natural, Red, Black.

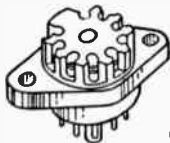
**HOW TO ORDER** Specify size, color and length

**SPECIFICATIONS**

Size	Nom. I. D.	Wall Thickness
No. 24	.023"	.016 ± .004"
No. 20	.035"	.016 ± .004"
No. 18	.046"	.020 ± .006"
No. 16	.056"	.020 ± .006"
No. 14	.070"	.020 ± .006"

### ERIE TEFLON CONNECTORS

**9-PIN CONNECTOR**



CN-409M

**USE.** Teflon 9-Pin Connectors are designed to mate with 9-Pin Miniature Tube Sockets, Catalog No. SO-429-3.

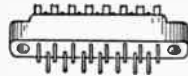
**ADVANTAGES.** Teflon 9-Pin Connectors provide exceptionally low loss between pins and between pins and ground. The Teflon insulation offers a loss factor of less than 0.0002; surface resistivity of 3.5 x 10<sup>13</sup> ohms; dielectric constant of 2.0 (60 cycles to 30,000 megacycles). It will not DC plate or carbonize under arcing.

Pins are silver-plated brass and insulating body is designed with "windows" for making easy solder connections.

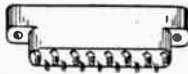
**HOW TO ORDER.** Specify Teflon 9-Pin Connector No. CN-409-M for mating with Miniature Tube Socket No. SO-429-3.

**15- and 18-PIN CONNECTORS**

CN-415M



CN-415F



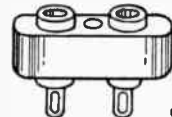
**USES.** Erie Teflon Connectors are designed for low-loss, high frequency service in interconnection of radio, radar and other electronic equipment — where connectors must be unaffected by wide range in ambient temperatures, pressure, altitudes, humidity, and mechanical shock and vibration.

**ADVANTAGES.** The principal characteristics of these Teflon connectors are outlined in the tabulation below.

Material of terminals in male connectors is Brass, silver-plated, gold-flashed; female connectors, Beryllium Copper, silver-plated, gold-flashed.

**HOW TO ORDER.** Specify Erie Teflon Connector Type CN-415 or CN-418 for 15 or 18-pin connectors, with subscript M or F for male or female types, or both for mating pairs.

**CRYSTAL SOCKETS**



CS-441

**USES.** Teflon Crystal Sockets are designed for use wherever low loss and frequency stability are desired and mechanical shock and vibration are problems.

**ADVANTAGES.** Made of Teflon, these Crystal Sockets are unusually sturdy and due to the inherent resiliency of the plastic, they aid in absorbing shock and vibration in severe service. Teflon Crystal Sockets have a loss factor of less than 0.0002 and a dielectric constant of only 2.0 from 60 cycles to 30,000 megacycles.

Teflon Crystal Sockets mount by means of a single hole and can be either screw or rivet mounted. Assembly is facilitated as there is no danger of breakage as with ceramics.

**HOW TO ORDER.** Specify Teflon CS-441 Crystal Sockets for 0.050 pins spaced 0.486 inches. Specify Teflon CS-442 Crystal Sockets for 0.095 pins spaced 0.486 inches.

**CONNECTOR CHARACTERISTICS**

CATALOG NO.	NUMBER OF TERMINALS	DIAMETER OF TERMINALS	VOLTAGE RATING (Volts RMS)	BREAKDOWN VOLTAGES (DC) (After 95% Humidity at 70°C)				CURRENT RATING (Amperes)	CONTACT RESISTANCE
				Between Terminals		Between Terminals and Gnd.			
				At Sea Level	At 60,000 Ft.	At Sea Level	At 60,000 Ft.		
CN-418-M	18	0.064	900	3500	800	3500	800	7.5	0.003
CN-418-F	18	0.064	900	3500	800	3500	800	7.5	0.003
CN-415-M	15	0.064	900	4000	1000	4000	1000	7.5	0.003
CN-415-F	15	0.064	900	4000	1000	4000	1000	7.5	0.003

## JAN SOCKETS AND SHIELDS

Part No.	DESCRIPTION	Designation	
		Per JAN/S28A-1	List Price Each
235 BC	7 Pin Mica	TS 102P01	.59
238 BC	7 Pin Ceramic	TS 102C01	.97
169 BC	9 Pin Mica	TS 103P01	.77
176 BC	9 Pin Ceramic	TS 103C01	1.20
335 PHSPTO	Octal Mica	TS 101P01	.80
336 PHSPTO	Octal Mica—with Bushings	TS 101P02	1.12
338 PHSPTO	Octal Ceramic	TS 101C01	1.20
337 PHSPTO	Octal Ceramic—with Bushings	TS 101C02	1.54
342 PHSPTO	Octal Mica—GRC	TS 101P0	.78
121	7 Pin Shield 1-3 8"	TS 102U01	.25
120	7 Pin Shield 1-3 4"	TS 102U02	.25
149	7 Pin Shield 2-1 4"	TS 102U03	.31
193	9 Pin Shield 1-1 2"	TS 103U01	.31
191	9 Pin Shield 1-15 16"	TS 103U02	.34
195	9 Pin Shield 2-3 8"	TS 103U03	.39



### RTMA SADDLE TYPE

Bottom Mounting

Insulator Material	Model No.	List Price Ea.
<b>7 PIN</b>		
Gen. Purp.	100	.14
Mica Filled	105	.17
Ceramic	220	.45
<b>9 PIN</b>		
Gen. Purp.	270	.20
Mica Filled	271	.24
Ceramic	272	.63

Contact Material — Brass, Cad. Plated



### RMA SADDLE TYPE

with Ground Lugs  
Bottom Mounting

Insulator Material	Model No.	List Price Ea.
<b>7 PIN</b>		
Gen. Purp.	300	.15
Mica Filled	305	.19
Ceramic	320	.46
<b>9 PIN</b>		
Gen. Purp.	370	.20
Mica Filled	371	.25
Ceramic	372	.65

Contact Material — Brass, Cad. Plated



### JAN SADDLE TYPE

Top Mounting

Insulator Material	Model No.	List Price Ea.
<b>7 PIN</b>		
Gen. Purp.	240	.14
Mica Filled	241	.17
Ceramic	113	.45
<b>9 PIN</b>		
Gen. Purp.	196	.20
Mica Filled	197	.24
Ceramic	170	.63

Contact Material — Brass, Cad. Plated



### JAN SHIELD BASE TYPE

Top Mounting

Insulator Material	Model No.	List Price Ea.
<b>7 PIN</b>		
Gen. Purp.	ST 234	.30
Mica Filled	ST 235	.35
Ceramic	ST 238	.56
<b>9 PIN</b>		
Gen. Purp.	ST 167	.41
Mica Filled	ST 169	.47
Ceramic	ST 176	.95

Contact Material — Brass, Cad. Plated



### SNAP-ON JAN TYPE

Top Mounting

Insulator Material	Model No.	List Price Ea.
<b>7 PIN</b>		
Gen. Purp.	250	.16
Mica Filled	251	.20
Ceramic	252	.47
<b>9 PIN</b>		
Gen. Purp.	450	.24
Mica Filled	451	.29
Ceramic	452	.69

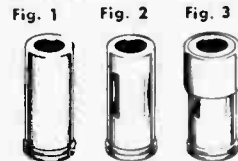
Contact Material — Brass, Cad. Plated



### JAN TYPE SHIELDS

Per Jan/S-28

Model No.	Material	
	Height	List Price Ea.
<b>7 PIN</b>		
127	1 3/8"	.18
126	1 3/4"	.19
148	2 1/4"	.28
<b>9 PIN</b>		
192	1 1/2"	.29
190	1-15/16"	.31
194	2 3/8"	.35



### SNAP-ON TYPE SHIELDS

Material Steel

Fig.	Model No.	Desc.	Height	List Price Ea.
<b>7 PIN</b>				
1	200		1-53/64"	.08
2	224	Slit	1-53/64"	.12
3	225	Slit & Lead	1-53/64"	.49
<b>9 PIN</b>				
1	227		2-1/16"	.10
2	228	Slit	2-1/16"	.14
3	229	Slit & Lead	2-1/16"	.57



### CORRUGATED INSERT FOR JAN SHIELDS

Cad. plate, beryllium copper, matte black finish

Model No.	JAN No.	List Price Ea.
929, 7-pin	TS102U01	.31
930, 7-pin	TS102U02	.35
931, 7-pin	TS102U03	.43
932, 9-pin	TS103U01	.37
933, 9-pin	TS103U02	.45
934, 9-pin	TS103U03	.52



### Bottom Solder PRINTED CIRCUIT SOCKETS

with Ground Contact

Insulator Material	Model No.	List Price Ea.
<b>7 PIN</b>		
Gen. Purp.	645	.19
Mica Filled	646	.20
<b>9 PIN</b>		
Gen. Purp.	653	.26
Mica Filled	654	.27

Contact Material — Brass, Tin Lead.  
Also available in all subminiature sizes.



### Bottom Solder PRINTED CIRCUIT SOCKETS

with Shield Contact

Insulator Material	Model No.	List Price Ea.
<b>7 PIN</b>		
Gen. Purp.	647	.20
Mica Filled	648	.21
<b>9 PIN</b>		
Gen. Purp.	655	.27
Mica Filled	656	.28

Contact Material — Brass, Tin Lead.  
Also available in all subminiature sizes.

**AMERICA'S QUALITY LINE • RADIO, TELEVISION, ELECTRONIC COMPONENTS**



### FLAT TYPE SUB-MINIATURE

Insulator Material	Model No.	List Price Ea.
5 Pin	770 BC	.44
6 Pin	813 BC	.47
7 Pin	790 BC	.50

Mica Filled Castings, Beryllium Copper Contacts.

#### MOUNTING RINGS

5 Pin	756	.03
6 Pin	843	.04
7 Pin	768	.04



### VENTILATED SHIELD

\*Brass, Nickel Plated  
\*\*Steel, Cad. Plated

Model No.	Height	List Price Ea.
121V*	1 3/4"	.36
120V*	1 3/4"	.36
149V*	2 1/4"	.42
127V**	1 3/8"	.29
126V**	1 3/4"	.30
148V**	2 1/4"	.39
<b>9 PIN</b>		
193V*	1 1/2"	.42
191V*	1-15/16"	.45
195V*	2 3/4"	.50
192V**	1 1/2"	.40
190V**	1-15/16"	.42
194V**	2 3/4"	.46



### HIGH VOLTAGE SOCKET

Model No.	List Price Ea.
962	.45



### 9-PIN AND 7-PIN SHIELD BASE TYPE PRINTED CIRCUIT SOCKET

9-Pin Model No.	Material	List Price Ea.
623 BC	Mica	1.45

Beryllium Copper for 1/16" Board

7-Pin Model No.	Material	List Price Ea.
622 PH5P	Mica	1.25

Contacts—Phosphor Bronze



### Top Solder PRINTED CIRCUIT SOCKETS with Ground Contact

Insulator Material	Model No.	List Price Ea.
<b>7 PIN</b>		
Gen. Purp.	649	.21
Mica Filled	650	.22
<b>9 PIN</b>		
Gen. Purp.	657	.26
Mica Filled	658	.28

Contact Material — Brass, Tin Lead. Also available in all subminiature sizes.



### Top Solder PRINTED CIRCUIT SOCKETS with Shield Contact

Insulator Material	Model No.	List Price Ea.
<b>7 PIN</b>		
Gen. Purp.	651	.22
Mica Filled	652	.23
<b>9 PIN</b>		
Gen. Purp.	659	.27
Mica Filled	660	.29

Contact Material — Brass, Tin Lead. Also available in all subminiature sizes.

### COMBINATION TRANSISTOR SOCKETS



No. 3301 with Flot Saddle  
No. 3304 with No. 757 Mntg. Ring  
Insulator: mica filled phenolic. Contacts: beryllium copper, silver plated, gold flashed.

Model No.	List Price Ea.
3301	.60
3304	.40
757	.05



### UHF SOCKET

Model No.	List Price Ea.
Saddle Type 510 Bottom Mounted	.29
511 Top Mounted	.29
Snap on 509	.31

Material — Mica  
Brass Contacts



### PRINTED CIRCUIT TYPE SUB-MINIATURE

Model No.	List Price Ea.
3 Pin 786 BC	.46
4 Pin 805 BC	.47
5 Pin 788 BC	.48
6 Pin 815 BC	.51
7 Pin 792 BC	.54

Mica Filled Castings.  
Contact Material — Beryllium Copper.



### TRANSISTOR TYPE SUBMINIATURE SOCKETS

3-Pin Point & Junction Type (Mica Filled Insulator Material)

Model No.	List Price Ea.
799BC	.42

4-Pin Linotetar Type (Mica Filled Insulator Material)

803BC	.43
-------	-----

Contact Material—Beryllium Copper, Silver Plated, Gold Flashed.



### PRINTED CIRCUIT CONNECTOR

Insulator: GP Resinox 3700 or Di allyl phthalate. Contacts: Phosphor bronze silver plated. Board: Connector will accommodate .062" to .074" thick board with normal warpage.

Model No. and No. of Contacts	List Price Ea.
6001-12	3.00
6001-20	4.00
6001-30	5.75
6001-36	6.50
6001-44	7.50



### FLAT SADDLE SUB-MINIATURE SOCKETS

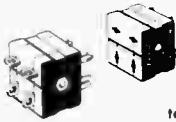
Model No.	List Price Ea.
3 PIN — 840	.65
4 PIN — 842	.66
5 PIN — 844	.67
6 PIN — 846	.70
7 PIN — 848	.73
8 PIN — 851	.96

Material — Mica Casting  
Saddle is Brass Nickel Plated

## AMERICA'S QUALITY LINE • RADIO, TELEVISION, ELECTRONIC COMPONENTS

Elco Varicon Miniature-Connectors provide the simplest, quickest, most positive means for connecting electronic or electric circuits. Varicons introduce "Keying Control", making it impossible to connect unmatched parts. Contact combinations in any number demanded by your specific needs are possible with Varicons; and any connector may be assembled by you or us from stock parts.

Prices below are for Varicons in General Purpose Phenolic. Varicons are also available in Low-Loss Mica Phenolic, Alkyd, and General Purpose Phenolic in assorted colors, prices for which will be furnished upon request. For general specifications of ALL Varicons, refer to description beneath Connector Kit at lower right hand corner of this page. For any other information regarding these "Miniature Connectors that work like Giants", your inquiry will meet with our immediate reply.

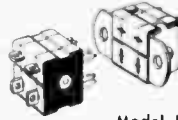


## VARICONS

Plain with no hardware

2nd and 3rd digit numerals in Model Nos. designate number of Contacts in Connector.

MALE		FEMALE	
Model No.	Price	Model No.	List Price Ea.
M1022	.29	F1022	.27
M1042	.40	F1042	.38
M1062	.52	F1062	.48
M1082	.63	F1082	.59
M1102	.78	F1102	.71
M1122	.90	F1122	.83
M1142	1.08	F1142	.99
M1162	1.26	F1162	1.16
M1182	1.44	F1182	1.33

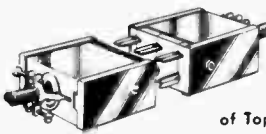


## VARICONS

With bracket

Substitute the numeral "2" instead of the numeral "1" in the first digit of the Model Number if a double tier is desired. List price can be computed by doubling the List Price of the appropriate Single Tier VARICON with Bracket and adding .03 ea.

MALE		FEMALE	
Model No.	Price	Model No.	List Price Ea.
M10220	.34	F10220	.32
M10420	.45	F10420	.43
M10620	.57	F10620	.53
M10820	.68	F10820	.64
M11020	.84	F11020	.77
M11220	.96	F11220	.89
M11420	1.14	F11420	1.05
M11620	1.31	F11620	1.22
M11820	1.50	F11820	1.38

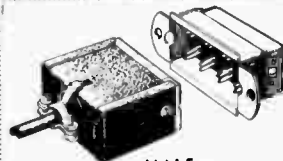


## VARICONS

With cover top clamp

Hole can be located on End instead of Top by changing final digit from 4 to 5.

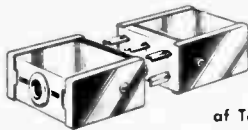
MALE		FEMALE	
Model No.	Price	Model No.	List Price Ea.
M10425	.86	F10425	.84
M10624	.98	F10624	.94
M10824	1.09	F10824	1.05
M11024	1.27	F11024	1.20
M11224	1.44	F11224	1.37
M11424	1.68	F11424	1.59
M11624	1.91	F11624	1.82
M11824	2.15	F11824	2.04
M22024	2.51	F22024	2.39
M22424	3.09	F22424	2.96
M22824	3.67	F22824	3.53
M23224	4.26	F23224	4.09
M23624	4.89	F23624	4.73



## VARICONS

With recessed housing

MALE		FEMALE	
Model No.	Price	Model No.	List Price Ea.
M10626	.93	F10626	.88
M10826	1.07	F10826	1.03
M11026	1.27	F11026	1.20
M11226	1.45	F11226	1.38
M11426	1.69	F11426	1.60
M11626	1.92	F11626	1.83
M11826	2.16	F11826	2.05
M22026	2.47	F22026	2.36
M22426	3.06	F22426	2.92
M22826	3.63	F22826	3.50
M23226	4.22	F23226	4.06
M23626	4.85	F23626	4.69



## VARICONS

With covers — top hole

Hole can be situated on End instead of Top by changing final digit from 2 to 3.

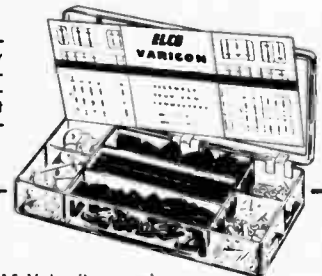
MALE		FEMALE	
Model No.	Price	Model No.	List Price Ea.
M10423	.67	F10423	.65
M10622	.79	F10622	.75
M10822	.90	F10822	.86
M11022	1.07	F11022	1.00
M11222	1.24	F11222	1.17
M11422	1.48	F11422	1.39
M11622	1.71	F11622	1.62
M11822	1.96	F11822	1.84
M22022	2.24	F22022	2.13
M22422	2.83	F22422	2.69
M22822	3.40	F22822	3.27
M23222	3.94	F23222	3.83
M23622	4.62	F23622	4.46

### KITS

VARICON MINIATURE-CONNECTOR KITS now make it possible to assemble your own connectors when you want them! In General Purpose Phenolic, Low-Loss Mica Phenolic, Alkyd, Colors. Write for prices.

### GENERAL SPECIFICATIONS

Current Rating 15 Amps, 115 Volts (in cover); 30 Amps (in free air) (withstanding voltage between closest terminals 4000 volts); Contact Resistance .0001 ohm. Low Capacitance. All Male & Female components are identical. 300 ohm line spacing. Contacts in use are always under pressure, cannot be overstressed or overstrained.



GP-1 10.00  
LL-1 13.75  
C-1 14.50  
\*Colored

#### CHASSIS APPLICATIONS

#### CABLE APPLICATIONS

#### PLUG-IN APPLICATIONS

#### PANEL APPLICATIONS

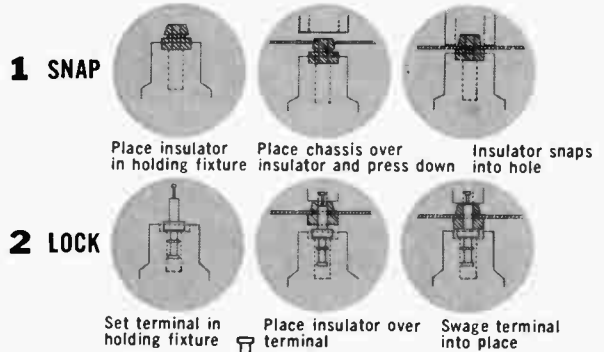


→ **insulated terminals and stand-offs**

*featuring* **TEFLON®** snap-lock terminals

- ELIMINATE TERMINAL BOARDS
- EASY TO INSTALL ... LOW COST
- IMPROVED PERFORMANCE

Snap-Lock terminals install directly into chassis (metal panel serves as ground plate to eliminate dielectric losses. Teflon insulator provides superior dielectric properties at all frequencies. New Snap-Lock design (pat. pend.) locks terminal in place for snug fit... guarantees ruggedness in equipment requiring high shock or vibration.



<b>SNAP-LOCK TERMINALS</b>	 4075 .16	 4076 .14	 4077 .11	 4078 .105	<b>FEED THROUGH TERMINALS</b>	 6082 Phenolic .30	 6081 Phenolic .28	 6080 Melamine .35	 6090 Teflon .40										
<b>MOLDED INSULATED STANDOFFS</b>	 6015 Phenolic .12	 6020 Phenolic .12	 6040 Melamine .19	 6041 Melamine .19	 6042 Melamine .19	 6043 Melamine .22	 6044 Melamine .22	 6045 Phenolic .13	 6049 Melamine .22	 6050 Melamine .22	 6051 Melamine .20	 6052 Melamine .22	 6053 Melamine .20	 6054 Melamine .19	 6055 Alkyd .18	 6057 Melamine .17	 6062 Melamine .19	 6063 Melamine .21	 6064 Melamine .12
	 6122 Melamine .18	 6123 Melamine .18	 6124 Melamine .18	 6129 Melamine .17	 6131 Melamine .17	 6150 Melamine .17	 6160 Melamine .16	 6161 Melamine .16	 6162 Melamine .16										

**SPECIFY SHAFT LENGTH AND BOARD THICKNESS**  
See next page for ordering information  
List price is indicated under model number  
All items shown full size.



















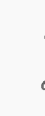





















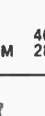
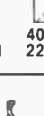
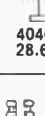
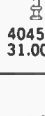
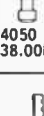



















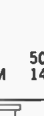














Material is half-hard brass with .0003" minimum silver plating, unless otherwise specified (other platings available on special order). All shank diameters held within overall tolerance of .003". All shank lengths held within overall tolerance of .004".



**ELECTRONICS, INC.**

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Burbank, California

→ terminals • plugs and sockets • diode clips

<b>SINGLE END TERMINALS PLUG AND JACK</b>	 3005 14.20M	 3010 11.80M	 3015 12.10M	 3020 9.20M	 3025 8.50M	 3030 13.50M	 3035 11.80M	 3045 22.00M	 3050 12.75M	 3055 13.50M	 7005 58.00M	 7010 130.00M	
<b>HOLLOW AND THREADED TERMINALS</b>	 3505 11.80M	 3510 17.60M	 3515 20.00M	 3520 24.50M	 3525 21.00M	 3530 14.00M	 3535 15.50M	 3540 21.80M	 4530 23.00M	 4531 21.00M	 4532 18.00M		
<b>DOUBLE END TERMINALS</b>	 4005 29.40M	 4010 31.00M	 4015 26.00M	 4020 22.00M	 4025 12.60M	 4030 28.60M	 4035 22.50M	 4040 28.60M	 4045 31.00M	 4050 38.00M	 4055 24.00M	 4060 34.00M	 4065 49.30M
<b>MILLED TERMINALS</b>	 4505 18.00M	 4508 36.00M	 4510 21.00M	 4515 19.60M	 4520 28.00M	 4525 28.00M	 4535 26.80M	 4540 19.00M	 4545 18.80M	 4550 36.00M			
<b>SUBMINIATURE TERMINALS</b>	 4560 36.00M	 5000 16.40M	 5005 13.60M	 5010 13.80M	 5015 16.40M	 5020 11.40M	 5025 14.00M	 5030 14.00M	 5040 11.40M	 5075 19.00M	 5080 28.00M	 5085 31.50M	 5090 11.50M
<b>TAPER PINS (mate with AMP pins) DIODE CLIPS</b>	 9030 22.00M	 9031 28.00M	 9032 37.40M	 9033 33.00M	 9034 53.00M	 9035 68.00M	 9046 30.00M	 9047 30.00M	 9010 26.70M	 9015 27.00M			
<b>MOUNTING STANDOFFS</b>	 8000-A 55.00M	 8000-B 63.00M	 8000-C 70.00M	 8005 38.00M	 8010 42.00M	 8015 42.00M	 8020 52.00M	 8025 42.00M	 8030 55.00M	 8035 44.00M			

**ORDERING INFORMATION**

Specify shaft length and desired board thickness by adding code letter to item number. For example, item No. 3005-B has shaft length of .105" and accommodates board thickness of 1/16"; No. 3005-C dimensions are .135" and 3/32", etc.

All items shown full size.  
List price is indicated under model number

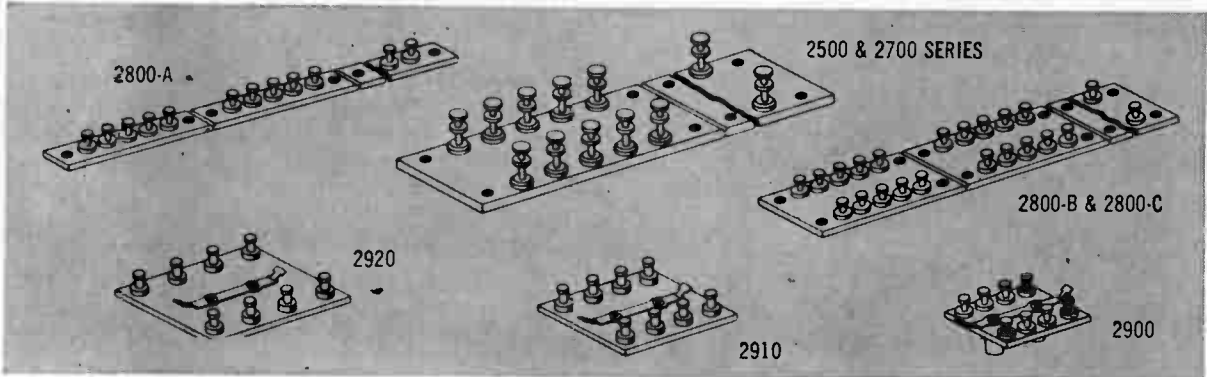
	3000, 4000, 7000, 8000, & 9000 SERIES		5000 SERIES		6000 SERIES
	shaft length	thickness	shaft length	thickness	Specify desired material thickness
<b>A</b>	.075	1/32	.053	1/32	
<b>B</b>	.105	1/16	.084	1/16	
<b>C</b>	.135	3/32	.115	3/32	
<b>D</b>	.165	1/8	.147	3/32	



**ELECTRONICS, INC.**

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Burbank, California

# terminal boards • swaging tools



## terminal board specifications

PART NO.	LENGTH	WIDTH	BOARD MATERIAL	NO. OF SECTIONS	NO. OF TERMINALS	TERMINAL	PRICE EA.
2500-B	13-1/8"	2"	paper base phenolic	5	50	3010	1.85
2500-C	13-1/8"	2-1/2"	"	5	50	3010	1.92
2500-P	13-1/3"	3"	"	5	50	3010	1.99
2600	13-1/3"	1/2"	"	5	25	3010	.95
2700-A	13-1/8"	1-1/16"	"	5	50	3025	1.72
2700-B	13-1/8"	1-1/2"	"	5	50	3025	1.78
2800-A	7-13/16"	.312"	"	5	25	5025	1.05
2800-B	7-13/16"	3/4"	"	5	50	5025	2.10
2800-C	7-13/16"	1"	"	5	50	5025	2.40
2900	.875"	.719"	glass melamine	1	8	5025	.50
2910	1.22"	1.03"	"	1	8	3530	.68
2920	1-1/2"	1.16"	"	1	8	3530	.78

### ORDERING INFORMATION

All terminal boards supplied with 3/32" material unless otherwise specified. Lercos will supply boards of any type made to customer's designs. Send blueprints for immediate quotation.

<b>SWAGING TOOLS</b>				
	Swaging tools Order by terminal number. 5.00 per set	Tool holders Fit all swaging tools. 2.00 per set	Snap-Lock swaging tools Set of 3 for economical installation of Lercos Snap-Lock terminals. No tool holders required. 10.00 per set	Swaging press For use with Lercos swaging tools. 50.00 each

List price is indicated under model number



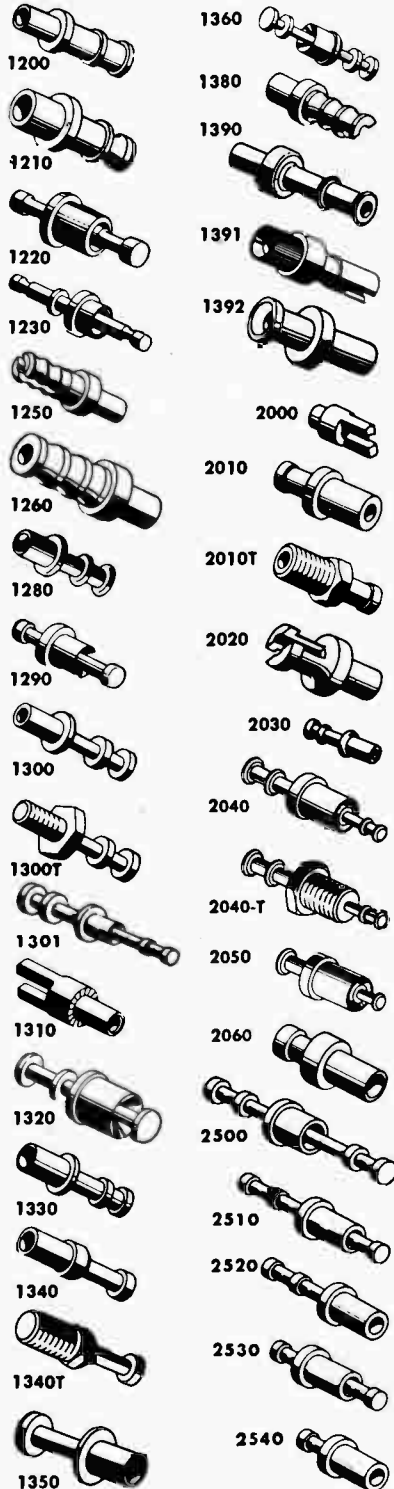
**ELECTRONICS, INC.**

First in quality and service  
Burbank, California

# USECO

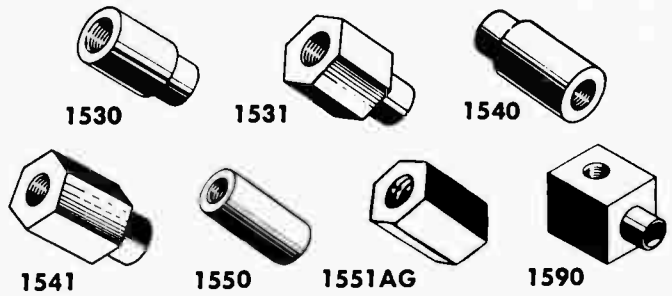
# STANDARDIZED ELECTRONIC HARDWARE

## STANDARD TERMINAL LUGS



**IMMEDIATE DELIVERIES** This is only a partial listing of our many electronic products. Immediate deliveries from the world's largest warehouse stock. For free samples, send request on business letterhead. Please address Dept. 15.

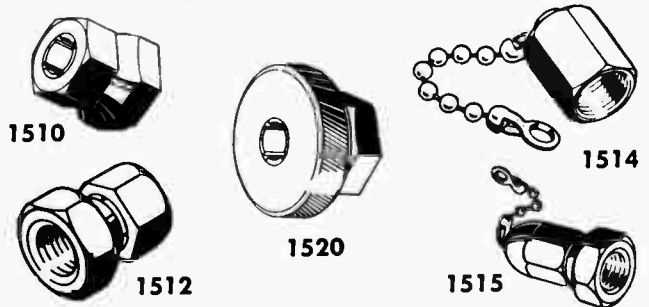
## STAND OFFS



## TAPER PIN TERMINALS



## SHAFT LOCKS



## CUSTOM SPECIFICATION PRODUCTS

TERMINAL BOARDS      PRINTED CIRCUITS  
HARDWARE...

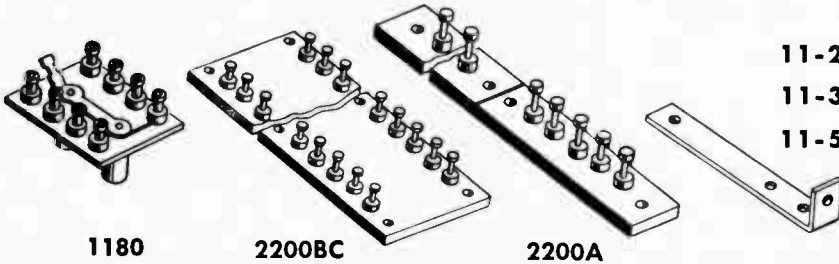
not appearing in our standardized hardware catalog  
available on special order



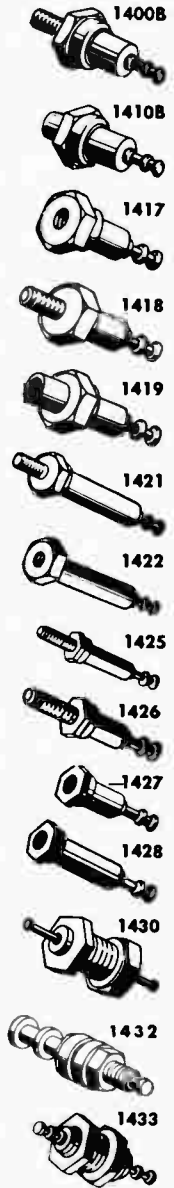
# STANDARDIZED ELECTRONIC HARDWARE

# USECO

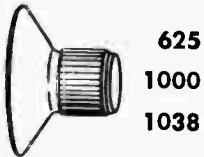
## TERMINAL BOARDS & BRACKETS



## INSULATED TERMINALS



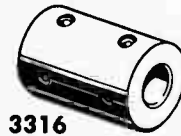
## KNOBS



## CAPTIVE SCREW



## SHAFT COUPLING



## PLUGS AND SOCKETS



## MISCELLANEOUS



## SWAGING PRESS & TOOLS



## HANDLES



# LITTON INDUSTRIES COMPONENTS DIVISION

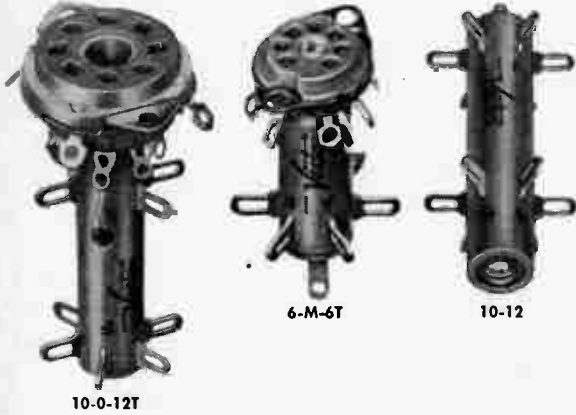
Los Angeles 16, California



# ELECTRONIC COMPANY

LOS ANGELES 65, CALIFORNIA

## POST SOCKET TURRETS



10-0-12T

6-M-6T

10-12

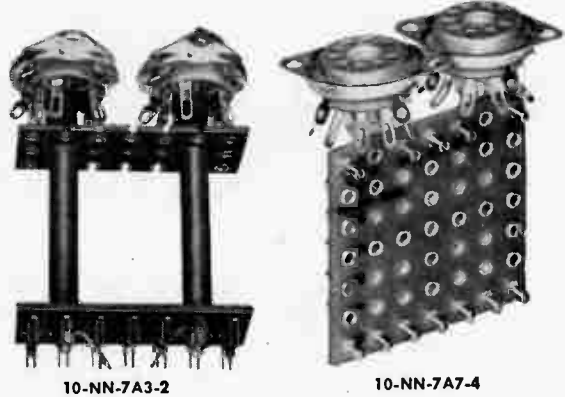
VECTOR SOCKET TURRETS are widely used for mounting circuit components. The posts are Grade XXXP phenolic (or glass silicone to order) 1/2" O.D. with 1/16" wall. Sockets are mica filled phenolic. The terminals are hot tinned brass, saddles cad. plated steel. Also available are premium quality sockets with hot tinned brass or steel saddles, beryllium copper, silver plated terminals (Add "J" to Cat. No. for this). Terminal Turrets without sockets, useful for many mountings, are listed at end of the table.

TRANSISTOR TURRET SOCKETS fit either 3-in-line or 3 on 0.2" Dia. circle type bases. Round socket mounts inside turret with saddle outside. Requires 0.365" mounting hole with two 1/8" side holes spaced 3/4".



Catalog Number	Socket Type	Unit Height	Turret Rings	No. Terms.	Space Between Rings	Other Information
10-0-12T	Octal	2 1/2"	2	12	13 5/8"	Bonded Assy.
8-0-9T	Octal	2 "	2	9	1 "	Bonded Assy.
6-0-6T	Octal	1 1/2"	1	6	—	Bonded Assy.
10-MB-12	7 P.Min.	2 1/2"	2	12	13 5/8"	Bolted Assy.
8-M-9T	7 P.Min.	2 "	2	9	1 "	Riveted Assy.
6-M-6T	7 P.Min.	1 1/2"	1	6	—	Riveted Assy.
10-NB-12	9 P.Nov.	2 1/2"	2	12	13 5/8"	Bolted Assy.
8-N-9T	9 P.Nov.	2 "	2	9	1 "	Riveted Assy.
6-N-6T	9 P.Nov.	1 1/2"	1	6	—	Riveted Assy.
10-12	None	2 1/2"	2	12	13 5/8"	TerminalTurrets
8-12	None	2 "	2	12	1 "	TerminalTurrets
6-12	None	1 1/2"	2	12	5 5/8"	TerminalTurrets
6-A-12	Transistor	1 1/2"	2	12	7/8"	Bonded Assy.
8-A-12	Transistor	2 "	2	12	13/8"	Bonded Assy.
7-A-12-440	Transistor	2 "	2	12	7/8"	Plus End Nut

## DECK TURRET AND WALL TURRET



10-NN-7A3-2

10-NN-7A7-4

DECK TURRET & WALL TURRET assemblies provide means for mounting circuit components similarly to Post-Turrets but are somewhat better adapted to compact multi-tube assemblies. Deck Turrets have terminal strips parallel to the socket plane whereas Wall Turrets have strips perpendicular thereto (See figures). They are designed for use on a chassis or with plug in units. Pattern "A" strip is standard.

* Catalog Number	Type	No. of Sockets	Unit Height	Strip Dimens.	No. of Holes	No. of Terms.	Space Between Strips
10-NN-7A3-2	2 Decks	2 Nov.	2 1/2"	1.90x0.84	7x3	14	1-7/16"
10-3N-11A3-2	2 Decks	3 Nov.	2 1/2"	2.96x0.84	11x3	22	1-7/16"
10-4N-15A3-2	2 Decks	4 Nov.	2 1/2"	4.02x0.84	15x3	30	1-7/16"
10-5N-19A3-2	2 Decks	5 Nov.	2 1/2"	5.08x0.84	19x3	38	1-7/16"
10-NN-7A7-4	1 Wall	2 Nov.	2 1/2"	1.90x1.90	7x7	22	—
10-3N-11A7-4	1 Wall	3 Nov.	2 1/2"	2.96x1.90	11x7	29	—

\* For miniature sockets instead of novals change letter "N" to "M". Change may also be made by user if desired and any combination of Sockets may be set-up subject to space limitations. Other heights are obtainable at factory, viz 2", 3" or greater.

## TUBE BASE SHIELDS



5-9

5-7

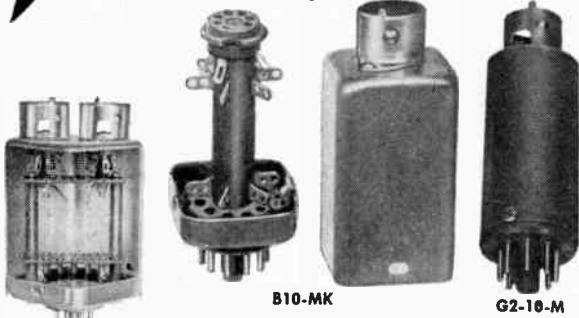
TUBE BASE SHIELDS are intended to be mounted above the socket as a base for conventional bayonet type tube shields. Material is cadmium plated steel.

Cat. No. 57..... For 7 Pin Min. Sockets

Cat. No. 59..... For 9 Pin Noval Sockets

# Vector

## SMALL ROUND OR SQUARE PLUG IN UNITS & CASES



C12-NNK-2

B10-MK

G2-10-M

SMALL ROUND & SQUARE PLUG IN UNITS & CASES for single and two-tube applications utilize deep drawn aluminum cases, with caustic etch finish. Plugs are tube base type; octal 8 or 11 pins for B, C & G2 types;

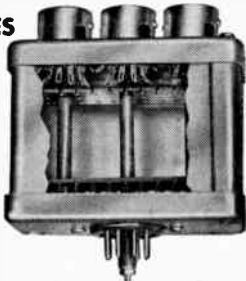
9 pin noval for G2.1 size and 7 pin Min. for G2.2. Sockets are mica filled phenolic with brass, cad plated contacts. Also available are premium quality sockets with beryllium copper, silver plated terminals. (Add "J" to Cat. No. for this).

Catalog Number	Type of Plug	Type of Socket	Type of Turret	Dimensions Height	Size
8 10 MK	Octal 11	7 P.Min.	Post	2 1/2"	1-7/16" Sq.
8 10 NK	Octal 11	9 P!Nov.	Post	2 1/2"	1-7/16" Sq.
8 10 TK	Octal 11	None	Post	2 1/2"	1-7/16" Sq.
8 12 OK	Octal 11	Octal	Post	3 "	1-7/16" Sq.
C 12 MK	Octal 11	7 P.Min.	Post	3 "	2 " Sq.
C 12 NK	Octal 11	9 P.Nov.	Post	3 "	2 " Sq.
C 12 TK	Octal 11	None	Post	3 "	2 " Sq.
C 12 NNK-2	Octal 11	(2) 9 P.Nov.	2 Decks	3 "	2 " Sq.
C 12 MMK-2	Octal 11	(2) 7 P.Min.	2 Decks	3 "	2 " Sq.
G2-10-M	Octal 8	7 P.Min.	None	2 1/2"	1 1/4" Diam.
G2-10-N	Octal 8	9 P.Nov.	None	2 1/2"	1 1/4" Diam.
G2.1-8-N	9 P.Nov.	9 P.Nov.	None	2 "	3/4" Diam.
G2.2-8-M	7 P.Min.	7 P.Min.	None	2 "	5/8" Diam.

(Add "-2" to Cat. No. for 2 deck type; and "-4" for wall type; see section above). Terminal wafers available for G2, G2.1 and G2.2. Military quality also available in all types at extra cost. (Add "J" to Cat. No.)

The above are the most popular types, but many others are available of the factory viz 2", 2 1/2", 3" or 4" height in B, C & G2 types. 8 pin Octal plugs can be supplied instead of 11 pin in all cases. Deck or Wall Turrets instead of post turrets are also available.

## LIP LOC CASES



Plug-In Unit made with Kit 4-EK3 using Case EX-12

LIP-LOC CASES: Provide ideal aluminum enclosures without interior structures for Plug-in-Units, instruments, etc., consist of two drawn end pieces and 2 L shaped center-section members which clamp between the end pieces. Only 2 screws need be removed to disassemble. Parts may be mounted on any 4 of 6 sides, with good accessibility. These cases may be combined readily with Turrets and Plugs to make compact Plug-in-Units. Caustic etch finish is standard or anodized to special orders.)

### CASE DIMENSIONS

Catalog Number	Base Length	Base Width	Height
DX-12	3.055"	2.1"	3"
EX-12	3.88"	1.63"	3"
E1X-12	5.88"	1.63"	3"
E2X-12	4.82"	1.70"	3"
FX-12	4.5"	2.44"	3"
G1X-12	4.125"	2.1"	3"
G2.1X-12	5.1"	2.1"	3"

(Also longer or shorter heights, perforated center sections or type Xa with 4 piece port type center-section are obtainable.)

## MULTI-USE PLUG-IN-KIT:

These flexible assemblies provide simple readily wired packages utilizing LIP-LOC cases and Deck-Turrets which may be arranged to mount many circuit assemblies. For example, KIT 4-EK3 may be set-up to mount 1 to 3, either 7 or 9 pin miniature sockets in any order using adapter rings to accommodate different socket diameters. Socket holes are 3/4" diameter with slots for saddle screws. Plug bases are supplied to close socket holes where tubes are not required. (If octal sockets are required, holes can be enlarged by customer.) 7 and 9 pin sockets are supplied and also an equal number of JAN type shield bases of each type and corresponding to the number of socket holes in the cover. An extra undrilled plug base is supplied so that larger plugs such as the "Blue-Line" may be mounted. (Latter is not supplied but spacers & screws for this are included.) Finish is caustic etch on aluminum. Sockets are mica filled phenolic, commercial grade, terminal strips and spacers are phenolic. Adapter rings to mount 7 pin sockets are furnished. Two Deck type strips with ZIP terminals are assembled with 9 pin sockets and 11 pin octal type plug into case. One extra third deck is supplied as a loose port which may be easily inserted in the stack if desired. Overall height of all units is 3".

Kit Number	Sockets	Base Dimens.	Deck Spacing (2 Decks)	Number Terminals Per Deck
KIT 4-EK3	3N or 3M	1 5/8" x 3 3/8"	1-7/16"	22
KIT 5-E2K3	4N or 4M	1.68" x 4.82"	1-7/16"	30
KIT 6-E1K3	5N or 5M	1 5/8" x 5 3/8"	1-7/16"	38

Many other case sizes and structures are obtainable at the factory.

## TUBE BASE PLUGS



P7

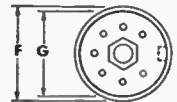
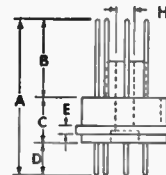
P7A

KI.334

KI.302



PRBL



Vector Tube Base Plugs fit the 7-pin miniature, 9-pin noval and 8-pin octal tube sockets. Castings are mica-filled phenolic. The pins are of high strength phosphor bronze. These plugs may be mounted in three ways:

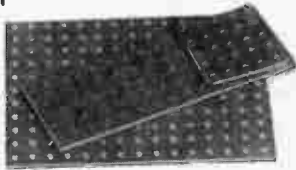
- By means of a screw passing through the center of the plug. The miniature and noval plugs have a recessed hexagonal hole in the base which fits a #4-40 or 5/40 small pattern nut.
- They may be retainer ring mounted in a plate or chassis. If the plugs are to be mounted in a plate add the letter "R".
- Where round shells are to be attached, the 7- and 9-pin plugs can be furnished with 2 threaded inserts in the side (#1-72 thread) when the letter "F" is added to the part number. The miniature plugs are available without the center post, and with the pins bent into hooks to facilitate soldering.

Cat. No.	Type	A	B	C	D	E	F	G	H	Retainer Ring No.
P7	7-pin min.	1 1/4"	17/32"	5/16"	.262	1/16"	.621	.588	.125	None
P9	9-pin noval	1 1/4"	17/32"	5/16"	.262	1/16"	.748	.700	.125	None
P7A	7-pin min.	.791	3/16"	5/16"	.262	1/16"	.621	.588	.125	None
P9A	9-pin noval	.791	3/16"	5/16"	.262	1/16"	.748	.700	.125	None
K1	.302 (Same as P7 exc. no centerpost)									
K1	.402 (Same as P-9 exc. no centerpost)									
K1	.312 (Same as P7A exc. no centerpost)									
K1	.412 (Same as P9A exc. no centerpost)									
K1	.334									
Min. hooked pin		.712	.150	5/16"	.262	1/16"	.621	.568	.125	None
K1	.434									
Novel hooked pin		.725	.162	5/16"	.262	1/16"	.748	.700	.125	None
P8L	Loctal									None

As shown in Fig. 2  
Add R after "P" or "K" for retainer ring  
Add F after "P" or "K" for 2/56 knurl nuts.

# Vector

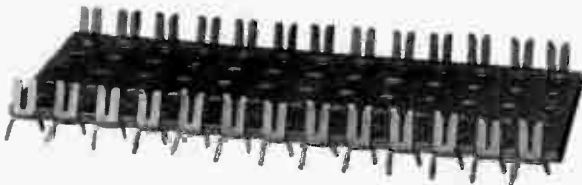
## TERMINAL PUNCH BOARD



TERMINAL PUNCH BOARD is used for quick mounting of circuitry, thru use of pre-punched terminal holes. Pattern "A" provides an all-over grid of holes .093" in diameter, spaced 0.265" in each direction; thickness is 1/16". Pattern "AA" is the same but board is 3/32" thick. Pattern "B" has 1/16" dia. holes on a 3/16" grid and is 1/16" thick. Grade XXXP phenolic is used.

Cat No.	Pattern	Width Approx.	Length Approx.	Thickness	No. Holes Each Dir.
64A18	A	4 7/8"	17"	1/16"	64 x 18
64AA18	AA	4 7/8"	17"	3/32"	64 x 18
90B30	B	5-11/16"	17"	1/16"	90 x 30
32A5	A	1 3/8"	8 1/2"	1/16"	32 x 5
32AA7	AA	1-29/32"	8 1/2"	3/32"	32 x 7
32AA9	AA	2- 7/16"	8 1/2"	3/32"	32 x 9
32AA11	AA	2-31/32"	8 1/2"	3/32"	32 x 11

## TERMINAL BOARDS



Terminal Boards using the above type "AA" punched material with ZIP edge type terminals (T9.1) installed along two outer edges are available in several sizes as shown below. Grade XXXP tan phenolic, 3/32" thick with approximately .093" diameter holes spaced 0.265" on centers is standard. Glass silicone material can be obtained to special order, as well as other sizes and terminal types.

User can readily saw off lengths for his application. For additional terminals in the center portion Push-In Type T9.4 should be ordered separately.

Illustration of Edge ZIP T9.1 terminal shows manner of attachment to terminal boards and how components can be mounted.

Cat. No.	Width Approx.	Length Approx.	No. of Terminals	No. Holes Each Dir. L — W.
32AA3-T9.1	0.84"	8 1/2"	64	32x3
32AA5-T9.1	1.35"	8 1/2"	64	32x5
32AA7-T9.1	1.87"	8 1/2"	64	32x7

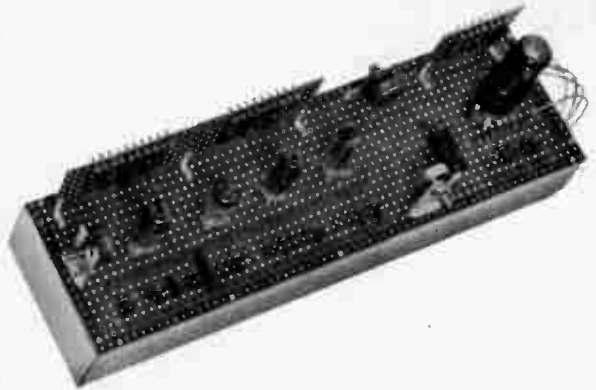
## CABLE CONNECTOR PLUGS

These permit connecting cables to miniature and noval tube sockets. Aluminum shells are fitted to the above plugs. In type "C" a rubber grommet (with 1/4" hole) is mounted in the side wall and a center screw holds the assembly together. In type "D" a Heyco strain relief grommet is mounted in the end of the shell and the base screws hold the shell on the plug.

End Outlet Cat. No.	Side Outlet Cat. No.	No. of pins	Outside Diam.	Approx. Length (Exc. Pins)
P7D	P7C	7	5/8"	2.187"
P9D	P9C	9	3/4"	2.3"

(Similar connectors for other tube type supplied to order.)

## EXPERIMENTER'S CHASSIS KIT

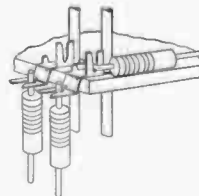


The EXPERIMENTER'S CHASSIS Kit for rapid setup of circuitry provides a perforated phenolic board, type AA described above, aluminum channel supports, PUSH-IN ZIP terminals as above, miniature seven pin, nine pin and octal sockets, self tapping screws and spacers for mounting sockets, pot and switch mtg brackets, and other miscellaneous hardware and strips. Instructions for assembly are supplied with the kit.

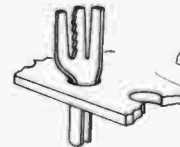
Kit 22X resembles #20X except that parts are provided to connect transistors. Transistor sockets with special clips fasten into the punch board holes. Or transistors may be clipped directly to the board without sockets.

Cat No.	Description
Kit-20X	Low Cost sampler with 4 3/4" x 8 1/2" Deck & accessories
Kit-21X	4 3/4" x 17" Deck—Terminals, Sockets, many accessories
Kit-22X	4 3/4" x 8 1/2" Deck for Transistor circuitry

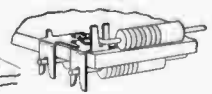
## VECTOR ZIP TERMINALS



SIDE ZIP  
T9.0



PUSH-IN  
T9.4



EDGE ZIP  
T9.1

VECTOR ZIP TERMINALS — Remarkable new "ZIP" Terminals do "everything". The PUSH-IN Type need only be pushed into the .093" hole (Pattern A or AA board) and holds itself in without staking (May be staked if desired for maximum holding). It is provided with serrated slots to grip inserted wires — it also has through panel hole and additional slot on opposite side and is offset for Riser wire application. "Side Zip" type as used in Deck type units provides side projecting fork and is eyeletted in place in .093" hole. "Edge Zip" is similar to latter-but laps over edge of strip with main fork perpendicular to strip. Hot tin dipped eyelets listed separately for attaching ZIPS (except Push-in type) may also be used alone as terminals.

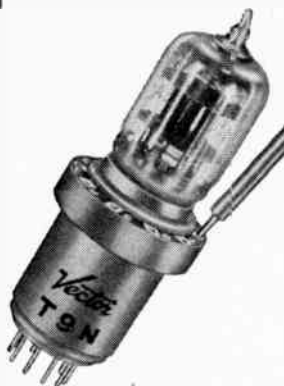
Cat No.	Type	Mtg. Hole	Length
9.0	Side Zip	.093	
9.1	Edge Zip	.093	
9.4	Push-in	.093	
7.0	Eyelet	.093	3/32"
7.1	Eyelet	.093	1/8"
7.2	Eyelet	.093	5/32"

# Vector

## TUBE SOCKET TEST ADAPTERS



T80



T9N

TUBE SOCKET TEST ADAPTERS are inserted between the socket and the tube and provide test tab elements for checking. Connections are wired straight thru from plug to socket. Beryllium copper socket contacts for long-life — malded tan phenolic bodies.

Catalog Number	Socket Type
T-8-0	Octal
T-7-M	Miniature
T-9-N	Noval
T-789	Set of above three in kit
P-1	Probe for above

## EXPERIMENTER'S TEST ADAPTERS

EXPERIMENTER'S TEST ADAPTERS. These are similar to the Socket Test Adapter but are less the shells and tabs so that connections can be cross-connected in any desired way. User must solder connections (Outer shells available at factory — add "S" to number to obtain).

Catalog Number	Socket Type
TX-8-0	Octal
TX-7-M	Miniature
TX-9-N	Noval
TX-789	Set of above three in kit



TX-8-0

## SOCKET EXTENDERS

SOCKET EXTENDERS provide a replaceable unit for use in tube testers. Wear is shifted from the socket in the tester to the one in the Extender so that when it is worn out a new one can be easily inserted. Sockets have highest grade beryllium copper contacts. A screw projects thru the plug and may be used to hold the unit firmly in place if desired. Socket to plug leads are soldered and an outer shell is used.

Catalog Number	Socket Type
#1262	Octal 8
#1263	9 P. Noval
#1264	7 P. Miniature



## THE ROTOPROBE

THE ROTOPROBE is a new type of test adapter to which a rotating test lead is permanently attached. Rotation of the shell causes a contact arm to move across the pins connecting the socket elements so that any position may be quickly contacted. This serves the same purpose as the usual Test Adapters but is more convenient and faster.

Catalog No.	Socket Type
T-8-B	Octal
T-7-B	Miniature
T-9-B	Noval
T-789-B	Set of above three in kit



## SOCKET CHANGE ADAPTERS

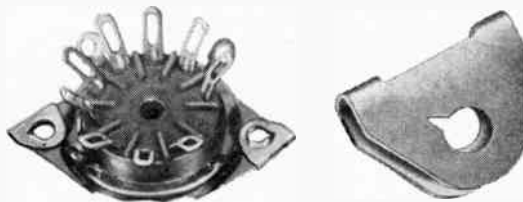
SOCKET CHANGE ADAPTERS facilitate use of unlike tube bases in existing sockets where a change of tube types is required. To be wired by user. Add "S" to number for an outer shell which may be cemented in place.

Cat. No.	Socket	Plug
T 780	7 P. Min.	Octal 8
T 79	7 P. Min.	9 P. Nov.
T 807	Octal 8	7 P. Min.
T 809	Octal 8	9 P. Nov.
T 97	9 P. Nov.	7 P. Min.
T 980	9 P. Nov.	Octal 8



T97

## SOCKET SADDLE NUTS

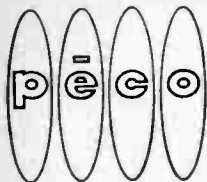


U nuts designed especially to slip over and clamp an socket saddles provide convenient means for quickly screwing sockets to chassis. Two types are available, Na. 4-40 U which fits Na. 4-40 screws and Na. 4Z U which fits a Na. 4 sheet metal screw. The latter is stronger since it is of thicker metal than the former. Screws should be hardened steel for both nuts to avoid stripping and are also listed below: Material is cad. plated steel.

Cat. No.	Thread	Screw Length
4-40 U Nut	4/40	—
4-Z U Nut	4 Z	—
S4/.250 Screw	4-40	1/4"
S4Z/.250 Screw	4 Z	1/4"

## HEATER RECTIFIER

VECTOR HEATER RECTIFIER, Type B3001 — Small full-wave selenium rectifier-filter circuit for eliminating AC hum by supplying DC heater current to first stage of low-level amplifier and preamps. Octal plug for convenient mounting, space above chassis only 1 3/8" x 1 3/8" x 4". Rated input voltage 6.3 to 7.5V AC, can be connected directly to available AC filament supply. Provides up to 0.3 amps DC. Produces no external magnetic fields; completely shielded, with grounding connection to case.



MANUFACTURERS OF ELECTRONIC EQUIPMENT

**POMONA** *Electronics* **CO., INC.**  
pomona, california

**SOCKET SAVERS**



**MODEL SS-7**  
SEVEN PIN MINIATURE  
NET 1.95 ea.

The Socket Saver is designed to be installed on tube checkers and other electronic equipment to prevent wear and tear of sockets on



**MODEL SS-9**  
NINE PIN MINIATURE  
NET 1.95 ea.

original equipment. They are easily installed and removed eliminating the necessity of replacing and re-wiring sockets on original equip-



**MODEL SS-8**  
EIGHT PIN OCTAL  
NET 1.95 ea.

ment. Built of quality materials. **BERYLLIUM COPPER LONG LIFE CONTACTS** to give maximum service.

MODEL SS — 789 KIT, Set of Three. NET

**TEST SOCKET TUBE ADAPTERS**



**MODEL TVS-7**  
SEVEN PIN MINIATURE  
NET 1.65 ea.

Peco Test Socket Tube Adapters are ideal for making measurements of voltage, resistance, audio and video without tracing complicated circuits from the bottom of the chassis. They Feature: Extended test



**MODEL TVS-9**  
NINE PIN MINIATURE  
NET 1.85 ea.

tabs for easy use with either alligator clips or test prods; Low loss mica-filled sturdy phenolic construction; Power factor less than 0.010 at 10 Mc; High insulation resistance, the I. R. exceeds 500,000 meg-



**MODEL TVS-8**  
EIGHT PIN OCTAL  
NET 1.55 ea.

ohms at 40% R. H., at 24° C; Distributed capacity, inter-element approximately 1 micro-micro farad; High voltage operation, voltage breakdown between elements exceeds 1700 volts AC or DC.

MODEL TVS — 789 KIT, Set of Three. NET 4.95

SPECIAL ADAPTERS DESIGNED TO YOUR SPECIFICATIONS.

**VIBRATOR TEST ADAPTER**



- Eliminates Guesswork
- Instantly shows when contacts are sticking or open
- Will indicate starting voltage

**VIBRATOR TEST ADAPTER** Simplifies servicing of auto radios by eliminating the vibrator as a possible source of trouble. Easy to use with any standard tube tester. Compact, durable phenolic construction; A working Vibrator will show approximately equal brilliance on both lights. Excessive brilliance on either light, or one or both lights not illuminated, indicates a defective Vibrator.

MODEL 4A 4 prong A base Shunt coil 6-12 volt NET  
MODEL 3D 3 prong D base Shunt coil 12 volt NET

**TEST SOCKET CATHODE RAY TUBE ADAPTERS**



**MODEL TVS-1**  
DUO-DECAL  
TEST SOCKET ADAPTER

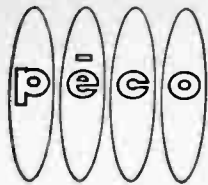
For Television picture tubes

The PECO TVS-1 Test Socket Adapter is ideal for making measurements of voltage, resistance, and video from the base of the picture tube. The TVS-1 is inserted between the CR Tube base and its socket. This completes the circuit and makes all connections readily accessible. Measurements can be made without tracing circuit wiring to test points below chassis, thereby saving valuable time and increasing efficiency in trouble shooting. NET 1.95 ea.



**MODEL TVS-14**  
DIHEPTAL  
TEST SOCKET ADAPTER

The PECO TVS-14 TEST SOCKET ADAPTER is ideal for making measurements of cathode ray tubes with a 14 pin diheptal base as in oscilloscopes, radar indicators, industrial television, studio monitors, etc. Sturdy Phenolic Construction; Power Factor less than 0.010 at 10 Mc. High insulation resistance I. R. exceeds 100,000 Megohms @ 50% R. H., 25° C. Low Inter-element capacity, less than 2 micro-micro farad. Voltage breakdown between adjacent elements exceeds 7,500 volts D. C. NET 14.90 ea.



MANUFACTURERS OF ELECTRONIC EQUIPMENT

# POMONA *Electronics* CO., INC.

pomona, california

## PECO PATCH-CORDS STACK-UP CONNECTING LEADS



MODEL B (BANANA TYPE)

Ideal for rapid circuit connections. Provides access to additional plugs at end or at side. For use with test equipment. Fits all standard banana jacks. One piece beryllium copper spring for positive long life contact. Extra flexible polyvinyl insulated wire... 18 gauge, stranding 65 x 36 T. C. Wire lead securely solder-bonded to plug. Plug body molded with durable polyethylene insulation. Available in 4", 8", 12", 18", 24" and 36" lengths. Colors: Black, Brown, Red, Orange, Yellow, Green, Blue, Violet, Grey and White. NET 1.50 ea.

Specify length and color when ordering.



MODEL P (.080 PHONE TIP)

Miniature patch cords. These provide a greater number of patch cords per given area. Used with test equipment, computers, problem boards, etc. Will fit all standard .080 tip jacks.

Beryllium copper heat treated spring contact, for long life and low contact resistance. Finish, silver plate, gold flash. Extra flexible polyvinyl insulated wire, 20 gauge. Stranding 41 x 36 T. C. Wire lead securely solder-bonded to assembly. Plug body molded with polyethylene. Compact size, extended height above jack, 3/8", diameter 1/4". NET 1.50 ea.

Lengths and colors available, same as Model B Patch Cords.

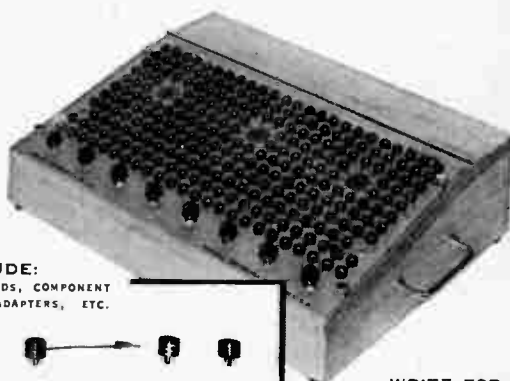


## MODEL C-38 CIRCUIT DESIGNER

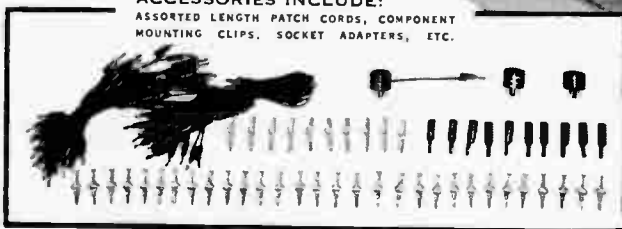
an engineering tool for rapid synthesis of electronic circuits

The simplicity and flexibility of the PECO Circuit Designer permits reliable "quick and clean" solderless assembly. Saves fabrication time, check-out time lost due to circuit errors and the cost of scrapped chassis.

Every component of the Circuit Designer is re-usable again and again. Complete with Accessories. 295.00 NET



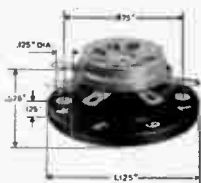
ACCESSORIES INCLUDE:  
ASSORTED LENGTH PATCH CORDS, COMPONENT MOUNTING CLIPS, SOCKET ADAPTERS, ETC.



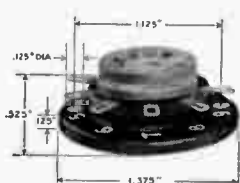
WRITE FOR FREE BULLETIN FOR ADDITIONAL INFORMATION

## SURFACE MOUNTED BREADBOARD SOCKETS

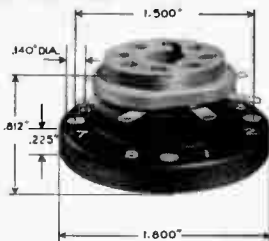
ideal for electronic and experimental use



MODEL XS-7  
SEVEN PIN MINIATURE  
NET 49c ea.



MODEL XS-9  
NINE PIN MINIATURE  
NET 57c ea.



MODEL XS-8  
EIGHT PIN OCTAL  
NET 57c ea.

Surface Mounted Breadboard Sockets are used for experimental circuit design, portable and enclosed units, plug-in and packaged assemblies. They feature: An insulated base to prevent connections from shorting to chassis; Eliminates double chassis design; Circuits may be wired in an enclosed unit; The base connections are numbered for easy identification;

Grade-A phosphor bronze spring contacts; Standard center to center mounting holes; For ease of installation the 7 and 9 Pin Miniatures may be mounted either in the center or on the sides, the 8 Pin Octal is mounted on the sides; Small mounting holes permit the re-use of experimental chassis.

## METER REVERSING POLARITY SWITCH



MODEL MS-1  
FOR USE WITH SIMPSON 260 TESTER

The MS-1 is designed to reverse polarity when making circuit tests without removing test leads to meter. It is instantly attached by plugging into test lead holes on Simpson Tester Model 260. Saves time in circuit testing. NET 5.75 ea.



# RF Coaxial Cable CONNECTORS

meet all your circuit design, mounting and environmental requirements

## “DM” Series

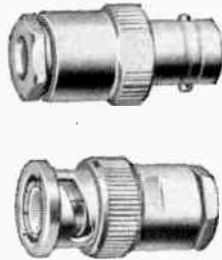
- New subminiature series
- One-half standard BNC size
- Watertight, weatherproof
- Quick-disconnect bayonet locking
- Teflon insulators assure low electric loss
- No crimping tools required for assembly



Dage No.	Description
1-317-1	Plug for .135 max. OD cable
1-345-1	Adapter for bulkhead feed-thru
1-352-1	Jack for .135 max. OD cable
1-379-1	Jack for .095 max. OD cable
1-399-1	Adapter—DM plug to BNC jack
1-522-1	Jack for RG-59/U cable
1-666-1	Jack receptacle—solder mounting
1-672-1	Plug for .065 max. OD cable
5230-1	Panel mounting cable jack for RG-58/U cable
5276-1	Plug for .199 max. OD cable
5286-1	Panel mounting receptacle— $\frac{1}{4}$ max. panel thickness
5296-1	Plug for RG-122/U cable

## “BNC” Series

- For use with miniature RF cables
- Small, lightweight, weatherproof
- Quick-disconnect bayonet locking
- Teflon insulators assure low electric loss
- Manufactured to MIL-C-3608 specs.



AN No.	Dage No.	Description
UG-88C/U	813-1	Cable plug for RG-55, 58/U
UG-89B/U	415-1	Cable jack for RG-55, 58/U
UG-260B/U	815-1	Cable plug for RG-59, 62, 71/U
UG-261B/U	816-1	Cable jack for RG-59, 62, 71/U
UG-262B/U	1-110-1	Flange mount cable jack for RG-59, 62, 71/U
UG-290A/U	671-1	Receptacle, flange mounting
UG-291B/U	817-1	Flange mount cable jack for RG-55, 58/U
UG-492B/U	2201-1	Bulkhead adapter, single hole mounting
UG-625B/U	1-408-1	Receptacle, single hole mounting
UG-914/U	1-278-1	Straight adapter
UG-932/U	486-1	High voltage cable plug for RG-59, 62, 71/U
UG-1016/U	2104-1	High voltage cable jack for RG-59, 62, 71/U

## “N” Series

- For use with medium sized cables
- Low voltage for microwave applications
- Excellent VSWR at frequencies up to 10,000 mc.
- Both weatherproof and non-weatherproof types
- Meets MIL-C-71A specifications



AN No.	Dage No.	Description
UG-18C/U	1-624-1	Cable plug for RG-5, 6, 21/U
UG-19C/U	1-526-1	Flange mount cable jack for RG-5, 6, 21/U
UG-20C/U	1-527-1	Cable jack for RG-5, 6, 21/U
UG-21D/U	1-111-1	Cable plug for RG-8, 9, 9A, 10/U
UG-22D/U	1-258-1	Flange mount cable jack for RG-8, 9/U
UG-23D/U	1-247-1	Cable jack for RG-8, 9/U
UG-58A/U	019-1	Receptacle, flange mounting
UG-160C/U	2149-1	Cable jack, single hole mount, for RG-8, 9-U
UG-536/U	385-1	Cable plug for RG-55, 58/U
UG-935A/U	1-256-1	Flange mount cable jack for RG-10, 12/U with armor clamp
UG-940A/U	582-1	Cable jack for RG-10, 12/U with armor clamp
MX-913/U	583-1	Cap and chain

## “SM” Series

- Small, lightweight, non-constant impedance
- For small cable where electrical matching and weatherproofing are not important
- Positive metal-to-metal braid clamping arrangement
- Plugs have female contacts; jacks and receptacles have male pin



AN No.	Dage No.	Description
UG-690/U	700-1	Adapter—SM jack to BNC plug
UG-691/U	707-1	Adapter—BNC plug to SM plug
UG-692/U	716-1	Cable plug for RG-59, 62/U
UG-693/U	724-1	Cable plug for .177 OD cable
UG-694/U	728-1	Right angle receptacle
UG-695/U	737-1	Straight adapter, two jack ends
UG-696/U	741-1	Pressurized bulkhead receptacle
UG-697/U	747-1	Turret lug bulkhead receptacle
UG-698/U	750-1	Cable jack, panel mount, for .177 OD cable
UG-699/U	753-1	Cable plug for RG-58/U
UG-700/U	754-1	Cable jack for RG-58/U
UG-923/U	755-1	Cable jack for RG-59/U

In addition to many other standard types, Dage can also supply custom RF connectors to meet your special requirements. Write for free copy of Catalog 201-A.



**ELECTRIC COMPANY, INC.**

Beech Grove, Indiana



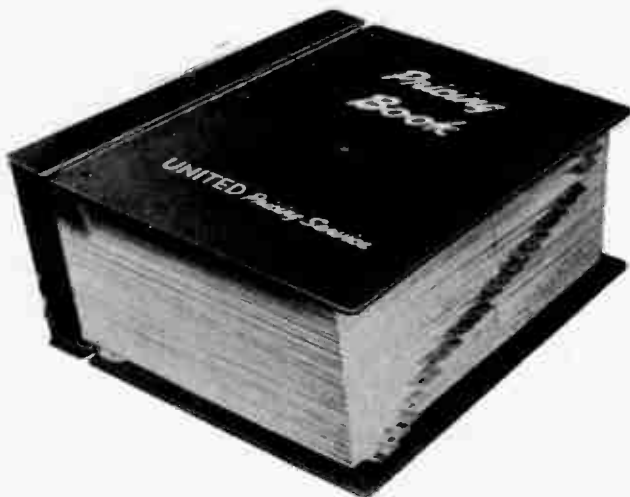
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# DELIVERY

Delivery is often dependent on availability of raw materials. Check with your distributor for delivery information at the time you place your order.

# RCA TEST EQUIPMENT

FOR SERVICE, INDUSTRY, SCHOOLS, LABORATORIES

## WR-69A TV/FM SWEEP GENERATOR



Application: for visual alignment and trouble-shooting of TV tuners, sound and picture if amplifiers, trap circuits and video amplifiers. Has preset switch positions for all VHF TV channels, and continuous tuning from 50 Kc to 50 Mc (essential requirement for alignment of color TV video and chrominance circuitry). Also full coverage of FM band. High output voltage flat and free from spurious responses. Fundamental signals generated on all channels by push-pull oscillator.

- Exceptionally good linearity provided by precision vibrating capacitor.
- Continuously variable sweep width, with maximum width of at least 11 Mc.
- Flat output, within 0.1 db per Mc of sweep width, even at maximum sweep width. Especially suited to requirements of color TV.
- Special blanking circuit produces 'scope time base or zero reference line for use in discriminator alignment.
- Dual-piston attenuator controls push-pull oscillator rf output ratio over a range of 20,000 to 1.

**\$295.00\*** includes balanced 300-ohm rf output cable, resistance terminated if/vf-output cable, instruction booklet.

\*User Price (Optional)

Output: 0.1 volt rms across cable termination at all frequencies. Minimum sweep width: 11 Mc on channel 2, 12 Mc on all other channels. 25 Mc on IF/Video range. Output termination—300 ohms balanced, channels 2 to 13 inclusive and on FM bands. 100 ohms unbalanced on IF/Video. Bias voltage supply: two outputs, 0 to 12 volts, continuously variable. Impedance to ground 350 ohms max. Weight: 16 lbs. Size: 13 $\frac{3}{4}$ " x 10" x 7 $\frac{1}{4}$ ".

## WR-86A UHF SWEEP GENERATOR

Application: for UHF TV applications from 300 to 950 Mc—combines a wide sweep range with a high output voltage of excellent amplitude linearity. A blanking circuit is included to provide a reference base line on an oscilloscope. Horizontal sweep frequency for the 'scope can be obtained from front panel terminals. The WR-86A has 50-ohm output and will work into a 50-ohm unbalanced load or, with the WG-296 padded balun provided, into a 300-ohm balanced load. Use accessory WG-298A UHF Demodulator for visual observation and measurement of standing-wave ratio of termination on 300-ohm line.

- Output frequency continuously variable on center frequencies of 300 to 950 Mc.
- Sweep width is 10% of indicated dial frequency up to 750 Mc; 75 Mc width from 750 to 950 Mc.
- Adjustable piston-type attenuator gives 60 db range of attenuation.
- A sinusoidal sweep output is provided for an oscilloscope with 150 degrees of phase adjustment.
- At least 0.6 volt output across either 50 ohms or 300 ohms.
- Amplitude variation at maximum sweep width no greater than 0.1 db/Mc.
- Lightweight and portable, attractively styled.
- Weight: 15 lbs.
- Size: 13 $\frac{1}{2}$ " x 9 $\frac{3}{4}$ " x 7 $\frac{1}{2}$ ".



**\$275.00\*** complete with WG-227 RF Output Cable, WG-296 50-to-300 ohm padded balun, instruction booklet.

\*User Price (Optional)

# RCA TEST EQUIPMENT

FOR SERVICE, INDUSTRY, SCHOOLS, LABORATORIES

## WR-99A CRYSTAL-CALIBRATED MARKER GENERATOR



**\$242.50\*** complete with rf output cable, instruction booklet.

*\*User Price (Optional)*

Application: supplies a fundamental frequency rf carrier of crystal accuracy for use in aligning and troubleshooting TV (color and black-and-white) and FM receivers, and other electronic equipment operating in the range of 19 to 260 Mc. Built-in crystal calibrator, heterodyne detector, amplifier and speaker provides calibrating beats at 1 Mc or 10 Mc intervals throughout entire tuning range which is covered by 8 bands. A built-in 4.5 Mc crystal provides necessary accuracy for alignment of intercarrier-if amplifiers and discriminators.

- At least 0.1 volt output, into 95 ohms terminated.
- Provides signals for adjusting vertical or horizontal linearity.
- Precision matched impedance/resistance pad attenuator, 0-60 db in 5 db steps.
- Special modulation input available for re-transmission.
- Provision for use as Heterodyne Frequency Meter.
- Provides dual markers for band-width checks and rf alignment.
- Triple markers for sound-if alignment and band-width checks.
- Adjustable dial pointer for accurate registration with crystal-calibration check points.

## WR-70A RF/IF/VF MARKER ADDER

Application: for rf, if and video sweep alignment of both color and black-and-white TV receivers. Provides sharp, easy-to-read markers for alignment. A choice of four different marker shapes is available, permitting use of marker type best suited to the response curve. Designed for use with conventional marker and sweep generators, such as the RCA WR-39 and WR-89 series marker generators and the WR-59 and WR-69 series TV sweep generators. With the WR-70A, the marker signal is added to the sweep-response curve after the sweep signal is taken out of the receiver under test.

- Eliminates or reduces distortion of sweep curve by the marker.
- Permits trap alignment without marker "suckout."
- Hi-Q markers—high in amplitude, narrow in width.
- Four marker choices—positive peak, negative peak, positive and negative peaks (wide band), positive and negative peaks (narrow band).
- Voltage stabilized for rock-steady trace display.

### SPECIFICATIONS

IF/VF sweep input—50 Kc to 50 Mc. RF input—50 Mc to 250 Mc.

**MINIMUM INPUT VOLTAGES**—IF/VF—0.1 volts rms. RF Sweep sample input—0.005 volts rms. Marker input—0.1 volts rms. Maximum demodulator signal input—8 volts peak-to-peak.

**MAXIMUM SIGNAL OUTPUT**—Marker signal—2.5 volts rms. Demodulator signal—10 volts peak-to-peak.

Input and output impedances all 100 ohms except demodulator signal input of 0.5 megohm.

Weight: 8 lbs. Size: 7½" x 10½" x 6¼".



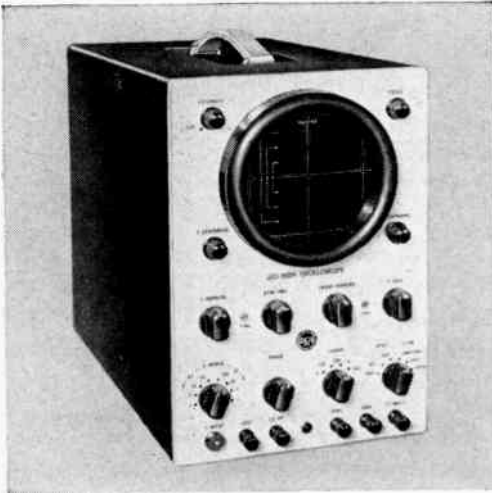
**\$97.50\*** complete with four coaxial cables and instruction booklet.

*\*User Price (Optional)*

# RCA TEST EQUIPMENT

FOR SERVICE, INDUSTRY, SCHOOLS, LABORATORIES

## WO-88A 5" OSCILLOSCOPE



**\$179.50\*** complete with WG-300B Direct/Low Capacitance Probe and Cable and instruction booklet.

*\*User Price (Optional)*

Application: provides excellent square wave response and remarkably faithful reproduction of horizontal and vertical sync and blanking pulses, sweep alignment traces, and other complex waveshapes encountered in TV servicing. Built-in voltage calibrating facilities permit simultaneous waveshape display and peak-to-peak voltage measurements. Sync polarity may be reversed instantly by simply clicking a front-panel switch. Matched high-impedance probe gives the "88" an over-all input resistance of 10 megohms and an input capacitance of less than 10  $\mu\text{f}$ .

- Frequency response flat within 3db from 0 to 500 Kc, useful to 1.0 Mc.
- Direct-coupled vertical amplifier.
- 5" Cathode-ray tube with magnetic shield.
- Sensitivity: 0.025 rms or 0.07 peak-to-peak.
- Sweep frequency: 15 cps to 30 Kc.
- Rise time: 0.5 microseconds.
- 60-cycle sweep with wide angle phasing control.
- Frequency-compensated attenuator.
- 1-volt peak-to-peak calibrating voltage.
- **MAXIMUM INPUT VOLTAGES**  
dc: 700 volts  
ac: peak-to-peak: 2000 volts
- Weight: 25 lbs. Size: 13½" x 16½" x 9".

WG-388A Modification Kit is available to adapt the WO-88A Oscilloscope for Color TV. Kit includes all parts and detailed instructions for modifying WO-88A for narrow and wide-band operation from dc to 4.5 Mc. Price only **\$5.95\***

## WO-56A 7" OSCILLOSCOPE

Application: for fast, accurate trouble-shooting of TV receivers and industrial applications. Features high sensitivity and wide frequency range of both the vertical and horizontal amplifiers. Dual controls simplify "coarse" and "fine" adjustments; fully shielded input cable and low-capacitance probe permits use in circuits which would not function properly if connected directly to an oscilloscope. 7" screen plus trace expansion of 3 times screen diameter provides unusual waveshape display for distant viewing or examination of minute portions of waveshapes.

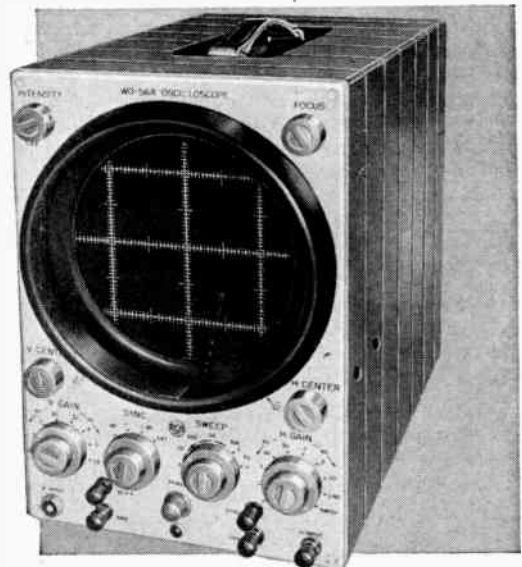
- Identical vertical and horizontal push-pull dc amplifiers and frequency-compensated and voltage-calibrated attenuator networks.
- Built-in calibrating voltage.
- dc amplifiers flat within -2db from 0 to 500 Kc; within -6db from 0 to 1 Mc.
- Sweep range from 3 cps to 30 Kc; preset sweep positions of 30 cps and 7875 cps for automatic lock-in on TV "V" and "H" waveshapes. "Plus" and "minus" sync switch for easy lock-in of "up-right" or "inverted" waveshapes.
- Separate phase control on front panel for phasing with sweep generator.

**INPUT IMPEDANCES**—1 megohm shunted by 30  $\mu\text{f}$ ; with probe and cable—1 meg. shunted by 75  $\mu\text{f}$ ;—with lo cap probe, 10 megohm shunted by 9.5  $\mu\text{f}$ .

**SENSITIVITY**—Vertical—10.6 v rms or 30 v peak-to-peak. Horizontal—21.2 v rms or 60 v peak-to-peak. Sweep Frequency—3 cps to 30,000 cps.

**MAXIMUM INPUT VOLTAGES**

dc: 700 v ac: 600 v rms Weight: 31 lbs. Size: 13½" x 9" x 16½".



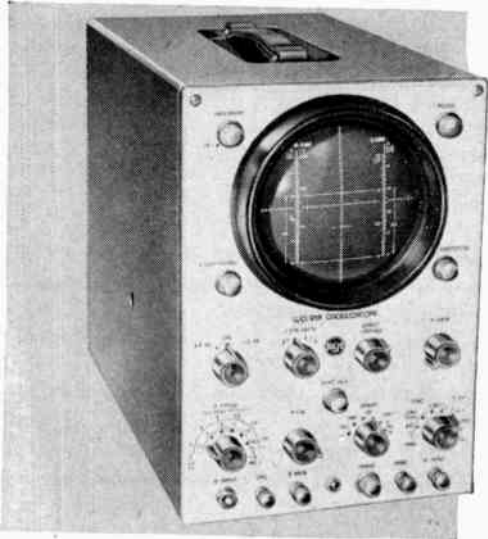
**\$289.50\*** includes WG-218 Direct Probe and Cable, WG-216B Low-Capacitance Probe, ground cable, alligator clip, green graph screen, instruction booklet.

*\*User Price (Optional)*

# RCA TEST EQUIPMENT

FOR SERVICE, INDUSTRY, SCHOOLS, LABORATORIES

## WO-91A 5" OSCILLOSCOPE



**\$239.50\*** complete with WG-300B two-way Direct/Low-Capacitance Probe and Cable, alligator clip and insulator, ground cable; green graph screen. Instruction booklet.

\*User Price (Optional)

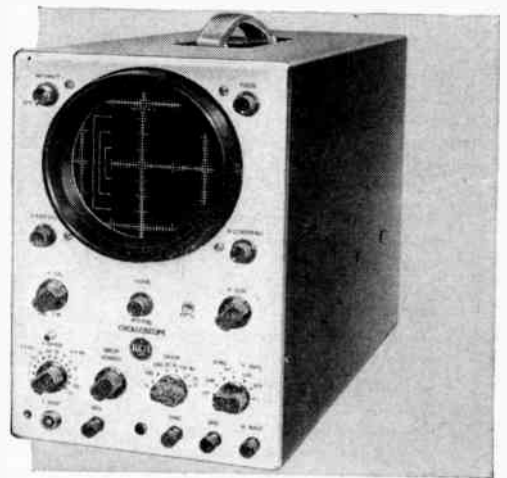
Application: for production and servicing both black-and-white and color TV receivers. Used to measure color burst signals and for trouble-shooting wide-band color circuits, signal tracing and aligning wide-band video amplifiers, and chrominance circuits. A multi-scale graph screen makes peak-to-peak voltage measurements as simple as with a VTVM. Response: Wide-band within 3 db from 10 cps to 4.5 Mc; High sensitivity within -1 db from 3 cps to 0.5 Mc; within -6 db to 1.5 Mc. Sensitivity: .05 volt peak-to-peak per inch (0.018 volts rms) in high-sensitivity position; 0.15 volt peak-to-peak per inch (0.053 volts rms in wide-band position).

- Voltage-calibrated, frequency-compensated, 3-to-1 step attenuator for "V" amplifier.
- Shielded vertical-input connector and shielded cable minimize hum, stray field pickup.
- Input Resistance—1 megohm shunted by 40  $\mu\text{f}$ . Lo capacitance position—10 megohm shunted by 12.5  $\mu\text{f}$ .
- Z-Axis input 12 volts for blanking.
- Preset "V" and "H" sweep positions.
- "Plus" or "Minus" internal-sync selector.
- Positive-lock internal sync.
- Sweep Frequency: 10 cps to 100 Kc.
- Maximum ac Input: 600 volts peak-to-peak.
- Weight: 30 lbs. Size: 13½" x 16½" x 9".

## WO-78B 5" OSCILLOSCOPE

Application: recommended for design, production and servicing of color and black-and-white TV receivers, and other applications where flat response to 5 Mc is essential. In wide-band positions, the response is flat within -1 db from 3 cps to 5 Mc with sensitivity of 0.1 volt peak-to-peak per inch (0.035 volts rms). In narrow band positions, the response is flat within -3 db from 3 cps to 500 Kc, with sensitivity of 0.01 volt peak-to-peak per inch (0.0035 volts rms). Rise time is .1 microsecond or less; overshoot is less than 5%. Full-screen deflection is obtained over entire rated range of vertical and horizontal amplifiers.

- 14-position, voltage-calibrated, frequency-compensated vertical attenuator.
- Push-button voltage calibration. Simply push button and set the vertical vernier for 2" of Vertical deflection.
- Automatic sync limiter keeps the pattern locked in over a wide range of input voltage.
- Maximum ac Voltage—600 v peak-to-peak.
- Input Resistance—1 megohm shunted by 53.5  $\mu\text{f}$ .
- "Z" axis input 40 v negative for blanking.
- Quick lock-in "V" and "H" sweep positions.
- Automatic regulation of critical voltages for high stability.
- SABP1 flat-faced cathode-ray tube with post-ultor potential of 3000 volts assures bright, sharply focused trace—interchangeable with SABP7 and SABP11.
- Sweep Frequency—10 to 100,000 cps.
- Weight: 40 lbs. Size: 9" x 13" x 18".



**\$475.00\*** includes WG-300B Direct/Low-Capacitance Probe and Cable, alligator clip, ground cable, insulator, green graph screen, instruction booklet.

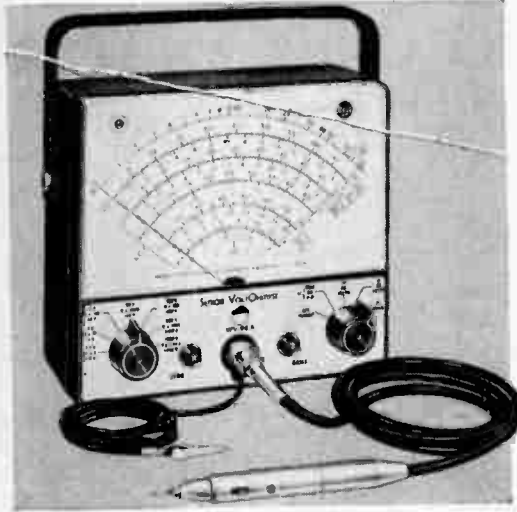
\*User Price (Optional)

# RCA TEST EQUIPMENT

FOR SERVICE, INDUSTRY, SCHOOLS, LABORATORIES

**WV-98A**

**SENIOR VoltOhmyst®**



**\$79.50\*** complete with WG-299B DC/AC-Ohms Probe and Cable, ground cable, alligator clip, insulator clip, instruction booklet.

\*User Price (Optional)

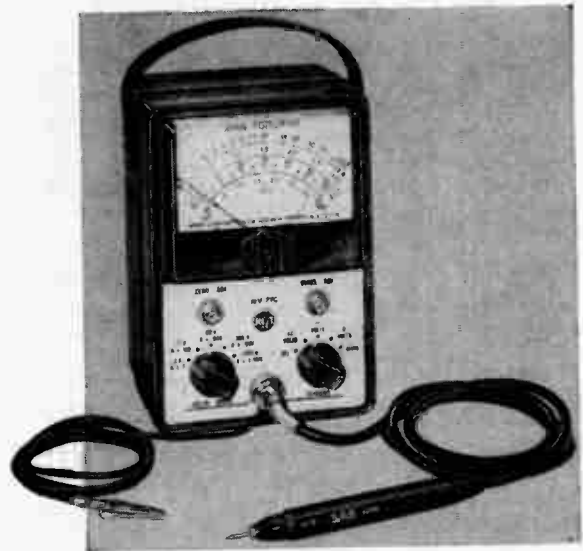
Application: provides direct reading of peak-to-peak voltages of complex waveforms found in video, sync and deflection circuits. Includes an improved circuit providing 3% accuracy full scale on both ac and dc measurements with better than 1% tracking error. Separate color-coded, peak-to-peak and rms-voltage scales in two distinctive colors simplify readings. Features die-cast aluminum case; high input resistance; electronic protection against burnout; rugged 200-microampere meter movement; and precision multiplier resistors with accuracy of  $\pm 1\%$ .

- Large 6½" easy-to-read, full vision meter (26 sq. in.).
- Measures complex waveforms directly from 0.2 volt to 4200 volts peak-to-peak in 7 overlapping ranges.
- Measures rms values of sine waves from 0.1 volt to 1500 volts in 7 overlapping ranges.
- Measures from 0.02 volt to 1500 volts dc on two scales in 7 overlapping "3-to-1" ranges.
- INPUT RESISTANCE—11 megohms on all dc ranges.
- Measures resistance from 0.2 ohms to 1000 megohms on single scale, with 7 overlapping ranges.
- FREQUENCY RESPONSE—30 cps to 250 Mc with WG-301A Crystal-Diode Accessory Probe.
- Compact design: 7" wide, 3¼" deep, 6½" high.

## WV-77C JUNIOR VoltOhmyst®

Application: an all-electronic ac-operated vacuum-tube volt ohmmeter for measurements in avc, oscillator and other high-impedance circuits, as well as audio and rf applications. Factory-built, factory tested and calibrated to rigid laboratory standards. Equipped with five ranges each for dc voltage, ac voltage and resistance measurements, the WV-77C measures dc from 50 millivolts to 1200 volts; ac from 100 millivolts to 1200 volts rms; and resistance from 0.2 ohm to one billion ohms.

- Essentially flat frequency response (30 cps to 3 Mc) . . . extends to 250 Mc with WG-301A Crystal-Diode Probe (available as accessory).
- Carbon-film  $\pm 1\%$  multiplier resistors . . . lasting accuracy and dependability.
- Sturdy 200-microampere meter movement electronically protected against burnout on all functions.
- Completely shielded in metal case for stability in presence of rf fields.
- Negative-feedback bridge circuit . . . provides freedom from effects of line-voltage fluctuations.
- Zero-centering facilities . . . for TV and FM discriminator alignment.
- Accuracy: dc 3% full scale on +volts, 5% on -volts; 5% on ac.
- High input-resistance on all ranges . . . 11 megohms for dc, 0.2 to 2 megohms for ac.
- Size: 8" x 5¾" x 4½".  
Weight: 4 lbs.



**\$59.50\*** complete with WG-299B DC/AC-Ohms Probe and Cable, ground cable, alligator clip, insulator clip, instruction booklet.

\*User Price (Optional)

## RCA TEST EQUIPMENT

FOR SERVICE, INDUSTRY, SCHOOLS, LABORATORIES

**WV-87B**

**MASTER VoltOhmyst®**



**\$137.50\*** complete with probes and cables, including WG-299C DC/AC-Ohms Probe and Cable, current cable, ground cable insulator, instruction booklet.

\*User Price (Optional)

Application: measures dc voltages accurately in high-impedance circuits even with ac present; reads rms values of sine waves and the peak-to-peak value of complex waves or recurrent pulses even in presence of dc. Invaluable for television, radar and other types of pulse work. Has the accuracy and stability necessary for many laboratory applications including a mirror scale. Its large, easy-to-read meter also makes it especially desirable as a permanently mounted instrument in the factory and repair shop.

- $\pm 3\%$  accuracy on ac and dc volts.
- Measures resistance from 0.1 ohm to 1000 megohms, current from 10 microamperes to 15 amperes.
- Features  $\pm 1\%$  multiplier and shunt resistors.
- Zero-center scale adjustment for discriminator alignment.
- Sensitivity on 1.5 v range — 7.3 megohm/volt.
- DC polarity reversing switch.
- Measures dc Voltage from 0-1500 volts; ac from 0-1500 volts rms; 4200 volts peak-to-peak.
- Frequency Response — 30 cps to 250 Mc using auxiliary WG-301A Crystal-Diode Probe.

**WV-84A**

### ULTRA-SENSITIVE DC MICROAMMETER

Application: a battery-operated vacuum tube microammeter designed for measuring minute direct currents, for making current and voltage measurements in electrolysis and corrosion investigations, and for checking currents in light meters, ultra-violet and infrared detectors, and spectrophotometric devices. Self-contained batteries permit use almost anywhere. Low-drain tubes extend battery life and protect the delicate meter against burnout due to accidental overloads. When used as a voltmeter, it is especially suited to measurements in circuits where loading is a critical factor. Can also be used as an ohmmeter to measure extremely high resistances, such as leakage and insulation resistance.

- Six direct-current ranges for measuring currents from 0.0002 to 1000 microamperes.
- Can be used as ohmmeter to measure resistance in the order of billions of ohms.
- Voltage drop for full-scale deflection only 0.5 volts.
- Input resistance of 100 megohms for measurement of voltages from 0.1 to 1 volt; 1000 megohms input resistance for voltages from 1 to 10 volts, 1005 megohms for voltages from 1 to 100 volts.
- Over-all microammeter accuracy on .01 range  $\pm 5\%$  or better; accuracy on all other ranges  $\pm 4\%$  or better.
- Size:  $9\frac{1}{2}'' \times 6\frac{1}{4}'' \times 5\frac{1}{16}''$ . Weight:  $9\frac{1}{2}$  lbs. including batteries.



**\$110.00\*** includes 50- and 950-megohm multiplier resistors, instruction booklet.  
(less batteries)

\*User Price (Optional)

# RCA TEST EQUIPMENT

FOR SERVICE, INDUSTRY, SCHOOLS, LABORATORIES



**\$107.50\*** complete with cable, instruction booklet.

*\*User Price (Optional)*

## WA-44B AUDIO SIGNAL GENERATOR

Application: for use in measuring: inter-modulation distortion in amplifiers, amplifier frequency response; frequency response of tone controls; frequency response of phonograph equalizers; input and output impedances of amplifiers; resonant frequency of loudspeakers; and speed of recorder/reproducer mechanisms. Continuously tunable from 11 cps to 100 Kc. Equally useful for: tuning bass-reflex enclosures; determining unknown audio frequencies; determining resonant frequency of LC circuits.

- RC-type oscillator has wide frequency-range — facilitates checking of hi-fi amplifiers.
- Delayed ovc circuit insures output uniform with  $\pm 1$  db over entire frequency range from 11 cps to 100 Kc. (reference frequency of 100 cps).
- Frequency stability of  $\pm 3\%$  or better.
- Separate high and low output terminals 15 V rms max., or 2.5 V rms max.
- Hum level 0.1% of maximum output.
- Voltage regulated oscillator power supply.
- Total harmonic distortion 2% or less from 30 cps to 15 Kc.
- Can be used with high 100,000 or low 1500 ohm impedance circuits.
- Size: 7" x 10½" x 6".  
Weight: 10 lbs.

## WR-49B RF SIGNAL GENERATOR

Application: for alignment and signal tracing of AM and FM radio receivers, alignment of low-frequency if amplifiers in TV receivers, and signal tracing and troubleshooting in TV receivers. Continuously tunable from 85 Kc to 30 Mc. With the WR-49A you can inject rf signals into plate circuits and other points where dc is present without placing a dc load on circuit under test . . . with protection from burnout in both equipment and signal generator.

- Cathode-follower output stage isolates oscillator from effects of load reactance and resistance, thereby maintaining good output waveform, voltage regulation and frequency stability of the oscillator.
- Functional-design dial facilitates accurate, easy readings.
- Full-length shielding of output cable minimizes radiation and hum pickup.
- Built-in dc blocking capacitors.
- Built-in 400 cycle oscillator for internal or external use.
- Range: 85 Kc to 30 Mc in 6 ranges.
- Maximum output at "hi" connector — .05 volts; at "lo" connector — .01 volts rms.
- Calibration accuracy of Dial —  $\pm 1\%$ .
- Attenuation range — 65 db.
- Percentage of modulation — adjustable to 70%.
- External modulation input available.
- Weight: 8 lbs. Size: 7½" x 10½" x 6".



**\$79.50\*** complete with shielded cable for rf or af output, instruction booklet.

*\*User Price (Optional)*



# RCA TEST EQUIPMENT

FOR SERVICE, INDUSTRY, SCHOOLS, LABORATORIES



## WT-100A ELECTRON-TUBE **MicroMhoMeter**

**Application:** a laboratory-type instrument which measures tube characteristics under actual operating-voltage and current conditions. Tests receiving-type and small transmitting tubes. Plug-in multiple-socket assemblies and 14 pin selector switches assure utmost flexibility for present and future requirements. **Measures:** true transconductance with an accuracy of better than  $\pm 3\%$ , both control-grid-to-plate and suppressor-grid-to-plate values, electrode currents-plate, screen grid, suppressor grid, and control-grid currents up to 300 ma; ac heater current; and voltage drop of vacuum and gas tubes, dry-disc rectifiers and crystal diodes.

- Built-in "shorts" test.
- Meter is burn-out proof, even on 3 microamp full-scale range.
- Regulated power supplies for dc voltages.
- 250-ma dc supply for filaments of battery-operated tube.
- Built-in gm calibrating circuit—no null meters or extra devices required.
- Measures gm up to 100,000 micromhos in 6 ranges.
- Up to 300 volts at 300 ma available for test under full operational conditions.
- Filament voltage available 0 to 117 volt ac at 5 amperes.
- Size:  $23\frac{1}{2}'' \times 8'' \times 18\frac{1}{2}''$ .
- Weight: 50 lbs.—shipping wt. 110 lbs.

**\$785.00\*** complete with 4 multiple-socket plug-in units and instruction booklet.

*\*User Price (Optional)*

# RCA TEST EQUIPMENT

FOR SERVICE, INDUSTRY, SCHOOLS, LABORATORIES

## WR-46A VIDEO DOT/ CROSSHATCH GENERATOR



**\$179.50\*** complete with output cable, sync pickup lead, ground lead and instruction booklet.

*\*User Price (Optional)*

Application: for installing and servicing color TV receivers, the WR-46A is designed for use in dc and dynamic convergence adjustments in color sets and "V" and "H" linearity adjustments in both color and black-and-white TV receivers. Permits simultaneous display of pattern with broadcasting picture in background to assure that convergence adjustments are made at correct horizontal and vertical scanning rates. Vertical sync is frequency divided from horizontal sync, resulting in interlaced scanning and exceptional freedom from "jitter," "crawl" and "sync hunting."

- High level video output continuously adjustable 0-50v—drives picture tube directly.
- Solid pattern—free of crawl and jitter.
- Furnishes dots, "V" and "H" bars, and crosshatch patterns.
- Equalizer control for "V" and "H" bar brightness.
- Output polarity-reversal switch.
- All output cables are dc isolated.
- Size: 10" x 13½" x 8".  
Weight: 17 lbs.

## WR-61B COLOR-BAR GENERATOR

Application: for checking overall operation of color TV receivers and for adjusting and trouble-shooting color phasing and matrixing circuits. The WR-61B generates the signals for producing 10 bars of different colors simultaneously, including bars corresponding to the R-Y, B-Y, G-Y, I, and Q signals. The output signal consists of a picture carrier, color subcarrier, sync pulses, and an unmodulated sound carrier. All frequencies crystal controlled for inherent accuracy and stability. Sound carrier can be switched off to check for sound interference. 189-Kc pedestals, adjustable in amplitude, provide luminance-channel information. Luminance signals provided at edge of color bars for checking luminance and chrominance registration.

- Amplitude of color subcarrier and color-burst signal adjustable for checking color sync-lock action of set.
- Both rf and video output available—video output has both "+" and "-" polarity.
- Maximum rf output at least 0.01 volt peak-to-peak; maximum video output at least 0.25 volt peak-to-peak across 75 ohms, 8 volts peak-to-peak at Hi video output.
- Size: 10" x 13½" x 7½".  
Shipping weight: 17 lbs.



**\$259.50\*** includes rf and video output cables, TV-input adapter, instruction booklet.

*\*User Price (Optional)*

# RCA TEST EQUIPMENT ACCESSORIES

## WG-216B LOW-CAPACITANCE PROBE



"Slip-on" type for use with the WG-218 or WG-220 Direct Probe in conjunction with an oscilloscope. When used with the WO-88A Oscilloscope, the total input resistance is 10 megohms shunted by a capacity of less than 10  $\mu\text{f}$ . . . . . **\$7.00\***

## WG-296 50-TO-300-OHM PADDED BALUN



Provides efficient matching 50-ohm output from WR-86A UHF Sweep Generator or to 300-ohm transmission lines and circuits. It has a 50-ohm coaxial input and 300-ohm line output. . . . . **\$13.50\***

## WG-218 DIRECT PROBE AND CABLE



With microphone-type connector, for oscilloscopes and VoltOhmysts®. **\$3.75\***

## WG-298A UHF DEMODULATOR FOR 300-950 MC



Excellent for checking standing-wave ratios on 300-ohm line terminations. Fits 50-ohm BNC type connectors. **\$37.50\***

## WG-222 DC/DIRECT PROBE



"Slip-on" type with built-in 1-megohm isolating resistor and a unique switching facility, making it possible to measure dc or resistance without changing probes. The WG-222 slips on the front of the WG-218 or WG-220. . . . . **\$3.50\***

## WG-299C DC/AC OHMS PROBE AND CABLE



The WG-299 is a single-unit probe for use with VoltOhmysts®. Switch provides instant selection of dc or ac/ohms operation. The WG-299C replaces both the WG-299A & WG-299B. . . . . **\$8.75\***

## WG-264 CRYSTAL-DIODE PROBE



Consists of a germanium diode rectifier and RC network in a plastic housing. It conveniently slips on the direct probe of VoltOhmysts®, such as the WV-97A. RF voltages at frequencies up to 250 Mc may be accurately measured with the WG-264. The ac voltage range extends from 20 millivolts to 20 volts rms; dc voltages up to 250 volts can be present. . . . . **\$7.75\***

## WG-300B DIRECT/LOW CAPACITANCE PROBE AND CABLE



Designed for use with the RCA WO-91A, WO-88A and WO-78B 'Scopes. Cable is 48" long, completely shielded from microphone connector to probe tip to minimize hum and stray field pick-up. Built-in switch provides instant selection of direct or low-capacitance operation. Input characteristics: 10 megohms resistance, less than 12.5  $\mu\text{f}$  capacitance in low capacitance position. Includes ground lead and clip. **\$14.25\***

## WG-291 DEMODULATOR PROBE



Has an input range of 500 Kc to 250 Mc with input capacitance of only 2.25  $\mu\text{f}$ . It separates the modulation from the rf carrier in an amplitude-modulated wave by means of a rectifier and a filter having a short time constant and an output frequency range of 30 to 500 cps. The WG-291 has a maximum input voltage of 20 rms volts and a maximum dc voltage rating of 250 volts. . . . . **\$7.95\***

## WG-220 DIRECT PROBE AND CABLE



A shielded input cable for use with voltmeters and oscilloscopes. It is fitted with a probe tip at one end and a microphone-type connector at the other. WG-220 is the same electrically as the WG-218, but is fitted with pin-plug tips. **\$3.75\*** (WG-218 or WG-220).

## WG-293 LOW-CAPACITANCE PROBE



"Slip-on" type for use with WG-294 Direct Probe and Cable and WO-78A Oscilloscope. Probe has 10 megohms input resistance and only 14  $\mu\text{f}$  input capacitance. Fully shielded. . . . . **\$7.50\***

## WG-302A RF/IF/VF SIGNAL TRACING PROBE



"Slip-on" type high-frequency probe designed for use with the WG-300A and B probe and cable to permit visual signal tracing for rapid isolation of trouble in radio receivers and in television if and video stages. . . . . **\$8.50\***

## WG-294 DIRECT PROBE AND CABLE



A shielded coaxial-type cable 48" long with "slip-on" type probe point. Fitted with microphone-type connector. Probe has 11" ground lead with clip. **\$4.50\***

## WG-301A CRYSTAL-DIODE PROBE



"Slip-on" type for use with the WG-299A, B or C DC/AC Ohms Probe and Cable extending the frequency range of VoltOhmysts® to 250 Mc. **\$7.75\***

\*User Price (Optional)

**RCA TEST EQUIPMENT**  
FOR SERVICE, INDUSTRY, SCHOOLS, LABORATORIES

**WP-25A TV ISOTAP**

Speeds up servicing, prevents damage to test equipment, minimizes shock hazards, cuts down costly returns. The WP-25A may be used as a high-medium-low voltage isolation transformer or as an auto-transformer for testing TV receivers at various settings of line voltage. Supplies outputs of 130, 115 and 105 volts at maximum load and is tapped to match line voltages from 105 to 130 volts in six steps. **\$22.00\***

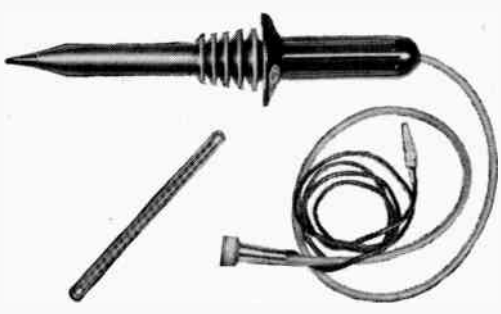


**WG-289, 290 HIGH VOLTAGE PROBE**

RCA High Voltage Probes WG-289 and WG-290 are identical except for their connectors. The WG-289 is provided with a microphone-type connector for use with the VoltOhmysts\* and other voltmeters having microphone-type connectors. The WG-290 is equipped with phone-tip connectors for use with voltmeters having phone-tip jacks.

These High Voltage Probes are capable of extending the dc voltage range of your meter to 50,000 volts. When used with a VoltOhmyst® the input resistance is increased to 1000 megohms, an important feature when working in high-impedance circuits where loading seriously affects the stability of the circuit under test.

A choice of five multiplier resistors is available, enabling these probes to be used with practically all popular electronic and non-electronic voltohmmeters. **\$7.15\***



- WG-206 1090-megohm multiplier resistor for WG-289 and WG-290 . . **\$2.80\***
- WG-207 991-megohm multiplier resistor for WG-289 and WG-290 . . **\$2.80\***
- WG-208 400-megohm multiplier resistor for WG-289 and WG-290 . . **\$2.80\***
- WG-209 480-megohm multiplier resistor for WG-289 and WG-290 . . **\$2.80\***
- WG-210 900-megohm multiplier resistor for WG-289 and WG-290 . . **\$2.80\***

**WG-304A RF MODULATOR**

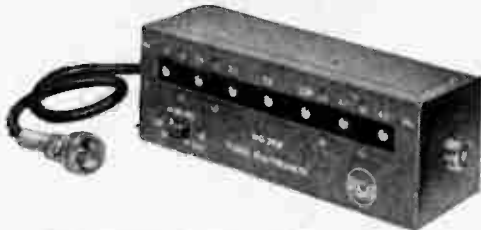
An accessory used to check the over-all frequency response of TV receivers from antenna to picture tube grid. The unit permits modulation of an rf marker signal from a marker generator (such as WR-89A) by a signal from a video sweep generator (such as WR-59C or WR-69A)..... **\$28.50\***



*\*User Price (Optional)*

# RCA TEST EQUIPMENT

FOR SERVICE, INDUSTRY, SCHOOLS, LABORATORIES



**WG-295B VIDEO MULTIMARKER**



**WG-307A TV BIAS SUPPLY**

**WG-306A AND B VIDEO-TEST ADAPTER**

**220X1 PICTURE TUBE-SOCKET EXTENSION CABLE**

**221X1 DEFLECTING YOKE EXTENSION CABLE**

**222X1 CONVERGING-MAGNET ASSEMBLY**

**223X1 HIGH-VOLTAGE EXTENSION CABLE**

**224X1 CONVERGING-MAGNET ASSEMBLY EXTENSION**

**225X1 HIGH-VOLTAGE EXTENSION CABLE**

**226X1 CONVERGENCE GRID SHUNT CABLE**

Provides seven simultaneous absorption-type markers at accurately preset frequencies for marking video response curves in color receivers. Markers are at 0.5 Mc (for Q, R-Y, B-Y, G-Y filters), 1.5 Mc (for I filter), 2.5 Mc (for bandpass filter), 3.58 Mc (color subcarrier frequency), 3 and 4.1 Mc (video and bandpass amplifiers), and 4.5 Mc (sound-trap frequency). Each marker is identified simply by touching a corresponding contact on the WG-295B case. This reduces the amplitude of the particular marker. The WG-295B connects between the IF/VF output on the sweep generator and the video output cable. Equipped with shorting switch. With instruction booklet. **\$32.50\***

Three fully adjustable 0 to 15V negative, plus a negative 100V nominal for biasing the burst keyer. Size: 2½" x 3" x 5¼"; weight: 22 ounces. **\$22.50\***

Designed to simplify trouble-shooting in the video stages of color TV receivers, making it possible to inject video signals from the WR-36A directly into the grid circuit of the video amplifier stages. Designed for use in all sets using either 6CL6 or 12BY7-A tubes in video amplifier stages. **\$4.50\***

	DEALER PRICE*	LIST PRICE*
(For 1956-1957 RCA Victor Color TV Receivers).....	\$7.40	\$12.35
(For 1956-1957 RCA Victor Color TV Receivers).....	3.50	5.80
(For 1956 RCA Victor Color TV Receivers).....	3.40	5.65
(For 1956 RCA Victor Color TV Receivers).....	1.35	2.25
(For 1957 RCA Victor Color TV Receivers).....	2.67	4.45
(For 1957 RCA Victor Color TV Receivers).....	1.35	2.25
(For all RCA Victor Color TV Receivers).....	4.80	8.00

*\*(Optional)*

# HICKOK

## TEST INSTRUMENTS

# HICKOK

### DYNAMIC MUTUAL CONDUCTANCE TUBE TESTER

**Most Accurate Engineers' Laboratory Model**

Tests Tubes Per Tube Handbooks and JAN Specifications



**Model 700:** For precise laboratory measurements of the most important vacuum tube characteristics, Transconductance (Mutual Conductance). With this Tube Tester it is possible to duplicate the results found in tube manuals. This instrument places a separate voltage on each element of the tube. These voltages can be varied and measured by means of separate variable rheostats and meters in each circuit. A.C. ripple has been completely filtered out of the plate, screen and grid circuits.

In addition to providing accurate measurements of Mutual Conductance, it is possible to study the behavior of various tubes when used in non-conventional and special types of circuits. Amplification Factor and Plate Resistance may be obtained from the test results. The HICKOK Model 700 may be operated in either of two ways. First, by making use of alternating current null methods of measurement in which capacitance and resistance errors have been eliminated; and second, by direct reading on a meter. The Null Method of making measurements on the tube is the most accurate and is the one which is recommended where sufficient time for the test is available.

Complete with all leads and accessories. Attractive and sturdy case.

#### Model 700

#### TECHNICAL FEATURES...

1. Micromho ranges are available as follows: 600, 1500, 3000, 6000, 15,000, 30,000 and 60,000 micromhos.
2. Four separate signal voltages are available, 1.0 volts, 0.5 volts, 0.1 volt and 0.05 volts.
3. Plate voltage supply is continuously variable from zero to 300 volts. An individual D.C. voltmeter in the plate circuit reads plate voltage at all times.
4. Screen voltage is continuously variable from 0 to 300 volts. This is metered by means of a separate D.C. Voltmeter in the screen circuit.
5. The control grid voltage is continuously variable from 0 to 75 volts. This voltage is measured by means of a separate D.C. Voltmeter in the grid circuit. Provision is made to make bias either negative or positive. Suppressor can be used as control grid if desired.
6. An extra negative circuit is provided for holding unused tube elements negative while test is being made on other elements.
7. Provision is made for testing tubes under self-bias conditions when required by that particular tube or when such information is desired.
8. Filament voltage may be applied to the tube up to 117 volts A.C. The separate A.C. Voltmeter in this circuit measures the voltage applied to the filament at all times. This voltage is continuously adjustable. A two-range filament current meter is provided — enabling the measurement of filament current up to 8 amperes.
9. A D.C. Milliammeter is provided for measuring plate current, screen current, or cathode current. This reads from 0 to 150 ma. and may be switched into the three circuits for this purpose.
10. A separate D.C. Microammeter is mounted in the control grid circuit to read grid current, if and when it exists.
11. Amplification factor can be easily calculated from values obtained from the meter readings. Other factors may be similarly calculated.
12. Provision is made for testing tapped filaments either in series or in parallel.
13. Provision is made for adjusting to the electrical center of filament type tubes.
14. Twin tube sections may be tested either singularly or in parallel.
15. Screen grid tubes can be connected as triodes or tetrodes, etc., as may be desired. Switching arrangement is provided for this purpose.
16. A built-in power supply is included with the instrument providing thoroughly filtered D.C. on plate, screen, and control grid.
17. A voltage adjustment with an accurate A.C. meter in the circuit is provided to insure exact signal voltage and correct phasing.
18. Includes a filament current meter with double scale for measurement of filament current up to 8 amps.
19. Designed and calibrated for 60 cycles, 110 or 120 volts operation, 150 watts. Calibration for other frequencies and voltages available.
20. Approximate size — 8" D. x 20" W. x 29" L. Approximate 70 lbs. net, 90 lbs. shipping.



**Model 7001**

**Model 7001:** Null Reading Apparatus is self-contained in a small case placed alongside the Model 700 tester. It consists of a voltage supply (source from the Model 700 to assure correct phasing), a sensitive A.C. Galvanometer, a calibrated resistor, and an accurate A.C. Voltmeter. It is connected directly into the plate circuit of the tube under test by binding posts on the panel of the Model 700. The grid-signal-produced-component of plate current is balanced by an equal and opposite current applied to the plate from the power supply through the calibrated resistor. The reading of the Micromho Meter at the top of the panel is proportional to the Transconductance of the tube, and is therefore calibrated in Micromhos. The effect of the Null Reading Method is to reduce resistance in series with the plate to zero, thereby assuring the highest accuracies obtainable.

**Model 7001:** for obtaining bridge type null readings of 1½% accuracy. 8" D., 8" W., 13½" L.

## HICKOK . . . CHOICE OF THE EXPERTS

# HICKOK TEST INSTRUMENTS HICKOK

Model 123A



## AUTOMATIC TUBE-TESTING MACHINE

### Dynamic Mutual Conductance...Cardmatic

Model 123A: Automatic and by far the fastest, but the real news is the greatly improved circuit of this equipment which is the first important New Tube Tester Design in the past 25 years.

Prior to the design of this equipment, only the HICKOK Model 700 laboratory type tester permitted the exact setting of all the different voltages to the different elements of a tube. Now, with the engineered perfection of the 123A; an infinitely large number of exactly controlled voltages are available for each element of a tube under test. In fact, through use of the HICKOK Cardmatic system, the design engineer can now choose a great variety of voltages for design testing of tubes used in special purpose circuits.

The tough long wearing Vinyl code cards instantly and positively trip the automation mechanism to make all the electrical connections required for the testing of a receiver type vacuum tube.

The unusually low 0.22 volts RMS signal used on the grid is necessary in testing the newer, more sensitive type tubes in order to avoid test distortion.

#### SPECIAL FEATURES

**300% MORE ACCURATE:** Tests Gm to an accuracy of 1%. (Most portable Gm testers attain 5% accuracy or less. Emission type testers cannot test for Gm and therefore have very poor performance in detecting weak tubes.)

**SCREEN and PLATE VOLTAGES:** 12 to 160 volts: This wide selection of voltages protects against obsolescence. For instance, new car radios use 12 volt plate voltage.

**FILAMENT VOLTAGES:** 0.1 to 119.9 volts in 1/10 volt steps. More and more tubes are now in use with odd filament voltages. The 123A will accurately test all of them at their exact filament voltage.

**EXTRA SENSITIVE GAS TEST AND GRID EMISSION TEST:** The most accurate tube gas evaluation test available today.

**200 MA LOAD ON RECTIFIER TUBES:** This gives an accurate test of the operation of a rectifier tube under load.

**NEW KNEE TEST:** This new test evaluates the ability of a tube to perform in TV horizontal or vertical output circuits. As a tube gets older it loses its ability to deliver current which results in non-linearity of raster. (crowding of the raster where one side pulls away, etc.). The 123A tests this "Knee" point to determine whether the tube will cause trouble in a TV set.

**TESTS SHORTS AND LEAKAGE TO 20 MEGOHMS:** (Users have detected as high as 50 megohms leakage.)

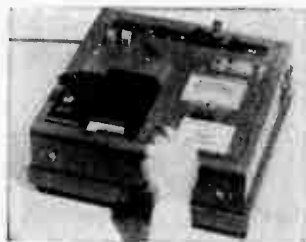
## HIGH SPEED *One-Two-Three* TEST



Insert Automation card. Let tube warm-up while watching for shorts, leakage and grid contamination.



Press button #2 and read quality value of tube.



Press button #3 and read most accurate tube gas evaluation available today.



## SELF-SERVICE TUBE MERCHANDISER

World's Best Tube Salesman

Model 123M: Floor model with built-in card storage and locked tube inventory compartment. Attractive illuminated display and tamper proof panel. Specifically designed for dealer store traffic and is a proven profit-maker. Sturdy steel cabinet is very attractive.

**HICKOK . . . CHOICE OF THE EXPERTS**

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# TEST INSTRUMENTS

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## DYNAMIC MUTUAL CONDUCTANCE TUBE TESTERS

### MOST ACCURATE PROFESSIONAL'S PORTABLE



**Model 539B**

Separate voltages (rectified DC) applied to each element of the tube.

Reads leakage on the Ohmmeter scale of the Micromho meter (to 50 Megohms). Also, has the regulator neon test lamp for a quick "good-bad" check.

Tests Selenium Rectifiers and Germanium Diodes.

Jacks are provided for measuring filament current by exterior means.

Self bias may be applied to the grid of the tube under test by a switching arrangement on the tester.

Model 539B: Most complete and most accurate Dynamic Mutual Conductance portable tube tester. Designed to furnish professional accuracy for laboratory design engineers and field engineers in all phases of electronics.

6 Micromho ranges: 60,000, 30,000, 15,000, 6,000, 3,000 and 600 Micromhos. Plus Rectifier Diode Range and Voltage Regulator (VR) Range. The 600 Micromho range is especially suited for more accurate testing of subminiature tubes.

Model 539B: Illustrated at left, strong portable carrying case with detachable cover. Case is attractively covered with durable black leatherette 16 $\frac{3}{4}$ " W., 18 $\frac{3}{8}$ " L., 7 $\frac{1}{2}$ " D. 28 lbs. 110-125 V.A.C. 40 watts. Includes test leads, instruction book and guarantee. Also available in lighter weight aluminum portable case.

#### SPECIFICATIONS

Choice of four AC signals: .25, .5, 1 or 2.5 Volts may be applied to the grid of the tube under test (in addition to the DC bias on the grid).

Separate DC voltmeter measures grid bias. Vernier adjustment of grid bias control permits accurate setting of the grid voltage. Separate AC meter measures line voltage at all times.

Voltage Regulator Test—Tests VR tubes under actual operating conditions—gives reading of striking voltage, regulating voltages and current at the same time.

Permits matching of tubes such as 6SN7 when used in multi-vibrator circuits.

Tests future life of the tube by measuring the efficiency of the cathode. Tests tube for noise.

Tests the gas content. Gas test measures control grid current, thereby detecting any minute amount of gas in the tube.

Provision for testing tubes at normal plate and screen volts or at low plate and screen volts.



**Model 750**

Two plate and screen voltages provided — Normal and Low — controlled by a Selector switch. The Low range is for use with sub-miniature tubes and for other tubes requiring a low range of plate and screen volts.

New 0-1500 Micromhos range for increased accuracy in testing sub-miniature tubes.

Four signal voltages provided — as low as .25 volt.

Two "red-green" ranges on the Micromho Meter scale offer easier customer readings.

Quick and easy scale selection — The Chart identifies the range to be read by the letters A or B. A simple selector switch carries the same letters and identifies the various ranges.

## PORTABLE RADIO-TV and COMMUNICATION TECHNICIANS' MODEL

Model 750: Accurately tests all tubes normally encountered in all phases of Electronic work including the latest ruggedized type tubes used by Airlines, Hearing Aid Tubes, Black and White and Color Television tubes, etc., and the new Series Heater-String (600 M.A.) tubes.

Model 750: Illustrated at the left, strong, portable carrying case with detachable cover. Case is attractively covered with durable black leatherette. 16 $\frac{3}{4}$ " W., 18 $\frac{3}{8}$ " L., 7 $\frac{1}{2}$ " D. 24 Lbs. 110-125 V. A.C., 40 watts. Test leads, instruction book and guarantee are included.

#### SPECIFICATIONS

Micromho ranges on the dial of the large HICKOK 5" Meter: 0-1500, 0-3000, 0-6000. 0-15,000, 0-30,000 micromhos. Also, two "Replace-Good" ranges.

Tests voltage regulator (VR) tubes in accordance with any manufacturer's handbook data or by use of the up-to-date roll chart furnished.

a. Accurate DC Voltmeter readings up to 200 volts.

b. Accurate DC Milliammeter Measurements up to 100 milliamperes.

— Both on the Micromho Meter.

Short test — Recent HICKOK engineering achievements have provided a highly accurate short test which will show up even the slightest heater cathode leakage condition of a vacuum tube.

Meter indicates whether the line voltage is low or high and permits correction.

Permits matching of tubes such as 6SN7 when used in critical circuits.

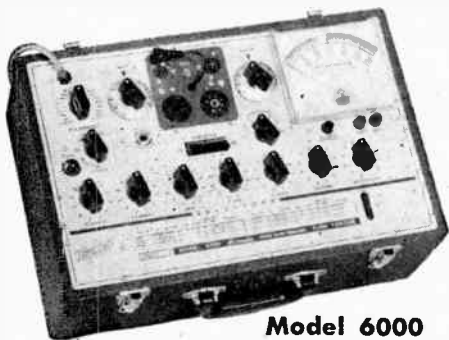
Forecasts the future life of the tube under test. Tests the gas content of the tube. Tests for tube noise.

Bias and line fuses prevent accidental damage. Chart arrangement provides quickest tube selection. The Tube's location on the chart is indicated by a key type number stamped beneath the chart openings.

## HICKOK . . . CHOICE OF THE EXPERTS



# HICKOK TEST INSTRUMENTS HICKOK



**Model 6000**

## NEW, HIGH SPEED DYNAMIC MUTUAL CONDUCTANCE Smaller Portable TUBE TESTER

**Model 6000:** Popularly priced lighter weight portable tube tester. Built to the high HICKOK standard for accuracy and dependability. A very popular model for on-location or shop bench servicing. Ideal for the smaller industrial laboratory. Checks all tubes normally encountered in present day electronics. Features the new time saving push button one-two-three test. Has popular tube grouping in new design roll chart.

### SPECIFICATIONS

Scale readings in micromhos for most accurate tube quality evaluation. (0-3000, 6000, 15,000 micromhos.)

High sensitivity HICKOK-built 5" meter with multi-color scale. Tests tubes to manufacturer's specifications as well as indicated reserve capacity.

Filament voltage from 0.6 to 117 volts in 18 steps.

Contains the HICKOK Grid Current Gas Test and Filament Continuity Test.

Tests and rejuvenates TV picture tubes when used in conjunction with HICKOK CRT adapter.

Detects more weak tubes with professional accuracy.

Constant indication of line voltage and automatic short test.

Standard sockets included in tester accommodate 96% of all tubes. RSP-3 adapter for foreign tubes and RSP-1 adapter for old obsolete tubes are available.

**Model 6000:** Attractive red leatherette covered portable case with detachable lid. 16 $\frac{3}{4}$ " W., 11 $\frac{3}{4}$ " L., 7 $\frac{1}{2}$ " D. 16 lbs. 105-125 V.A.C. 60 cycles, 40 watts. Panel is gold anodized with red and black lettering.

## ROLL CHARTS

HICKOK periodically issues revised tube reference charts to include the data on all tubes available at time of each printing. Order direct from factory. 2 year subscription (4 charts) prepaid only \$3.00. Be sure to list Model Number and Serial Number of your tester.



**Model 533AP**

## PROFESSIONAL RADIO-TV TECHNICIANS PORTABLE MODEL

**Model 533AP:** Radio, television and communication technicians' portable model with true Dynamic Mutual Conductance circuits pioneered by HICKOK. Acclaimed by the experts as the only true test of a tube.

**Model 533AP,** illustrated at the left. Strong, portable carrying case with detachable cover. Designed for on-location or shop-bench servicing. Case is attractively covered with durable black leatherette. 16 $\frac{3}{4}$ " W., 18 $\frac{3}{8}$ " L., 7 $\frac{1}{2}$ " D. 23 lbs. net, 30 lbs. shipping weight. 110-130 V.A.C. 40 watts.

### SPECIFICATIONS:

New Bias Fuse prevents accidental damage to bias potentiometer. New lucite meter window has static-free coating.

Tube readings in micromhos — 0-3000, 6000, 15,000.

Tests tubes under simulated operating conditions.

Contains the HICKOK Tube Gas Test and Tube Noise test.

Incorporates the new test feature that forecasts future life of a tube.

Most valuable for accurate matching of tubes in television servicing.

Larger, 5" easy-to-read meter scale and calibrated GM circuit provide increased accuracy in testing today's newer tubes.

Tests all the latest tubes including miniature and subminiature types.

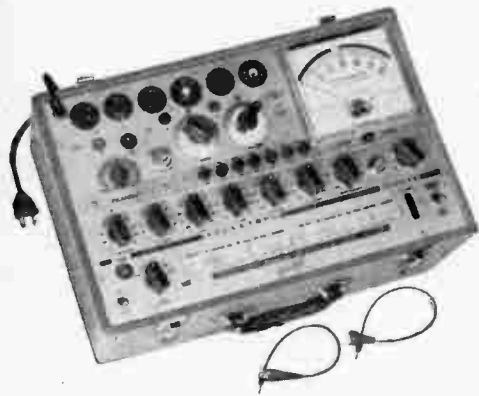
An improved "Short Test" is incorporated into the design of this tester to show up even the slightest heater cathode leakage of a vacuum tube.

Completely built of highest quality components for lasting accuracy and dependability.

**HICKOK . . . CHOICE OF THE EXPERTS**

# HICKOK TEST INSTRUMENTS HICKOK

## WORLD'S MOST POPULAR TUBE TESTER



**Model 600A/800K**

### DYNAMIC MUTUAL CONDUCTANCE

**Model 600A/800K:** This equipment features the high quality of HICKOK Dynamic Mutual Conductance circuits and is priced within reach of the electronic technician and student who have repeatedly expressed a great desire to own top quality equipment at a saving while establishing a strong foundation for a successful servicing profession.

Tube testing is both accurate and profitable with good equipment. No other popularly priced tube tester approaches the quality and completeness of this instrument.

New lighter weight portable. Dynamic Mutual Conductance in a radio and TV technicians' popularly priced model. Smaller, handier, but built to the high HICKOK standard for accuracy and dependability. A very popular model for on-location or shop-bench servicing. Builds customer confidence and increases tube sales.

Shown at the left. Strong portable carrying case with detachable cover. Case is attractively covered in durable, dark red leatherette, 16 $\frac{1}{4}$ " W., 11 $\frac{1}{4}$ " L., 7 $\frac{1}{2}$ " D. 16 lbs. net, 21 lbs. shipping weight. 110-120 V.A.C. 40 watts. Panel is gold anodized.

#### SPECIFICATIONS

Scale readings in micromhos for most accurate tube evaluation.  
 A.C. Signal 2.5 volts: 0-3000, 6000, 15,000 micromhos.  
 Contains the HICKOK Tube Gas Test.  
 Tests tubes to manufacturers' specifications as well as indicates reserve capacity.  
 High sensitivity meter with large 5" multi-color scale is easier to read more accurately.  
 Tests and rejuvenates TV picture tubes when used with C.R.T. Adapter listed on page G-343.

Detects more weak tubes with professional accuracy.  
 Tests tubes under simulated operating conditions.  
 Tests the latest tubes including miniature and sub-miniature types. Includes high-speed built-in roll chart.  
 Filament voltage from .6 to 117 volts in 18 steps.  
 Contains the new HICKOK automatic "Short Test" to show up even the slightest heater-cathode-leakage.

## NEW...ELECTRONIC VOLT OHMMETER KIT

### Professional Size and Top Quality in Easy-to-Assemble Kit



**Model 225K**

- Huge HICKOK-Built 9" Meter
- Accurate Peak-to-Peak Scales
- Fast Continuity Tests
- AC-DC Single Unit Probe
- Unusually High Input Impedance
- DC Zero-Center Scale
- Plus and Minus DC Voltages
- Test Leads Included

**Model 225K:** HICKOK practical engineering provides the low-cost answer to your needs for a multi-range Volt-Ohmmeter in a professional engineer's top quality instrument.

More than 47 years of experience in the engineering design and production of electrical-electronic test equipment backs this Model 225K Quali-Kit. All component parts are of the highest practical quality to insure long life and trouble-free service. Numerous field studies have been made to prove the ease of assembly of this instrument. Only basic tools are necessary, and the task is both educational and pleasant.

Extra long scales minimize reading errors and permit permanent placement of the equipment at a more practical working distance.

Additional features: • Built-in audio tone speeds continuity tests • Accurate Peak-to-Peak scales for measurement of complex waveforms • D.C. Zero-Center scale for galvanometer applications • New, HICKOK single unit A.C.-D.C. probe.

60 page instruction book is the most complete you have ever seen. Includes easy to follow check-off steps, large sectional diagrams, plus a theory section on operation and uses.

Dimensions—13 $\frac{1}{4}$ " H., 16 $\frac{1}{4}$ " W., 7" D. Weight—15 lbs. Net.—23 lbs. Shipping. Blue baked Hammertex finish steel case with etched aluminum panel.

#### SPECIFICATIONS

##### RANGES—D.C. VOLTMETER:

Plus D.C. Volts: 0 to 1.5, 3, 12, 30, 120, 300, 1200.  
 Minus D.C. Volts: 0 to 1.5, 3, 12, 30, 120, 300, 1200.  
 Input Resistance: 10 megohms with new HICKOK Dual-Probe.  
 Zero-Center Scale: For discriminator alignment and other galvanometer applications.

##### OHMMETER:

Design Center: 10 ohms.  
 Ranges: x1, x10, x100, x1000, x10,000, x100,000, x1 megohm.  
 Readability: 0.2 ohms to 1,000 megohms.

##### A.C. VOLTMETER:

7 Ranges A.C. RMS: 0 to 1.5, 3, 12, 30, 120, 300, 1200.  
 7 Ranges A.C. Peak-to-Peak: 0 to 4, 8, 32, 80, 320, 800, 3200.  
 Frequency Characteristics: Flat from 40 cps. to 3.5 mc.

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## YOU CAN'T BURN IT OUT!



Model 455



Model 456



### VOLT-OHM-MILLIAMMETER

This new portable multimeter is a small and compact instrument with a single Function-and-Range selector switch to facilitate ease of use by industrial or electronic technicians.

This equipment incorporates a full-wave bridge type rectifier circuit.

The modern case design with wide vision diffused-light type face and inclined dial permits maximum ease of reading while instrument is lying flat in a normal Use-Position. The design advantage of this Use-Position greatly minimizes the invitation for physical abuse evident with conventional multimeters which are so easy to accidentally upset and bump off of the workbench.

This equipment also features a patented protection system which protects both the meter and associated circuits from damage due to accidental overload. The design is such that when the circuit is exposed to an excessive overload, a protection system will open the input until the overload has been removed and the protective system reset by pressing a reset button on the front panel.

The protected ranges of the system are so designed that overloads which do not trigger the protective system will not possibly damage the equipment. This automatic overload cut-out and fuse system has been reliably proven in both military and civilian use. In fact, it is so effective that any high voltage or current may be applied directly across any function including ohms without danger to the meter, resistors, shunts or other associated components.

Batteries are housed in a special compartment that is accessible without removing the case. No soldering is required . . . batteries can easily be snapped in or out.

Instrument is available in either of two models.

### TECHNICAL FEATURES

#### Model 455

Sensitivity:	20,000 ohms per volt DC. 20,000 ohms per volt AC.
Volts:	3, 12, 30, 120, 600, 1200 volts AC. 3, 12, 30, 120, 600, 1200 volts DC.
Resistance:	0.1 to 100 megohms in four ranges.
Center Scale Ranges:	5, 500, 5000, 500,000 ohms.
Current:	50 microamperes. 1, 10, 100, 1000 milliamperes. 10 amperes.

#### Model 456

Sensitivity:	20,000 ohms per volt DC. 1,000 ohms per volt AC.
Volts:	3, 12, 30, 120, 600, 1200 volts AC. 3, 12, 30, 120, 600, 1200 volts DC.
Resistance:	0.1 to 100 megohms in four ranges.
Center Scale Ranges:	5, 500, 5000, 500,000 ohms.
Current:	50 microamperes. 1, 10, 100, 1000 milliamperes. 10 amperes.

Includes provision for output measurement.

DB Range: -18 to +57 in 5 ranges.

Frequency compensated for accurate readings over the entire audio range.

This versatile and compact portable Volt-Ohm-Milliammeter incorporates the latest engineering advancements. The unique case design, coupled with a practical circuit overload protection and ease of operation provides maximum utility for this type of equipment.

### SPECIFICATIONS (either model)

Molded case: 8½" L., 5¾" W. Height is 3" tapering down to 1¾", Net weight: 3¾ lbs. Furnished complete with test leads, instruction book and guarantee.

Attractive and durable neoprene carrying case is available to house instrument and leads.

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### CAPACITANCE TESTER, TRUE VACUUM TUBE VOLT-OHM MILLIAMMETER



**Model 209-A**

POWER SUPPLY: 105-125 V, 50-70 cycles. Ranges Volts, A-C and D-C: 0-3, 12, 30, 120, 300, 1200. Mills (D-C): 0-3; 12; 30; 120; 300; 1200. Cap.: 0-10,000 mmf in 2 ranges, 0-1000 mf in 5 ranges. Ind.: 50 mh-100 henries. Ohms: 0.1 ohm to 10,000 megohms in 8 ranges. Frequency: A-C up to approximately 20C mc may be measured. Input Impedance: Volts D-C: 12 megohms, Volt A-C: 12 megohms.

### LABORATORY SIZE . . . LARGE NINE-INCH METER WITH ZERO CENTER SCALE

Model 209-A: A universal test instrument for all radio and electronic service work. Accurately and easily measures wide ranges of inductances, capacitances, resistances, currents and voltages, both A.C. and D.C.

This new giant size instrument matches the size and attractiveness of the Hickok complete line of test equipment. Large 9-inch meter improves ease of operation. Has a 1200 Volt scale, and a new Peak-to-Peak Voltmeter to measure peak to peak or RMS values of A.C.

The new Zero-Center scale on D.C. permits much faster alignment of discriminator and other galvanometer applications.

High input impedance prevents loading when making voltage tests. Measurement of inductances are possible with the use of a conversion chart supplied in the instruction book. Possibility of damage due to overload is slight in all except current measurements. Power supply permits normal operation and accuracy with wide line voltage fluctuation.

Includes high frequency probe and all leads.

#### SPECIFICATIONS:

Dimensions—13 $\frac{1}{4}$ " H., 16 $\frac{1}{4}$ " W., 7" D.  
Weight—18 lbs. Net; 26 lbs. Ship.

Attractive gray finish steel portable case with non-glare black scale and panel.

### LATEST DESIGN VACUUM TUBE VOLTMETER

#### No Batteries Required



**Model 415**

Model 415: A new design electronic volt-ohmmeter with a single selector switch, 5-inch meter, and modern slanted-face case that permits increased speed in field or laboratory uses.

No batteries are required for this instrument . . . not even for the ohmmeter section. The advantage of this built-in DC voltage supply assures sensitivity and is thoroughly reliable as proven in equipment supplied to the military.

All DC ranges are of zero-center design for instant polarity identification in troubleshooting the many present day complex circuit arrangements.

Molded Case: 8 $\frac{1}{2}$ " L., 5 $\frac{7}{8}$ " W. Height is 3" tapered down to 1 $\frac{3}{4}$ ". 5 lbs. net weight. 105-125 volts, 50-60 cycles, approx. 15 watts. Includes new combination AC-DC single unit Dual-Probe, ohms lead, ground lead, complete instruction book and guarantee.

#### SPECIFICATIONS

##### AC Voltmeter

AC voltages are based on peak-to-peak detection and are calibrated in RMS.

7 RMS Voltage Ranges: 0-1.5, 5, 15, 50, 150, 500, 1500.

Frequency Response: 50 cycles to 2.5 megacycles.

Input Capacity: Approx. 150 mmf.

##### DC Voltmeter

7 DC Voltage Ranges: 0-1.5, 5, 15, 50, 150, 500, 1500.

All ranges are zero-center.

##### Ohmmeter

7 Ohms Ranges: x1, x10, x100, x1k, x10k, x100k, x1 megohm.

Design center: 10 ohms.

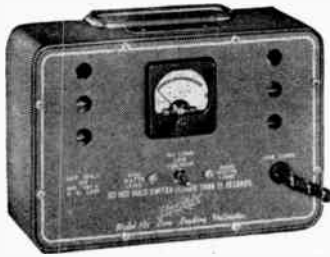
Readability: 0.2 ohm to 2000 mag-ohms.

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**Model 101**

### NEW LINE LOADING VOLTMETER

**MODEL 101:** Electricians and appliance installation technicians are indeed receptive to this new time-saver. A built-in front panel switching arrangement permits 1000 watt or 2000 watt line load and reads resulting AC line voltage change due to load. Field service and electrical unit installers effectively use this equipment to quickly determine circuit capacity and adequacy of existing wiring to handle air conditioning units, freezers, etc. in homes or institutions. Instrument plugs into any 115 volt AC outlet and continuously reads line voltage, from 50 to 140 volts. Entirely self-contained. Housed in attractive steel portable case, 9 $\frac{1}{4}$ " W., 6 $\frac{1}{4}$ " H., 3 $\frac{1}{4}$ " D. 5 lbs. net weight. Moderately priced for every electrician or appliance installation service company.



**Model 900C**

### LOAD CHECK APPLIANCE TESTER

**MODEL 900C:** Appliance repairs are generally easy when you know precisely what is causing the trouble. This equipment will quickly spot the trouble and help you to build a profitable appliance service business. Basically a wattmeter load tester, it will permit a quick and easy test for shorts, high resistance, continuity of circuitry or accurate calculation of power factor.

When readings on this tester are compared to the rated values of the appliance, a quick and accurate evaluation of trouble can be determined. Permanently attached leads and AC receptacle prevent loss or misplacement. Spring loaded test prods eliminate electrical shock hazard to operators by necessitating a push-to-test action. A 20 watt range permits checking of non-inductive loads such as butter conditioner in new refrigerators, etc., and also has adequate multiple ranges (0 to 260 volts and 0 to 2000 watts) to service all major household appliances including electric ranges.

9A and 9B leads are available as a quickly attachable accessory for measurement of 3-wire circuits. With the C-105 (10 to 1) transformer accessory, this instrument is an excellent tool for load checking of industrial equipment up to 130 amps, and 10,000 watts (used intermittently). A sturdy portable carrying case is available in black simulated leather. Has compartments for transformer, prods and leads and has removable cover. 11 $\frac{1}{2}$ " H., 10 $\frac{3}{4}$ " W., 5 $\frac{1}{2}$ " D. 13 lbs. net weight.

Complete and detailed operating instructions with schematic diagrams are permanently mounted on the back of the portable steel case. 9 $\frac{1}{2}$ " H., 6 $\frac{1}{4}$ " W., 4 $\frac{1}{4}$ " D. 6 $\frac{1}{2}$  lbs. net weight.



**Model 175**

### OSCILLOSCOPE VOLTAGE CALIBRATOR

**MODEL 175:** Permits quick and accurate Peak-to-Peak voltage measurements on any 'scope. Convenient switching arrangement permits peak-to-peak voltage measurement of wave shapes without disconnecting calibrator from 'scope.

Readings are accurate to 5% at 115 volts.

Calibrates 'scope peak-to-peak at any desired voltage. Ranges: peak-to-peak 0.1, 1.0, 10.0, 100.0 volts.

Small, compact, very easy to use. Attractive metal case 6" L., 3 $\frac{3}{4}$ " W., 2" D. 115 volts, 50-60 cycles, 5 watts. 3 lbs. net weight.



**Model 465**

### DOUBLE RANGE DC KILOVOLTMETER

**MODEL 465:** For measuring DC Voltages as high as 30,000 volts. Has a sensitivity of 10,000 ohms per volt. This instrument has many industrial uses and features low current drain.

Phenolic case provides ample protection against the high voltages being measured.

Furnished complete with leads and carrying case 7", 6 $\frac{1}{8}$ ", 4 $\frac{1}{4}$ ". 6 lbs. net weight. 8 $\frac{1}{2}$  lbs. shipping.

### PROBES and ACCESSORIES

**TYPE 34 Crystal Modulator Probe:** Use with any 'scope to trace a modulated RF signal, at any frequency, through radio or TV receiver from the antenna post to the detector or discriminator. 4 ft. long. 2 oz. net; 2 lbs. shipping. A quick and accurate aid to trouble-shooting with your 'scope.

**TYPE 35 Crystal Demodulator Probe:** Same technical advantage as Type 34 Probe listed above; however, the Type 35 is specifically designed for Model 675 HICKOK Oscilloscope and has Amphenol Type connector.

**TYPE 75 Termination Pad:** For use with TV-FM alignment generator. Eliminates most standing waves on the length of output cable to insure accurate frequency match of the generator and TV receiver. Can be used on both 90 and 300 ohm inputs. Net weight 6 oz.; 2 lbs. shipping.

**MODEL CRT TV Picture Tube Rejuvenator Adapter:** For use with any HICKOK Tube Tester to check gas, grid control, shorts or cathode emission. Also works well as picture tube rejuvenator.

**MODEL CR5 TV Picture Tube Tester:** Rapidly determines picture tube condition. Field proven to be better than 98% accurate.

#### CRYSTALS:

.005% accuracy for Model 295X.

4.5 mc, specified channels or special frequencies for 695, 615, or 290X.

**TVP-1 Television Probe:** Increases 'scope usefulness in servicing TV receivers. Enables technician to accurately duplicate manufacturers' pattern. Reduces loading effect. Made of black phenolic with chrome probe and four foot heavy duty cord with spade connectors. Net weight 6 oz.; 2 lbs. shipping.

**PR30KV. High Voltage DC Probe:** Extends the range of your VTVM to 30,000 volts DC. Doubles the use of any voltmeter. Ideal for use with the HICKOK 203, 209, 215, 225 or 415. Made of heavy duty black phenolic, with a four foot cord and cable type connector. Net weight 6 oz.; 2 lbs. shipping.

**PR30KVA High Voltage DC Probe:** Same technical advantage of PR 30 listed above; however, this probe is specifically designed for use with the HICKOK Model 209A. Same weight and physical dimensions as PR 30 listed above.

**PR25KV High Voltage DC Probe:** Specifically designed to extend range of HICKOK Models 450 and 435A to 25,000 volts DC. This probe can also be used with any other 20,000 ohm per volt DC multimeter with a 250 volt scale.

**PR-4-6KV:** Extends DC range of Models 455 or 456.

**PR-4-30KV:** Extends DC range of Models 455 or 456.

**PR15 RF Crystal Probe:** For use with HICKOK Model 215 or Model 225. Net weight 12 oz.; 21 lbs. shipping.

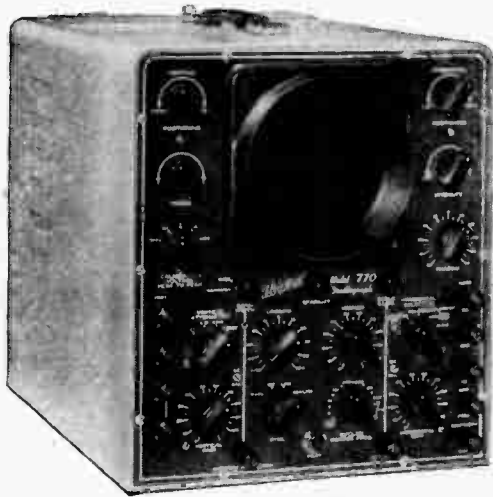
## HICKOK . . . CHOICE OF THE EXPERTS

# HICKOK

# TEST INSTRUMENTS

# HICKOK

## PROFESSIONAL ENGINEERS'



Model 770

### 5" Flat-Face Tube Laboratory OSCILLOSCOPE

Model 770: A new 5-inch oscilloscope with unusual versatility for the complete analysis of electrical and electronic circuits.

Wide band amplifier of DC to 5MC, built-in voltage calibrator, recurrent and driven sweep, excellent locking, high gain, hum free and clear, stable trace qualify the 770 as ideal for use in all phases of electrical work.

This equipment provides the necessary range and stability for measurements of fine accuracy. The 770 will respond accurately to voltages in wide ranges of both frequencies and amplitudes.

The new type flat-faced tube permits a more linear reading as well as facilitates photography for permanent records of any pattern or series of patterns.

#### SPECIFICATIONS

##### VERTICAL AMPLIFIER

Frequency Response: Wide Band; DC to 5 MC (within 3 db).  
Narrow Band; DC to 2.5 MC (within 3 db).  
Pulse Response: Excellent pulse response with a Rise Time of 0.7 Microseconds.  
Sensitivity: Wide Band; 35 MV RMS per inch. Narrow Band; 10 MV RMS per inch.  
Vertical Attenuator: Frequency compensated decade steps of 1 to 1, 10 to 1, 100 to 1 and 1000 to 1. Self-contained voltage calibrator provides peak-to-peak calibrating voltages of 100, 10, 1, 0.1 volts.  
Gain Control: Non-frequency discriminating 10 to 1 gain control.  
Input Impedance: 2.2 megohms, 50  $\mu$ f.  
Deflection: Full screen vertical deflection without low or high frequency distortion.  
Shock Mounted Amplifiers.  
Direct Connection: Sensitivity; 25 volts RMS per inch. Input Impedance; 2.2 megohms, 20  $\mu$ f.

##### HORIZONTAL AMPLIFIER

Frequency Response: DC to 500 KC (within 3 db).  
Sensitivity: 75 MV RMS per inch.  
Horizontal Attenuator: Frequency compensated decade steps of 1 to 1, and 10 to 1.  
Line Sweep: Phaseable approximately (180°) line frequency.  
Input Impedance: 2.2 megohms, 50  $\mu$ f.  
Deflection: 3 times full screen horizontal deflection without low or high frequency distortion.  
Shock Mounted Amplifiers.  
Direct Connection: Sensitivity; 35 volts RMS per inch. Input Impedance; 2.2 megohms, 20  $\mu$ f.

##### TIME BASE GENERATOR

Sweep Functions: Recurrent and driven.  
Frequency: Frequency coverage from 2 CPS to 30 KC in 7 ranges. Provision for external capacities for slower frequency sweeps.  
Fixed Sweep Frequencies: 30 and 7875 cycles.  
Synchronization at line or 2 times line frequency.  
Time Base Expansion: Time base expansion of six times full screen (30 inches) with complete positioning of expanded trace.

##### DISPLAY INFORMATION

The trace is displayed on a type 5ADP1 (5ABP1) flat faced Cathode Ray Tube with high accelerating and post accelerating voltages, providing sharp trace detail with greater brilliance and better definition. Flat faced tube provides a linear reading and permits accurate photography of the display information.  
Intensity Modulation: Input provided for Intensity (X-Axis) Modulation.

##### SPECIAL FEATURES

Both B+ and line are fused for extra protection.  
Test Signals: Line Frequency; 3 volts RMS per inch. Sawtooth; available from front panel. Shielded; Mu Metal magnetic shield gives maximum protection to cathode ray tube against effect of external magnetic fields. Flat Faced Tube; permits linear reading of display information and facilitates photography. Stabilized; sweep lengths and synchronizations are maintained as signal line varies.

##### ILLUMINATED CALIBRATED SCREEN

The illuminated calibrated screen is backed with a green filter which reduces reflections caused by incidental illumination thereby permitting accurate qualitative and quantitative measurements. Astigmatic focus control provides a new standard in undistorted sharpness.

##### FOR SPECIAL APPLICATIONS

Some engineers may prefer a 5ADP11 tube for short persistence or 5ADP7 tube for long persistence observations. Either is available in the Models 770HA (with High Actinic Tube) or 770LP (with Long Persistence Tube) at a slightly higher cost.

##### DIMENSIONS

14" H., 12" W., 18" D. 50 lbs.

##### POWER SUPPLY REQUIRED

105-125 Volts, 50-400 CPS.

##### POWER CONSUMPTION

Approximately 125 watts. Furnished complete with test leads, instruction book and guarantee.

## HICKOK . . . CHOICE OF THE EXPERTS

# HICKOK TEST INSTRUMENTS HICKOK



**Model 675A**

## WIDE BAND... HIGH SENSITIVITY With Illuminated, Calibrated Screen and D.C. Amplifiers

**Model 675A:** Here is a new 5-inch scope that provides all the late design features to permit unusual accuracy in servicing present-day electronic equipment . . . including color TV receivers. This instrument features practical engineering advantages heretofore found only in much higher priced equipment. The 675A features wide band frequency response from 1 cycle through 3.58 MC (within 1 db.).

The illuminated, calibrated screen with astigmatic focus provides a new standard in undistorted trace detail. The stability of this equipment plus the many definitely new circuit innovations provides a technician's scope that will rival the features of many high-priced engineer's models. The unusually wide range of the Model 675A is not achieved at the expense of sensitivity therefore, the need for band width switching has been eliminated. Check the specifications listed below, and then see your Radio-Electronic Parts Jobber for an actual demonstration of this high quality though moderately priced scope.

### S P E C I F I C A T I O N S

**VERTICAL AMPLIFIER:** Frequency Response: 1 CPS to 4.5 MC (within 3 db). Pulse Response: Excellent pulse response with a Rise Time of .08 Microseconds. Sensitivity: 20 MV RMS per inch. Vertical Attenuator: Frequency compensated decade steps of 1 to 1, 10 to 1, 100 to 1 and 1000 to 1. Gain Control: Non-frequency discriminating 10 to 1 gain control. Input Impedance: 1 megohm, 40  $\mu$ f. Trace Reversal: A switch is provided for reversing the polarity of the vertical trace. Deflection: Full screen vertical deflection without low or high frequency distortion. Shock Mounted Amplifier, Self-Contained Voltage Calibrator.

**HORIZONTAL AMPLIFIER:** Frequency Response: 1 CPS to 450 KC (within 3 db). Pulse Response: Good pulse response with a Rise Time of 2 microseconds. Sensitivity: 250 MV RMS per inch. Horizontal Attenuator: Frequency compensated decade steps of 1 to 1 and 10 to 1. Input Impedance: 1 megohm, 40  $\mu$ f. Line Sweep: Phaseable approximately (180°) line frequency. Gain Control: Non-frequency discriminating 10 to 1 gain control. Deflection: Full screen horizontal deflection without low or high frequency distortion.

**TIME BASE GENERATOR:** Sweep Function: Recurrent. Frequency coverage from 10 CPS to 100 KC. In four calibrated decade ranges, with vernier control of 10 to 1. Time Base Expansion: Time base expansion of ten times full screen around center line (40 inches) with complete positioning of expanded trace. Writing Speed: The wide frequency cover-

age together with expansion will produce writing speeds variable from 25,000 Microseconds per inch (based on 4 inches) or 10,000 Microseconds per CM (based on 10 CM) to 0.25 Microseconds per inch (based on 40 inches) or 0.1 Microseconds per CM based on 100CM).

**DISPLAY INFORMATION:** The Trace is displayed on a type 5UP1 Cathode Ray tube with a high accelerating potential providing sharp trace detail. Intensity Modulation: Input provided for Intensity (Z-Axis) DUAL FUSED: Both B+ and Line are fused for extra protection.

**Modulation.**

**ILLUMINATED, CALIBRATED SCREEN:** The Illuminated, Calibrated Screen is backed with a green filter which reduces reflections caused by incidental illumination thereby permitting accurate qualitative and quantitative measurements. Astigmatic focus control provides a new standard in undistorted trace sharpness.

**FOR SPECIAL APPLICATIONS:** Some engineers may prefer a 5UP11 tube for short persistence or 51D7 tube for long persistence observations. Either is available in the Models 675HA (with High Actinic Tube) or 675 LP (with long Persistence Tube) at a slightly higher cost.

13" H., 10" W., 16" D., 35 lbs. 105-125 Volts, 50-400 CPS. 125 Watts at 115 volts.

Furnished complete with high and low capacity probe, instruction book and guarantee.



**Model 685**

## INDUSTRIAL'S PORTABLE With Triggered Sweep

**Model 685:** An engineer's quality 5-inch oscilloscope with DC amplifiers. Permits accurate measurements of electrical phenomena such as modulation, phase relations, voltage amplitudes and distortion. Good shock mounted amplifiers and circuit design permit excellent locking and stability for uses in all phases of TV and electronic work. A maximum full screen vertical and three-times full screen horizontal deflection is allowed without low or high frequency distortion. The vertical gain control provides a non-frequency discriminating 10 to 1 gain. Identical horizontal and vertical attenuators are frequency compensated in decade steps from 1 to 1 through 1000 to 1. The vertical attenuator has a fixed voltage calibration of .1 volt peak-to-peak. The horizontal sweep has a phaseable (approximately 180°) line frequency signal. Has 120 cycle line sweep.

This equipment as a time base generator function has frequency coverage from 1 to 100,000 cycles in four calibrated decade ranges with 10 to 1 vernier control. Input is provided for intensity (Z-Axis) modulation.

The illuminated, calibrated screen is backed with a green filter to reduce reflections caused by incidental illumination. This 'scope is one of the biggest values available today.

<p><b>Vertical Amplifier:</b> DC to 750 KC (within 3 db) 20 MV RMS per inch</p>	<p><b>Horizontal Amplifier:</b> DC to 750 KC (within 3 db) 30 MV RMS per inch</p>
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Includes provision for the addition of external capacitors to provide slow sweeps . . . to 5 seconds.

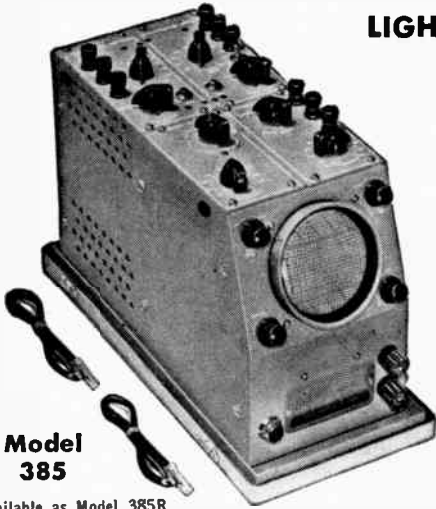
Attractive steel portable case with professional type panel. 13" H., 10" W., 16" D. 35 lbs. 105-125 volts, 50-400 CPS. Approximately 65 watts. Furnished complete with test leads, instruction book and guarantee.

# HICKOK . . . CHOICE OF THE EXPERTS

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**Model  
385**

Also available as Model 385R  
in standard rack-mount case.

## LIGHT WEIGHT 3" PORTABLE OSCILLOSCOPE

Model 385: A new light weight field engineer's portable that incorporates all the latest quality features. Ease of use and dependable design is similar to a model used by the Armed Services. Contains DC Amplifiers, both horizontal and vertical. Frequency coverage to 4MC, 3 db down. Both vertical and horizontal attenuators are fully compensated.

Features unitized construction for quick accessibility to circuitry as well as replaceable circuit sections. Case is shock mounted. Built-in retractable light shield, with CR tube mounted at a 20° angle, facilitates use of the portable model. Terminal board at rear provides direct connection to CR tube elements. This equipment has provision for Z-Axis modulation.

Also available with shock mounted, moisture-proof case. 6" W, 9" H, 13½" D. 15 lbs. net. Less carrying case: 5½" W, 8" H, 13¼" D. 11 lbs. net. In rack mount case as Model 385R: 5¼" H., 19" W., 11½" D. 15 lbs. net.

105-125 volts, 50-1000 cycles. Power consumption is 60 watts at 115 volts. 4 foot Coaxial Test Cable and 4 foot Ground Lead. Telescopic light shield and ruled plastic screen are included.

### SPECIFICATIONS

**VERTICAL AMPLIFIER**—Frequency Response: Wide Band; DC to 4 MC (within 3 db). Narrow Band; DC to 2 MC (within 3 db). Pulse Response: Wide Band; excellent pulse response with a Rise Time of .08 Microseconds. Sensitivity: 75 MV RMS per inch. Vertical Attenuator: Frequency compensated decade steps of 1 to 1, 10 to 1, 100 to 1. Variable voltage calibration of 0 to 1 volt. Gain Control: Non-frequency discriminating 10 to 1 gain control. Input Impedance: 2.2 megohms, 25  $\mu$ i. Deflection: Half screen vertical deflection without low or high frequency distortion. Direct Connection Provision: Sensitivity: 17 volts RMS per inch. Input Impedance; 4.7 megohms, 30  $\mu$ i.

**HORIZONTAL AMPLIFIER**—Frequency Response: DC to 500 KC (within 3 db). Pulse Response: Excellent pulse response with a rise time of .1 microseconds. Sensitivity: 75 MV RMS per inch. Horizontal Attenuator: Frequency compensated decade steps of

1 to 1, 10 to 1 and 100 to 1. Variable voltage calibration of 0 to 1 volt. Input Impedance: 2.2 megohms, 25  $\mu$ i. Gain Control: Non-frequency discriminating 10 to 1 gain control. Deflection: Full screen horizontal deflection without low or high frequency distortion. Direct Connection: Sensitivity: 25 volts RMS per inch. Input Impedance; 4.7 megohms, 30  $\mu$ i.

**TIME BASE GENERATOR**—Sweep Function: Recurrent. Frequency: Frequency coverage from 3 CPS to 50 KC in six ranges. Locking: Internal or external. Time Base Expansion: Time base expansion of six times full screen (18 inches) with complete positioning of expanded trace.

**DISPLAY INFORMATION**—The Trace is displayed on a type 3RP1 Cathode Ray tube with a high accelerating potential providing sharp trace detail. Intensity Modulation: Input provided for Intensity (Z-Axis) Modulation.



**Model 387R**

## 3-INCH RACK MOUNT Industrial's Oscilloscope

Model 387R: An accurate 3-inch oscilloscope featuring identical horizontal and vertical amplifiers with a frequency response of DC to 500 KC.

The standard rack-mount case is very popular with engineers and laboratory technicians. 5¼" H., 19" W., 11½" D. 25 lbs. 105-125 volts, 50 to 1000 CPS. Approximately 62 watts.

### SPECIFICATIONS

**VERTICAL AMPLIFIER**—Frequency Response: DC to 500 KC (within 3 db.) Pulse Response: Excellent pulse response with a Rise Time of 2 Microseconds. Sensitivity: 10 MV RMS per inch. Vertical Attenuator: Frequency compensated 1% decade steps of 1 to 1, 10 to 1, 100 to 1 and 1000 to 1. Variable voltage calibration on 5th position of 0 to 1 volt. Gain Control: Non-frequency discriminating 10 to 1 gain control. Input Impedance: 1 megohm, 45  $\mu$ i. Deflection: Full screen vertical deflection without low or high frequency distortion. Shock Mounted Amplifiers. Direct Connection: Sensitivity: 17 volts RMS per inch. Input Impedance: 4.7 megohms, 30  $\mu$ i.

**HORIZONTAL AMPLIFIER**—Frequency Response: DC to 500 KC (within 3 db). Sensitivity: 14 MV RMS per inch. Horizontal Attenuator: Frequency compensated 1% decade steps of 1 to 1, 10 to 1, 100 to 1, 1000 to 1. Variable voltage calibration

on 5th position of 0 to 1 volt. Gain Control: Non-frequency discriminating 10 to 1 gain control. Input Impedance: 1 megohm, 45  $\mu$ i. Deflection: Full screen horizontal deflection without low or high frequency distortion. Shock Mounted Amplifiers. Direct Connection: Sensitivity: 25 volts RMS per inch. Input Impedance: 4.7 megohms, 30  $\mu$ i.

**TIME BASE GENERATOR**—Sweep Function: Recurrent or driven. Frequency: Frequency coverage from 1 CPS to 100 KC in five calibrated decade ranges 10 to 1 vernier control with decade steps of x1, x10, x100, x1000, x10,000. Slower sweeps may be obtained by the addition of an external capacitor. Locking: Internal or external. Time Base Expansion: Horizontal gain control in conjunction with a special sweep positioning control provides 10 to 1 expansion around center line. Choice of external sync. either positive or negative.

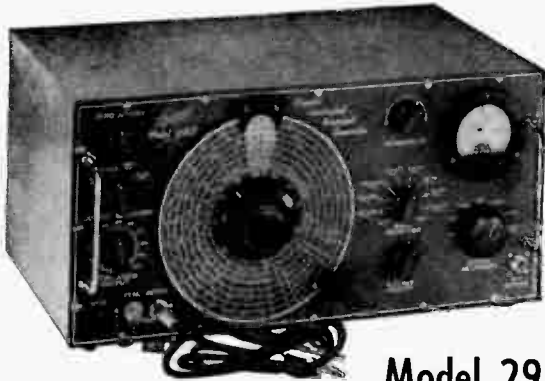
## HICKOK CHOICE OF THE EXPERTS



**HICKOK****TEST INSTRUMENTS****HICKOK**

# ALL-BAND MICROVOLT SIGNAL GENERATOR

## FOR ACCURATE COMMUNICATION RECEIVER WORK



### Model 295X

**Model 295X Microvolt and Crystal Controlled Generator** is designed primarily to service receivers in the mobile and aircraft field. Sensitivity of a receiver can be readily determined with extreme accuracy, and without use of correction factors or reference tables. Features an unusually wide range of frequencies both variable and crystal controlled, wide range of output voltage accurately metered, exceptional stability of frequency and amplitude adjustment and calibrated RF output level as low as 0.1 microvolt. This equipment combines features generally available only in two separate generators.

**MICROVOLT GENERATOR**—An accurate, known microvolt source covering frequencies from 125KC to 175MC continuous on fundamentals. Metered output from 0.1 microvolt to 100,000 microvolt on all ranges. No external attenuator pad required. Extremely low leakage is the result of proper shielding (silver plated over copper). Direct reading of the output level results

- 125 KC to 175 MC continuous on fundamentals.
- Output of 0.1 to 100,000 microvolts on all ranges.
- Attenuation down to 0.1 microvolt . . .
- No external pad required.

from precision attenuation and monitoring. No loading —Frequency does not change when the attenuator is changed.

**CRYSTAL CONTROLLED OSCILLATOR**—Separate crystal controlled RF oscillator . . . 400KC to 20MC . . . on fundamentals and controlled harmonics up to 250MC provides crystal accuracy for frequency checks. Crystals with .01 and .005% accuracy are available as optional equipment.

**APPLICATION FEATURES INCLUDE:** Measurement of threshold sensitivity of squelch circuits . . . Checking noise quieting performance of FM, mobile and aircraft receivers . . . Measurement of gain per stage and overall gain of RF and IF sections . . . Alignment and adjustment of RF and IF stages of communication equipment, to 175 MC . . . Measurement of sensitivity of radio receivers . . . Tuning and alignment of discriminator . . . Adjustment of AGC circuits.

### TECHNICAL FEATURES

#### Variable RF Oscillator:

Ranges: A—125 to 325 KC	E—6.9 to 20 MC
B—325 to 890 KC	F—20 to 70 MC
C—890 to 2400 KC	G—70 to 120 MC
D—2.4 to 6.9 MC	H—120 to 175 MC

Frequency Accuracy: 1% Vernier control allows fine hairline settings.

**RF Output Level:** Metered in microvolts adjusted by a precision decade multiplier and vernier control.

X1 Step, 0.1 to 1  
 X10 Step, 1 to 10  
 X100 Step, 10 to 100  
 X1K Step, 100 to 1,000  
 X10K Step, 1,000 to 10,000  
 X100K Step, 10,000 to 100,000

**Output Impedance:** 50 ohms

**Modulation:** 400 cycles, 30%.

**Crystal Controlled RF Oscillator:**

Fundamental frequency range: 400 KC to 20 MC

Crystal harmonic frequency range: 20 MC up to 200 MC

**RF Output Level:** Variable from a maximum of approximately 2 volts.

**Audio Oscillator:**

Frequency: 400 cycles

Output Level: Variable to a maximum of approximately 1 volt.

**Outputs:**

Unmodulated RF  
 Modulated RF (400 cycles, 30%)  
 Crystal-modulated or unmodulated  
 Audio—400 cycles

Rigid quality control in manufacturing insures that this instrument will conform exactly within the outlined specifications . . . even in the critical (below 1 microvolt) region.

**Case:** Modern design hammertex gray steel with black panel. 19", 12½", 9" H. 105-125 volts; 50-60 cycles. Approximately 90 watts. Accessories include 1 megacycle crystal and output cable for audio or crystal output. 51 lbs. ship.

# HICKOK . . . CHOICE OF THE EXPERTS

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## TEST INSTRUMENTS

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### NEW, CRYSTAL CONTROLLED WHITE DOT-BAR TV COLOR DISPLAY GENERATOR



Model 660

#### SPECIFICATIONS

Video Output:  
0 to 4 volts Peak-to-Peak.  
300 ohm output impedance.  
Black positive or negative.  
300 white dots, less those in blanking.  
Crosshatch white lines, 20 vertical and  
15 horizontal, less those in blanking.  
Sidelock color frequency crystal is  
3.563795 MC output 1 volt  
Peak-to-Peak.  
RF Output Voltage  
.05 volts maximum.  
.001 volts minimum.

Model 660: Features light weight, portable style with detachable cover. Weighs only 15 pounds. Especially designed for home service calls. This equipment is ideal for the alignment of color TV receivers. It is accurate and unusually easy to use. Preset channels allow easy selection through a built-in switching arrangement.

Provides either of 3 patterns on the screen of any color TV receiver:  
White Line Crosshatch; 20 vertical and 15 horizontal, less those in blanking.  
White Dot (small size); 300 dots, less those in blanking.  
Color Display Pattern; crystal-accurate blended in sequence of orange, red, magenta, blue, cyan, green.

#### DESIGN FEATURES:

Model 660 features the necessary high degree of stability not found in variable white-dot generators. In the 660 all frequencies generated are crystal controlled and locked together with extreme stability.  
Frequency of chrominance (color) signal is exactly crystal controlled to reduce possibility of alignment errors. This feature permits increased accuracy over ordinary color generators which use a free running oscillator.  
RF output frequency is in preset channels, 2 thru 6, to allow easy selection through a built-in switching arrangement.  
Small dot and crosshatch size down to two lines in both horizontal and vertical planes.  
Color display pattern with crystal accuracy is a blending in the following color sequence: Orange, Red, Magenta, Blue, Cyan and Green.  
Ratio of sync to video is variable from 10 to 90%.  
The small-size portable design of this equipment permits easy on-location color TV checks to quickly determine ability of a receiver to produce color in the proper hue . . . even in the absence of a station signal.  
The circuit of the 660 is such that regardless of future color TV receiver design, this instrument will be useable.  
The exceptionally stable timer circuit will hold synchronization over a very wide range of line voltages that may be encountered in on-location servicing.

#### Used By Leading Color TV Receiver Manufacturers

RF modulated by all video outputs (60% modulation). Sturdy, black leatherette covered portable case with detachable cover. 10½" x 10½" x 5¼" D. 15 lbs. 105-125 volts, 50-60 cycles, 40 watts.

Includes complete instruction book with color channel alignment waveforms, 2 crystals, output cable and instrument guarantee.

### 100% FULLY SATURATED NTSC\* STANDARD TV COLOR BAR GENERATOR



Model 656XC

\*National Television Systems Committee as approved by Federal Communications Commission.  
Model 656XC: Matched to the other HICKOK instruments, housed in a handy portable detachable cover carrying case attractively covered with durable black leatherette. 16¾" W., 18¾" L., 7½" D. 40 Lbs. net; 48 Lbs. shipping.  
Absolutely stable. Entirely independent of changes in line voltage. Compare the wave form information and sharpness of detail of the 656XC with any other TV color bar generator. . . . You'll pick the HICKOK immediately.

Model 656XC: Produces a standard 100% fully saturated NTSC color bar pattern on color TV sets. This is a must for non-obsolescence. Regardless of future color television receiver design this HICKOK color bar generator will be compatible. This is the type of signal that is transmitted over the air. All literature and alignment data are published around this standard NTSC signal. The Model 655XC provides signal for complete color alignment. Produces color bars on TV screen in the following order from left to right: green, yellow, red, magenta, white, cyan, blue and black. Phase of colors produced is accurately set with precision delay lines. The amplitude of sub-carrier and the amplitude of the brightness component are accurately set with precision resistive Networks. This results in the high stability required for proper alignment. Proper colors are generated within 30 seconds after warmup. In addition to color bar patterns, the 656XC produces: White Dot Crosshatch (20 vertical and 15 horizontal, less those in blanking); Vertical Lines Only; Horizontal Lines Only; and Small Size White Dots are "locked" to assure stability. This locking is achieved through the extremely stable crystal controlled timer circuit. The white dots are of perfect size (approx. 2 lines thick) to permit accurate convergence adjustments. 300 dots are present in each raster, less those in blanking region.

#### DESIGN FEATURES:

Precisely crystal controlled: Sub carrier and horizontal framing.  
Produces clearly defined wave forms to provide ease of alignment and assure minimum possible error.  
NTSC standard phase and brightness: This NTSC standard signal was used in designing all color TV receivers, and is now used by TV manufacturers.  
Self checking: Assures operator that generator is producing accurate NTSC standard signal at all times.  
Generates 3 primaries, 3 complements plus black and white. (An essential feature of this equipment is that white is produced by adding the 3 primaries.)  
Equivalent vestigial side band modulation avoids overloading of chroma channels. This instrument was designed and built in cooperation with leading color TV receiver manufacturers, and is specified by them for their field service engineers.  
Generator is self contained . . . no complicated external synchronizing connections. Output is either R.F. or Video. Video: 0-2 volts peak-to-peak open circuit. 0-1 volt peak-to-peak across 100 ohms with positive or negative output. R.F.: modulated output modulated through color bar pattern is available through channels 2 thru 6.  
A sound carrier is also provided for accurate setting of local oscillator in TV receivers. In addition to color bars this instrument generates the necessary signals to align R-Y, B-Y or I and Q type demodulators. These signals appear at black level with equal amplitudes.  
Provision for switching I, Q, R-Y, B-Y or Chroma On-or-Off.  
The 3.58 MC sub-carrier output of one volt peak-to-peak is also available for troubleshooting and alignment of color synchronizing circuits.

## HICKOK . . . CHOICE OF THE EXPERTS

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**Model 710**

**AMPLITUDE METERED OUTPUT IN 5 RANGES**

Multiplier	Output Resistance	Sine Wave Volt. Range RMS VOLTS	Sine Wave Volt. Range VOLTS	Square Wave Volt. Range Peak-to-Peak Volts
X1	1000 Ohms	1.5	.15	5 -50
X.1	100 Ohms	.15	.15	.5 - 5
X.01	10 Ohms	.015	.15	.05 - .5
X.001	1 Ohms	.0015	.015	.005 - .05
X Zero*	0 Ohms	0	0	0

\*Provided for zero reference.

## NEW SINE-SQUARE WAVE GENERATOR

*For Laboratory and Industrial Use*

**Model 710:** This new instrument is a professional laboratory design to provide an accurately calibrated source of sine-wave and square-wave functions over a very wide frequency range.

### TECHNICAL FEATURES

- Sine wave total harmonics distortion below 1%.
- Hum level better than 90 db down.
- Square wave rise time less than 0.1 Micro-second.
- Direct coupled output for square wave.
- Synchronization output provided.
- Edge-lighted parallax correcting hairline on frequency dial facilitates highly accurate readings.
- May be used as a portable instrument or for rack Mounting.

### FREQUENCY COVERAGE

20 cycles to 1 MC in 5 ranges.

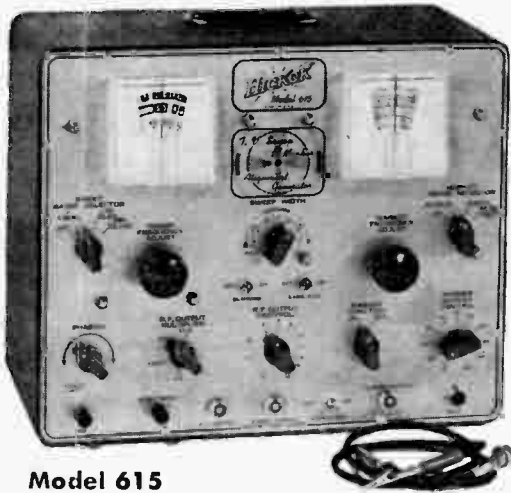
(A) Scale: 20 to 200 cps; x1, x10, x100, x1K.

Calibrated to  $\pm 2\%$ ,  $\pm 1$  cps.

(B) Scale: 200 KC to 1 MC.

### POWER CONSUMPTION:

50-60 cps., 115 Volts, 110 Watts, 8 $\frac{3}{4}$ " H., 12" D., 16" W. (19" wide when rack mounted), 44 lbs. Net; 52 lbs. Shipping.



**Model 615**

## Latest Television SWEEP and MARKER UHF-VHF ALIGNMENT GENERATOR For Black and White or Color

**Model 615:** A complete, single-unit TV sweep and marker generator specifically engineered to provide all the necessary features and ranges required for visual alignment of modern TV receivers. Permits complete TV video IF and RF alignment. Provides harmonic output on UHF. Both the marker and the sweep have excellent attenuation. (Due to the high sensitivity of today's TV receivers, alignment equipment must have good attenuation to achieve required results.) Hickok all-electric sweep features no moving parts to wear out or become inoperative. In any FM oscillator it is most desirable to eliminate amplitude modulation because it distorts the final curve as viewed on a scope. In the Model 615, amplitude modulation is less than 0.1 db per megacycle. Marker frequency accuracy is at least 0.5% at any setting. Non-parallax — knife-edge pointers practically eliminate reading errors.

Strong 0.25 volts RMS marker amplitude and excellent attenuation of marker. Frequency: 2.5 to 5.5 MC, 19 to 50 MC, 54 to 108 MC and harmonic 108 to 216 MC.

Built-in retrace blanking is controllable from front panel to provide zero reference base line.

Built-in switching arrangement and panel connector permit internal marker mixing with FM or external with heterodyned marker adder such as HICKOK Model 691.

Variable sweep width: 0-15 MC.

Dual fused for extra protection of power transformer and other components.

Generates frequencies necessary for proper alignment of color TV receivers. Has video sweep in addition to IF and RF sweep.

Built-in 4.5 MC crystal provides dual markers for IF or RF alignment, and very accurate 4.5 MC signal for inter-carrier sound alignment.

Both marker and crystal oscillators may be amplitude modulated approximately 30% by a self-contained 900 cycle internal modulator.

Excellent sweep linearity. Includes video sweep for checking video amplifiers.

External sweep variable phasing (170°) is provided on front panel for use with scopes which do not have variable sweep phasing control.

Attractive portable steel case 13 $\frac{1}{4}$ " H., 16 $\frac{1}{4}$ " W., 8" D. 31 lbs. net. 39 lbs. shipping.

## HICKOK . . . CHOICE OF THE EXPERTS

# HICKOK

## TEST INSTRUMENTS

# HICKOK

### VHF-UHF MARKER GENERATOR



Model 690

Model 690: Crystal controlled. High .25 volt RF output. Provides dual markers with any TV sweep generator. Features another HICKOK First — a Non-Parallax shadow type dial. Conventional dials unless viewed at exact, right-angle introduce error, since hairline indicator is always a slight distance from the scale. The HICKOK Non-Parallax dial can be viewed from any angle without introducing error. The 45 inches of dial can be self-calibrated to within .05% accuracy with self-contained crystal calibrator. Complete RF coverage channels 2 thru 83. Also, 3.57 mc crystal (color burst frequency) is available. Leading TV manufacturer's engineers have tested this unit and comment highly on its frequency, stability and time saving features. You need the 690 for VHF or UHF black and white alignment right now.

#### OUTSTANDING FEATURES

- Exceptionally rapid and time saving method is employed in calibrating the dial. No counting of beats—no interpolation—no remembering of frequencies.
- Calibrates other signal generators to crystal accuracy.
- Complete IF-RF coverage thru channel 83. Picture and sound settings marked for all channels.
- Marker can be modulated by self-contained 400 cycle. Especially valuable in stage-by-stage alignment. Eliminates use of another instrument.
- Provision for two other crystals. In addition to 2.5 mc crystal supplied, 3.58 mc crystal, frequency of the color burst, available for color work.
- View two markers at once on response curve... main marker and marker of crystal selected. Greatly speeds alignment.
- Both electronic-eye and headphone jack provide visual or audible zero-beat.
- Attenuation is controlled by both step attenuator and vernier for completely regulated output.
- Unit is completely double-shielded.
- All VHF frequencies on fundamentals. No spurious or confusing beats.
- Strong, attractive steel portable case. 16 $\frac{1}{2}$ " W., 13 $\frac{1}{4}$ " H., 8" D. 26 lbs. Net; 34 lbs. Ship.

### UHF-VHF SWEEP-ALIGNMENT GENERATOR

#### All Electronic Sweep



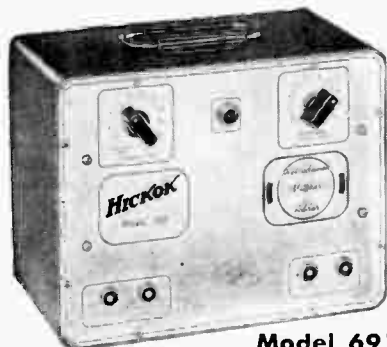
Model 695

Model 695: Here is a completely new generator with ALL-ELECTRONIC sweep. It will exactly fill all top requirements of the professional TV serviceman or lab. engineer. There are no moving parts to wear out. Though moderately priced, this unit features a sweep signal that is absolutely linear and without amplitude modulations. Features a high .3 volt output. Triple shielded—no leakage problem here. Signal can be attenuated from 300,000 to 3 microvolts. 0-12 volts variable bias voltage with continuous tuning allows set alignment to more sensitive for "fringe areas," or less sensitive for "prime areas" to prevent overloading. Continuous tuning and detailed, easy-to-read scales provide foolproof method of alignment. Three RF oscillators provide complete VHF coverage on fundamentals (UHF on harmonics) and heterodyned output IF 0 to 50 mc. This assures the strong signal necessary for aligning front ends.

#### OUTSTANDING FEATURES

- All-Electronic sweep.
- Fundamental output on all VHF channels (.3 volt output).
- Continuously variable tuning.
- 0 to 50 mc. IF heterodyned output, .15 volts output.
- Blanking of oscillator, provides reference base line.
- 100 db. attenuation, 3 volt to 3 microvolts.
- Triple shielded, very low leakage. Provides attenuation down into "snow" region to check IF's for excitation.
- Metered variable DC bias voltage 0-12 volts. Eliminates use of batteries for fixed bias.
- 170° of phasing.
- Sweep width of 0-15 mc.,  $\pm 3$  mc. depending on frequency.
- Linear sweep.
- Amplitude variation of less than 0.1 db. per mc.
- Output impedance is 90 ohms.
- Attractive steel portable case. 16 $\frac{1}{4}$ " W., 13 $\frac{1}{4}$ " H., 8" D. 30 lbs. net; 38 lbs. Shipping.

### UHF or VHF HETERODYNED MARKER ADDER



Model 691

Model 691: This unit in conjunction with the Model 695 Sweep-Alignment and Model 690 Marker provides the utmost in TV alignment technique. Takes guesswork out of alignment jobs. Eliminates errors previously introduced by overload due to markers. The 691 provides a marker visible at all times (including trap points) and will not change in amplitude or distort the response curve WHAT-SO-EVER. This feature, in addition to the accuracy and minimum leakage of the other units (690-695), will greatly simplify any alignment. The outputs of the sweep and marker generators are heterodyned and applied to a scope in such a manner that the marker signal will never pass through the receiver itself — therefore cannot cause overloading. This unit will work well with any of your present equipment that has an output of 50,000 microvolts or more.

#### OUTSTANDING FEATURES

- Input RF voltage required: 50,000 microvolts.
- Output marker voltage: maximum 3 volts.
- Attenuation of marker: variable 0 to 60 db.
- Attenuation of response curve: variable 0 to 20 db.
- Input impedance: 90 ohms.
- Power supply required: 105-125 volts A.C., 50-60 cycles, 25 watts.
- Attractive steel portable case. 1 $\frac{1}{4}$ " W., 8 $\frac{3}{4}$ " H., 7" D. 10 lbs. Net; 15 lbs. Ship.

HICKOK . . . CHOICE OF THE EXPERTS

# HICKOK

# TEST INSTRUMENTS

# HICKOK

## NEW, HIGHLY ACCURATE AM GENERATOR

### High Output, Minimum Leakage



**Model 290X**

Model 290X: Specifically designed to meet the accuracy and high speed requirement of today's radio servicing.

This equipment provides a highly accurate and stable source of RF power for alignment of AM broadcast receivers. Can be checked against a crystal to 0.05%.

The 290X features unusual ease and speed of operation to make it the most versatile AM generator on the market today.

All output frequencies are easily obtained by dialing the front panel selector switch to the desired RF frequency.

If desired, crystal accuracy may be obtained through addition of a crystal in the crystal holder provided.

**VERY STABLE, Quick and EASY TO USE.**

### SPECIFICATIONS

5 preset calibrated frequencies: 262 KC, 455 KC, 465 KC, 600 KC, 1400 KC.  
Internal crystal oscillator for frequencies of 500 KC to 20 MC.  
400 cycle modulation on RF carrier.  
High unmodulated RF output.  
Audio output 400 CPS for checking speakers.

RF output variable through front panel control.

Attractive steel portable case 9½" W., 6" H., 3¼" D., 6 lbs. 105-125 volt, 50-70 cycles.

Furnished complete including test leads and instrument guarantee. Instructions are permanently mounted on back of instrument case.

## UNIVERSAL CRYSTAL CONTROLLED SIGNAL GENERATOR

### MODEL 288X

### High Output AM-FM Generator



**Model 288X**

A variable frequency signal generator, crystal controlled, for accurate AM and FM alignment. Useable in TV alignment as a marker oscillator in connection with television front-end or IF alignment, or the 288X can also be used as an FM generator to align the sound IF amplifier of a TV receiver. RF unmodulated or internally amplitude modulated at 400 cycles, or internally frequency modulated. RF variable from 110 kc. to 110 mc. on AM and 1 kc. to 160 mc. on FM, in 7 bands, all fundamental. Fixed 50-mc. output is internally frequency modulated at 60 cycles or at 400 cycles for FM and television. Fixed, crystal-controlled 100-kc. and 1000-kc. outputs either unmodulated or internally amplitude modulated. Fixed 1000 kc. internally frequency modulated at 60 cycles for visual IF alignment. 50 mc. and 1000 kc. oscillators beat with variable RF oscillator to give variable FM signals. Variable AF output 0-15,000 cycles; fixed AF, 400 cycles. Outputs continuously variable with multiplier and linear controls. Db meter—10 to plus 38 in 3 ranges. 105-125-volt 60-cycle operation. Test leads included.

### SPECIFICATIONS

Dimensions—13¼" x 16¼" x 7" D. Scale—over 100"  
Net Weight—25 lbs.—Ship. 33 lbs. Satin-aluminum finish panel  
Meter—Model 51X Blue baked Hammertex finished steel case

**HICKOK . . . CHOICE OF THE EXPERTS**

# HICKOK

# Meeters

For Accuracy and Dependability

## MODEL 19 AC-DC ASTATIC MILLIAMMETERS, AMMETERS, VOLTMETERS, WATTMETERS, WATTLSS COMPONENT INDICATORS

Accuracy within  $\frac{1}{2}$  of 1% on AC or DC.

Astatic Electrodynamicometer movements. Not affected by external magnetic fields. Scale length:  $5\frac{1}{2}$  inches. Wattmeter scales are uniform, others uniformly squared. Mirror scales.

Model 19 portable instruments designed for precision AC or DC measurements. They are of astatic dynamometer type with a greater accuracy than most other portable AC and DC instruments. Owing to the astatic design the indications are the same on either AC or DC.

Dimensions:  $4" \times 6\frac{1}{4}" \times 7\frac{1}{8}"$ . Weight  $4\frac{1}{2}$  lbs. Case material: Molded phenolic.



Model 19

## MODEL 13 AC DYNAMOMETER INSTRUMENT

Accuracy within  $\frac{1}{2}$  of 1%.

Shielded from effect of External Magnetic fields. Ammeters, Milliammeters, Voltmeters, Wattmeters — single phase. Mirror scales, Knife Edge Pointers. Scale length:  $5\frac{1}{2}$  inches.

These instruments are correct on AC of any frequency up to 125 cycles. Built for use on higher frequencies. Deviations from the sinusoidal wave form met in ordinary testing have no noticeable effect on the calibration of these instruments. Voltmeters and wattmeters are self-contained up to 750 volts, designed to perform continuous service.

Also furnished as Model 13M Iron Vane Type for special applications.

Dimensions:  $4" \times 6\frac{1}{4}" \times 7\frac{1}{8}"$ . Weight:  $3\frac{1}{2}$  lbs. Case material: Phenolic.



Model 13

## MODEL 14 DC AMMETERS, MILLIAMMETERS, MICROAMMETERS, VOLTMETERS, MILLIVOLTMETERS, VOLT-AMMETERS, THERMO-COUPLE METERS

Accuracy within  $\frac{1}{2}$  of 1%.

D'Arsonval movements. Shielded from effect of external magnetic fields. Uniform scales provided in DC meter with anti-parallax mirrors. Scale length:  $5\frac{1}{2}$  inches.

Voltmeters in this model have a resistance of approximately 1000 ohms per volt, the exact resistance being marked on data card furnished with the instruments. Model 14 millivoltmeters are supplied with leads for connection to external shunts. Ammeters are self-contained up to 150 amperes, having negligible temperature coefficient built-in shunts. The drop across the ammeters is 50 millivolts. Model 14 microammeters are of the high torque, have excellent damping, and other rugged characteristics not usually found in high sensitivity instruments.

Dimensions:  $7\frac{1}{8}" \times 6\frac{1}{4}" \times 3\frac{1}{2}"$ . Weight:  $6\frac{1}{2}$  lbs. Case material: Polished phenolic. Excellent magnetic damping.



Model 14

# HICKOK . . . Electrical Indicating Instruments

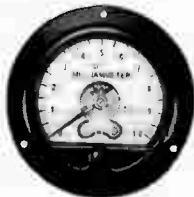
# HICKOK

# Meters

For Accuracy and Dependability

## 3½" ROUND-250 DEGREE METER

All DC meters can be supplied with accuracy either 1% or 2% of full scale deflection. The AC meters, which use copper-oxide rectifier-type movements, have accuracy within 5% of full scale deflection under all conditions. These instruments are as accurate as panel mounting instruments of equal size and have the advantage of two and one-half times longer scale. They are damped in accordance with American Standards Association Specifications, and their response time is also in accordance with these specifications. Allows readings to be taken quickly and more accurately.



## 3½" SQUARE 250 DEGREE METER SAME AS THE ROUND 250 DEGREE METER



All DC meters can be supplied with accuracy either 1% or 2% of full scale deflection. The AC meters, which use copper-oxide rectifier-type movements, have accuracy within 5% of full scale deflection under all conditions. These instruments are as accurate as panel mounting instruments of equal size and have the advantage of two and one-half times longer scale. They are damped in accordance with American Standards Association Specifications, and their response time is also in accordance with these specifications. Allows readings to be taken quickly and more accurately.

## 2½" 250 DEGREE AIRCRAFT METER

This instrument is mounted in a regulation aircraft case per Army-Navy specification, including the shielding and dimensional requirements. Has scale approximately 4¾" long. Quick readability makes them desirable as flight instruments. Aircraft-type dial is available. Mechanism specially designed for aircraft service and will meet vibration-resistant requirements, etc.



## DIRECT READING FREQUENCY METER, AIRCRAFT TYPE



These Hickok improved self-contained frequency meters can be mounted in aircraft type cases of the large AN size. These are the smallest size frequency meters. This type of case is often convenient where space is a limiting factor. Suitable for aircraft use. Movement is shockproof. Case is dust and waterproof in accordance with Army-Navy aircraft instrument specifications. Radium or fluorescent dials and pointers available.

## RUGGEDIZED PANEL METERS

2½", 3½" or 4½"

The high Hickok standard of quality is now available in a ruggedized DC or rectifier type AC meter. This instrument provides the practical answer to requirements for shock proof meters with dependable accuracy. This highly efficient shock mount design permits pointer and scale divisions to be easily read when meter is under vibration. Exceptionally thick flint hard glass withstands pressure and shock tests designated by military specifications. Designed for flush mounting. Luminous dials can be supplied. Furnished in sealed case.



## 2½" MINIATURE SQUARE PANEL MOUNTING



Flush mounting, phenolic case, wide flange only; and metal cases, wide and narrow flanges. Accurate within 1½%. These miniature panel mounting instruments are of the standardized 2½" size, but have extra long scale lengths by reason of the wide angle of deflection and longer scale radius. Five types of cases are available. Lance type pointers regularly supplied, however, small spade pointers can be furnished.

## 3½" ROUND FLUSH MOUNTINGS

Accurate within 1½%. Large opening symmetrically designed admits a maximum of light to the dial. Thick flange eliminates danger of breakage and improves appearance. Metal dials with white background are supplied in all standard ranges. Special dial designs are supplied on quantity orders, at no extra charge. Internal illumination can be furnished.



## 3½" SQUARE FLUSH MOUNTINGS



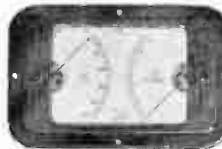
Accurate within 1½%. Large opening, symmetrically designed, admit maximum light to the dial. Thick flange eliminates danger of breakage and improves appearance. Require less panel space than round flush instruments. Metal dials with white background are supplied in all standard ranges. Special dial designs supplied on quantity orders at no extra charge. Internal illumination obtainable by means of bulb inserted in a socket through the instrument base.

## 4½" 250-DEGREE RUGGEDIZED METER

DC Model: 48-250R. AC Model: 49-250R (Rectifier type). Accuracy: 2% as standard and available to 1%. For flush mounting. These long scale 250-degree arc angle instruments are now available as shock proof ruggedized and sealed. Permits a scale length approx. 2½ times as long as conventional instruments in the same size case. Use of these meters offers possibility of considerable saving to panel space. Available in 3½" and 4½" sizes.



## SPACE SAVING DOUBLE-MOVEMENT METER



Model 76DC, Model 77 AC. Accuracy 1½%. 4" x 6" flush mounting phenolic case. Black finish standard. DC scale length is 2¾". AC scale length 2¼". This unusually functional meter features a double movement to permit maximum size dial in a unique space saving arrangement that facilitates reading of two separate indications with minimum effort.

# HICKOK . . . Electrical Indicating Instruments

# HICKOK

# Meters

For Accuracy and Dependability

## 4" RECTANGULAR PANEL

Accuracy within 1½%. Molded phenolic cases — for flush or surface mounting. Dull Black finish standard. Other phenolic colors available. DC Scale length 3¾" — longest which can be attained in an instrument of this size. AC Scale length 3.2", 85 degrees deflection. Can be furnished with or without illuminated dials. Available also in 2½", 3½", and 5", for flush mounting. Volt-ammeters, volt-milliammeters, etc., having built-in push-button switches available.



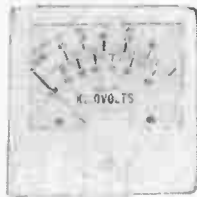
## 4" RECTANGULAR

Large dial area. Accurate within 1½%. Molded bakelite cases — furnished shielded or unshielded. Dull black finish standard, other colors available. Flush mounting. DC scale length 5". AC scale length 4.25". Illuminated dials available. This instrument is a companion to other Hickok rectangular models but has proportionately larger dials, and is ideally suitable for use in electronic-testing equipment where multiple scale arcs are needed.



## 3½" RECTANGULAR SEMI-FLUSH

The new lucite-window model with a scale length of 3¾". Designed as attractive, modernistic replacements for conventional 3½" round or square flange instruments, and can be used in any space large enough to accommodate the standard 3½" meter. This instrument is furnished shielded or unshielded and available in most AC and D.C. ranges. Furnished in clear front with frosted effect border as shown. Also available in 5".

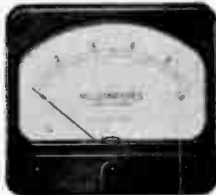


## 4" RECTANGULAR FREQUENCY METER

Frequency meters are self-contained with dimensions of 3¾" x 4" x 2¾". No external reactor is used. The instruments can be supplied shielded from the effect of external magnetic fields. Available in 25, 50, 60, 400 or 800 cycle center scale.

## 4¾" RECTANGULAR PANEL METER

Model 68 DC, Model 69 AC, Accuracy 1½%. Developed specifically to meet requirements for a 4¾" instrument that permits maximum length of scale, new efficiency small movement, and choice of two mounting stud locations to permit maximum versatility in semi-flush panel mount applications. Also available as an illuminated type with a new illumination technique that permits bulb replacement from front panel without necessitating removal of instrument from panel.



## 7" SQUARE PANEL METER

Model 74 DC, Model 75 AC, Accuracy 1½%. Semi-flush phenolic case. Black finish furnished as standard. Available shielded or unshielded. DC Scale length is 5¾". AC Scale length is 4¾". The large dial area of this meter makes it ideal for use in multi-scale arrangements for electronic testing equipment or panel board uses.



## 4" "P" SERIES PORTABLE INSTRUMENTS

Scale lengths — AC Models P49, P49M — 3.25". DC Model P48 — 3.7". Accurate within 1½%. Dimensions: 4" x 3¾" x 2-3/16". Not shielded. These meters are manufactured in many ranges of voltmeters, millivoltmeters, ammeters, milliammeters, microammeters, volt-ammeters, and wattmeters for use on both alternating and direct currents. A high quality solid leather carrying case can be supplied at extra charge.

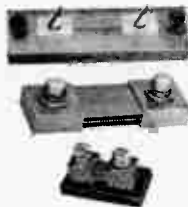


## CHARGICATOR

The newest instrument designed to improve battery servicing. This instrument measures the state of charge in a lead-acid storage battery, instantly and accurately. It's handier, cleaner, and quicker than a hydrometer and avoids acid damage to clothing. The chargicator also provides a complete test of all other factors affecting the life or condition of a battery. 4½" portable round panel mount for continuous connection.

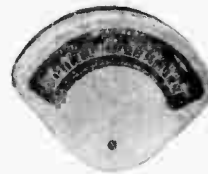
## SHUNTS

Hickok Portable Precision Shunts are of sufficient size to keep the temperature rise within the limits of N. E. M. A. standards. Shunts are accurately adjusted for 50 millivolt drop at full current value. The shunt resistance material has negligible thermo-electric effect against copper and negligible temperature coefficient within the limits of operation of the shunt. Will operate at rated capacity continuously without impairment of accuracy. Leads supplied with all shunts when ordered with ammeters.



## FAN TYPE METER

D'Arsonval movement. Accuracy 1%. Scale length: 7 inches. Dimensions: 8-19/32" x 6-11/16" x 2-1/16". This instrument is available in any combination of DC ranges. It has a window in the top of the case so that a light can be mounted above it for external illumination. This window is optional. It can be supplied with mirror scales and knife-edge pointers. The movements are especially designed for use in places where vibrations are encountered.



## CURRENT TRANSFORMERS

Hickok midget current transformers "Donut" design—for use with inserted primaries. SERIES 1 is primarily intended for use with ammeters, and conforms to N. E. M. A. standards ½X as to ratio only. SERIES 2 conform to N. E. M. A. standards ½X as to ratio and phase angle, and are intended for use with wattmeters, also may be used with both wattmeters and ammeters. Secondary leads are five feet long with soldering lugs made to fit ¼" dia. stud.

# HICKOK...Electrical Indicating Instruments



# HICKOK

# Meters

For Accuracy and Dependability



## POCKET PORTABLE

**MODEL 480 and 481**—Accuracy within 1%. Unshielded. DC Model 480: Scale length 3.7". Voltmeters, millivoltmeters, ammeters, milliammeters, micro-ammeters, and volt-ammeters. AC Model 481. Scale length 3.25". Ammeters, milliammeters, voltmeters, wattmeters — single phase. Mirror scales, knife edge pointers.

Oak Case furnished with slip hinges permits the cover to be removed. The resistor compartment is separate from the meter movement and beneath the panel on which the binding posts are mounted. These instruments are specifically designed for smallness and accuracy. They will easily slip into the pocket and their high accuracy enables them to be used in many testing and inspecting applications. Found especially handy for field service work and are extensively used by the U. S. Signal Corps. Built with full open faces, enabling the use of multiple scales, which are easily readable and unusually long. The movements are especially designed for portable use in these models, and are of the very highest quality.

Dimensions:  $6\frac{3}{4}$ " x  $4\frac{3}{4}$ " x  $2\frac{3}{4}$ ". Weight: 3 lbs.



**MODEL 440**—Accuracy either 1% or  $\frac{1}{2}$  of 1%. Scale length  $4\frac{3}{4}$ ". Panel and the 5" meter cover are phenolic. Has a built-in lead compartment with leads supplied.

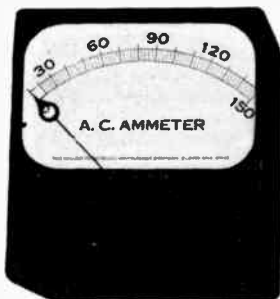
The instrument comes in an oak case with strong, flexible carrying handle. Case is furnished with slip hinge cover, permitting the cover to be removed for easier use. This type of case is especially handy for field service work and is extensively used. All types have mirror scales, knife edge pointers and full open faces. The latter feature enables the use of multiple scales, which are easily readable and unusually long. The movements are especially designed for portable use in these models, and are of the very highest quality. This particular instrument has three DC voltage ranges; 30, 150, and 1500. Two millivolt ranges: 75 and 150. Three milliamper ranges; 30, 60, and 300. These instruments, however, are available in any combination of DC ranges. Dimensions:  $8\frac{1}{2}$ " x  $7\frac{1}{4}$ " x  $3\frac{1}{2}$ ". Weight: 4 lbs.

Also available in the AC Type, Model 441, with a scale length of  $4\frac{1}{4}$ ".

## SWITCHBOARD TYPE

**MODEL S12 DC**. D'Arsonval Movements. Model S-11 AC, Electrodynamometers. Model S-11M AC, Magnetic Vane Movements. Scale length of  $5\frac{1}{8}$ ". Shielded from External Magnetic Fields. Ideally suited for heavy industrial applications. Movements are of the large switchboard type. The AC Ammeter at left is furnished either self contained or with an external switchboard mounting current transformer. Cases can be supplied impervious to magnetic dust, dirt and moisture found in heavy industries. Can withstand severe vibration, shocks and extreme of temperature though still maintain the guaranteed accuracy of 1%. Available in surface type or flush type cases. Pressed steel cases, black enamel finish.

Dimensions:  $5\frac{3}{8}$ "W.,  $5\frac{7}{8}$ "H.,  $4\frac{1}{4}$ "D. plus  $1\frac{1}{4}$ " mounting studs.



Hickok is one of the foremost pioneers and manufacturers of electrical indicating instruments. Here shown are a few of the more popular types furnished. However, any practical range and type can be supplied. Your inquiry is invited. Kindly list details of your requirements. Prices are available on request.

## THE HICKOK ELECTRICAL INSTRUMENT CO.

10500 Dupont Avenue, Cleveland 8, Ohio

# HICKOK... Electrical Indicating Instruments

# RF WATTMETERS | DUMMY LOAD RESISTORS | VSWR METERS

*MicroMatch* is the registered trade name which identifies a complete line of M. C. Jones Electronics Co., Inc. R. F. Power and VSWR measuring instruments.

These instruments contain a patented circuit designed to produce an output essentially independent of frequency. They cover the frequency range of 0.5 to 4000 mcs. and power levels of 10 milliwatts to 120 kilowatts.

The R. F. Power and VSWR instruments are rugged field and laboratory type complete measuring equipment, consisting of both coupler and indicating units.

The DC and RF output coupler units only are sold principally to manufacturers who incorporate these units directly into government or commercial type transmitters.

Because they are made in quantity to the highest government and commercial standards, MICROMATCH instruments combine the highest quality with extremely low cost.



## RF POWER and VSWR INSTRUMENTS

Model No.	Frequency Range (mcs.)	Power Range Incident & Reflected (watts)	RF Connectors and Impedance
261**	0.5 - 225	0 - 1000	Type 83-1R 52 ohms
262	-	0 - 1000 (relative)	Indicator only
263	0.5 - 225	0 - 10; 100; 1000	Type N* 52 ohms
701N	20 - 2000	0 - 1.2	Type N* 52 ohms
702N	28 - 2000	0 - 4	Type N* 52 ohms
703N	20 - 2000	0 - 12	Type N* 52 ohms
704N	46 - 2000	0 - 40	Type N* 52 ohms
705N	20 - 2000	0 - 120	Type N* 52 ohms
706N	28 - 2000	0 - 400	Type N* 52 ohms
711N	25 - 1000	0 - 30; 75; 300	N plus 83-1R Adapters
405B8	28 - 2000	0 - 4000	1 5/8" Flange 51.5 ohms
445A9	28 - 2000	0 - 12,000	3 1/8" Flange 50.0 ohms
445A10	20 - 2000	0 - 40,000	3 1/8" Flange 50.0 ohms



## DC OUTPUT DIRECTIONAL COUPLERS

Model No.	Frequency Range (mcs.)	Power Range Incident & Reflected (watts)	RF Connectors and Impedance
576N1	42 - 2000	1.2	Type N* 52 ohms
576N2	28 - 2000	0 - 4	Type N* 52 ohms
576N3	20 - 2000	0 - 12	Type N* 52 ohms
576N4	46 - 2000	0 - 40	Type N* 52 ohms
576N5	42 - 2000	0 - 120	Type N* 52 ohms
576N6	28 - 2000	0 - 400	Type N* 52 ohms
402B8	28 - 2000	0 - 4,000	1 5/8" Flange 51.5 ohms
442A9	28 - 2000	0 - 12,000	3 1/8" Flange 50.0 ohms
442A10	20 - 2000	0 - 40,000	3 1/8" Flange 50.0 ohms



## RF OUTPUT DIRECTIONAL COUPLERS

Model No.	Frequency Range (mcs.)	Coupling Attenuation	RF Connectors and Impedance
313N3	300 - 2000	30 db	Type N* 52 ohms
313N4	120 - 2000	40 db	Type N* 52 ohms
313N5	60 - 2000	50 db	Type N* 52 ohms
313N6	30 - 2000	60 db	Type N* 52 ohms
313N7	25 - 2000	70 db	Type N* 52 ohms



## ABSORPTION TYPE RF WATTMETERS

Model No.	Frequency Range (mcs.)	Power Range (watts)	RF Connectors and Impedance
621N	1 to over 1000	0 - 120 milliwatts	Type N* 52 ohms
623N	1 to over 1000	0 - 1.2	Type N* 52 ohms
624N	1 to over 1000	0 - 4	Type N* 52 ohms
625C5	50 - 1000	0 - 120	Type C 50 ohms
611A7	50 - 1000	0 - 1200	3 1/8" Flange 50 ohms
612A	44 - 1000	0 - 6000	3 1/8" Flange 50 ohms



## RF LOAD RESISTORS

Model No.	Frequency Range (mcs.)	RF Power Dissipation (watts)	RF Connectors and Impedance
633N	3000	50 (air cooled)	Type N* 52 ohms
635N	3000	200 " "	Type N* 52 ohms
636N	3000	600 " "	Type N* 52 ohms
636A	2000	600 " "	3 1/8" Flange 50.0 ohms
638A	2000	6000 (water cooled)	3 1/8" Flange 50.0 ohms



## CALORIMETRIC TYPE Primary Standard of RF Power

Model No.	Frequency Range (mcs.)	Power Range (watts)	RF Connectors and Impedance
641N	0 - 3000	0 - 3; 10; 30; 100; 300	Type N 52 ohms

\*Also available with UHF, C, and HN Connectors.  
\*\*Coupler Unit Only for use with 262 Indicator.



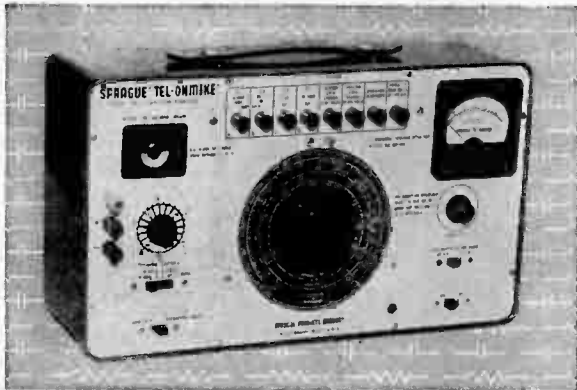
Please write for our 50-page catalog describing the complete M. C. Jones line.



**M. C. JONES ELECTRONICS CO., Inc.**  
BRISTOL, CONNECTICUT

# SPRAGUE TEST EQUIPMENT

## TO-5 TEL-OHMIKE® CAPACITOR ANALYZER



Modern service shops find the Tel-Ohmike a must. The TO-5 is a moderately priced instrument with laboratory quality and accuracy. Guaranteed accuracy  $\pm 3\%$  for values up to 200 mf (+ 1mmf for 0-100 mmf scale) and  $\pm 5\%$  from 200 mf to 2000 mf.

### MODEL TO-5RM FOR RACK MOUNTING

Electrically identical with the standard instrument, Model TO-5RM has a standard 19" wide x 10½" high panel for mounting in standard relay racks. User net price of the TO-5RM is \$93.90.



- **CAPACITANCE BRIDGE** measures up to 2000 mf in five overlapping ranges. The special 1 mmf to 100 mmf range is exclusive with the Tel-Ohmike.
- **INSULATION RESISTANCE** directly read on large meter up to 20,000 megohms for papers, ceramics, and micas. No guessing with neon lamps.
- **LEAKAGE CURRENT** of electrolytics measured directly on meter, with exact rated voltage up to 600v. applied from continuously adjustable power supply. Two ranges: 0-6-60 ma. No guessing on eye-width or counting lamp blinks!
- **POWER FACTOR** of electrolytics measured by Wien Bridge up to 55% in three ranges.
- **TURNS RATIO SCALE** to measure turns ratio of power and audio transformers.
- **MAGIC-EYE TUBE** simplifies bridge balancing for capacitance and power factor measurements.
- **PUSH-BUTTONS** for instant range selection, also discharge capacitors for safety upon release.
- **MODERN CASE** finished in two-tone gray; measures 8½" high, 14½" wide, 6½" deep. Weight only 12½ pounds.

MODEL TO-5.....115 VAC/50-60 cy.....\$83.90 net  
Model TO-5X.....115-230 V/25-60 cy..... \$89.90 net

## LF-1 TRANSIMULATOR

### SPEEDS DESIGN OF TRANSISTORS CIRCUITS BY ELIMINATING BREADBOARD LAYOUT

Bring transistor circuits to life in a matter of minutes with the Sprague LF-1 Transimulator. This new instrument lets you simulate any amplifier stage, a-c or direct-coupled, short of high power audio output, also multivibrator, switching, phasing, push-pull, Class A and B, and many others using cross-coupled Transimulators . . . whether the circuit is common or grounded emitter, base, or collector . . . whether the transistors are PNP, NPN, or Surface Barrier. You can simulate circuits stage-by-stage for cascade operation . . . or use a separate Transimulator for each stage to get simultaneous multi-stage operation.

### Bring Circuit Diagrams To Life In Minutes

Everything you need for RC amplifier circuits is built right into the LF-1, including coupling capacitors . . . bias and load resistors . . . battery voltage supplies . . . Base Collector—Voltage Divider stabilization circuits . . . 5-way binding posts for transformer coupling and metering. Whether you're designing audio circuits or switching circuits, you'll get a true picture of operating parameters minutes after you've drawn the circuit diagram . . . without wasting valuable time with breadboard and soldering gun.

### Pays For Itself In A Matter Of Weeks

An ideal laboratory instrument, Transimulators are inexpensive enough to justify several on every bench. You can even use the LF-1 to test transistors *in the circuit* . . . the only real proof of design parameters. And a complete step-by-step instruction manual makes operation fast, simple, and easy.



### FEATURES OF THE LF-1 TRANSIMULATOR

- **TRANSISTORS**—PNP and NPN Junction, and Surface Barrier.
- **CIRCUITS**—Common or Grounded Emitter, Base, Collector.
- **RANGE**—Audio, up to 100 kc.
- **TRANSISTOR POWER**—Through medium power audio output.
- **BATTERY SUPPLY**—Separate bias and load. 1.5, 3, 4.5, 6 volts d-c. Polarity Reversing Switch.
- **COUPLING**—2  $\mu$ f and 20  $\mu$ F Direct, and Ext. C. posts, on both Input and Output.
- **BIAS RESISTANCE**—Up to 555,000 ohms continuously variable.
- **LOAD RESISTANCE**—Up to 277,500 ohms continuously variable.
- **EMITTER RESISTANCE**—Up to 2,500 ohms variable. Series resistor and bypass capacitor can be added.
- **BASE COLLECTOR STABILITY**—Up to 250,000 ohms variable. Series resistor and bypass capacitor can be added.
- **VOLTAGE DIVIDER STABILITY**—Up to 50,000 ohms variable.
- **5-WAY BINDING POSTS**—For meters, transformer coupling, external supply voltage, degeneration, bypass, coupling, signal input and output, almost any connection required.

**\$79.50 NET**  
LESS BATTERIES

# \* Simpson



INSTRUMENTS THAT STAY ACCURATE

The VOM That Outsell All Others Combined is Now Better Than Ever!

## NEW improved MODEL

Seven New Features Make the 260 More Valuable Than Ever!

For years, the rugged dependability of the Simpson 260 has made it the world's most popular volt-ohm-milliammeter. Now . . . Simpson offers a new and improved 260 . . . easier to operate, more sensitive, more accurate . . . a better buy than ever before. Almost 600,000 Simpson 260's have been purchased by technicians, service organizations, laboratories, factories, and the armed forces. Such overwhelming preference is proof that Model 260 best meets the needs of VOM users. When you're in the market for a VOM, you can feel sure that a Model 260 is your best buy.



## Simpson 260

AC-DC VOLT-OHM-MILLIAMMETER

Model 260 in Ever-Redy Carrying Case



Model 260RT (Roll-Top Safety Case Unit)



### RANGES

DC VOLTAGE (20,000 ohms-per-volt): 0-250 mv; 0-2.5 v; 0-10 v; 0-50 v; 0-250 v; 0-1000 v; 0-5000 v.

AC VOLTAGE (5000 ohms-per-volt): 0-2.5 v; 0-10 v; 0-50 v; 0-250 v; 0-1000 v; 0-5000 v.

AF OUTPUT VOLTAGE (With .1 microfarad internal series capacitor): 0-2.5 v; 0-10 v; 0-50 v; 0-250 v.

VOLUME LEVEL IN DECIBELS (Zero DB equal to 1 milliwatt across a 600 ohm line): -20 to +10 DB; -8 to +22 DB; +6 to +36 DB; +20 to +50 DB.

DC RESISTANCE: 0-2000 ohms (12 ohms center); 0-200,000 ohms (1200 ohms center); 0-20 megohms (120,000 ohms center).

DIRECT CURRENT: 0-50 mu a; 0-1 ma; 0-10 ma; 0-100 ma; 0-500 ma; 0-10 amp.

### DEALER'S NET PRICES

Model 260, complete with test leads and Operator's Manual	\$43.95
(Size: 5 1/4" x 7" x 3 1/8". Wt: 3 1/2 lbs. Ship Wt: 5 lbs.)	
1818 LEATHER CARRYING CASE	7.75
4236 EVER-REDY VINYL CARRYING CASE	9.75
MODEL 260RT in Roll-Top Safety Case, complete with test leads and Operator's Manual	49.95
(Size: 6 3/8" x 9" x 4 3/4". Wt: 6 1/2 lbs. Ship. Wt: 9 lbs.)	
HIGH VOLTAGE PROBE for 260 (25,000 v)	9.95
HIGH VOLTAGE PROBE for 260 (50,000 v)	12.50

Adjust-A-Vue Handle — holds Model 260 at convenient viewing angle. Eliminates separate gadgets and make-shift props.

### NEW FEATURES

1. POLARITY REVERSING SWITCH: Speeds up servicing when making direct current measurements.
2. 50 MICROAMPERE-250 MILLIVOLT RANGE: Gives more sensitive measurements . . . reads lower values of current and voltage.
3. EASIER-TO-READ SCALES: Black and red scales have been spread out for faster reading, less chance of error.
4. LESS CIRCUIT LOADING: Sensitivity of AC voltage ranges has been increased to 5000 ohms per volt.
5. POPULAR DBM RANGES: -20 DBM to +50 DBM, one milliwatt in 600 ohms.
6. IMPROVED FREQUENCY RESPONSE IN AC MEASUREMENTS: Five to 500,000 cycles per second.
7. FULL-WAVE BRIDGE RECTIFIER SYSTEM: Provides more accurate AC voltage measurements.

## MIDGETESTER, Model 355, AC-DC Volt-Ohmmeter

SELF SHIELDED, 10,000 Ohms Per Volt AC and DC

World's smallest! Ideal for appliance repair, radio-TV service, etc. Utilizes the rugged Core Magnet Meter Movement.

VOLTS, DC: 3, 12, 60, 300, 1200.  
VOLTS, AC: 3, 12, 60, 300, 1200.  
RESISTANCE, DC: 0-10K ohms (120 ohms center); 0-100K ohms (1.2K ohms center); 0-1 megohm (12K ohms center); 0-10 megohms (120K ohms center).

SIZE: 2 3/4" wide, 4 1/2" high, and 1" thick.

WEIGHT: 7 oz.

MODEL 355 with Leads, Operator's Manual

\$34.95

ZIPPER CASE, Leather with Belt Loop #6355

\$2.95

Fits in Your Shirt Pocket



# ★ Simpson



INSTRUMENTS THAT STAY ACCURATE

## 100,000 OHMS PER VOLT

### MODEL 269\*, AC-DC Volt-Ohm-Microammeter

Self Shielded . . . 33 ranges . . . 7" scale . . . rugged Core Magnet Meter Movement. Can replace VTVM's for many voltage and resistance checks. Carrying case and accessory probes available.

VOLTS DC: 1.6, 8, 40, 160, 400, 1600, 4000 . . . 100,000 ohms per volt.

VOLTS AC: 3, 8, 40, 160, 800 . . . 5,000 ohms per volt.

OUTPUT: 3, 8, 40, 160 volts AC.

DECIBELS: -12 to +45.5 DB in 4 ranges. ODB = .001 watt in 600 ohms.

RESISTANCE DC: 0-2K ohms (18 ohms center); 0-20K ohms (180 ohms center); 0-200K ohms (1.8K ohms center); 0-2 megohms (18K ohms center); 0-20 megohms (180K ohms center); 0-200 megohms (1.8 megohms center).

CURRENT DC: 0-16, 0-160 ua; 0-1.6, 0-16, 0-160 ma; 0-1.6, 0-16 a.

SIZE: 7-15/16" x 6" x 2-15/16". WEIGHT: 4 lbs.

MODEL 269 with leads and Operator's Manual ..... **\$88.00**



\*ADJUST-A-VUE HANDLE

## DELUXE VOM

### MODEL 262\*, AC-DC Volt-Ohm-Milliammeter

This compact instrument is made possible by the Simpson Self Shielded Core Magnet Meter Movement . . . 20,000 ohms per volt . . . 33 ranges . . . 7" scale. Carrying case and accessory probes available.

VOLTS DC: 1.6, 8, 40, 160, 400, 1600, 4000 . . . 20,000 ohms per volt.

VOLTS AC: 3, 8, 40, 160, 800 . . . 5,000 ohms per volt.

OUTPUT: 3, 8, 40, 160 volts AC.

DECIBELS: -12 to +45.5 DB in 4 ranges. ODB = .001 watt in 600 ohms.

RESISTANCE DC: 0-500 ohms (4.5 center); 0-5K ohms (45 ohms center); 0-50K ohms (450 ohms center); 0-500K ohms (4.5K ohms center); 5 megohms (45K ohms center); 0-50 megohms (450K ohms center).

CURRENT DC: 80, 160 ua; 1.6, 16, 160 ma; 1.6, 16 a.

SIZE: 7-15/16" x 6" x 2-15/16". WEIGHT: 4 lbs.

MODEL 262 with leads and Operator's Manual ..... **\$59.50**



\*ADJUST-A-VUE HANDLE



### VACUUM TUBE VOLT-OHMMETER\* MODEL 303\*

An Unusually Versatile VTVM

AC VOLTS: 1.2, 12, 60, 300, 1200.

DC VOLTS: 1.2, 12, 60, 300, 1200.

OUTPUT: 1.2, 12, 60 volts AC.

RESISTANCE DC: 1K ohms (10 ohms center); 100K ohms (1000 ohms center); 1 megohm (10K ohms center); 10 megohms (100K ohms center); 1000 megohms (10 megohms center).

\*ADJUST-A-VUE HANDLE

DECIBELS: -20 to +63 DB in 5 ranges. ODB = .001 watt in 600 ohms.

R.F. VOLTS: 20 volts maximum. Frequency — Flat 20 Kc to 100 Mc.

LINE VOLTAGE: 105-125V, 50/60 Cycles. Accessory Probes and Carrying Case available.

MODEL 303 with DCV Probe, ACV-Ohms Probe, Ground Lead, Operator's Manual ..... **\$68.00**

## NEW! LOW-OHM-METER MODEL 362

Greater Accuracy from  
0.1 to 25 ohms

—  
Low Circuit Current



RANGES:  
0-5 ohms and  
0-25 ohms.

The two ranges of the Low-Ohm Meter permit highly accurate readings between 0.1 and 25 ohms. This is ideal for checking motor armatures and fields; switch and relay contact resistances; shorts between generator windings and grounds; shorts in TV and radio chassis wiring; electrical equipment in industrial plants; plus many other uses. Accuracy is within 3% of full scale value.

Model 362 with calibrated test leads ..... **\$24.95**

# Simpson

INSTRUMENTS THAT STAY ACCURATE



## NEW! FOR TV SERVICING In-Circuit HORIZONTAL SYSTEM ANALYZER



### MODEL 382

- saves time in running checks on TV horizontal deflection systems
- tests capacitors, too!

Model 382 is the world's most complete "testing package" for analyzing TV horizontal deflection systems. With this one instrument, you can:

(1) Check any winding in the horizontal system (transformer or yoke) for **shorts** and **opens**. Even one shorted turn is clearly indicated on a large 4½" meter. Uses reliable, time-proven Q-type test.

(2) Check flyback and yoke system **IN-CIRCUIT** (disconnect only plate cap of output tube). High-Q systems are checked on a quick-reading, Good-Bad scale (most present day sets use the High-Q system); Low-Q systems on comparative logging scale.

(3) Measure capacitance value (and check for open capacitors) — direct-reading scales indicate from 10 mmf to 0.1 mfd — no bridge to balance. Measures capacitance to better than 10%.

(4) Make continuity checks of any wire-wound component, such as width coils, linearity coils, oscillator transformers; check capacitors for direct shorts. Can check many other components for Q, either directly or by logging scale.

SIZE: 7¼" x 8" x 11¾".

Model 382 with special test cable and Operator's Manual

**\$69.95**

## NEW! COLOR BAR GENERATOR

### MODEL 430

- Service Any Color TV Receiver — Past, Present, and Future
- True, 100% Saturated NTSC Signals
- Exceptionally wide Range of Outputs
- Single, Master Control
- Outputs Pictured on Master Control
- Completely Self-Contained



The new Model 430 is full of features . . . features that save the technician's time . . . features that greatly simplify operation . . . features that make Model 430 exceptionally versatile. Have your Electronic Distributor demonstrate it the next time you're in to see him.

### IMPORTANT FEATURES

**PROVIDES TRUE 100% SATURATED NTSC SIGNALS** & Color bar pattern is vivid and bright, same as standard signals transmitted over the air.

**EXCEPTIONALLY WIDE RANGE OF OUTPUTS** — Includes G-Y at 90°.

**SINGLE MASTER CONTROL** — All outputs are selected by rotating a single control.

**OUTPUTS PICTURED ON MASTER CONTROL** — Each position on the master control contains a color print of the signal output which you should see on the screen.

**COLOR BAR GRATICULE (OPTIONAL)** — Gives direct references on scope face. Eliminates separate reference book.

### IMPORTANT SPECIFICATIONS

**OUTPUTS** — Y: chroma; color bar (8 bars simultaneously); R-Y; B-Y: R-Y and B-Y simultaneously; I: Q: I and Q simultaneously; G-Y at 90°; synch and burst; horizontal synch; high level 3.58 megacycle output; high level modulated rf output; positive or negative video output. 4.5 Megacycle (crystal controlled) marker for proper tuning.

**CHROMA LEVEL SWITCH** — 0 db for checking older style receivers and some current models; 6 db for video checks of newer receivers using vestigial color sideband alignment; 15 db for checking color synch lock under weak signal conditions. Variable chroma control position for other chroma levels.

**COLOR BAR DISPLAY PATTERN** — Left to right: red, yellow, green, cyan, white magenta, blue, black.

Model 430, complete with Operator's Manual, and Leads **\$395.00**

# \* Simpson



INSTRUMENTS THAT STAY ACCURATE

## NEW! HANDSCOPE

Model 466

5" SCREEN

Measures only 8" x 12 1/4" x 16 1/4"



**FREQUENCY RESPONSE OF VERTICAL AMPLIFIER:** From 15 cycles/sec to 100 Kc/sec, flat within  $\pm 1$  db; 6 db down at 250 Kc/sec; usable to 1 Mc/sec.

**MAXIMUM VERTICAL DEFLECTION SENSITIVITY:** 30 Millivolts R.M.S./inch.

**FREQUENCY RESPONSE OF HORIZONTAL AMPLIFIER:** From 15 cycles/sec to 20 Kc, flat within  $\pm 1$  db; 6 db down at 100 Kc/sec.

**MAXIMUM HORIZONTAL DEFLECTION SENSITIVITY:** 0.7 volt RMS/inch.

**Z-AXIS SENSITIVITY (VOLTAGE REQUIRED TO EXTINGUISH BEAM):** 20 volts RMS.

**CALIBRATING VOLTAGE** (at 117.5 VAC power source): 1 volt P-P  $\pm 10\%$ .

**MAXIMUM INPUT VOLTAGE:** 400 volts peak.

**INPUT RESISTANCE:** 0.1 Meg (at atten. x 1); 0.5 Meg (at atten. x 100).

**INPUT CAPACITANCE:** 40 uuf (at atten. x 1); 35 uuf (at atten. x 100).

**SAWTOOTH SWEEP RANGE:** 15 cycles/sec to 80 Kc/sec.

**POWER CONSUMPTION** (at 117.5 volts AC): 50 watts  $\pm 10\%$ .

MODEL 466 with lead. Operator's Manual **\$144.95**

## CAPACOHMETER

Model 383A

World's First  
IN-CIRCUIT

Capacitor Leakage Tester



The "Capacohmeter" combines in "one package" the flexibility to: (a) Measure leakage of defective paper, mica, or ceramic capacitors in ohms; (b) indicate directly the capacitance of good paper, mica, or ceramic capacitors over a range of 10.0 micromicrofarads to 10.0 microfarads; (c) detects many marginal capacitors by means of a pulse technique. All tests are read directly on a 4 1/2" instrument. No adjusting of a bridge circuit and balancing controls. All measurements made under load conditions. Borderline capacitors which cause costly "call backs" are immediately "knocked out" with the "pulse test." Many tests are made right "in circuit."

Model 383A, complete with test leads and Operator's Manual **\$89.95**

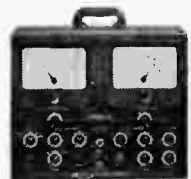
## TV-FM SIGNAL GENERATOR, Model 479

**MARKER GENERATOR FREQUENCIES:**  
Fundamental and second harmonic. Band A. 3.3 to 15.6 meg; Band B. 15 to 76 meg; Band C. 75 to 250 meg.

**FM GENERATOR FREQUENCIES:** Band A. 2 to 120 meg; Band B. 140 to 260 meg. (Dial marked for harmonic use for UHF.) Sweep rate 60 cycles (Line Frequency).

**SIZE** 17" x 14" x 7 1/2". **WEIGHT:** 29 lbs.  
**POWER:** 50 watts. 105-125 volts. AC only.  
**NOTE:** specify 50 or 60 cycles.

**MODEL 479** including 2 Oscilloscope Cables, 1 Impedance Matching Output Cable, 1 Signal Input Cable, Operator's Manual. UHF Instructions **\$325.00**



## COLORSCOPE

Model 458

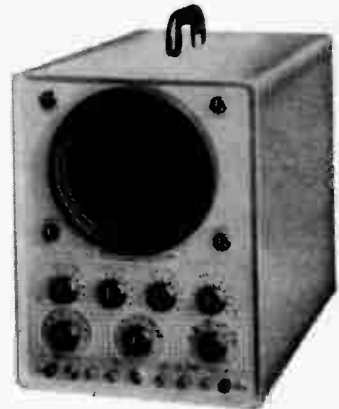
100% RESPONSE  
AT 3.58 MC  
COLORBURST

DUAL  
BANDWIDTH —  
NARROW OR  
WIDE

BIG 7-INCH  
SCREEN

IDEAL FOR BOTH  
COLOR AND  
BLACK & WHITE TV

**\$229.95**



### SPECIFICATIONS

#### Frequency Response of Vertical Amplifier

##### Wide Band Position

From 20 cycles/sec. to 4.5 mc/sec.—flat within  $\pm 1$  db.  
From 10 cycles/sec. to 5.0 mc/sec.—within  $\pm 2$  db.

Full response at the Burst Frequency (3.58 mc/sec.)

##### Narrow Band Position

From 20 cycles/sec. to 200 kc/sec.—flat within  $\pm 1$  db.  
From 10 cycles/sec. to 300 kc/sec.—within  $\pm 2$  db.

Rise Time (Wide Band Position) — less than 0.05 microseconds.

##### Maximum Vertical Deflection Sensitivity

Wide Band Position — 40 Millivolts R.M.S./inch

Narrow Band Position — 15 Millivolts R.M.S./inch

##### Frequency Response of Horizontal Amplifier

From 20 cycles/sec. to 200 kc/sec.—flat within  $\pm 1$  db.

From 10 cycles/sec. to 300 kc/sec.—within  $\pm 2$  db.

##### Maximum Horizontal Deflection Sensitivity

Horizontal Input "Hi"—115 Millivolts R.M.S./inch

Horizontal Input "Low"—1.4 volts R.M.S./inch

Z-axis sensitivity (Voltage required to extinguish the beam) less than 4.0 volts R.M.S.

Calibrating Voltage (@ 117.5 VAC Input to Colorscope)

18 P-P volts  $\pm 10\%$

Maximum Input Voltage—600 volts peak

Input Resistance (Minimum)—3.3 Megohms  $\pm 10\%$

Input Capacitance @ 5.0 mc/sec.—20 uuf  $\pm 10\%$

Sawtooth Sweep Range—14 cycles/sec. to 250 kc/sec.

Power Consumption @ 117 1/2 volts AC, 60 cycles/sec. — 80 watts  $\pm 10\%$

Case Dimensions (Over-all)—11" wide, 14 1/2" high, 16 3/8" deep. Net Weight: 29 lbs.

Oscilloscope Calibrator, Model 276 **\$29.50**

# \* Simpson



INSTRUMENTS THAT STAY ACCURATE

## PORTABLE Field Strength Meter

Model 498

Multi-Power

Operates Anywhere

Covers All Channels



This newest Simpson field strength meter provides means for the measurement of television signals in any locality. It answers the need of service technicians for a combination power line or battery operated field strength meter that is self-charging.

MODEL 498 covers all channels, UHF and VHF. Measures relative field strength from approximately 50 microvolts to .5 volts. Excellent for fringe areas. Also useful as a tuner substitute when servicing TV. Continuously variable sensitivity. Operates from any one of four sources: (1) 117 VAC line; (2) Self-contained storage battery\*; (3) Your automobile battery; and (4) Your external battery.

SIZE: 8" x 11" x 8½". WEIGHT: 11½ lbs. Shipping Wt: 15 lbs.

MODEL 498, 117 VAC and 6.3 VDC, less battery.

**\$155.50**

No. 5721 Storage battery, 12 ampere hour capacity.

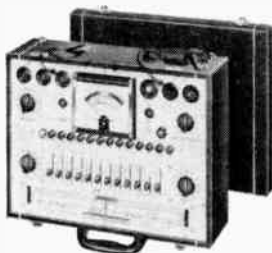
**\$9.50**

\*Internal storage battery can be recharged by self-contained charger or from your automobile battery while traveling between jobs.

## PLATE CONDUCTANCE TUBE TESTER

Model 1000

Extro Lo-Volt Leakage Test  
Will Not Damage Any Tube



MODEL 1000 is ideal for radio-TV and industrial control servicing. Tests any receiving tube, including 9 pin miniatures and sub-miniatures with base arrangements in a line or circle. The Simpson plate conductance method makes testing simpler . . . more positive . . . more accurate. Multi-position toggle switches provide quick adjustment.

Snap-Out-Snap-In transparent plastic windows are provided over the roll chart . . . add new tube data at any time.

LINE VOLTAGE: 105-125 Volts, 50-60 cycle.

SIZE: 15¾" x 11¾" x 6".

WEIGHT: 15 lbs. Shipping Wt: 19 lbs.

MODEL 1000 complete  
with Operator's Manual

**\$135.00**

## SIMPSON MODEL 434

VARIDOT

WHITE DOT GENERATOR

VARIABLE DOT SIZE . . . VARIABLE DOT NUMBER

Lets You Adjust the Number and Size  
of Dots to Match any Receiver  
Manufacturers' Recommendations



The NEW Simpson Model 434 provides white dot patterns with variable dot size (from 1 to 8 scanning lines, with corresponding dot widths), and variable dot number, from 6 to 12 horizontal dots, and 6 to 12 vertical dots.

With the Model 434 White Dot Generator, you make linearity adjustment of black and white TV and linearity and convergence adjustments on color TV receivers with confidence. Adjustable dot size provides a check of receiver transient response.

Horizontal and vertical sync pulses are provided, with adjustable vertical sync which can be operated at line frequency or off line frequency. This also operates as a hum-check control for both color and black and white receivers. This feature is rarely found in test equipment offered at this price. Vertical and horizontal synchronization assures you of correct aspect ratio . . . ample attenuation . . . 300 ohm RF output.

Positive or negative video output . . . excellent for accurate and fast checking transient response of video amplifiers is available.

Housed in attractive Simpson grey hammerloid case. Modulated RF output is available, operating on fundamentals from Channel 2 to Channel 6. Line Voltage: 117 Volts, 50-60 cycles, 45 watts. Weight is approximately 11½ lbs.

SHIPPING WEIGHT: 15 lbs.

DEALER'S NET PRICE, Complete with operating instructions and output cables **\$147.50**



# ★ Simpson



INSTRUMENTS THAT STAY ACCURATE

## TEMPERATURE TESTERS — Check 3 Temperatures at 1 Time

### THERM-O-METER\*

#### Model 388-3L

Dual Scale:  $-50^{\circ}$  to  $+1000^{\circ}$ F  
and  $-40^{\circ}$  to  $+500^{\circ}$ C



The Therm-O-Meter measures the temperature of air, gases, liquids, or solids by means of thermocouple type leads. Readings can be made in 15 to 30 seconds, and up to a distance of  $7\frac{1}{2}'$ . Model 388-3L, the three-lead model, is particularly useful where two or three temperatures must be measured at the same time.

**LEADS** — Two types available: General Purpose and Surface Temperature probe. Length is  $7\frac{1}{2}'$ .

**SIZE AND WEIGHT**— $7-15/16"$  x  $6"$  x  $2-15/16"$ , 4 lbs.

**MODEL 388-3L\*** (for three leads) with one No. 0190 general purpose lead, battery and, Operator's Manual. **\$64.50**

**MODEL 388\*** (for one lead) with one No. 0190 general purpose lead, battery, and Operator's Manual. **\$59.50**

Ever-Redy Carrying Case, Vinyl, No. 5262 ..... **\$9.95**

General Purpose Lead, No. 0190..... **\$4.95**

Surface Temperature Probe Lead, No. 0187..... **\$6.95**

\*Adjust-A-Vue Handle supports instrument at convenient angles.

### TEMPERATURE METER

#### Model 385-3L

Measures Temperatures  
from  $-50^{\circ}$  to  $+70^{\circ}$  F



The Temperature Meter was developed primarily for servicing refrigeration equipment such as deep-freeze units, home refrigerators, and walk-in coolers. It can also be used to service air-conditioning units when the test requirements fall within its temperature range.

**MODEL 385-3L**, for three 15-foot leads, is especially useful where two or three temperatures must be checked at the same time, such as in setting up a refrigerator thermostat or in checking ambient temperature rises and control apparatus.

**LEADS** — General purpose type, 15' long. Thermistor tip.

**SIZE AND WEIGHT** —  $3"$  x  $5\frac{7}{8}"$  x  $2\frac{1}{2}"$ ,  $1\frac{1}{2}$  lbs.

**MODEL 385-3L** (for three leads) with one test lead and Operator's Manual ..... **\$33.95**

**MODEL 385** (for one lead) with one test lead and Operator's Manual ..... **\$30.00**

Additional Thermistor Lead, No. 0010 ..... **\$3.95**

Ever-Redy Carrying Case, Leather, No. 4299 **\$5.95**

## SIMPSON MICROTESTERS (Size: $3" \times 5\frac{7}{8}" \times 2\frac{1}{2}"$ )

### AC-DC VOLT-OHM-MILLIAMMETER, Model 240

Designed for radio testing . . . 1000 ohms per volt, AC and DC.

AC VOLTS: 15, 150, 750, 3000.

DC VOLTS: 15, 75, 300, 750, 3000.

DC MILLIAMPERES: 15, 150, 750.

OHMS: 0-3000 (center scale 30); 0-300,000 (center scale 3000). Model 240 Leads.

**\$28.95**



### AC-DC VOLT-OHM-MILLIAMMETER, Model 230 —

AC Volts: 10, 250, 1000 (400 ohms per volt) — DC

Volts: 10, 50, 250, 1000 (1000 ohms per volt) — DC

Milliamperes: 10, 50, 250 — Ohms: 0-1000, 0-100,000

— with Leads ..... **\$27.95**

### DC AMMETER, Model 375 — 0-1, 2.5, 5, 10, 25

amps ..... **\$19.95**

### DC MILLIAMMETER, Model 373 — 0-1, 5, 10, 25, 50,

100, 250, 1000 ma ..... **\$19.95**

### DC MICROAMMETER, Model 374 — 0-50, 100, 250,

500, 1000 ua ..... **\$23.00**

### AC AMMETER, Model 370 — 0-1, 0-2.5, 0-5, 0-10,

0-25 amps ..... **\$21.95**

### AC MILLIAMMETER (Self-contained transformer),

Model 378 — 0-5, 25, 100, 250, 1000 ma ..... **\$23.95**

### DC VOLTMETER (Res. 1000 ohms per volt), Model

377 — 0-1, 2.5, 5, 10, 25, 50, 100, 250, 500, 1000

DC volts ..... **\$19.95**

### AC VOLTMETER (Rec. Type — 1000 ohms per volt),

Model 376 — 0-5, 10, 25, 50, 100, 250, 500, 1000

AC volts ..... **\$19.95**

### AC VOLTMETER, Model 371 — 0-150, 0-300, 0-600

volts ..... **\$19.95**

### OHMMETER, Model 372—0-500 ohms (5 ohms center);

0-5000 ohms (50 ohms center); 0-50,000 ohms (500

ohms center); 0-500,000 ohms (5,000 ohms center);

0-5 meg. (50,000 ohms center); 0-50 meg. (500,000

ohms center) — with Leads ..... **\$27.95**

### AC VOLT-AMP-WATTMETER, Model 390 — Volts:

0-150, 300 — Amps: 0-0.3, 15 — Watts: 0-300, 600,

1500, 3000—with break-in plug and Leads... **\$43.95**

### AC-DC VOLT-WATTMETER, Model 391 — AC or DC

— Volts: 0-130, 0-260 — Watts: 0-1500, 0-3000 —

with Cord and Plug ..... **\$34.95**

### AC-DC VOLT-WATTMETER, Model 392 — AC or

DC — Volts: 0-130, 0-260 — Watts: 0-1000, 0-5000

— with Cord and Plug ..... **\$37.95**

### BATTERY TESTER, Model 379 — (Separate arcs for

Radio A Batteries, Hearing Aid A Batteries, and for

all B Batteries) — with Leads ..... **\$24.95**

# \* Simpson



INSTRUMENTS THAT STAY ACCURATE

## NEW! Millivoltmeter

Checks Safety Thermocouples on GAS-FIRED Equipment

MODEL 387  
For Servicing Gas-Fired—

Furnaces • Boilers • Heaters  
Hot Water Heaters • Dryers  
Refrigerators



The new Simpson Millivoltmeter makes gas unit servicing faster, more accurate. Simply place the probe leads across the thermocouple terminals and test for correct value. Ranges are 10, 30, 100, 300, and 1000 millivolts. Accuracy is 3% of full scale from 50° to 120°F. Handy pocket size — only 3" x 5 7/8" x 2 1/2".

Model 387, with leads and Operator's Manual **\$29.95**

## LINE-O-METER, Model 397 Line Current-Capacity Tester

The Line-O-Meter pretests the current capacity of electrical lines. It tells whether existing wiring is adequate to handle motor starting currents of heavy duty appliances such as air conditioners.



RANGE — 13 to 50 amp (single phase, 117 V, 60 cycle lines).

SIZE AND WEIGHT — 5 1/2" x 3-11/16" x 2 1/2", 2 lbs.  
Model 397 with cord and Operator's Manual **\$29.95**

## NEW! EDGEWISE PANEL INSTRUMENTS

- Require only 1/2 the panel area of a conventional 2 1/2" meter
- Choice of two, self shielded Core Magnet Meter Movements for a wider range of sensitivities
- Scale length comparable to a 2 1/2" meter
- Accurate comparative readings by mounting meters next to each other



HORIZONTAL



VERTICAL  
(Special Order)

Edgewise Panel Meters are available in popular DC and AC rectifier types, and can be adapted to use also, as position indicators, or as null indicators for tuning circuits. Supplied complete with mounting hardware, including a bezel with two Speed Nuts for quick, simple mounting. Write for information on your special requirements in scales, ranges, sensitivities, and resistances.

Accuracy — DC, 2% of full scale. AC Rectifier Type, 5% of full scale.

Scale Length — 1 7/8".

Case — Dustproof, molded Lucite.

Terminals — Solder or stud type for ammeters.

Weight — Approximately 5 ounces.

HORIZONTAL TYPE	RANGE	APPROX. RESISTANCE (OHMS)	MODEL 1502
DC VOLTMETER	0-50 v	50 K	\$12.60
DC VOLTMETER	0-150v	105 K	12.60
DC VOLTMETER	0-500 v	1 M	12.75
DC AMMETER	0-5 amp	.010	13.35
DC AMMETER	0-10 amp	.005	13.35
DC MILLIAMMETER	0-1 ma	20	13.05
DC MILLIAMMETER	0-10 ma	4.9	13.05
DC MILLIAMMETER	0-100 ma	1.14	13.05
DC MILLIAMMETER	0-500 ma	.237	13.05
DC MICROAMMETER	0-50 mu a	1750	18.15
DC MICROAMMETER	0-100 mu a	1000	16.05

HORIZONTAL TYPE	MODEL 1507
VU Meter "A"	\$21.60
VU Meter "B"	21.60

## NEW! METER RELAYS

Improved Design  
Gives Greater Reliability



Now you can get a reliable, supersensitive meter relay that offers lower costs and circuit simplification in many applications. These new relays feature platinum alloy contacts and increased contact force which minimize sticking and give extreme reliability. Units control up to one watt on less than 50 millimicrowatts. Currently available in 2" DC and 3" AC and DC models. Non-locking type. Write for complete information.

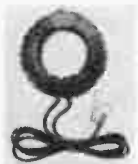
## SHUNTS

External switchboard type for use with DC ammeters. Adjusted for 50 millivolt drop. Shunts available for one ampere to 7000 amperes. Six-foot lead included with each unit.



## CURRENT TRANSFORMERS

These current transformers are of the inserted, one turn, primary type. Designed for switchboard and panel AC ammeters that require external transformers. Models available for 50-1000 amperes primary — all with 5 amperes secondary.





# Simpson

## PANEL INSTRUMENTS

# NEW! WIDE-VUE

### PANEL INSTRUMENT 2½", 3½", 4½" SIZES



New Wide-Vue meters provide not only ultramodern styling, but also wide-angle readability and longer scales, compared with conventional units. The black, plastic cover is formed in one piece and wraps around the dial for maximum protection. Meters mount in round holes

by means of four studs. All DC meters listed below, except those marked by an (\*), have the Simpson self shielded Core Magnet Meter Movement which eliminates calibration problems.

#### DC VOLTMETERS

RANGE	APPROX. RESISTANCE	2½" MODEL 1227	3½" MODEL 1327	4½" MODEL 1329
0-10	1000 opv	\$11.55	\$12.00	\$13.20
0-15	1000	11.55	12.00	13.20
0-25	1000	11.55	12.00	13.20
0-30	1000	11.55	12.00	13.20
0-50	1000	11.55	12.00	13.20
0-100	1000	11.55	12.00	13.20
0-150	1000	11.55	12.00	13.20
0-300	1000	11.55	12.00	13.20
0-500	2000	12.00	12.60	13.65

#### DC AMMETERS

RANGE	APPROX. RESISTANCE	2½" MODEL 1227	3½" MODEL 1327	4½" MODEL 1329
0-1	.050	.....	\$11.40	\$12.60
0-2	.025	.....	11.40	12.60
0-3	.0166	.....	11.40	12.60
0-5	.010	\$10.95	11.40	12.60
0-10	.005	10.95	11.40	12.60
0-15	.0033	.....	11.40	12.60
0-25	.002	.....	11.40	12.60
0-50	.001	.....	11.40	12.60

Self-contained for ranges shown.

#### DC MILLIAMMETERS

RANGE	APPROX. RESISTANCE	2½" MODEL 1227	3½" MODEL 1327	4½" MODEL 1329
0-1	46	\$10.80	\$11.25	\$12.00
0-5	23	10.80	11.25	12.00
0-10	7	10.80	11.25	12.00
0-25	2.0	10.80	11.25	12.00
0-50	3.0	10.80	11.55	12.60
0-100	1.5	18.80	11.55	12.60
0-150	1.0	10.80	11.55	12.60
0-200	.75	10.80	11.55	12.60
0-250	.60	.....	11.55	12.60
0-300	.50	10.80	11.55	12.60
0-500	.30	10.80	11.55	12.60

#### DC MICROAMMETERS

RANGE	APPROX. RESISTANCE	2½" MODEL 1227	3½" MODEL 1327	4½" MODEL 1329
0-25*	2200	\$17.85	\$18.60	\$20.70
0-50*	2000	15.30	15.75	17.10
0-100	2000	13.80	14.40	16.05
0-200	1000	11.70	12.45	13.80
0-500	200	11.25	11.85	13.20
50-0-50	2000	13.95	14.55	16.20

#### AC VOLTMETERS

RANGE	APPROX. RESISTANCE	2½" MODEL 1257	3½" MODEL 1357	4½" MODEL 1359
0-10	133	\$10.20	\$10.95	\$12.60
0-150	25,000	11.40	12.15	13.20
0-300	50,000	11.40	12.15	13.20

#### AC AMMETERS

RANGE	APPROX. RESISTANCE	2½" MODEL 1257	3½" MODEL 1357	4½" MODEL 1359
0-1	.287	.....	\$10.80	\$12.75
0-5	.012	.....	10.80	12.75
0-10	.003	.....	10.80	12.75
0-15	.0015	.....	10.80	12.75
0-25	.0003	.....	11.10	13.20
0-50	.0001	.....	12.00	15.45

Self-contained for ranges shown.

#### AC VOLTMETERS — RECTIFIER TYPE

RANGE	APPROX. RESISTANCE	3½" MODEL 1347	4½" MODEL 1349
0-150	1000 ohms per volt	\$16.20	\$17.85
0-150	2000 ohms per volt	16.80	18.45

#### VU METERS

RANGE	3½" MODEL 1347
A — Scale	\$19.80
B — Scale	19.80

#### DC GALVONOMETERS

SCALE	MICRO-AMPERES SENSITIVITY	RES.	3½" MODEL 1227	4½" MODEL 1327
50-0-50	75-0-75 MICS	2000	\$12.15	\$13.35
50-0-50	500-0-500 MICS	46	10.80	11.40

#### DECIBEL METERS

RANGE	3½" MODEL 1347	4½" MODEL 1349
General-Purpose	\$16.50	\$18.00
5000 ohms		

#### MILLIVOLTMETER

RANGE	RES.	3½" MODEL 1327	4½" MODEL 1329
0-50 DC	5	\$11.40	\$12.60

# Simpson

## PANEL INSTRUMENTS



MODELS 125, 135, 145, 155

2½" ROUND CASE — OPEN FACE STYLE. Flange diameter, 2¾"; depth overall, 2-5/16"; body diameter, 2-11/64"; scale length, 1¾". Bakelite case.

MODELS 127, 137, 147, 157

2½" RECTANGULAR CASE. Width, 2¾"; height, 2¾". Mounts in round hole. Body diameter, 2-3/16". Scale length, 1¾". Bakelite case.

MODEL 27-37-57 ILLUMINATED

3½" RECTANGULAR CASE. Width, 3"; height, 3½". Mounts in round hole. Body diameter, 2¾". Scale length, 1-5/16". Bakelite case.

NOTE: The 2½" and 3½" rectangular instruments indicated (\*) are also carried in stock with lucite illuminated dials. Supplied complete with socket and 6 volt bulb for an additional cost of \$1.95 dealer's net. RF ammeters, lucite illuminated, must be supplied with external thermocouple. Add \$5.55 for couple. All instruments are calibrated for use on non-magnetic panels.

### VOLTMETERS

RANGE	APPROX. RESISTANCE	MODEL 125-127	MODEL 25-27 DC	MODEL 29	APPROX. RESISTANCE	MODEL 155-157	MODEL 55-57 AC	MODEL 59
0-1.5		\$10.95	\$11.40	\$12.60	3 ohms	\$ 9.60	\$10.35	\$12.00
0-3		10.95	11.40	12.60	12	9.60	10.35	12.00
0-5		10.95	11.40	12.60	33	9.60	10.35	12.00
0-8		10.95	11.40	12.60	.....	.....	.....	.....
0-10		10.95*	11.40*	12.60	133	9.60*	10.35*	12.00
0-15		10.95	11.40	12.60	300	9.60*	10.35*	12.00
0-25		10.95	11.40	12.60	833	10.20	10.65	12.00
0-30		10.95	11.40	12.60	.....	.....	.....	.....
0-50		10.95*	11.40*	12.60	.....	.....	.....	.....
0-100		10.95	11.40	12.60	3 333	10.20	10.65	12.00
0-150		10.95*	11.40*	12.60	16 666	10.65	11.10	12.00
0-200		10.95	11.40	12.60	25 000	10.80*	11.55*	12.60
0-250		10.95	11.40	12.60	.....	.....	.....	.....
0-300		10.95*	11.40*	12.60	41 166	10.80	11.55	12.60
0-500		11.40	12.00*	13.05	50 000	10.80*	11.55*	12.60
0-750		11.40	12.00	13.05	83 333	15.60	16.35	17.55
0-1000		13.65	14.25*	15.45	125 000	15.60	16.35	17.55
0-1500		13.65	14.25	15.45	166 666	15.60	16.35	17.55
0-2000		13.65	14.25*	15.45	.....	.....	.....	.....
0-2500		13.65	14.25	15.45	.....	.....	.....	.....
0-3000		13.65	14.25*	15.45	.....	.....	.....	.....
0-4000		13.65	14.25*	15.45	.....	.....	.....	.....
0-5000		13.65	14.25*	15.45	.....	.....	.....	.....

External resistors are furnished on AC meters having a range of 500 volts or higher. DC 1000 volts or higher.

### MILLIAMMETERS

RANGE	APPROX. RESISTANCE	MODEL 125-127	MODEL 25-27 DC	MODEL 29	APPROX. RESISTANCE	MODEL 155-157	MODEL 55-57 AC	MODEL 59
0-1	46 ohms	\$10.20*	\$10.65*	\$11.85	.....	.....	.....	.....
0-1.5	46	10.20	10.65	11.85	.....	.....	.....	.....
0-3	46	10.20	10.65	11.85	.....	.....	.....	.....
0-5	23	10.20	10.65	11.85	.....	.....	.....	.....
0-10	7	10.20*	10.65*	11.85	.....	.....	.....	.....
0-15	1.5	10.20*	10.65*	11.85	2,000 ohms	\$ 9.60	\$10.35	\$12.15
0-20	1.0	10.20	10.65	11.85	875	9.60	10.35	12.15
0-25	2.2	10.50*	10.95*	12.45	.....	.....	.....	.....
0-50	3.0	10.50*	10.95*	12.45	390	9.60	10.35	12.15
0-75	2.0	10.50	10.95	12.45	80	9.60	10.35	12.15
0-100	1.5	10.50*	10.95*	12.45	.....	.....	.....	.....
0-150	1.0	10.50	10.95	12.45	20	9.60	10.35	12.15
0-200	.75	10.50*	10.95*	12.45	.....	.....	.....	.....
0-250	.60	10.50	10.95	12.45	5	9.60	10.35	12.15
0-300	.50	10.50*	10.95*	12.45	.....	.....	.....	.....
0-500	.30	10.50*	10.95*	12.45	9	9.60	10.35	12.15
0-750	.20	10.50	10.95	12.45	.....	.....	.....	.....
0-1000	.15	10.50	10.95	12.45	.....	.....	.....	.....

### MICROAMMETERS

RANGE	APPROX. RESISTANCE	MODEL 125-127	MODEL 25-27 DC	MODEL 29
0-15	4800 ohms	.....	\$21.00	\$22.95
0-25	2200	\$17.85	18.60	20.70
0-50	2000	15.30	15.75	17.10
0-100	2000	13.20	13.80	15.45
0-200	1000	11.10	11.85	13.20
0-500	200	10.65	11.25	12.60
25-0-25	2000	.....	15.90	17.25
50-0-50	2000	.....	13.95	15.60
100-0-100	1000	.....	12.00	13.50
500-0-500	46	.....	10.80	12.00

### MILLIVOLTMETERS

RANGE	APPROX. RESISTANCE	MODEL 125-127	MODEL 25-27 DC	MODEL 29
0-50	5 ohms	\$10.35	\$10.80	\$12.00
0-100	10	10.35	10.80	12.00

# Simpson

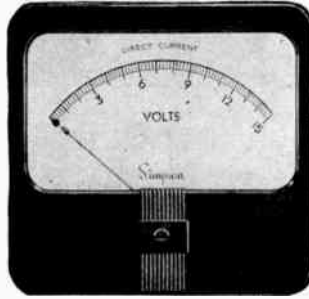
## PANEL INSTRUMENTS



MODELS 25, 35, 45, 55  
3 1/2" ROUND CASE — OPEN FACE STYLE. Flange diameter, 3 1/2"; depth over-all, 2 1/4"; body diameter, 2 3/4"; scale length, 2-9/16". Bakelite case.



MODELS 27, 37, 47, 57  
3 1/2" RECTANGULAR CASE. Width, 3"; height, 3 1/4". Mounts in round hole. Body diameter, 2 3/4". Scale length, 2-9/16". Bakelite case.



MODELS 29, 39, 49, 59  
4 1/2" RECTANGULAR CASE. Width, 4-21/32"; height, 4-13/64". Mounts in round hole. Body diameter, 2 3/4". Scale length, 3-29/32". Bakelite case.



MODELS 1160, 1161, 1162  
New 5 1/2" Modernistic Meter. Supplied on special orders only. Also available in 2 1/2", 3 1/2" and 4 1/2" sizes.

### AMMETERS

RANGE	APPROX. RESISTANCE	MODEL 125-127	MODEL 25-27 DC	MODEL 29	APPROX. RESISTANCE	MODEL 155-157	MODEL 55-57 AC	MODEL 59
0-4	.050 ohms	\$10.35	\$10.80	\$12.00	.287 ohms	\$9.60	\$10.20	\$12.15
0-1.5	.033	10.35	10.80	12.00	.185	9.60	10.20	12.15
0-2	.025	10.35	10.80	12.00	.115	9.60	10.20	12.15
0-3	.0166	10.35	10.80	12.00	.027	9.60	10.20	12.15
0-5	.010	10.35	10.80	12.00	.012	9.60	10.20	12.15
0-10	.005	10.35	10.80	12.00	.003	9.60	10.20	12.15
0-15	.0033	10.35	10.80	12.00	.0015	9.60	10.20	12.15
0-25	.002	10.35	10.80	12.00	.003	9.60	10.50	12.75
0-30	.00166	10.35	10.80	12.00	.....	.....	.....	.....
0-50	.001	10.35	10.80	12.00	.001	9.60	11.40	14.85
0-75	5	10.35	10.80	12.00	.012	9.60	10.20	12.15
0-100	5	10.35	10.80	12.00	.012	9.60	10.20	12.15
0-150	5	10.35	10.80	12.00	.012	9.60	10.20	12.15
0-200	5	10.35	10.80	12.00	.012	9.60	10.20	12.15
0-250	5	10.35	10.80	12.00	.012	9.60	10.20	12.15
0-300	5	10.35	10.80	12.00	.012	9.60	10.20	12.15
0-500	5	10.35	10.80	12.00	.012	9.60	10.20	12.15
0-750	5	10.35	10.80	12.00	.....	.....	.....	.....
0-1000	5	10.35	10.80	12.00	.....	.....	.....	.....
15-0-15	.0033	10.95	11.55	12.75	.....	.....	.....	.....
30-0-30	.00166	10.95	11.55	12.75	.....	.....	.....	.....
50-0-50	.001	10.95	11.55	12.75	.....	.....	.....	.....

AC-DC ammeters are self-contained for ranges up to and including 50 amperes. Higher range DC ammeters (50-MV) listed above CAN be supplied with external shunts and include 6 foot leads. Higher range AC ammeters can be supplied with external current transformers and include 2 foot leads. Price of external shunts or current transformers should be added to meter prices shown.

### WATTMETERS — DYNAMOMETER TYPE

RANGE WATTS	MAX. VOLTS	MAX. AMPS	MODEL 175-177	MODEL 75-77	MODEL 79	RANGE WATTS	MAX. VOLTS	MAX. AMPS	MODEL 175-177	MODEL 75-77	MODEL 79
0-75	150	1.0	\$22.65	\$24.15	\$31.35	0-600	300	4.0	\$25.20	\$26.40	\$33.75
0-150	150	2.0	22.65	24.15	31.35	0-1500	300	10.0	25.20	26.40	33.75
0-300	150	4.0	22.65	24.15	31.35	0-3000	300	20.0	25.20	26.40	33.75
0-750	150	10.0	22.65	24.15	31.35						

### AC VOLTMETERS — RECTIFIER TYPE

RANGE	APPROX. RESISTANCE	MODEL 45-47	MODEL 49
0-1		\$15.60	\$17.25
0-3		15.60	17.25
0-5		15.60	17.25
0-10	1000	15.60	17.25
0-15	ohms	15.60	17.25
0-50	per volt	15.60	17.25
0-100		15.60	17.25
0-150		15.60	17.25
0-300		15.60	17.25
0-1		\$16.20	\$17.85
0-3		16.20	17.85
0-5		16.20	17.85
0-10	2000	16.20	17.85
0-15	ohms	16.20	17.85
0-50	per volt	16.20	17.85
0-100		16.20	17.85
0-150		16.20	17.85
0-300		16.20	17.85

### AC MILLIAMMETERS — RECTIFIER TYPE

0-1	600 ohms	\$15.45	\$16.80
0-2	400	15.45	16.80
0-5	200	15.45	16.80

### AC MICROAMMETERS — RECTIFIER TYPE

0-100	3400 ohms	\$18.60	\$20.10
0-200	2400	16.35	18.00
0-300	1800	16.20	17.70
0-500	1200	15.90	17.40

### DC GALVANOMETERS

SCALE	SENSITIVITY MICRO-AMPERES	RESISTANCE	MODEL 125-127	MODEL 25-27
50-0-50	500-0-500	46 ohms	\$10.20	\$10.80
50-0-50	75-0-75	2000	11.55	12.75

### RF AMMETERS

RANGE	INTERNAL APPROX. RESISTANCE	MODEL 135-137	MODEL 35-37	MODEL 39
0-1	.205 ohms	\$11.40*	\$12.75*	\$15.45
0-1.5	.177	11.40	12.75	15.45
0-2	.104	11.40*	12.75*	15.45
0-2.5	.088	11.40	12.75	15.45
0-3	.076	11.40*	12.75*	15.45
0-5	.039	11.40*	12.75*	15.45
0-8	.025	11.40	12.75	15.45
0-10	.021	11.40	12.75	15.45

### RF MILLIAMMETERS

#0-115	..... ohms	.....	\$26.10	.....
0-150	4.5	.....	15.45	\$17.70
0-250	3.0	.....	15.45	17.70
0-500	.6	.....	15.45	17.70

\* 0-100 linear scale—50 divisions.

### VOLUME LEVEL INDICATORS—DECIBEL METERS

ZERO POWER LEVEL—6 MW, 500 OHM LINE

RANGE	MODEL 145-147	MODEL 45-47	MODEL 49
GENERAL PURPOSE TYPE			
—10 to +6 db 5000 ohms	\$15.75	\$15.90	\$17.40
HIGH SPEED TYPE			
—10 to +6 db 5000 ohms	.....	16.95	18.15
LOW SPEED TYPE			
—10 to +6 db 5000 ohms	.....	16.95	18.15

### VOLUME LEVEL INDICATORS—VU METERS

REFERENCE LEVEL—1 MW 600 OHM LINE

RANGE	MODEL 145-147	MODEL 45-47	MODEL 142
Not illuminated A or B			
Scale—3900 ohms	.....	\$19.20	\$20.40
Illuminated A or B Scale—			
3900 ohms	.....	.....	23.40

Model 142 has same physical appearance as Model 29

# WESTON INSTRUMENTS



Round Style

## PANEL INSTRUMENTS

These panel instruments reflect half a century of instrument skill and the Weston tradition of building instruments to the highest standards of dependability and service.

Models 301, 425 and 476 are available in round flush bakelite cases 3 1/2" or 3 3/8", and 3 1/4" metal cases with black finish; also in round surface metal and rectangular flush bakelite cases. Models 301 and 425 supplied in round surface bakelite cases. All are calibrated normally for use on non-magnetic panels. For magnetic panel use, instruments will be adjusted for a specified steel panel thickness. Order instruments in bakelite cases for use on circuits above 300 volts when it is not possible to connect in grounded side of line. The 1301 line of instruments listed at bottom, incorporate the Weston CORMAG® self-shielded mechanism. They can be mounted interchangeably on magnetic or non-magnetic panels without need for adjustment. For other instrument prices, write to Weston Electrical Instrument Corporation, Newark 12, New Jersey.



Rectangular Style

## 3 1/2" PANEL INSTRUMENTS

### MODEL 301 — D-C VOLTMETERS

Approximate resistance of Model 301 in ohms per volt — 1 to 30 volts, 62; 50 to 150 volts, 200; 200 volts, 250.

Range	Price	Range	Price	Range	Price
3	\$17.25	15	\$17.25	150	\$18.75
5	17.25	30	17.25	200	19.50
8	17.25	50	17.25		
10	17.25	100	18.00		

With Resistance of 1,000 ohms per volt

Range	Price	Range	Price	Range	Price
50	\$18.00	300	\$21.75	1.5KV	\$47.25*
100	18.75	500	26.25	2 KV	\$2.25*
200	20.25	1KV	33.75	3 KV	62.25*

\* Supplied with external resistor.

### MODEL 301 — D-C MILLIAMMETERS \*

Range	Approx. Res. Ohms	Price	Range	Approx. Res. Ohms	Price
1	105	\$17.25	30	1.2	\$17.25
1.5	27	17.25	50	2.0	17.25
2	27	17.25	100	1.0	17.25
5	5.7	17.25	150	0.66	17.25
10	2.0	17.25	200	0.5	17.25
15	2.0	17.25	300	0.33	17.25
20	2.0	17.25	500	0.2	17.25

\* Milliammeters with ranges above 40 MA. are shunted, and have a drop of approximately 100 MV.

### MODEL 301 — D-C AMMETERS \*

Single Ranges: 1/1.5/2/3/5/10/15/30/50 at \$17.25

\* Ammeters are supplied in self-contained ranges up to 50 amperes inclusive, and have a drop of 50 MV ±5%. Ranges above 50 amperes require external shunts.

### MODEL 301 — D-C MICROAMMETERS

Range	Price	Range	Price
20	\$31.50	100	\$28.50
30	31.50	200	21.00
50	29.75	500	21.00

### MODEL 301 — RECTIFIER TYPE A-C VOLTMETERS

Range	1000 ohms	2000 ohms	Range	1000 ohms	2000 ohms
1	per volt	per volt	50	\$26.50	\$29.50
1.5	.....	\$29.50	100	27.25	30.25
3	\$26.50	29.50	150	28.00	31.00
5	26.50	29.50	300	30.25	.....
15	26.50	29.50			

### MODEL 301 — RECTIFIER TYPE A-C MILLIAMMETERS

Range	Price	Range	Price
0.5	\$29.50	2	\$25.75
1	25.75	5	25.75

### MODEL 301 — RECTIFIER TYPE A-C MICROAMMETERS

Range	Price	Range	Price
100	\$36.00	250	\$29.50
200	29.50	500	29.50

### MODEL 301 VU METER

A OR B SCALE.....Price \$36.50

### MODEL 476 — A-C AMMETERS

Single Ranges: 1/1.5/2/3/5/10/15/30/50 at \$17.25

### MODEL 476 — A-C VOLTMETERS

Single Ranges: 1.5/3/5/8/10/15/30/50 at \$15.75

Range	Price	Range	Price
100	\$18.00	250	\$20.25
130	18.75	300	21.00
150	18.75	500	24.00

### MODEL 425 — THERMOCOUPLE TYPE AMMETERS

Single Ranges: 1/1.5/2/3/5/8/10/15/20 at \$25.75

### MODEL 425 — THERMO MILLIAMMETERS

Ranges: 10/20/50	\$63.50
100/115/120/150/200/300/500	\$29.25

## CORMAG® 3 1/2" PANEL INSTRUMENTS

### MODEL 1301 — D-C VOLTMETERS

With sensitivity of approximately 1000 ohms per volt.

Single Ranges: 3 5/10/15/30/50/100/150 at \$15.25  
200 volts at \$15.75

### MODEL 1301 — D-C AMMETERS \*

Single Ranges: 1/2/3/5/10 at \$14.75  
15/30/50 at \$15.75

\* Ammeters are supplied in self-contained ranges up to 50 amperes inclusive, and have a drop of 50 MV ±5%. Ranges above 50 amperes require external shunts.

### MODEL 1301 — D-C MILLIAMMETERS

Range	Approx. Res.	Price	Range	Approx. Res.	Price
1	88	\$14.75	50	2.0	\$14.75
5	8	14.75	100	1	14.75
10	1.1	14.75	200	0.5	14.75
15	1.1	14.75	300	0.33	14.75
20	1.1	14.75	500	0.2	14.75
30	1.0	14.75			

### MODEL 1301 — D-C MICROAMMETERS

Range	Price	Range	Price
100	\$17.75		
200	15.25		
500	15.25		

### MODEL 1302 — RECTIFIER TYPE A-C VOLTMETERS

Range	Price		Range	Price	
	1000 Ω/V	2000 Ω/V		1000 Ω/V	2000 Ω/V
1.5	\$.....	\$21.25	50	\$20.75	\$.....
3	20.75	21.25	100	20.75	.....
5	20.75	21.25	150	20.75	21.75
15	20.75	21.25	300	21.25	.....

### MODEL 1302 — RECTIFIER TYPE A-C MILLIAMMETERS

Single Ranges: 1/5 at \$20.25

### MODEL 1302 — RECTIFIER TYPE A-C MICROAMMETERS

Range	Price
200	\$23.25
500	20.75

SUBJECT TO PRICE CHANGE OR WITHDRAWAL WITHOUT NOTICE

# WESTON INSTRUMENTS

## 4 1/4" PANEL INSTRUMENTS

### MODEL 961—D-C INSTRUMENTS

Rated accuracy 2% of full scale—Scale 3.17" (80.3 mm)—Permanent Magnet Moving Coil Type.

#### D-C VOLTMETERS

Range	Scale Div.	Price
1	50	\$27.25
2	40	27.25
3	60	27.25
5	50	27.25
7.5	75	27.25
10	50	27.25
15	75	27.25
25	50	27.25
50	50	27.25
80	40	27.25
100	50	28.00
130	65	28.75
150	75	28.75
200	40	29.50
250	50	31.00
300	60	31.75
500	50	34.75

Self-contained ranges listed have sensitivity of approximately 200 ohms per volt up to and including 200 volts; higher ranges are 1000 ohms per volt.

#### D-C MILLIAMMETERS

Range	Scale Div.	Approx. Res.	Price
1	50	80	\$27.25
3	60	7.3	27.25
5	50	2.8	27.25
10	50	1.25	27.25
25	50	1.0	27.25
50	50	2	27.25
100	50	1	27.25
200	40	0.5	27.25
300	60	0.33	27.25
500	50	0.2	27.25

Ranges above 25 milliamperes are shunted and have a drop of approximately 100 millivolts.

### MATCHED A-C AND D-C PORTABLE INSTRUMENTS

#### MODEL 433—A-C INSTRUMENTS

Scale Length 4.04"—Accuracy within 3/4 of 1% — Movable Iron Type — Shielded Case Size 5-1/16" x 5 1/4" x 3 1/4" — Weight 2 1/2 lbs. — Hand Calibrated Mirror Scales Bakelite Case with Carrying Strap. Note: These instruments are calibrated for use in a horizontal position.

#### A-C VOLTMETERS

Made with single, double and triple ranges. For use on frequencies from 25 to 125 cycles.

Range	Net Price
10, 30, 50, 75	\$ 80.00
10/5, 20/10, 30/15	87.50
450/300/150	109.25
600/300/150	111.50
750/300/150	113.75

#### A-C MILLIAMMETERS

Made in single and double ranges only, for use on frequencies from 25 to 500 cycles.

Range	Net Price
15, 30, 75, 500	\$78.50
300/150	93.50

#### A-C AMMETERS

Made in single, double and triple ranges for use on frequencies from 25 to 500 cycles. All instruments have two binding posts; double and triple range instruments are provided with a range selector switch.

Range	Net Price
1, 1.5, 2, 3	\$ 78.50
15, 25, 30	84.50
2/1, 5/2.5, 10/5	93.50
3/1.5/0.75, 5/2.5/1, 10/5/1	138.50
20/5/2, 30/7.5/3, 50/20/5	144.50

### D-C AMMETERS

Range	Scale Div.	Price	Range	Scale Div.	Price
1	50	\$27.25	5	50	\$27.25
1.5	75	27.25	10	50	27.25
2	40	27.25	25	50	27.25
3	60	27.25	50	50	27.25

Regularly supplied with self-contained shunts up to and including 50 amperes, but can be supplied with external 50 mv shunts and 5 foot (0.065 ohm) leads.

### D-C MICROAMMETERS

Range	Scale Div.	Approx. Res. Ohms	Price
30	60	1800	\$43.00
50	50	720	41.25
75	75	450	41.25
100	50	250	40.00
200	40	400	31.00
300	60	175	31.00
500	50	80	31.00

### MODEL 963—THERMO AMMETERS

Rated accuracy 2% of full scale . . . Scale 3.17" . . . Thermocouple type.

POWER CONSUMPTION: 1 to 4 amperes incl. varies from 0.2 to 0.4 watt per ampere. Approx. 5 amperes and above—0.2 watt per ampere.

Frequency errors less than 2% up to 65 megacycles.

Amps.	Scale Div.	Price	Amps.	Scale Div.	Price
1	50	\$35.50	5	50	\$35.50
1.5	75	35.50	6	60	35.50
2	40	35.50	8	40	35.50
2.5	50	35.50	10	50	35.50
3	60	35.50	15	75	35.50
4	40	35.50	20	40	35.50

The ranges are all self-contained.

Through the use of specially controlled characteristics, thermo ammeters can be supplied to meet the special requirements of the FCC for antenna ammeters.

### MODEL 931—D-C INSTRUMENTS

Scale Length 4.04"—Accuracy within 1/2 of 1% Core Magnet Moving Coil Type. Case Size 5-1/16" x 5 1/4" x 3 1/4" — Weight 2 lbs. — Hand Calibrated Mirror Scales — Bakelite Case with Carrying Strap. Note: These instruments are calibrated for use in a horizontal position.

#### D-C VOLTMETERS

Range	Net Price 1,000 Ohms Per Volt	Net Price 5,000 Ohms Per Volt
3, 15, 50	\$ 91.00	\$106.00
300/150/3	109.00	124.00
750/300/150	115.75	130.75

#### D-C AMMETERS

Range	Net Price
1, 1.5, 3, 5	\$ 94.00
30/15/3	109.00
50/20/5	109.00

Self-contained up to 50 amperes inclusive, but can be supplied with external 50 mv shunts and 5 ft. leads.

#### D-C MILLIAMMETERS

Range	Net Price
15, 150	\$ 89.50
1500/150/15	109.00
15/1.5/15	113.50

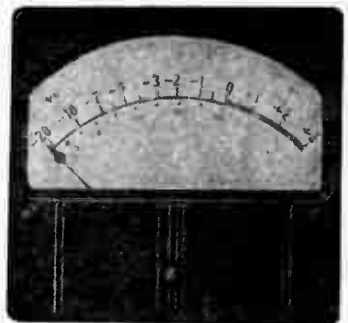
Single range Milliammeters with ranges above 30 ma are shunted and have a drop of 50 mv ±5%.

#### D-C MICROAMMETERS

Range	Approx. Res. Ohms	Net Price	Approx. Res. Ohms	Net Price
30	2300	\$113.50	490	\$121.00
100	2000	106.00	60	113.50
200	600	98.50	15	106.00



MODEL 961



MODEL 962—TYPE 30 VU METERS

Model 962 VU Meters are available with a choice of two scales. Type A stresses the level in VU and is used largely in monitoring wire lines. Type B emphasizes per cent use of transmitter output and is the standard for broadcast service. Scale backgrounds are buff colored.

Scale A or B . . . . . Model 962—\$42.50



### MODEL 432—D-C AND

### SINGLE PHASE A-C WATTMETERS

Double voltage and single or double current ranges, self-contained up to 300 volts and 50 amperes, frequencies from 25 to 125 cycles.

Electrodynamometer Type			
Accuracy 1/2 of 1% — Scale Length 4.04"			
Case Size 5 1/16" x 5 1/4" x 3 1/4" — Wt. 3/4 lbs.			
Normal Volts	Normal Amps	Net Price	
150/75	1	\$155.75	
Double Current Ranges			
300/150	5/2.5	176.75	

# WESTON Electronic TEST EQUIPMENT

## A New Simplified Approach to TV Alignment

The Weston Model 980 line provides servicemen with the most advanced, and by far the most simple and accurate method of TV receiver alignment. It comprises all of the instruments necessary for all-purpose observation of complex wave forms by the electronic industry.

With the Weston method, the output of the sweep generator is fed into the calibrator making it unnecessary to connect the calibrator to the TV set. Only two connections are necessary. This eliminates receiver oscillations ordinarily encountered with the conventional method of receiver test hook-up. Further, there

is no disappearance of markers at trap resonant frequencies. Response curve is not disturbed. Annoying trimmer touch-up on trap circuits is minimized.

This simplified technique is only possible when the companion instruments—Weston Calibrator and Sweep Generator—are used with a scope having provisions for Z-axis intensity modulation. However, individual instruments in the Model 980 line can be used with available test equipment in the conventional method of alignment.

### WESTON MODEL 985 CALIBRATOR

The Weston Model 985 Calibrator is a highly functional instrument for TV shop, engineering, laboratory, and industrial alignment applications. Markers are provided for waveform patterns, local tuner oscillator frequencies, and trap circuit alignment. The instrument is extremely useful for making linearity adjustments, calibrating signal generators, and determining signals of unknown frequencies.

#### FEATURES

**SCALE CALIBRATION:** The frequency calibration of each frequency setting can be checked and adjusted with crystal accuracy. Crystal calibrating points are available at 1.5 and 4.5 megacycles throughout the entire scale. A scale shift knob is provided to align properly the scale with the crystal calibrating dots. A neon type bulb is utilized to indicate visibly the crystal frequency points.

**SCALE PRESENTATION:** Slide rule type in which one scale is visible at a time. Ten scale range bands available . . . total scale length of 8¼ ft.

**DUAL MARKERS:** 4.5 mc side band markers permit simultaneous observation of video and sound carrier.

**INTERNAL MARKERS:** Special circuitry provides an internal marker of either a positive or negative pulse suitable for Z-axis intensity modulation of the scope pattern. This eliminates the necessity of feeding an RF calibrator signal directly into the TV receiver which can cause overload and oscillation in the TV set. The marker is visible even at the sound trap frequencies.

**HETERODYNE DETECTION:** With an input sensitivity of 500 microvolts, the local TV receiver-tuner channel oscillator frequency can be determined without tuner disassembly.

**BAR PATTERN GENERATOR:** Amplitude modulated signals of the band oscillator at 400 cycles for the horizontal linearity check and 300 KC for the vertical linearity check can be readily fed to TV antenna terminals to produce horizontal and vertical bars.



#### SPECIFICATIONS

**FREQUENCY RANGE (with Variable Frequency Oscillator):**

- 4-110 megacycles in 7 bands.
- 170-260 megacycles in 3 bands.
- Use of second harmonic is suitable for UHF 340-520 megacycles in 3 bands.

**OUTPUT ATTENUATOR RANGE:** 100% to 1%.

**CRYSTAL MARKER ACCURACY:** 1.5 mc position  $\pm 0.01\%$   
4.5 mc position  $\pm 0.01\%$

**INTERNAL MODULATION FREQUENCIES:** 400 cps, 300 KC, 4.5 mc

**HETERODYNE INPUT SENSITIVITY:** 500 microvolts

**LINEARITY ADJUSTMENT:** Horizontal — 400 cycles  
Vertical — 300 KC

**DUAL MARKERS:** Video and sound . . . available for either Z-axis intensity modulation of scope or conventional marker pip display.

**TUBE COMPLEMENT:** 6BA7, 12AT7, 6CL6, 6AL5, 6X4, 6T4.

**POWER SUPPLY:** 105/125 volts, 50/60 cycles per second.

**SCALE LENGTH:** 8¼ ft.

**CASE:** Grey hammertone finished steel.

**PANEL:** Aluminum finish with etched black markings.

**SIZE:** 13.5" x 10" x 6.75"

**APPROX. WEIGHT:** 18¼ lbs.

**Model 985** ..... **Net Price \$150.00**



# WESTON Electronic TEST EQUIPMENT

## MODEL 983 OSCILLOSCOPE

The Model 983 is a high gain, wideband Oscilloscope designed to accurately reproduce waveforms comprising a wide band of frequencies. High sensitivity of 15 millivolts per inch RMS makes this Oscilloscope ideal for — setting resonant traps . . . signal tracing in low level stages . . . as a general null indicator . . . for phase characteristic measurement in Industrial Applications . . . and for sweep frequency visual alignment of TV receivers.

The scope contains identical vertical and horizontal push-pull amplifiers with a choice of a-c or d-c coupling without affecting either sensitivity or bandwidth. Both amplifiers have compensated step

attenuators and cathode follower input.

It has excellent square wave reproduction with overshoot of only 2 to 5% with a rise time of 0.1 microsecond. The scope response is essentially flat throughout the specified range of 4.5 mc and is usable to 6 mc.

The unit has provisions for internal voltage calibration, internal phased sine wave, and Z-axis intensity modulation. Reversal of polarity of both horizontal and vertical signals is easily accomplished by means of toggle switching. Tube replacements are non critical, and etched circuitry facilitates quick and rapid maintenance.

### SPECIFICATIONS

**WIDE BAND FREQUENCY RESPONSE:** Flat within 1.5db from 0-3.6 mc and within -3db to 4.5 mc on both vertical and horizontal amplifiers. Transient response: overshoot 2 to 5%. Rise time: 0.1 microsecond.

**HIGH DEFLECTION SENSITIVITY:** 15.0 millivolts per inch, RMS, on both vertical and horizontal amplifiers.

**PHASE SHIFT:** Between Horizontal-Vertical Amplifiers, 0 to 500 kc — 0°; to 1 mc within 2°; by internal adjustment with gain controls at max. 0° phase shift possible on any specific frequency to 6 mc.

**CALIBRATING VOLTAGES:** 500 millivolts, 5 volts, 50 volts, 500 volts, peak to peak.

**Z-AXIS MODULATION:** Input terminal mounted on front panel.

**SWEEP FREQUENCIES:** 10-500,000 cps, variable. Preset TV/V Position—30 cps. Preset

TV/H Position—7875 cps. Retrace Time—better than 2% to 100 kc; at 500 kc less than 10%.

**INTERNALLY PHASED SINE WAVE.**

**VERTICAL AND HORIZONTAL POLARITY:** Reversible.

**INPUT IMPEDANCE:** Vertical Amplifier (without Shielded Cable), 1 meg shunted by 60 $\mu$ f. Vertical Amplifier (with Shielded Cable), 1 meg shunted by 120 $\mu$ f. Vertical Amplifier (with Low Capacitance Probe), 2 meg shunted by 15 $\mu$ f. Horizontal Amplifier (without Shielded Cable), 1 meg shunted by 60 $\mu$ f.

**POWER SUPPLY:** 105/125 volts, 50/60 cycles.

**TUBE COMPLEMENT:** (1)-1V2, (1)-5U4-GA, (5)-6BQ7A, (4)-12BY7A, (4)-6AH6V, (1)-6U8, (1)-5U1, (1)-OD3, (1)-5N060T, (1)-6BK7A. Flat faced tube available at a surcharge.

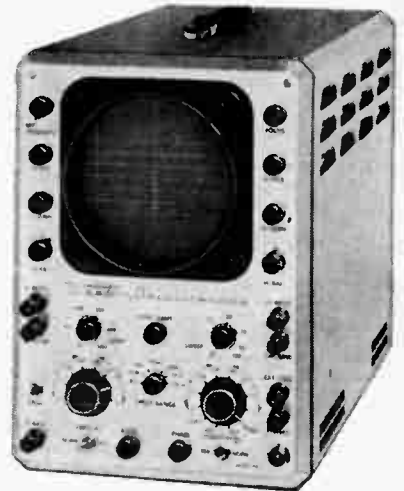
**CASE:** Grey hammertone finished steel.

**PANEL:** Aluminum finish with etched, black markings.

**SIZE:** 10" x 14" x 19.5". (254 x 342.9 x 457.2mm)

**APPROX. WEIGHT:** 40 lbs. (18.2 kgs.)

**Net Price \$328.50**



Model 983

## WESTON MODEL 984 SWEEP GENERATOR

The Weston Model 984 is a top performance instrument, precision built for effective trouble shooting of sound and video IF circuits, associated trap circuits, TV tuners, video amplifiers and all-purpose visual alignment. It has a high flat output voltage.

### FEATURES

**BLANKING:** Special circuitry produces a zero output reference base which is essential for relative gain measurements.

**RF OUTPUT:** Frequency modulated signal, TV Channels 2 to 13 inclusive, complete FM coverage available by means of two preset selector positions. FREQUENCIES ARE FUNDAMENTALS OF THE OSCILLATOR FREQUENCY.

**IF/VIDEO OUTPUT:** Frequency modulated signals ranging to 50 megacycles, continuous tuning, signals free from harmonics.

**SWEEP WIDTH:** Full 10 megacycles on all channels.

**SCOPE TERMINAL:** For scope without 60 cycles phased position.

### SPECIFICATIONS

**SWEEP WIDTH:** 0-10 Megacycles (continuously variable for both IF and RF ranges).

**OUTPUT VOLTAGE (RMS):** 0.1 Volt . . . sweep is linear.

**RF OUTPUT:** TV channels 2 to 13 preset. Complete FM coverage available by means of two additional preset selector positions.

**IF/VIDEO OUTPUT:** 50 Megacycles (continuous tuning).

**HORIZONTAL SWEEP FOR OSCILLOSCOPE:** Phase adjustment range — 165°. Frequency — Power Line 50-60 cycles per second.

**CABLE TERMINATION:** RF output — 300 ohms balanced. IF output — 100 ohms.

**POWER:** 105/125 volts, 60 cycles.



**TUBE COMPLEMENT:** 6J6, 6U8, 12AT7, 6X4.

**CASE:** Grey hammertone finished steel; leather carrying handle.

**PANEL:** Etched aluminum satin finish.

**SIZE:** 13.50" x 10" x 6.75".

**APPROX. WEIGHT:** 14 lbs. 4 oz.

**Model 984 . . . . . Net Price \$150.00**

# WESTON Electronic TEST EQUIPMENT

## WESTON MODEL 982 VACUUM TUBE VOLTMETER

The Weston Model 982 is a self-contained, battery operated Vacuum Tube Voltmeter. It is particularly adaptable to the Radio-TV Servicing industry where the requirements of peak to peak measurement of a-c voltages exclude the use of conventional meters. This instrument makes possible quantitative measurement of all complex wave form voltages utilized in video, sync and deflection circuits with no a-c line interference in critical measurements.

### FEATURES

**BATTERY OPERATED:** Unit affords complete isolation from spurious response due to stray a-c fields and circulating ground currents. Extremely low drain for long battery life. Power Consumption: Less than 25 milliwatts.

**DIRECT PEAK TO PEAK MEASUREMENTS.**

**NO SWITCHING OF LEADS IS REQUIRED:** One shielded lead is used for all measurements, a-c, d-c, ohms, and peak to peak.

**RANGE FUNCTION SWITCH:** Makes negative and positive d-c potentials measurable DIRECTLY.

**HIGH INPUT IMPEDANCE:** 10 megohms on d-c for accurate measurements — 2.8 megs. a-c, RMS — 1 meg. a-c, peak to peak.

**NO ZERO SCALE DRIFT:** Instrument can be used immediately without waiting for warm up . . . resetting of zero corrector when switching from range to range is entirely eliminated.

**DC ISOLATION ADAPTOR:** Makes d-c measurements possible in the presence of a-c voltages.

**FREQUENCY RESPONSE:** Suitable for measurement of TV wave forms, such as sync pulses, saw tooth, drive voltages, and other complex wave form voltages.

**DISCRIMINATOR ALIGNMENT:** Zero corrector knob has sufficient latitude to center scale.

**A-C VOLTS:** 20 cps — 1.5 kc; Peak-to-Peak Volts: 20 cps — 300 kc; for voltages above 160 volts peak-to-peak containing frequency components up to 300 kc a low capacitance probe is furnished. For frequencies above 300 kc to 250 megacycles an RF Probe is available.

RF PROBE is available as an accessory.

### SPECIFICATIONS

**ACCURACY:**  $\pm 3\%$  d-c —  $\pm 5\%$  a-c, RMS. Sinusoidal wave form.

**IMPEDANCE:** 10 megs. d-c — 2.8 megs., a-c, RMS — 1 meg. a-c, peak to peak.



### RANGES:

D-C Volts	1.6	8	40	160	400	800	1600
A-C Volts	1.6	8	40	160	400	800	1200
P-P Volts	1.6	8	40	160	400	800	1600
Low-C Probe				16	80	400	1600
P-P Volts						10	10
Ohms	X1 Meg.	X100K	X10K	X1K	X100	X10	X1

(10 ohms center)

**BATTERY LIFE:** Battery A\* — Approx. 90 days . . . is easily replaceable (Standard 1.5 volt, Size D Cell).  
Battery B\* — Shelf life approx. 1 year.

**SCALE LENGTH:** 4.63".

**CASE:** Grey hammertone finished steel with carrying strap.

**PANEL:** Aluminum finish with markings etched in black.

**SIZE:** 10" x 7.38" x 3.625".

**APPROX. WEIGHT:** 6 lbs. (complete with batteries and accessories).

\*Based on maximum use — 8 hours per day.

**Model 982** ..... **Net Price \$67.50**

## WESTON MODEL 980 ANALYZER (VOLT-OHM-MILLIAMMETER)

The Weston Model 980 Volt-Ohm-Milliammeter is a highly sensitive, accurate and rugged instrument with a combination of functional ranges which provide a wide range of test measurement applications in the electronic field. The instrument has a d-c sensitivity of 20,000 ohms/volt, and an a-c sensitivity of 1000 ohms/volt. Accuracy is 2% d-c, 3% a-c.

Range and functional switching is greatly simplified by use of a single dial for all ranges and functions.

### SPECIFICATIONS

**ACCURACY:** 2%, d-c; 3%, a-c.

**SCALE LENGTH:** 4.63".

#### RANGES:

D-C Volts: 1.6, 8, 40, 160, 400, 1600 . . . at 20,000 ohms/volt.

A-C Volts: 1.6, 8, 40, 160, 400, 1600 . . . at 1,000 ohms/volt.

DB Range: -15 db to +54 db (in six ranges).

D-C Milliamperes: 8, 80, 800.

D-C Microamperes: 80.

D-C Amperes: 8.

Ohms Range	Center Scale	Full Scale
R x 1	25	1,000
R x 10	250	10,000
R x 100	2,500	100,000
R x 1,000	25,000	1 megohm
R x 10,000	250,000	10 megohms

**CASE:** Black molded bakelite, with carrying strap.

**PANEL:** Black molded bakelite with engraved white markings.

**SIZE:** 6.25" x 7.50" x 3.25".

**APPROX. WEIGHT:** 2.69 lbs.



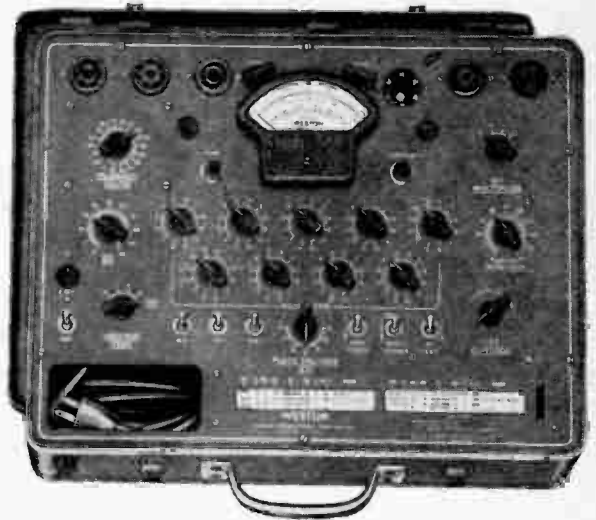
**Model 980** ..... **Net Price \$43.50**

# WESTON Electronic TEST EQUIPMENT

## WESTON MODEL 981 PROPORTIONAL MUTUAL CONDUCTANCE TUBE CHECKER

### FEATURES

- METER MEASUREMENT OF HIGH LEAKAGE RESISTANCE:** Provides an accurate meter measurement of leakage resistance as high as 5 megohms between tube elements, thus being particularly useful for TV servicing and TV line production assembly.
- MULTIPLE SWITCHING FACILITIES:** Protection against obscrescence is assured through the use of nine single circuit, twelve position, selector switches. These multiple switching facilities make possible many more combinations of tube connections.
- TWIN SECTION TUBES:** Three toggle switches make it possible to rapidly check and compare the respective sections of twin section tubes at only one setting of the selector switches.
- SINGLE SOCKET FOR EACH TUBE BASE REGARDLESS OF TUBE CONNECTION:** Eliminates the possibility of plugging a tube into the wrong socket. Sockets are provided for conventional type tube bases as well as acorn, and 7 and 8 pin subminiatures.
- Gm MEASUREMENTS:** Gm measurements are made more accurately by using filtered d-c plate, screen grid and control grid potentials. A precision voltage divider network and selector switch allows a proportionate value of signal voltage to be chosen for testing tubes having transconductances up to 30,000 micromhos. Signal voltages of 5.2, 2.6, 1.3, and 0.65 volts peak-to-peak having a frequency of 5000 cycles are provided.
- ROLL INDEX CHART:** Provides comprehensive, up-to-date test data on commonly encountered tubes, as well as those infrequently used.
- LEAKAGE TEST:** The leakage tests are performed at a d-c potential of 125 volts. For each numbered position of the LEAKAGE TEST switch, a specific tube element is isolated and connected into a series ohmmeter circuit consisting of the isolated element, the 125 volt d-c potential, a current limiting resistor, a milliammeter, and all other elements of the tube.
- VOLTAGE REGULATOR TUBES:** A selenium rectifier supply furnishes 200 volts d-c for testing of voltage regulator tubes.
- SUBMINIATURE TYPE TUBES:** A 45 volt potential source facilitates testing of subminiature tubes.



### SPECIFICATIONS

- FILAMENT VOLTAGES:** .65, 1.1, 1.5, 2, 2.5, 0.6a, 3.3, 5, 6.3, 7.5, 10, 13, 20, 27.5, 35, 47, 70, 115.
- PLATE VOLTAGES:** 90, 130, 220 volts d-c; 22, 44, 160 volts a-c.
- SIGNAL VOLTAGES:** 5.2, 2.6, 1.3, 0.65 volts peak-to-peak.
- Gm RANGE:** Up to 30,000 micromhos.
- POWER REQUIREMENTS:** 100 to 125 volts, 60 cycles single phase a-c, 30 watts.
- CASE:** Grey hammertone finished steel.
- SIZE:** 17.50" x 13.25" x 6.00".
- WEIGHT:** 23½ lbs. (10.7 Kgs.).

Model 981 ..... Net Price \$199.50

## Model 749 Miniature Clamp Volt-Ammeter



Light weight and rugged pocket-size instrument for quick easy servicing. Has self-shielded core magnet mechanism with spring backed jewels, and shatter-proof Plexiglas window. Only one scale for all ranges and functions. Jaws take up to 1" round, or 1¾" x ¾" rectangular conductors. Furnished with test leads in scuff-proof case. Plug-In Adapter available for making both current and voltage measurements . . . has female recepticals on both sides for plugging in load without disturbing circuit being tested . . . convenient for lead insertion for voltage checks . . . serves as 10 to 1 divider for low current measurements.

**RATED ACCURACY:** (Model 749) ±3% full scale deflection.  
**RANGES:** Current 300/150/60/30/15/6 amperes a-c.  
 Voltage 600/300/150 volts a-c.  
 Model 749 — \$40.50 complete Plug-In Adapter — \$4.75

## Model 633 Clamp Volt-Ammeter and Clamp- Ammeter



MODEL 633 Type VA-1

	Net Price
Model 633 Type VA-1 (Incl. Potential Leads) — 1000/250/100/25/10 amperes a-c 700/350/175 volts a-c.....	\$114.50
Model 633 Type A-1 — 500/250 100/50/25/10 amperes a-c.....	\$106.50
Model 633 Type A-2 — 1000/500 250/100/25/10 amperes a-c.....	\$106.50
Model 633 Type A-3 — 2000/1000/500/250/100/50 amperes a-c.....	\$114.50
Model-9958, 50 Foot Extension Cable, Plug & Receptacle for Model 633 Types A-1, A-2, A-3.....	\$ 72.00
Leather Carrying Case (Model 633 Types VA-1, A-1, A-2, A-3).....	\$ 13.50
Leather Carrying Case (Model 9958 — Cable, Plug and Receptacle).....	\$ 22.50

### — NOTE —

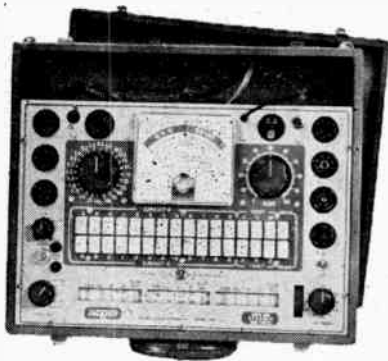
Model 633 instruments may be used for continuous duty up to 500 amperes.

### Approximate Dimensions and Weights

Model 633 Types VA-1, A-1, A-2, A-3.....	13½" x 4¾" x 2½"	3¼ lbs.
Leather Carrying Case (Types VA-1, A-1, A-2, A-3).....	14½" x 5½" x 3½"	2¼ lbs.
Model 9958, 50 Foot Extension Cable, Plug & Receptacle.....		4¼ lbs.
Leather Carrying Case (Model 9958—Cable, Plug & Receptacle)	14" x 8½" x 3¾"	4¼ lbs.

Prices Subject To Change Without Notice.

# Famous JACKSON Test Equipment



Model 648A **\$129.95** Net  
Shipping Weight 23 pounds

You get every one of these  
Essential Heater Voltages

.75	4.2	9.4	25.
1.4	5.0	10.5	35.
1.75	5.6	12.6	50.
2.0	6.3	15.	70.
2.5	7.5	17.	100.
3.0	8.4	19.	

**SEQUENCE SWITCHING** keeps  
your 648A **FULLY** Flexible

Full flexibility and high speed set-up are assured with the 648A's sequence switching. You are able in seconds to set up the correct test conditions for every kind of receiving tube. *No panels to change, no new cards to buy.* Anti-obsolescence is built right into the 648A.

## NOW! 23 SEPARATE HEATER VOLTAGES for ALL the latest tubes JACKSON MODEL 648A

No longer need you use compromise heater voltages in testing latest series string tubes. The new Jackson 648A gives you the correct voltage for every newly announced and presently planned or available type. And, the correct voltage is important, for only by having the correct heater voltage can you be sure of the tubes performance. Too high a voltage will result in excess output making a weak tube look good. Too low may make a good tube look bad.

**New! Zig-Zag Speed Chart**—Eliminates unnecessary chart-twirling. Order of middle column of listings is inverted, starting at bottom. Helps you locate tube type quickly. New data listed monthly in PF Reporter. Completely new charts issued regularly.

**New! Variable Sensitivity Shorts Test**—Lets you check interelement leakage at any value between 250K ohms and 2 megohms. Perfect for grid leak checks on tubes in RF, IF, and AGC circuits. Makes special Grid circuit checkers unnecessary.

### Plus These Popular 648 Features

**Dynamic-Principle**—Originated by Jackson. Separate loads or voltages applied to each element of tube under test. Sequence switching with push-button speed makes the set-up time less than the warm-up time of the tube.

**Automatic Line Voltage Indicator**—You center the needle using the line-voltage switch and pointer automatically indicates the actual line voltage. Saves carrying a separate line voltmeter.

**Life Line Indicator**—Tells you when a good tube is approaching the end of its life. Avoids call-backs.

**Easy Reading Meter**—Easy to read from any angle. Calibrated in GOOD-BAD and percent of relative transconductance.

**Portable Case**—Finished in attractive gray and green tough plastic.



Model 49  
Shipping Weight  
16 pounds

**\$49.95** Net



## Jackson Model 49 Low-Priced Tube Tester

*With Amazing Plug-In  
Accessory Feature*

The only tester of its kind in the world! In addition to making tube tests, this tester, when fitted with accessories can check selenium rectifiers, determine tube heater current, find high resistance leakage, and rejuvenate picture tubes. Look at the features you get for such a low price.

- All-steel fully portable case.
- Line Voltage Indicator.
- Lever action switches numbered to correspond with tube pin numbers.
- Complete shorts and merit tests.
- JACKSONITE finished case—scuff and scratch resistant.
- Plug-in accessories fitted with airplane fasteners, are in and out in a jiffy, won't interfere with normal tube testing even when plugged in.

### These Accessories Available for the Model 49

**Model P49B Plug-in Adapter Kit**—Reedies your 49 for any accessories. **\$2.95 net.**

**Model 49R Selenium Rectifier Tester**—20 to 650 ma, 25 to 300 volts. **\$17.95 net.**

**Model 49N High Resistance Shorts Tester**—Variable 200K ohms to 2 megs. **\$6.95 net.**

**Model 49PR Picture Tube Rejuvenator**—Restores cathode condition. Removes shorts. **\$19.95 net.**

**Model 49C Heater Current Tester**—3 ranges 500 mils to 5 amps. **\$14.95 net.**

**Model 49S Auxiliary Socket Adapter**—For testing older type and subminiatures. **\$11.95 net.**



*"Service Engineered" Test Equipment*

Dayton 2, Ohio

IN CANADA: THE CANADIAN MARCONI COMPANY



**JACKSON 5-Inch  
Wide Band  
Oscilloscope  
Model CRO-2**

**CRO-2 Shipping Weight 32 pounds \$225.00 Net**

A laboratory-quality scope with highly stable circuitry to make it ideal for all TV work, color or black and white. Widely used in industrial laboratories, yet priced within the range of any television service shop.

**Check these features against any television scope:**

- Wide Band Amplifier, flat within 1 db from 20 cycles to 4.5 MC.
- Two Range Vertical Deflection sensitivity from .018 r. m. s. volts-per-inch.
- Highly stable amplifier circuits.
- Positive or Negative Internal Horizontal Sync.
- Linear Sweep Oscillator, 20 cycles thru 50 kc.
- Input Calibrating Voltage, 10 volts peak-to-peak.
- Vertical Polarity Reversal.
- Return Trace Blanking.
- Intensity Modulation—60 cycle internal, or external.
- Direct Connections to Deflection Plates, when desired.

**Accessory Probes for Your Jackson CRO-2**

**Low Capacity Probe Model LC2-1P**

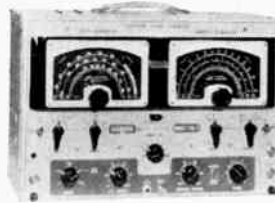
Cathode Follower Type with 2 to 1 attenuation ratio and not more than 8 uuf effective input capacitance. For use in critical circuits up to 25 volts.

**High Voltage Low Capacity Probe Model LC10-1P**

Attenuation ratio 10 to 1. For circuits where up to 1,000 volts may be present.

**Demodulation Probe Model DEM-P**

For signal tracing in RF or IF sections or any demodulation application.



**JACKSON  
Television  
Signal Generator  
Model TVG-2**

**TVG-2 Shipping Weight 35 pounds \$259.95 Net**

*Complete Sweep-Marker Generator plus Crystal Calibrator*

A complete television signal generator with ample output for aligning even the most badly detuned set. Also valuable in working with FM receivers, air-craft and police receivers, and other VHF receivers.

- Wide Range Sweep Oscillator 30 kc through 216 mc., on fundamentals.
- Video Sweep (30 kc.) for color circuit adjustments.
- Variable Sweep Width 0 to 18 mc.
- Accurate Marker (1/4 of 1%) 4 mc. through 216 mc.
- Crystal Oscillator for any crystal 3 mc. to 20 mc. with Beat Detector.
- 400 cycle Modulation for Marker or Crystal Oscillators.
- Provision for Video Signal Modulation.
- RF output, 90 ohms impedance, or 300 ohms on max. output position.
- Oscilloscope Timing with Phase Control and Blanking.



**JACKSON  
Transistor  
Code Oscillator**

*For Hams,  
Would-be Novices,  
Code Practice Teaching*

Model 562 less battery.

Shipping weight 2 pounds **\$7.95 Net**

- Transistor circuit with variable pitch.
- Simple adaptation for transmitter monitoring.
- Two connected together make wired station practice set-up.
- Compact size: 6 1/4" x 3 3/4" x 2".
- Requires only a single size "D" cell.



**Jackson  
Wide-Range  
Audio Oscillator  
Model 655**

Model 655 Shipping Weight 32 pounds **\$135.00 Net**

**For Audio, TV, Laboratory Applications**

- Highly stable, RC tuned sine wave generator.
- Range 20 cycles to 200 kc. in 4 ranges.
- Up to 500 milliwatts output.
- Output impedances, 10, 250, 500, 5000 ohms, or Hi-Z resistive.
- Frequency Characteristic—1 db. 30 to 15,000 cycles on transformer output.
- Accuracy, 3% or 1 cycle, whichever is greater.
- Hum level down 60 db. at maximum output.
- Harmonic Waveform distortion less than 5%, to 15,000 cycles.



**Selenium Rectifier  
Tester  
Handy Pocket Size  
Model 710**

Model 710 Shipping Weight 5 pounds **\$29.50 Net**

- True dynamic test under rated load.
- Tests all types 20 to 650 ma., 25 to 300 volts.
- Line voltage adjustment.
- Positive meter indication on GOOD-BAD scale.
- Checks individual sections of full wave and bridge rectifiers.



*"Service Engineered" Test Equipment*

**Dayton 2, Ohio**

IN CANADA: THE CANADIAN MARCONI COMPANY

# Hoyt PANEL AND PORTABLE INSTRUMENTS

Fine Instruments for more than Fifty Years

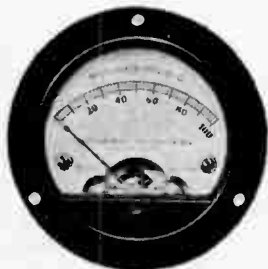


MODEL Nos. 641, 645, 653 and 649, D.C.  
MODEL Nos. 642, 646, 654 and 650, A.C.

Clear Plastic Styrene Cases  
(Quantity Only)



MODEL Nos. 635 and 597, D.C.  
MODEL Nos. 636 and 598, A.C.



MODEL Nos. 582 & 17 3/4, D.C.  
MODEL Nos. 584 and 552, A.C.

NOTE: If "in-between" ranges are required, add \$1.00 to price of next higher range listed. If "zero-center" ranges are required, add \$1.00 to price of that range. For in-between ranges on moving-coil type Voltmeter 150 volts and up, add \$2.50 to prices shown. Voltmeter Sensitivity — Ranges 1-50 volts are 100 ohms per volt. Ranges 50-500 volts are 1000 ohms per volt. Ranges 500-750 volts are 2000 ohms per volt.

NOTE: Please specify type of case on order from chart above. Unless specified, all meters are calibrated on non-magnetic panels. If steel panels are used, give thickness of steel and size of panel hole (No extra charge). All prices are net — subject to change or withdrawal without notice

HOYT moving-coil Meters are built on the D'Arsonval principle using carefully selected jewel bearings and polished steel pivots. Accuracy within 2%. Alnico Magnets with soft-iron pole-pieces of uniform flux density used in all movements. Permanently correct balance assured by HOYT "cross arm" spiral wire balance. High torque to weight ratio. Quick response and good damping under all conditions. Choice of "knife-edge" or "lance" type pointers.



MODEL Nos. 600 and 647, D.C.  
MODEL Nos. 601 and 648, A.C.  
Bakelite Cases

MODEL	DC	AC	CASE TYPE PANEL MTG.	SCALE LENGTH AC - DC	FLANGE	BODY DIA. AC - DC	BODY DEPTH AC - DC
17/3	552		Bakelite Rd.	1 7/8"	2.690"	2.200"	1 3/8"
17/3	552		Metal Rd.	1 7/8"	2 3/64"	2 1/16"	1 19/64"
635	636		Bakelite Sq.	1 7/8"	2 3/8" x 2 3/8"	2.200"	1.400"
649	650		Styrene Sq.	2 1/2"	2 5/8" x 2 3/8"	2.200"	1 1/8"
17/L	560		Metal Rd.	2 1/4"	3 7/8"	2 1/2"	1 1/2"
17/L	560		Metal Surface	2 1/4"	3 7/16"	2 1/2"	—
582	584		Bakelite Rd.	2 1/2"	3 1/2"	2 3/4"	1 3/8"
597	598		Bakelite Sq.	2 1/2"	3" x 3"	2 3/4"	1 3/8"
653	654		Styrene Sq.	3 1/2"	3 3/8" x 3 1/8"	2 3/4"	1 1/8"
570	580		Metal Rd.	2 5/8"	3 3/4"	3"	1 11/16"
570	580		Metal Surface	2 5/8"	3 5/8"	3"	—
607	610		Bakelite Sq.	2 3/4"	3 5/8" x 3 5/16"	2 1/4"	1 1/16"
574	617		Metal Rd.	3 3/4"	4 1/2"	3 3/4"	1 19/32"
574	617		Metal Surface	3 3/4"	4 1/2"	3 3/4"	—
600	601		Bakelite Sq.	3 3/4"	4 1/2" x 4"	2 3/4"	1 1/16"
641	642		Styrene Sq.	4 1/4"	4 1/2" x 3 7/16"	2 3/4"	1 1/8"
645	646		Styrene Sq.	4 1/2"	4 5/8" x 4 3/16"	2 3/4"	1 1/8"
647	648		Bakelite Sq.	4"	4 1/2" x 4 1/16"	2 3/4"	1 1/8"
602	—		Metal Rd.	5"	6 1/16"	3"	1 1/4"
583	—		Metal Rd.	6 1/4"	8 3/8"	3"	1 7/32"

## PRICES: PANEL MOUNTING PORTABLE

Range	#17/3 #635, #649	#17/L	#653 #582 #597	#570 #607	#574, 641-5 #600, 647	#583	#602	#578	#515
<b>D.C. MILLIAMMETERS</b>									
	\$8.70	\$9.00	\$9.20	\$9.70	\$10.20	\$15.50	\$12.50	\$11.15	\$13.10
<small>Standard Single Milliammeter Ranges: 0/1*, 0/3, 0/5, 0/10, 0/15, 0/25, 0/30, 0/50, 0/100, 0/150, 0/200, 0/300, 0/500 MA.</small>									

<b>D.C. MICROAMMETERS</b>									
0/20	\$15.70	\$16.00	\$16.20	\$16.70	\$17.20	.....	.....	.....	.....
0/50	13.20	13.50	13.70*	14.20	14.70	.....	.....	.....	.....
0/100	11.50	11.80	12.00	12.50	13.00*	\$18.30	\$15.30	13.95	15.90
0/200	9.75	11.10	10.30*	10.80	11.30	16.60	13.60	12.25	14.20
0/500	9.30	9.50	9.80	10.30	10.80	16.10	13.10	11.75	13.70

<b>D.C. MILLIVOLTMETERS</b>									
0/50	8.70	9.00	9.20	9.70	10.20	15.50	12.50	11.15	13.10

<b>D.C. AMMETERS</b>									
0/1	8.70	9.00	9.20	9.70	10.20	15.50	12.50	11.15	13.10
0/5	8.90	9.20	9.55	10.20	10.40	16.20	13.20	11.35	13.30

Prices for Standard Ranges of 0/10, 0/15, 0/25, 0/30\*, 0/50\* Amps. are same as 0/5 Amp. prices above on all models.

<b>D.C. VOLTMETERS</b>									
9.40	9.70	9.90	10.40	10.90	16.20	13.20	11.85	13.80	
<small>Prices for Standard Ranges of 0/1, 0/3, 0/5, 0/10, 0/15, 0/25, 0/30, 0/50*, 0/100, 0/150*, 0/300* volts are same as above on all models.</small>									
<small>Prices for Standard Ranges of 0/500, 0/600, 0/750 volts are below.</small>									
9.90	10.20	10.40	10.90	11.40	16.70	13.70	12.35	14.30	

\* These ranges carried in STOCK on Model 582, 597 and 647 only. (Calibrated for non-magnetic panels.)

### STANDARD SWITCHBOARD SHUNTS

For price of high current Ammeters, add price of 50 millivoltmeter to price of external shunt, below. 3-ft. leads furnished with shunts. Further specs. on request. \*Stock shunts.

0/25	\$7.00	0/100	\$7.00*	0/500	\$12.25*	0/1500	\$37.45*
0/30	7.00	0/150	7.00*	0/600	14.65*	0/2000	44.75
0/50	7.00*	0/200	7.00*	0/800	19.00*	0/2500	56.75
0/75	7.00*	0/300	8.10*	0/1000	26.50*	0/3000	68.15

# INSTRUMENTS PANEL AND PORTABLE

*Hoyt*

Fine Instruments for more than Fifty Years

PRICES:	PANEL MOUNTING					PORTABLE	
	#552		#654		#580	#617	
Range	#636, #650	#560	#584 #598	#610	#601, 648 #642-6	#562	#517

## A.C. MILLIAMMETERS

\$8.40	\$8.80	\$9.00	\$9.60	\$10.20	\$11.15	\$13.10
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Standard single Milliammeter ranges for all models at above prices are 0/10, 0/30, 0/50, 0/100, 0/150, 0/200, 0/300, 0/500 MA.

## A.C. AMMETERS

\$8.40	\$8.80	\$9.00	\$9.60	\$10.20	\$11.15	\$13.10
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Standard single Ammeter ranges for all models at above prices are 0/1, 0/3, 0/5\*, 0/10, 0/15, 0/25, 0/30\*, 0/50\* Amps. AC Ammeters are self-contained to 75 Amps.

0/75	....	....	10.70	11.30	11.70	12.85	14.80
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## A.C. VOLTMETERS

\$8.40	\$8.80	\$9.00	\$9.60	\$10.20	\$11.15	\$13.10
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Prices for Standard Ranges of 0/5, 0/10, 0/15 volts same as above on all models. Prices for Standard Ranges of 0/25, 0/30, 0/50, 0/100 volts are below.

\$8.70	\$9.10	\$9.30	\$9.90	\$10.20	\$11.15	\$13.10
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Prices for 0/150\* and 0/300\* volts are:

\$9.45	\$9.90	\$10.10	\$10.60	\$11.10	\$12.05	\$14.95
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Prices for 0/500 and 0/600\* volts are:

....	....	\$14.50	\$15.00	\$15.50	\$16.45	\$19.35
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\* These ranges carried in STOCK on Model 584, 598 and 648 only (calibrated for non-magnetic panels).

NOTE: For AC Rectifier-type Voltmeters — 5 through 300 volts — add \$5.00 to price of comparable D.C. model in 5 volt range.

NOTE: If "in-between" ranges are required, add \$1.00 to next higher price as shown above. Standard calibration is for non-magnetic panels. Steel panel calibration at no extra charge if order specifies thickness of steel and size of panel hole. Please specify type meter case on order.

## HIGH CURRENT DONUT TYPE TRANSFORMERS (In stock)

For prices of higher current AC Ammeters, add price of ammeter model above to transformer price below. Transformers have 2-ft. leads and 2 VA burden. Other ranges available on request.

50/5	\$8.45	100/5	\$8.45	200/5	\$8.45	500/5	\$10.55
75/5	8.45	150/5	8.45	300/5	8.45	600/5	10.55*



MODEL Nos. 636 and 598, A.C.

HOYT A.C. Meters for indicating 60 cycle Voltage and Current are of the repulsion type with pneumatic damping. Furnished in the same case styles and sizes as HOYT D.C. Meters, they match the D.C. meter where both types are used on the same panel. See DC-AC Specification Chart on opposite page.

VU Meters available in some case styles. Prices on request.

Accuracy is 2%. A choice of pointers is available, and special shields can be supplied at additional cost.

Clear Plastic Styrene cases available. Quantity only.



MODEL No. 693, D.C.  
2 1/2" Rect. Case

## MOVING MAGNET TYPES

HOYT Moving Magnet Indicators have been used for many years by the leading manufacturers of electrical devices.

Attractive appearance is combined with a

sturdy movement. Furnished in round or square cases at low cost. Standard finish on metal cases is black. Chrome Plate is available at slight additional cost. Many types of mounting arrangements available.

NOTE: A.C. Vane Meters are furnished in quantity only. Prices on request.



MODEL No. 640, D.C.  
2 1/4" Round Case

Range	MODEL		CASE TYPE PANEL MTG.	SCALE LENGTH		FLANGE	BODY DIA.		BODY DEPTH	
	DC	AC		AC-DC	AC-DC		AC-DC	AC-DC		
	640	531AC	Nar. Metal Rd.	1 1/4"	2 7/32"	2"	2"	1 5/8"		
	640	531AC	Metal Surface	1 1/4"	2 3/8"	2"	2"			
	693	594	Metal Sq.	1 5/16"	2 5/8" x 2 5/8"	2 1/16"	2 1/16"	9/16"		

Range	#640	#693	Range	#640	#693	Range	#640	#693
<b>D.C. MILLIAM.</b>			<b>D.C. AM.</b>			<b>D.C. VOLTM.</b>		
0/1	\$3.45	\$3.50	Prices for ranges of 0/1, 0/5, 0/10, 0/15 Amps. are:			Prices for ranges of 0/1, 0/3, 0/5, 0/10, 0/15 volts are:		
0/3	2.55	2.60	0/25	\$1.80	\$1.85	0/25	\$1.80	\$1.85
0/5	2.30	2.35	0/30	2.25	2.30	0/30	2.10	2.15
0/10	2.15	2.20	0/50	2.45	2.50	0/50	2.25	2.30
0/15	1.85	1.90	0/75	2.85	2.95	0/100	2.25	2.30
Prices for ranges of 0/25, 0/30, 0/50, 0/100, 0/150, 0/200, 0/300, 0/500 MA are:			0/100	3.30	3.40	0/150	2.30	2.35
	\$1.80	\$1.85						



# AERO Instrument Company

NORTH HOLLYWOOD, CALIFORNIA

## VIBRATING REED FREQUENCY & TIMING INSTRUMENTS

### GENERAL DESCRIPTION

Vibrating Reed Instruments are direct reading frequency indicators for use where the efficient operation of A.C. equipment depends upon the maintenance of known or constant frequency. They are self contained, their accuracy is not affected by wide voltage variations or wave form distortions and require no auxiliary apparatus. They consist of a number of steel reeds, of high Q, each of which is tuned to a single frequency within the band covered by the instrument. Indication is by visual pattern formed by the vibration of the reed in resonance with the line frequency. Excitation is electromagnetic, and the reeds are the only moving elements. **Running Time Meters** are synchronous motor operated instruments to automatically measure service periods or service requirements.

### APPLICATIONS

A large demand exists for VIBRATING REED FREQUENCY METERS for use with engine driven A.C. generator units as this is the most simple speed and frequency indicator yet devised for A.C. generator sets. These meters are also generally used in laboratory and portable test equipment, electronics, telephony, aircraft, industrial plants and numerous applications where electrical frequency indication is desired. Engineering services are available for those desiring assistance on their application problems. **Running Time Meters** are often used in conjunction with reed type frequency meters.



### SERIES 7002

Range: 48-52 and 58-62 cycles for reading in either 50 or 60 cycles. Voltage: 125 volts  $\pm 20$  volts. Accuracy:  $\pm 0.3\%$  of designated frequency. Power Consumption: 1 watt. Resistance: Approximately 100 ohms per volt. Flush panel mounting.

- 2810-134—48-52 and 58-62 cy. in  $3\frac{1}{2}$ " flange MIL-M-6A molded bakelite case..... \$25.00
- 2810-133—48-52 and 58-62 cy. in  $3\frac{1}{2}$ " flange metal case..... 25.00
- 2810-153—48-52 and 58-62 cy. in  $3\frac{1}{4}$ " flange metal case..... 25.00
- 2810-123—48-52 and 58-62 cy. in  $2\frac{1}{2}$ " flange metal case..... 25.00

### SERIES 1001

Direct reading indicators to automatically and cumulatively register total operating or idle time of any equipment, machine, circuit or system to which they are connected. Range: 0 to 10,000 hours in hours and tenths of hours—automatically resets. Voltage: 125  $\pm 20$  volts. Power consumption: 2.5 watts. Frequency: 50, 60 and 400 cycles. 61134—60 cy. in  $3\frac{1}{2}$ " flange MIL-M-6A molded bakelite case..... \$19.00  
41134—400 cy..... Price upon request



### SERIES 7004

Range: 59-63 cycles. Used extensively on standby power supplies for measuring generator frequency and engine speeds. Electrical characteristics: Same as the Series 7002.

- 6915-134—59-63 cy. in  $3\frac{1}{2}$ " flange MIL-M-6A molded bakelite case..... \$21.50
- 6915-133—59-63 cy. in  $3\frac{1}{2}$ " flange metal case..... \$21.50
- 6915-153—59-63 cy. in  $3\frac{1}{4}$ " flange metal case..... \$21.50
- 6915-123—59-63 cy. in  $2\frac{1}{2}$ " flange metal case..... \$21.50



### $3\frac{1}{2}$ " SEALED METER

Meets all applicable requirements of MIL-M-6A Specification. All  $3\frac{1}{2}$ " meters can be supplied in hermetically sealed cases. Electrical characteristics: Same as unsealed instruments.

Prices on all models available upon request.



### SERIES 4009

Range: 380-420 cycles. For use on 400 cycle commercial power supplies and aircraft inverters. Accuracy:  $\pm 0.2\%$  at 70° F. Power consumption: Approximately 1.25 watts. Resistance: Approximately 70 ohms per volt. Flush panel mounting.

- 4059-134—380-420 cy. in  $3\frac{1}{2}$ " flange MIL-M-6A molded bakelite case..... \$31.00
- 4059-133—380-420 cy. in  $3\frac{1}{2}$ " flange metal case..... \$31.00
- 4059-153—380-420 cy. in  $3\frac{1}{4}$ " flange metal case..... \$31.00
- 4059-123—380-420 cy. in  $2\frac{1}{2}$ " flange metal case..... \$31.00



### $1\frac{1}{2}$ " SEALED METER

Range: 380-420 cycles. For use in air borne or ground equipment where size and weight are important factors. Voltage: 125  $\pm 20$  volts. Resistance: Approximately 70 ohms per volt. Accuracy:  $\pm 0.2\%$  at 70° F. or 1.5% over range of -60° to +165° F. Breakdown voltage: 1500 volts. Power consumption: Approximately 1.25 watts.

4005-115—380-420 cy. in  $1\frac{1}{2}$ " hermetically sealed case..... \$23.85

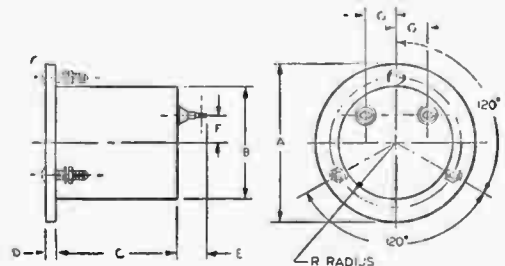


TABLE I

CASE STYLE	CASE SIZE CHART												MOUNTING SCREWS	
	A	B	C	D	E	F		G		H		I		
A	7.10	1.31	1.36	0.14	0.40	MAX	MIN	MAX	MIN	MAX	MIN	MAX	MIN	4-36x.78

Series 4005

Range 380 to 420 C.P.S. Hermetically Sealed.

**VOLTAGES**—All frequency meters can be supplied for voltages from 10 to 440 volts.

**DISCOUNTS**—Quantity prices quoted upon request.

**SPECIAL INSTRUMENTS**—Prices on special ranges will be furnished upon request.

**RUNNING TIME METERS**—Special ranges, frequencies and voltages available.

Write for catalog describing complete line of Aero stock instruments.



## APPLIANCE TEMPERATURE TESTERS

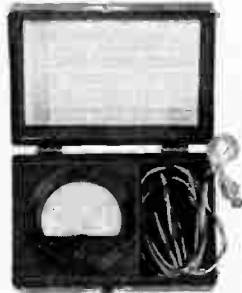
**A NEW IDEA IN TESTERS** — The need for scientific but sturdy portable test equipment in the appliance service field is met by this exclusive line. Here the user profits from J-B-T's wide experience in building field test sets for many well known manufacturers of ranges, irons, refrigerators, deep freeze units, and similar equipment. All J-B-T testers include the principle of remote reading of temperature, —and temperature measures the real usefulness of the appliance. Although called appliance testers, these handy portable testers have found a multitude of uses for trouble-shooting, experimenting and research in industry and in laboratories.

### OVEN TESTERS

**MODEL 23-JP-1.** Latest addition to the widely-known family of J-B-T oven temperature testers is this modern and compact unit. Like the Models 32-JP-3 and 32-JP-4 described below, this indicating portable pyrometer is designed to save time and furnish reliable information in testing and setting thermostats on electric or gas ranges and other appliances by showing oven temperatures as they change. The same size of dial, 0-650°F., with 2 3/8" scale arc reading, is used but covered by an all-plastic instrument front. The indicator is mounted on a black metal panel affixed inside a pocket-sized, black top-grain leather case 4 1/2" x 2 7/8" x 4 1/4" over hardware. Characteristic of more expensive pyrometers, the 23-JP-1 is automatically compensated for ambient temperature. Thus the tester eliminates calculations, avoids likelihood of serious error as temperatures change inside the instrument itself, and gives fool-proof direct readings. Supplied with attached SA-116 5 1/2' calibrated thermocouple, clip, and convection shield ..... \$26.00



**MODEL 32-JP-3.** This sturdy, fast reading portable is by far the most widely used oven tester in the country. The rigid outer carrying case 6" x 3 7/8" x 3 3/4" is covered in black leatherette; the glass-covered indicator fits in a 3/4" flanged metal case. The dial shows 0-650°F. in 10° divisions readable to 2 1/2°. Exceptionally fast, continuous response. Automatic compensation for ambient temperature is valuable feature whether the tester is used for service work, sales demonstrations, or inspection. More details on the 32-JP-3 are available in Bulletin JP-103. Price includes attached SA-116 5 1/2' calibrated thermocouple, clip for attaching to grill, and convection shield for steady readings. .... \$27.50

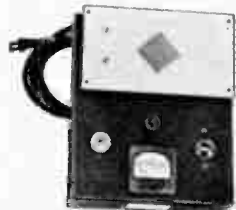


### VERSATILE OVEN TESTERS

**MODEL 32-JP-4.** Companion tester to the 32-JP-3 with all the features of that tester, plus a leather carrying strap, and binding posts for quick attachment and interchanging of various thermocouples listed on this page, to check irons, washers, waffle-bakers, toasters, roasters, clothes dryers, etc. Range, 0-650°F.; black leatherette case 6" x 3 7/8" x 3 3/4". More details on the 32-JP-4 are available in Bulletin JP-104. Price includes SA-116 5 1/2' calibrated thermocouple, clip and convection shield. .... \$28.75

### IRON TESTERS

**MODEL 32-JIT.** Self-contained bench type tester; checks all makes of irons; measures thermostat temperatures; and shows open or short circuits. Automatically compensated for room temperature. Also indicates operating temperature of the sole plate (working surface) on non-electric or cordless irons. Black metal base; overall size 10" x 12" x 5 1/2"; scale 0-650°F., 15 amp. fuse, 6' cord, 110-volt, 50-60 cycles .... \$34.50



### ALL-PURPOSE TESTERS

**MODEL 61-JRT.** This 9-in-1 tester speeds accurate temperature adjustment and current analysis of ranges, refrigerators, etc. Rapidly reads four cold zones, —100° F. to +80° F. up to 14' distant; two heat zones 0-600° F. up to 5 1/2' distant; one voltage range 0-300 AC; and with transformer, two current ranges, 0-30 and 0-60 amps, AC. Sturdy, polished walnut case 15 1/2" x 10 3/8" x 4 3/4" with handle and slip hinges. Two-color etched metal panel. Separate switches protect bulb and ammeter circuits.



Requires one standard flash-light cell, replaceable in the field. Temperature scale accuracy ±2% of full scale. Rectified AC readings ±5%. Accessories listed below may be added for testing irons, grills, roasters, washers, etc. Includes two SA-162 resistance bulbs, two SA-116 thermocouples, necessary electrical leads, and AS-TR-2 built-in transformer ..... \$118.00

For more details, see Bulletin JRT-349.

**MODEL 61-JRT (LESS TRANSFORMER).** Same unit, same scales, except does not read in amperes; AS-TR-2 transformer assembly omitted ..... \$105.00

### THERMOCOUPLES

(See next page for Resistance Bulbs and Transformers)



**SA-116 with SHIELD and CLIP.** Standard flexible No. 22 gauge iron constantan, asbestos insulated, 5 1/2', with attachment clip and convection shield as normally supplied with 23-JP-1, 32-JP-1, 32-JP-2, 32-JP-3, 32-JP-4, 60-JRT and 61-JRT Testers. (See SA-199 for extra quality, glass insulated type). SA-116 ..... \$2.00

**SA-170 (REPLACEMENT THERMOCOUPLE FOR IRON TESTERS 32-JIT and IT-1).** Thermocouple and lead, including aluminum plate and special tip, quickly installed in the field ..... \$2.30

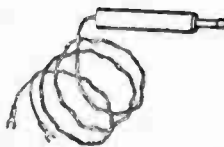
**SA-175 (PLAIN TIP).** For roasters, waffle irons, etc., 5 1/2' iron constantan flexible No. 22 gauge, asbestos insulated, with small ball tip; used where clip and shield of SA-116 not suitable; for Models 32-JP-2, 32-JP-4, 60-JRT, and 61-JRT ..... \$1.60

**SA-176 (for TOASTERS, etc.)** 5 1/2' iron constantan No. 22 gauge asbestos insulated, with special disc to collect heat; easily attached to 32-JP-2 and 32-JP-4 oven testers, also 60-JRT and 61-JRT ..... \$3.00

**SA-188 (for AUTOMATIC WASHER TEMPERATURES, etc.)** 3/8" diameter copper tube, 4" long, encloses thermocouple for insertion in pipe or sample of water. Has 6' leads for attachment to 32-JP-2 and 32-JP-4 oven testers, also 60-JRT and 61-JRT ..... \$4.50

**SA-199 with SHIELD and CLIP.** Same as SA-116 above, except duplex, non-fraying glass braid construction; diameter .115"; recommended for frequent use with these testers at temperatures above 400°F. .... \$2.40

**SA-300 (for SURFACE READINGS),** not regularly stocked. Spring-type iron constantan in Transite tip with handle and 5' No. 22 gauge lead for extremely rapid heat readings; for attachment to 32-JP-2, 32-JP-4, 60-JRT and 61-JRT appliance testers ..... \$8.00



**SA-301 (REPLACEMENT TIP FOR SA-300),** not regularly stocked. Transite tip and thermal element only ..... \$3.75

**ACCESSORY IRON TESTER, MODEL IT-1.** This attachment is identical with the 32-JIT, except there is no meter. It is easily connected to Models 32-JP-2, 32-JP-4, 60-JRT and 61-JRT. Shows open circuits and shorts, checks sole plate temperatures and thermostats on all types of irons ..... \$18.00



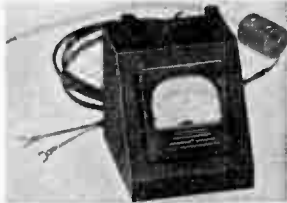
TEMPERATURE INDICATORS

**WHERE TO USE:** To determine heat rise of motors, transformers and coils; for laboratory furnaces, inspection set-ups, for remote indication of infrared and other oven temperatures; and to check temperatures in industrial processes such as heat treating and annealing.

When used with selector switch, permits centralized reading of one to ten thermocouples, as in diesel exhaust manifold applications.

MODEL 32-J

**MODEL 32-J PYROMETER IN SN-7 STAND.** Mounted in sloping front black metal stand, 4 1/4" high x 4 3/8" deep x 4 1/8" wide. Compensated for ambient temperature. Medium resistance system, damped for quick reading on 2 3/8" scale, assures ruggedness and pointer stability. To retain the ±2% accuracy of the installation: use only the type and resistance of thermocouple and lead which are provided; do not cut extra lead—coil it—change in length changes calibration. A protection tube is not generally required. Many users find it convenient to keep an extra couple and lead on hand.



MODEL 32-J IN SN-7 STAND (Supersedes SN-3 Stand)

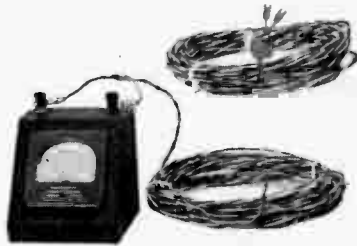
0°—650° F—350° C, includes SA-91 thermocouple, SA-84 lead, and CB-1 connector block.....\$33.50  
 0°—1200° F—650° C, includes SA-87, SA-82, and CB-1.....33.50  
 0°—2000° F—1100° C, includes SA-87, SA-82, and CB-1.....33.50

MODEL 32-J IN SN-8 STAND (not illustrated). With 3 binding posts to accommodate flexible extra lead and thermocouple for hard-to-reach locations. (Stand Supersedes SN-5)

0°—650° F with SA-91 thermocouple, SA-84 lead, CB-1 connector block, and SA-86 flexible leads and thermocouple.....\$37.50

INFRARED TEMPERATURE UNITS

**MODEL 32-J PYROMETER COMBINATION.** When used with the thermocouples shown below, this unit checks operating temperatures of infrared baking, drying, and preheating. After selection of the proper matched tip, the user measures heat at the most important place in this method—at the surface of the work in process.



Here's a moderately-priced, always handy tester for laboratory and pilot-run experiments, maintenance on the infrared heat source, and trouble-shooting on the finish itself. Equally important, the user can keep temperatures consistent and reproduce good results. Select the unit that manufacturers of finishes and of infrared ovens supply to their own field men. Like all pyrometers, this instrument is automatically compensated for ambient temperature — no need to re-set the zero adjuster when reading.

**MODEL 32-J INFRARED PYROMETER COMBINATION.** Indicator 0-650°F. for RP-1080 iron constantan, mounted in SN-7 sloping front metal stand 4 1/4" high x 4 3/8" deep x 4 1/8" wide; complete with two of the 35' thermocouples below (may be one type and a spare, or two types); SA-113 "A" disc type and SA-115 "B" ball type supplied if not otherwise specified.....\$40.00

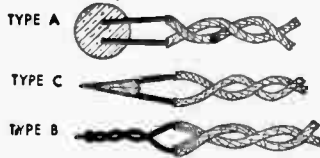
**MODEL 32-J INFRARED PYROMETER WITH SINGLE THERMOCOUPLE.** Same combination as above except SA-113 "A" disc type or one other type as specified.....\$35.00

SPARE THERMOCOUPLES.

**SA-113.** 35' #20 asbestos-insulated duplex thermocouple with disc type "A" junction for attachment flush to surface.....\$5.75

**SA-114.**—35' thermocouple as above except needle type "C" junction for soft material or where crevices are present.....\$5.75

**SA-115.**—35' thermocouple as above except ball type "B" junction; an extremely durable all-purpose tip.....\$5.50



RESISTANCE BULBS (FOR COLD TESTING)



**SA-142.** Bulb with 14' polyethylene ribbon type lead, for use only with Model 60-JRT; calibration is not interchangeable with SA-162; has no embossed number.....\$6.50

**SA-162.** Bulb with 14' polyethylene ribbon type lead, for use only with Models 50-50 and 61-JRT; has embossed part number.....\$6.50

**CL-90 CLAMP.** Metal clamp for holding SA-142 and SA-162 resistance bulbs in contact with surfaces up to 1/4".....\$0.30

TRANSFORMERS

**AS-TR-2.** Attachment for compartment of 61-JRT all-purpose tester, completely housed, with jumper lead and panel; reads 30 and 60 AC amp. scales on tester.....\$18.00

**AS-TR-3.** Attachment for increasing usefulness of 60-JRT all-purpose tester. Includes side rails for attaching inside compartment; fully housed. Reads 30 and 60 AC amp. by dividing volt scale by 10 or 5.....\$20.00

TEMPERATURE ACCESSORIES

**LEAD WIRES.** To bring the reference junction within the pyrometer, compensating or extension lead wires should always be used. See the instrument dial for (1) the kind of lead and (2) combined resistance of lead and thermocouple. Standard leads include:

**SA-82** 6' compensating lead for chromel-alumel couples; duplex, stranded; asbestos-insulated, cotton-brat impregnated with moisture-proof and flame-proof compound; terminals at instrument end; other end tinned for connector block.....\$1.70

**SA-83** 26' compensating lead for chromel-alumel same construction as above.....\$5.35

**SA-84** 6' extension lead for iron-constantan, 1938 calibration; duplex; moisture-proof and flame-proof; same construction as above.....\$1.70

**SA-85** 26' extension lead for iron-constantan, 1938 calibration; similar to above.....\$5.35

**SA-86** 7' iron-constantan thermocouple and lead combined; twisted pair No. 20 Ga., asbestos-insulated—for intermittent use on 650° F scales; terminals at meter end; other end welded. (Resistance not interchangeable with SA-84 or SA-85).....\$2.05



**THERMOCOUPLES.** For pyrometers and leads above, J-B-T thermocouples are carefully selected, standardized, and tested.

**SA-87** 12" No. 14 Ga. chromel-alumel, 2-hole ceramic beads, fits 7/16" hole; welded tip.....\$3.40

**SA-88** same except 24" No. 14 Ga.....\$4.25

**SA-89** 12" No. 8 Ga. chromel-alumel, 2-hole ceramic beads, fits 5/16" hole; welded tip.....\$3.40

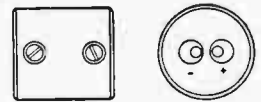
**SA-90** same except 24" No. 8 Ga.....\$4.25

**SA-91** 12" No. 14 Ga. iron-constantan, 1938 calibration; 2-hole ceramic beads, fits 5/16" hole; welded tip.....\$2.90

**Flexible Thermocouple.** 7' length, see SA-86 lead wire.  
**SA-92** same except 24" No. 14 Ga.....\$3.75

CONNECTOR BLOCK Model CB-1.

Lava connector block, withstands high temperatures, accommodates all thermocouples up to No. 6 Ga. Heavy brass connectors keep contact resistance low. Can be used independent of connector head.....\$1.85



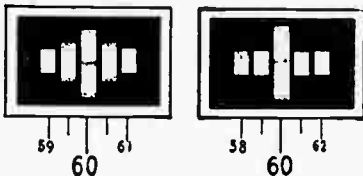
**PROTECTION TUBES.** To support, enclose, and protect thermocouples like the above, especially at higher temperature or in damaging atmospheres, various wrought iron or alloy protection tubes are recommended. See Page 5 of Catalog 556 for such protection tubes and CH-6 connector head.

## VIBRATING REED FREQUENCY METERS (PATENTED)

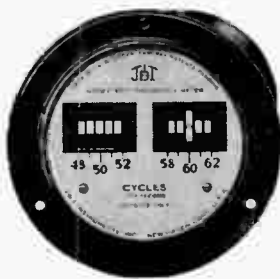
J-B-T Vibrating Reed Frequency Meters are used extensively in radio, telephone, and television service, on engine generator sets, in laboratories, in many types of electronic equipment, on panel and control boards, in inspection set-ups — wherever constant or known frequency is important to efficient operation of equipment. More than 15 years of continuous experience covering many thousands of these instruments are your assurance of quality for both commercial and defense applications.

The patented, simplified design used in the J-B-T meter operates on AC or interrupted DC. Each reed is adjusted to respond by resonance to but one frequency. As the current excites the driving coil, the reed "in tune" with the frequency in the coil will respond by vibrating rapidly because of permanent magnet polarization and induced magnetism from the coil. The instrument is adapted to specified operating voltage by a series resistor. To determine frequency, simply read the reed.

The response patterns differ with the increments of frequency between reeds. For example, at 60 cycles, half-cycle steps give the broad response shown below at left, whereas full cycle steps bring the sharp response at right.



**CAUTION:** If a meter plugged in on a 60-cycle AC power line does not indicate exactly 60 cycles, trust the meter! Power supply may momentarily be off-frequency due to changing load conditions. All J-B-T Frequency Meters are accurately calibrated at the factory, entirely independent of frequency of power supply. Production and inspection equipment are checked regularly against National Bureau of Standards frequency signals.



(Meter operating at 60 cycles)

### 10 REEDS

**Range:** 48-52 and 58-62 cycles. Double window for ease of reading either range. Often specified for export. 100-130 volts; 130 ohms per volt; 1 watt power consumption. Accuracy  $\pm 0.3\%$  at reference temperature. Flush panel mounting. See Table of Dimensions, lines 4 and 5.

**30-F**, (illustrated). 48-52 and 58-62 cy., 3/4" Metal Case. \$27.50

**30-FX**, 48-52 and 58-62 cy., 3/2" Molded Case, MIL-M-6A mtg. \$27.50

### 5 REEDS

Used on standby power equipment. Handy for accurately measuring frequency of power source. Five reeds, 58-62 cycles, 100-130 volts. Other characteristics same as Model 30-F. See Table of Dimensions, lines 4 and 5. (This meter also is made with 7 reeds.)

**31-F**, (illustrated). 58-62 cy., 3/4" Metal Case. \$23.65

**31-FX**, 58-62 cy., 3/2" Molded Case, MIL-M-6A mtg. \$23.65



**ADVANTAGES:** Guaranteed accuracy at reference temperature of 77°F is  $\pm 0.3\%$  or better; of the AC frequency being measured, unless otherwise stated. Accuracy on interrupted DC may be somewhat less. High fatigue safety factor for continuous operation. Temperature compensations are not required as temperature coefficient of reeds is only approximately 75 parts per million per degree F., negative.

All meters are permanently calibrated at the factory and do not require subsequent adjustment. J-B-T reeds have relatively high Q characteristics, an especially desirable factor in electronic circuits. Wave form or external magnetic fields do not ordinarily have an adverse effect. Built with no pivoted parts and with lock washers at every crucial point, these rugged meters can take rougher treatment than many instruments.

### 9 REEDS — 400 CY.

Used for measuring frequency of high-cycle power sources, particularly aircraft. Accuracy  $\pm 0.3\%$  at reference temperature. Nine reeds, 380-420 cycle range; 100-130 volts; 70 ohms per volt; 1.75 watts power consumption. Flush panel mounting. See Table of Dimensions, lines 4 and 5.

**33-F**, (illustrated). 380-420 cy., 3/4" Metal Case. \$34.10

**33-FX**, 380-420 cy., 3/2" Molded Case, MIL-M-6A mtg. \$34.10

### 9 REEDS — 60 CY.

Covers a broad frequency band. Nine reeds, 56-64 cycles, or in half-cycle steps (accuracy  $\pm 0.2\%$ ) 58-62 cycles. 100-130 volts; 130 ohms per volt; 1 watt power consumption. Flush panel mounting. See Table of Dimensions, lines 4 and 5.

**34-F**, 56-64 cy., 3/4" Metal Case, 1-cycle steps. \$27.25

**34-FX**, (illustrated). 56-64 cy., 3/2" Molded Case, MIL-M-6A mtg. \$27.25

**34-F-Z**, 58-62 cy., 3/4" Metal Case, 1/2-cycle steps. \$28.90

**34-FX-Z**, 58-62 cy., 3/2" Molded Case, MIL-M-6A mtg. \$28.90

### 18 OR 21 REEDS

Advanced design offers 21 reeds as an interchangeable 3/2" panel meter with 2-cycle intervals for close reading over the band of 380 to 420 cycles per second. Accuracy  $\pm 0.3\%$  at reference temperature. The reed flag size is necessarily smaller than the 9-reed 400-cycle meter, such as the model 33-FX, but the 21 reeds are located in an enlarged window 2" wide with flags 3/32" high x 1/16" wide to give maximum readability. A revised internal construction for mounting the reeds in one clamp assures ruggedness. This instrument and its variations are particularly useful where unusually close indication of frequency throughout the band has not been available heretofore. These meters are not regularly stocked. See Table of Dimensions, line 5.

**36-FX-21**, (as illustrated). 380-420 cycles, 21 reeds, 28 volts operation, 3/2" Molded Case; 17 ohms per volt; 1.7 watts power consumption. \$51.60

**36-FX-21-115**, (as illustrated). 380-420 cycles, 21 reeds, 100-130 volts; 50 ohms per volt; 2.5 watts power consumption. \$52.80

**30-FX-18**, (not illustrated). 46-54 and 56-64 cycles, 18 reeds in one window with two groupings, 100-130 volts; 300 ohms per volt; 0.35 watts power consumption. \$36.30

## 2 1/2" METERS — 5 REEDS

MODEL 21-FX, illustrated, matches other 2 1/2" panel instruments. Meets ASA C39.1-1951 and MIL-M-6A (Type MR 24 or MR 25) in depth of case and mounting dimensions. Weighs only 4 1/2 ozs.; 5 reeds; 850 ohms per volt; 0.15 watt power consumption. Also 116 to 124 cy.; 250 ohms per volt; 0.5 watt power consumption. 390 to 410 cy.; 100 ohms per volt; 1.3 watts power consumption. Flush panel mounting, see Print MD-20, also Table of Dimensions, Line 2.

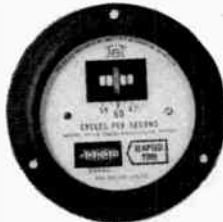


(Operating at 60 cycles)

- 21-FX, 58-62 cy., 2-11/16" Molded Case, 1 cy. steps.....\$22.55
- 21-FX, 116-124 cy., 2-11/16" Molded Case, 2 cy. steps.....\$25.30
- 21-FX, 390-410 cy., 2-11/16" Molded Case, 5 cy. steps.....\$27.50
- 21-FX, 380-420 cy., 2-11/16" Molded Case, 10 cy. steps.....\$27.50

## ELAPSED TIME — FREQUENCY METERS

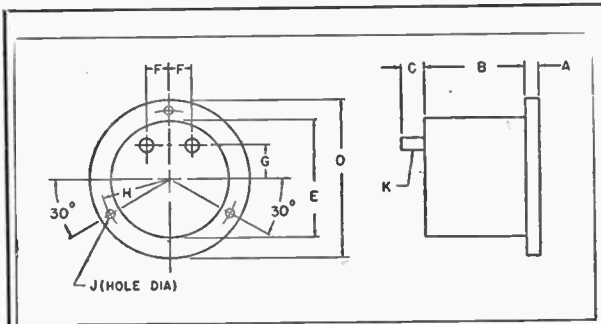
31-FE SERIES. To conserve panel space and centralize information, this panel instrument combines the elapsed time or running time meter with frequency reeds. It is used on motor generator sets and on electrical equipment where maintenance routine calls for periodic servicing. The J-B-T design, proved by years of field experience, uses a separate exciting coil for the reeds to achieve close control of reed amplitude and frequency. Reads 0-9,999.9 hours, and 58-62 cycles with 5 reeds, for 100-130 volt operation; self starting. Tenths shown in red, all other numerals in black. Black metal case with front mounting per Table of Dimensions, line 6. Power consumption is 3.5 watts. For variations having 7, 9, or 11 reeds, not regularly stocked, such as Model 34-FE, see revised print SK-45.



- 31-FE, 3 1/4" metal case.....\$33.00
- 31-FEX-1, (per print SK-44—not regularly stocked) like Model 31-FE, except with 3 1/2" metal flange permanently attached for MIL-M-6A front mounting per line 7, Table of Dimensions.....\$34.10

## RUGGEDIZED FREQUENCY METERS

Models with "RUG"—Sealed vibrating reed frequency meters and sealed elapsed time meters can be supplied, on special order, to the intent of MIL-M-10304A which covers ruggedization of other kinds of meters. This feature usually is specialized only for extra severe shock and vibration.



FREQUENCY METERS, TABLE OF DIMENSIONS, INCHES

MODEL	MIL-M-6A* MOUNTING	A	B	C	D	E	F	G	H	J	K	TERMINAL DESCRIPTION
Line 1 15-FH Series	—	1/8	1-9/16	3/8	2-3/32	1-1/2	3/8	3/8	0.875	0.125	Solder, 1/16" dia. hole	
Line 2 21-FX Series	MR 24, MR 25	13/64	1-3/8	23/32	2-11/16	2-5/32	7/16	9/16	1.220	0.116	10-32 NF-2 studs	
Line 3 21-FHXX Series	MR 26	3/32	1-27/32	11/16	2-11/16	2-1/8	1/2	1/2	1.220	0.125	Solder, 3/32 hole	
Line 4 30-F to 34-F Series	—	7/64	2-3/32	23/32	3-1/4	2-9/16	7/16	7/8	1.453	0.150	10-32 NF-2 studs	
Line 5 30-FX to 36-FX Series	MR 34, MR 35	19/64	2	23/32	3-1/2	2-11/16	7/16	7/8	1.580	0.150	10-32 NF-2 studs	
Line 6 31-FE Series	—	7/64	3-7/8	23/32	3-1/4	2-9/16	7/16	7/8	1.453	0.150	10-32 NF-2 studs	
Line 7 31-FEX-1 Series	MR 34, MR 35	7/64	3-7/8	23/32	3-1/2	2-9/16	7/16	7/8	1.453	0.150	10-32 NF-2 studs	
Line 8 30-FHXX to 34-FHXX Series	MR 36	3/32	2-1/4	5/8	3-1/2	2-11/16	1/2	3/4	1.580	0.150	Solder, 3/32 hole	

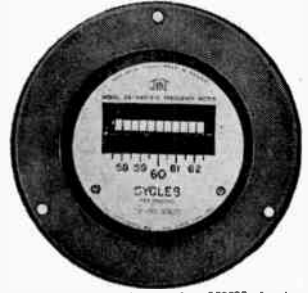
\* Also JAN-I-6 and ASA C39.1-1951 Mounting

## NOTE ON METER VOLTAGE

J-B-T Vibrating Reed Frequency Meters of all sizes normally are made with two studs and are designed to be connected across one phase of a multi-phase line. The single phase voltage where the meter will be used thus becomes the voltage to be specified for the meter. Special meters with extra studs are made only for the purpose of reading two or more voltages, not additional phases.

## 3 1/2" SEALED METERS

FHXX TYPE sealed meters, glass-to-metal construction, with solder terminals and detachable flange, supersede the former FHX sealed meters (Print SK-24). While JAN-I-6 and MIL-M-6A (Type MR38) do not refer to frequency indicators, the FHXX series uses the front mounting dimensions, and meets or exceeds the sealing and electrical requirements including the 3000 volt breakdown. Mounting dimensions are shown below. Standard voltage is 100-130. Electrical characteristics and accuracy are the same as for corresponding models without the HXX designation. Every meter tested in water where the absolute pressure of the air above the water is reduced to 2.5 inches of mercury (approx. 57,000 ft. altitude) and is maintained for one minute. While not regularly stocked, these meters are in production. For dimensions, see Table, line 8.



- 30-FHXX, 10 reeds, 48-52 cy. and 58-62 cy. ....\$34.30
- 31-FHXX, 5 reeds, 58-62 cy. .... 30.45
- 33-FHXX, 9 reeds, 380-420 cy. .... 40.90
- 34-FHXX, 9 reeds, 56-64 cy. .... 34.05
- 34-FHXX-11, 11 reeds, 55-65 cy. .... 36.25
- 34-FHXX-Z-11, illustrated, 11 reeds, 57.5-62.5 cy. .... 37.90

## 2 1/2" SEALED METERS

On special order, J-B-T supplies 2 1/2" sealed frequency meters with mounting per Type MR 26 of MIL-M-6A. See Table of Dimensions, Line 3. Typical is:

- 21-FHXX, 5 reeds, 58-62 cy. 100-130 volts .....\$34.85

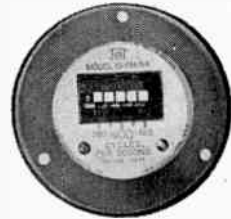
## 1 1/2" SEALED METERS

MODEL 15-FHAC. Widely used as the frequency standard on audio-oscillators, the model illustrated operates 2 reeds, 60 and 400 cycles, at approximately 8-10 volts on 0.04 watts for a cathode follower circuit. Accuracy ±0.5% at 77°F. Steel case has telephone black case, solder terminals. Barrel is 1 1/2" diameter; 2-3/32" detachable flange FL-4 covers glass-to-metal seal. See Table of Dimensions, line 1.

- 15-FHAC .....\$20.30

15-FH-5 METERS (lower photo) also use the 1 1/2" black metal case with 2-3/32" detachable flange and glass-to-metal seal. The 15-FH-5 series features 5 reeds in a row for 100-130 volt operation. Specified where size and weight are important. Same 100% inspection for approx. 57,000 ft. altitude as FHXX types. Standard meter, but not regularly stocked. See Table of Dimensions, line 1.

- 15-FH-54, 5 reeds, 390-410 cycles, 2.5 watts power consumption.....\$25.85
- 15-FH-58, 5 reeds, 58-62 cycles, 0.25 watts power consumption.....\$21.45
- 15-FH-400, 5 reeds, 380-420 cy., 2.5 watts power consumption.....\$25.85



## ELAPSED TIME METERS; 4" AND PORTABLE FREQUENCY METERS

### ELAPSED (OR RUNNING) TIME METERS — 60 Cycles

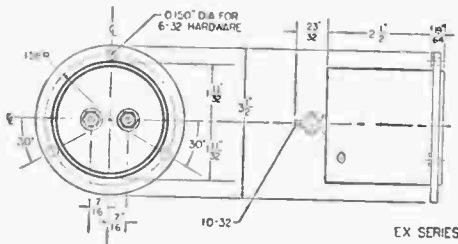


**MODEL 31-EX.** To record operating time of AC electrical and electronic equipment, this self-starting synchronous instrument registers in 1/10th hour steps to 9,999.9 hours, then automatically re-sets. Shows tenths in red numerals, all others in black. Black molded case per diagram below matches FX, 3 1/2" frequency meters, and fully encloses all parts. J-B-T engineers recommend AC elapsed time meters for superior accuracy, especially where voltage or ambient temperatures vary widely. Popular for tube life, TV equipment, punch presses, conveyors, oil burners, maintenance schedules, etc. Types for 99,999 hours or for 50 cycles are available on special order.

- 31-EX, 60 cy., 110-125 volts .....\$15.95
- 31-EX-200, 60 cy., 230 volt (not regularly stocked).....\$17.05
- MODEL 31-ES, (Square Case).** Same as 31-EX except black molded case 3" x 3", per print SK-34; 60 cy., 110-125 volts (not regularly stocked) .....\$17.05

### ELAPSED TIME METERS—Tenths of Minutes

**MODEL 31-EXM,** 60 cycles, 110-125 volts, reading 0-9,999.9 minutes; for short-run applications or readings at closer intervals than 31-EX. Tenths of minutes in red, minutes in black numerals, otherwise identical with 31-EX .....\$16.25



**MODEL 31-EX.** Molded Case, with centered terminals, meets type MR-34 or MR-35 mounting dimensions of MIL-M-6A, also JAN-1-6.

### 3 1/2" SEALED ELAPSED METERS—60 Cycles



**MODEL 31-EHXX.** Where rugged requirements make a completely sealed elapsed time meter desirable, this glass-to-metal construction, with flat glass front and 3 1/2" diameter separable flange, often is specified. Heavy-duty solder terminals are supplied. Every instrument is checked in a vacuum chamber. Overall dimensions and appearance match the FHXX series sealed frequency meters. Maximum voltage between terminals and case, 1000 volts, R.M.S. See print SK-53. The meter registers in 1/10 hour steps to 9,999.9 hours, then automatically re-sets. Tenths indicator is in red, all others in black. Mount according to Print SK-85.

- 31-EHXX, 60 cy., 110-125 volts .....\$19.75

### 2 1/2" SEALED ELAPSED TIME METERS—60 Cycles

**MODEL 21-EHXX.** This new 2 1/2" sealed meter, with front mounting dimensions the same as Type MR-26 electrical indicating instruments in MIL-M-6A, nevertheless offers a full-size counter reading 0-9,999.9 hours in 1/10th hour steps and a rugged self-starting synchronous motor. Glass-to-metal seal makes the instrument completely tamper-proof. Ask for Print SK-68.

- 21-EHXX, 60 cycles, 110-125 volts .....\$24.75

### —SEALED ELAPSED TIME METER—400 Cycles—

**MODEL 33-EHXX.** Meeting a long-felt need for a stable 400-cycle elapsed time meter compact enough to fit in a 3 1/2" flanged case, with all parts enclosed, is this new 400-cycle elapsed time meter. The instrument now is being produced only in sealed construction, glass-to-metal, with separable flange, heavy-duty solder terminals, and flat glass front. External appearance matches FHXX series and Model 31-EHXX sealed, 60-cycle, elapsed time meter. A slightly larger case is used per drawing SK-61.

- 33-EHXX, 400 cy., 0-9,999.9 hours, 1/10 hour steps, 110-125 volts .....\$58.00

### 400 CYCLE BROAD AND VERNIER INDICATORS

**MODEL 41-FX.** This 2-window frequency meter is widely used for electronic and aircraft testing in commercial and military applications. The lower window shows a broad range of 300-500 cycles, with 21 reeds in 10-cycle steps. The upper window gives a vernier effect with 13 reeds indicating 380-420 cycles in 4-cycle steps, with 2-cycle increments in the critical range of 396-404 cycles. Housed in black molded case with flush front 4 1/8" wide x 4 1/8" high and 2 3/8" deep behind panel over studs, the instrument blends well with other panel meters. Made for 100-130 volt operation. Also available with 4 studs for 200-240, 115, and 30 volts as used in aircraft analyzers. Power consumption is 2 watts at 30 volts, 4.6 watts at 115 volts, 7.7 watts at 200 volts. Full dimensions on drawing MD-38.



- 41-FX, 100-130 V .....\$120.00
- 41-FX, triple voltage, without switch .....135.00

### PORTABLE FREQUENCY TESTERS

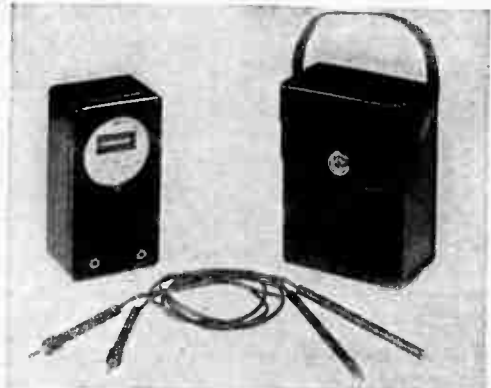
#### METAL CASE (TS-328A/U, 33-FP-9M, 34-FP-9M)

This portable frequency meter meets the exacting test requirements of aviation, signal and communication equipment. Its accuracy of ±0.3% results from the J-B-T reed construction, based on 13 years of field and laboratory use, plus care in manufacture and thorough run-in for permanent calibration. The sturdy, light-weight case of anodized aluminum with gray protective finish locks tightly when not in use. The detachable cover is the only removable portion; leads, sub-panel, and meter assembly are permanently attached. Case dimensions are 6 3/8" long x 4" wide x 3-9/32" deep with attached D-ring for belt or carrying strap. Panel and meter barrel are molded in one piece to exclude moisture and dirt; coil and electrical connections are fungus treated. When made to Government specifications, using pertinent name plate, the 9-reed, 380-420 cycle model is known as TS-328A/U. It has the same case exterior as the TS-297/U multimeter. See print SK-63-10.



- 33-FP-9M, 380-420 cy., 9 reeds, 100-130 volts, 70 ohms per volt, 1.75 watts power consumption; commercial quality and packing .....\$49.75
- 34-FP-9M, 60 cycle portable same as above, except 9 reeds, 56-64 cy., 100-130 volts, 130 ohms per volt, 1 watt power consumption, commercial quality and packing .....\$42.35

#### MOLDED CASE (33-FP-9L, 34-FP-9L)



- Handy, compact, portable instrument of same ±0.3% accuracy and electrical characteristics as above. Housed in sturdy molded case 5 7/8" x 3-1/16" x 2 5/8". Black polished top grain leather carrying case 6-3/32" x 4 1/4" x 2 3/4" and 4' leads complete with sharp 5" insulated test picks and banana plugs also supplied. This model is popular for laboratory and engineering tests.
- 33-FP-9L, 380-420 cy., 9 reeds, 100-130 volts .....\$47.60
  - 34-FP-9L, 56-64 cy., 9 reeds, 100-130 volts .....\$40.70

# TRIPLET

## TEST EQUIPMENT



### MODEL 630 — VOLT-OHM-MILLIAMMETER

Popular streamlined tester with long meter scales arranged for easy reading. Outstanding linear ohm scale; low reading .1 ohm, high 100 megs. One switch will select any range; minimizes chance of incorrect settings and burnouts. Accuracy 3% DC to 1200 V.

#### RANGES

DC Volts: 0-3-12-60-300-1,200-6,000 at 20,000 ohms per volt.  
 AC Volts: 0-3-12-60-300-1,200-6,000 at 5,000 ohms per volt.  
 Ohms: 0-1,000-10,000.  
 Megohms: 0-1-100.  
 DC Microamperes: 0-60 at 250 millivolts.  
 DC Milliamperes: 0-1.2-12-120 at 250 millivolts.  
 DC Amperes: 0-12.  
 DB: —20 to +70 (600 ohm line at 1 MW).  
 CASE—Molded, fully insulated, 3½" x 5½" x 7½".  
 MODEL 630—U. S. A. Dealer Net .....\$44.50

Complete with leads, alligator clips, rubber feet, batteries and instruction manual.

### MODEL 630-A — VOLT-OHM-MILLIAMMETER

A laboratory type VOM with ½% resistors for greater accuracy. Long mirrored scale to eliminate parallax. Banana jacks, low resistance connections. High flux magnet for increased ruggedness. One switch selects any range; minimizes chance of incorrect settings and burnouts. Accuracy 1½% on DC to 1200 V.

#### RANGES

DC Volts: 0-3-12-60-300-1,200-6,000 at 20,000 ohms per volt.  
 AC Volts: 0-3-12-60-300-1,200-6,000 at 5,000 ohms per volt.  
 Ohms: 0-1,000-10,000.  
 Megohms: 0-1-100.  
 DC Microamperes: 0-60 at 250 millivolts.  
 DC Milliamperes: 0-1.2-12-120 at 250 millivolts.  
 DC Amperes: 0-12 at 250 millivolts.  
 DB: —20 to +70 (600 ohm line at 1 MW).  
 CASE—Molded, fully insulated, 3½" x 5½" x 7½".  
 MODEL 630-A—U. S. A. Dealer Net .....\$54.50

Complete with leads, alligator clips, rubber feet, batteries and instruction manual.

### 630 PROBES — SHUNTS 630-A HIGH VOLTAGE PROBES

Pt. T-79-68—0-12,000 D.V. Volts .....	\$14.50
Pt. T-79-69—0-12,000 A.C. Volts .....	\$14.50
Pt. T-79-70—0-30,000 D.C. Volts .....	\$14.50
Pt. T-79-71—0-30,000 A.C. Volts .....	\$14.50
<b>EXTERNAL SHUNTS</b>	
Pt. T-91-247—30 Amperes (Plug-In) .....	\$ 9.00
Pt. T-91-248—60 Amperes (Portable) .....	\$12.00
Pt. T-91-255—120 Amperes (Portable) .....	\$12.00



### MODEL 631 — COMBINATION VOLT-OHM MILLIAMMETER AND VACUUM TUBE VOLTMETER

Two fundamental units at the price of a single tester; the number one instrument for all electronic men.

VTVM stability assured by battery operation. Sensitivity plus—sensitivity of the 1.2 volt (VTVM) range is equal to over nine million ohms per volt. Long battery life on VTVM section.

A V-O-M for general use and a VTVM when needed—ranges entirely adequate for servicing needs.

Large meter easy to read; unbreakable meter face.

Single switch selects all ranges; minimizes chance of incorrect settings and burnouts.

Accuracy 3% DC to 1200 V.

DC Volts: 0-3-12-60-300-1,200 (20,000 ohms per volt).

AC Volts: 0-3-12-60-300-1,200 (5,000 ohms per volt).

Ohms: 0-1,500-15,000.

Megohms: 0-1.5-150.

DC Microamperes: 0-60 at 250 MV.

DC Milliamperes: 0-1.2-12-120-1,200 at 250 MV.

DC Amperes: 0-12 at 250 MV.

DB: —20, +4, +16, +30, +44, +56. (600 ohm line at 1 MW).

#### VTVM RANGES

DC Volts: 0-1.2-6-30-120.

CASE—Molded, fully insulated, 3½" x 5½" x 7½".

MODEL 631—U. S. A. Dealer Net .....\$64.50

Complete with leads, alligator clips, rubber feet, batteries and instruction manual.



# TEST EQUIPMENT

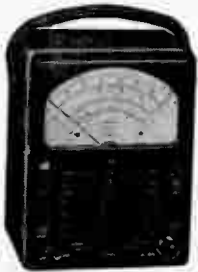
# TRIPLET

## MODEL 630-NA — VOLT-OHM-MILLIAMMETER

The super deluxe of VOMs. Seventy ranges; nearly double those of conventional testers. Frequency compensated from 35 cps to 20 kc. Temperature compensated. Accurate within 1½% of full scale reading on DC. Large open front meter easy to read. Mirrored scale. Meter protection against overloads.

**RANGES**  
DC Volts: 0-240-6-3-12-60-300-1,200-6,000 at 10,000 ohms per volt.

0-120-3-1-5-6-30-150-600-3,000 at 20,000 ohms per volt.  
AC Volts: 0-3-12-60-300-1,200-6,000 at 5,000 ohms per volt.  
0-1-5-6-30-150-600-3,000 at 10,000 ohms per volt.  
Ohms: 0-1K-10K-100K.  
Megohms: 0-1-10-100.  
DC Microamperes: 0-120 at 240 millivolts.  
0-60-600 at 120 millivolts.  
DC Milliampers: 0-1-2-12-120-1,200 at 240 millivolts.  
0-60-600 at 120 millivolts.  
DB: —20 to +70 (600 ohm line at 1 MW).  
CASE—Molded, fully insulated, 3¼" x 5½" x 7½".  
MODEL 630-NA—U. S. A. Dealer Net ..... \$74.50  
Complete with leads, alligator clips, rubber feet, batteries and instruction manual.



## MODEL 650 — VACUUM TUBE VOLTMETER

Complete frequency coverage from 15 cps to over 150 MC, with one probe supplied with instrument. One volt full scale reading on both DC-AC. Reads peak to peak AC volts and RMS. Separate 1 volt AC and 5 volt AC scales for greater accuracy. Pointer will remain zero when changing ranges. Single selector switch for all ranges. Accuracy 3% DC.

**RANGES**  
DC Volts: 0-1-5-10-50-100-500-1,000.  
AC-RF Volts: 0-1-5-10-50-100-500 (15 cps to over 150 MC).  
Peak to Peak Volts: 0-2-8-14-28-140-280-700.  
Ohms: 0-1K-10K-100K-1 Meg.-100 Meg.-1,000 Meg.  
CASE—Insulated molded case and panel, 3¼" x 5½" x 7½". Removable strap handle.  
MODEL 650—U. S. A. Dealer Net ..... \$89.50  
Complete with leads, alligator clips, rubber feet, battery and instruction manual.  
DC High Voltage Probe: 50 KV-500 DC volt; 10 KV-100 DC volt; 5KV-50 DC volt. \$14.50 net each.

## MODEL 625-NA — VOLT-OHM-MILLIAMMETER

Dual sensitivity provides extra ranges. Large mirror scale for excellent readability. Three color meter scale, 5" long. Six inch instrument, 0-50 microamp. AC volts at 10,000 Q/V permits checking many audio and high impedance AC circuits where a VTVM usually is required. Accuracy 3% DC to 1000 V.

0-2.5-10-50-250-1,000-5,000 at 10,000 ohms per volt.  
AC Volts: 0-2.5-10-50-250-1,000-5,000 at 10,000 ohms per volt.  
Ohms: 0-2,000-200,000.  
Megohms: 0-40.  
DC Microamperes: 0-50 at 250 millivolts.  
DC Milliampers: 0-1-10-100-1,000 at 250 millivolts.  
DC Amperes: 0-10 at 250 millivolts.  
DB: —30 to 69 on 500 ohm line 6 MW.  
CASE—Black molded, insulated, 2½" x 5½" x 6".

### RANGES

DC Volts: 0-1.25-5-25-125-500-2,000 at 20,000 ohms per volt.

MODEL 625-NA—U. S. A. Dealer Net ..... \$54.50  
Complete with leads, alligator clips, batteries and instruction manual.

## MODEL 666-HH — POCKET VOLT-OHM-MILLIAMMETER

Compact, hand-size V-O-M. Three-inch meter integral with panel, adjusted to 400 microamperes at 250 millivolts. Only three jacks necessary for all ranges. Accuracy 3% DC to 1000 V.

### RANGES

DC Volts: 0-10-50-250-1,000-5,000 at 1,000 ohms per volt.  
AC Volts: 0-10-50-250-1,000-5,000 at 1,000 ohms per volt.  
Ohms: 0-2,000-400,000.  
DC Milliampers: 0-10-100-500 at 250 millivolts.  
CASE—Black molded, insulated, 3¼" x 5⅞" x 2⅞".

MODEL 666-HH—U. S. A. Dealer Net ..... \$27.50  
Complete with leads, alligator clips, batteries and instruction manual.

## MODEL 630-T — VOLT-OHM-MILLIAMMETER

Specially designed for telephone maintenance. Accuracy 2% on DC. Fused protected circuit protects resistors and meter in ohms ranges. Special neck strap supplied to hold instrument, leaving both hands free. Banana jack connectors to eliminate a shock hazard. Completely insulated case to protect instrument from ground.

### RANGES

DC Volts: 0-3-3-12-60-300-600 at 20,000 ohms per volt.  
AC Volts: 0-3-12-60-300-600 at 3,000 ohms per volt.  
Ohms: 0-1K-10K-100K.  
Megohms: 0-1-10.  
DC Microamperes: 0-60 at 150 millivolts.  
DC Milliampers: 0-1-2-12-120 at 150 millivolts.  
CASE—Molded, completely insulated to protect instrument from ground, 3½" x 5½" x 7½".  
WEIGHT—4 lbs.

MODEL 630-T—U. S. A. Dealer Net ..... \$54.50

## MODEL 666-R — POCKET VOLT-OHM-MILLIAMMETER

Hand-size — the ideal tester for electrical maintenance. Recessed range knob enables tester to fit in tool kit. AC rectifier pre-calibrated unit for easy replacement. Banana jacks at top of the panel lessen possibility of leads falling over the meter dial. Single switch selects all ranges; minimizes chance of incorrect settings and burnouts. Accuracy 3% DC to 1000 V.

### RANGES

DC Volts: 0-10-50-250-1,000-5,000 at 1,000 ohms per volt.  
AC Volts: 0-10-50-250-1,000-5,000 at 1,000 ohms per volt.  
Ohms: 0-3,000-300,000.  
Megohms: 0-3.  
DC Milliampers: 0-10-100 at 250 MV.  
DC Amperes: 0-1 at 250 MV.  
CASE—Black molded, streamlined, completely insulated. Handy pocket size, 3¼" x 5⅞" x 2⅞".

MODEL 666-R—U. S. A. Dealer Net ..... \$54.50  
Complete with leads, alligator clips, batteries and instruction manual. Special field case designed for the 666-R. See page G-388.



# TRIPPLET

## TEST EQUIPMENT



**MODEL 310  
VOLT-OHM  
MILLIAMMETER**

### MODEL 310 — HAND-SIZE MIGHTY MITE

The only complete miniature V-O-M with 20,000 ohms per volt and selector range switch. Self-shielded for checking in strong magnetic field. Rugged, high torque, bar-ring instrument. Unbreakable plastic meter window. Fitting interchangeable test prod into top of tester makes it the common probe, freeing one hand. Standard sensitivity 20,000 ohms per volt DC, and 5,000 ohms per volt AC. Accuracy 3% DC.

#### RANGES

DC Volts: 0-3-12-60-300-1,200 (at 20,000 ohms per volt). AC Volts: 0-3-12-60-300-1,200 (at 5,000 ohms per volt).  
 Ohms: 0-20,000-200,000. Megohms: 0-2-20.  
 DC Microamperes: 0-600 at 250 millivolts. DC Milliampers: 0-6-60-600 at 250 millivolts.  
 WEIGHT—Approx. 14 oz., complete with battery. CASE—Molded, fully insulated, 2 3/4" x 4 1/4" x 1 3/8".  
**MODEL 310—U. S. A. Dealer Net** .....\$34.50  
 Complete with leads, batteries and instruction manual.

### MODEL 666-HH — POCKET VOLT-OHM-MILLIAMMETER

A precision-manufactured marvel of compactness that provides a complete miniature laboratory for D.C. and A.C. voltage. Direct Current and Resistance analyses.

#### RANGES

DC Volts: 0-10-50-250-1,000-5,000, 1,000 Ohm Volt.  
 AC Volts: 0-10-50-250-1,000-5,000, 1,000 Ohm Volt.  
 DC MA: 0-10-100-500, at 250 Millivolts.  
 Ohms: 0-2,000-400,000 (12-2400 center scale).  
 Attractive streamlined black molded case, completely insulated, 3 1/8" x 5 7/8" x 2 3/8". Black molded panel with white markings.

Battery self-contained, plug-in type, 1.5V. Eveready No. 935 or equivalent. 50" test leads with clips and plugs furnished.

#### Weight: 1 1/2 lbs.

Accessories available to special order for extending ranges: External pin jack shunts for Direct Current ranges, resistors for AC-DC volt ranges, battery and resistors for Ohms ranges.

**MODEL 666-HH—U. S. A. Dealer Net** .....\$27.50

CASE—Attractive black leather carrying case with strap handle.

**MODEL 669 CASE—U. S. A. Dealer Net** .....\$6.10

### TRIPPLET MODEL 10 CLAMP-ON ADAPTER



Just plug into any Triplet Model 310 Miniature V-O-M it becomes an AC clamp-on ammeter to measure AC amperes without cutting or opening current carrying wires. The split transformer yoke opens at the touch of a lever to fit around a single conductor or bus-bar for direct readings of AC amperes from 6 to 300 in 6 steps. **MODEL 10** .....\$14.50 net  
 The Model 10 can be used at a distance from the Model 310 by using No. 311 lead attachment. This permits readings in difficult locations. No. 311 Leads .....\$1.90 net  
 In addition, to use with the Model 310, the Model 10 Adapter also can be used as a Clamp-On Ammeter with any Volt-Ohm-Milliammeter having a 3 AC Volt scale at 5,000 ohms

per volt such as Triplet Models 630, 630-A, 630-NA, 631, etc. by employing Triplet No. 611 Leads.....\$1.90 net.

#### RANGES

**MODEL 10:**  
 AC Amperes: 0-6-12-30-60-120-300.

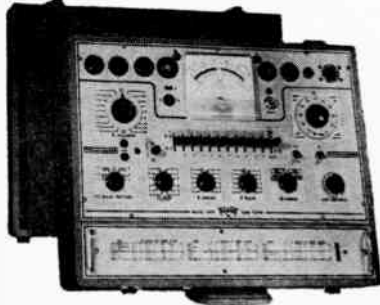
### TRIPPLET MODEL 101 LINE SEPARATOR



Serves to plug in at outlet to divide 2 conductor cords for clamp-on measuring. Makes accurate, rapid testing of radio and TV sets, phonographs, appliances, motors, etc. possible without opening or splitting double conductors. Also serves to increase ammeter sensitivity 10X and 20X, if desirable, for easier reading. **Model 101** .....\$5.50 net.

Capacity of Model 101:  
 Range: Direct—Divide by 10  
 Divide by 20  
 Maximum Capacity Amperes: 30-12-6.

### MODEL 3423 — MUTUAL CONDUCTANCE TUBE TESTER



Variable plate voltage, 0-250 volts, available only in better testers. Uses high frequency signal on grid (4KC). Selenium rectifiers, crystal diodes and transistors can be tested with no extra accessories. All new heater voltages are available from .63 to 117 voltage. Direct leakage measurement on meter from 0 to 10 Meg. between any one element and all other elements.  
**METER SCALES**—0-1,800-6,000-18,000-36,000 for micromhos.  
 Good - ? - Bad scale for diodes and rectifiers.  
 0-100 scale for thyratron tubes.  
 This tester registers per cent of target value.  
 Speed roll tube chart; easy to use; easily replaced when listings are revised to include new tubes.  
 CASE—Wood, gray leatherette covered, with white trim. Chrome hardware. Hinged removable lid, 6 1/2" x 14 3/4" x 18 3/2". Instrument model 420, 4" long scales.  
**MODEL 3423—U. S. A. Dealer Net** .....\$199.50

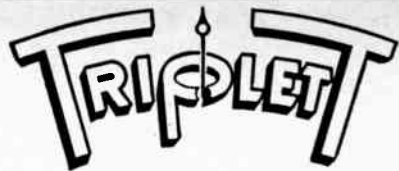
### MODEL 3413-B — FASTER, FLEXIBLE TUBE TESTER



Greater meter sensitivity for tubes with low current.  
 Neon Short Test—Dual sensitivity shows inter-element short or leakage while cathodes are hot. All the new heater voltages. Filament voltages 0.63 to 110 in 19 steps.  
 The tester does not become obsolete when new tubes are announced.  
 Quick-change roll chart supplied at regular intervals; revised to keep up with tube changes.  
 TV picture tube test by means of an adapter (available extra) without removing tube from receiver. (See BV Adapter.)  
 Counter and portable case with cover.  
 Flexible three position lever switches for complete coverage of present and future tube connections.  
 Large six inch meter has three color easy-to-read GOOD - ? - BAD scale.  
 CASE—Metal, with attractive baked on black enamel finish, 6 1/2" x 11 1/2" x 15 1/2", detachable hinged cover, leather strap handle, nickel plated hardware and rubber feet.  
**MODEL 3413-B—U. S. A. Dealer Net** .....\$79.50  
 BV ADAPTER for Picture Tube tests with Models 3413-B and 3423. Net .....\$5.40



# TEST EQUIPMENT



## MODEL 3441-A — NEW 5" OSCILLOSCOPE

Maximum sensitivity (10 millivolts per inch).  
 Wide band width 4.5 MC (Usable to 9 MC).  
 Wide band amplifiers for color TV servicing.  
 Calibration voltage metered so line voltage is not a factor.  
 Horizontal amplifier frequency range flat to + or -1 DB from 20 cycles to 60 KC. Deflection sensitivity .15 volts RMS per inch.  
 Saw tooth output supplies a saw tooth wave form from 10 to 60,000 cycles. Output variable 0-70 volts peak to peak.  
 Polarity-reversing switch keeps wave form showing in conventional manner.  
 PANEL—Black and red on white. Characters etched on aluminum.  
 CASE—Metal with black suede enamel finish, 15 $\frac{1}{2}$ " x 11 $\frac{1}{2}$ " x 16". Leather handle.

**MODEL 3441-A**—U. S. A. Dealer Net ..... \$249.50  
 Crystal (Demodulating or Signal Tracing) Probe. Part Number 9989 ..... \$10.50  
 Low Capacity (10-1). Part Number 10379-A ..... \$11.90

## MODEL 3439 — COLOR BAR GENERATOR

Crystal controlled RF output.  
 A built-in VTVM circuit with meter on the panel provides quick and easy checking of sync, subcarrier and modulation amplitudes.  
 Unit completely self-contained—no extra accessories or equipment needed. Easy to set up, with RF output direct.  
 Sound carrier (unmodulated) insures precise tuning of the receiver; and permits checking sound rejection and presence of beat interference between the color subcarrier and the sound carrier.  
 Brightness modulation is available to check for possible shift of hue in the bright areas or highlights.  
 Amplitude of the color subcarrier is adjustable; for checking the color sync lock action in the receiver.  
 Video signals of positive or negative polarity are provided for low impedance (75 ohms) and high impedance (5,000 ohms) video circuits.  
 CASE—Metal with black baked enamel suede finish, 15 $\frac{1}{2}$ " x 11 $\frac{1}{2}$ " x 6 $\frac{1}{4}$ ". Leather handle.

**MODEL 3439**—U. S. A. Dealer Net ..... \$249.50

## MODEL 3438 — DOT BAR COLOR GENERATOR

Frequency RF output fundamental coverage on channels 2 to 6.  
 Provides its own horizontal and vertical sync pulses.  
 RF and IF output.  
 Video output—Video signals as above with positive or negative polarity supplied across low impedance source of 2,000 ohms with 1 mfd. 200 volt blocking condenser.  
 Color oscillator provides three base colors (red, blue and green) plus colors corresponding to phases of R-Y, B-Y, I and Q axis.  
 Completely self-contained; no extra accessories or equipment is needed. No additional sync is required from the set.  
 Can be used for signal tracing completely through either b/w or color TV sets.  
 CASE—Metal with attractive baked black enamel suede finish, 6 $\frac{1}{4}$ " x 11 $\frac{1}{2}$ " x 15 $\frac{1}{4}$ ", panel silver black and red etched aluminum. Shielded output co-axial cable.

**MODEL 3438**—U. S. A. Dealer Net ..... \$229.50



## MODEL 660 — LOAD CHEK

A time-saver, designed for TV servicing. Helps prevent repair come-backs. No time lost in connecting this unit. Just plug in the power cord of the radio and all meters are connected.  
 Quick way to locate hidden shorts and overloaded circuits.  
 Double meter indication provides simultaneous check of line voltage and power.  
 Shows faulty power line wiring as well as proper functioning of the appliance under test.  
 Simple operation by means of only one toggle switch to change watts range.  
 Double range on Watts meter permits one unit to serve from a 5-tube radio to the largest TV set.

### RANGES

Watts: DC-AC: 0-500-1,000.  
 Volts: DC-AC: 0-150.

CASE—Black molded, 2 $\frac{1}{2}$ " x 5 $\frac{1}{2}$ " x 6", insulated to protect instrument from ground. Removable black leather strap handle.

**MODEL 660**—U. S. A. Dealer Net ..... \$34.50

### MODEL 661

Designed for Radio and Low Wattage Appliances. Appearance and construction same as 660 with watt range 150-300.

### RANGES

Watts: DC-AC: 0-150-300.  
 Volts: DC-AC: 0-150.

**MODEL 661**—U. S. A. Dealer Net ..... \$34.50

## MODEL 3432-A — SIGNAL GENERATOR

Designed for new servicemen coming into the service field. One generator to align radio, television (monochrome and color).  
 Complete frequency coverage 160 KC to 110 MC fundamental with seven bands (220 MC harmonics).  
 R.F. circuits are double shielded with copper steel shields.  
 Large easily read etched aluminum dial.  
 Cathode follower output provides good stability by acting as a buffer to the oscillator.  
 The generator is provided with a 400 cycle audio frequency with variable control for 0-100 per cent modulation.

Band A ..... 160-370 KC	Band E ..... 4.85-13 MC
B ..... 360-735 KC	F ..... 12.5-35 MC
C ..... 715-1875 KC	G ..... 34-110 MC
D ..... 1825-4950 KC	G (Harmonics) ..... 68-220 MC

CASE—Metal with black baked enamel suede finish, 15 $\frac{1}{2}$ " x 11 $\frac{1}{2}$ " x 6 $\frac{1}{4}$ ". Black leather strap handle, rubber feet.

**MODEL 3432-A**—U. S. A. Dealer Net ..... \$99.50



## MODEL 2002 — APPLIANCE TESTER

For installations and servicing.  
 Shows power consumption of industrial equipment, radios, electric ranges, refrigerators, washers and other household appliances under actual operating conditions, on either DC or AC between 25 and 133 cycles.  
 A Wattmeter on the left and a Voltmeter on the right permit Watts and Volts to be read simultaneously or independently.  
 Shows if voltage remains within limits under operating loads.  
 Current coils assure ample capacity for momentary tests on motor starting overloads.  
 Heavy inner construction assures ample current capacity for momentary tests on motor starting overloads.  
 Shows faulty power lines.

### RANGES

Watts: DC-AC: 0-1,500-3,000.  
 Volts: DC-AC: 0-130-260.

CASE—Heavy leather and snap button cover and leather handle, 6 $\frac{1}{2}$ " x 4 $\frac{1}{2}$ " x 3 $\frac{1}{4}$ ". Storage space for leads furnished which include one cord to plug into wall socket, another with a socket to receive connections from appliances under test.

**MODEL 2002**—U. S. A. Dealer Net ..... \$44.50

### MODEL 2000-B

Same as Model 2002, but with Watt range 750-1,500.

**MODEL 2000-B**—U. S. A. Dealer Net ..... \$42.50

## MODELS 630, 630-A AND 631 — HIGH VOLTAGE PROBES

Completely insulated polystyrene test probe with guard-type handle. Probe is 11 $\frac{3}{4}$ " long, with 48" hi-voltage wire lead with banana plug at tester end.

Part T-79-68	0-12,000 D. C. Volts	\$14.50
Part T-79-69	0-12,000 A. C. Volts	14.50
Part T-79-70	0-30,000 D. C. Volts	14.50
Part T-79-71	0-30,000 A. C. Volts	14.50

LEADS for Models 630, 630-A, 666-HH, 666-R and 625NA. Plastic (T-79-49) and Rubber (T-79-127). Net ..... \$1.90  
 REPLACEMENT LEAD for Model 630-T. T-79-136. Net ..... \$2.80  
 REPLACEMENT LEAD for Model 310. T-79A-153. Net ..... \$1.90

### TESTER STAND

Metal stand holds Model 630, 630-A, 630-NA, 630-T, 631 or 650 tester in approximately a 45° angle; will enable you to make easier readings.

**STAND ONLY**—Pt. T-255-A-33. U. S. A. Dealer Net ..... \$ .50

# TRIPLET

# INSTRUMENTS



**MODEL 639-N**

(For Testers 630, 630-A, 630-NA, 631, 630-T)

639-N black cowhide leather carrying case. Center-cover flaps snap back allowing full view of scales and permitting complete access to instrument without removal from case. Tester stand is included at no extra cost.

**MODEL 639-N (Case only)—U. S. A. Dealer**  
Net ..... \$9.50



**MODEL 369**

Model 369—Handsome black cowhide leather carrying case for Model 310. Trousers belt slips through loop on back of the case for out-of-the-way carrying.

**MODEL 369—U. S. A. Dealer Net** ..... \$3.20

**MODEL 659 black leather case for 650**.....\$10.50

**MODEL 659-P leather case lined with 3/8" sponge rubber.**

For Model 650 ..... \$16.00

**MODEL 669 black leather case for 666-R and 666-HH** ..... \$6.10

**MODEL 669-RL camera-type black leather case for Model 666-R.** Tester can be used in the case.

**Case only** ..... \$6.60



**MODEL 639-P**

(For Testers 630, 630-A, 630-NA, 631)  
Model 639-P black cowhide leather carrying case lined with 3/8" sponge rubber.

**MODEL 639-P—U. S. A. Dealer Net** ..... \$14.90

**MODEL 629 leather case for 625-NA, 660 and 661** ..... \$7.20

**MODEL 639 black leather case.** For Models 630, 630-A, 630-NA and 631 ..... \$9.40

## D.C. MILLIVOLTMETERS

Range	Approx. Res.	Scale Div.	2"		3"		4"		6"	
			Models 221-T 227-T	Models 221-PL 227-PL	Models 321-T 327-T	Models 321-PL 327-PL	Model 420	Model 420-PL	Model 626	Model 626
0-50	6.3	50	\$9.90	\$10.40	\$10.50	\$11.00	\$11.60	\$11.60	\$13.60	\$13.80
0-100	12.5	50	9.90	10.40	10.50	11.00	11.60	11.60	13.80	13.80
0-150	20 (30)	75	9.90		10.50		11.60		13.80	13.80

## D.C. VOLTMETERS — (1000 Ohms Per Volt — Film Type Resistors)



Range	2"		3"		4"		6"	
	Models 221-T 227-T	Models 221-PL 227-PL	Models 321-T 327-T	Models 321-PL 327-PL	Model 420	Model 420-PL	Model 626	Model 626
0-10	\$10.70	\$11.20	\$11.20	\$11.70	\$12.30	\$12.30	\$14.50	\$14.50
0-25	10.70	11.20	11.20	11.70	12.30	12.30	14.50	14.50
0-50	10.70	11.20	11.20	11.70	12.30	12.30	14.50	14.50
0-100	10.70	11.20	11.20	11.70	12.30	12.30	14.50	14.50
0-150	10.70	11.20	11.20	11.70	12.30	12.30	14.50	14.50
0-200	10.70	11.20	11.20	11.70	12.30	12.30	14.50	14.50
0-250	10.70	11.20	11.20	11.70	12.30	12.30	14.50	14.50
0-300	10.70	11.20	11.20	11.70	12.30	12.30	14.50	14.50
0-500	11.20*	11.70*	11.60	12.30	12.90	12.90	15.10	15.10
0-750	11.20*	11.70*	11.80	12.30	12.90	12.90	15.10	15.10
0-1000*	13.30	13.80	13.90	14.40	15.00	15.00	17.20	17.20
0-2000*	13.30	13.80	13.90	14.40	15.00	15.00	17.20	17.20
0-3000*	13.30	13.80	13.90	14.40	15.00	15.00	17.20	17.20
0-4000*	13.30	13.80	13.90	14.40	15.00	15.00	17.20	17.20
0-5000*	13.30	13.80	13.90	14.40	15.00	15.00	17.20	17.20

\* Supplied with external resistors

## D.C. VOLTMETERS — 1000 Ohms Per Volt (Wirewound)

Range	Scale Div.	2"		3"		4"		6"	
		Models 221-T 227-T	Models 221-PL 227-PL	Models 321-T 327-T	Models 321-PL 327-PL	Model 420	Model 420-PL	Model 626	Model 626
0-1	50	\$10.70	\$11.20	\$11.20	\$11.70	\$12.30	\$12.30	\$14.50	\$14.50
0-3	(30) 60	10.70	11.20	11.20	11.70	12.30	12.30	14.50	14.50
0-5	50	10.70	11.20	11.20	11.70	12.30	12.30	14.50	14.50
0-10	50	10.70	11.20	11.20	11.70	12.30	12.30	14.50	14.50
0-25	50	13.10	13.60	13.60	14.10	14.70	14.70	16.90	16.90
0-50	50	13.10	13.60	13.60	14.10	14.70	14.70	16.90	16.90
0-100	50	13.60	14.10	14.20	14.70	15.30	15.30	17.50	17.50
0-150	(30) 75	13.60	14.10	14.20	14.70	15.30	15.30	17.50	17.50
0-300	(30) 60	16.60	17.10	17.20	17.70	18.30	18.30	20.50	20.50
0-500	50	18.60*	19.10	19.10	19.60	20.20	20.20	22.40	22.40
0-750	(30) 75	21.30*	21.80	21.90	22.40	23.00	23.00	25.20	25.20

The following supplied with external resistor boxes at prices shown.

0-1000	50	37.50	38.00	38.10	38.60	39.20	39.20	41.40
0-2000	40	61.50	62.00	62.00	62.50	63.10	63.10	65.30

\* Supplied with external resistors. Scale divisions for 2" models in parenthesis.

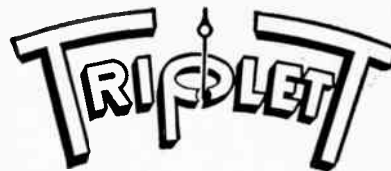
## D.C. MICROAMMETERS

Range	Approx. Res.	Scale Div.	2"		3"		4"		6"	
			Models 221-T 227-T	Models 221-PL 227-PL	Models 321-T 327-T	Models 321-PL 327-PL	Model 420	Model 420-PL	Model 626	Model 626
0-20	3000	40	\$17.60	\$18.10	\$18.20	\$18.70	\$19.30	\$19.30	\$18.70*	\$18.70*
0-50	1510	50	14.90	15.40	15.40	15.90	16.50	16.50	16.80*	16.80*
0-100	825	50	13.00	13.50	13.50	14.00	14.60	14.60	15.00	15.00
0-200	360	40	11.10	11.60	11.70	12.20	12.80	12.80	14.40	14.40
0-500	156	50	10.60	11.10	11.10	11.60	12.20	12.20		
50-0-50	825	13.00	13.50	13.50	14.00	14.60	14.60			
100-0-100	360	11.10	11.60	11.70	12.20	12.80	12.80			
500-0-500	55	9.90	10.40	10.50	11.00	11.60	11.60			

\* Supplied only with knife-edge pointers.



# INSTRUMENTS



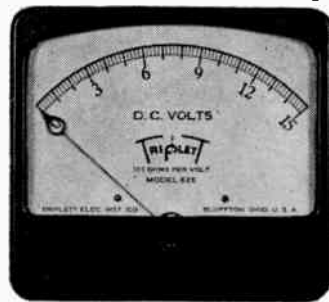
Models 221-PL, 231-PL, 321-PL, 331-PL, 341-PL

Range	Approx. Res.	Scale Div.	D.C. MILLIAMMETERS					
			2" Models 221-T, 227-T	2" Models 221-PL, 227-PL	3" Models 321-T, 327-T	3" Models 321-PL, 327-PL	4" Model 420	6" Model 626
0-1	55	50	\$ 9.90S	\$ 10.40S	\$ 11.00S	\$ 11.60S	\$ 11.60	\$ 13.80
0-1.5	30	** (30)	9.90	10.40	10.50	11.00	11.60	13.80
0-3	14	** (30)	9.90	10.40	10.50	11.00	11.60	13.80
0-5	8.5	50	S 9.90	10.40	10.50S	11.00	11.60	13.80
0-10	3.1	50	S 9.90S	10.40	S 10.50S	11.00	11.60	13.80
0-15	6.6	75	9.90	10.40	10.50S	11.00	11.60	13.80
0-25	4	50	10.30S	10.80	10.90S	11.40	12.00	14.20
0-50	2	50	10.30S	10.80	S 10.90S	11.40	12.00	14.20
0-75	1.3	** (30)	10.30	10.80	10.90	11.40	12.00	14.20
0-100	1	50	S 10.30S	10.80	S 10.90S	11.40	12.00	14.20
0-150	0.6	** (30)	S 10.30S	10.80	S 10.90S	11.40	12.00	14.20
0-200	0.5	40	10.30S	10.80	S 10.90S	11.40	12.00	14.20
0-250	0.4	50	10.30	10.80	10.90	11.40	12.00	14.20
0-300	0.33	** (30)	60	10.30S	10.80	10.90S	11.40	12.00
0-400	0.25	40	10.30	10.80	10.90	11.40	12.00	14.20
0-500	0.2	50	S 10.30S	10.80S	S 10.90S	11.40	12.00	14.20
0-750	0.13	** (30)	75	10.30	10.80	10.90	11.40	12.00
0-1000	0.1	50	10.30	10.80	10.90	11.40	12.00	14.20
500-0-500 (Galv.)	55	50-0-50	9.90	10.40	10.50	11.00	11.60	13.80

Ranges above 10 Milliampers are shunted and have a drop of approximately 100 millivolts. Special resistance may be obtained to order. Double-range Milliampers available on special order. Prices on request.

Range	Scale Div.	D.C. AMMETERS					
		2" Models 221-T, 227-T	2" Models 221-PL, 227-PL	3" Models 321-T, 327-T	3" Models 321-PL, 327-PL	4" Model 420	6" Model 626
0-1	50	\$ 9.90	\$ 10.40	\$ 11.00S	\$ 11.60	\$ 11.60	\$ 13.80
0-3	** (30)	60	9.90	10.40	11.60	11.60	13.80
0-5	50	10.70	11.20	S 11.20S	11.70	12.30	14.50
0-10	50	10.70S	11.20	S 11.20S	11.70	12.30	14.50
0-15	** (30)	75	10.70	11.20	11.70	12.30	14.50
0-25	50	10.70	11.20	11.20S	11.70	12.30	14.50
0-30	** (30)	60	10.70	11.20	11.70	12.30	14.50
0-50	50	10.70	11.20	only S 11.20S	11.70 only	12.30	14.50

D.C. Ammeters are self-contained up to and including 50 Amperes. Shunts 75 Amperes (50 M.V.) and higher are switchboard type with 5 ft. leads.



Models 626, 636, 646

Range	Approx. Ohms/Volt	Scale Div.	A.C. VOLTMETERS						
			2" Models 231-S, 237-S	2" Models 231-PL, 237-PL	3" Models 331-S, 337-S	3" Models 331-PL, 337-PL	4" Model 430	6" Model 636	
0-1.5	1.33	** (30)	75	\$ 9.90	\$ 10.40	\$ 10.50	\$ 11.00	\$ 11.60	\$ 13.80
0-3	3.33	** (30)	60	9.90	10.40	10.50	11.00	11.60	13.80
0-5	4		50	9.90	10.40	10.50	11.00	11.60	13.80
0-10	10		50	9.90	10.40	10.50S	11.00	11.60	13.80
0-15	16	** (30)	75	9.90	10.40	10.50	11.00	11.60	13.80
0-25	20		50	9.90	10.40	10.50	11.00	11.60	13.80
0-50	50		50	9.90	10.40	10.50	11.00	11.60	13.80
0-100	91		50	9.90	10.40	10.50	11.00	11.60	13.80
0-150	125	** (30)	75	\$ 10.90S	11.40	S 11.40S	S 11.90S	\$ 12.50	\$ 14.70
0-250	144		50	11.40	11.90	12.00	12.50	S 13.10	15.30
0-300	144	** (30)	60	12.00	12.50	S 12.50S	13.00	13.60	15.80
0-500	125		50	15.70†	16.20†	16.30†	16.80†	17.40†	19.60†
0-750	125	** (30)	75	16.30*	16.80*	16.80*	17.30*	17.90*	20.10*
0-1000	125		50	16.80*	17.30*	17.40*	17.90*	18.50*	20.70*

These A.C. Voltmeters are for use on frequencies from 25 to 133 cycles. † Indicates instruments supplied with external wire-wound series resistors at price shown. \* Supplied with external resistor boxes at prices shown above. All other instruments are self-contained. Double-range Voltmeters are available on special order. Prices on request.

Range	Approx. Res.	Scale Div.	A.C. AMMETERS					
			2" Models 231-S, 237-S	2" Models 231-PL, 237-PL	3" Models 331-S, 337-S	3" Models 331-PL, 337-PL	4" Model 430	6" Model 636
0-1	.21	50	\$ 9.90	\$ 10.40	\$ 10.50S	\$ 11.00	\$ 11.60	\$ 13.80
0-2	.11	40	9.90	10.40	10.50	11.00	11.60	13.80
0-3	.02 ** (30)	60	9.90	10.40	10.50S	11.00	11.60	13.80
0-5	.01	50	9.90S	10.40	S 10.50S	11.00	S 11.60	13.80
0-10	.005	50	9.90S	10.40	S 10.50S	S 11.00	11.60	13.80
0-15	.002 ** (30)	75	9.90	10.40	S 10.50S	11.00	11.60	13.80
0-25	.001	50	9.90	10.40	S 10.50S	11.00	S 11.60	13.80
0-30	.011 ** (30)	60	9.90	10.40	S 10.50S	11.00	11.60	13.80
0-50	.0005	50	9.90	10.40	S 10.50S	11.00	11.60	13.80
0-75	.0003	74			12.10S	13.20	13.20	15.40

For use on frequencies from 25 to 500 cycles. Instruments listed above are self-contained. For ranges above 75, (above 50 on 2" models) use current transformers, with 5 Amp. secondary (60-133 cycles). Add Do-Nut transformer price to price of 0-5 A.C. Ammeter shown above. Transformers. Primary Ampere Range 75, 100, 200, 250, 300, 400 Amp. \$10.50 net each; 500, 600 Amp., \$13.80 net each; 750, 1000 Amp. \$19.30 net each, and 1200 Amp., \$28.60 net each.

Range	Approx. Res.	Scale Div.	A.C. MILLIAMMETERS					
			2" Models 231-S, 237-S	2" Models 231-PL, 237-PL	3" Models 331-S, 337-S	3" Models 331-PL, 337-PL	4" Model 430	6" Model 636
0-10	2900	50	\$ 9.90	\$ 10.40	\$ 10.50	\$ 11.00	\$ 11.60	\$ 13.80
0-15	1150	** (30)	9.90	10.40	10.50	11.00	11.60	13.80
0-25	344	50	9.90	10.40	10.50	11.00	11.60	13.80
0-50	82	50	9.90	10.40	10.50	11.00	11.60	13.80
0-100	21	50	9.90	10.40	10.50	11.00	11.60	13.80
0-200	6.7	40	9.90	10.40	10.50	11.00	11.60	13.80
0-250	0.4	50	9.90	10.40	10.50	11.00	11.60	13.80
0-500	0.8	50	9.90	10.40	S 10.50	11.00	11.60	13.80

For use on frequencies from 25 to 500 cycles.

Range	Approx. Res.	Scale Div.	THERMO AMMETERS (R. F.)					
			2" Models 241-T, 247-T	3" Models 341-T, 347-T	3" Models 341-PL, 347-PL	4" Model 440	4" Model 440-PL	6" Model 646
0-5 Amps	.93	50	\$ 11.00	\$ 11.60	\$ 12.10	\$ 12.70	\$ 12.70	\$ 14.90
0-1 Amps	.35	50	11.00	11.60	12.10	12.70	12.70	14.90
0-1.5 Amps	.21	** (30)	11.00	11.60S	12.10	12.70	12.70	14.90
0-2.5 Amps	.13	50	11.00	11.60	12.10	12.70	12.70	14.90
0-5 Amps	.06	50	11.00	11.60	12.10	12.70	12.70	14.90
0-10 Amps	.03	50	11.00	11.60	12.10	12.70	12.70	14.90

Internal couples are normally furnished at prices shown. If external couples are required, please specify on order, adding \$5.50 net to price of instrument shown above. External couples only less meter, with leads, \$6.60 net each.

S - NORMALLY CARRIED IN STOCK

# STERLING PANEL METERS



TYPE 80

Flush case, narrow flange, standard finish black enamel. Speed Nut Mounting. Diam. flange  $2\frac{3}{8}$ ". Speed Diam. case 2". Depth case  $\frac{1}{2}$ ". Requires hole  $2\frac{1}{8}$ " in diam. Length terminals  $\frac{1}{8}$ ".



TYPE 88

Flush case, narrow apron flange. Standard finish black enamel. Same dimensions as Type 80. Speed Nut Mounting.



TYPE 70

Flush case, wide flange, standard finish black enamel. Screw holes in flange for mounting. Diam. flange  $2\frac{3}{8}$ ". Diam. case 2". Depth case  $\frac{3}{8}$ ". Requires hole  $2\frac{1}{8}$ " in diam.



STERLING'S NEW SPEED NUT CLAMP



REGULAR BACK CLAMP

## ALTERNATING CURRENT METERS

### A.C. VOLTMETERS

Number	Range	List Price
870	0-1 Volts	\$4.00
871	0-6 Volts	4.00
872	0-10 Volts	4.00
873	0-15 Volts	4.00
910	0-30 Volts	4.00
879	0-50 Volts	4.25
911	0-75 Volts	4.25
874	0-150 VHR†	5.50
912	0-250 Volts	6.00
875	0-300 Volts	6.25
913	0-500 Volts	7.25
876	0-600 Volts	7.25
877	0-750 Volts	8.75
878	0-10-140 Volts	5.50

†VHR—Volts High Resistance

### A.C. MILLIAMMETERS

Number	Range	List Price
880	0-25 Milliamperes	\$4.00
881	0-50 Milliamperes	4.00
882	0-100 Milliamperes	4.00
883	0-250 Milliamperes	4.00
914	0-300 Milliamperes	4.00
884	0-500 Milliamperes	4.00

### A.C. AMMETERS

Number	Range	List Price
886	0-1 Amperes	\$4.00
915	0-2 Amperes	4.00
887	0-3 Amperes	4.00
888	0-5 Amperes	4.00
916	0-7 $\frac{1}{2}$ Amperes	4.00
889	0-10 Amperes	4.00
917	0-15 Amperes	4.00
890	0-20 Amperes	4.25
918	0-25 Amperes	4.25
892	0-30 Amperes	4.25
891	0-60 Amperes	4.50
893	0-60 Amperes	4.75
894	0-75 Amperes	4.75
895	0-100 Amperes	4.75

## DIRECT CURRENT METERS

### D.C. VOLTMETERS

Number	Range	List Price
801	0-1 Volts	\$2.50
802	0-3 Volts	2.50
803	3-0-3 Volts	2.50
804	0-5 Volts	2.50
805	0-6 Volts	2.50
806	0-8 Volts	2.50
807	0-10 Volts	2.50
808	0-15 Volts	2.50
809	0-25 Volts	2.50
810	0-25 Volts High Res.	3.75
811	0-50 Volts	2.50
812	0-50 Volts High Res.	4.25
823	0-75 Volts	2.75
813	0-100 Volts	2.75
814	0-100 Volts High Res.	4.25
815	0-150 Volts	3.00
816	0-150 Volts High Res.	4.25
817	0-300 Volts	4.25
818	0-500 Volts	5.75
819	0-750 Volts	6.75
820	0-8-160 Volts	3.75

### RESISTANCE METERS

#### Direct Reading

901.....4.5 Volts, 10,000 Ohms  
3 Flashlight cells required  
List Price \$3.75

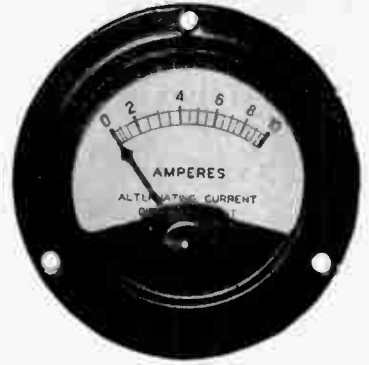
902...2 M.A., 9 Volts, 100,000 Ohms, 6 Flashlight cells required  
List Price \$5.25

### D.C. MILLIAMMETERS

Number	Range	List Price
835	0-2 Milliamps.	\$4.00
836	0-5 Milliamps.	3.25
837	0-10 Milliamps.	3.00
838	0-15 Milliamps.	2.50
839	0-25 Milliamps.	2.50
840	0-50 Milliamps.	2.50
841	0-100 Milliamps.	2.50
842	0-150 Milliamps.	2.50
843	0-200 Milliamps.	2.50
844	0-300 Milliamps.	2.50
845	0-400 Milliamps.	2.50
846	0-20-100 Milliamps.	3.25
847	0-15-150 Milliamps.	3.25
848	0-500 Milliamps.	2.50

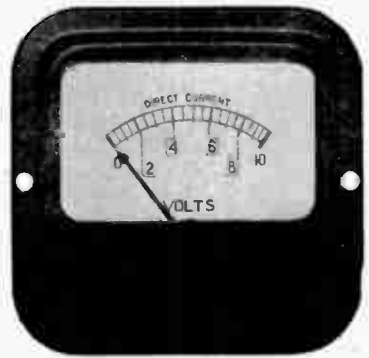
### D.C. AMMETERS

Number	Range	List Price	Number	Range	List Price
855	0-1 Amperes	\$2.50	868	0-20 Amperes	\$2.75
859	1-0-1 Amperes	2.50	863	20-0-20 Amperes	2.50
856	0-3 Amperes	2.50	865	0-30 Amperes	2.75
860	3-0-3 Amperes	2.50	867	30-0-30 Amperes	2.75
857	0-5 Amperes	2.50	869	0-40 Amperes	3.50
861	0-6 Amperes	2.50	866	0-50 Amperes	3.50
858	0-10 Amperes	2.50	925	50-0-50 Amperes	3.75
862	10-0-10 Amperes	2.50	926	60-0-60 Amperes	3.75
864	0-15 Amperes	2.50	927	75-0-75 Amperes	4.00



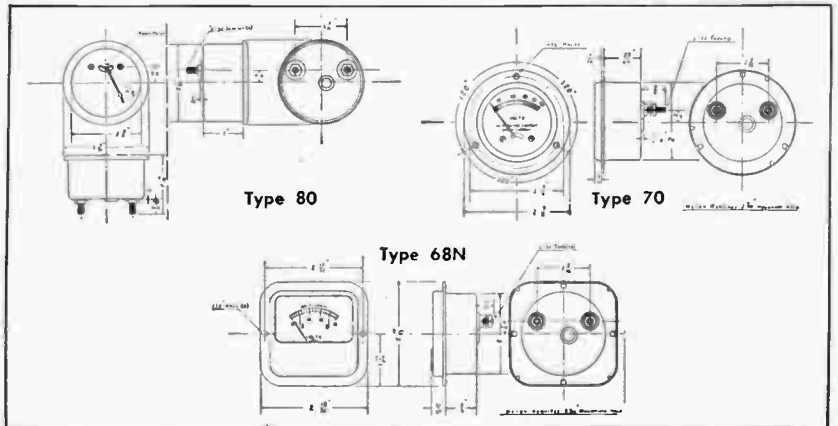
TYPE 78

Flush case, wide flange with apron. Standard finish black, screw holes in flange for mounting. Same dimensions as Type 70.



TYPE 68N

Flush case, square flange, standard finish black enamel. Screw holes in flange for mounting. Width flange  $2\frac{3}{8}$ ". Diam. case  $2\frac{1}{8}$ ". Depth case  $\frac{3}{8}$ ".



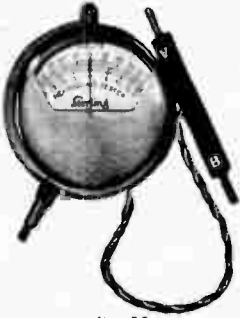
## TYPE 70 PRICES LISTED

Note: Specify if for magnetic steel panel mounting.  
Type 80, 88, 78, and 68N square flange case furnished for any range of meter at an additional list price of 25c each.

# Sterling Hearing Aid Battery Testers



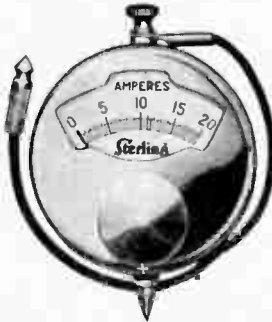
No. 31A



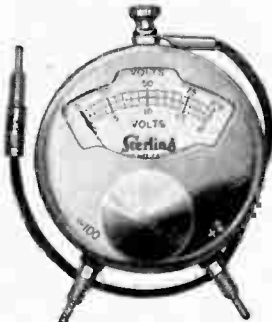
No. 10



No. 13



No. 23 AMMETER



No. 38A VOLTMETER

**NO. 31A DOUBLE VOLTMETER**—for special 30 or 45 v. "B" batteries and 1½ v. "A" batteries, scale 0-50 v. 1 v. div., scale 0-2 v. 1/10 v. divisions. Carefully engineered to impose the correct loads on the small delicate batteries used to operate vacuum tube hearing aids. Equipped with new STERLING flexible plugs. Price \$4.25

**NO. 32A DOUBLE VOLTMETER**—for special 30 v. "B" batteries and 1½ v. "A" batteries, scale 0-35 v. 1 v. div. scale 0-2 v. 1/10 v. divisions. Equipped with new STERLING flexible plugs. Price \$4.25

**NO. 10 DUAL CONTACT PROD METER** in pocket or desk model. Marked "A" at one contact and "B" at the other, the prod is simply inserted into the corresponding battery for quick and easy reading. No. 10 is for earlier type hearing aid batteries. Scale 50-0-50 v., 2 v. div. and 2-0-2 v., 1/10 v. div. No. 10 has one cord and one plug. Price \$5.00

**NO. 11** Formerly called the 10S this tester is used on 22½ v. and 30 v. "B" batteries. The load requirement is proportionately less than 1 mil. No. 11 has one cord and one plug. Price \$7.50

**NO. 12** This new meter has no spur and a new voltage scale 30-0-30 v., 1 v. div. and 2-0-2 v., 1/10 v. div. Made extra sensitive for the latest type miniature batteries. Load: on 22½ v. batteries approx. 565 micro-amperes, on 15 v. batteries approx. 375 micro-amperes, on 1½ v. batteries approx. 40 mils. Price \$7.50

**NO. 13 TRANSISTOR TYPE BATTERY TESTER** with voltage scale 0-7, 2/10 v. divisions. Tests up to five mercury batteries in series. Indicates battery strength with a minimum consumption of power. Price \$4.65

## Sterling Pocket Meters

Standard Line Direct Current Pocket Ammeters, Voltmeters and Voltammeters.

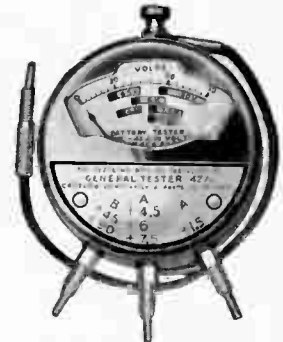
	Ammeters	LIST PRICE
No. 23	for photo-flash dry batteries. 0-20 amp. scale, ½ amp. div.	\$3.00
No. 24	for testing No. 6 dry cells. 0-35 ampere scale, 1 ampere divisions	\$2.75
No. 24A	for testing dry cells including the heavy-duty Ignition type of cell. 0-50 ampere scale, 1 ampere divisions	\$2.85

	Voltmeters	LIST PRICE
No. 33	for ordinary single cells and Flashlight cells, 0-3 v. scale 1/10 v. div.	\$2.85
No. 34	for "Hot Shot" and Radio batteries. 0-10 volt scale, 1/5 volt div.	\$2.85
No. 34A	for 12 volt batteries. 0-16 volt scale, ½ volt divisions	\$3.00
No. 34B	for ordinary 22½ v. radio "B" batteries. 0-30 v. scale, 1 v. divisions	\$3.00
No. 34C	for testing ordinary 45 v. radio "B" batteries. 0-50 v. scale, 1 v. div.	\$3.25

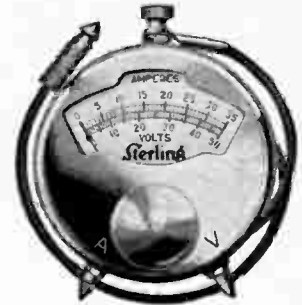
	Voltammeters	LIST PRICE
No. 44	for "Hot Shot" and Radio batteries and No. 6 dry cells, 0-35 ampere scale, 1 ampere divisions; 0-10 volt scale, 1/5 volt divisions	\$3.25
No. 44A	for 12 volt batteries and No. 6 dry cells. 0-35 ampere scale, 1 ampere divisions; 0-16 volt scale, ½ volt divisions	\$3.25
No. 45	for testing No. 6 dry cells and ordinary 45 volt radio "B" batteries. 0-35 ampere scale, 1 ampere divisions; 0-50 volt scale; 1 volt divisions	\$4.25
No. 45A	for testing dry cells including the heavy-duty Ignition type and ordinary 45 v. radio "B" batteries. 0-50 amp. scale, 1 amp. div.; 0-50 v. scale, 1 v. div.	\$4.50

### SPECIAL PURPOSE POCKET METERS

	Voltmeters	LIST PRICE
No. 37A	for 45 v. "B" batteries and 1.5 "A" batteries. Scale 0-50 v., 1 v. div. Scale 0-2 v., 1/10 v. div. Tests 45 v. "B" and 1½ v. "A" batteries	\$3.75
No. 38A	for 90 v. "B" batteries and 1.5 v. "A" batteries. Scale 0-100 v., 5 v. div. Scale 0-2 v., 1/10 v. div. Tests 45 v. and 90 v. "B" batteries and 1½ v. "A" batteries	\$4.00
No. 39A	for 90 v. and 135 v. "B" batteries and 1.5 v. "A" batteries. Scale 0-150 v., 5-v. div. Scale 0-2 v., 1/10 v. div. Tests 90 v. and 135 v. "B" batteries and 1½ v. "A" batteries	\$4.00
No. 40A	for 90 v. and 135 v. "B" batteries and 4.5 v., 6 v. and 7.5 v. "A" batteries. Scale 0-150 v., 5 v. div. Scale 0-10 v., 1/5 v. div. Tests 90 v. and 135 v. "B" batteries and 4½ v., 6 v. and 7½ v. "A" batteries	\$4.25
No. 42A	Graphic General Tester. Red and Green color chart for all standard batteries including 45 v. and 90 v. "B" batteries and 1.5 v., 4.5 v., 6 v., and 7.5 v. "A" batteries. 0-100 v. scale for special sizes of "B" batteries, 5 v. div. Tests all Portable Radio batteries	\$6.25



No. 42A GENERAL TESTER



No. 45 VOLTAMMETER

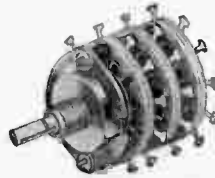
**STANDARD LINE**—Sterling's direct current pocket ammeters, voltmeters and voltammeters may be used in all kinds of battery testing, in railroad signal work, for photo flash purposes and in telephone and low-voltage electrical work generally. They are polarity indicators. Meters 2½" in diameter and 5/8" thick. Nickel finish. Standard package, ten instruments. Shipping Weight 4 lbs.



## RUGGEDIZED METERS

1½" Square

Meets MIL-M-10304 (SIG.C.) Accuracy within ±3% of full scale deflection. Basic d-c. ranges 0-100 d-c va, 0-1 d-c ma, and 0-10 d-c mv. RF and VU meters and other ranges also available.



## SUB-MINIATURE ROTARY SWITCH

Wafer size 1" x 7/8". Twelve positions per deck . . . one to three decks. One, two, three or four poles per deck. Shorting or non-shorting contacts. Positive indexing with 30° spacing.

# SPECIALISTS in Sub-Miniature Panel Meters

**FIRST** in U.S. to manufacture 1" diameter meter.

**FIRST** to produce 1" and 1½" illuminated meters.

**FIRST** to produce 1½" self-contained DB and VU meters.

**FIRST** to produce Miniature Side Indicators.

## 1" ROUND

MODEL 100



1" barrel diameter. Full 90° scale arc, scale length .770". VU, DB and illuminated meters also available with external accessory attached.



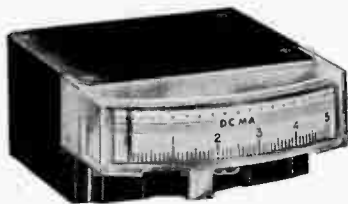
MODEL 150

## 1½" ROUND and SQUARE

1½" barrel diameter. Full 90° scale arc, scale length 1.322". Model 153 meets MIL-M-3823 requirements. Also available: self-contained VU and DB meters — illuminated meters with lamp housing attached.



MODEL 153



MODEL 1135  
Single Horizontal Mounting

## SIDE INDICATORS\*

- GREATER READABILITY
- REDUCES PANEL AREA 1/3 OVER CONVENTIONAL METER INSTALLATIONS OF SAME SCALE LENGTH
- HORIZONTAL OR VERTICAL MOUNTING

### THREE SIZES AVAILABLE:

MODEL 1120—Scale length 1.3".

MODEL 1135—Scale length 2.1".

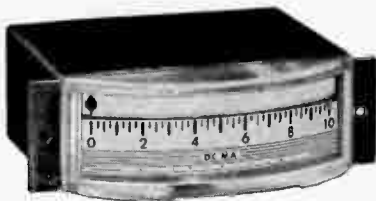
Front external zero adjuster.

MODEL 1145—Scale length 2.75".

Front external zero adjuster.



MODEL 1120

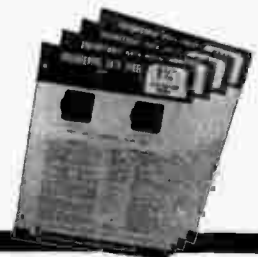


MODEL 1145  
Single Horizontal Mounting

International Instruments' components lead the way for miniaturization through practical engineering design.

\*Pat. Pending

ENGINEERING DATA SHEETS COMPLETELY DESCRIBING THESE INSTRUMENTS ARE AVAILABLE WRITE FOR YOUR COPIES TODAY.



# international instruments

INCORPORATED

NEW HAVEN 15, CONN., CABLE "INTERINST"

# MULTITESTERS and VTVM'S

More Ranges — More Accuracy — More Style for the Money

*Chicago*  
**INSTRUMENTS**



660



431-A



551-660



450-663



371-312



541



504-458-A



660A

## Model 660 (New) High Sensitivity VOM Net \$29.50

This latest design tested with one 20,000 ohms per volt in sections loading on D.C. volts will find a place in every TV tube caddy. Quality Components used throughout 1% resistors and shunts insures accuracy. Clean plastic meter with 4 color dial. Instant selection of correct meter scale by use of color coding. Scale to same color switch position. Ranges DC volts 0/25/10/25/100/250/1 K/ 2.5 kv.) AC volts 0/25/10/25/100/250/1K. Output; Same as AC volts. 250 MA; Ohms, 5. Ranges from 1 Ohm to 20 MEGOHMS. Size only 6 $\frac{3}{4}$ " x 5 $\frac{1}{4}$ " x 3 $\frac{1}{4}$ ". Complete with test leads.

## Model 660A (New) High Sensitivity VOM. Net \$27.50

Some sensitivity and ranges, except output, as Model 660. Case style and protective wrap around similar to Model 551. Designed for horizontal or angle use. Complete with test leads.

## Model 431-A AC-DC VOM Net \$21.50

A quick, rotary type range selector is featured in this popular multitester. Shunts and multipliers accurate to 1%. 1000 ohms per volt sensitivity. AC-DC Volt Ranges: 0-15/30/150/300/1500/3000. DC Amperes: 0-7.5. DC Milli-amperes: 0-1.5/150. Ohms Full Scale: 0-10,000/100,000/1 meg. Ohms Center Scale: 60/600 6000. Aluminum Case with protective aluminum cover. Size: 6 $\frac{1}{2}$ " x 3 $\frac{1}{4}$ " x 3 $\frac{1}{8}$ ".

## Model 450 Featherweight VOM

Net \$14.00

The original palm size multitester has retained its popularity over the years because of its accuracy, convenience and rugged dependability. Tiny molded case has no projections to catch in the

packet — a real pleasure to use! 1000 ohms per volt sensitivity. Same accuracy as larger Chicago instruments. DC Volts: 0-5/10/50/500/1000. Mills: 0-1. Ohms Full Scale: 5000/50,000/500,000. Ohms Center Scale: 30/300/3000. Size only 3-15/16" x 2 $\frac{3}{8}$ " x 2".

## Model 371 Simplex VOM Net \$7.00

An extremely useful iron vane type instrument that offers more features for its price than anything on the market. DC Volt Ranges: 0-3/15/30/300. DC Mills: 0-25. Ohms Full Scale: 10,000. Molded Bakelite Case only 1 $\frac{7}{8}$ " x 2 $\frac{3}{4}$ " x 3 $\frac{3}{8}$ ".

## Model 312 Simplex AC-DC VOM

Net \$9.00

Similar to Model 371 except for ranges. AC-DC Volts: 0-25/50/125/250. AC-DC Mills: 0-50. Ohms Full Scale: 100,000. Ohms Center Scale: 2400. Capacity: .05 to 15 MFD.

## Model 551 AC-DC VOM Net \$17.50

A radically new type of multitester offering more useful ranges than many instruments twice its size and price. All shunts and multipliers are within 1% accuracy and are mounted inside the actual meter case. 1000 ohms per volt sensitivity. Instrument protected by attractive black leather wrap-around case permanently attached. Compare these ranges: DC Volts: 0-5/10/50/100/500/2000. AC Volts: 0-12.5/25/125/250/1250. Lo Ohm Scale: 0-1000. Ohms Full Scale: 0-200,000/2 meg. DC Mills: 0-1/10/100. Size only 6 $\frac{1}{2}$ " x 5 $\frac{1}{2}$ " x 2 $\frac{3}{8}$ ".

## Model 458-A AC-DC VOM Net \$29.50

Exclusive design case slanted for better visibility. Ideal for bench use as large meter can easily be read at a distance. Contains every useful range including amperes. Appearance similar to Model 504 V.T.V.M. 1000 Ohms per volt sensitivity. AC-DC Volts: 0-2.5/10/50/250/1000/5000. AC-DC Mills: 0-1/10/100. AC Amps: 0-.05/1/5/10. DC Amps: 0-1/10. Ohms Full Scale: 1000/200,000/2 meg. Ohms Center Scale: 50/2250/22,500. Attractive brown Hammerloid finished case with leather carrying strap. Size 10 $\frac{1}{8}$ " x 6 $\frac{3}{4}$ " x 5 $\frac{1}{2}$ " over all.

## Model 504 Vacuum Tube Voltmeter

Net \$47.00

A complete service laboratory in an easy to read slant front case is yours in this top quality instrument. Precision 1% multipliers, ease of function-range selection and capacitance ranges are found only in instruments costing much more. Zero center for TV and FM alignment. Price includes DC probe and test leads. Sizes: 10" x 6 $\frac{3}{4}$ " x 6". 30 Ranges. AC-DC Volts 0-5/10/50/100/500/1000/5000. Decibels: -20 to +16. Ohms: 0-1000/10K/100K/1 meg/100 meg/1000 meg. Ohms Center Scale: 10/100/1000/10K/1 meg/10 meg. Capacitance: 50 to 5000 mmf./0.0005 to .05 mf./0.05 to 5 mf./5 to 50 mf./5 to 500 mf./50 to 5000 mf. DC Mills: 0-1/10/100/500.

## Model 504 Accessories

Model P-505 R.F. Probe. Extends range to 100 MC. Net \$6.50

Model P-506 High Voltage Probe. Extends range to 30,000. Net \$6.50

## Model 541 Unidial Electronic Multitester Net \$35.00

An extremely high grade compact VTVM with single knob selector for both function and range. 11 Megohm input. High torque jewelled meter with burn-out protection. Decibel scale. Polarity reverse for D.C. volts. Peak volts scale. 1% Resistors. Latest TV type rectifier. AC operation. A precision factory wired and tested instrument at the price of a kit. No batteries used on ohm function. Ranges: AC-DC Volts: 0-3/30/300/1200. Ohms: 1/5 ohm to 1000 meg. Size Only 6 $\frac{3}{4}$ " x 5 $\frac{1}{4}$ " x 3 $\frac{1}{4}$ ".

## Model 541 Accessories

Model 541-1 Hi-voltage Probe. Extends range to 30,000 V. Net \$6.50

## Model 541-2 Hi Frequency Probe

Extends frequency response to 200 MC Net \$6.50

Model 1030 Elite Test Leads for 450 Series. Polarized rubber insulation — Net \$.85

Model 1048 Test Leads for all Chicago Instruments. Net \$1.00

Texon carrying case for Model 421D Net \$3.90

Texon carrying case for Model 431A Net \$3.90

Texon carrying case for Model 541 Net \$5.00

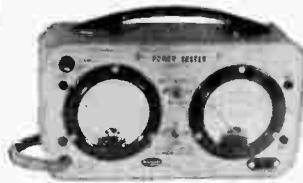
**CHICAGO INDUSTRIAL INSTRUMENT COMPANY**

# Chicago INSTRUMENTS

## TUBE CHECKERS AND SPECIAL PURPOSE INSTRUMENTS



531-532 TUBE CHECKER



543



454



4710



501  
SELECTOHM



545

### Model 532 Tube Checker and Service Unit Net \$99.00

Consists of an up-to-minute plate conductance tube checker, an AC-DC Volt-Ohmmeter, a condenser leakage tester, selenium rectifier and dry battery tester, all in one attractive luggage type carrying case. The tube checker features a patented quick set-up key arrangement that tests diodes as diodes, triodes as triodes and pentodes as pentodes. Illuminated roll chart lists all receiving tube types. Lid contains handy chrome mirror to assist in making picture tube adjustments. Volt Ohmmeter ranges: AC-DC Volts: 0-10/100/500/1000. Ohms: 0-5000/50,000/500,000/50 meg. Readings are all made on modern, 5" square lucite meter. Add the cost of each instrument in this attractive case and you will recognize the outstanding value the Model 532 offers. Price includes test leads and picture tube adapter, Fabricoid covered case and instruments. Dimensions: 16" x 13" x 7½".

### Model 531 Tube Checker and Battery Tester Net \$74.00

Similar to the Model 532 above but for tube, dry battery and selenium rectifier testing only. Battery tester is the latest design which tests all popular types under rated load. Price includes test leads, picture tube adapter, simulated leather covered wood carrying case and instructions. Dimensions: 16" x 13" x 7".

### Model 543 Appliance Power Tester. Net \$32.00

Shows volts, amps and watts simultaneously for accurate analysis of all types of electrical appliances. Provision for shunting out ammeter on motor starting current. Highest quality jewelled meters. AC Volts: 0-150/300. AC Amps: 0-5/15. AC Watts: 0-600/1200 and 0-1750/3500. Dimensions: 11½" x 6" x 4".

### Model 454 Featherweight Dry Battery Tester Net \$12.00

Tests all portable radio batteries and flashlight type dry batteries under standard factory specified load. Volt Ranges: 1.5/6/15/22.5/30/45/67.5/90. Price includes test leads. Dimensions: 3-15/16" x 2¾" x 2".

### Model 4710 Portable or Counter Type Dry Battery Tester Net \$18.00

Boost your profitable dry battery sales with this instant reading instrument. Tests Radio and Flashlight batteries according to factory specifications. Volt Ranges: 1½ to 10 and 10 to 150. Complete with test leads. Dimensions: 6¾" x 5¼" x 3¼".

### Model 545 Photo-Flash Battery Tester Net \$17.50

The only tester of its type which will properly test photoflash batteries from 1½ V to 510 V under individual loadings.

### Model 667—1½ v. Photoflash Battery Tester Net \$12.50

Same size and appearance as Model 454—pocket size only tester of its kind. Uses U.S. Bureau of Standards loading. Ideal for commercial photographers, photo enthusiasts, and for photo flash battery merchandizing. Uses rugged jeweled meter. Tests "AA", "C", and "D" type batteries only. Size 3½" x 2¾" x 2".

### Model 501 Selectohm Linear Potentiometer Net \$10.00

Precision wire wound potentiometer is of laboratory quality but is priced so the service man and industrial user may take advantage of its many uses. Widely used as a resistance substitute for determining value of blackened, burned out resistors, for making quick set-ups in circuit design, decade box, divider network, etc. 100,000 ohm linear scale is accurately calibrated with 500 ohm markings. Rated at 25 watts.

# Chicago INSTRUMENTS

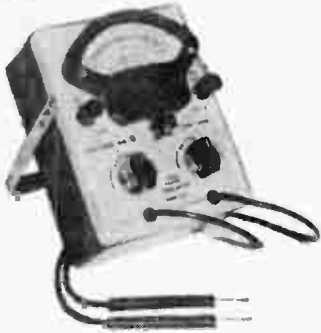
CHICAGO INDUSTRIAL INSTRUMENT CO.



## INSTRUMENTS FOR INDUSTRIAL APPLICATION

# Chicago

INSTRUMENTS



555

**Model 555 Centi-Low Range Ohmmeter**  
Net \$49.50

An instrument so sensitive it will detect a shorted winding in a motor or generator, detect poor solder connections and switch contacts. Never before available except in costly laboratory set-ups. The Model 555 is priced for the motor and generator maintenance man, factory inspection department as well as for the laboratory. Powered by self-contained long life dry battery external batteries or power supply when ohmmeter is continuously operated. Low Ohm Ranges: lowest increment .01 ohms, center .5 ohms, high 5 ohms. Ohms Range: lowest increment 0.2 ohms, center 5 ohms, high .50 ohms. Price includes Kelvin principle test leads which introduce no error into the indicated meter reading and a special leatherette carrying case. Over all size: 7" x 5½" x 3¾".

**Model 510 (New) Moisture Tester**  
Net \$27.50

This pocket size tester is invaluable for determining electrical conductivity of surfaces such as plaster, wood, etc. For dryness before painting. It has proven its value for 7 years for this application. This year's model, 20 times more sensitive, is expected to find increasing applications in industry where duplicating satisfactory mixes employing water is a factor, such as match plates, castings, general foundry, plastic moulding compounds; cement mixes, etc. Housed in black plastic case. Size 3½" x 2¾" x 2". Complete with probes.



663

**Model 663 (New) General Utility AC-DC-VOM**  
Net \$18.50

Same as Model 450 except for ranges. AC volts and output—0/15/30/150/300/750.

DC volts—0/15/30/150/300/750.

Ohm full scale 100 K. Center scale 3500. Co. Complete with test leads.

**Model 663 with Leather Case.**  
Net Price \$23.50



431A



510

**Model 533A Resistance Thermometer**  
Net \$58.00

Latest design bridge thermometer, direct reading scales, color coded to reduce error. Large 4½" sq. meter. Wire wound bridge resistors. Compensated for ambient temperature variation with NTC resistor. All wiring cabled and color coded. Carrying handle locks to form easel for angular positioning.

Ranges (50° F/ plus 212° F)  
Low (50° C/ plus 100° C)  
High (Plus 212°F/ plus 600°F)  
(Plus 100°C/ plus 300°C)

Size 6¾" x 5¼" x 3¼"

Supplied with 1 general purpose probe, instructions, and handy felt-lined leatherette carrying case.

**Custom Test Equipment**

We also design and build test units to fit your individual requirements; resistance bridges, calibrating equipment, industrial battery life testers, etc.



533A

**Model 431-A AC-DC VOM** Net \$21.50

A quick, rotary type range selector is featured in this popular multitester. Shunts and multipliers accurate to 1%. 1000 ohms per volt sensitivity. AC-DC Volt Ranges: 0-15/30/150/300/1500/3000. DC Amperes: 0-7.5. DC Milli-ampers: 0-1.5/150. Ohms Full Scale: 0-10,000/100,000/1 meg. Ohms Center Scale: 60/600/6000. Aluminum Case with protective aluminum cover. Size: 6½" x 3¼" x 3¾".

### CHICAGO INDUSTRIAL INSTRUMENT COMPANY

# Shurite PANEL METERS



Model 850



Model 950



Model 950  
with Zero Adjuster



Model 550



Model 650

## O-1 DC MILLIAMPERES

Sensitive-type meters such as Stock No. 9300Z, 0-1 DC Ma. with approximately 1000 ohms internal resistance, and Stock No. 9332Z, 0-3 DC Ma., 500 ohms internal resistance, open new design possibilities. Where the necessarily more costly D'Arsonval permanent magnet meter was formerly thought to be the only choice, these Shurite variations are now used in many circuits. Substantial quantity production makes moderate prices possible.

Shurite panel meters are attractive, rugged, dependable instruments with accuracy well within 5%. All models have metal cases with telephone-black fronts except the 850 which is plastic. All models fit 2-5/32" hole. Model 850 also fits any smaller hole down to 2-1/64". DC meters are polarized-vane solenoid type, or moving-magnet construction when indicated, AC meters are double-vane repulsion type with jeweled bearing. Although the jewel construction costs more to build, it pays off by providing continuing accuracy during a longer useful life. All are guaranteed.

- **GUARANTEE:** Meters are guaranteed to users against defective workmanship and material, and will be repaired or replaced if sent to the factory postpaid with 40¢ handling charge within one year after purchase.
- **ALL-METAL DIALS**—age and moisture resistant, lithographed in black on white for high visibility.
- **STURDY DESIGN**—with husky new coil frames designed to prevent breakage, rigidly mounted in cases with anti-turning hex head studs. Interchangeable in other respects with a popular brand formerly available.
- **MODERN APPEARANCE**—with concealed coils and new raised dial design, enhancing appearance and greatly increasing readability.
- **WIDE SELECTION**—Shurite offers the broadest line of standard meters in the economy-priced field. Distributor stocks are backed by an extensive factory inventory.

**TYPICAL USES:** Shurite products, with their rugged design, and ability to duplicate readings, enjoy wide acceptance in the electronic and electrical fields for transmitters, receivers, TV antenna rotator controls, battery indicators, appliances, power sources, battery eliminators, electric fence controllers, and the very popular basic meters in radio test kits, battery voltage indicators on emergency lighting, burglar and fire alarm systems, output meters on rectifiers, rate-of-charge indicators, testers for hearing aid batteries and their chargers, ammeters for plating sets, and polarity indicators for metals analysis, automotive test equipment to pin-ball circuit testers, and well-depth indicators. Shurite has long been the favorite brand for hobbies and experiments.

Prices NET, F.O.B. New Haven, Conn. Individually Boxed, Domestic Pocked, Effective July 22, 1957

## DC MILLIAMMETERS

RANGE	RESIST.	Model	Model	Model	Model 850*		
		550*	650*	950	Stock No.	Net Each	
Ma.	Approx Ohms	Stock No.	Stock No.	Stock No.	Net Each	Stock No.	Net Each
0-1**	1000	5300Z	6300Z	9300Z	\$3.50	8300Z	\$3.70
0-3L**	500	5332Z	6332Z	9332Z	3.15	—	—
0-3	4800	5301	6301	9301	2.60	—	—
0-5	3475	5302	6302	9302	2.35	8302	2.55
0-10	870	5303	6303	9303	2.20	8303	2.40
0-15	485	5304	6304	9304	1.90	8304	2.10
0-25	172	5305	6305	9305	1.85	8305	2.05
0-50	46	5306	6306	9306	1.85	8306	2.05
0-100	10.4	5307	6307	9307	1.85	8307	2.05
0-150	4.7	5308	6308	9308	1.85	8308	2.05
0-200	2.8	5309	6309	9309	1.85	8309	2.05
0-300	1.5	5310	6310	9310	1.85	8310	2.05
0-400	.46	5311	6311	9311	1.85	—	—
0-500	.30	5312	6312	9312	1.85	8312	2.05

\*\* Sensitive type, note internal resistance. Moving-magnet construction, patent pending. Price includes zero built-in adjuster.

\* For zero adjuster add 35¢ to price and Z to stock number.

No zero adjuster on Model 950 stock models; except 9300Z and 9332Z.

## AC MILLIAMMETERS

RANGE	RESIST.	Model	Model	Model	Model 850*		
		550	650	950	Stock No.	Net Each	
Ma	Approx Ohms	Stock No.	Stock No.	Stock No.	Net Each	Stock No.	Net Each
0-10	4800	5607	6607	9607	\$3.30	—	—
0-25	750	5601	6601	9601	3.00	—	—
0-50	150	5602	6602	9602	3.00	—	—
0-100	37	5603	6603	9603	3.00	8603	3.20
0-250	5.4	5604	6604	9604	3.00	8604	3.20
0-500	1.34	5605	6605	9605	3.00	—	—

No zero adjuster on AC meters.

## DC AMMETERS

RANGE	RESIST.	Model	Model	Model	Model 850*		
		550*	650*	950	Stock No.	Net Each	
Amps	Approx Ohms	Stock No.	Stock No.	Stock No.	Net Each	Stock No.	Net Each
0-1	.105	5201	6201	9201	\$1.85	—	—
0-3	.02 Max	5202	6202	9202	1.85	—	—
0-5	.02 Max	5203	6203	9203	1.85	8203	\$2.05
0-8	.02 Max	5204	6204	9204	1.85	—	—
0-10	.02 Max	5205	6205	9205	1.85	8205	2.35
0-15	.02 Max	5206	6206	9206	1.85	—	—
0-25	.02 Max	5207	6207	9207	2.30	8207	2.50
0-50	.02 Max	5208	6208	9208	2.50	—	—
3-0-3	.02 Max	5210	6210	9210	2.05	—	—
5-0-5	.022	5211	6211	9211	2.05	—	—
6-0-6	.02 Max	5212	6212	9212	2.05	—	—
10-0-10	.02 Max	5213	6213	9213	2.30	—	—
20-0-20	.02 Max	5214	6214	9214	2.35	8214	2.55
30-0-30	.02 Max	5215	6215	9215	2.50	—	—
50-0-50	.02 Max	5216	6216	9216	2.60	—	—

\* For zero adjusters add 35¢ to price and Z to stock number.

No zero adjuster on Model 950 stock models.

## AC AMMETERS

RANGE Amps	RESIST. Approx Ohms	Model 550*	Model 650	Model 950	Model 850*	
		Stock No.	Stock No.	Stock No.	Net Each	Net Each
0-1	.42 Max	5501	6501	9501	\$2.95	—
0-3	.072 Max	5502	6502	9502	2.95	—
0-5	.041 Max	5503	6503	9503	2.95	8503 \$3.15
0-0.10	.02 Max	5504	6504	9504	2.95	8504 \$3.15
0-15	.02 Max	5508	6508	9508	2.95	8508 3.15
0-30	.02 Max	5505	6505	9505	3.20	—
0-50	.02 Max	5506	6506	9506	3.40	—

No zero adjuster on AC meters.

## DC VOLTMETERS

RANGE Volts	RESIST. Approx Ohms	Model 550*	Model 650*	Model 950	Model 850*	
		Stock No.	Stock No.	Stock No.	Net Each	Net Each
0-1	10	5101	6101	9101	\$1.85	—
0-3	93	5102	6102	9102	1.85	—
3-0.3	250	5103	6103	9103	1.95	—
0-5	300	5104	6104	9104	1.85	—
0-6	390	5105	6105	9105	1.85	—
0-8	600	5106	6106	9106	1.85	—
0-10	880	5107	6107	9107	1.85	8107 \$2.05
0-15	2370	5108	6108	9108	1.85	8108 2.05
0-20	3500	5121	6121	9121	1.90	—
0-25	1240	5109	6109	9109	2.15	8109 2.35
0-25**	5800	5110	6110	9110	2.75	—
0-50	2540	5122	6122	9122	2.30	8122 2.50
0-50H**	11800	5111	6111	9111	2.95	—
0-75	3740	5112	6112	9112	2.30	—
0-100	5140	5113	6113	9113	2.30	—
0-100H**	23800	5114	6114	9114	3.00	—
0-150	7540	5115	6115	9115	2.35	8115 2.55
0-150H**	34800	5116	6116	9116	3.10	—
0-300H**†	74800	5117	6117	9117	3.20	—
0-500H**†	124800	5118	6118	9118	3.45	—
0-750H**†	184800	5119	6119	9119	4.05	—

\* For zero adjuster add 35¢ to price and Z to stock number.  
No zero adjuster on No. 950 stock models.

\*\* H denotes high resistance.

† Supplied with external resistors.

## AC VOLTMETERS

RANGE Volts	RESIST. Approx Ohms/Volts	Model 550	Model 650	Model 950	Model 850*	
		Stock No.	Stock No.	Stock No.	Net Each	Net Each
0-4	11	5401	6401	9401	\$3.00	—
0-6	15.8	5402	6402	9402	3.00	—
0-10	27	5403	6403	9403	3.00	—
0-15	32.3	5404	6404	9404	3.00	—
0-25	53	5412	6412	9412	3.00	—
0-50	96	5405	6405	9405	3.60	8405 3.80
0-150	100	5406	6406	9406	3.60	8406 3.80
0-300*	100	5407	6407	9407	4.25	8407 4.45
0-600*	100	5408	6408	9408	4.65	—
0-750*	100	5409	6409	9409	5.25	—

\* Supplied with external resistors. No zero adjuster on AC meters.

## RESISTANCE METERS

RANGE Ohms	Volts	Model 550*	Model 650*	Model 950	Model 850*	
		Stock No.	Stock No.	Stock No.	Net Each	Net Each
10,000	4.5**	5701	6701	9701	\$2.45	8701 \$2.65

\* For zero adjuster add 35¢ to price and Z to stock number.  
No zero adjuster on No. 950 stock models.

\*\* Requires 3 flashlight cells for resistance readings but does not require resistor for voltage readings.



Stock 4151

## POCKET TYPE METERS

A typical pocket meter in bright-plated Model 450 case is this transistor battery tester, 0-7 DC volts. Please ask for Catalog 63 which includes Battery Testers (Pocket Type) which have stock numbers beginning with the digit 4. Stock No. 4151, 0-7 DC volts, approx. resistance 670 ohms.....\$2.30

Prices NET, F.O.B. New Haven, Conn. Individually Boxed, Domestic Packed, Effective July 22, 1957.

# SHURITE METERS

The MASTER — 22nd Edition

Net

NEW HAVEN 8, CONNECTICUT

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Page G-397

## HANDY AC LINE VOLTAGE TESTER



Stock 5406-LT—Here's how to use this highly popular line tester: push in the plug and read line voltage, then plug in the TV set, ironer, toaster, washer, air-conditioner, or other appliance and note the new reading. Find (and demonstrate) voltage drop or inadequate wiring as a major source of service problems with this compact, sturdily-built device. Cord is permanently attached to metal-cased meter which tests single outlets without accessories. Range 0-150 Volts A.C. Standard package of 6 individually boxed meters includes attractive counter display at no extra charge. Per meter.....\$3.95

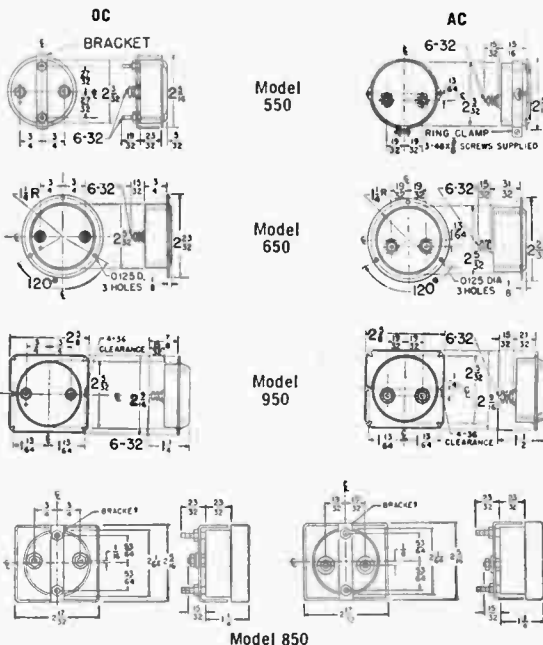
## FLANGE ADAPTER RING

To adapt any Model 550 (round) meter to look like Model 650, attach this 2 3/4" flange from front of panel.

Model 5-A, Standard black, with hardware, each.....\$0.18

## MOUNTING DETAILS

All cases mount flush, using 2 3/2" hole (850 Series can also use 2 3/4" hole); most standard ranges use 6-32 studs.



## IMPORTANT — HOW TO ORDER

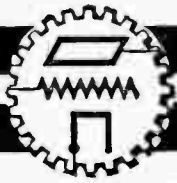
For all standard models, give: (1) Model Number, (2) Range, (3) Stock Number. If Model number and stock number are not stated, Model 550 will be supplied.

**ZERO ADJUSTERS (Z)** For DC meters, zero adjusters are available on Models 550, 650 and 850, but on only two Models 950 — 9300Z and 9332Z. For AC meters, zero adjusters are available only on Model 850. When ordering, add Z to stock number. Example: Model 550-DC voltmeter, 0-1 volt range without zero adjuster is 5101. With zero adjuster, it is 5101Z.

**PANEL CALIBRATION (S)** Meters are calibrated for non-magnetic panels. If for magnetic (steel) panel mounting, specify thickness and overall size of panel, and add -S to stock number when ordering, as 5101-S.

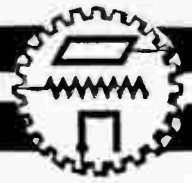
**VISCOSITY DAMPING (V)** Careful application of new silicone compound on bearing surfaces damps pointer overtravel. Add V to stock number, as 5406V, and 5 cents to price. Not regularly stocked; available only on quantity order.

**SEE YOUR DISTRIBUTOR** Besides carrying most types, and being able to obtain your other needs promptly, your authorized Shurite distributor of electronic parts is qualified to suggest the right meter for your need.



# Industrial Instruments

## Electrical Test Equipment



Model RN-1

### WHEATSTONE BRIDGE

● A carefully engineered bridge made for all around use in lab., plant, or field. All models contain own 4½-volt battery power supply and galvanometer. Provision for external batteries and galvanometer if desired. All models have ratio dial settings of .001, .01, .1, 1, 10, 100, and 1000 as well as built-in resistance standards of 1, 10, 100, and 1000-ohm decades. Ratios are guaranteed to .05% tolerance. Resistance dial resistors to ±0.1% of nominal value except 1 ohm dial (0.25%). Self-cleaning, four-leaf phosphor bronze wiper switches with detent mechanism mounted below panel. Galvanometer of well-known moving-coil type. Separate binding posts for use of external galvanometer if desired, and for use of bridge as resistance decade. Hardwood case with removable cover. 9¼" x 7½" x 6¼" h. Wt. 9¼ lbs. net; 12¼ lbs. shipping.

**MODEL RN-2.** Standard Portable Wheatstone Bridge, complete with batteries Net Price \$160.00

**MODEL RN-2.** Standard Portable Wheatstone Bridge with Murray & Varley Loops Net Price \$175.00

**MODEL RN-3.** Same as RN-2 but with additional ratio settings of 1/9, ¼ and varying galvanometer sensitivity control Net Price \$205.00

### RESISTANCE DECADES

● Available in a wide variety of standard models. Accuracy at 1.0 and 0.1 ohm steps is ±0.25%. Accuracy of all other resistors is ±0.1% of indicated value. Self-cleaning, molded nylon and silver plated brass switch mounted below panel. Zero resistance is less than .003 ohms per dial. Hardwood case. Models DR-1D to DR-4D, 6" x 4½" x 4½" h. Weight 4 lbs. net, 6 lbs. shipping. Models DR-50D to DR-52D, 9" x 6" x 4½" h. Weight 5 lbs. net, 7 lbs. shipping. Models DR-70D and DR-71D, 17¼" x 5" x 4½" h. Weight 6 lbs. net, 7 lbs. shipping.

Model No.	Total Resistance Ohms	Decade Steps	Accuracy	Price
DR-1D	1,110,000	10x(1,000+10,000+100,000)	±0.1%	\$ 84.00
DR-2D	111,000	10x(100+1,000+10,000)	±0.1%	68.00
DR-3D	11,100	10x(10+100+1,000)	±0.1%	65.00
DR-4D	1,110	10x(1+10+100)	±0.25 & ±0.1%	60.00
DR-50D	11,111	10x(.1+1+10+100+1,000)	±0.25 & ±0.1%	98.00
DR-51D	111,110	10x(1+10+100+1,000+10,000)	±0.25 & ±0.1%	105.00
DR-52D	1,111,100	10x(10+100+1,000+10,000+100,000)	±0.1%	125.00
DR-70D	1,111,111	10x(.1+1+10+100+1,000+10,000+100,000)	±0.25 & ±0.1%	150.00
DR-71D	11,111,110	10x(1+10+100+1,000+10,000+100,000+1,000,000)	±0.25 & ±0.1%	195.00



### CAPACITANCE DECADES

● Instrument calibrated directly in capacitance so that reading from left to right, the dial settings will give the exact value in microfarads. Progressive adjustment in .01, .001, or .0001 mfd. steps depending on model. .001 to 11.1 mfd. can be obtained by group assembly. All units employ paper or mica capacitors of highest quality and stability. Enclosed in hardwood case. DK-4, DK-10, and DK-2A, 8" x 5½" x 7½" H.; wt. 8 lbs.; 10 lbs. shipping. DK-5A, DK-11A, 10¾" x 7¾" x 7½" H.; wt. 10 lbs. net; 12 lbs. shipping.



Model	Capacitance Mfd. Steps	Accuracy	Dielectric Section	P.F.	Peak Volts	Price
DK-5A	11.1 in .01	±1%	.01 mica	.2%	700 DC	\$105.00
		±3%	.1 paper	1%	400 DC	
		±3%	1.0 paper	1%	400 DC	
DK-4	1.11 in .001	±1%	.001 mica	.2%	700 DC	88.00
		±1%	.01 mica	.2%	700 DC	
		±3%	.1 paper	1%	400 DC	
DK-2A	1.11 in .001	±1%	mica	.2%	700 DC	198.00
			throughout		500 AC	
					60 cycle	
DK-10	0.111 in .0001	±5% or	mica	*.2%	700 DC	125.00
		10 mmfd.	throughout		500 AC	
					60 cycle	
DK-11A	11.1 in .01	±.5%	.01 mica	.2%	700 DC	205.00
		±.5%	.1 mica	.2%	500 AC	
		±2%	1.0 paper		60 cycle	
					1%	400 DC

\*Except .001 section which is ±2%

**INDUSTRIAL INSTRUMENTS, INC. • CEDAR GROVE, N. J.**



### TYPE P — VOLTAGE BREAKDOWN TESTERS



P-2

AC and DC Breakdown Tester

The Type P Series Voltage Breakdown Testers are designed for safe, accurate and fast testing of materials, components and circuits both in the laboratory and on the production line. All types have self-contained metered high-voltage power supply with safety features including interlock switches and pilot warning lights. Load current is limited to values shown in table below. Output voltage continuously variable over range listed for each model.

#### ELECTRICAL SPECIFICATIONS AND PRICES

Model	VOLTAGE RANGE		CURRENT RANGE		Price
	AC volts RMS	DC volts	AC	DC	
P1		0-4000		5 ma (max)*	\$198.00
P2	0-3000	0-4000	7 ma (max)	5 ma (max)*	240.00
P3A	0-8000	0-10,000	60 ma (max)	50 ma (max)*	465.00

\*Models P1, P2, and P3A incorporate a variable series resistance which limits short circuit current independently of voltage.

Other power supplies up to 100 KV can be supplied to your specifications. Send complete details for quotation.

### TYPE L — MEGOHMMETERS

Type L Megohmmeters are used for both laboratory and high speed production testing of motor and transformer winding insulation, cable insulation, high value resistors, capacitor insulation, and for the measurement of surface and volume leakage of insulating materials. These instruments meet the requirements for testing insulation resistance in accordance with ASTM D-257, and Federal Specification LP-406B, Method 4041.

#### ELECTRICAL SPECIFICATIONS AND PRICES

Model	TEST Voltage	RANGE		POWER Consumption	WEIGHT		Size	Price
		Low in meg.	High in meg.		Net	Ship.		
L-2A	200 fixed	1	100,000	40 Watts	12	15	15"x8"x10"	\$200.00
L-4A	200 and 500 fixed	1 2.5	100,000 250,000	52 Watts	14	17	"	230.00
L-6B	100 to 600*	1	100,000	82 Watts	15	18	"	295.00
L-7	100 to 600*	1	5x10 <sup>12</sup>	75 Watts	20	24	8"x10½"x11½"	365.00

\*Continuously variable, built-in voltmeter for accurate setting.

Type L-7 General-Purpose Megohmmeter incorporating special features for measurement of capacitor leakage and high insulation resistance.



### TYPE LRO-1 LOW RESISTANCE OHMMETER

The Type LRO-1 Low Resistance Ohmmeter is useful for the measurement of resistance of sensitive relay contacts, fuses, bus-bars and connections, rail joints, pipe or conduit, switch contacts, transformer windings, motor windings, bonding, grounding and similar applications. The current through the unknown resistance never exceeds 110 ma. Price \$135.00

#### FEATURES:

Extreme accuracy for the most critical measurements. • Entirely self-contained, including 1½ volt flashlight battery. • Ranges: .1 ohm, 1 ohm and 10 ohms. 100 meter scale divisions. • Accuracy of plus/minus 1½% on LRO-1 based on full scale values. • Maximum current through piece under test = 0.11 amp.



# SUPERIOR TEST EQUIPMENT

The New  
Model TD-55

## TUBE TESTER

FOR } The Experimenter or Part-time Serviceman, who has delayed purchasing a higher priced Tube Tester.  
} The Professional Serviceman, who needs an extra Tube Tester for outside calls.  
} The Busy TV Service Organization, which needs extra Tube Testers for its field men.

Speedy, yet efficient operation is accomplished by:

1. Simplification of all switching and controls.
2. Elimination of old style sockets used for testing obsolete tubes (26, 27, 57, 59, etc.) and providing sockets and circuits for efficiently testing the new Naval and Sub-Minor types.

**YOU CAN'T INSERT A TUBE IN WRONG SOCKET**  
It is impossible to insert the tube in wrong socket when using the new Model TD-55. Separate sockets are used, one for each type of tube base.

### CHECKS FOR SHORTS AND LEAKAGES BETWEEN ALL ELEMENTS

The Model TD-55 provides a super sensitive method of checking for shorts and leakages up to 5 Megohms between any and all of the terminals. Continuity between various sections is individually indicated.

### ELEMENTAL SWITCHES ARE NUMBERED IN STRICT ACCORDANCE WITH R.M.A. SPECIFICATION

The 4 position fast-action snap switches are all numbered in exact accordance with the standard R.M.A. numbering system. Thus, if the element terminating in pin No. 7 of a tube is under test, button No. 7 is used for that test. "FREE-POINT" ELEMENT SWITCHING SYSTEM  
Any pin may be used as a filament pin and the voltage applied between that pin and any other pin, or even the "top cap."



Model TD-55 complete with operating instructions, charts and streamlined case. **\$26<sup>95</sup>** NET

The New Model TW-11

## STANDARD PROFESSIONAL TUBE TESTER



- Tests all tubes, including 4, 5, 6, 7, Octal, Lock-in, Hearing Aid, Thyatron, Miniatures, Sub-miniatures, Novals, Sub-minors, Proximal fuse types, etc.
- Uses the new self-cleaning Lever Action Switches for individual element testing. Because all elements are numbered according to pin-number in the RMA base numbering system, the user can instantly identify which element is under test. Tubes having tapped filaments and tubes with filaments terminating in more than one pin are truly tested with the Model TW-11 as any of the pins may be placed in the neutral position when necessary.
- The Model TW-11 does not use any combination type sockets. Instead individual sockets are used for each type of tube. Thus it is impossible to damage a tube by inserting it in the wrong socket.
- Free-moving built-in roll chart provides complete data for all tubes. All tube listings printed in large easy-to-read type.

- **NOISE TEST:** Phono-jack on front panel for plugging in either phones or external amplifier will detect microphonic tubes or noise due to faulty elements and loose internal connections.

### EXTRAORDINARY FEATURE

- **SEPARATE SCALE FOR LOW-CURRENT TUBES** — Previously, on emission type tube testers, it has been standard practice to use one scale for all tubes. As a result, the calibration for low-current types has been restricted to a small portion of the scale. The extra scale used here greatly simplifies testing of low-current types.

The Model TW-11 operates on 105-130 Volt 60 Cycles A.C. Comes housed in a beautiful hand-rubbed oak cabinet complete with portable cover.

**\$47<sup>50</sup>** NET

The New Model TV-12

## TRANS-CONDUCTANCE TUBE TESTER



ALSO TESTS TRANSISTORS

### TESTING TUBES

• **Employs improved TRANS-CONDUCTANCE circuit.** An in-phase signal is impressed on the input section of a tube and the resultant plate current change is measured. This provides the most suitable method of simulating the manner in which tubes actually operate in Radio & TV receivers, amplifiers and other circuits. Amplification factor, plate resistance and cathode emission are all correlated in one meter reading.

- **NEW LINE VOLTAGE ADJUSTING SYSTEM.** A tapped transformer makes it possible to compensate for line voltage variations to a tolerance of better than 2%.
- **SAFETY BUTTON** — protects both the tube under test and the instrument meter against damage due to overload or other form of improper switching.
- **NEWLY DESIGNED FIVE POSITION LEVER SWITCH ASSEMBLY.** Permits application of

separate voltages as required for both plate and grid of tube under test, resulting in improved Trans-Conductance circuit.

### TESTING TRANSISTORS

A transistor can be safely and adequately tested only under dynamic conditions. The Model TV-12 will test all transistors in that approved manner, and quality is read directly on a special "transistor only" meter scale. The Model TV-12 will accommodate all transistors including NPN's, PNP's, Photo and Tetrodes, whether made of Germanium or Silicon, either point contact or junction contact types.

Model TV-12 housed in handsome rugged portable cabinet sells for only ..

**\$72<sup>50</sup>** NET

The New Model TV-40

## C.R.T. TUBE TESTER

A complete picture tube tester for little more than the price of a "make-shift" adapter!! Tests ALL magnetically deflected tubes . . . in the set . . . out of the set . . . in the carton!!

The Model TV-40 is absolutely complete. Self-contained, including built-in power supply, it tests picture tubes in the only practical way to efficiently test such tubes; that is by the use of a separate instrument which is designed exclusively to test the ever increasing number of picture tubes!

### SPECIFICATIONS

- Tests all magnetically deflected picture tubes from 7 inch to 30 inch types.
- Tests for quality by the well established emission method. All readings on "Good-Bad" scale.
- Tests for inter-element shorts and leakages up to 5 megohms.
- Test for open elements.

**EASY TO USE:** Simply insert line cord into any 110 volt A.C. outlet, then attach tester socket to tube base (Ion trap need not be on tube). Throw switch up for quality test . . . read direct on Good-Bad scale. Throw switch down for all leakage tests.

Model TV-40 C.R.T. Tube Tester comes absolutely complete — nothing else to buy. Housed in round cornered, molded bakelite case. Only .....

**\$15<sup>85</sup>** NET



Manufactured by

**SUPERIOR INSTRUMENTS CO.**  
NEW YORK 67, N. Y.



# SUPERIOR TEST EQUIPMENT



The New Model 770-A

The FIRST POCKET-Sized

## VOLT-OHM MILLIAMMETER

USING THE NEW "FULL-VIEW" METER

71% MORE SCALE AREA!!

Yes, although our new FULL-VIEW D'Arsonval type meter occupies exactly the same space used by the older standard 2 1/4" Meters, it provides 71% more scale area. As a result, all calibrations are printed in large easy-to-read type and for the first time it is now possible to obtain measurements instead of approximations on a popular priced pocket-sized V.O.M.

**FEATURES:**

- Compact—measures 3 1/4" x 5 1/2" x 2 1/4"
- Uses "Full View" 2% accurate, 850 Microampere D'Arsonval type meter
- Housed in round-cornered, molded case
- Beautiful black etched panel. Debossed letters filled with permanent white, insures long-life even with constant use.

The Model 770-A comes complete with self-contained batteries, test leads and all operating instructions.

**SPECIFICATIONS**

- 6 A.C. VOLTAGE RANGES: 0-15/30/-150/300/1500/3000 volts.
- 6 D.C. VOLTAGE RANGES: 0-7.5/15/-75/150/750/1500 volts.
- 2 RESISTANCE RANGES: 0-10,000 Ohms, 0-1 Megohm.
- 3 D.C. CURRENT RANGES: 0-15/150 Ma., 0-1.5 Amps.
- 3 DECIBEL RANGES: -6 db to +18 db, +14 db to +38 db, +34 db to +58 db

**\$15<sup>85</sup>**  
NET

The New Model 670-A

## SUPER-METER

A combination Volt-Ohm Milliammeter plus capacity reactance inductance & decibel measurements

**SPECIFICATIONS:**

- D.C. VOLTS: 0 to 7.5/15/75/150/750/1,500/7,500 Volts.
- A.C. VOLTS: 0 to 15/30/150/300/1,500/3,000 Volts.
- OUTPUT VOLTS: 0 to 15/30/150/300/1,500/3,000 Volts.
- D.C. CURRENT: 0 to 1.5/15/150 Ma. 0 to 1.5/15 Amperes.
- RESISTANCE: 0 to 1,000/100,000 Ohms 0 to 10 Megohms.
- CAPACITY: .001 to 1 Mfd. 1 to 50 Mid. (Quality test for electrolytics).
- REACTANCE: 50 to 2,500 Ohms 2,500 Ohms to 2.5 Megohms.
- INDUCTANCE: .15 to 7 Henries 7 to 7,000 Henries.
- DECIBELS: -6 to +18 +14 to +38 +34 to +58.
- ADDED FEATURE: The Model 670-A includes a special GOOD-BAD scale for checking the quality of electrolytic condensers at a test potential of 150 Volts.

The Model 670-A comes housed in a rugged, crackle-finished steel cabinet complete with test leads and operating instructions.

Measures 6 1/4" x 9 1/2" x 4 1/2".

**\$28<sup>40</sup>**  
NET



The New Model

## 76

For the first time ever: ONE TESTER PROVIDES ALL THE SERVICES LISTED BELOW!



IT'S A CONDENSER BRIDGE with a range of .00001 Microfarad to 1000 Microfarads (Measures power factor and leakage too.)

IT'S A SIGNAL TRACER which will enable you to trace the signal from antenna to speaker of all receivers and to finally pin-point the exact cause of trouble whether it be a part or circuit defect.

**✓ CAPACITY BRIDGE SECTION**

4 Ranges: .00001 Microfarad to .005 Microfarad; .001 Microfarad to .5 Microfarad; .1 Microfarad to 50 Microfarads; 20 Microfarads to 1000 Microfarads. Will locate shorts, and leakages up to 20 megohms. Will measure the power factor of all condensers.

**✓ TV ANTENNA TESTER SECTION**

Loss of sync, snow and instability are only a few of the faults which may be due to a break in the antenna, so why not check the TV antenna first? The Model 76 will enable you to locate a break in any TV antenna and if a break does exist, the Model 76 will measure the location of the break in feet from the set terminals.

IT'S A RESISTANCE BRIDGE with a range of 100 ohms to 5 megohms.

IT'S A TV ANTENNA TESTER. The TV Antenna Tester section is used first to determine if a "break" exists in the TV antenna and if a break does exist the specific point (in feet from set) where it is.

**SPECIFICATIONS**

**✓ RESISTANCE BRIDGE SECTION**

2 Ranges: 100 ohms to 50,000 ohms; 10,000 ohms to 5 megohms.

**✓ SIGNAL TRACER SECTION**

With the use of the R.F. and A.F. Probes included with the Model 76, you can make stage gain measurements, locate signal loss in R.F. and Audio stages, localize faulty stages, locate distortion and hum, etc. Provision has been made for use of phones and meter if desired.

Model 76 comes complete with all accessories including R.F. and A.F. Probes; Test Leads and operating instructions. Nothing else to buy.

**\$26<sup>95</sup>**  
NET

The New Model TV-50

## GENOMETER

A versatile all-inclusive GENERATOR which provides ALL the outputs for servicing: A.M. RADIO - F.M. RADIO - AMPLIFIERS - BLACK & WHITE TV - COLOR TV

- 7 Signal Generators in One!
  - R. F. Signal Generator for A.M.
  - R. F. Signal Generator for F.M.
  - Audio Frequency Generator
  - Bar Generator
  - Cross Hatch Generator
  - Color Dot Pattern Generator
  - Marker Generator

Bar Generator: Projects an actual Bar Pattern on any TV Receiver Screen. Pattern will consist of 4 to 16 horizontal bars or 7 to 20 vertical bars.

Cross Hatch Generator: Projects a crosshatch pattern on any TV picture tube. Pattern consists of non-shifting, horizontal and vertical lines, interlaced.

Dot Pattern Generator (for Color TV): The Dot Pattern projected on any color TV Receiver tube by the Model TV-50 will enable you to adjust for proper color convergence.

Marker Generator: The Model TV-50 includes all the most frequently needed marker points. 189 Kc., 262.5 Kc.,

458 Kc., 600 Kc., 1000 Kc., 1400 Kc., 1600 Kc., 2000 Kc., 2500 Kc., 3379 Kc., 4.5 Mc., 5 Mc., 10.7 Mc., (3579 Kc. is the color burst frequency).

R. F. Signal Generator: Generates Radio Frequencies from 100 Kilocycles to 60 Megacycles on fundamentals and from 60 Megacycles to 180 Megacycles on powerful harmonics.

Variable Audio Frequency Generator: Provides a variable 300 cycle to 20,000 cycle peaked wave audio signal (also fixed 400 cycle sine wave).



Comes absolutely complete with shielded leads and operating instructions. Only ...

**\$47<sup>50</sup>**  
NET

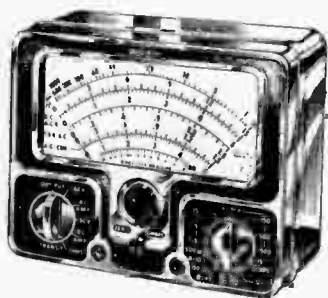
# PHAOSTRON

## TESTING EQUIPMENT

*Standard of Quality for the Industry*

Dependability, flexibility and guaranteed maximum accuracy are built-in characteristics of all PHAOSTRON Instruments. The portable units shown here have been acclaimed by engineers as the finest instruments of their kind available—regardless of price. These Phaostron Test Instruments are ready-to-use for years of trouble-free, dependable top performance, produced to the highest quality standards—in compact, magnetically shielded metal cases.

### NEW IMPROVED "555A" AC-DC VOM

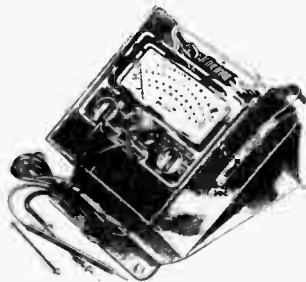


**NEW LOW PRICE**  
Not \$49.50, as before, but now priced lower than ever for a top quality, accurate, dependable meter. Replaces discontinued Model 555.

ONLY THE PHAOSTRON "555A" VOM (VOLT OHM MILLIAMMETER) MEASURES AC AND DC CURRENT AND VOLTAGE AS WELL AS RESISTANCE, AND HAS ALL THESE FEATURES:

- Meter movement protection... up to 1000 times overload by rectifier network.
- Unbreakable polished chrome metal case.
- Separate range and function switches.
- Anti-magnetic shielding.
- 43 unduplicated Ranges. Only 2 Jacks
- 3% DC, 4% AC Permanent Accuracy.

Complete with probes and batteries..... **\$44.95**



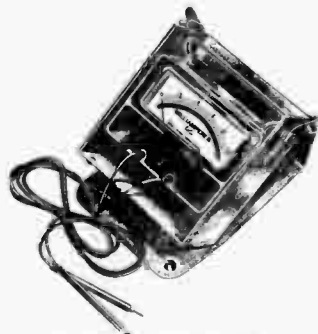
#### "777" V. T. M.

(Vacuum Tube Voltmeter)

A completely self-contained, ready-to-use test instrument. Accessories and High-frequency Coaxial Cable, DC Probe, AC Line Cord and Instruction Book all fit in the Genuine Leather Case supplied with it.

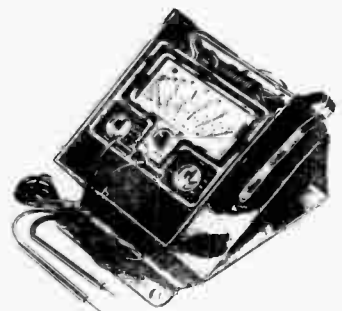
42 Unduplicated Ranges - Illuminated Dial doubly shielded, time-proven 200 microamp movement. Permanent Accuracy 3% DC, 5% AC. Large, easy to read Color Coded Scales. Separate Range and Function Switches. Many other features

Complete with Coaxial cable, DC Probes and Leather Case **74.95**



#### PORTABLE LABORATORY INSTRUMENT

The finest instrument of its kind. Guaranteed Accuracy—each instrument carries a signed record of readings from certified standards. Overload network provides protection up to 500 times full scale for short periods. Double probe outlets—Cords may be plugged into low resistance jacks - or used with the 3-way binding posts. Instrument easily removed from leather carrying case for laboratory use.



#### "656" VOM

Carefully designed for long trouble-free service and performance. Used to prevent most common burnouts and instrument damage. Signal light warns operator of overloads and incorrect polarity. Doubly shielded 45 UA movement assures continuous accuracy.

Sensitivity; 20,000 Ohms/Volt DC.  
2,000 Ohms/Volt AC  
Complete A.C. Current Ranges (From 1.5 mA to 15 Amps.). Chrome Handle serves as Power Cord Reel.  
Complete with Probes, Power Cord, Batteries and Leather Carrying Case..... **64.50**

#### NEW!

#### ILLUMINATED PROBE

Just insert the tip of cord set in jack, and probe instantly gives brilliant pre-focused light right on work! Will pay for itself the first time used. Extra long, slender tip for easy access in difficult areas. Probe uses standard globe and EverReady Penlight Battery #912.

ONLY **\$2.50**



PAT. PEND.

Your Key to Excellence



PHAOSTRON

**PHAOSTRON INSTRUMENT & ELECTRONIC CO.**



# PHASTRON

## PANEL METERS

Standard of Quality for the Industry



1 1/2" RUGGEDIZED



2 1/2" RUGGEDIZED



3 1/2" SQUARE CUSTOM



2 1/2" ROUND CUSTOM



3 1/2" RECTANGULAR



4 1/2" RECTANGULAR

TYPE	RANGE	RUGGEDIZED AND SEALED METERS				CUSTOM METERS						
		1 1/2" Square	2 1/2" Round	3 1/2" Round	4 1/2" Round	2 1/2" Rd. or Sq.	3 1/2" Rd. or Sq.	3 1/2" Black	3 1/2" Rect.** Chrome	4 1/2" Black	4 1/2" Rect.** Chrome	4" x 6"*** Rect.
Voltmeter DC 1000 OHMS/VOLT	0-1.5 0-3 0-5 0-8 0-10 0-15 0-30 0-50 0-80 0-100 0-150 0-200 0-300 0-500	16.35	15.80	16.35	17.50	12.20	13.05	13.90	16.10	15.00	17.50	19.70
Voltmeter AC 1000 OHMS/VOLT Rectifier Type	0-1.5 0-3 0-5 0-10 0-15 0-25 0-50 0-100 0-150 0-300	18.85	18.30	18.85	20.00	16.35	17.20	18.05	20.25	19.15	21.65	23.85
Ammeter DC	0-1 0-1.5 0-2 0-3 0-5 0-10 0-15 0-30 0-50 5-0-5 10-0-10 15-0-15 20-0-20 30-0-30 50-0-50	Not Available At Present	21.10	21.65	22.75	11.10	11.95	12.75	15.00	13.90	16.35	18.60
Milliammeter DC	0-1 0-1.5 0-2 0-3 0-5 0-10 0-15 0-20 0-30 0-50 0-100 0-150 0-200 0-300 0-500 1-0-1 100-0-100	15.00	14.45	15.00	16.10	11.10	11.95	12.75	15.00	13.90	16.35	18.60
Milliammeter AC Rectifier Type	0-1 0-2 0-5	18.85	18.30	18.85	20.00	16.35	17.20	18.05	20.25	19.15	21.65	23.85
Microammeter DC	0-0.20* 0-30 0-50 0-100 0-200 0-500 50-0-50 100-0-100 500-0-500	- - 21.90 18.05 16.65 21.90 18.05 15.00	- 24.15 17.50 16.10 21.35 19.45 14.45	25.00 25.00 25.00 21.90 18.05 16.65 21.90 18.05 15.00	26.10 26.10 26.10 23.05 19.15 17.75 23.05 19.15 16.10	16.65 14.45 12.20 11.65 14.45 11.65 12.20 11.10	20.55 20.55 17.50 15.25 13.05 12.50 15.25 13.05 11.95	21.35 21.35 18.30 16.10 13.90 13.30 16.10 13.90 12.75	23.60 23.60 20.55 18.30 16.10 15.55 18.30 15.00	22.50 22.50 19.45 17.20 15.00 14.45 17.20 15.00 13.90	25.00 25.00 21.90 19.70 17.50 16.95 19.70 17.50 16.35	34.70 34.70 32.45 31.10 21.90 20.80 31.10 21.90 18.60
Microammeter AC Rectifier Type	0-100 0-200 0-250 0-500	24.40 20.25 20.00 19.15	23.85 19.70 19.45 18.60	24.40 20.25 19.45 19.15	25.55 21.35 21.10 20.25	19.70 17.50 17.20 16.65	20.55 18.30 18.05 17.50	21.35 19.15 18.85 18.30	23.60 21.35 21.10 20.55	22.50 20.25 20.00 19.45	25.00 22.75 22.50 21.90	33.60 23.30 23.30 23.05
Null Indicator	A B C	Not Available At Present	28.85	31.35	33.60	23.05	23.85	24.70	26.90	26.35	28.85	-
VU Meters	A B	Not Available At Present	28.60	29.15	30.25	20.55	21.35	22.20	24.20	23.30	25.80	28.05
Expanded Scale Voltmeter-AC	90-130					27.45	28.30	29.15	31.35	30.25	32.75	34.95

\*60° SCALE

\*\*A00 \$2.75 FOR ILLUMINATED TYPE



214



221



232



1171



1180



803

249



536, 526



NEW DELUXE

**PEAK-TO-PEAK VTVM No. 249**  
with 7½" METER  
and **EXCLUSIVE UNI-PROBE**  
(Pat. Pend.)

All the outstanding and exclusive features of Model 232 — PLUS the convenience and readability of its big 7½" meter. An ideal bench instrument.  
**KIT \$39.95** Factory Wired **\$59.95**

**VACUUM TUBE VOLTMETER No. 221**

**KIT \$25.95** Wired **\$39.95**  
The popular, reliable, performance-proven VTVM — over 50,000 in use! Large 4½" meter in can't-burnout circuit. Zero center for TV/FM discriminator alignment. AC/DC Volts: 0-5, 10, 100, 500, 1000 (up to 30,000 v. with HVP probe, up to 250 mc with PRF probe, and peak-to-peak with PTP probe). Ohms: 0.2 ohms to 1000 megohms. DB: —20 to +55. Input R: 25 megohms. 1% precision multipliers. Stable, accurate double-triode bridge circuit. Satin aluminum etched panel; steel case. Leatherette Carrying Case  
For No. 221 ..... **\$3.95**

**DELUXE VTVM No. 214**

**KIT \$34.95** Wired **\$54.95**  
All the versatility and performance-proven features of Model 221—PLUS the extra convenience and legibility of its big 7½" meter.

**6 EICO**

**VOLT-OHM-MILLIAMETERS**

No. 565 — 20,000 OHMS/VOLT MULTIMETER  
**KIT \$24.95** Wired **\$29.95**  
31 Full Scale Ranges - DC/AC/Output Volts: 0-2.5, 10, 50, 250, 1000, 5,000 - DC Current: 0-100 ua; 10, 100, 500 ma; 10 Amp. - Ohms: 0-2000, 200K, 20 meg. - 5 DB Ranges: —12 to +55. - Large 4½" 50 UA Meter Movement. - High-Impact Bakelite case. 6¾" x 5¼" x 3". Ship. wt. 2¾ lbs.

No. 555 — 20,000 OHMS/VOLT MULTIMETER  
**KIT \$29.95** Wired **\$34.95**  
As above, with 1% precision resistors.

No. 566 — 1000 OHMS/VOLT MULTIMETER  
**KIT \$14.90** Wired **\$18.95**  
Ranges: Same as Model 536 (see below), plus 7 output voltage ranges. Large 4½" 400 ua meter movement. 6¾" x 5¼" x 3". Ship. wt. 3 lbs.

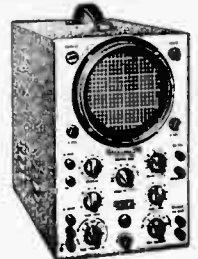
No. 556 — 1000 OHMS/VOLT MULTIMETER  
**KIT \$16.90** Wired **\$23.50**  
Same as Model 566, with 1% precision resistors.

No. 536 — 1000 OHMS/VOLT MULTIMETER  
**KIT \$12.90** Wired **\$14.90**  
31 1000 Ohms/Volt Full-Scale Ranges! - DC/AC Volts: Zero to 1, 5, 10, 50, 100, 500, 5000. - DC/AC Current: 0-1, 10 ma.; 0.1, 1 Amp. - Ohms: 0-5000, 100K, 1 meg. - 6 DB Ranges: —20 to +69 - Large 3" 400 UA Meter Movement - High-Impact Bakelite case. 6¼" x 3¾" x 2". Ship. wt. 2 lbs.

No. 526 — 1000 OHMS/VOLT MULTIMETER  
**KIT \$13.90** Wired **\$16.90**  
As above, with 1% precision resistors.



565, 555,  
566, 556



460, 470, 425

**VTVM PROBES**

**MODEL PTP-11 or 25**  
**PEAK-TO-PEAK** **VTVM PROBES**  
**KIT \$4.95** Wired **\$6.95**

For Color and Monochrome TV Servicing  
Accurate reading of p-p voltages directly on DC scales of your VTVM. Use with any 11 or 25 megohm VTVM. For tracing complex AC waveforms thru TV receiver deflection systems.

**MODEL PRF-11 or 25**  
**RF VTVM PROBES**  
**KIT \$3.75** Wired **\$4.95**

For RF voltage measurements up to 250 mc. Accuracy ±10%. Use with any 11 or 25 megohm VTVM.

**HIGH VOLTAGE PROBE No. HVP-2**  
**\$4.95**

For safe measurement up to 30,000 volts dc with any VTVM or 20,000 ohms/volt VOM. Ideal for TV high voltage measurement. Includes a choice of high quality multiplier resistor to match most popular instruments.

**HIGH VOLTAGE PROBE No. HVP-1**  
**\$6.95**

Popular choice for years. Same applications as Model HVP-2 above and supplied with matching resistor for your instrument.

**DC WIDE BAND**

**5" OSCILLOSCOPE No. 460**  
**KIT \$79.95** Wired **\$129.50**

For Color and Monochrome TV Servicing  
Incomparable! The world's FINEST professional scope value — far outperforms and outfeatures scopes of many times its cost! For Color, Black-and-White TV, lab and industry.  
Flat from DC to 4.5 mc. usable to 10 mc., featuring DC amplifiers. Vert. Sens.: 25 mv/in., push-pull thruout. Sweep freqs.: 10 cps to 100 kc, low sweep with ext. condenser. Automatic sync limiter and amplifier eliminates sync voltage adjustment. On front panel: int. mod., saw-tooth output, 60 cps, ext. sync, ext. capacitor jacks! 60 cps variable phase sine sweep. Pre-set TV V&H sweep positions. Edge-lit plexiglass filter screen with variable illumination. 4 freq. compensated attenuator positions up to 1000:1 on either direct or capacitive coupled input.

**7" PUSH-PULL OSCILLOSCOPE**  
**No. 470**

**KIT \$79.95** Wired **\$129.50**  
Deluxe TV servicing scope that sets a new high for sensitivity at wide bandwidth! Vertical: flat ±2 db 10 cps-1 mc, .01 rms v/in. Horizontal: flat 10 cps-200 kc, —4 db at 500 kc; .3 rms v/in. Sweep: 15 cps-100 kc. 3-step freq.-compensated attenuator. K-follower inputs and push-pull outputs in both amplifiers. Return trace blanking, variable phasing of 60 cps sine sweep, internal voltage calibrator, direct connection to CRT plates; int. mod. input, sawtooth from sweep oscillator and 60 cps outputs.

**5" PUSH-PULL OSCILLOSCOPE**  
**No. 425**

**KIT \$44.95** Wired **\$79.95**  
The popular, dependable, performance-proven Scope — tens of thousands in use! Push-pull Vert. and Hor. amplifiers. High V&H sens.: 0.05-0.1 rms v/in. V&H resp., 5 cps-500 kc. Useful to 2.5 mc. Sweep: 15 cps-75 kc. Z-axis intensity mod. Direct connections to CRT plates. 2-6J5, 3-6SN7, 2-5Y3, 5" CRT.

**GEIGER COUNTER No. 803**  
**KIT \$19.95** Factory Wired **\$29.95**

**DECADE RESISTANCE BOX No. 1171**  
**KIT \$19.95** Wired **\$24.95**  
Exceptionally accurate, wide-range, versatile instrument. 0-99,999 ohms in 1-ohm steps with 5 decades and ½% precision.

**DECADE CONDENSER BOX No. 1180**  
**KIT \$14.95** Wired **\$19.95**  
Precision silver-mica capacitors (± 1% accuracy, 500 VDC rated) arranged in 3 decades for extremely wide range of 100 mmf to 0.111 mf in steps of 100 mmf. Positive detent ceramic wafer switches, silverplated contacts.

**NEW! MODEL 232**

**PEAK-TO-PEAK VTVM with**

**DUAL-PURPOSE AC/DC UNI-PROBE**  
(Pat. Pend.)

**KIT \$29.95** Wired **\$49.95**  
The new leader in professional peak-to-peak VTVMs—revolutionary engineering for laboratory precision and lowest price! Measure directly p-p voltage of complex and sine waves: 0-4, 14, 42, 140, 420, 1400, 4200. DC/RMS sine volts: 0-1.5, 5, 15, 50, 150, 500, 1500 (up to 30,000 v. with HVP probe, and 250 mc with PRF probe). Ohms: 0.2 ohms to 1000 megohms. 7 non-skip ranges on every function. Calibration without removing from cabinet. 4½" meter, can't-burnout circuit. Zero center, 1% multipliers. Exceptional stability and accuracy.

**NEW! DUAL-PURPOSE**

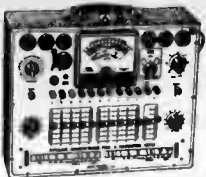
**AC/DC UNI-PROBE**

(Pat. Pend.)

Available separately for EICO No. 221 and other VTVMs.  
Terrific time saver! Only 1 probe performs all functions — a half-turn of probe-tip selects DC or AC-OHMS!  
**KIT \$4.95** Factory Wired **\$6.95**

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666



495



488



625



540



PD, PLC, PSD



630



CRA



584

### SCOPE PROBES

For Color and Monochrome TV Servicing

#### MODEL PSD OSCILLOSCOPE DEMODULATOR PROBE

**KIT \$3.75** Wired **\$5.75**  
For signal tracing and checking of TV/radio RF and IF stages. Demodulates amplitude-modulated carriers between 150 kc and 250 mc.

#### MODEL PD OSCILLOSCOPE DIRECT PROBE

**KIT \$2.75** Wired **\$3.95**  
For TV waveform tracing in low Z or low frequency circuits. Eliminates stray pickup and signal re-radiation.

#### MODEL PLC OSCILLOSCOPE LOW CAPACITY PROBE

**KIT \$3.75** Wired **\$5.75**  
For TV waveform tracing in high Z, high frequency or wide-band circuits.

#### OSCILLOSCOPE VOLTAGE CALIBRATOR No. 495

**KIT \$12.95** Wired **\$17.95**  
Makes your scope an accurate, wide-range, peak-to-peak AC electronic voltmeter; Enables p-p voltage measurement of complex TV sweep waveforms displayed on scope, calibration of vert. and hor. scope amplifiers, etc. Output variable from zero on every range with full-scale readings of 0.1, 1, 10, and 100 volts p-p. Accuracy  $\pm 5\%$  of full scale on each range. VR tube regulated power supply.

#### ELECTRONIC SWITCH No. 488

**KIT \$23.95** Wired **\$39.95**  
Makes your 1 Scope more useful than 2 in many cases! Simultaneously observe 2 patterns on 1 scope: compare voltage and current amplitudes, waveforms, freqs. and phase relationships. Continuously variable switching rates from less than 10 cps to over 2000 cps. Very useful as square wave generator over same range.

#### TUBE TESTER No. 625

**KIT \$34.95** Wired **\$49.95**  
CRA pix tube adapter for tube tester — \$4.50  
A professional, dependable tube tester and merchandiser. Tests ALL conventional and TV tubes. 10 individual lever-type element switches.  $4\frac{1}{2}$ " meter, 3-color scale. Illuminated anti-backlash "SPEEDROLL" roll-chart. Protective overload bulb. Line-adjust control. 2 grid caps. Blank socket for future tube types. Pilot light test socket. Also tests TV picture tubes with EICO CRA Adapter.

• Tests new 600 ma filament series string tubes. Tube Tester Kit with Counter Display Case

Model 625-CK, Kit ..... \$44.95  
Model 625-C, factory wired ..... \$59.95  
Lid for your EICO Tube Tester ..... \$3.98

#### PICTURE TUBE TEST ADAPTER No. CRA (For EICO Models 625, 625-K, 666 and 666-K Tube Testers)

With the new Model CRA and your EICO Tube Tester, you check all sizes TV Picture Tubes as fast and easily as any ordinary tube. Model CRA gives a quantitative measurement of cathode emission, and tests for filament continuity and shorts between elements. Comes complete with standard 12-pin TV tube socket, octal plug-in connector, and extra long 4-foot cable that enables Pix Tube to remain in set WHILE TESTING. **Factory Wired \$4.50**

#### CATHODE RAY TUBE CHECKER No. 630

**KIT \$13.95** Factory Wired **\$18.95**

Easy, fast, dependable testing of all sizes TV picture and oscilloscope type C-R tubes—right in the set or carton. Bridge measurement of peak beam current (proportional to screen brightness) using neon lamp as sensitive balance indicator. Balancing control calibrated directly in terms of tube condition. Detects open and shorted elements. Size:  $9\frac{1}{2}$ " x  $6\frac{1}{2}$ " x 3". Ship. wt. 5 lbs.

#### NEW! DYNAMIC CONDUCTANCE TUBE AND TRANSISTOR TESTER No. 666

**KIT \$69.95** Factory Wired **\$109.95**

Unexcelled testing thoroughness and accuracy. Checks transistor collector current and Beta using internal dc power supply. Tests all receiving tubes including subminiatures (and tv pic tubes with accessory adapter). Composite indication of mutual conductance, plate conductance, and peak emission. Simultaneous sel. of any 1 of 4 combinations of 3 plate, 3 screen, and 3 ranges of control grid voltage. Grid voltage variable over 3 ranges with 5% accuracy pot. New series-string voltages for 600, 450 and 300 ma types. 5 ranges meter sens. with 1% precision shunts and 5% accurate pot. 10 SIX-position lever switches for free-point connection of every tube pin or cap. 10 push-buttons for rapid insert of any tube element in leakage circuit and speedy sel. of individual tube sections. Direct reading of inter-element leakage in ohms. New gear-driven rollerchart. Steel case with cover and handle. Sensitive 200 ua meter.

#### BATTERY TESTER No. 584

**KIT \$9.95** Factory Wired **\$12.95**

For accurate, true DYNAMIC test of all A and B portable radio batteries, lantern batteries, and other types — in or out of equipment. Test Positions (Volts): 1.5, 4.5, 6.0, 7.5, 9.0, 22.5, 45, 67.5, 75, 90 plus Spare Position. Test leads provided. High-impact Bakelite case and satin aluminum panel.  $6\frac{1}{4}$ " h x  $3\frac{3}{4}$ " w x 2" d.

#### NEW! REDI-TESTER No. 540

**KIT \$12.95** Wired **\$15.95**

Designed specifically for the ever-expanding do-it-yourself market, the 540 is excellent for electrical and electronic servicing, for home and automotive repairs. Low-cost, dependable, extremely versatile, the 540 is ALL of the following multi-range instruments: ac/dc voltmeter, ammeter, ohmmeter, wattmeter and leakage checker. Its rotary switch selection and one-place visual indication — both unique in instruments of this type — permits much faster and convenient operation. Locates defects in electrical appliances, motors, house wiring, furnace control, air conditioning, automotive equipment, tv and radio tubes and parts. Its instruction book, contains an introduction to electricity, complete operating method, and procedures for common repair jobs.



944



950-B



1120



1100

#### FLYBACK TRANSFORMER AND YOKE TESTER No. 944

**KIT \$23.95** Wired **\$34.95**

The industry's finest — at lowest cost! A time- and trouble-saving MUST for TV servicemen! Positive check of all flybacks and yokes, in or out of set, in just seconds! Uses sensitive grid-dip principle — shows up even 1 shorted turn! Exclusive separate calibration for air- and iron-core flybacks. Checks any inductance of not too low impedance; also usable for general continuity testing. Large  $4\frac{1}{2}$ " 50  $\mu$ a meter, 3 separate colored scales.

#### R. C. BRIDGE and R-C-L COMPARATOR No. 950B

**KIT \$19.95** Wired **\$29.95**

Latest bridge-type instrument directly reads 0.5 ohms—500 megs resistance (4 ranges), 10 mmfd-5000 mfd capacitance (4 ranges), and power factor. (Kit includes precision calibrating resistor.) Unique comparator range for R, C, and L comparison measurement against external standard. Leakage testing of all capacitors at rated dc working voltage with internal 0-500 vdc source. Electron-ray tube as both bridge balance and capacitor leakage indicator.

#### RETMA CAPACITANCE SUBSTITUTION BOX No. 1120

**KIT \$5.95** Wired **\$9.95**

Enables rapid substitution of a wide range of RETMA capacitance values from 0.0001 to 0.22 mfd in an operating circuit to determine value needed for optimum performance and to find value of badly damaged or illegible capacitors. Minimum accuracy  $\pm 10\%$ . Uses silver mica and molded plastic capacitors, most conservatively rated at 600 volts. Convenient 5-way jack-top binding posts.

#### RETMA RESISTANCE SUBSTITUTION BOX No. 1100

**KIT \$5.95** Wired **\$9.95**

Enables rapid substitution of wide range of RETMA resistance values from 15 ohms to 10 megohms in decade multiples of 15, 22, 33, 47, 68, 100 ohms. Uses standard 1 watt,  $\pm 10\%$  RETMA resistors.

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LABORATORY  
PRECISION

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360



377



324



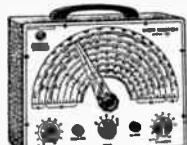
147



145



352



320, 322



315



368



1050



1055

### NEW! EICO RF SIGNAL GENERATOR

#### No. 324

"The Best Generator Buy in the World!" say EICO customers. For IF-RF alignment, signal tracing and trouble-shooting of TV, FM, AM sets all on fundamentals . . . marker generator for alignment of new h-f and older l-f TV IF's . . . 400 cps sine wave audio testing . . . lab and experimental work. Extended frequency range: 150 kc to 145 mc on fundamentals in 6 bands; 111-435 mc on calibrated harmonics.  $\pm 1\%$  frequency accuracy; 6:1 vernier tuning knob and excellent spread at most important alignment frequencies. Etched tuning dial, plexiglass windows, edgelit hairlines. Colpitts RF oscillator, directly plate-modulated by cathode follower for improved modulation. Variable depth of internal modulation 0-50% by 400 cps Colpitts oscillator. Variable gain external modulation amplifier: only 3.0 volts needed for 30% modulation. Turret-mounted slug-tuned coils. Fine and Coarse (3-step) attenuators, 50-ohm output Z. RF and AF outputs respectively 100,000 uv and up to 10 v. Tubes: 12AU7, 12AV7, selenium rectifier, xfmr-operated. 5-way jack-top binding posts for AF in/out; coaxial connector and shielded cable for RF out. Satin aluminum panel and grey wrinkle steel case. 8" H x 10" W x 4 3/4" D. Ship. wt. 10 lbs.  
KIT \$26.95      Factory Wired \$39.95

### NEW! TV-FM SWEEP GENERATOR AND MARKER No. 368

The FINEST service instrument of this type ever offered in either kit or wired form at ANY price! Outstanding ease and accuracy in FM and TV (including Color) alignment. Entirely electronic sweep circuit with accurately biased inductor: superb linearity on both sides of selected center freq. Newly-designed AGC circuit automatically adjusts osc. for max. output on each band with min. amplitude variations. Sweep gen. range 3-216 mc in 5 OVERLAPPING FUND. BANDS. Sweep width continuously variable from 0-3 mc lowest max. deviation to 0-30 mc highest max. deviation. Variable marker gen. range from 2-75 mc in 3 FUND. BANDS plus a calibrated harmonic band 60-225 mc. Variable marker calibrated with int. xtal marker gen. 4.5 mc xtal included. Ext. marker provision. Double pi line filter, Edge-lit hair-lines eliminate parallax.  
KIT \$69.95      Factory Wired \$119.95

### RF SIGNAL GENERATORS

MODEL 320: For AM-FM precision alignment and TV marker frequencies. Vernier Tuning Condenser. Highly stable RF oscillator, range: 150 KC - 102 MC with fundamentals to 34 MC. Separate audio oscillator supplies 400-cycle pure sine wave voltage. Pure RF, modulated RF or pure AF for external testing. Satin aluminum etched panel; rugged steel case. Ship. wt. 10 lbs.  
Model 320—KIT \$19.95      Factory Wired \$29.95  
MODEL 322: In addition to all the outstanding laboratory-precision qualities of the famous EICO Model 320, the brand new Model 322 features the individual calibration of each of its 5 bands.  
Model 322—KIT \$23.95      Factory Wired \$34.95

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### DELUXE RF SIGNAL GENERATOR

#### No. 315

Laboratory-precision generator EICO Service-Engineered with 1% accuracy. Frequency range: 75 kc-150 mc in 7 calibrated ranges. Extremely stable. Illuminated hairline VERNIER TUNING. VR stabilized line supply. 400-cycle pure sine wave with less than 5% distortion. Tube complement: 6X5, 6SL7, 6C4, VR-150. Satin aluminum etched panel; rugged steel case. 115 v., 60 cycles AC. Size: 12" x 13" x 7". Ship. wt. 21 lbs.  
KIT \$39.95      Factory Wired \$59.95

### TV-FM SWEEP GENERATOR

#### No. 360

Covers all TV-FM alignment frequencies, 500 KC - 228 MC. Vernier-driven dial. Center of each of 13 TV channels marked on front panel. Sweepwidth variable 0-30 MC with mechanical inductive sweep — permits gain comparison of adjacent TV channels. Crystal marker oscillator, variable amplitude. Provides for injection of external marker. Phasing control. Complete with HF tubes. Less Crystal. Size: 10" x 8" x 6 3/4". Ship. wt. 12 lbs.  
KIT \$34.95      Factory Wired \$49.95

EICO 5 MC and 4.5 MC Crystals — \$3.95 ea.

### SINE AND SQUARE WAVE AUDIO GENERATOR

#### No. 377

Complete sine wave coverage: 20-200,000 cps. Complete square wave coverage: 60-50,000 cps. 2-gang tuning condenser. All frequency range resistors have 1% or better accuracy. Large easy-reading dial calibration: 0-100 linear reference scale. Response  $\pm 1.5$  db from 60 cps to 150 kc. Wien bridge RC oscillator. Improved cathode follower output circuit. Output Voltage: 10 v. at 1000 ohms load, 14 v. at 10,000 ohms and higher, 8 v. at 500 ohms on sine wave; square wave output higher. High power output: 100mw into rated load. Rated load impedance: 1000 ohms resistive. Continuously variable output attenuator. Distortion 1% of rated output. Hum less than 0.4% of rated output. Tubes: 6X5, 6SJ7, 2-6K6, 6SN7, 6S6 (G-E 6-watt lamp). Satin aluminum etched rub-proof panel; rugged steel case. 115 V., 50/60 cycles, 50 W. Size: 11 1/8" x 7 1/8" x 7 5/8". Ship. wt. 14 lbs.  
KIT \$31.95      Factory Wired \$49.95

### BAR GENERATOR No. 352

Enables rapid adjustment of TV picture Vertical and Horizontal linearity without hard-to-find station-transmitted test pattern. Produces 16 to 23 V bars and 13 to 22 H bars, adjustable in number to accommodate all screen sizes. Incorporates VHF osc., RF osc., and LF multi-vibrator. Adjustable from Channel 2 to 6. Deluxe 3-way antenna terminal clip fits any type antenna terminal including plug-in type. Output voltage: 100,000 microvolts. Tubes: 1-12AU7, 1-6C4; selenium rectifier. Size: 5" x 7 1/2" x 4 1/2". Ship. wt. 6 lbs.  
KIT \$14.95      Factory Wired \$19.95

### NEW! DELUXE MULTI-SIGNAL TRACER

#### No. 147

Entirely new 5-tube instrument provides high gain RF and low gain audio channels with both visual and aural monitors (electron-ray tube and 5" speaker). Permits RF, IF and audio signal tracing in TV, FM and AM sets. Highly useful noise localizer circuit that applies DC test voltage thru probe to suspected component and simultaneously picks up and amplifies effect. Wattmeter circuit detects abnormal power consumption in TV and radio receivers. May be connected as test speaker, amplifier or output transformer, and has output for VTVM or scope. Excellent for gain-per-stage estimation, null detector, scope preamplifier, utility amplifier, small P.A. system. New satin finish etched panel; grey-wrinkle steel case. 105-125 VAC, 50/60 cps. Size: 8" x 10" x 4 3/4". Ship. wt. 10 lbs.  
KIT \$24.95      Factory Wired \$39.95

### MULTI-SIGNAL TRACER No. 145

Audibly traces all IF, RF, video and audio from ANT to SPKR or CRT without switching. Response well over 200 mc. 5" test speaker. Provision for visual tracing with VTVM. Complete with 6SJ7, 6K6, 6X5. Germanium crystal diode probe, Satin aluminum etched panel; rugged steel case. 105-125 VAC, 50/60 cps. Size: 10" x 8" x 4 3/4". Ship. wt. 9 lbs.  
KIT \$19.95      Factory Wired \$28.95

### 6V and 12V BATTERY ELIMINATOR and CHARGER No. 1050

Gives you all the electrical power you need for 6-volt and 12-volt battery charging and auto radio servicing. Two DC ranges: 0-8 v (10 amps continuous, 20 amps intermittent), 0-16 volts (6 amps continuous, 12 amps intermittent). Continuous voltage adjustment with variac-type transformer. Separate voltmeter and ammeter. Heavy duty selenium rectifiers. Fused primary; automatic reset circuit-breaker opens secondary circuit upon overload. Rugged, well-ventilated steel cabinet. Size: 8 3/4" x 10 1/2" x 7 3/4". Ship. wt. 15 lbs.  
KIT \$29.95      Factory Wired \$38.95

### BATTERY ELIMINATOR ACCESSORY FILTER No. 1055

L-C filter provides additional filtering of output of EICO No. 1050 above, or any similar unit, when the battery eliminator is used for powering transistor and "hybrid" car radios. Functions on either 6V or 12V ranges of the b.e. up to 10 amps max current; can remain in use for ALL functions of the b.e.  
KIT \$11.95      Factory Wired \$15.95

### "EXTRA-FILTERED" 6V and 12V BATTERY ELIMINATOR and CHARGER No. 1060

Combines Model 1050K Battery Eliminator and Model 1055 Filter in a single unit. Powers both transistor and conventional equipment. New dual-range ammeter permits more accurate readings. Selection of voltage range automatically provides appropriate current range.  
KIT \$38.95      Factory Wired \$47.95



HF-20



HF-61



HF12



HF52



HF90



HF60, HF50

**NEW! FM TUNER HFT90**

KIT, less cover \$39.95\*  
WIRED, less cover \$65.95\*  
Cover \$ 3.95  
\* excise tax incl.

Newly-designed, extremely sensitive, low-noise "front end", supplied in a cast housing completely pre-wired, pre-aligned, ready to use. Employs temperature-compensated components and advanced circuitry to completely eliminate need for AFC. Drift less than 2 parts in 10,000 from cold start. Radiation suppressed far below FCC standards. Also features new DM-70 traveling tuning eye. Sensitivity, unapproached among FM tuner kits, of 1.5 uv for 20 db quieting\*\*. Input 300 ohms, IF bandwidth 260 kc, detector Peak separation of 600 kc. Freq. resp. 20-20,000 cps  $\pm$  1 db. Audio output 1 V for 10 w input with 75 kc deviation. Hum 60 db below 1 V. Cathode follower and multiplex outputs. Flywheel slide-rule tuning, AGC, stabilized low limiting threshold for excellent performance from weaker signals, broad-band ratio detector for improved capture ratio and easier tuning, full-wave rectifier and heavy filtering, very low distortion. Uses 1-ECC85/6AQ8, 3-6AU6, 1-6AL5, 1-6C4, 1-DM70, 1-6X4. Flexible "low silhouette" design adaptable to any panel thickness for console installation; optional cabinet. HWD: 3 $\frac{3}{8}$ " x 12" x 8 $\frac{1}{4}$ ". Operates from 110-125 VAC, 60 cps line.

\*\* Typical unit, measured with Marconi TF955A/2 FM-AM signal generator

**NEW! HF 20**

**20-Watt Ultra-Linear Williamson-Type HIGH FIDELITY AMPLIFIER**

Complete with Preamplifier, Equalizer and Control Section

KIT \$49.95 Wired \$79.95  
A low-cost, complete-facility amplifier of the highest quality that sets a new standard of performance at the price, kit or wired. Rated Power Output: 20 w (34 w peak). IM Distortion (60 & 6000 cps 4:1) at rated power: 1.3%. Max. Harmonic Distortion between 20 & 20,000 cps at 1 db under rated power: approx. 1%. Mid-band Harmonic Distortion at rated power: 0.3%. Power Response (20 w):  $\pm$ 0.5 db 20-20,000 cps;  $\pm$ 1.5 db 10-40,000 cps. Freq. Resp. (1/4 w):  $\pm$ 0.5 db 13-35,000 cps;  $\pm$  1.5 db 7-50,000 cps. 5 feedback equalizations for LPs & 78s. Low-distortion feedback tone controls: large boosts or cuts in bass or treble with mid-freqs. and volume unaffected. Loudness control and separate level set control on front panel. Low Z output to tape recorder. 4 hi-level switched inputs: tuner, tv, tape, aux; 2 low-level inputs for proper loading with all cartridges. Hum bal. control. DC superimposed on filament supply. Extremely fine output transformer: interleaved windings, tight coupling, careful balancing, grain-oriented steel. 8 $\frac{1}{2}$ " x 15" x 10". 24 lbs. Matching cover Model E-1. \$4.50.

**NEW! HIGH FIDELITY PREAMPLIFIER**

**No. HF61A**

KIT \$24.95 Wired \$37.95  
With Power Supply: Wired \$44.95  
No. HF61—KIT \$29.95  
Will not add distortion or detract from the wide-band or transient response of the finest power amplifiers at any control settings. High quality feedback circuitry throughout plus the most complete control and switching facilities. Heavy-gauge solid brushed brass panel, concentric controls, one-piece brown enamel steel cabinet for lasting attractive appearance. Feedback-type, sharp cutoff (12 db octave) scratch and rumble filters. Low distortion feedback equalization: 5 most common recording curves for LPs & 78s including RIAA. Low-distortion feedback tone

controls: provide large boost or cut in bass or treble with mid-freqs and volume unaffected. Centralab printed-circuit Senior "Compentrol" loudness control with concentric level control. 4 hi-level switched inputs (tuner, tv, tape, aux.) and 3 low-level inputs (separate front panel low-level input selector permits concurrent use of changer and turntable.) Proper pick-up loading and attenuation provided for all quality cartridges. Hum bal. control, DC superimposed on filament supply. 4 convenience outlets. Extremely flat wideband freq. resp.:  $\pm$ 1 db 8-100,000 cps;  $\pm$ 0.3 db 12-50,000 cps. Extremely sensitive. Negligible hum, noise, harmonic or IM distortion. Size: 4 $\frac{7}{8}$ " x 12 $\frac{3}{8}$ " x 4 $\frac{7}{8}$ ". 8 lbs.

**NEW! 50-Watt Ultra-Linear Integrated HIGH FIDELITY AMPLIFIER HF52**

with Preamplifier, Equalizer and Control Section  
KIT \$69.95 Wired \$109.95

Combines a power amplifier section essentially identical to the HF50 power amplifier with a preamp-equalizer control section similar to HF20 above. Provision for use with electronic crossover network and additional amplifier(s). See HF50 for response and distortion specs; HF60 for square wave response, rise-time, inverse feedback, stability margin, damping factor, speaker connections; HF20 for preamplifier, equalizer and control section description. Hum and noise 60 db below rated output on magnetic phono input (8 mv input for rated output), and 75 db below rated output on high level inputs (0.6 v input for rated output). Matching cover Model E-1, \$4.50.

**NEW! 50-WATT Ultra-Linear HIGH FIDELITY POWER AMPLIFIER HF50**

KIT \$57.95 Wired \$87.95

Like the HF60, the HF50 features virtually absolute stability, flawless transient response under either resistive or reactive (speaker) load, and no bounce or flutter under pulsed conditions. Extremely high quality output transformer with extensively interleaved windings, 4, 8, and 16 ohm speaker connections, grain-oriented steel, and fully potted in seamless steel case. Otherwise identical to HF60. Output Power: 50 w cont., 100 w pk. IM Distortion (60 & 6000 cps. @ 4:1) below 1% at 50 w; 0.5% @ 45 w. Harmonic Dist.: below 0.5% between 20 cps & 20 kc within 1 db of rated power. Freq. Resp.: at 1 w,  $\pm$ 0.5 db 6 cps  $\pm$ 60 kc;  $\pm$ 0.1 db 15 cps  $\pm$ 30 kc at any level from 1 mw to rated power; no peaking or raggedness outside audio range. All other specs identical to HF60. Matching cover Model E-2, \$4.50.

**NEW! 12-WATT Williamson-Type**

**HIGH FIDELITY INTEGRATED AMPLIFIER HF12**

with Preamplifier, Equalizer and Control Section  
KIT \$34.95 Wired \$57.95

Compact, beautifully packaged and styled. Provides complete "front-end" facilities and true high fidelity performance. Direct tape head and magnetic phono inputs with NARTB (tape) and RIAA (phono) feedback equalizations. 6-tube circuit, dual triode for variable turnover bass and treble feedback-type tone controls. Output Power: 12 w cont., 25 w pk. IM Dist. (60 & 6000 cps @ 4:1): 1.3% @ 12 w; 0.55% @ 6 w; 0.3% @ 4 w. Freq. Resp.: 1 w:  $\pm$ 0.5 db 12 cps  $\pm$  75 kc; 12 w:  $\pm$ 0.5 db 25 cps  $\pm$  20 kc. Harmonic Dist.: 20 cps: 2% @ 4.5 w; 1/2% @ 2.5 w; 30 cps: 2% @ 11 w; 1/2% @ 6 w; 40 cps: 1% @ 12 w; 1/2% @ 9 w; 2000 cps: 1/2% @ 12 w; 10 kc: 1% @ 10 w; 1/2% @ 4 w. Transient Resp: excellent square wave reproduction (4 usec rise-time);

**NEW! No. HF60 60-WATT Ultra-Linear**

**HIGH FIDELITY POWER AMPLIFIER**

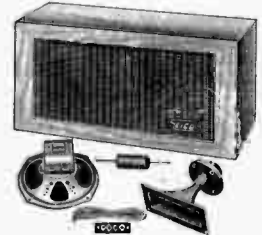
with ACRO T0-330 Output Transformer  
KIT \$72.95 Wired \$99.95

Superlative performance, obtained through finest components and circuitry. EF86 low-noise voltage amplifier direct-coupled to 6SN7GTB cathode coupled phase inverter driving a pair of Ultra-Linear connected push-pull EL34 output tubes operated with fixed bias. Rated power output: 60 w (130 w peak). IM Distortion (60 & 6000 cps at 4:1): less than 1% at 60 w; less than 0.5% at 50 w. Harmonic Distortion: less than 0.5% at any freq. between 20 cps & 20 kc within 1 db of 60 w. Sinusoidal Freq. Resp.: at 1 w:  $\pm$ 0.5 db 5 cps  $\pm$  100 kc;  $\pm$ 0.1 db 15 cps to 35 kc at any level from 1 mw to rated power; no peaking or raggedness outside audio range. Square Wave Resp.: excellent from 20 cps to 25 kc, 3 usec rise-time. Sensitivity: 0.55 v for 60 w. Damping Factor: 17. Inverse Feedback: 21 db. Stability Margin: 16 db. Hum: 90 db below rated output. ACRO T0-330 Output Transformer (fully potted). Speaker Taps: 4, 8, 16 ohms. GZ34 extra-rugged rectifier (indirectly-heated cathode eliminates high starting voltage on electrolytics & delays B+ until amplifier tubes warm up). Input level control. Panel mount fuse holder. Both bias and OC — balance adjustments. Std octal socket provided for pre-amplifier power take-off. Size: 7" x 14" x 8". 30 lbs. Matching cover Model E-2 \$4.50.

**NEW! COMPLETE with FACTORY-BUILT CABINET**

**2-WAY HI-FI SPEAKER SYSTEM HF51 \$39.95**

Genuine 2-way book-shelf size speaker system. Jensen heavy duty 8" woofer (6.8 oz. magnet) & matching Jensen compression-driver exponential horn tweeter with level control. Smooth clean bass and crisp extended highs free of coloration or artificial brilliance. Factory-built tuned bass reflex birch hardwood cabinet (not a kit) constructed to high quality standards. Neutral acoustical grille cloth framed by a smooth-sanded solid birch molding. Freq. Resp. measured 2 ft. away on principal axis in anechoic chamber with 1 watt input — Woofer:  $\pm$ 4 db 80-1800 cps; Tweeter:  $\pm$ 2 db 2800-10,000 cps; Crossover Region: 1800-2800 cps, shift in level over this region depends on tweeter level control setting. Overall Response:  $\pm$ 6 db 70-12,000 cps. Power-handling capacity: 25 watts. Size: 23" x 11" x 9". 25 lbs. Wiring Time: 15 min.



HF51

**ELECTRONIC INSTRUMENT CO., Inc. • Long Island City 1, N. Y.**

**ALL PRICES 5% HIGHER ON WEST COAST**

## IN-CIRCUIT SELENIUM RECTIFIER TESTER



Model SRT-1 \$29.95

- Cannot damage or over heat rectifier being tested.

### Model SRT-1

The SRT-1 checks all power rectifiers (selenium, germanium and silicon, rated from 10 ma. to 500 ma.) both *in-circuit* and *out-of-circuit*, with 100% effectiveness.

- ✓ Quality (current emission)
- ✓ Fading (after warm-up)
- ✓ Shorts ✓ Opens
- ✓ Arcing ✓ Life Expectancy

### Features:

- Will not blow fuses . . . even when connected to a dead short.
- Large 3" highly accurate meter . . . sensitive yet rugged.
- Separate meter scales for in-circuit and out-of-circuit tests with 3% accuracy.
- No shock hazards.

## ANTENNA LINE TESTER

Model ALT-1



Model ALT-1 \$19.95

### SIMPLE TO USE

Disconnect antenna line from set . . . Attach instrument test leads to antenna line at the set. The readings will tell you instantly if there is a break in either leg of antenna line. . . . The ALT-1 also tells you in feet from the receiver exactly where the break is located.

The only instrument specifically designed to check twin-lead antenna lines for breaks, where a continuity check is not possible. With the ALT-1 the serviceman determines immediately if the trouble is in the antenna line or in the TV chassis. If it is the antenna line he proceeds to spot the exact location of the break — even under the insulation, without leaving the house.

### NO OTHER INSTRUMENT CAN DO THIS JOB . . .

- ✓ Locate antenna line breaks in all non-continuity antennas such as conicals, yagis, double V's, etc.
- ✓ Check from inside the house for breaks in either leg of antenna line.
- ✓ Locate under-insulation breaks in seconds.
- ✓ Determine whether antenna line or TV set is at fault.

## CRT TESTER REJUVENATOR

Model CRT-1



Model CRT-1 \$19.95

- Completely self contained . . . built-in power supply furnishes all the necessary voltages for the test and repair of all picture tubes in the set or in the carton.
- Detachable CRT test cable.

Here is an instrument brilliantly engineered to test and repair delicate and sensitive Cathode Ray Tubes. The CRT-1 swiftly checks and repairs weak and inoperative picture tubes in the set or in the carton.

### TEST

- ✓ Checks cathode emission
- ✓ Indicates shorts and leakage
- ✓ Estimates the probable useful life of the tube
- ✓ Test for open elements

### REPAIR

- ✓ Clears inter-element shorts and leakage
- ✓ Removes cathode surface contamination

### REJUVENATE

- ✓ Restores emission, giving new life to weak dim picture tubes

# CENTURY TV TEST EQUIPMENT

## Means Faster and More Profitable Servicing for Servicemen

Here are test instruments developed and produced by CENTURY to meet the every day service call needs of the serviceman. They are brilliantly designed to save valuable time and make extra dollars for him. Down to earth prices and rugged durable quality are his assurance of lasting satisfaction.

## IN-CIRCUIT CONDENSER TESTER

Model CT-1

### Check in-circuit:

- ✓ Quality of over 80% of all size condensers . . . including leakage, shorts, opens, and intermittents.
- ✓ Value of all condensers 200 mmfd. to .5 mfd.
- ✓ Electrolytics for quality — any size.
- ✓ Transformer, socket and wiring leakage capacity.

### Checks out-of-circuit:

- ✓ Quality of 100% of all size condensers . . . including leakage, shorts, opens and intermittents.
- ✓ Value of all condensers 50 mmfd. to .5 mfd.
- ✓ Electrolytics for quality — any size.
- ✓ High resistance leakage to 300 megohms.
- ✓ New or unknown condensers.

### Features

- Ultra-sensitive 2 tube drift-free circuitry.
- Multi-color direct scale precision readings for both quality and value . . . in-circuit or out-of-circuit.
- Cannot damage circuits . . . operate: at low potentials.
- Electronic eye balance indicator for even greater accuracy.



Model CT-1 \$34.95

## SPEAKER SUBSTITUTER

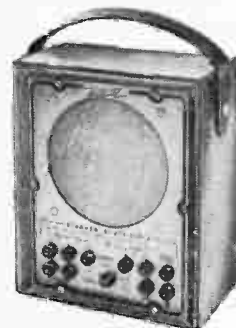
Model SS-1

- A UNIVERSAL SUBSTITUTE FOR ALL SPEAKERS
- A SIGNAL TRACER
- A VOLTAGE CHECKER

With SS-1 on the job the serviceman can leave cumbersome and easily damaged speakers right in the cabinet whenever it becomes necessary to remove a chassis to the shop for repairs.

### THE SS-1 DOES ALL THESE JOBS

- ✓ Substitute any speaker in use today . . . including field coil speakers . . . no matter how complicated the plugs.
- ✓ Signal trace all audio and video circuits.
- ✓ Check for vertical and horizontal sweep voltages.
- ✓ Check and measure B+ voltages.
- ✓ Substitute power supply bleeder resistances.



Model SS-1 \$22.50

- Supplied with signal tracing probe, adapter plugs for RCA, Dumont and Admiral speakers and clip-leads for all other type speakers.

ALL CENTURY INSTRUMENTS BEAR THE STANDARD RETMA GUARANTEE AND COME COMPLETE WITH ALL TEST CABLES AND INSTRUCTIONS. . . .

# Century Electronics Co., Inc.

manufacturers of electronic equipment

MINEOLA, N. Y.

# FREED Test Instruments

## TYPE 1030-A LOW FREQUENCY "Q" INDICATOR

### USES

The Type 1030-A Low Frequency "Q" Indicator measures directly the "Q" factor of coils. The instrument can also be used to measure the inductance of coils, distributed capacity, impedances, and dielectric losses. The "Q" Indicator can be used to study the magnetic properties of iron, such as stability of iron cores in function of applied voltages, and iron losses as a function of the frequency.

### FEATURES

The main and essential feature of the instrument is that the "Q" factor is read directly without any complicated computations. The possibility of measuring "Q" through the whole audio and super-sonic frequency range is provided. The setting up and the measuring of the "Q" of coils is practically instantaneous. The instrument is unaffected by line voltage variations, is entirely self-contained and A.C. operated. Both meters ("multiply-by" and "Q") are protected against overloads and cannot be burned out. The frequency range for "Q" measurements is 20 to 200,000 cycles. The terminals of the variable decade condensers are available directly on the front panel of the instrument. The condensers, therefore, can be used as high quality precision variable condensers. To reduce the residual capacitance a link is provided on the front panel of the instrument which disconnects all but the 100 mmfd variable air condenser. When the link is closed five decade capacitors and the air variable are connected across the condenser terminals. The total capacitance range is from 26 mmfd to 11.11 mfd so that an extremely wide range of inductors may be tested at any



desired frequency without adding external capacitors which introduces large errors. The R. C. Oscillator and variable impedance amplifier can be used as a separate low frequency generator with an output power of five watts into a 50 ohm load. The "Q" scale is calibrated from 0 to 100. A high accuracy of measurement is obtained, since "Q" variations from 0 to 100 are read on a 4 inch meter. "Q" factors of coils can be measured with up to 100 volts across the coil, and therefore makes it possible to determine the stability and the variations of the "Q" factor of coils as a function of the applied voltage. The voltage fed into the series circuit is variable from 10 volts to .01 volt.

### SPECIFICATIONS

**Range of "Q" Measurements:** The range of "Q" factors is from 0.1 to 1000 over the frequency range from 20 to 50,000 cycles with an accuracy of 5%, from 50,000 cycles to 200,000 cycles the accuracy of "Q" measurements is limited by the residual capacity of the measuring circuit; (for iron core coils measurements in this frequency range will approach the 5%).

**Oscillator Frequency Range:** Continuously variable from 20 to 200,000 cycles in four ranges.

**Frequency Accuracy:** 1% under normal conditions. The frequency stability is better than 2% over a long period of time.

**Output Impedance and Voltage:** Four output impedances are available.

(a) 10 ohms impedance — 25 V Output Voltage

(b) 1 ohm impedance — 2.5 V Output Voltage

(c) .2 ohm impedance — .25 V Output Voltage

(d) .1 ohm impedance — .02 V Output Voltage

These Impedances are measured at 50,000 cy.

**Variable Condenser:** The variable condenser is composed of a 10 x 1 mfd., 10 x 0.1 mfd., 10 x 0.01 mfd., 10 x 0.001 mfd. and 10 x 0.0001 mfd. decade condenser and a 100 mmfd. variable air condenser.

**Power Supply:** The instrument is entirely self-contained and operates on 105-125 volts, 50-60 cycles. Total consumption 200 watts.

**Dimension:** Width 19½" x Depth 14½" x Height 23"

**Weight:** 120 lbs.

# FREED Test Instruments



## TYPE 1020-B MEGOHMMETER

### USES

The Freed Type 1020-B Megohmmeter is a self contained and A.C. operated instrument equally useful in the laboratory or for production testing of the leakage resistance of insulation materials, condensers, cables, motors and transformer windings.

### FEATURES

Resistance values indicated directly on a four inch meter protected against over-load. Rapid and safe to use, test voltage removed from terminals and capacitive component discharged to ground in all positions of multiplier switch. Maximum short circuit current limited to 6 milliamperes for optimum safety of operating personnel. Low resistance in series with component under test provides very short charging time for even the very largest capacitors. Calibration position provided to check accuracy of 500 volts D.C. potential.

500 volt test supply electronically regulated.

### SPECIFICATIONS

**Range:** 1 megohm to 2,000,000 megohms in six overlapping ranges selected by a multiplier switch.

**Accuracy:** Plus or minus 3% on resistance values up to 100,000 megohms; plus or minus 5% from 100,000 to 2,000,000 megohms.

**Power Supply:** 105-125 volts A.C. 50-60 cycles 30 watts.

**Dimensions:** 9½ x 10½ x 8 inches.

**Net Weight:** 18 pounds.

**Voltage on Unknown:** The voltage applied to the unknown terminals is 500 volts D.C. and is independent (less than 1%) of the value of the unknown.

**Stability:** Line voltage variations from 105-125 volts will cause less than 2% variation in the meter reading.

## 2040 MEGA-MEGA METER

For measuring materials with extremely high insulation resistance such as the new type of plastics a type 2040 should be used. The resistance range of this instrument is 20 million megohms (20 megamegohms for absolute readings and 100 million megohms for relative readings).

### SPECIFICATIONS

**Range:** 1 megohm to 100,000,000 megohms ( $10^8$ ).

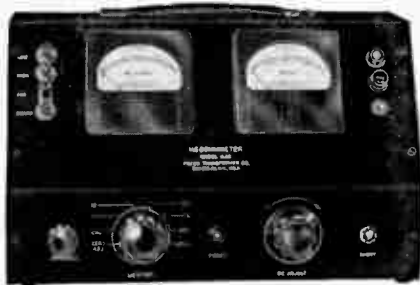
**Accuracy:** Plus or minus 3% on resistance values up to 100,000 megohms, plus or minus 5% to 20,000,000 megohms, relative readings to 100,000,000 megohms.

**Voltage on Unknown:** Regulated 500 Volts D.C.

**Power Supply:** 105-125 Volts, 50-60 cycles.

**Size:** 9½ x 10½ x 8 inches.

**Weight:** 18 lbs.



## TYPE 1620 MEGOHMMETER

### DESCRIPTION

The instrument is a direct-reading, precision-balanced electronic ohmmeter with a variable D.C. test potential included as part of the unit. The D.C. test potential is variable from 50 to 1000 volts and is indicated by a four inch meter.

The insulation resistance is measured in six overlapping ranges and is indicated by a four inch meter, protected against overload. A relay, operated from the front panel, disconnects the high voltage from the test terminals and eliminates all danger of shock due to exposed high potential. In the standby position (when push button is released) a resistance is connected between the chassis and the high voltage terminal, so that the danger of shock is eliminated when disconnecting the component under test.

### CONTROLS

1. Range selector and calibrating switch.
2. Zero adjust control for setting meter scale to infinity.
3. Push button switch for activating the relay which applies test voltage to terminals — when released, discharges capacitive component across the unknown terminals.
4. Variable D.C. adjust — for setting the D.C. test voltage at desired level.
5. A.C. on-off switch.

### SPECIFICATIONS

**Range:** .5 megohms to 4,000,000 megohms in six overlapping ranges selected by a multiplier switch.

**Accuracy:** Plus or minus 5%.

**Volts on Unknown:** The voltage applied to the unknown terminals is continuously variable from 50 volts to 1000 volts. A 4" meter indicates the voltage applied to the unknown.

**Terminals:** Four terminals are provided, two for connecting the unknown, one guard and one ground.

**Power Supply:** 105-125 volts A.C. — 50-60 cycles.

**Cabinet:** 15" x 9" x 7½".

## TYPE 1620-C MEGOHMMETER

All features same as type 1620 with additional circuitry for measuring capacitor leakage with test voltages from 50-1000 volts D. C.



# FREED Test Instruments

## TYPE 2030 PORTABLE MEGOHMMETER

### USES

The Freed Type 2030 Megohmmeter is a battery operated instrument especially suited for measuring leakage of transformers, motors, cables, condensers and insulating materials wherever the power line is inaccessible or where battery operation is more desirable.

### FEATURES

Resistance values are indicated on a 3" expanded scale meter protected against overload. Low resistance in series with component under test provides very short charging time for even the largest condensers. Calibration positioned provided to check accuracy of 500 volt test potential. The 500 volt test supply is regulated.

### SPECIFICATIONS

**Range:** 5 megohms to 10,000,000 megohms in 5 overlapping ranges.

**Accuracy:** Plus or minus 3% on resistance values up to 100,000 megohms; plus or minus 5% from 100,000 megohms to 10,000,000 megohms.

**Voltages on Unknown:** The voltage applied to the Unknown terminals is 500 volts D.C.  $\pm 2\%$  and is independent (less than 1%) of the value of The Unknown.

**Terminals:** Four terminals are provided, two for connecting the Unknown, one guard and one ground.

**Dimensions:** 5 x 6 x 10.

**Power Supply:** Standard replaceable long life batteries.

**Dimensions:** 5 $\frac{3}{4}$ " x 8" x 3 $\frac{3}{4}$ ".

**Weight:** 4 lbs.



## TYPE 1010-A COMPARISON AND LIMIT BRIDGE

### USES

This instrument is a comparison and limit bridge for use in both laboratory and production testing of resistors, condensers and inductors. The manufacturer of these components can use it for production tests, the user for incoming inspection and acceptance tests. The instrument is particularly useful for laboratory work (bridge or filters) where very accurate components are required.

### FEATURES

For precision and production testing, the bridge has many advantages. Power line operation and the visual null indicator make the instrument completely self-contained. It can be used in noisy locations. Its small size and light weight permit the instrument to be moved easily and to be set up wherever necessary.

### DESCRIPTION

The instrument is composed of an oscillator, a bridge and a selective amplifier. The oscillator output is coupled into the bridge through a shielded isolation transformer. A switch is provided which connects either a high or low impedance winding across the bridge, consisting of two fixed resistors, the unknown impedance and the standard. A variable resistor between the two fixed resistors makes it possible to read the percentage difference between the unknown and the standard on a specially calibrated dial. A high gain selective amplifier indicates the balance of the bridge. The general method of testing is the comparison of an unknown component with a standard component of the same type. Accurate percentage measurements are obtained by the use of precision components in the arms of the bridge. The use of a high gain amplifier and adequate internal shielding assures a very sharp and distinct balance.

A visual null indicator, consisting of a meter used in connection with the high gain amplifier makes it possible to use the No. 1010-A Bridge as a precision limit bridge in production testing.

### SPECIFICATIONS

**Frequency:** Three test frequencies are available: 50 or 60 cycles, 1000 cycles and 10,000 cycles.

The 50 or 60 cycles are taken from the line. The 1000 and 10,000 cycles are generated by an oscillator and are accurate to within  $\pm 2\%$ .

**Range:** Two comparison ranges are provided. 5% and 20%. The percentage difference is read directly on a calibrated dial.

**Resistor Measurements:** Resistors from 1 ohm to 20 megohms may be compared at 60 cycles to an accuracy of  $\pm 0.1\%$ .

**Condenser Measurements:** Condensers from 50 mmfd to 10 mfd are measured at 1000 cycles. Condensers above 10 mfd are measured at 60 cycles. Condensers below 50 mmfd may be measured if the ground-unground switch is in the unground position.

**Inductor Measurements:** Inductors may be measured at 60, 1000 or 10,000 cycles depending on their value. Range: 10 microhenries to 1000 henries.

**Accuracy:** On the 5% position the components can be adjusted to within an accuracy of  $\pm 0.1\%$ .

**Voltage Applied to the Unknown:** Two controls are provided to vary the voltage across the unknown. A special low impedance winding is used when measuring small impedances and the voltage across these may be varied from .1 to 1 volts. For higher values of impedance the voltage may be varied from .5 to 15 volts.

**Power Supply:** 105-125 volts; 50-60 cycles.

**Portable:** Carrying cabinet of all metal construction.

**Dimensions:** 10 $\frac{1}{2}$ " x 12" x 12".

**Net Weight:** 17 lbs.



# FREED Test Instruments

## TYPE 1110-AB INCREMENTAL INDUCTANCE BRIDGE



### USES

The Incremental Inductance Bridge is designed for measuring the inductance of Iron Core components at any frequency up to 10,000 cycles. Inductors can be measured with a superimposed direct current, therefore, the bridge will measure the incremental inductance of coils. The bridge can be used for determination of storage factor, "Q", either at a given frequency in function of the applied voltage or at a given voltage in function of the applied frequency. The bridge can be used by the manufacturers of iron core components, such as filter chokes, high Q coils, and iron core audio and supersonic frequency components. Due to its very wide inductance range the instrument can be used as a general purpose laboratory inductance bridge.

### SPECIFICATIONS

**Inductance Ranges:** One millihenry to one thousand henries in five ranges. Inductance values are read directly from a four dial decade and a multiplier switch. The last range may be extended to 10,000 henries through the use of an external resistance. (Freed Type 1420)

**Conductance Range:** One micromho to one mho in five ranges, read directly from a four dial decade and a multiplier switch. This conductance represents the reciprocal of the A.C. resistance of the coil.

**"Q" Range:** "Q" is measured as the product of Inductance (L), Frequency (W) and Conductance (G). The range of "Q" measured on the bridge is 0.5 to 100. Measurement of inductance is independent of the values of "Q"

**Frequency Range:** The bridge is calibrated and adjusted at both 60 and 1000 cycles, but can be used at any frequency up to 10,000 cycles. Errors resulting from stray capacity increase with frequency.

**Range of Superimposed D.C.:** On multiplier switch position L X 100 the D.C. is limited to 10 ma. On the position L X 10, the D.C. is limited to 250 ma., on all

other positions the D.C. can be one ampere maximum.

**Accuracy:** 1% through the frequency range from 60-1000 cycles 2% for frequencies from 1000 to 10,000 cycles. This accuracy is decreased for extreme positions of the multiplier. Conductance measurements 5% from 60-1000 cycles.

**Mounting:** The bridge is supplied in a walnut cabinet or on special order for standard rack mounting.

**Dimensions:** Rack: 19" Wide x 8" Deep x 14" High.  
Cabinet: 21" Wide x 8" Deep x 16 $\frac{5}{8}$ " High.

**Net Weight:** Rack: 37 lbs. Cabinet: 48 lbs.

## TYPE 1210-A NULL DETECTOR AND VACUUM TUBE VOLTMETER

### USES

The Type 1210-A Null Detector and Vacuum Tube Voltmeter is primarily designed for bridge measurements. The Null Detector indicates the balance of the bridge, and the Vacuum Tube Voltmeter indicates the voltage across the unknown two terminal or four terminal network. The three selective circuits provide means for sharply tuning the instrument to audio frequencies commonly used for measurements. The Vacuum Tube Voltmeter can be used as a general purpose audio Vacuum Tube Voltmeter.

### DESCRIPTION

The Type 1210-A Null Detector and Vacuum Tube Voltmeter is a combination of the Model 1140 Null Detector Amplifier, and a high input impedance Vacuum Tube Voltmeter. Both instruments are independent and feed two separate 4" meters.

### SPECIFICATIONS

#### NULL DETECTOR

**Input Impedance:** 1 megohm in parallel with 25 mmf.

**Frequency Response:** 2 db from 20 to 20,000 cycles.

**Null Detector Sensitivity:** At 1000 cycles, 100 microvolts will give a 15% meter deflection. **Hum and Noise Level:** With the selective filters out, less than 60 microvolts referred to the input, with 1 kc filter less than 5 microvolts.

**Selective Amplifier:** 26 db second harmonic attenuation at 60, 400 and 1000 cycles. Selectivity at any other frequency between 20 cycles and 20 kc. may be obtained by connecting Freed Model 1940 to the external filter jack.

#### VACUUM TUBE VOLTMETER

**Voltage Range:** .01 volts to 100 volts in four ranges — (0.1, 1, 10, 100 volts at full scale).



**Waveform Error:** The instrument is a full wave average meter and is free of turnover effects. For small amounts of distortion the accuracy of the instrument is independent of the waveform.

**Frequency Range:** 20 cycles to 20,000 cycles (1 db).

**Input Impedance:** Equivalent to 50 megohms resistance in parallel with a 25 mmf condenser.

**Meter Scale:** Logarithmic Voltage Scale calibrated from 1 to 10 plus a linear db scale calibrated from 0 to 20 db.

**Dimensions:** Rack Mounting 19" x 9" x 11 $\frac{1}{2}$ " — 25 lbs. In cabinet 21" x 15" x 13" — 37 lbs.

**Power Supply:** 105-125 volts A.C. — 50-60 cycles

# FREED Test Instruments

## TYPE NO. 1170 D.C. SUPPLY

### USES

The Type 1170 Power Supply is intended to be used as a dependable source of direct current for the Incremental Inductance Bridge Type No. 1110-A. The supply can also be used as a general laboratory substitute for a high voltage storage battery.

### DESCRIPTION

The Type 1170 D.C. supply consists of an electronically regulated high voltage supply. Four independent control circuits provide four current ranges, namely 5 milliamperes, 25 milliamperes, 100 milliamperes, and 500 milliamperes. The output current is indicated by a multirange 4" meter.

### SPECIFICATIONS

**Current Ranges:** Four current ranges — 5, 25, 100 and 500 milliamperes.

**Voltage Ranges:** The maximum no load voltages corresponding to the four current ranges are the following: 500 MA — 270 volts, 100MA — 270 volts, 25 MA — 55 volts, 5 MA — 25 volts. On both 500 MA and 100 MA range with the control set to zero, the output voltage is independent of the load.

**Voltage Regulation:** The unit operates from a 115 volts, 50-60 cycle line. For a line variation of plus or minus 10%, the output voltage shall not vary more than  $\pm 1\frac{1}{2}\%$ .

**Power Consumption:** Under 500 MA full load the power consumption is 360 watts. Under no load conditions the consumption is 150 watts.

**Hum Level:** On the 270 volt, 500 milliamperere range the hum level under full load condition is 6 millivolts which corresponds to -93 Db.



**Mounting:** The instrument is supplied for mounting on a 19-inch relay rack or for cabinet mounting.

**Dimensions:** Rack: 19" Wide x  $12\frac{3}{8}$ " Deep x  $12\frac{1}{4}$ " High. Cabinet:  $21\frac{1}{2}$ " Wide x 15" Deep x 14" High.

**Net Weight:** Rack Mounted 68 lbs. In Cabinet 89 lbs.

## TYPE 1140-A NULL DETECTOR-AMPLIFIER

### USES

The Freed Model 1140-A Null Detector Amplifier is a sensitive null indicator for bridge measurements, providing visual null indications or aural when used in conjunction with headphones. The unit may also be used as a high gain amplifier for general laboratory work.

### DESCRIPTION

Functionally the instrument consists of a high gain linear amplifier with a 30 db. input attenuator in addition to the variable gain control. A four-inch panel meter provides visual null indications, the response of the meter circuit is approximately logarithmic over a 40 db. voltage range. Resonant circuits tuned to 60, 400 and 1000 cycles limit the amplifier transmission characteristics to the three audio frequencies commonly used for bridge measurements or it may be used as a non-selective amplifier with filter "off."

### SPECIFICATIONS

**Input Impedance:** 1 megohm in parallel with 25 mmf. GAIN: 98 db with 1 megohm load (6 mmf. shunt capacity).

**Frequency Response:** 2db from 20 to 20,000 cycles.

**Null Detector Sensitivity:** At 1 kc. 100 microvolts will give a 15% meter deflection. **Hum and Noise Level:** With the selective filters out, less than 60 microvolts referred to the input, with 1 kc filter less than 5 microvolts.

**Selective Amplifier:** 26 db. second harmonic attenuation at 60, 400 and 1000 cycles. Selectivity at any other frequency between 20 cycles and 20 kc. may be obtained by connecting Freed Model 1940 to the external filter jack.

**Output Impedance:** Approximately 50,000 ohms.

**Output Voltage:** 40 volts undistorted into 1 megohm load, 10 volts into 20,000 ohms.

**Power Supply:** 105-125 volts, 50-60 cycles, 35 watts consumption.

**Mounting:** This instrument can be supplied in cabinet model (Type No. 1140-A) or in a standard relay rack mount with dust cover (Type No. 1140-AR).

**Dimensions:** (Type No. 1140-A)  $13\frac{1}{2}$ " x  $8\frac{1}{2}$ " x 10" overall (Type No. 1140-AR) 19" L. x  $8\frac{3}{4}$ " W. x 9" D.

**Weight:** 24 lbs.



# FREED Test Instruments

## TYPE 1180 A.C. SUPPLY

### USES

The type 1180 A.C. Supply is designed for both laboratory and production applications where a power line isolated source of A.C. test voltage is required. It will have particular application to bridge measurements where a source of voltage in small increments is needed.

### DESCRIPTION

The Type 1180 A.C. Supply consists of a variable auto transformer, an isolation transformer, a 10-1 ratio transformer and a precision tapped voltage adjustment transformer.

### SPECIFICATIONS

**Voltage Range:** .01 — 130 volts A.C. — 50-60 cycles.

**Dimensions:** 19" Wide x 5" Deep x 7" High.

**Weight:** 13½ lbs.



## TYPE 1150 UNIVERSAL BRIDGE

### FEATURES

The Universal Bridge offers a variety of five possible bridge circuits. A wide range of capacitance, inductance, impedance, and phase angle measurement can be made throughout the frequency spectrum from 20 cycles to 20,000 cycles.

Decade resistors in the variable arms allow the unknown to be measured to four significant figures.

Operation is simple and both terminals and controls are arranged for convenience and ease of measurements.

### SPECIFICATIONS

**Frequency Range:** The bridge can be used at frequencies from 20 cycles to 20,000 cycles.

**Accuracy:** All resistors of the bridge arms are adjusted to 0.1%. The absolute accuracy of measurement will depend upon the accuracy of standards used.

**Mounting:** The bridge is supplied in a walnut cabinet or on special order for standard rack mounting.

**Dimensions:** Rack: 19" Wide x 8" Deep x 14" High.  
Cabinet: 21" Wide x 8" Deep x 16½" High.

**Weight:** Rack: 32 lbs. Cabinet: 43 lbs.



**Inductance Range:** The bridge will measure inductance of coils from 0.1 mh to 1000 henries with an accuracy of 0.5% at 1000 cycles.

**Capacitance Range:** Condensers from .001 mf to 1 mf can be measured to within 0.5% at 1000 cycles. Condensers below .001 mf should be measured by the substitution method.

## TYPE 1870 INCREMENTAL INDUCTANCE COMPARISON BRIDGE

### USES

The Freed Type 1870 Incremental inductance comparison bridge is designed for rapid testing of transformers and chokes under actual operating conditions. It is extremely useful on the production line or in incoming inspection departments where the combination of speed and accuracy is desirable.

### DESCRIPTION

The unit is completely self contained, consisting of a metered 500 ma D.C. supply, a metered 135 volt, 60 cycle supply and a direct reading % deviation indicator. An external oscillator jack is provided so that test frequencies from 60 cycles to 10 kc may be used.

### SPECIFICATIONS

**Inductance Range:** 25 mh to 100 h.

**Deviation Range:** ±20% with an accuracy of 1%. ±50% with an accuracy of 5%.

**Frequency:** The line frequency is used for most measurements. If another frequency is desired a jack is provided for connecting an external oscillator.

**Voltage Applied to Unknown:** Variable from 0 to 135 volts.

**D.C. Current Range:** 0 to 500 ma in four overlapping ranges, 0-5 ma, 0-25 ma, 0-100 ma, 0-500 ma.

**Vacuum Tube Voltmeter:** .01, .1, 1, 10, and 100 volts full scale.

**Power Supply:** The instrument is entirely self contained and operates on 100-125 volts, 50-60 cycles.

**Dimensions:** 19½" high x 22" wide x 15" deep.

**Weight:** 150 lbs.



# FREED Test Instruments

## TYPE 1940 INTERSTAGE FILTER

### USES

This filter may be used with the Freed Type 1140-A Null Detector and Type 1210-A Null Detector VTVM or similar amplifiers. It can be set to any one of 7 fixed frequencies to reduce noise and harmonics when making bridge measurements.

### DESCRIPTION

The filters are parallel resonant circuits, and are designed to be used in the plate circuit of the amplifier. D.C. current through the inductor is limited to 3 ma. Terminals are provided for connecting an external capacitor to tune to any frequency between 50 cps and 20 kc.



### FEATURES

1. Each of 7 tuned frequencies is quickly available.
2. Any resonant frequency between 50 cps and 20 kc can be obtained with external capacitors.
3. Sharp anti resonant tuning.
4. Can be used directly in plate circuit.

### SPECIFICATIONS

**Frequencies:** 100 cps, 200 cps, 500 cps, 800 cps, 1200 cps, 2000 cps and 10 kc adjusted to an accuracy of  $\pm 2\%$ .

**Discrimination of 2nd harmonic** approximately 23 db.

**Terminals:** Shielded cord and plug for connection to null detector. Binding posts for connecting external capacitors.

**Dimensions:** 6" x 6" x 6".



## TYPE 1410 WIDE BAND AND CARRIER FREQUENCY DISTORTION METER

### USES

The Type 1410 Wide Band Carrier Frequency Distortion Meter may be used in the laboratory or in production testing of receivers, amplifiers and oscillators.

### DESCRIPTION

The instrument consists of a capacitive input attenuator, a low impedance output preamplifier, a null T network and a high gain vacuum tube voltmeter.

The signal to be measured is applied to the capacitive input attenuator, which reduces it sufficiently so that it may be fed into a three stage distortionless amplifier. The output impedance of this amplifier is 1 ohm due to the high amount of inverse feed back applied. In order to prevent the amplifier from being driven into non-linearity, a monitoring circuit is included in the instrument.

The attenuated signal is fed into a null T network which completely eliminates the fundamental. The residual signal consists wholly of harmonics and noise, and this is measured by the vacuum tube voltmeter.

The null T network is switched out of the circuit and the signal level is attenuated by a calibrated resistive divider. When the voltmeter indicates the same level as the level of harmonics, the divider reads the percentage distortion directly.

### FEATURES

The high sensitivity of the instrument permits measurements to be made on signals as low as 0.2 volts to an accuracy of 0.1%. Signals as high as 1000 volts may be applied to the input terminals directly.

The frequency range of the instrument is 20 kc to 1 mc. in 10 overlapping ranges. Frequencies up to 3 mc. are passed without attenuation by the amplifier circuits, so that distortion measurements can be made on fundamental frequencies up to 1 mc.

An isolation transformer and line filter provided with the instrument prevent any feedback through the power line.

### SPECIFICATIONS

**Frequency Range:** 20 kc to 1 mc.

**Input Impedance:** 500,000 ohms shunted by 70 mmfd. (plus capacity of input cable) on all ranges but the 0.1 volt range. The shunt capacity on this range is 800 mmfd.

**Accuracy:** Harmonic Distortion can be measured accurately to 0.1%.

**Sensitivity:** Distortion levels of 0.1% can be read accurately for a signal input as low as 0.2 volts. Maximum input signal is 1000 volts rms.

**Elimination Characteristics:** Eliminates fundamental completely while attenuating second harmonic approximately 3%.

**Power Supply:** 105:125 volts, 50-60 cycles.

**Dimensions:** 19 $\frac{3}{4}$ " x 16 $\frac{3}{4}$ " x 15 $\frac{3}{4}$ ".

**Net Weight:** 60 pounds.

# FREED Test Instruments

## TYPE 1560 DIFFERENTIAL VOLTMETER

### USES

The Freed Type 1560 Differential Voltmeter measures difference in voltage levels as low as 0.1% regardless of their phase relation. It is extremely useful when checking response and attenuation of filters, transformers, amplifiers and other applications where a small difference in two voltages is to be measured. Because of its excellent stability and high sensitivity the differential voltmeter may also be used to observe drift in amplifiers, meters, and filters.

### DESCRIPTION

The A.C. input signals are amplified then rectified and compared so that accurate comparison may be obtained regardless of the phase of the input signals. Voltage differences as low as .01% can be observed through the use of a high gain amplifier and are indicated on a four inch zero center meter.

### SPECIFICATIONS

**Input Range:** 1, 3, 10, 30, 100 volts (.3 v minimum input).  
**Frequency Range:**—30 cycles to 20 KC.  
**Difference Voltage Range:**—10% to +5%.  
**Basic Accuracy:**—0.1% difference.  
**Input Impedance:**—500,000 ohms.  
**Power Supply:**—105/125 volts, 50/60 cycles.  
**Dimensions:**—21" x 15" x 13".  
**Weight:**—35 lbs.



## TYPE 2050 ALL-TRANSISTOR NULL DETECTOR

### USES

The Freed Type 2050 Null Detector, when used in conjunction with other battery operated equipment, allows complete isolation from the power lines. This feature, plus battery operation, provide a lower noise level which makes it useful in all types of AC Bridge measurements. Readily portable and independent of power lines, this instrument is particularly suited for bridge measurements in any location.

### FEATURES

- Complete isolation from power lines
- Portable—lightweight
- Economical Operation
- High sensitivity throughout battery life.
- Maintenance—Free
- Simplified operations—No warm-up, no zero setting
- Built-in Harmonic Filters

### SPECIFICATIONS

**Sensitivity:** (with 400 cycle or 1000 cycle filters).  
A—200  $\mu$ V for full-scale  
80  $\mu$ V for 30% deflection } in "Linear" position.  
B—2000  $\mu$ V for full-scale  
100  $\mu$ V for 30% deflection } in "Null" position.  
**Input Impedance:** Approximately 1 Megohm (resistive) at 1000 cycles.  
**Frequency Range:** 40 cycles to 20kc  $\pm$  1db.  
**In "Direct" position:** 20 cycles to 50kc  $\pm$  5 db.  
**FILTERS:** 400 cycles and 1000 cycles, greater than 20db rejection of 2nd Harmonics.



**Power Supply:** 5.2 volts (4 mercury cells)  
**Battery Life:** At least 1800 hours.  
**Size:** 6" x 8" x 3 1/2".  
**Weight:** 3 1/2 lbs. with batteries.

## TYPE 1670 DC NULL DETECTOR

### USES

This instrument is designed to give rugged performance while still maintaining the excellent sensitivity of a galvanometer. It is extremely useful as a null indicator giving instantaneous polarity indication in any type of D.C. bridge measurements. It will find particular application in strain measurements, pyrometry, conductivity and insulation testing, flow measurement and null detection.

### DESCRIPTION

The instrument consists of a filter in the input circuit, a chopper and a high gain A.C. amplifier.

The sensitivity of the instrument when not using the filter is greater than 10 microvolts per division with an input impedance of 1 megohm. The filter when used suppresses any 60 cycle pickup by more than 50 db. The sensitivity when using the filter is reduced to 100 microvolts per division.

### SPECIFICATIONS

**Input Impedance:** 1 megohm.  
**Null Detector Sensitivity:** 10 microvolts per division without filter.  
100 microvolts through filter.  
**Scale:** 4" zero center.  
**Power Supply:** 115 volts, 50-60 cycles.  
**Dimensions:** 8 1/2" x 10" x 11".



# FREED Test Instruments

## FREED DECADE CAPACITORS

Freed decade capacitors are high quality capacitors designed for use in wave filters, tuned circuits and equalizers for audio and supersonic frequencies where a rather large variable capacitance is desired. Their stability, accuracy and low dissipation factor make them especially useful during the preliminary design period when capacitance values are determined experimentally.

Each decade is variable from 0 to 10 by use of 11 position selector switch. The losses in the switches and mountings are kept low by the use of special low loss, impregnated switch wafers. A positive detent mechanism allows the switch to be set accurately. The accuracy is  $\pm 1\%$  at frequency of 1 kc.

**No. 1415** is a 1 mfd/step mylar capacitor. Total capacitance 10 mfd. Size: 3" x 3" x 8". Wgt.: 2 lbs.

**No. 1416** is a 0.1 mfd/step polystyrene capacitor. Total capacitance is 1 mfd. Size: 3" x 3" x 8". Wgt.: 2 lbs.

**No. 1417** is a .01 mfd/step polystyrene capacitor. Total capacitance is 0.1 mfd. Size: 3" x 3" x 8". Wgt.: 2 lbs.

**No. 1418** is a .001 mfd/step polystyrene capacitor. Total capacitance is .01 mfd. Size: 3" x 3" x 8". Wgt.: 2 lbs.

**No. 1419** is a 100 mmfd/step capacitor. Total capacitance is .001 mfd. Size: 3" x 3" x 8". Wgt.: 2 lbs.

\*Tapped holes are provided in front of casting for mounting to a panel.

**No. 1250** is a three section decade capacitor. The type 1416, 1417 and 1418 are assembled together in a single wooden cabinet to give a total capacity of 1.110 mfd in .001 mfd steps. Size: 13 $\frac{3}{4}$ " x 6" x 4 $\frac{1}{2}$ ". Wgt.: 8 lbs.

**No. 1350** is a five section decade capacitor. The type 1415, 1416, 1417 and 1418 are mounted on one panel with a 1000 mmfd precision air variable condenser. Size: 19" x 7 $\frac{3}{4}$ " x 8". Wgt.: 20 lbs.

**No. 1351** is a six section decade capacitor. The type 1415, 1416, 1417, 1418 and 1419 are mounted on one panel with a 100 mmfd precision variable condenser. The 100 mmfd may be used singly in which case the stray capacity is less than 10 mmfd or it may be used in conjunction with the other decades by simply closing a shorting link.

The capacity is continuously variable from 10 mmfd to 11.1111 mfd in 100 mmfd steps with  $\pm 1\%$  accuracy.

The maximum voltage that may be applied to these decades is 500 D.C. working volts.

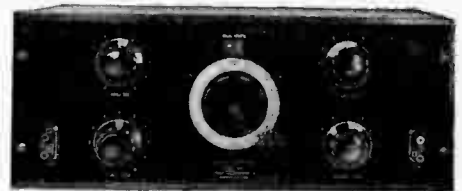
The dissipation factor of the polystyrene units when measured at 1 kc. is less than .0002. The dissipation factor of the 1 mfd/step decade (mylar) is less than .005. Size: 19" x 10 $\frac{3}{4}$ " x 8" Wgt.: 25 lbs.



No. 1415      No. 1416      No. 1417  
No. 1418      No. 1419



No. 1250



No. 1350

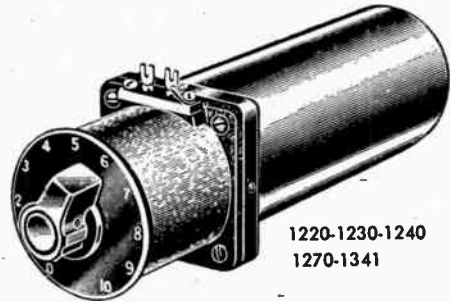
No. 1351

# FREED Test Instruments

## FREED DECADE INDUCTORS

Primarily designed for use in wave filters, tuned circuits and equalizers for audio and supersonic frequencies. The stability, accuracy and high value of "Q" makes these Decade Inductors invaluable laboratory instruments.

Type	Freq. Range	Q	Step	Total Inductance	Size	Wgt.
1164*†#	30 to 2,000	50@200	.1 Hy	111 Hy	15 x 7 x 5½	28
1220†	500 to 20,000	160@1000	0.001 Hy	0.01 Hy	3 x 3 x 8	4½
1230†	500 to 20,000	160@1000	0.01 Hy	0.1 Hy	3 x 3 x 8	4½
1240†	500 to 20,000	160@1000	0.1 Hy	1 Hy	3 x 3 x 8	4½
1270†	500 to 20,000	60@1000	1 Hy	10 Hy	3 x 3 x 8	4½
1280‡	500 to 20,000	60@1000	0.001 Hy	1.11 Hy	13¾ x 6 x 4½	16
1290‡‡	500 to 20,000	60@1000	0.001 Hy	11.11 Hy	15 x 7 x 5½	20
1310†	500 to 20,000	60@1000	0.01 Hy	11.1 Hy	13¾ x 6 x 4½	16
1341†	100 to 2,000	80@ 500	10 Hy	100 Hy	3 x 3 x 8	4½



1220-1230-1240  
1270-1341



1164  
1250  
1280  
1310

### ACCURACY OF TOROIDAL INDUCTANCES

Inductance per Step	1 mh	10 mh	100 mh	1 h
Accuracy	±2%	±1%	±0.5%	±0.25%

\*Type 1164 Decade Ind. is wound on a special nickel alloy core.

†Single Decade Unit. ‡Three Decade Unit. ‡‡Four Decade Unit.

#Accuracy at 1164 ±1%.

Tapped holes are provided on front of casting for mounting to a panel on Types 1220, 1230, 1240, 1270 and 1341.

## TYPE 2020 SERIES-PRESET ELECTRONIC COUNTERS

Freed Model 2020 Preset Counters were designed for accurate and reliable counting and control of manual or automatic machine operations. Any predetermined number from 1 to 9,999 may be preset for controlling production processes. When the preset total is reached a built-in D.P.D.T. relay will stop a machine, operate solenoids and other control devices.

The use of cold cathode counting tubes, simplified circuits and quality components assure years of reliable low cost counting service.

### SPECIFICATIONS

**Maximum Count:** 6 digit—1 million.

**Maximum Counting Rate:** Up to 5000 counts per second, for control applications up to 500.

**Input:** Pulses from photo-cells, switch closure, magnetic pick-up, etc.

**Output Relay:** D.P.D.T. 5 ampere contacts.

**Size:** 4 digit 8" x 7" x 12".

**Weight:** 11 lbs.

**Power:** 105-125 Volts A.C. 50-60 cycles.

**Note:** Model 2020 Preset Counters can be supplied with from 1 to 6 presets.



Type 2020-4



# FREED Test Instruments

## ADDITIONAL COUNTER INFORMATION

In addition to the Freed Model 2020 Counters a wide choice of other models is available for Straight Counting, measuring, Control of process, and batching control.



**TYPE 2020 PRESET COUNTERS**—available in twenty-four models. Two, three, four, five or six digit Counters each with any number of presets from 1 to 6. Using these Counters as many as six operations may be controlled with a single instrument. For example one preset Counter with 3 preset may be used to wind three windings on a transformer, each winding having a different number of turns.

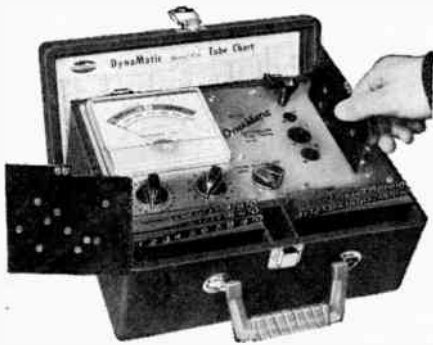
**TYPE 2023 BATCHING COUNTERS**—All Preset Counters are available with an additional circuit for batch counting. This enables the preset of the desired operation as well as determine the number of times this operation is to be repeated.

**TYPE 2022 TOTALIZING COUNTERS**—cold cathode counters are available to 99,999 counts and electromechanical counters with one or two stages of electronic counting provides count capacities up to 10 million counts.

### WRITE FOR ENGINEERING APPLICATION DATA AND PRICES

Type No.	Description	Net Price
1010-A	Comparison and Limit Bridge	\$ 325.00
1020-B	Megohmmeter	225.00
1030-A	Low Frequency "Q" Indicator	1250.00
1110-AB	Incremental Inductance Bridge	375.00
1140-A	Null Detector — Amplifier	234.00
1150	Universal Bridge	325.00
1164	Decade Inductor	230.00
1170	DC Supply	325.00
1180	AC Supply	115.00
1210-A	Null Detector-Vacuum Tube Voltmeter	350.00
1220	Decade Inductor	65.00
1230	Decade Inductor	61.00
1240	Decade Inductor	65.00
1250	Decade Condenser	170.00
1270	Decade Inductor	75.00
1280	Decade Inductor	250.00
1290	Decade Inductor	325.00
1310	Decade Inductor	195.00
1341	Decade Inductor	85.00
1350	Decade Condenser	250.00
1351	Decade Condenser	295.00
1410	Distortion Meter	850.00
1415	Decade Condenser	32.00
1416	Decade Condenser	45.00
1417	Decade Condenser	32.00
1418	Decade Condenser	26.00
1419	Decade Condenser	40.00
1420	Decade Resistor	24.00
1560	Differential Voltmeter	525.00
1620	Megohmmeter	325.00
1620-C	Megohmmeter	350.00
1670	DC Null Detector	325.00
1870	Incremental Inductance Comparison Bridge	550.00
1940	Interstage Filter	100.00
2030	Megohmmeter	195.00
2050	Portable Null Detector	185.00

# TELETEST INSTRUMENTS



Model DM-456 DynaMatic Punched Card Conductance Tube Tester, Net .....\$149.95

## PUNCHED-CARD DYNAMIC MUTUAL CONDUCTANCE TUBE TESTER

### MODEL DM-456

The first AUTOMATIC Gm Tester on the Market!!!

Now, Automation has come to TV servicing with this revolutionary, new dynamic mutual conductance tube tester. Speeds up tube testing to meet today's requirements and tomorrow's demands—speed tests more than 500 tubes, including battery type.

The TeleTest DynaMatic is also the smallest lightest, most compact portable Gm tester available. Roll charts and multiple-socket panels are completely eliminated. Socket and voltage connections are set up AUTOMATICALLY by a simple, perforated card system.

• Tests ALL new types of TV circuit tubes, under load, as fast as they appear in new sets, even the new 600 ma heater-string types.

- The most simplified system of testing in the entire field.
  - Tests for mutual conductance, gas content, grid emission, life expectancy, shorts and leakage, including even the slightest heater cathode leakage.
  - Additional punched cards issued when their use is required. No waiting for replacement roll charts or overlay panels.
  - Supplied in gray leatherette carrying case.
  - Checks Battery Tubes
  - Accessory available to test Loctal types.
- Line Voltage—117 v. 60 cycle AC; self-adjusting line compensation.

Meter—4½" rectangular; 2 Gm ranges: 0-6000 & 0-18,000 micromhos; "Good-Bad" scale calibrated in % of rated mutual conductance.

Dimensions—11½" long x 8¾" wide x 5½" deep.



## REJUVATESTER

### MODEL RT-203

An unbeatable combination . . . a CRT tester and rejuvenator in one, compact, featherweight unit, Unmatched simplicity of operation with one-knob control, large easy-to-read meter and neon short indicator. Restores normal performance on 90% of all magnetically-deflected TV and industrial CRT's even those using electrostatic focusing!

- Checks cathode emission, gas content, loss of brightness; locates open elements, hot and cold inter-element shorts and leakage as high as 5 megohms.
- Removes cathode surface contamination.
- Restores and improves emission quality.
- Clears inter-element shorts.
- Cathode activity metered during revitalization to prevent permanent tube damage.

Line Voltage—117 v, 60 cycle AC.

Short Indicator—#51 neon lamp.

Meter—4½" rectangular.

Dimensions—7" high x 5½" wide x 2½" deep.

Weight—3¼ lbs.

Model RT-203 Rejuvatester, Net.....\$44.95

Model RT-203B mounted in black, leatherette-covered all wood carrying case with detachable cover.....\$49.95



## CAPACITESTER

### MODEL CT-355

The first and foremost condenser tester designed to check coupling condensers, under load, without removal from the circuit. The elimination of grid current effects makes it superior to any voltmeter, and dynamic testing procedures make it surpass an ohmmeter for "hot" leakage detection.

- Dynamic in-circuit test for coupling condenser leakage.
- Checks electrolytic, paper, mica and ceramic capacitors; variable tuning and trimmer condensers, for leakage and breakdown.
- Also tests open, shorted, intermittent capacitors; unstable resistors, transformer windings, switches, sockets, contacts or between any points where leakage may occur.
- Positive indication of relative leakage present, without damage to condensers.
- High accuracy Wien-bridge capacitance measurement, as added feature.

Line Voltage—117 v, 60 cycle AC.  
Polarizing Voltages—150 and 300 v DC (Nominal).

Capacitance Measurement—3 ranges: 10 mmfd — .005 mfd, .001 — 0.5 mfd, 0.1 — 50 mfd.

Leakage Resistance Measurement — over 40 megohms, under load.

Tubes—one 6AF6, one 6AV6.

Dimensions—7" high x 4¼" wide x 2½" deep.

Weight—3¼ lbs.

Model CT-355 CapaciTester, Net.....\$44.95

Model CT-355B mounted in black, leatherette-covered all wood carrying case with detachable cover..... 49.95



## FLYBACK TESTER

### MODEL FT-100

Engineered for the cost-conscious technician, here is the first and only flyback tester that doesn't require a reference transformer for comparison! Indicates true flyback condition under full operating voltage, 100% of the time!

- Tests fixed and variable-core monochrome and color flybacks, air core HV transformers and auto-transformers.
- Also deflection yoke windings, width and linearity coils.
- Dynamic test, under full operating voltage, with no danger of shock.
- Accessory unit available to simplify yoke testing even further.

Line Voltage—117 v, 60 cycle AC.

Meter—4½" rectangular, 50 ua sensitivity.

Tubes—one 6AL5.

Test Current Output—2000-ampere, 10 usec pulse.

Dimensions—7" high x 5¼" wide x 2½" deep.

Weight—3¼ lbs.

Model FT-100 Flyback Tester, Net.....\$44.95

Model FT-100B mounted in black, leatherette-covered all wood carrying case with detachable cover..... 49.95

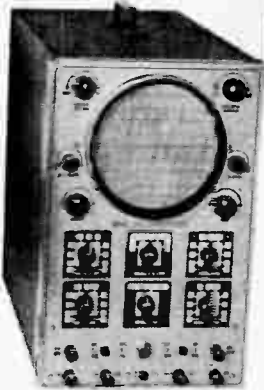
Model YT-101 Yoke Accessory..... 6.95

save **MORE...**  
service **BETTER**

**EMC**

precision  
instruments

**NEW** **EMC MODEL 601**  
**OSCILLOSCOPE**



**CHECK THIS LIST OF EXCLUSIVE FEATURES**

- Full 5 mc bandwidth for color TV servicing.
- Down only 1 DB at 3.58 mc color burst sync frequency.
- Has a push-pull vertical amplifier with sensitivity of .02 volts per inch.
- The DC positioning controls provide for instantaneous trace positioning without bounce or overshoot.
- Uses new 51P1-5" scope tube for sharp focusing and good intensity.
- Retrace blanking amplifier eliminates confusion and gives clearer pictures.
- Has built-in 60 cycle phasing control and sweep for TV servicing.
- Uses astigmatism control for better focusing.
- Provision for Z axis input or intensity modulation.
- Synchronization available in positive or negative phase of input voltage or from external source.
- Built-in peak to peak calibration reference.
- Uses a 2 step compensated attenuator input.
- Multivibrator sweep from 15 cycles to over 75 kilocycles.

**SPECIFICATIONS**

**Tube Complement:** 1-5U1 cathode ray; 1-5AB4 (vert. amp.); 1-6BQ7A (vert. amp.); 1-12BH7 (vert. amp.); 1-12AU7 (multivibrator); 1-12AT7 (horiz. amp.); 2-6C4 (phase splitter & blanking Amplifier); 2-5Y3 rectifier tubes.  
**Sweep Generator:** Multivibrator type. Frequency Range 15 to over 75,000 cycles.  
**Vertical Amplifier:** Max. Sensitivity—.02 volts (RMS) per inch; Freq. Response—Flat within 1.5 DB from 15 cycles to 5 megacycles; Input Impedance—2 megohms-30 MMFD.  
**Horizontal Amplifier:** Max. Sensitivity—2 volts RMS per inch; Freq. Response—Useful to 1 megacycle; Input Impedance—5 meg-40 MMFD.  
**Synchronization:** Positive or negative from vertical amplifier or from external source.  
**Power Requirements:** 105-130 volts 50/60 cycles A0-50 watts.  
**Dimensions:** 8 3/4" wide x 14" high x 15 1/4" deep.  
**Weight:** 29 lbs.  
**NEW MODEL 601 (completely wired & tested)** **\$117.90**

**VOLOMETER\***  
**EMC MODEL 102**

A sturdy, durable pocket instrument from EMC's economy line housed in a molded-bakelite case. This instrument features a three-inch, accurate to within 2%—800 microamperes D'Arsonval-type meter with three AC current ranges; and the same zero adjustment for both resistance ranges.

**SPECIFICATIONS:**  
**AC VOLTAGE—5 RANGES:** 0 to 12-120-600-3000 volts. **DC VOLTAGE—5 RANGES:** 0 to 6-60-300-600-3000 volts.  
**AC CURRENT—3 RANGES:** 0 to 30-150-600 ma. **DC CURRENT—4 RANGES:** 0 to 6-30-130 ma; 0 to 1.2 amps. **TWO RESISTANCE RANGES:** 0 to 1000 ohms; 0 to 1 megohm.  
**MODEL 102—Weight** 1 lb. 5 oz.; **Size** 3 3/4" x 6 1/4" x 2"  
**MODEL 102K—in Kit Form**..... **\$14.90**  
\*Reg. trade mark for volt-ohm milliammeter. **12.50**

**VOLOMETER\***  
**EMC MODEL 104**

A valuable addition to EMC's economy line is this accurate, precision-engineered instrument. This model features a 4 1/2 inch, 50 microampere meter, with alnico magnet... housed in a molded-bakelite case; with three AC current ranges to 3 amps and three resistance ranges to 20 megohms.

**SPECIFICATIONS:**  
**AC VOLTAGE—5 RANGES** (1,000 ohms per volt): 0 to 6-60-300-600-3000 volts. **DC VOLTAGE—5 RANGES** (20,000 ohms per volt): 0 to 6-60-300-600-3000 volts. **AC CURRENT—3 RANGES:** 0 to 30-300 ma. 0 to 3 amps. **DC CURRENT—3 RANGES:** 0 to 6-60-600 ma. **THREE RESISTANCE RANGES:** 0 to 20K, 0 to 200K, 0 to 20 megs. **FIVE DB RANGES:** -4 to +67 DB.  
**MODEL 104—With carrying strap.** Wt. 2 lb. 5 oz. **Size:** 5 1/4" x 6 3/4" x 2 7/8"..... **\$26.95**  
**MODEL 104K—in Kit Form**..... **19.25**  
**MODEL HVT—30,000 Volt Probe for MODEL 104**..... **7.95**  
\*Reg. trade mark for volt-ohm milliammeter.

**VACUUM TUBE**  
**VOLTMETER**  
**EMC MODEL 106**

**CHECK THESE FEATURES:**  
• Specially designed for field alignment of television and radio sets. • Uses dual triode balanced bridge circuit. • All functions and ranges completely electronic—meter cannot burn out. • Zero center position for FM discriminator alignment. • Uses 1% precision resistors for voltage multipliers. • 5 DB ranges. • Full scale deflection of 1 1/2 volts for both AC-DC volts. • Measures resistance in 5 ranges from .2 to 1000 megs. • 1 meg. isolating resistor in probe. • Housed in compact, portable bakelite case. • **Size:** 4 1/4" x 5 1/4" x 2 7/8". net wt. 3 lbs.

**SPECIFICATIONS:**  
**AC VOLTAGE—5 RANGES:** 0 to 1.5, 10, 100, 300, 1000 volts. Input resistance 2 megohms. Frequency response flat from: 25 to 100,000 cycles. **DC VOLTAGE—5 RANGES:** 0 to 1.5, 10, 100, 300, 1000 volts (up to 30,000 volts with accessory probe). Input Resistance: 16.5 megs. or 1 1/2 megohms per volt. **OHMS:** 1000-10,000-100,000-10 megohms, 1000 megohms, 10 megohms center on 1000 megohms range. **DECIBELS RANGES:** -24 to -1.5, -8 to +15, +12 to +35, +21.5 to +44.5, +32 to +55.  
**MODEL 106—Illustrated**..... **\$35.90**  
**MODEL 106—in Kit Form**..... **23.90**  
**MODEL RFP—High Frequency Probe (useful to 200 megacycles)**..... **6.95**  
**MODEL HVP—30,000 Volt Probe for MODEL 106**..... **8.75**  
**MODEL IS—Rubber covered. Instrument stand for volt-ohm, milliameters and VT volt-meters** **0.98**

**EMC**

**ELECTRONIC MEASUREMENTS CORP.**

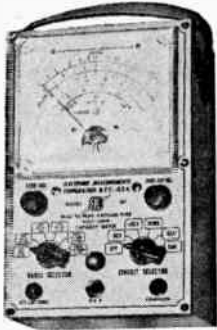
**NEW YORK 12, N. Y.**

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service **BETTER**

with

# EMC

precision  
instruments



Accessory Probes Available

## EMC MODEL 107

Peak-to-Peak Vacuum Tube  
Volt-Ohm-Capacity Meter

Directly measures capacity, resistance and complex waveforms peak to peak. This new multi-function meter contains an exclusive combination of features never before offered for less than \$100. Expanded scale meter cannot burn out . . . measures capacity from 50 MMFD to 5000 MFD . . . inductance from 1.4 henries to 140,000 henries in 4 ranges . . . uses an electronic balanced push-pull circuit and peak to peak rectification . . . 1% multipliers for voltage capacity and resistance measurements . . . has zero center position for FM discriminator alignment.

**SPECIFICATIONS:**

PEAK TO PEAK AC VOLTAGES—6 RANGES: 0 to 4, 28, 84, 280, 840, 2800 volts. Input resistance 1.5 megohms.  
AC RMS VOLTAGES—6 RANGES: 0 to 1.5, 10, 30, 100, 300, 1000 volts. Input resistance 1.5 megohms.  
CAPACITY—6 RANGES: .00005 MFD to .005 MFD, .005 to .05, .05 to .5, .5 to 500, 50 to 5000 MFD.

RESISTANCE—6 RANGES: 0-1000, 10,000, 1 meg, 10 MEG, 1000 MEGS, 10 MEGS center on 1000 MEGS range.  
DC VOLTS—6 RANGES: 0 to 1.5, 10, 30, 100, 300, 1000 volts (up to 30,000 volts with accessory probe).  
Input resistance 16.5 megs or 1 2/3 megohms per volt.  
1 meg isolating resistor in probe.  
DB RANGES: -24 DB to +55 DB in 5 ranges.

Model 107 Complete with Leads ..... \$48.90  
Model 107 Kit Form ..... \$34.50



## EMC MODEL 103 VOLOMETER\*

EMC's economy line offers another accurate and efficient instrument housed in a molded-bakelite case. This model features a 4 1/2 inch, accurate to within 2%—800 microamperes D'Arsonval-type meter with three AC current ranges; and the same zero adjustment for both resistance ranges.

**SPECIFICATIONS:**

AC VOLTAGE—5 RANGES: 0 to 12-120-600-1200-3000 volts.  
DC VOLTAGE—5 RANGES: 0 to 6-60-300-600-3000 volts.

AC CURRENT—3 RANGES: 0 to 30-150-600 ma.  
DC CURRENT—4 RANGES: 0 to 6-30-120 ma.: 0 to 1.2 amps.  
TWO RESISTANCE RANGES: 0 to 1000 ohms, 0 to 1 megohms.

FIVE DB RANGES: -4 to +64 DB.  
MODEL 103—Weight 2 lb. 3 oz. Size: 5 1/4" x 6 3/4" x 2 7/8" ..... \$18.75  
MODEL 103-S: with plastic carrying strap ..... 19.25  
MODEL 103K, in Kit Form ..... 14.90

\*Reg. trade mark for volt-ohm milliammeter.



## EMC MODEL 700

RF-AF-Crystal Marker — TV Bar — Generator

Only the EMC Model 700 gives you all of these outstanding features:

1. Complete coverage from 18 cycles to 108 megacycles on fundamentals.
2. Bar generator for TV adjustment with a variable number of bars available for horizontal or vertical alignment.
3. Square Wave Generator to 20 kilocycles.
4. Wien Bridge AF oscillator with sine wave output from 18 cycles to 300 kilocycles.
5. Crystal marker and amplitude control.
6. Individually tuned coils.
7. Constant RF output impedance.
8. Stepped RF attenuator.
9. Electrostatically shielded transformer.
10. Thorough shielding.
11. Colpitts RF oscillator from 300 KC to 108 megacycles on fundamentals — up to 216 megacycles on 2nd harmonic.
12. Variable percentage of modulation.

MODEL 700 ..... \$55.90



## EMC MODEL 905-6A

Battery Eliminator, Charger & Vibrator Checker

A combination unit housed in a single sloping metal case. Has identical features of Models 905 & 906.

MODEL 905-6A (wired) ..... \$67.90  
(in Kit Form) ..... 44.90

**MODEL 905 Battery Eliminator and Charger**

• Continuously variable voltage output • Automatic overload relay-self resetting • Either 6 or 12 volt operation • Separate voltmeter and ammeter • Heavy duty rectifier

MODEL 905 Battery Eliminator and Charger only (wired) ..... \$37.50  
(in Kit Form) ..... 28.90

**MODEL 906 Vibrator Checker**

• Checks both 6 volt and 12 volt vibrators • Reads condition of vibrator on "Bad-Good" Scale • Checks both interrupter and self-rectifier type for proper starting point as well as quality of operation • Operating instructions are printed on front panel • Instruction sheets list data for testing all popular vibrators  
• Can be used with any battery eliminator such as Model 905

MODEL 906 Vibrator Checker (wired) ..... \$31.80  
(in Kit Form) ..... 17.05

# EMC

ELECTRONIC MEASUREMENTS CORP.

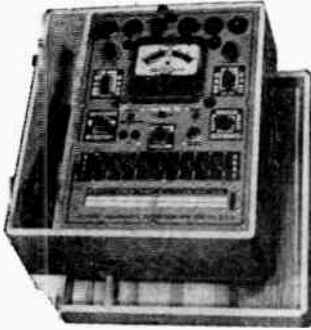
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**EMC**

precision  
instruments



**MUTUAL CONDUCTANCE  
TUBE TESTER  
EMC MODEL 206**

This completely flexible model using lever-type switches offers extremely accurate results with ease of operation. It represents the finest in tube testing equipment at a price comparing favorably with emission-type testers.

**CHECK THESE FEATURES:**

- Checks mutual conductance on a calibrated micromho and "reject-good" scale
- Checks 5 element tubes as pentodes
- Checks tubes for gas content
- Sufficient plate current to check both emission and mutual conductance
- Detects both shorted and open elements
- Complete switching flexibility allows all present and future tubes to be tested, regardless of location of elements on tube base
- Tests tubes for radio frequency and other noise
- Tests all tubes from .75 volts to 117 filament volts
- Tests all local, oral, and miniature tubes
- Tests cold cathode, magic eye, voltage regulator, ballast resistors
- Instrument fuse is easily replaced from panel front
- Individual sockets for each tube base type eliminates possible errors
- Checks individual sections of multi-purpose tubes
- Checks 9-prong miniature tubes
- Checks subminiature tubes
- Attractive four-color panel with durable hardwinkle finish
- Built-in roll chart

MODEL 206P—With hand-rubbed oak carrying case.....	\$83.50
MODEL 206C—Sloping counter case.....	79.50
MODEL CTA—Cathode ray tube adaptor for MODEL 206.....	6.50



**TUBE-BATTERY-OHM  
CAPACITY TESTER  
EMC MODEL 204**

In this model EMC offers a durable, accurate instrument that gives easy, direct readings for all tubes through the standard emission method of testing. It uses four-position lever-type switches and is housed in a hand-rubbed, portable oak carrying case with removable hinged cover.

**CHECK THESE FEATURES:**

- Tests all tubes including Noval and subminiatures
- Completely flexible switching arrangement
- Checks batteries under rated load on "reject-good" scale
- Individual sockets for each type of tube base
- Tests all tubes from .75 volts to 117 filament volts
- Tests cold cathode, magic eye, voltage regulator and ballast tubes
- Has pilot light indicator
- Checks for shorts and leakages
- Line voltage control compensates for line variations between 105 and 135 volts
- Built-in roll chart protected by non-breakable transparent plastic
- Checks condenser leakage to 1 megohm
- Checks resistance up to 4 megohms
- Checks capacity from .01 to 1 mfd.
- Three color hammertone panel

MODEL 204C—Sloping counter case.....	\$54.90
MODEL 204P—With hand-rubbed oak carrying case (illustrated).....	55.90
MODEL CRA—Cathode ray tube adaptor.....	4.50
MODEL 204CK—in Kit Form.....	39.50



**TUBE TESTER  
EMC MODEL 205**

In this durable, accurate instrument EMC offers a model that gives easy, direct readings for all tubes through the standard emission method of testing. It uses four-position lever-type switches and is housed in either a hand-rubbed, portable oak carrying case with removable hinged cover; or in a sloping counter case.

**CHECK THESE FEATURES:**

- Tests all tubes including Noval and subminiatures
- Completely flexible switching arrangement
- Individual sockets for each type of tube base
- Tests all tubes from .75 volts to 117 filament volts
- Tests all cold cathode, magic eye, voltage regulator and ballast tubes
- Has pilot light indicator
- Line voltage control compensates for line variations between 105 and 135 volts
- Checks for shorts and leakages
- Three color hammertone panel

MODEL 205C—Sloping counter case.....	\$46.50
MODEL 205P—With hand-rubbed oak carrying case (illustrated).....	47.50
MODEL CRA—Cathode ray tube adaptor.....	4.50
MODEL 205CK—in Kit Form.....	34.50



**EMC MODEL 207  
Tube-Battery-OHM-Capacity-Tester**

Features large, easy to read, 7 1/2" meter for counter use. In this model EMC offers a durable, accurate instrument that gives easy, direct readings for all tubes through the standard emission method of testing. It uses four-position lever-type switches and is housed in a hand-rubbed, portable oak carrying case with removable hinged cover.

**CHECK THESE FEATURES:**

- Tests all tubes including Noval and subminiatures
- Completely flexible switching arrangement
- Checks batteries under rated load on "reject-good" scale
- Individual sockets for each type of tube base
- Tests all tubes from .75 volts to 117 filament volts
- Tests all cold cathode, magic eye, voltage regulator and ballast tubes
- Has pilot light indicator
- Checks for shorts and leakages
- Line voltage control compensates for line variations between 105 and 135 volts
- Built-in roll chart protected by non-breakable transparent plastic
- Checks condenser leakage to 1 megohm
- Checks resistance up to 4 megohms
- Checks capacity from .01 to 1 mfd.
- Three color hammertone panel

MODEL 207C—Sloping counter case (illustrated).....	\$65.90
MODEL 207P—Portable case, removable cover.....	69.50
MODEL CRA—Cathode ray tube adaptor.....	4.50

**EMC**

**ELECTRONIC MEASUREMENTS CORP.**

**NEW YORK 12, N. Y.**



# PRECISION

Modern Engineering . . .

**EMICO** panel and test meters are rugged and reliable instruments. (Available with plastic or metal face.) DC meters have the new HI-TORK magnetic movements and are accurate to well within 5%. AC meters are of the moving iron type and are also accurate to within 5%.

**MOUNTING** — All model NF-2C, RF-2C, and RF-2¼C with plastic front meters will fit into a 2-1/16" diameter hole and are mounted by means of a U clamp.

**DESIGN** — EMICO meters are designed to give satisfactory service under the most severe conditions. They are styled to add to the prestige and appearance of electrical equipment.

**CALIBRATION** — Since the instruments are calibrated in steel cases, their accuracy is not affected by panels made of magnetic materials of nominal thickness.

**GUARANTEED** — ALL EMICO instruments are guaranteed against defective material and workmanship for a period of one year after date of purchase, and will be repaired or replaced if sent to the factory postpaid with a 50¢ handling charge.

## PRICE LIST

Range	DC AMMETERS			
	Approximate Resist. Ohms	MODEL NF-2C Catalog Number	Dealers' Net Price	MODEL RF-2C Catalog Number
0-1	.15	2101	\$1.75	2201
0-3	.032	2101-A	1.75	2201-A
0-5	.016	2102	1.75	2202
0-10	.00115	2103	1.75	2203
0-15	.00115	2103-A	1.75	2203-A
0-20	.00115	2104	1.75	2204
0-25	.00115	2104-A	1.75	2204-A
0-30	.00115	2105	1.75	2205
0-60	.000116	2106-A	2.40	2206-A
1-0-1	.08	2109	1.75	2209
3-0-3	.00115	2110	1.75	2210
6-0-6	.00115	2111	1.75	2211
10-0-10	.00115	2112	1.75	2212
15-0-15	.00115	2113	1.75	2213
20-0-20	.00115	2114	1.75	2214
30-0-30	.00115	2115	1.75	2215
75-0-75	.000116	2116-A	2.75	2216-A

Range	DC MILLIAMMETERS			
	Approximate Resist. Ohms	MODEL NF-2C Catalog Number	Dealers' Net Price	MODEL RF-2C Catalog Number
0-1	850	2120	\$3.60	2220
0-3	425	2121	2.50	2221
0-5	925	2125	2.25	2225
0-10	1300	2126	2.10	2226
0-20	300	2127	1.75	2227
0-25	95	2127-A	1.75	2227-A
0-30	105	2128	1.75	2228
0-50	65	2129	1.75	2229
0-100	37	2130	1.75	2230
0-150	45	2130-A	1.75	2230-A
0-200	14.5	2130-B	1.75	2230-B
0-300	18	2131	1.75	2231
0-500	7.0	2132	1.75	2232

Range	DC VOLTMETERS (HIGH RESISTANCE)			
	Approximate Resist. Ohms	MODEL NF-2C Catalog Number	Dealers' Net Price	MODEL RF-2C Catalog Number
0-10	1050	2140	\$2.65	2240
0-30	2800	2141	2.65	2241
0-50	4000	2142	2.85	2242
0-150	28000	2143	3.00	2243
0-300	55000	2144	3.10	2244

Range	DC VOLTMETERS (LOW RESISTANCE)			
	Approximate Resist. Ohms	MODEL NF-2C Catalog Number	Dealers' Net Price	MODEL RF-2C Catalog Number
0-1	33	2134	\$1.75	2234
0-3	100	2135	1.75	2235
0-5	30	2136	1.75	2236
0-10	140	2136-A	1.75	2236-A
0-15	225	2136-B	1.75	2236-B
0-20	280	2137	1.75	2237
0-30	450	2137-A	1.75	2237-A
0-50	600	2137-B	1.75	2237-B
0-100	1000	2137-C	1.75	2237-C
0-150	1400	2138	1.75	2238

Range	AC AMMETERS			
	Approximate Resist. Ohms	MODEL NF-2C Catalog Number	Dealers' Net Price	MODEL RF-2C Catalog Number
0-1	.365	6101	\$2.90	6201
0-3	.078	6102	2.90	6202
0-5	.023	6103	2.90	6203
0-10	.013	6104	2.90	6204

Range	AC MILLIAMMETERS			
	Approximate Resist. Ohms	MODEL NF-2C Catalog Number	Dealers' Net Price	MODEL RF-2C Catalog Number
0-25	750	6125	\$2.90	6225
0-50	175	6126	2.90	6226
0-100	58	6127	2.90	6227
0-250	12	6128	2.90	6228
0-500	1.75	6129	2.90	6229

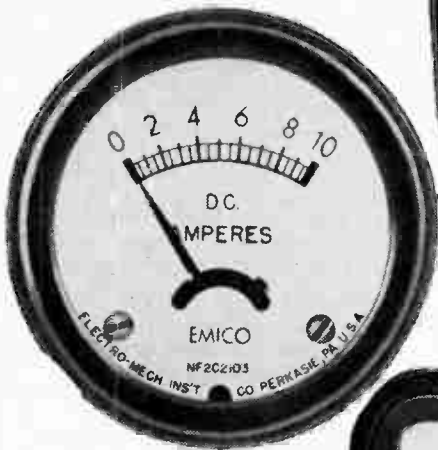
Range	AC VOLTMETERS			
	Approximate Resist. Ohms	MODEL NF-2C Catalog Number	Dealers' Net Price	MODEL RF-2C Catalog Number
0-5	50	6135	\$2.90	6235
0-10	175	6136	2.90	6236
0-15	300	6137	2.90	6237
0-25	920	6137-A	2.90	6237-A
0-50	1800	6138	2.90	6238
0-150	9530	6139	3.50	6239
0-300	32000	6140	4.10	6240

PRICES—Prices listed are net and include all hardware and individual boxing. Resistance approximate. If important request factory engineering confirmation.

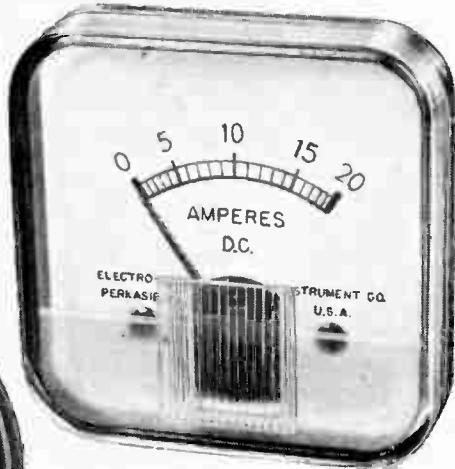
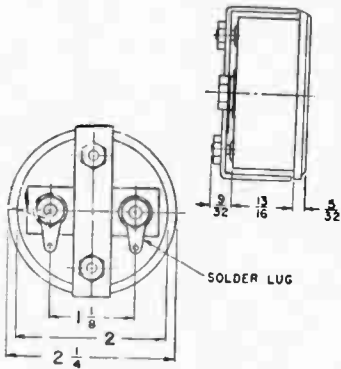
# INSTRUMENTS FOR PANELS AND TEST SETS

## Precision Workmanship!

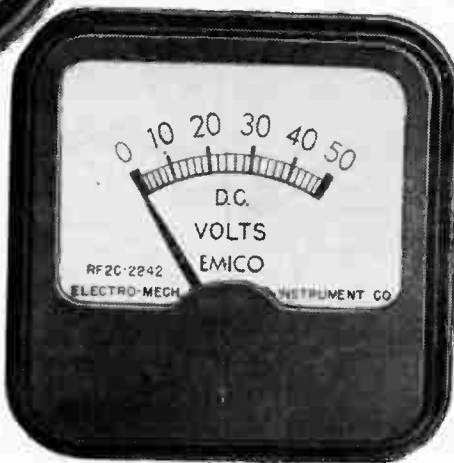
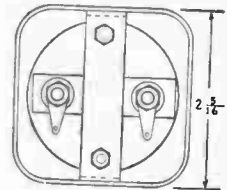
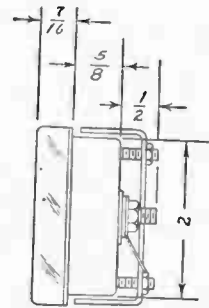
- PEAK EFFICIENCY
- TOP SERVICE
- LONG LIFE



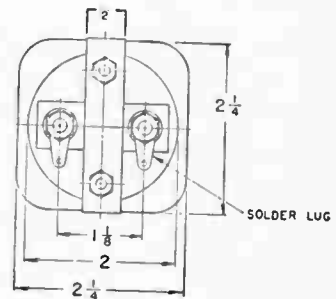
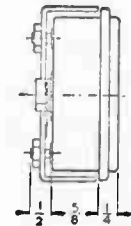
MODEL NF2C



MODEL RF2 1/4 C



MODEL RF2C



EMICO offers a complete line of precision direct current indicating instruments having the simplicity of construction of polarized vane meters with an accuracy and performance comparable to moving coil indicators. This new development is the result of years of experience in instrument designs, manufacturing techniques and the use of modern magnetic materials.

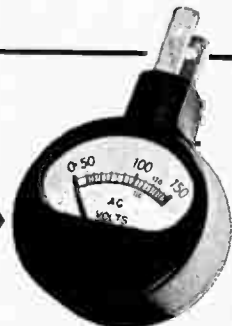


**EMICO Sensitive Sub-Miniature Plug-in Relay**  
Single pole, double throw, rotating magnet instrument type Relay. Hermetically sealed unit. 1400 Ohm coil operates at 1 MW. Plugs in a standard 9-pin miniature tube base.  
Dealers' Net \$18.75



**EMICO Circuit Indicator**  
Sub-miniature power indicator\* with sensitivity to 1 MW. Maximum resistance to 1400 Ohms. Voltage to 25 volts D.C. Front panel mounting.  
Dealers' Net \$7.50  
\*Variation Available in Quantity

**EMICO A.C. Voltage Tester**  
Accurate, precision mechanism plug-in type with damped meter movement. Convenient 90° swivel prongs for ease of reading from any position.  
Dealers' Net \$3.00



ELECTRO-MECHANICAL INSTRUMENT CO. PERKASIE, PENNSYLVANIA

# Waterman

## PRODUCTS



S-14-C



S-4-C

S-5-C



S-11-A



S-14-A



S-15-A

**S-14-C COMPUTER POKETSCOPE** is a portable oscilloscope, especially designed for computers and business machine service. Lightweight and small size together with simplicity of operation makes this instrument IDEAL for field servicing. In addition . . . signal amplifier with  $0.35 \mu s$  pulse rise from dc, with signals of 1 mv observable . . . calibrated fixed sweeps and continuously adjustable linear time base from  $20 \mu s$  to 2 seconds . . .  $5 \times$  stable time base expansion with complete parading for accurate pulse position . . . sync limiting . . . special intensification circuits permits observation of pulses shorter than  $10 \mu s$  at repetition rates slower than 1 pps . . . accessory attenuating and amplifying probes . . . make this instrument a MUST for computer type service.

**S-4-C SAR PULSESOCOPES** are improved JANized equivalents to the Gov't Model AN/USM-25. These portable instruments (only 31.5 lbs. each) are for precision pulse time measurements in radar, TV and all electronics equipment. Portray all attributes of the pulse . . . internal crystal controlled markers of 10 and  $50 \mu s$  available for self-calibration . . . in R operation a small segment of the A sweep is expandable for detailed observation with a direct-reading calibrated dial accurate to 0.1%. Video amplifier band-pass up to 11 mc . . . optional video delay  $0.55 \mu s$  . . . pulse rise time better than  $0.05 \mu s$  . . . R pedestal (sweep) 2.4 to  $24 \mu s$  . . . video sensitivity of 0.1 v rms/in. Easily convertible from  $\mu s$  to yards. Operates from 50 to 400 cycles at 115 volts.

**S-5-C LAB PULSESOCOPES** are JANized equivalents to the Gov't Model AN/USM-24C. These portable, AC, wide band-pass laboratory oscilloscopes are ideal for pulse as well as general purpose measurements. Internal delay of  $0.55 \mu s$  permits observation of pulse leading edge. Includes precision amplitude calibration,  $10 \times$  sweep expansion, internal trace intensity time markers, internal trigger generators and many other features. Video amplifier  $0.6 v$  RMS/inch . . . pulse rise time of  $0.07 \mu s$  or response to 11 mc . . . 5 to  $50,000 \mu s$ /in. triggered or repetitive sweep . . . internally generated markers from 0.2 to  $500 \mu s$  . . . trigger generator from 50 to  $5000$  pps. for internal and external triggering. Operates from 50 to 400 cycles at 115 volts AC.

**S-11-A INDUSTRIAL POKETSCOPE** is a small, compact, and lightweight instrument for observing electrical circuit phenomena. The flexibility of the POKETSCOPE permits its use for ac measurements as well as for dc. The vertical and horizontal amplifiers are capable of reproducing within  $-2$  db from dc to 200 kc with a sensitivity of 0.1 v rms/in . . . repetitive time base from 3 cycles to 50 kc continuously variable throughout its range . . . variations of input impedance, line voltage or controls do not "bounce" the signal—the scope stabilizes immediately.

**S-14-A HI-GAIN POKETSCOPE** provides the optimum in oscilloscope flexibility for analysis of low-level electrical impulses. Vertical and horizontal channels: 10 mv rms/inch with response within  $-2$  db from dc to 200 kc and pulse rise of  $1.8 \mu s$  . . . non-frequency discriminating attenuators and gain controls with internal calibration of trace amplitude . . . repetitive or trigger time base with linearization from  $\frac{1}{2}$  cycle to 50 kc with  $\pm$  sync or trigger.

**S-14-B WIDE BAND POKETSCOPE** is ideal for investigations of transient signals, dc signals, aperiodic pulses or recurrent waveforms. Vertical channel: 50 mv rms/in. within  $-2$  db from dc to 700 kc . . . pulse rise time of  $0.35 \mu s$ . Horizontal channel: 0.15 v rms/in. within  $-2$  db from dc to 200 kc . . . pulse rise of  $1.8 \mu s$ . Attenuators and gain controls are non-frequency discriminating . . . trace amplitude calibration . . . repetitive or triggered time base from  $\frac{1}{2}$  cycle to 50 kc . . .  $\pm$  sync or trigger . . . trace expansion, filter graph screen and many other features

**S-15-A POKETSCOPE** is a portable, twin tube, high sensitivity oscilloscope with two independent vertical as well as horizontal channels. It is indispensable for investigation of electronic circuits in industry, school and laboratory. Vertical channels 10 mv rms/in. with response within  $-2$  db from dc to 200 kc and pulse rise time of  $1.8 \mu s$  . . . horizontal channels 1 v rms/in. within  $-2$  db from dc to 150 kc . . . non-frequency discriminating controls . . . internal signal amplitude calibration . . . linear time base from  $\frac{1}{2}$  cycle to 50 kc, triggered or repetitive, for both horizontal channels.

**S-12-B RAKSCOPE** admirably fills the need for a small oscilloscope of wide versatility. With all the features of the S-11-A POKETSCOPE, the RAKSCOPE is JANized (Gov't Model No. OS-11), and has many additional advantages; the sweep, from 5 cycles to 50 kc, is either repetitive or triggered . . . vertical and horizontal amplifiers are 50 mv rms/inch with band-pass from 0 to 200 kc . . . special phasing circuitry for frequency comparison.

Write for your complimentary copy of "POCKETSCOOP" • Official Waterman publication.

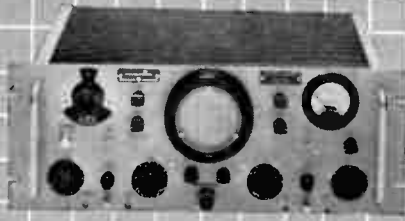


**POCKETSCOPES®**  
**PULSESCOPES®**

**RAKSCOPES®**

**PANELSCOPES®**  
**RAYONIC TUBES®**

## SYSTEMS CONCEPT



**RAKSCOPE S-12-C**



**PANELSCOPE®**

The Waterman SYSTEMS RAKSCOPE, S-12-C series is a rack mounted oscilloscope with SYSTEMS CONCEPT. Systems concept is a basic means for rapid monitoring of desired signals with minimum operative effort and without the use of auxiliary switching or jack panels. S-12-C series provide the following:

1. **BASIC UNIT**—The basic S-12-C SYSTEMS RAKSCOPE is a complete combination systems monitoring and trouble-shooting oscilloscope with outstanding physical and electrical characteristics. The RAKSCOPE occupies but 7 inches of a standard 19" rack and extends only 10 inches behind the front panel. Identical vertical and horizontal amplifiers are DC type having rise times better than 0.35 usec, and 50 or 71 millivolts rms per inch of deflection respectively. Signal calibration method uses a direct reading accurate meter. Time base sweeps are from 1/2 cps to 50KC in trigger or repetitive operation. Sync from internal or external sources provide stable operation by means of new sync lockout circuits. Special plug-in elliptical sweep circuit for easy phase and frequency checks greatly increase its systems utility. Construction is ruggedized throughout. Tube type options include standard commercial, ruggedized commercial or ruggedized military. Operable from 50 to 400 cycles.

2. **CUSTOM MODIFICATION**—Desired flexibility is obtained with the optional signal input selector. For the first time it is possible to select up to eleven different signal sources with the necessary built-in attenuation (supplied by us or by you) for each source. Thus the entire switching panel can be omitted from an overall system resulting in circuit and space economics. Standard elliptical sweep is 60 cycles, but plug-in units for other frequencies can be supplied. Accessories such as attenuating, direct, and amplifying probes are available.

Improve your existing or contemplated systems by including the S-12-C SYSTEMS RAKSCOPE as an integral part. Your local Waterman representative is ready to assist you in determining specific requirements.

The Waterman PANELSCOPE is a custom-built cathode ray tube oscilloscope, with simplified operation, and yet available at a low price. The PANELSCOPE concept provides for the following:

(1) **MINIATURIZATION**—Panel space required is only 5 1/4" x 5-3/16"—depth is 10" and the weight is less than 7 lbs. The PANELSCOPE can be installed in practically any equipment—mobile or stationary—air, sea, or land—military or commercial.

(2) **SIMPLICITY OF OPERATION**—Twist of a single rotary switch provides a synchronized pattern of desired incoming signal (up to 11 circuits) against proper linear time base. This is ideal for monitoring and trouble shooting, as it removes the need of fiddling with knobs as is done now on general purpose oscilloscopes. The static controls, such as beam, focus, positioning, and graticule brightness are located in tube escutcheon.

(3) **CUSTOM DESIGN**—A wide variety of—signal amplifiers with response from dc to megacycles and sensitivities from 5 millivolts—synchronized or triggered linear time base generators from 1/2 cycle (and lower if need be) to 2 microseconds—can be specified by you to fit your needs for particular equipment.

(4) **PARTIAL KIT FORM**—the PANELSCOPE comes fully wired and tested with chosen signal amplifier, linear time base generator and attendant sync. amplifier. The desired signal attenuators, frequency and amplitude determining components, and method of synchronization can be installed either by us or by you.

(5) **POWER REQUIREMENT**—Less than 10 watts of line power for built-in high voltage supply—The required B+ and heater current as selected by your requirements. For those cases where B+ and heater power is not available, auxiliary power pack can be supplied.

There is a place in your equipment for Waterman PANELSCOPE, a custom built oscilloscope at production prices, although your needs may be but one or two. Ask for specification sheets either from our representatives or direct from the factory.

### RAYONIC CATHODE RAY TUBES BY WATERMAN

TUBE	PHYSICAL DATA		STATIC VOLTAGE		DEFLECTION*		LIGHT OUTPUT**
	FACE	LENGTH	A3	A2	VERT	HOR	
3JP1	3"	10"	3000	1500	111	150	40
3MP1	3"	8"		750	99	104	4
3RP1	3"	9.12"		1000	61	86	5
3SP1	1.5x3"	9.12"		1000	61	86	5
3XP1	1.5x3"	8.875"		2000	33	80	22

\*Deflection in volts per inch.

\*\*Light output of a line in millifoot lamberts per millimeter of line width not to exceed .65mm.

The basic properties of the cathode ray tube that concern the designer or the user are: deflection sensitivity, unit line brightness, line width, static voltage requirements and physical size. A comparison between cathode ray tubes manufactured by Waterman Products Company is shown in the table adjoining. These tubes are available in P1, P2, P7 and P11 phosphors. 3JP1, 3JP2, 3JP7, 3RP1, 3SP1 and 3XP1 are available as JAN tubes.

**WATERMAN PRODUCTS**

**WATERMAN PRODUCTS CO., INC.**

PHILADELPHIA 25, PENNA., U.S.A. • CABLE ADDRESS, POKETSCOPE, PHILA.

Manufacturers of Pocketscopes® • Rakscopes® • Pulsescopes® • Panelscopes® and Rayonic® Tubes

**PRECISE — THE FASTEST-GROWING KIT MANUFACTURER IN THE WORLD**

*Instruments* IN KIT & WIRED FORM . . .

**precise**  
above all else

**TEST 5 TUBES in 4 SECONDS each . . . ACCURATELY**

**• NEW PRECISE MODEL 116  
Em & Gm ULTRAFAST TUBE & TRANSISTOR TESTER**

Servicemen know the Precise Model 111 (the winner in an independent survey) easily rates "the finest tube tester in the field" at any price, BUT FOR AN ON THE JOB QUICK-TEST . . . the fastest, most accurate is the PRECISE Model 116. What's more you test tubes the foolproof method inherent in the famous Precise Model 111.

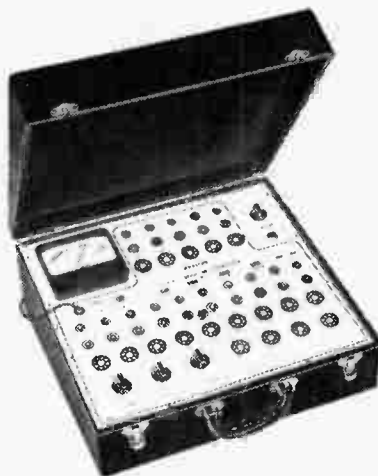
Did you ever wish you could plug in 5 of the same type tubes at once and check each one individually by rotating a switch? YOU CAN WITH THE PRECISE MODEL 116—Plug in 5 IF tubes and let them heat up at once and then check each one separately by rotating the TUBE BANK switch. ACTUALLY CHECK 5 TUBES IN 20 SECONDS. 4 SECONDS PER TUBE.

The Precise Model 111 taught the lesson that IF amplifier tubes (like the 6BC5 or 6AU6) should be tested for GM (mutual transconductance) while the power amplifiers (like the 6L6) should be tested for Em (emission). The Model 116 test checks each section of each tube separately . . . by rotating the FUNCTION SWITCH . . . each triode of a dual triode is checked individually . . . each diode and the triode of a duo-diode-triode is separately tested and not lumped as in other testers . . . and a pentode is tested as a pentode—not a diode. TRANSISTORS, SHORTS, GAS, LIFE, Em Gm etcetera can be tested with the PRECISE Model 116.

You can inexpensively extend the Precise Model 116 to test filament current, etc. The Model 116 gives an accurate, ultra-fast (3 basic knobs for testing) check of television tubes!

No Surplus—An etched panel—beautiful Moleskin covered wood carrying case and cover and specially simplified instructions makes the PRECISE MODEL 116 THE FINEST FAST-CHECK TUBE TESTER AND DOLLAR EARNING TRAVELING COMPANION A TV SERVICEMAN EVER HAD.

PTA-K (Picture tube adapter).....\$2.95      PTA-W (Wired).....\$4.25



MODEL 116K in kit form ..... **\$69<sup>95</sup>**

MODEL 116W factory wired..... **\$119<sup>95</sup>**

Incl. Carrying Case & Cover



**• NEW PRECISE MODEL 111 Mutual Conductance and Emission Tube Tester**



111K.....kit form **\$79<sup>95</sup>**

111W factory wired \$139.95  
Incl. Carrying Case & Cover

INDEPENDENT SCIENTIFIC SURVEY AND LAB TESTS PROVE PRECISE MODEL 111 "BEST COMMERCIAL TUBE TESTER AT ANY PRICE."

**ENGINEERING DESIGN CONSIDERATION:** To understand the Model 111 Mutual Conductance and Emission Tube Tester, it is perhaps best to spend a moment with the original design considerations. Basically we recognize the fact that:

1. A GM or Emission type tube tester actually read a goodly percentage of tube troubles—BUT each alone missed a great many. We could not say with any degree of assurance which type of tube test was the best. Certain applications required GM, while others required Emission. PRECISE Solution: The Model 111 checks Gm and Emission separately. It indicates on the roll chart the most important single test for normal applications. It is, of course, desirable to make both tests.
2. In series T.V. filament arrangements, which are daily enjoying greater popularity, the "Voltage Sapper" (a tube which developed too much filament voltage as compared to the other tubes) was a constant trouble. PRECISE Solution: The Model 111 allows the filament current to be measured directly on the meter.
3. A whole series of different test voltages (sweeping from zero voltage up) was required. PRECISE Solution: The Model 111 sweeps from 0 through the normal testing range when making measurements. This gives an average evaluation for the tube over an extended range of operation.
4. Short tests usually require elaborate switch manipulation. PRECISE Solution: The Model 111 uses a single rotary switch which checks each element against every other element. No conversion chart is required to ascertain which pins are shorted. This test may be made at any time hot or cold without changing any other switches.
5. The instrument would have to be rugged to stand the "trunk of a car" type of abuse. PRECISE Solution: In the Model 111 a heavy wooden cabinet houses the entire unit. The panel is deeply etched aluminum.
6. Tube Bias, being an important consideration, should actually be measured on the meter. PRECISE Solution: The Model 111 measures tube bias directly on the indicating meter.
7. The instrument should be simple to operate. PRECISE Solution: The Model 111 uses a no-blacklash roll chart, and a sectionalized design setting off each section.
8. There should be a provision for new tubes. PRECISE Solution: The Model 111 is one of the simplest type tube testers to set up for new tubes. The pin connections and function positions may be taken directly from the tube manual. The instrument already includes provisions for testing many color tubes.
9. It should check all modern tubes. PRECISE Solution: The Model 111 is provided with sockets for testing the following type bases. Large 4 prong, large 5 prong, large 6 prong, large 7 prong, medium 7 prong, miniature 7 prong, in-line 7 prong (sub-miniature), Octal, Noval, sub-miniature 8 prong, CRT and Loctals. Weight 24 lbs. Size 14" x 16" x 6".
10. The instrument should check Cathode Ray Tubes. PRECISE Solution: The Model 111 also checks cathode ray tubes with CRT adaptor. Model PTA-K \$2.95, PTA-W \$4.25.

Prices Slightly Higher in the West — Prices and Specifications Subject to Change Without Notice on All PRECISE Equipment.

**PRECISE DEVELOPMENT CORP. • OCEANSIDE, N. Y.**

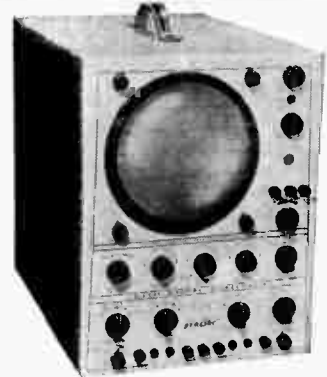
**PRECISE — THE FASTEST-GROWING KIT MANUFACTURER IN THE WORLD**

*Instruments* IN KIT & WIRED FORM ... **precise**

above all else

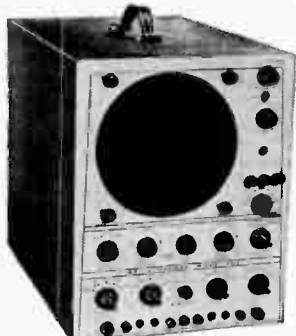
**THE FIRST AND STILL TOP COLOR SCOPE BELOW \$1000  
NEW AMAZING PRECISE MODEL #300  
COLOR OSCILLOSCOPE**

The Oscilloscope you've been seeking. . . . No other oscilloscope at any price — high or low — with these desirable features — in both Kit and Wired Form: —  
**SPECIFICATIONS: PRECISE MODEL 300 OSCILLOSCOPE —**  
**VERTICAL:** Vertical-flat (3db) DC through 5 megacycles with sensitivity of greater than 10 millivolts push-pull (3.94 Millivolts/cm); Constant Resistance; Push-pull input immediately converted to single-ended normal or reverse phase by shorting bar at inputs 1 and 2; Frequency compensated vertical stepping attenuator selects AC or DC inputs; Push-pull DC amplifiers from input through output; Internal electronic mixing through inputs 1 and 2; five-way binding posts.  
**POSITIONING:** Bridge type positioning on vertical and horizontal does not vary tube characteristics.  
**HORIZONTAL:** Frequency compensated stepping attenuator in horizontal amplifier; Push-pull Horizontal out.  
**BLANKING:** Internal (return trace blanked), external (return trace not blanked), 60 cycle or 120 cycle Blanking through Blanking amplifier circuit.  
**SYNCHRONIZATION:** External, Internal Positive, Internal Negative, Internal 60 cycle or Internal 120 cycle synchronization.  
**SWEEP RATE:** Driven or non-driven linear sweeps from 1 cycle to 80KC in five ranges (1-10 cycles uses external C circuit); Trigger potentiometer.  
**MAGNIFIER:** Electronic magnifier and magnifier positioner allow any part of a signal to be magnified up to ten times (equivalent to 70 inches of horizontal deflection).  
**CALIBRATION:** Internal square wave calibrator and potentiometer for using oscilloscope as a VTVM on Peak to Peak measurements.  
**CALIBRATION SCREEN:** Edge-illuminated scale and graticule may be turned on or off; filtered screen.  
**OUTPUTS ON FRONT PANEL:** Plus Gate output; Sawtooth output; 60 cycle phasing output; 60 cycle unphased output; Calibration output.  
**FOCUSING:** Astigmatism, focus and intensity control.  
**CRT:** NEW 7" Tube, normally supplied is medium persistency type 7VP1, or 7JP1 may also be used (oscilloscope green trace) — high persistency types available at additional cost.  
**DIRECT:** Deflection plates available from rear of cabinet.  
**INTENSITY MODULATION:** Z modulation through modulation amplifier.  
**GENERAL:** Low loss components; Over-designed fused power supply for additional circuitry; Deeply etched aluminum panel. New parts from original manufacturers — (NO SURPLUS); Steel cabinet;



11" x 14" x 17"; complete with instruction book and all components; Accessories; Model 912T (MM) Demodulator Probe and Model 960 Capacity Attenuator Probe available at extra cost — please see specifications on following pages. There are many additional features and circuits in kit form, which may be added to the Model 300. Please write us for descriptive literature.

300K ..... kit form **\$99<sup>95</sup>**  
 300W ..... factory wired **\$199.50**



**• NEW PRECISE 8 1/2" COLOR OSCILLOSCOPE MODEL 308  
USED BY COLOR MANUFACTURERS ALL OVER THE COUNTRY**

An oscilloscope unique in the industry . . . THE ONLY 8 1/2" scope on the commercial market . . . All the general specifications of the time proven PRECISE Model #300; plus over 85 sq. inches of viewing space provided by its NEW 8 1/2" tube; ANODE INTENSIFIER; FREQUENCY SYNCHRONIZATION CONTROL TO ELIMINATE HORIZONTAL JITTERS (this and other features not found in other scopes at many times the cost) PLUS VOLTAGE REGULATION.  
 Weight.....35 lbs. Size.....11" x 14" x 19"

308K ..... kit form **\$129<sup>50</sup>**  
 308W ..... factory wired **\$229.50**

**• NEW PRECISE MODEL #315 5" OSCILLOSCOPE**

The PRECISE Model 315 is a best buy as a low cost, high quality oscilloscope for general radio and TV applications. It features such innovations as frequency compensated vertical and horizontal attenuators along with identical vertical and horizontal amplifiers.  
 The Model 315 is rugged and simple to build. It uses a 5CP1 type tube with a post accelerator. Both the horizontal and vertical sections are cathode-follower input type and are AC coupled.  
 The instrument is housed in a grey steel cabinet. Attractive brushed aluminum with black lettering and a bezel comprise the front panel.

**SPECIFICATIONS:**  
**VERTICAL —** The vertical amplifiers are within ±6db through 500KC. Single ended, AC coupled, cathode follower, frequency compensated stepping attenuator input. Basic sensitivity is approximately 250 millivolts per inch. Outputs are push-pull.  
**HORIZONTAL —** The same general specifications as the vertical amplifier.  
**SYNCHRONIZATION —** External, internal.  
**SWEEP RATE —** From approximately 10 cycles to 100 KC. Hard vacuum type sweep circuit.  
**CALIBRATION —** 6.3 volts sine wave.  
**FOCUSING —** Focus, intensity and astigmatism controls. The astigmatism control is available from the rear. A standby switch is used to turn off CRT filaments when not in use.

As you know Precise does not use, nor advocate, surplus parts — especially in a kit. In accordance with this policy (although a cathode ray tube is supplied with each Model 315 as a convenience, at no charge) we are officially listing this instrument without CRT. The CRT supplied, free of charge, is new, guaranteed for 1 year. Has never been used and was purchased from the Government in its original unopened carton. If a new tube, not Government, is desired it is available at an additional charge of \$14.00.



The Model 315K ..... **\$49.95**  
 The Model 315 Wired ..... **\$84.95**

**PRECISE DEVELOPMENT CORP. • OCEANSIDE, N. Y.**

# Instruments IN KIT & WIRED FORM . . . **precise** above all else

## THE VERY LATEST PRECISE 'SCOPE FOR COLOR . . . MODEL 3151

It's hard to believe, but here is an oscilloscope that goes up beyond nine megacycles and is flat through five megacycles. It not only takes color in its stride, but is ready for the new advances still on the drafting boards. There is truly no other 'scope below \$100.00 that can meet all its specifications. There are no short cuts in the laboratory type service scope—Push-Pull vertical and horizontal—High sensitivity—5CP1 tube with post acceleration—Frequency compensated Stepping Attenuators for both Vertical and Horizontal—Focus, Intensity and Astigmatism controls—Calibration output voltage.

**VERTICAL**—The Vertical Amplifiers are flat through 5 mc and  $\pm 8$  db through 9 mc. The sensitivity is 10 millivolts per cm. Frequency compensated Stepping Attenuators in input. The output is push-pull pentodes.

**HORIZONTAL**—The Horizontal Amplifiers are within  $\pm 6$  db through 500 kc, Push-Pull output. Frequency Compensated Stepping Attenuator input and cathode follower assures linear horizontal trace. Hard vacuum sweep frequencies with sufficient expansion to see color bursts clearly. Horizontal Sensitivity is approximately 40 millivolts per cm.

**FOCUSING**—Focus, Intensity and Astigmatism controls. Brushed Aluminum Panel; Heavy Steel Cabinet, 13 $\frac{1}{4}$ " x 8 $\frac{3}{4}$ " x 18 $\frac{1}{2}$ ".

UP  
to 9 mc  
FLAT  
to 5 mc



3151K.....kit form **\$59.95**  
3151W.....factory wired **\$109.95**



### • NEW PRECISE MODEL 9071 Voltage Regulated VTVM

Special 7 $\frac{1}{2}$ " meter • 1% CERAMIC PRECISION RESISTORS • FM zero alignment scale • Coax DC connector • Burn-out proof circuit • DC input 25 Meg • Power transformer operated (no selenium rectifier used) • 4 tube circuit • Compact design • Size: 8 $\frac{1}{2}$ " x 12" x 5".

9071K..... kit form **\$35.95** • 9071W..... factory wired **\$49.95**

Same ranges as Model 909

### • PRECISE MODEL 909 Vacuum Tube Voltmeter

**WHAT BETTER WAY TO BUY THAN BY MAKING A COMPARISON!**

Ceramic precision resistors—1% OR BETTER; deeply etched panel; steel cabinet; Amphenol type DC connector.

**FREQUENCY RANGE:** Up to 250 megacycles with PRECISE 912 Probe (available at additional cost).

**VOLTAGE RANGE:** Up to 30,000 V. with PRECISE 999 High Voltage Probe (available at additional cost).

**FM & TV:** Special true zero alignment scale for FM & TV discriminators; Burn-out proof circuit; 25 Megohm input impedance on DC; complete with test leads and internal battery; oversize 4 $\frac{1}{2}$ " meter; 105-120V., 50-60 cycles, AC; wt.: 10 lbs.; 10" x 7" x 5".

**RANGES:** +DC: 0-5-25-250-500-1000 Volts; —DC: 0-5-25-250-500-1000 Volts; AC: 0-5-25-250-500-1000 Volts  
Ohms: Rx1-Rx10-Rx1000-Rx10,000-Rx1,000,000 ohms; from .2 Ohms to 1 Billion Ohms; DB: From —20 to +55 DB.

909K ..... **\$25.98** • Factory Wired ..... **\$37.50**

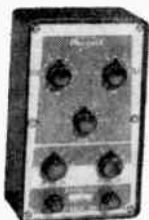


### • PRECISE NEW MODEL 468 Resistance Decade Box

PRECISE AGAIN LEADS THE FIELD with its New Low-Priced Resistance Decade Box. Compact in size for Bench Drawers and Tool Boxes.

5 Separate Switches, 11 Positions on Each; plus or minus 1%. Readings from 10 OHM to 1,111,110 OHM in 5 Decades. 1% Dep. Carbon Non Ind. above 10 OHM. Binding Posts permit quick substitution of equivalent Resistors indicated on Selector Panel. Deeply etched Aluminum Panel; Rugged Construction; Complete with Simplified Construction Manual.

468K ..... kit form **\$18.95**  
468W ..... factory wired **\$24.95**

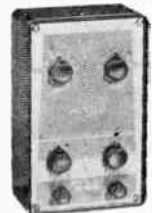


3 $\frac{3}{4}$ "x6 $\frac{1}{4}$ "x2"

### • PRECISE MODEL 478 Newest Capacity Decade Box

PUTS 10,000 CAPACITORS IN YOUR POCKET . . . first in the low price field to reach over 1 MFD at 1% accuracy . . . Four decades from 100 MMFD to 1.1111 MFD (100 MMFD steps) . . . 10 TIMES THE CAPACITY RANGE . . . Capacitors well within 1%; SILVER MICA, except for highest values which are special low-drift, molded, oil impregnated; rated at 600 volts, except for highest ranges rated 400 volts. . . All capacitors fully tested, including: leakage resistance (thousands of megohms); accuracy measured on standard bridges; voltage breakdown tested; power factor, temperature cycling and aging. — STURDY HIGH IMPACT BAKELITE CASE REDUCES GROUND CAPACITY AND INSURES LONG LIFE.

478K ..... kit form **\$18.95**  
478W ..... factory wired **\$24.95**



3 $\frac{3}{4}$ "x6 $\frac{1}{4}$ "x2"

## PRECISE DEVELOPMENT CORP. • OCEANSIDE, N. Y.

# Instruments IN KIT & WIRED FORM ... **precise**

above all else



## • PRECISE MODEL 630 RF-AF-TV Marker & Bar Generator

The very first kit to reach 110 MC on fundamentals, 330 MC on harmonics. The first kit to offer a complete modulation; cathode-follower output; stepping attenuator; external modulation; speech amplifier; crystal marker; crystal amplitude control; RF & AF stand-by; Wien Bridge AF Oscillator; Colpitts RF Oscillator; Drum Dials; Coaxial fittings; individually tuned coils; constant output impedance; filtered line; Vernier tuning on RF & AF; Separate RF Section; Complete shielding.

**RF FREQUENCIES:** BAND 1—300KC to 1MC FUNDAMENTALS • BAND 2—1MC to 3MC FUNDAMENTALS • BAND 3—3MC to 10MC FUNDAMENTALS • BAND 4—10MC to 30MC FUNDAMENTALS • BAND 5—30MC to 110MC FUNDAMENTALS • BAND 5A—60MC to 220MC 2nd HARMONIC • BAND 5B—90MC to 330MC 3rd HARMONIC

**AF FREQUENCIES:** Band 1—20 to 40 Cycles • Band 2—40 to 200 Cycles • Band 3—200 to 2K Cycles • Band 4—2K to 20K Cycles • 8" x 12" x 5"; leather handle; wrinkle steel cabinet; deeply etched aluminum panel; amphenol type connectors; wt.: 10 lbs.

630K (Kit) .....

**\$33<sup>95</sup>**

\*630KA preassembled RF head \$38.95  
Factory Wired ..... \$53.95



## • PRECISE MODEL 610

### Newest RF Signal Generator for AM, FM and TV

The first low-priced RF Signal Generator to reach 110 MC on fundamentals, 330 MC on harmonics, with the accuracy and stability of high-priced equipment. PRECISE achieves this by slug and capacity tuning of the coils, along with complete isolation of the Colpitts Oscillator by a Cathode Follower Buffer Output.

\*The first kit to offer a complete factory pre-assembled and pre-tuned RF Head; Cathode-Follower Output; External Modulation; Speech Amplifier; Bridge Type AF Oscillator; Colpitts RF Oscillator; Drum Dial; Coaxial Fittings; Individually Tuned Coils; Vernier Tuning; Separate RF Section; Complete Shielding, 400 Cycle and 60 Cycle Internal Modulation.

#### RF FREQUENCIES:

BAND 1—300KC to 1MC FUNDAMENTALS  
BAND 2— 1MC to 3MC FUNDAMENTALS  
BAND 3— 3MC to 10MC FUNDAMENTALS  
BAND 4— 10MC to 30MC FUNDAMENTALS  
BAND 5— 30MC to 110MC FUNDAMENTALS  
BAND 5A—60MC to 220MC 2nd HARMONIC  
BAND 5B—90MC to 330MC 3rd HARMONIC

8 1/2" x 12" x 5"; leather handle; wrinkle steel cabinet; deeply etched aluminum panel; amphenol type connectors; wt.: 10 lbs. TUBE COMPLEMENT: 6C4, 12AX7, 6X5.

610K

**\$23<sup>95</sup>**

#610KA preassembled RF head \$28.95  
610W (factory wired) \$39.95



## • PRECISE MODEL 635

### Universal AF Sine, Square and Pulse Generator

Efficiently and effectively ascertains all Audio and Video troubles

Sine waves; square waves; Wien Bridge Oscillator; Pulses; variable impedance output; voltage regulation insures a veritably constant output; cathode follower output; Minimum overshoot & round-off through 50,000 cycles on square waves and pulses; sine waves through 200,000 cycles.

8 x 11 x 5"; leather handle; wrinkle steel cabinet; deeply etched aluminum panel; amphenol type connectors; wt.: 10 lbs.

**TUBE COMPLEMENT:**  
1—6AU6; 3—6SN7; 1—6X5; 1—6S6

**RANGES:** 20-40 cycles • 40-200 cycles • 200-2000 cycles • 2000-20,000 cycles • 20,000-200,000 cycles.

635-W Factory wired \$52.50 • 635K Kit form

**\$33<sup>50</sup>**



## • PRECISE MODEL 760

### Voltage Regulated Power Supply

The Model 760 is an extremely versatile electronically regulated power supply capable of delivering an assortment of different voltages. It is invaluable in general repair and laboratory use.

#### REGULATED VOLTAGE

Range—75 volts to over 450 volts.

% Regulation—Within 1% at specified current duration.

% Ripple—.01% at specified currents.

Max. Current—100 ma depending on voltages.

Metering—Voltage and current are both metered by switches.

High Voltage—Unregulated variable to 1000 volts DC positive or negative. Voltage is metered.

Maximum current of 1 ma.

Low AC Voltage—Unregulated 6.3 volts AC, 4 amperes capacity.

High AC Voltage—375 volts AC, 50 ma, DC Capacity. Unregulated.

V.R. Tube Reference DC Voltage—DC reference voltage, low current, available for reference or screen operation.

All voltages are capable of being used simultaneously except for the plus or minus 1000 volts.

Either plus or minus may be used but not simultaneously.

#### GENERAL

The instrument is housed in a sturdy steel cabinet with a deeply etched aluminum panel. A rugged 4 1/2" meter movement is used for all metering. Shunt and multiplier resistors are within 1% accuracy. A leather carrying handle is provided. 5 Way binding posts are used for the regulated outputs. All other voltages are available by pin jacks. The high and low voltage supplies each have a standby position and the voltage metered is indicated by a jeweled pilot light for the HV and LV.



Weight: 11 lbs.

Size: 8 1/2" x 12" x 5"

**\$39<sup>95</sup>**

760K ..... kit form  
760W ..... factory wired \$59.95

# PRECISE DEVELOPMENT CORP. • OCEANSIDE, N. Y.

# Instruments IN KIT & WIRED FORM ... **precise**

above all else

## • PRECISE 711 and 713...



### POWER-LAB

- 711K (100 Watts of Isolation) **\$49.95 kit**
- 711W (100 Watts of Isolation) **\$64.95 wired**
- 713K (300 Watts of Isolation) **\$62.95 kit**
- 713W (300 Watts of Isolation) **\$79.95 wired**

**OPERATES YOUR WHOLE BENCH AND SHOP**  
You'll start and end each working day with the POWER-LAB. For the first time in the industry, one instrument takes the place

of more than 11 pieces of equipment and makes you wonder why no one ever did this before... the most useful, often used, test device in your shop. There's NO OTHER INSTRUMENT LIKE THE POWER-LAB ON THE MARKET. Here again, Precise engineering is proud to be the first to supply a need that has too long existed in the service trade. When you buy POWER-LAB by Precise, you get all the advantages of owning a battery eliminator for servicing auto radios (even signal seekers), an AC-DC Converter, a supply for transistor sets, AND OF MAINTAINING A CONSTANT 115 volts in checking on TV set variations. You can even run the set down to 105 volts for testing horizontal jitter, and back up to 125 volts for high-voltage breakdowns, thereby eliminating the cause of many call backs due to arcing... PLUS... the 101 uses you'll find each day for POWER-LAB versatility.

Here's the story... now you can get all this  
**COMPLETE IN ONE KIT (or wired)**

- A BATTERY ELIMINATOR
- A BATTERY CHARGER
- A HIGH CURRENT LINE VOLTAGE VARIAC
- AN AC LINE VOLTAGE METER
- AN AC LINE AMMETER
- AN AC LINE WATTMETER
- AN AC LINE ISOLATION TRANSFORMER
- A LOW VOLTAGE, HIGH CURRENT AC SUPPLY
- A DC LINE VOLTAGE VARIABLE SUPPLY
- A DC HIGH CURRENT AMMETER
- AN AGC BIAS BOX

ALL SPECS BELOW ARE FOR MOD. 711 AND 713 UNLESS OTHERWISE SPECIFIED

	VOLTS	MAXIMUM	CONTINUOUS
Low Voltage DC	2 ranges 0-15v Full Wave 0-30v Full Wave Bridge	20 amps*	10 amps*
Low Voltage AC	0-24v	20 amps*	20 amps
High Voltage AC	No Isolation 90-140 volts	20 amps 2000 watts	10 amps 1000 watts
High Voltage AC	Model 713 with Isolation 90-140 volts		3 amps 300 watts
High Voltage AC	Model 711 with Isolation 90-140 volts		1 amp 100 watts
High Voltage DC	110-180 volts	1 amp**	.075 amp**

\*Depending on voltage.  
\*\*May be increased up to 10 amperes at additional cost.

### MODEL 999



The PRECISE Model 999 High Voltage Probe was designed for high voltage measurements with special emphasis on SAFETY, OPERATIONAL SIMPLICITY AND RUGGED CONSTRUCTION. FIRST IN THE INDUSTRY to include any one or more of the following EXCLUSIVE features.

**Multiple Insulation:** The only probe with at least three individual media that must be penetrated before a voltage breakdown could occur.

**Mechanically shockproof construction:** The only probe to utilize a double spring suspension system in order to protect the Ceramic high wattage multiplier resistor.

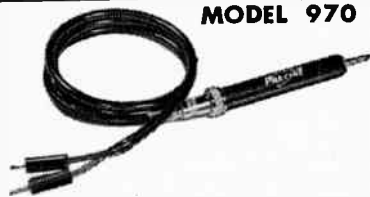
**Interchangeable Tips:** The only probe where two tips are supplied—one, the conventional type for probing; the other, an alligator clip for connecting permanently to the circuit.

**Swivel Lead Connection:** A special fixed slip-ring arrangement is provided which prevents the test lead cable from snagging or developing high strains at the junction of the cable and probe handle.

Interchangeable Resistors.

Wired Only.....Dealer Net..... **\$6.98**

### MODEL 970



PRECISE MODEL 970... direct Probe: Shielded, interchangeable tips and non-hydroscopic insulation. WIRED ONLY... Dealer Net... **\$3.75**

PRECISE MODEL 912... RF Probe: Frequency range—rms readings from AF through 250 mc; built-in 600 v blocking capacitor. WIRED ONLY... **\$4.25**

PRECISE MODEL 960... 10-to-1 Capacity Attenuator Probe: Frequency range through 100 mc, flat, input capacity less than 7 mmfd. WIRED ONLY... **\$5.95**

PRECISE RE-MO-TUNER... Model SMK: Clip Re-Mo-Tuner to controls behind set while you adjust from front. Sturdy, compact. DEALER NET... **\$2.95**

## • NEW PRECISE MODEL UPA-IN AND UPA-IP ULTRA PREAMPLIFIER

The PRECISE Model UPA-1 preamplifier is an ultra-modern presentation of true high fidelity, set off in a beautiful rich brushed brass colored panel, designed to enhance a living area. • It embodies the most modern circuitry with separate controls for Bass Boost, Treble Boost and Roll-off, Volume Record Compensation which also includes the latest AES curves (this year), a main Selector switch which connects to Phono, Microphone, Radio Television and an auxiliary position (4 separate input jacks are mounted on the rear chassis), a separate On-Off switch also operates the Convenience outlet at the rear of the instrument. • The instrument is designed so that it is completely self-contained or, if desired, it may be mounted directly into a console panel. In the latter case, no additional hardware is required because of a unique cabinet and chassis design. The cabinet dimensions are 12 x 4 x 4 and it weighs approximately six pounds. • The input gain and amplifier latitude is more than ample for Reluctance or Crystal inputs. Long lines may be used with the cathode-follower input



The UPA-1 is available in two circuits:  
UPA-IP has its own transformer supply and is operated directly from the 110 volt AC line.  
UPA-IPK • Kit Form • \$25.95  
UPA-IPW • Wired Form • \$39.95

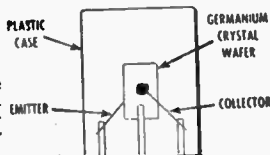
UPA-IN does not include a power supply. Power is taken directly from the main amplifier. It does, however, have its own filtering circuits.

UPA-INK • Kit Form • \$19.95  
UPA-INW • Wired Form • \$34.95

## T1 — TRANSISTOR KIT — Only \$14.95

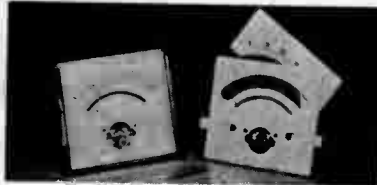
ANOTHER NEW EXCLUSIVE KIT BY PRECISE

PRECISE makes it possible to build your own experiments with the most remarkable kit you've ever seen... the new PRECISE T1 TRANSISTOR KIT. Components include transformer, chassis, TRANSISTORS, germanium diode, wire, etc. — everything you need for experimental construction PLUS the finest step-by-step instruction book.



# PRECISE DEVELOPMENT CORP. • OCEANSIDE, N. Y.

Instruments



precise  
above all else

## PDC CUSTOM METERS

### SPECS & RANGES

#### A Completely New Idea in CUSTOM METER Design\*

ONCE again, from the engineering laboratories of the Precise Development Corp., a remarkable achievement in the field of testing... PDC CUSTOM METERS... immediately available for general meter use, engineers, experimenters, hobbyists, pilot runs, spot applications, and in-the-field measurements.

**PRECISE PDC METERS** now offer you an opportunity to have **immediately available** individual custom meters that will cover any one of 100 voltage and current AC and DC ranges.

#### EACH METER FEATURES

- D'Arsonval Moving Coil Design
- Polished Jewels and Pivots
- Fatigue Tested Springs
- Stress-released units
- 2% Accuracy
- Knife-Edged Pointer
- Mirror Scale
- Lithographed Scale Faces
- High Quality Shunts and Multipliers
- Optional Illumination Packet
- Optional Shadow Mask
- Plastic Case
- Sizes: 2½", 3½", 4½"

#### REVOLUTIONARY DESIGN ADDS METER VERSATILITY

**PDC CUSTOM METERS are INTERCHANGEABLE.** All Precise Custom Meters are interchangeable. Special interchangeable slip-on scales, and companion snap-in shunts and multipliers, add to the ranges that may be covered from one basic custom meter.

**Here's How It Works.** Let's say you have a 15-volt, 20,000 ohms-per-volt PDC custom meter, and you need a 2.5 volt, 20,000 ohms-per-volt meter for another application. With the PRECISE PDC revolutionary design, you don't have to buy another separate meter. All you need do is to take the same 15-volt, 20,000 ohms/volt meter, open the case, slip out the interchangeable scale face, pull out the resistor in the rear... and then slip on a 2.5 scale face, snap in its companion multiplier into the lock-type jaws in the rear... and when you snap the cover back in place...

**In Less Than a Minute You Have a New Custom Meter.** That's how simple it is to have a professionally accurate, perfectly calibrated custom meter with a special lithographed scale face, and scale identification... **WITHOUT BUYING ANOTHER CUSTOM METER.**

**Precise PDC Custom Meters** are comparably priced with custom meters currently being sold today. Now you can have many custom meters from just one... PRECISE'S revolutionary design adds meter versatility to save you money.

Basic meters for replacement, as well as scale faces, shunts or multipliers are available from local electronic distributors.

\*Pat. Pending

DC 1000 ohms/v VOLTS	DC 2000 ohms/v VOLTS	DC 20,000 ohms/v VOLTS	AC 1000 ohms/v VOLTS	DC Current AMPERES	AC Current AMPERES
.05	.05	.1			
.5	.25	.5		50 ua	
1.0	.5	1.0	1	100 ua	
1.5	.75	1.5	1.5	200 ua	
2.5	1.25	2.5	2.5	400 ua	
3	1.5	3	3	500 ua	1 ma
5	2.5	5	5	1 ma	3 ma
10	5	10	10	3 ma	10 ma
15	7.5	15	15	10 ma	25 ma
25	12.5	25	25	25 ma	50 ma
30	15	30	30	50 ma	.1
50	25	50	50	.1	.25
100	50	100	100	.25	.3
150	75	150	150	.3	.5
250	125	250	250	.5	1.0
300	250	300	300	1.0	
500	500	500	500		
1000	750	1000	1000		
1500*		1500*	1500*		

ANY ONE OR MORE OF THE ABOVE METERS WITHIN ONE MINUTE

\*SPECIAL ORDER. OTHER SPECIAL SCALES, SUCH AS VU-DB, AVAILABLE, AS WELL AS ZERO CENTER GALVANOMETER



#### SPECIAL INDUSTRIAL PDC-IND METER PACKAGE

Here's a special introductory package from PRECISE, one which will provide you with complete coverage of all the ranges indicated above.

You Get:

- Six Meter Movements
- Interchangeable Scale Faces
- Shunts and Multipliers
- Illumination Packet
- Beautiful Attache-type Case
- Meter Master Chart

**\$129<sup>95</sup>**

**PRECISE DEVELOPMENT CORP. • OCEANSIDE, N. Y.**

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The MASTER — 22nd Edition

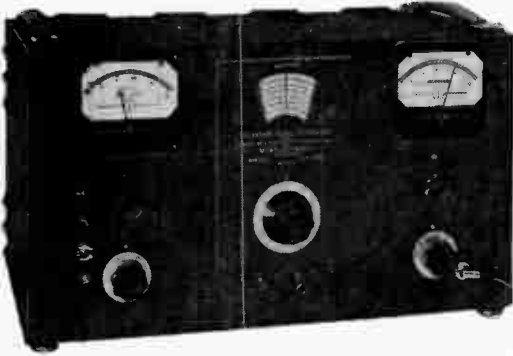
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# MEASUREMENTS CORPORATION

## Laboratory Standards

### STANDARD SIGNAL GENERATOR • Model 65-B • 75 Kc. - 30 Mc.



#### SPECIFICATIONS

**FREQUENCY RANGE:** 75 kilocycles to 30 megacycles in 6 push button ranges.

**FREQUENCY CALIBRATION:** Individually calibrated direct reading dial, for each range. Accurate to  $\pm 0.5\%$ .

**OUTPUT VOLTAGE:** Continuously variable from 0.1 microvolt to 2.2 volts.

**OUTPUT IMPEDANCE:** 5 ohms to 0.2 volt, rising to 15 ohms at 2.2 volts.

**MODULATION:** Continuously variable from 0 to 100%; indicated directly by a meter on the panel. Modulation may be obtained either from an internal source of 400 or 1000 cycles or from an external source.

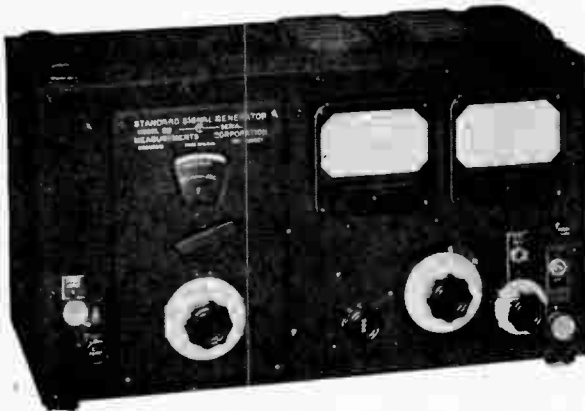
**ENVELOPE DISTORTION:** 4% at 100% modulation at 1 megacycle; 8% at 100% modulation at 15 Mc; 1% at 30% modulation.

**LEAKAGE:** Less than 0.1 microvolt leakage with attenuator set for 0 output.

**POWER SUPPLY:** 117 volts, 60 cycles, 115 watts.

**DIMENSIONS:** 11 $\frac{1}{2}$ " H. x 20 $\frac{1}{2}$ " L. x 10 $\frac{1}{2}$ " D., overall.

**WEIGHT:** Approximately 55 pounds.



### STANDARD SIGNAL GENERATORS

Model 80

2 Mc. - 400 Mc.

Model 80-R

5 Mc. - 475 Mc.

#### SPECIFICATIONS

**FREQUENCY RANGE:** (Model 80) 2 to 400 megacycles in 6 bands. (Model 80-R) 5 to 475 megacycles in 6 bands.

**FREQUENCY ACCURACY:**  $\pm 0.5\%$ .

**OUTPUT ACCURACY:** At 0.1 volt,  $\pm 10\%$  from 2 Mc to 200 Mc. From 200 Mc to 400 Mc (200 to 475 Mc for Model 80-R) at 0.1 volt,  $\pm 15\%$ .

**OUTPUT VOLTAGE:** Continuously variable from 0.1 to 100,000 microvolts.

**OUTPUT IMPEDANCE:** Designed for 50 ohms termination.

**MODULATION:** Amplitude modulation is continuously variable from 0 to 30%. Modulation depth is indicated by a meter on the panel. Internal modulation of 400 or 1000 cycles is available. Modulation may also be applied from an external source. Pulse modulation may be applied to the oscillator from an external source through a special connector.

**LEAKAGE:** Attenuator leakage less than 0.1 microvolt.

**POWER SUPPLY:** 117 volts, 50 to 60 cycles, 70 watts.  
**DIMENSIONS:** 11 $\frac{1}{2}$ " high x 19 $\frac{1}{8}$ " wide x 11 $\frac{3}{8}$ " deep, overall.  
**WEIGHT:** 45 pounds.



### STANDARD SIGNAL GENERATOR

Model 82

20 Cycles - 50 Mc.

#### SPECIFICATIONS

**FREQUENCY RANGE:** 20 cycles to 200 kilocycles in four ranges. 80 kilocycles to 50 megacycles in seven ranges, plus one blank range.

**FREQUENCY ACCURACY:** Each range is individually calibrated. 20 cycles to 200 kilocycles, accurate to  $\pm 5\%$ . 80 kilocycles to 50 megacycles, accurate to  $\pm 1\%$ .

**OUTPUT VOLTAGE AND IMPEDANCE:** 0-50 volts across 7500 ohms from 20 cycles to 200 kilocycles. (The output voltage and impedance in this range can be reduced by an external attenuator). 0.1 microvolt to 1 volt across 50 ohms over most of the range from 80 kilocycles to 50 megacycles.

**MODULATION:** Continuously variable 0-50% from 20 cycles to 20 kilocycles from internal variable oscillator or external source.

**HARMONIC OUTPUT:** Less than 1% from 20 cycles to 20 kilocycles; 3% or less from 20 kilocycles to 50 megacycles.

**LEAKAGE AND STRAY FIELD:** Less than 1 microvolt from 80 kilocycles to 50 megacycles.

**POWER SUPPLY:** 117 volts, 60 cycles, 75 watts.  
**DIMENSIONS:** 15" high x 19" wide x 12" deep overall  
**WEIGHT:** 50 pounds.

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# MEASUREMENTS CORPORATION

## Laboratory Standards

### STANDARD SIGNAL GENERATOR • Model 84R • 300 Mc. - 1000 Mc.



**WEIGHT:** Approximately 135 pounds, including external line voltage regulator.

#### SPECIFICATIONS

**FREQUENCY RANGE:** 300 to 1000 megacycles in one band; individually calibrated direct reading dial.

**FREQUENCY ACCURACY:**  $\pm 0.5\%$ .

**OUTPUT VOLTAGE:** Continuously variable from 0.1 to 300,000 microvolts.

**OUTPUT IMPEDANCE:** 50 ohms.

**MODULATION:** 0 to 30% within  $\pm 20\%$  as determined by DC meter. Internal sine-wave oscillator; choice of 400, 1000, or 2500 cycles is provided. External modulation up to 30 kilocycles may be applied.

**PULSE FREQUENCY:** 60 to 100 Kc in three ranges, 60-1000, 600-10,000 and 6000-100,000 pulses per second.

**POWER SUPPLY:** 117 volts, 50 to 60 cycles.

**DIMENSIONS:** 13" high x 26" wide x 12 $\frac{1}{8}$ " deep, overall.

### STANDARD SIGNAL GENERATOR • Model 84-TRV • 400 Mc. - 1000 Mc.



**POWER SUPPLY:** 117 volts, 60 cycles, 60 watts.

**LEAKAGE:** Negligible.

**DIMENSIONS:** 11 $\frac{1}{2}$ " high x 19 $\frac{1}{8}$ " wide x 10 $\frac{1}{2}$ " deep, overall.

**WEIGHT:** Approximately 40 pounds.

#### SPECIFICATIONS

**FREQUENCY RANGE:** 400 to 1000 megacycles in one band.

**FREQUENCY ACCURACY:** Individually calibrated dial direct reading to an accuracy of  $\pm 0.5\%$ . Vernier dial provided for frequency interpolation.

**OUTPUT VOLTAGE:** Continuously variable from 0.1 microvolt to 0.3 volt with mutual inductance type attenuator. Output from 0.3 volt to over 0.5 volt indicated directly on output meter.

**OUTPUT ACCURACY:** At 0.3 volt, the output voltage accuracy is  $\pm 10\%$  from 400 to 750 megacycles and  $\pm 20\%$  from 750 to 1000 megacycles. Mutual-inductance attenuator with negligible relative error provides lower voltage levels.

**OUTPUT SYSTEM:** The mutual-inductance attenuator has a Thevenin source impedance of 50 ohms with a VSWR of less than 1.2. The voltage induced in the attenuator is measured with a crystal diode voltmeter which may be conveniently checked against an internal regulated 60-cps voltage reference.

**MODULATION:** Continuously variable from zero to 30% from an internal 1000-cycle oscillator. Provision is made for applying external modulation from 50 to 20,000 cycles. Approximately 5 volts r.m.s. across 100,000 ohms are required for 30% modulation.

**RESIDUAL FREQUENCY MODULATION:** The spurious frequency modulation due to residual hum and noise is less than 300 c.p.s.

### STANDARD TEST SET FOR TRANSISTORS • Model 505



The Model 505 Standard Test Set for Transistors is a portable instrument arranged to test junction transistors on a programmed "go-no go" basis. It utilizes a battery supply and suitable switching and metering means for multiple testing of PNP and NPN small-signal, medium-power, and switching transistors.

#### SPECIFICATIONS

- Tests PNP and NPN small-signal, medium-power and switching transistors.
- Checks for short-circuited emitter-collector junctions.
- Measures collector-to-emitter leakage current.
- Measures collector current and d-c gain.
- Case Dimensions: 10" high x 14" wide x 7 $\frac{1}{4}$ " deep.
- Power Supply: Two F4BP 6-volt dry batteries.
- Weight: Approximately 9 pounds without batteries.

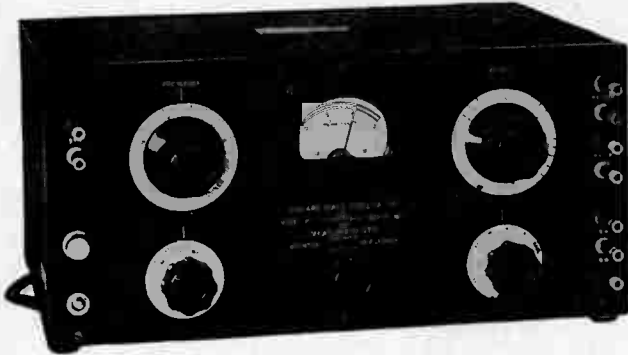
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# MEASUREMENTS CORPORATION

## Laboratory Standards

### SQUARE WAVE GENERATOR • Model 71



#### SPECIFICATIONS

**FREQUENCY RANGE:** Continuously variable from 5 to 100,000 cycles per second.

**WAVE SHAPE:** Rise time less than 0.2 microseconds with approximately 5% overshoot at 75 peak volts output. At 5 volts or less rise time is less than 0.1 microsecond.

**OUTPUT VOLTAGE:** Step attenuator giving 75, 50, 25, 15, 10, 5 peak volts fixed and 0 to 2.5 volts continuously variable.

**SYNCHRONIZING OUTPUT:** 25 volts peak.

**R. F. MODULATOR:** 5 volts maximum carrier input. Translation gain is approximately 0.1. Output impedance is 600 ohms.

**POWER SUPPLY:** 117 volts, 50-60 cycles, 100 watts

**DIMENSIONS:** 7 $\frac{3}{8}$ " high x 15" wide x 8 $\frac{7}{8}$ " deep.

**WEIGHT:** Approximately 20 pounds.

### SQUARE WAVE GENERATOR • Model 72



#### SPECIFICATIONS

**FREQUENCY RANGE—STEPS:** 5 cps to 5 Mcs in 18 steps with vernier control for adjusting frequency.

**RISE TIME:** 0.02 Microseconds on all ranges, 75 ohms.

.05 Microseconds on all ranges, 500 ohms.

**OUTPUT IMPEDANCES:** 75 ohms or 500 ohms.

**OUTPUT VOLTAGE:** 0-2 volts peak-to-peak (75 ohms) open circuit. 0-10 volts peak-to-peak (500 ohms) open circuit. Output is negative voltage with respect to ground.

**SYNCHRONIZING VOLTAGE INPUT:** 0.1 volt.

**SYMMETRY CONTROL:** Far Square-Wave Balance.

**POWER REQUIREMENTS:** 115 volts, 50/60 cycles, 75 watts.

**CASE DIMENSIONS:** 10" H. x 14" W. x 7 $\frac{1}{4}$ " D. Wt. 18 lbs.



### PULSE GENERATOR

Model 79B

#### SPECIFICATIONS

**FREQUENCY RANGE:** 60 to 100,000 pulses per second.

**PULSE WIDTH:** Continuously variable from 0.5 to 40 microseconds.

**OUTPUT VOLTAGE:** Approximately 150 to 200 volts peak positive with respect to ground.

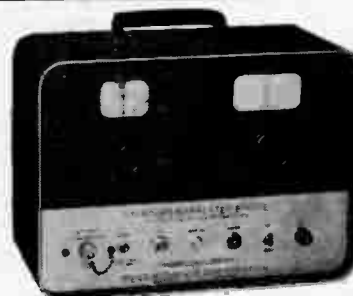
**"SYNC" OUTPUT:** 35 volts positive with respect to ground. Displaced by  $\frac{1}{2}$  period from pulse output.

**"SYNC" INPUT:** May be synchronized with as little as 2 volts peak from an external source.

**POWER SUPPLY:** 117 volts, 60 cycles, 115 watts.

**DIMENSIONS:** 10 $\frac{15}{16}$ " high x 14 $\frac{1}{2}$ " wide x 11 $\frac{1}{8}$ " deep, overall.

**WEIGHT:** Approximately 31 pounds.



### STANDARD BARRETT BRIDGE

Model 202-C

#### SPECIFICATIONS

**RANGE:** Voltage—20 to 70 millivolts r.m.s.

Power—8 to 100 microwatts.

DBM—From -10 to -21 dbm.

(Ranges may be extended upward by use of suitable pods.)

**FREQUENCY RANGE:** 2 Mc. to 1000 Mc.

**INPUT IMPEDANCE:** 50-Ohms.

**VSWR:** Less than 1.2 at 1000 Mc.

**ACCURACY:**  $\pm 5\%$  2 Mc. to 400 Mc.  $\pm 10\%$  400 Mc. to 1000 Mc.

**POWER SUPPLY:** 110 to 120 volts, 50 to 60 cycles, o.c.

**POWER CONSUMPTION:** 45 watts.

**FUSE PROTECTION:** one  $\frac{1}{2}$ -ampere, slo-blow.

**DIMENSIONS:** 10 $\frac{1}{2}$ " high x 14" wide x 7 $\frac{1}{4}$ " deep overall.

**WEIGHT:** 18 pounds.

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# MEASUREMENTS CORPORATION

## Laboratory Standards

### FM STANDARD SIGNAL GENERATORS • Model 210 Series



POWER SUPPLY: 117 volts, 50-60 cycles, 45 watts.  
DIMENSIONS: 10" x 14" x 7 1/4".  
WEIGHT: Approximately 25 pounds.

#### SPECIFICATIONS

##### CARRIER FREQUENCY RANGE:

Model 210-A	86 to 108 Mc.
Model 210-B	148 to 174 Mc.
Model 210-C	30 to 37 Mc.
Model 210-D	36 to 44 Mc.
Model 210-E	42 to 52 Mc.
Model 210-S	25 to 50 Mc.

Individually calibrated dial with  $\pm 0.5\%$  accuracy.  
Mechanical vernier and electronic tuning.

**OUTPUT VOLTAGE:** 0.1 to 100,000 microvolts ( $-7$  to  $-127$  DBM) across a 50-ohm termination. Negligible carrier leakage.

**OUTPUT SYSTEM:** Mutual inductance attenuator with 50-ohm source impedance with a low VSWR. Continuous monitoring of output level with accurate barretter bridge.

**MODULATION:** 400 and 1000 cycle internal audio oscillator. Deviation directly calibrated in two ranges: 0 to 30 Kc. and 0 to 300 Kc. (0 to 15 Kc. and 0 to 150 Kc. for Model 210-B and Model 210-S). Can be modulated from external signal source providing 5 volts across 10,000 ohms.

**MODULATION FIDELITY:** Frequency deviation response is within  $\pm 0.5$  db from d.c. to 15,000 cycles and is down less than 3 db at 70 Kc. Transient response is excellent.

**FM DISTORTION:** Less than 1% at 75 Kc. deviation. (Less than 2% for Model 210-S).

**RESIDUAL FM:** Spurious residual FM is 60 db below 75 Kc. deviation.

### STANDARD SIGNAL GENERATOR • Model 95

- Broad Frequency Coverage
  - Extended Modulation Range
  - Wide FM Deviation
  - Low Distortion



RESIDUAL FM: Better than 70 db below full deviation.  
POWER SUPPLY: 117 volts 50-60 cycles, 140 watts.  
DIMENSIONS: 17 1/4" wide x 11-3/16" high x 14-7/8" deep overall.  
WEIGHT: Approximately 70 pounds.

The Model 95 with its extremely high stability and low distortion makes this instrument indispensable for critical measurements on FM receivers, multiplex and telemetering equipment.

#### SPECIFICATIONS

**CARRIER FREQUENCY RANGE:** 50 to 400 Mc. in 3 bands, 50-100 Mc. 100-200 Mc. 200-400 Mc.

**FREQUENCY ACCURACY:**  $\pm 1\%$  Direct reading dial.

**FREQUENCY DRIFT:** Less than 0.03% after warm-up.

**OUTPUT VOLTAGE:** Continuously variable from 0.1 to 100,000 microvolts.

**OUTPUT VOLTAGE ACCURACY:** At 100,000 microvolts the output voltage accuracy is  $\pm 10\%$ .

**OUTPUT IMPEDANCE:** 50 ohms, VSWR less than 1.4.  
**LEAKAGE AND STRAY FIELDS:** Attenuator leakage less than 0.1 microvolts. Power line leakage and stray fields negligible.

**MODULATION:** Frequency modulation continuously variable,

- 0-150 Kc on 50-100 Mc band,
- 0-300 Kc on 100-200 Mc band,
- 0-600 Kc on 200-400 Mc band.

**MODULATION FREQUENCY:** Internal 400 cps. and 1000 cps,  $\pm 5\%$  accuracy. External modulation flat within  $\pm 1$  db, 50 cps to 70 Kc.

**FM DISTORTION:** Less than 0.5% for 75 Kc deviation on 50-100 Mc band, 150 Kc deviation on 100-200 Mc band, 300 Kc on 200-400 Mc band.

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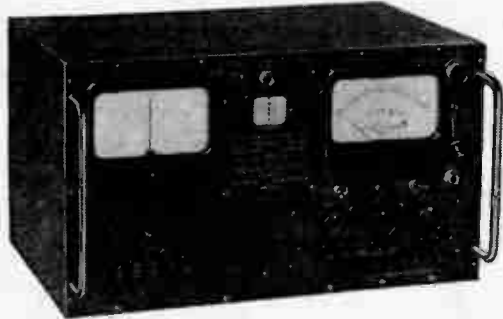
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# MEASUREMENTS CORPORATION

## Laboratory Standards

### V.H.F. RADIO NOISE & FIELD STRENGTH METER • Model 58-AS



**POWER SUPPLY:** 117 volts, 50 to 60 cycles, 50 watts. Standard vibrator or rotary inverters may be employed for d-c operation.  
**DIMENSIONS:** 9" H x 16" W x 12 $\frac{3}{4}$ " D, overall.  
**WEIGHT:** Approximately 30 pounds.

#### SPECIFICATIONS

**FREQUENCY RANGE:** 15 to 150 megacycles in five bands.  
**FREQUENCY ACCURACY:**  $\pm 2\%$ .  
**INPUT VOLTAGE RANGE:** Logarithmic—100  $\mu$ v full-scale to 1 volt full-scale. Linear—10  $\mu$ v full-scale to 0.1 volt full-scale. Maximum Sensitivity—will give a readable deflection on CW signals of 1  $\mu$ v.  
**ATTENUATORS:** R-F Input Attenuator—X1, X10, X100, and X1000. I-F Attenuator—X1, and X10.  
**METER:** Logarithmic—From 0 to 10  $\mu$ v mid-scale and 100  $\mu$ v full-scale. Decibel—The logarithmic scale is also calibrated from 0DB to 20DB mid-scale and 40DB full-scale. Linear—0 to 10  $\mu$ v full-scale.  
**INPUT IMPEDANCE:** 72 ohms, balanced to ground.  
**DETECTOR RESPONSE:** Complies with ASA recommendations: Average, Quasi-Peak and Peak "slide-back".  
**BANDWIDTH:** For CW signals, bandwidth is 140 Kc at 6 db points.  
**OUTPUT CIRCUIT:** Headphone output Jack also provides oscilloscope response up to full r-f bandwidth. Meter Jack for 1 milliamperere-reading meter or remote meter.  
**CIRCUIT:** Five-band superheterodyne, with tuned r-f amplifier reduces image response.

### INTERMODULATION METER • Model 31



**POWER SUPPLY:** 117 volts, 60 cycles, 30 watts.  
**DIMENSIONS:** 7 $\frac{1}{4}$ " high x 19" wide x 8 $\frac{1}{2}$ " deep.  
**WEIGHT:** 16 pounds.

#### SPECIFICATIONS:

##### GENERATOR:

**LOW FREQUENCY:** 60 cycles.  
**HIGH FREQUENCY:** 3000 cycles.  
**LF/HF VOLTAGE RATIO:** Fixed 4/1.  
**OUTPUT VOLTAGE:** 10 v. max. into high impedance or +5 DBM matched to 600 ohms.  
**OUTPUT IMPEDANCE:** 2000 ohms.  
**RESIDUAL INTERMODULATION:** 0.2%.

##### ANALYZER:

**INPUT VOLTAGE:** Full scale ranges of 3, 10 and 30 volts RMS. Less than one volt of mixed signal is sufficient for operation.  
**INPUT IMPEDANCE:** Greater than 400 K ohms.  
**INTERMODULATION:** Full scale ranges of 3, 10 and 30%.  
**ACCURACY:**  $\pm 10\%$  of full scale.

### PEAK-TO-PEAK VOLTMETER

#### Model 67

#### SPECIFICATIONS

**VOLTAGE RANGE:** 5 ranges; 0.03 to 300 volts peak-to-peak, full scale.  
**SEMI-LOGARITHMIC SCALES:** 0 to 30 peak-to-peak and 0 to 10 r.m.s. millivolts.  
**FREQUENCY RANGE:** 5 to 100,000 sine-wave cps.  
**INPUT IMPEDANCE:** 1 megohm shunted by 30 mmfd.  
**ACCURACY:** For sine-waves  $\pm 5\%$  from 5 to 100,000 cps.  
**STABILITY:** Less than 2% error with line variations from 110 volts to 120 volts.  
**POWER SUPPLY:** 117 volts; 50-60 cycles, 35 watts.  
**DIMENSIONS:** 7 $\frac{1}{2}$ " H. x 7" W. x 9 $\frac{3}{8}$ " D., overall.  
**WEIGHT:** 10 pounds.

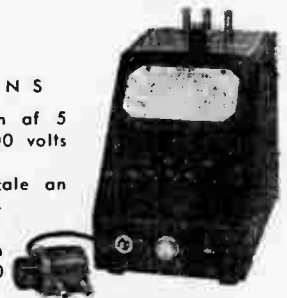


### VACUUM TUBE VOLTMETER

#### Model 62

#### SPECIFICATIONS

**RANGE:** Push button selection of 5 ranges—1, 3, 10, 30 and 100 volts full scale AC or DC.  
**ACCURACY:**  $\pm 2\%$  of full scale on each range, both DC and sine-wave AC at line voltage of 117v.  
**FREQUENCY ERROR:** Less than 10% from 30 cycles to over 150 megacycles.  
**INPUT IMPEDANCE:** Approximately 7 mmf. The input resistance is a function of frequency.  
**POWER SUPPLY:** 117 volts, 60 cycles, 24 watts.  
**DIMENSIONS:** 7 $\frac{3}{8}$ " H. x 4 $\frac{1}{4}$ " W. x 9 $\frac{3}{8}$ " D., overall.  
**WEIGHT:** Approximately 8 pounds.



# MEASUREMENTS CORPORATION BOONTON • NEW JERSEY



# MEASUREMENTS CORPORATION

## Laboratory Standards

### MEGACYCLE METER

100 Kc to 940,000 Kc



**Model 59-LF Oscillator Unit**

Frequency Range: 100 Kc to 4.5 Mc. Price - Oscillator Unit (Head) only \$98.50



**Model 59 Oscillator Unit**

Frequency Range: 2.2 Mc to 420 Mc. Price - Oscillator Unit (Head) only \$98.50



**Model 59-UHF Oscillator Unit**

Frequency Range: 420 Mc to 940 Mc. Price - Oscillator Unit (Head) only \$128.50

Measurements' Megacycle Meter is now available in a choice of three oscillator heads providing frequency range coverage from 100 Kc to 940,000 Kc. Thus, the utility of this versatile instrument has been extended, making it, more than ever, indispensable to anyone engaged in electronic work; engineer, serviceman, amateur or experimenter.

### PRECISION GRID-DIP METERS



The Power Supply is a compact, lightweight portable unit consisting of a full-wave rectifier with voltage regulator tube—designed for use with any of the oscillator heads illustrated. Power input: 117 volts, 60 cps.

#### PRICES:

Power Supply only \$75.00

Model 59-LF Head with Power Supply \$168.00

Model 59 Head with Power Supply \$168.00

Model 59-UHF Head and Power Supply \$198.00

Prices FOB. Boonton, N. J.

### CRYSTAL CALIBRATORS

Model 111 and Model 111-B  
.25 to 1000 Mc.                      .1 to 1000 Mc.

These instruments have been designed as dual-purpose calibrators. They not only provide a test signal of crystal-controlled frequency, but also have a self-contained receiver of 2 microwatts sensitivity. A new circuit arrangement with quartz crystal control utilizes the cross-modulation products of three separate oscillators. The fundamental frequencies of Model 111 are .25, 1.0 and 10 megacycles, while those of the Model 111-B are .1, 1 and 10 megacycles.



#### SPECIFICATIONS

FREQUENCY ACCURACY: 0.002%.

POWER SUPPLY: 117 volts, 60-cycles, 18 watts.

DIMENSIONS: 6" wide, 9 1/2" high, 5 1/2" deep, overall.

WEIGHT: 4 pounds.

### I.F. CONVERTER



**Model 275**

For use with the Model 78-FM and Model 210-A Standard Signal Generators to provide carrier output at the IF frequencies used in FM and Television receivers.

#### SPECIFICATIONS

FREQUENCIES: 4.5, 10.7, 21.7 Mc. Plus continuous coverage from 4 to 20 Mc.

FREQUENCY ACCURACY:  $\pm 0.5\%$ .

OUTPUT VOLTAGE: 10 microvolts to 1.0 v. when used with Model 210-A or Model 78-FM.

BAND WIDTH:  $\pm 250$  Kc. from center frequency.

AMPLITUDE MODULATION: Up to approximately 80%, combined with or exclusive of FM. There is negligible spurious FM due to AM. The envelope distortion is less than 10% at 80% modulation.

POWER SUPPLY: 117 volts, 50 to 60 cycles, 45 watts.

DIMENSIONS: 10" high x 14" wide x 7 1/4" deep.

WEIGHT: 15 pounds.

# MEASUREMENTS CORPORATION BOONTON · NEW JERSEY



### Model E-420 DOT AND BAR GENERATOR *Compatible for Color and Monochrome TV*

- It's a **WHITE DOT** generator for color convergence
- It's a **VERTICAL BAR** generator for horizontal linearity
- It's a **HORIZONTAL BAR** generator for vertical linearity
- It's a **CROSS HATCH PATTERN** generator for checking overall linearity
- It has **VARIABLE DOT SIZE and NUMBER**  
It has Variable 'V' and 'H' Bar Width  
It has Variable 'V' and 'H' Bar Number
- It provides **DIRECT VIDEO OUTPUT** for checking video amplifiers
- It provides **MODULATED TV CHANNEL OUTPUT** for overall TV set performance checking

Model E-420 Deluxe (illustrated): In custom-styled, blue-grey, hooded steel cabinet and four-color, satin-brushed aluminum panel with contrasting dark-blue control knobs. Dimensions 13 x 11½ x 6½ inches. Complete with tubes, output cables and comprehensive instruction manual.

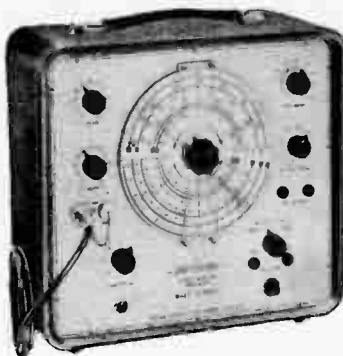
Code: Newsy Net Price: \$150.00

### Model E-440 COLOR BAR GENERATOR

- A **MUST** for Color TV Servicing essential to adjust color phasing and matrix networks
- Provides **ALL Required Test Signals**  
RF carrier (channel 3), color sub-carrier, sound carrier, horizontal sync pulses, luminance, brightness
- Produces **10 Simultaneous Color Bars**  
Includes signals for R — Y, B — Y, I, Q, etc.
- All **Crystal Controlled Signals** assures maximum stability and reliability
- Video and RF Outputs **INDEPENDENTLY** Available for separate testing of video amplifiers and front ends
- Simple Operation . . . Easy Application  
Individual panel-controls permit regulation of each element of the composite signal

Model E-440 Deluxe: (Illustrated) In custom-styled blue-grey, hooded steel cabinet and four-color, satin-brushed aluminum panel with contrasting dark-blue control knobs. Dimensions 13 x 11½ x 6 inches. Complete with tubes, output cables and comprehensive instruction manual.

Code: Noble Net Price: \$235.00



### Model E-200C The Modern, Multi-band SIGNAL-MARKING GENERATOR

- Direct Frequency Reading  
continuous dial calibrations from 88KC to 240 MC.
- Accuracy — 1% on All Bands  
exceptional frequency stability
- 0-100% Variable Internal Modulation  
provides up to 300% greater signal audibility
- AVC-AGC Substitution Voltage (built-in)  
continuously variable from 0-50 volts DC
- Extra-Large Tuning Dial with Vernier Drive  
9 easy-reading bands
- Used in Every Other Service Lab in the Country  
for reliable TV, FM, AM alignment

Model E-200-C Deluxe: (Illustrated) In custom-styled, blue-grey, hooded, steel cabinet; two-color satin-brushed aluminum panel and contrasting dark blue control knobs. Case dimensions 11½ x 13 x 6¾ inches. Complete with tubes, coaxial output cable and illustrated manual 'Servicing by Signal Substitution.'

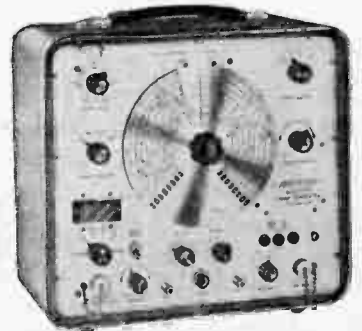
Code: Truth Net Price: \$95.00

### Model E-400 SWEEP SIGNAL GENERATOR

- Direct Frequency Reading — 8 Bands  
Dial calibrated from 3 to 900 Mc.
- Saves Time on Front-End Alignment  
channel numbers 2 thru 13 directly calibrated on dial
- Internal Retrace Blanking Circuit  
simplifies alignment—eliminates return traces
- Wide-Band Sweep . . . 0-15 Megacycles  
for best TV front-end and I.F. alignment
- Narrow-Band Sweep . . . 0-1 Megacycle  
for best FM and TV sound I.F. alignment
- Crystal Marker-Calibrator (Built-in)  
2.0 and 4.5 Mc. crystals furnished

Model E-400 Deluxe: (Illustrated) In custom-styled, blue-grey, hooded, steel cabinet; two-color satin-brushed aluminum panel and contrasting dark blue control knobs. Case dimensions 11½ x 13 x 6¾ inches. Complete with tubes, test cables, 2 crystals and comprehensive instruction manual.

Code: Nelda Net Price: \$160.00



➔ See Page G-444 for Model 220 Marker Adder and Model 230 Multi-Bias Supply. All prices and specifications subject to change without notice

# PRECISION OSCILLOSCOPES



Industrial • Laboratory • Communications  
Radio-TV (Monochrome and Color)

## Model ES-550 HIGH SENSITIVITY, WIDE BAND 5" SCOPE The Scope for COLOR TV!

- 5 Megacycles Bandwidth with 10 Millivolts per Inch Vertical Sensitivity
- 10 Millivolts per inch Vertical Sensitivity with 5 Megacycles Bandwidth
- Does Not Sacrifice Sensitivity for Bandwidth does not sacrifice Bandwidth for Sensitivity!
- Push-Pull Vertical and Horizontal Amplifiers with input step attenuators and cathode followers
- Vertical Response: within 1 db from 10 cps to 3.5 Mc — 3 db at 5 Mc
- Horizontal Response: within 1 db from 10 cps to 1.0 Mc — 3 db at 2 Mc
- Peak-to-Peak Voltage Calibrator (built-in) direct reading to 500 volts, peak-to-peak
- Amplified Auto-Sync Circuit simplifies "lock-in" of test patterns
- 3000 Volt Power Supply for higher visibility of pulsed wave forms
- Built-in 60 cps Phasing and Blanking Controls

Model ES-550 Deluxe: (Illustrated) In custom-styled, blue-grey ripple finished steel cabinet; 2 color satin-brushed aluminum panel and contrasting dark blue control knobs. 8¼" x 14½" x 18½". Complete with all tubes and comprehensive Manual.

Code: Queen

Net Price: \$235.00



## Model ES-500A HIGH SENSITIVITY, WIDE RANGE 5" SCOPE

- Exceptional Stability and Flexibility at an unusually moderate price
- Push-Pull Vertical and Horizontal Amplifiers with 10 cps to 1 Mc response at full gain
- High Sensitivity 20 millivolts per Inch Vertical 150 millivolts per Inch Horizontal
- Compensated Vertical Input Step Attenuator calibrated by factors of 1, 10 and 100
- Built-in Peak-to-Peak Voltage Calibrator direct reading to 500 volts peak-to-peak
- Vertical Phase Reversing Switch for inversion of all patterns at will
- "Z" Axis Modulation Input facility for blanking, timing, etc.
- Internal, Phasable 60 Cycle Beam Blanking for elimination of alignment retrace; clean display of synch. pulses, etc.

Model ES-500A Deluxe: (Illustrated) In custom-styled, blue-grey ripple finished steel cabinet; 2 color satin-brushed aluminum panel and contrasting dark blue control knobs. Case Dimensions 8¼ x 14½ x 18½ Inches. Complete with all tubes, including 5CP1/A CR tube and comprehensive Instruction Manual.

Code: Quick

Net Price \$195.00

## Model ES-520 RELIABLE, GENERAL-PURPOSE 5" SCOPE

- Ideal for Industrial Electronics and Audio, Radio and TV Maintenance
- Push-Pull Vertical and Horizontal Amplifiers for better deflection linearity
- Excellent Bandwidth: within 2 db from 20 cps to 500 KC Vertical within 3 db from 20 cps to 200 KC Horizontal
- High Sensitivity 20 millivolts per Inch Vertical 50 millivolts per Inch Horizontal
- Peak-to-Peak Voltage Calibrator, (built-in) direct reading to 500 volts, peak-to-peak
- Excellent Vertical Square-Wave Response from 20 cycles to 50 kilocycles
- All this and modestly priced—Factory Engineered, Wired and Calibrated

Model ES-520 Deluxe: (Illustrated) In custom-styled, blue-grey ripple finished steel cabinet; 2 color satin-brushed aluminum panel and contrasting dark blue control knobs. Case Dimensions 8¼ x 14½ x 16½ inches. Complete with all tubes, including 5UP1 CR tube and comprehensive Manual.

Code: Quire

Net Price: \$145.00



## Model SP-5 OSCILLOSCOPE TEST PROBE SET

for TV Signal Tracing, Alignment, Trouble-Shooting and Waveform Analysis

Engineered for use with all PRECISION Cathode Ray Oscillographs, Models ES-500, ES-500A, ES-520 and ES-550.

1. HIGH IMPEDANCE—LOW CAPACITY PROBE
2. CRYSTAL—DEMODULATING PROBE
3. RESISTIVE—ISOLATING PROBE
4. SHIELDED—DIRECT PROBE

• Set consists of Shielded Master Cable and 4 different, detachable Probe Heads in custom-made vinyl carrying case.

Model SP-5: Complete as described above, with detailed operating instructions.  
Code: Quoit Net Price \$28.50

# PRECISION VACUUM TUBE VOLTMETERS



Industrial • Laboratory • Communications  
Radio-TV (Monochrome and Color)



## Model 68 MODESTLY PRICED, METAL-CASED VTVM

- 5 Peak-to-Peak Voltage Ranges  
0-8-32-160-800-3200 volts.
- 5 (+) Plus DC Voltage Ranges
- 5 (-) Minus DC Voltage Ranges:  
(Left-Hand Zero) 13 1/2 Meg. input resistance.  
0-3-12-60-300-1200 volts
- 5 High Impedance RMS AC Voltage Ranges:  
0-3-12-60-300-1200 volts.
- 5 Resistance Ranges Up to 1000 Megohms
- 5 Zero-Center Reference Ranges  
simplifies FM discriminator balancing
- Factory-Engineered, Factory-Wired and Calibrated  
ruggedly built — modestly priced
- Extra-Large, 5 1/4" Wide-Angle PACE Meter

Model 68: In rugged, blue-grey ripple-finished steel cabinet, size: 5 7/8" x 7 3/4" x 3 1/2". Complete with tubes, internal ohmmeter battery and detailed instruction manual.

Code: Pinto

Net Price: \$54.50

### ACCESSORIES AVAILABLE

RF-12: High Frequency Crystal Probe complete with low capacity x 10 multiplier head. Frequency range to 250 Mc.

Code: Pilot

Net Price \$10.95

TV-4 High Voltage Probe

Net Price \$14.75

(Described below under Model 78 accessories)

## Model 78 BATTERY-OPERATED, METAL-CASED VTVM

- A MUST Where Power Line is Unavailable as in mobile communications, mining, oil, gas operation, etc.
- A MUST Where Power Line Connection is Undesirable. Eliminates cross-ground connections, hi-frequency feedback thru power lines, etc.
- Provides EVERY Modern VTVM Function
  - 6 true-zero-center DC voltage ranges to 1500 volts  
13 1/2 Megohms constant input resistance  
0 ±1.5 ±6 ±30 ±150 ±600 ±1500 volts
  - 5 electronic-ohmmeter ranges to 1000 megohms
  - 5 high-impedance AC voltage ranges to 1200 v.  
0-3-12-60-300-1200 volts RMS  
8 Megs. input resistance;  
67 mmfd. input capacity

- Extra-Large, 5 1/4" Wide-Angle PACE Meter  
easy reading . . . large scales
- Self-Contained, Extra-Long-Life Battery Performance  
in a VTVM of exceptional stability and ruggedness

Model 78: In rugged, blue-grey ripple-finished steel cabinet. Dimensions: 5 7/8" x 7 3/4" x 3 1/2". Complete with tubes, one set of batteries and detailed instruction manual.

Code: Piano

Net Price: \$82.50

### ACCESSORIES AVAILABLE

RF-12: High Frequency Probe .....\$10.95 net price  
(Described above under Model 68 accessories)

Model TV-4: Super-High Voltage Safety Test Probe complete with x 100 multiplier cartridge for ranges to 60 KiloVolts D.C. Code: Excel  
Net Price \$14.75



## Model 88 LAB-TYPE VTVM

- The VTVM that was designed for the Laboratory and priced for the technician!
- More Functions—More Ranges—More Sensitivity  
7 functions . . . 40 ranges . . . 26 2/3 mgs input
- 8 Peak-to-Peak Voltage Ranges—specially engineered for accuracy on pulsed and TV wave forms  
0-3.2-16-32-160-800-3200 volts
- 8 True-Zero Center DC Voltage Ranges  
Constant 26 2/3 Megohms input resistance  
0 ±1.2 ±6 ±12 ±60 ±300 ±1200 V.  
. . . also, 6 (-) minus and 6 (+) plus DC voltage ranges.
- 5 electronic ohmmeter ranges to 1000 Megohms.  
Extra-Large, 5 1/4" Wide-Angle PACE Meter  
3-colors . . . easier-reading . . . longer-scales

Model 88: In compact custom-molded phenolic case; complete with detachable AC line cord, internal ohmmeter battery, 3-way coaxial VTVM probe, and detailed operating manual. Size 5 3/8" x 7 x 3 1/8".  
Code: Plant  
Net Price \$74.50

### ACCESSORIES AVAILABLE

Model LC-1: Leather Carrying Case, custom designed for use with Model 88VTVM. Top grain cowhide.

Code: Curry

Net Price \$9.50

Model TV-8: High Voltage Probe .....Net Price \$14.75  
(Described below under Model 98 accessories)

Model RF-10A: High Freq. Probe.....Net Price \$14.40  
(Described below under Model 98 accessories)

Part No. ST-1: Retractable snap-on stand permits convenient 45 degree table mount.

Code: Stand

Net Price \$1.00

## Model 98 LABORATORY VTVM with 7" Long-View Meter

- PRECISION's Finest VTVM . . . the ultimate in performance, versatility and ease of operation.
- More Ranges — 55 . . . More Functions — 9
- Higher Sensitivity . . . 22.2 mgs/volt at 1.2v. DC
- 8 P-to-P Voltage Ranges — specially engineered for maximum accuracy on pulsed and TV wave forms 0-3.2-16-32-160-800-3200 volts
- 6 True-Zero-Center DC Voltage Ranges.  
26 2/3 Megohms Input.  
0 ±1.2 ±6 ±12 ±60 ±300 ±1200 volts.
- 6 Electronic Ohmmeter Ranges to 1000 Megohms.
- 8 Minus and 6 Plus DC Voltage Ranges:  
(Left-Hand-Zero)  
13 1/2 Mgs input 0-1.2-6-12-60-300-1200V.
- 6 High Impedance RMS AC Voltage Ranges:  
0-1.2-6-12-60-300-1200 volts.
- 8 DC Current Ranges: 0-300 microamperes.  
0-1.2-6-30-130-600 MA. 0-1.2-12 Amps.
- 8 Decibel-Output-Meter Ranges: —20 to +63 DB

Model 98-MCP Deluxe: (Illustrated) In custom-styled, hooded cabinet and two-color satin-brushed aluminum panel. Dimensions: 11 1/2 x 13 x 6 1/2 inches. Complete with 3-way VTVM probe and manual.  
Code: Print  
Net Price \$119.50

Model 98-P Deluxe. Same instrument as 98 MCP Deluxe except in rubbed, natural finish, hardwood cabinet, 12 x 13 x 6".  
Code: Prime  
Net Price \$122.25

### ACCESSORIES AVAILABLE

Model RF-10A: High Frequency Vacuum Tube Probe. For direct measurements up to 300 v. and 300 MC.  
Code: Probe  
Net Price \$14.40

Model TV 8: Super-High Voltage Safety Test Probe with X100 Cartridge for DC voltage ranges to 60 kv.  
Code: Extra  
Net Price \$14.75





# PRECISION VOLT-OHM-MILLIAMMETERS



Industrial • Laboratory • Communications  
Radio-TV (Monochrome and Color)



## Model 120 LAB-TYPE V-O-M

20,000 Ohms per Volt D.C. • 5,000 Ohms per Volt A.C.

**MORE RANGES • AN EXTRA-LOW RESISTANCE RANGE • AN EXTRA LOW-VOLTAGE RANGE  
AN EXTENDED LOW CURRENT RANGE • A LARGER AND EASIER READING SCALE FACE  
SIMPLE, POSITIVE RANGE SELECTION • RUGGED, POSITIVE CONTACT JACKS AND PLUGS**

- 8 DC Voltage Ranges: 20,000 ohms per volt. 0-1.2-3-12-60-300-600-1200-6000 volts.
- 8 AC Voltage Ranges: 5,000 ohms per volt. 0-1.2-3-12-60-300-600-1200-6000 volts.
- 8 AC Output Ranges: same as AC volt ranges. Built-in 600 volt blocking capacitor.
- 7 DC Current Ranges: 0-60-300 Microamperes. 0-1.2-12-120-600 Milliamperes. • 0-12 Amps.
- 5 Resistance Ranges: self-contained. 0-200-2000-200,000 ohms. 0-2-20 megohms.
- 8 Decibel Ranges: from -20 to +77 DB
- Extra Large 5 1/4" Rugged 'PACE' meter: 50 microamperes sensitivity,  $\pm 2\%$  accuracy.
- 1% Multipliers and Shunts: wire and film types.
- Only 2 Plug-Jacks Serve All Standard Ranges:

- "Transit" Position on range selector, protects meter during transportation.
  - Custom-Molded Phenolic Case and Panel
- Model 120: complete with batteries, test leads and manual. Over-all case dimensions 5 3/8 x 7 x 3 1/8".  
Code: Wheel **Net Price \$44.95**

### ACCESSORIES AVAILABLE FOR MODEL 120

- Model TV-2B: Super-High Voltage Safety Test Probe. Complete with multiplier cartridge for direct reading to 30KV.  
Code: Earth **Net Price \$14.75**
- Model LC-3: Ever ready type, Genuine leather instrument case. Custom styled. Top-grain cowhide.  
Code: Cased **Net Price \$9.50**
- Part No. ST-1: Retractable, snap-on stand, permits convenient 45 degree table mount.  
Code: Stand **Net Price \$1.00**

## Model 110 POCKET SIZE V-O-M

20,000 Ohms per Volt D.C. • 5,000 Ohms per Volt A.C.

- Full Range Instrument Performance Small-Sized Instrument convenience
- Fits Your Pocket . . . Fits Your Tube-Caddy the Ideal Extra V.O.M. for field and service
- Extra-High Sensitivity 20,000 ohms per volt DC 5000 ohms per volt AC
- Extra-Low . . . Extra-High Voltage Ranges 1.5 volts full-scale Extra Low-AC and DC 3000 volts full-scale Extra-High-AC and DC
- Extra-Wide Resistance Ranges self-contained up to 20 megohms
- Complete Current Ranges up to 600 MA
- Complete Decibal Ranges from -20 to +70 db
- 3 1/2" Full-View Meter—Long, Easy-Reading Scales

Model 110: Complete with ohmmeter batteries, heavy duty banana-plug test leads and instruction manual. Dimensions: 1-11/16 x 3 1/2 x 5 3/8".  
Code: Valet **Net Price \$34.50**

### — ACCESSORIES AVAILABLE FOR MODEL 110 —

- Model LC-4: Ever ready Instrument case. Custom styled, genuine leather.  
Code: Coral **Net Price \$5.95**
- Model TV-5B: Super-High Voltage Safety Test Probes. Complete with multiplier cartridge for direct reading to 30 kv.  
Code: Ember **Net Price \$14.75**



## Model 100 POCKET SIZE V-O-M

1,000 ohms per volt A.C. and D.C.

Similar to the Model 110 described above, except 1000 ohms per volt AC and DC. Complete with ohmmeter batteries, heavy duty banana-plug test leads and manual. Dimensions: 1-11/16 x 3 1/2 x 5 3/8".  
Code: Value **Net Price \$29.95**

(Same accessories available as described for Model 110 above)

# PRECISION Model E-300



## Sine and Square Wave SIGNAL GENERATOR



- A MUST for Testing HI-FI Audio Equipment don't trust your ear
  - A MUST for Testing Video Amplifiers don't trust your eye
  - Ideal for Testing Industrial Wide-Band Amplifiers versatile, accurate, rugged
  - Eliminate Guesswork with the Model E-300 build customer confidence . . . cut call backs
  - There's No Substitute for Sine-Square Wave Analysis to test frequency response, phase-shift and amplifier distortion
  - Wide Range Sine-Wave Output from 20 cycles to 200 KC: flat within  $\pm 1$  db
  - Wide Range Square-Wave Output 20 cycles through 20,000 cycles; within  $\pm 1$  db
  - Special Video Square Wave Output 50 KC, 100 KC, 250 KC, 500 KC steps (.05 microsecond rise-time)
- Model E-300 Deluxe (Illustrated): In custom-styled, blue-grey, hooded steel cabinet and two color brushed aluminum panel with contrasting dark blue control knobs. Dimensions 11 1/2 x 13 x 6 3/8". Complete with tubes, coaxial output cable and comprehensive instruction manual.  
Code: White **Net Price \$195.00**

# PRECISION TUBE & TRANSISTOR TESTERS



Industrial • Laboratory • Communications  
Radio-TV (Monochrome and Color)

## Model 640

**CATHODE CONDUCTANCE TUBE TESTER**  
*The Finest Instrument of its Type*

Gives the ultimate degree of value in a tube-checking instrument designed according to time-proven emission-testing principles, as have been recommended by tube manufacturers and RETMA. Provides the highest degree of insurance against obsolescence PLUS the utmost simplicity and speed of operation.

The Model 640 gives all this, and at such modest price, without the slightest sacrifice in the long established **PRECISION** standards of workmanship, quality and reliability.

- Free-point 10-lever element selector system for merit, leakage and short tests of all tubes.
  - Tests all modern TV, FM and AM tube types, including series-string types, tuning eyes, gas rectifiers, etc.
  - Filament voltages from 3/4 to 117 volts on 24-position rotary selector switch, accommodates future tube releases.
  - Dual short-check sensitivity for standard and special short tests.
  - Individual tests for each section of multi-section tubes and ballast resistor-type tubes.
  - Built-in pin straighteners for 7 & 9-pin tubes.
  - Extra-large, 5 1/4", rugged PACE meter,  $\pm 2\%$  accuracy.
  - High-speed, 3-window roll chart.
- with time-saving **PRECISION** "Tube-Finder" feature.



Model 640: With etched, satin-brushed aluminum panel. Leatherette-covered, solidly constructed carrying case with tool compartment and hinged, removable cover. Case dimensions: 18 x 10 1/2 x 6 1/4 inches.

Code: Baker \_\_\_\_\_ Net Price \$79.50

ALSO AVAILABLE: Model PTA Picture Tube Adapter Cable: Net Price \$7.75

## Model 660

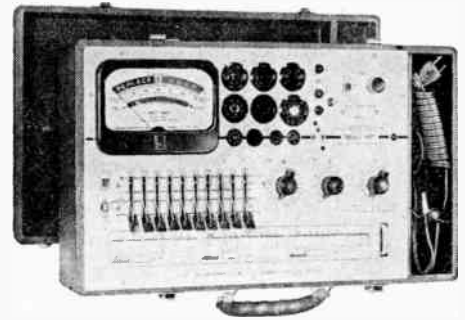
**TUBE AND TRANSISTOR TESTER**  
*with Picture Tube Beam Current Test*

The only moderately priced instrument which gives you comprehensive  $I_{CB0}$ , gain, leakage, shorts, etc. tests on every type of transistor, as well as standard cathode conductance tube testing facilities.

- Provides every tube testing feature of the Model 640 described above.
- Comprehensive transistor testing features — designed on the basis of engineering recommendations by leading transistor manufacturers. Tests  $I_{CB0}$  gain, shorts and leakage on all RF, audio, power and tetrode transistors — both N-P-N and P-N-P types.
- Crystal diodes tested in special circuit for both forward and reverse current.
- TV picture tubes tested in specially engineered circuit — for picture producing beam current. (Requires optional accessory PTA picture tube cable adapter.)

Model 660: With etched, satin-brushed aluminum panel. Leatherette-covered, solidly constructed carrying case with tool compartment and hinged removable cover. Case dimensions: 18 x 10 1/2 x 6 1/4 inches.

Code: Baron \_\_\_\_\_ Net Price \$99.50



## FOR BETTER and FASTER ALIGNMENT (Monochrome or Color TV)



## Model 220 MARKER-ADDER

- An accessory instrument for improving the accuracy and versatility of the conventional sweep generator, signal-marker generator and 'scope.
- Greatly increases the accuracy and speed of RF and IF alignment of color and monochrome TV, as well as FM.
- Permits use of large-size, highly visible markers, without distorting the sweep response curve.
- Eliminates the need to connect the marker signal generator to the tuned circuits of the receiver.

- Makes the marker pip fully visible in traps and at other zero response points. Simplifies and speeds adjustments at these critical points.
- Prevents marker signal from overloading the receiver tuned circuits... preserves the true shape of the sweep response curve.

Model 220: In attractive, rugged, blue-grey, ripple-finished steel cabinet. Size: 5 7/8" x 7 3/4" x 3 1/2". Complete with 4 connecting cables and manual. Ready to operate. 110 volts 50/60 cycles.

Code: Nymph \_\_\_\_\_ Net Price \$52.50

## Model 230 (voltage regulated) MULTI-BIAS SUPPLY

- A valuable, time-saving accessory instrument for single and multiple bias substitution in color and monochrome TV alignment (AVC, AGC, Chroma).
- Provides four simultaneous bias voltages. Each output is individually adjustable and well filtered from a voltage-regulated source.
- 4 separate bias controls at front of panel:  
Three for 0 to 150 volts negative.  
One for 0 to 150 volts positive.

- Eliminates all need for makeshift battery hook-ups and other cumbersome temporary bias supply arrangements.

Model 230: In compact, custom-molded phenolic case and 2 color satin-brushed aluminum panel. Complete with all connecting leads, VR tube and technical manual. Size: 5 3/8" x 7" x 2 1/4". Ready to operate. 110 volts 50/60 cycles.

Code: Naomi \_\_\_\_\_ Net Price \$27.50

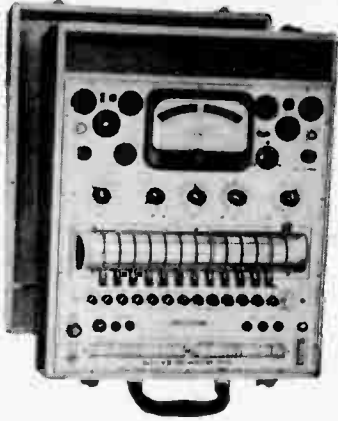


All prices and specifications subject to change without notice  
The MASTER — 22nd Edition

# PRECISION Electronamic TUBE TESTERS



Industrial • Laboratory • Communications  
Radio-TV (Monochrome and Color)



## Model 10-12 Electronamic TUBE TESTER

- Positive, All-Inclusive Tube Performance Testing not limited to mutual conductance alone
- Tests Tubes Over a COMPLETE PATH of Operations . . . not at just One Arbitrary Point
- ACTIVELY Tests All Tube Elements . . . not for just One Inconclusive Characteristic Individual plate, grid, screen, filament, etc., test voltages
- Tests All Modern Tube Types . . . Incl. subminiatures fully wired to handle future tubes up to 12 pins . . . built-in stainless-steel pin straighteners
- Dual Short-Check Sensitivity provides critical leakage testing facility. Special low voltage short-check circuit guards against damage to tubes under test
- Complete Battery Testing Facilities tests radio A, B and C dry batteries under load conditions
- Built-in Stainless Steel Pin-Straighteners for 7- and 9-pin tubes
- 5 1/4" Wide-Angle, Rugged PACE Meter

Model 10-12P Deluxe (illustrated): 2-color, satin-brushed aluminum panel and contrasting dark blue control knobs; rubbed hardwood cabinet with tool compartment and hinged removable cover. Dimensions: 17 1/4" x 13 3/4" x 6 3/4".  
Code: Fancy Net Price: \$129.00

Model 10-12P Standard: Electrically identical to above, but with black and white anodized panel. Same dimensions as above.  
Code: Facil Net Price: \$124.00

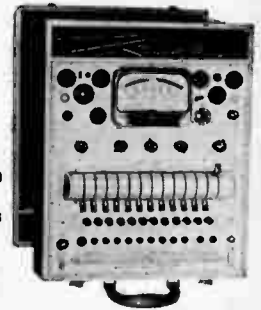
## Model 10-54 Electronamic TEST MASTER COMBINATION TUBE and CIRCUIT TESTER

Incorporates same famous tube and battery testing features described for the Model 10-12 Electronamic Tube Tester (illustrated above), PLUS a complete, wide-range, high-speed push-button-operated, super-sensitive circuit tester.

- Six D.C. Voltage Ranges: 20,000 ohms per volt. 0-3-12-60-300-1200-6000 volts.
- Six A.C. and Output Voltage Ranges: 1000 ohms per volt. 0-3-12-60-300-1200-6000 volts.
- Seven D.C. Current Ranges: 0-60-120 microamperes. 0-1.2-12-120-1200 milliamperes and 0-12 amperes.

- Four Self-Contained Resistance Ranges: 0-6000-600,000 ohms; 0-6-60 megohms.
- Six DB Ranges from -10 to +77 DB., 0 DB=1 MW., 600 ohms.
- Recessed 6000 Volt Range Safety Jacks provide optimum safety for both operator and instrument.
- 1% Wire-Wound and Deposited-Film Multipliers and Shunts
- 5 1/4" Wide-Angle, Rugged PACE Meter

Model 10-54-P Deluxe Code: Habit Net Price \$160.00  
Model 10-54-P Standard Code: Henry Net Price \$155.00



## Model 10-15 Electronamic TUBE MASTER with Extra-Large 9" Meter

- Designed for equipment-conscious, radio service-sales organizations and tube-selling sections of department stores. Also excellent for classroom demonstrations.
- Incorporates the Electronamic Tube Performance and Battery Testing Circuit as described for the Model 10-12 above.

Model 10-15 Deluxe (Illustrated): Heavy gauge, blue-grey, ripple-finish steel cabinet with chrome trim and polished reflector. 24" high, 17 1/2" wide, base-10" tapering to 4" at top.

Code: Graze

Net Price \$179.00



## Model PTA

Picture Tube Adapter Cable  
for use with all  
PRECISION Tube Testers

Checks TV picture tubes within limitations inherent in all devices of this type. Rugged . . . long lasting.

Complete with instructions for use with all present PRECISION tube checkers in the '600' and '10-00' series. Also for use with previous PRECISION tube checkers, Models 612, 614, 620, 654, 910, 912, 914, 915, 920, 922 and 954.

Code: Cable

Net Price: \$7.75

## Model SS-10 SERIES STRING FILAMENT CHECKER



- IT QUICK CHECKS Receiver Tubes for Filament Continuity . . . TV, Radio and Battery Set Types Octal, Loctal, Miniature 7-pin and Noval 9-pin types.
- IT QUICK CHECKS TV Picture Tubes for Fil. Continuity . . .
- IT QUICK CHECKS TV and Radio Set Fuse Continuity . . .
- IT QUICK CHECKS TV Sets for AC Circuit Continuity . . .
- IT QUICK CHECKS Pilot Lamps, bayonet and screw-base types.

Model SS-10: handsomely styled, custom-molded case with striking gold and black anodized, aluminum panel; complete with batteries—ready to operate.  
Size: 1" deep x 3 1/2" wide x 5 3/4" long.

Code: Saver

Net Price: \$8.50

## Model AC-12

LINE LOAD SURVEY METER



- Quick-Checks Power Capacity of 110 Volt AC Lines to accommodate freezers, air-conditioners, fans, etc.
- Shows Line Load Conditions in Simple Terms: Low . . . O.K. . . High
- Also Reads Actual Line Voltage
- Easy-to-Read, Wide-Vision Meter . . . 3-color Scaleplate
- Three Test Loads — (Not Just One or Two)
- Lightweight, Portable, Rugged, Convenient . . . perfect for salesmen, electricians, servicemen.

Model AC-12: In ventilated case with brushed aluminum panel. Size: 5 1/2" x 7 3/4" x 3 1/2" Complete ready to operate.

Code: Liner

Net Price \$29.50

All prices and specifications subject to change without notice

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Net

The MASTER—22nd Edition

Page G-445

# P A C O KITS

A DIVISION OF *PRECISION* Apparatus Company, Inc.

## The Finest Electronic Test Instruments IN KIT FORM

for

- radio and TV service
- hi-fi custom-building and service
- electronics hobbyists and amateur radio
- science education and technical schools
- industrial testing and quality control

Now, for the first time, (for technicians, hobbyists, engineers), a line of test instrument kits engineered and produced under the auspices of a leading test equipment manufacturer, and conveniently available directly from your own local electronic parts distributor.

*PRECISION's* 25 years of experience in instrument and meter design and manufacture is your assurance of **PACO's** superior performance and value.

Compare **PACO** quality instrument kits against any others — for performance, appearance, ruggedness, ease of operation, and simplicity of assembly and wiring.

See how **PACO** sets an entirely new standard in electronic kit instrumentation.



### Model B-10 BATTERY ELIMINATOR KIT

Special Low-Ripple Output designed to power modern transistor circuits • Both 6 and 12 volt outputs • Automatic overload protection • Continuously variable voltage output • Doubles as ideal battery charger • In heavy-duty, louvred steel cabinet and two color panel. Case dimensions: 7 x 11½ x 6¾".

Code: Heavy ..... Net Price: \$41.95



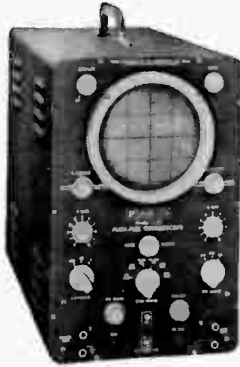
### Model C-20 RESISTANCE-CAPACITY-RATIO BRIDGE KIT

Capacity ranges from 10 mmfd to 2000 mfd • Resistance ranges from .5 ohms to 200 megohms • Ratio test ranges from .05 to 20 • Tests leakage of micas, papers and electrolytics • In attractive, ripple finished steel cabinet and easy reading 2 color panel. Dimensions: 7 x 11½ x 5".

Code: Ratio ..... Net Price: \$20.95

**PACO****ELECTRONICS CO., Inc.**A DIVISION OF **PRECISION Apparatus Company, Inc.**

Export: 458 Broadway, New York 13, New York • Canada: Atlas Radio Corp., 50 Wingold Avenue, Toronto, Ontario

**Model S-50****5" CATHODE RAY OSCILLOSCOPE KIT**

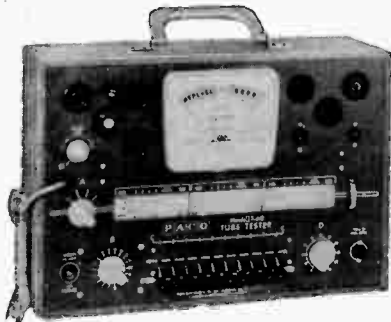
Push-Pull vertical and horizontal amplifiers • Ultra-modern printed-circuit amplifier design • High-sensitivity, 1 MC vertical amplifier • Built-in 1 volt peak-to-peak self-calibrator • Efficient, two-color, easy-reading panel • Rugged, louvred steel cabinet, 13 $\frac{1}{2}$  x 8 $\frac{3}{4}$  x 17 $\frac{1}{4}$ ".

Code: Scope.....Net Price: \$47.50

**Model V-70****VACUUM TUBE VOLTMETER KIT**

7 DC and RMS AC voltage ranges to 1500 V. • 7 peak-to-peak voltage ranges to 4000 volts • 7 ohmmeter ranges to 1000 megohms • Special PACE 5" Acrylic cased meter • Attractive, easy-reading, two color panel • Rugged ripple-finished steel cabinet, size 7 $\frac{1}{2}$  x 5 $\frac{3}{8}$  x 4 $\frac{1}{4}$ ".

Code: Range.....Net Price: \$31.50

**Model T-60****TUBE CHECKER KIT**

Free-point lever element selector system • Extra-large 5" Acrylic cased meter by PACE • Illuminated, high speed, brass-gear, 3 column roll chart • Tests all new AM-FM-TV tubes including Series-String types • In rugged attractively finished cabinet • Two color panel with contrasting knobs. Dimensions: 10 $\frac{1}{2}$  x 15 $\frac{1}{4}$  x 4 $\frac{3}{4}$ ".

Code: Check.....Net Price: \$36.75

**... ACCESSORIES ...****For the Model V-70 VTVM**

- RF crystal probe for HF measurements
- High-voltage probe for testing high-voltage TV power supplies up to 30,000 volts

**For the Model S-50 OSCILLOSCOPE**

- Set of oscilloscope probes for convenient, accurate circuit checking and analysis. Set consists of:
  - a. low-capacity probe
  - b. demodulator probe
  - c. direct probe

**For the Model T-60 TUBE TESTER**

- Standard picture-tube test cable
- 110° picture tube adapter
- Hinged cover for tube tester cabinet

**For the Model M-40 V-O-M**

- High voltage probe for testing high-voltage TV power supplies up to 30,000 volts

**...and  
COMING  
SOON...****Model G-30**

RF SIGNAL GENERATOR

Code: Genny

Net Price: \$28.50

**Model Z-80**

AUDIO-RF SIGNAL TRACER

Code: Trace

Net Price: \$29.50

**Model M-40**

HIGH SENSITIVITY V-O-M

Code: Meter

Net Price: \$31.50

# Test with confidence

WRITE FOR DATA SHEETS ON THE INSTRUMENTS SHOWN... ALL ARE STANDARD PRODUCTION MODELS, AVAILABLE FOR IMMEDIATE DELIVERY FROM STOCK... LET US QUOTE ON YOUR REQUIREMENTS FOR MODIFIED UNITS OR SPECIAL TEST EQUIPMENT.

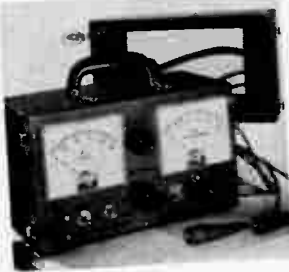
## SLAUGHTER CO.

PIQUA 3, OHIO

### High-Voltage Leakage Tester

checks insulation for leakage

... grounds  
... arcing



MODEL  
**122**

16 lb. Portable  
for lab and  
field work

0/2100 V.A.C. ... 0/100/1000 MICROAMPS  
CAPACITY COMPENSATION ... MEASURES  
A.C. RESISTANCE, CAPACITY, AND POWER  
FACTOR.

### Precision Stroboscope

with high intensity daylight lamp

... stable  
... accurate



MODEL  
**162**

Interchangeable  
Heads ...  
0.1% accuracy

FOR SPEED MEASUREMENTS TO 30,000 RPM  
FOR MOTION STUDIES ... CAN BE SYNCHRO-  
NIZED WITH EXTERNAL SIGNALS ... CAN BE  
TRIGGERED WITH EXTERNAL CONTACTS ...  
CAN BE COUPLED TO COUNTER, SCOPE, OR  
OTHER EQUIPMENT.

SLAUGHTER CO. • PIQUA 3, OHIO

### High-Voltage Insulation Tester

with buzzer signal on breakdowns

... grounds  
... shorts



MODEL  
**101**

Watch what you  
are doing ...  
not the tester

SIX TEST VOLTAGES ... 500 to 2500 V.A.C.  
PRICED SO YOU CAN AFFORD TO SPOT A  
FEW ALONG YOUR ASSEMBLY LINES.

FOR SAFETY

### Adjustable High-Voltage Tester

with buzzer signal on breakdowns

... grounds  
... shorts



MODEL  
**106**

Voltmeter  
shows actual  
Test Voltage

ADJUSTABLE VOLTAGES TO 2500 V.A.C. RE-  
COMMENDED FOR BREAKDOWN TESTING AT  
FINAL ASSEMBLY AND INSPECTION.

### High-Voltage Leakage Tester

audibly signals excess leakage

... grounds  
... arcing



MODEL  
**103**

Measures Leakage  
... not capacity  
current

TEST VOLTAGE ADJUSTABLE TO 2100 V.A.C.  
LEAKAGE LIMIT ADJUSTABLE ... 0 TO 5 MA.  
DETECTS 20 MICROAMPERE ARCS ... CAN-  
CELS CHARGING CURRENT CAUSED BY IN-  
HERENT CAPACITY. USED AT FINAL INSPEC-  
TION FOR BREAKDOWN AND LEAKAGE TESTS.

SLAUGHTER CO. • PIQUA 3, OHIO



# The "SENCOPE" Line is Mighty FINE



## FILAMENT CHECKER

**QUICKLY FINDS ANY OPEN FILAMENT. ONLY CHECKER THAT CHECKS ALL OCTALS, LOCTALS 7 AND 9 PIN MINITURES AUTOMATICALLY** Especially handy for servicing series filament TV sets and radios. TV Cheater Cord is used (rather than batteries) so that you do not check all series tubes and then find no AC power present. Checker becomes continuity and voltage tester when leads are inserted in pins 1 and 12 of picture tube socket. More than 100,000 SENCO Filament Checkers in use today. Weighs less than 6 oz.  
**MODEL FC4 ... DEALER NET \$2.95 With Leads \$2.75 Without Leads**



## TUBE and CAPACITOR LEAKAGE CHECKER

"TWO TESTERS IN ONE"

- ✓ a highly accurate tester for detecting leakage between tube elements.
  - ✓ a reliable instrument for indicating capacitor leakage with 50 volts applied.
- Cannot be outperformed by any other grid circuit tester... really whips those tough dog problems. New overlay conversion plate for old testers, now available for 90 cents.  
**NOW - CHECKS 70 CRITICAL TUBE TYPES**

**Performance -**  
 The checker accurately indicates the following:  
 ● grid to cathode tube leakage up to 100 megohms  
 ● heater to cathode leakage up to 50,000 ohms  
 ● control grid emission currents as low as 0.5 micro-amps  
 ● electrolytic capacitor leakage up to 50,000 ohms with 50 volts applied across the capacitor  
 ● leakage in other type capacitors up to 100 megohm with 50 volts applied across the capacitor  
**MODEL LC2 ... DEALER NET \$24.95**  
 Leatherette Carrying Case .....\$2.00  
 Complete with Leads and Wired



**PEAK-TO-PEAK Comparison Meter** Dealer Net \$8.75  
**A COMPLETELY ASSEMBLED PEAK TO PEAK METER AT HALF THE PRICE OF A KIT**

## Handy "36" RC Substitution Unit

### "36"

**MOST OFTEN NEEDED COMPONENTS AT YOUR FINGERTIPS!**



3 pole, 12 position switch individually selects one of the "36" components for direct substitution. Contains:  
 ★ 12-1 watt 10% resistors from 10 ohms to 5600 ohms  
 ★ 12-1/2 watt 10% resistors from 10K ohms to 5.6 megohms  
 ★ 10-600 volt capacitors from 100-mmf. to .5 mfd.  
 ★ 1-10mfd., 450V Electrolytic  
 ★ 1-40mfd., 450V Electrolytic  
 ★ For Shop, Laboratory or Outside Service  
**MODEL H36 ... DEALER NET \$12.75**  
 Completely Isolated  
 Leatherette Carrying Case .....\$2.95

## PRE-HEATER

PREHEAT UP TO 20 TUBES AT ONE TIME



- Find troublesome gassy and intermittent tubes when the TV set is in your shop—stop that costly call back.
  - Quick-heat switch speeds up pre-heating time by increasing all voltages by 10 percent.
  - A must when servicing series filament sets (all series filament tubes go out when the first one is pulled for checking).
  - Handy pin straightener
  - Easy to operate
  - 10 ampere transformer just like in a TV set
  - Provides all filament voltages up to 35 volts including new 450 and 600 MA tubes
- MODEL FP22 ... DEALER NET \$18.95**

## "UP-DOWN" VOLTAGE BOOSTER



**A PRACTICAL LINE VOLTAGE REGULATOR AT HALF THE PRICE OF OTHERS**

Increases power line voltage ten volts, decreases it ten volts, or restores it to normal with the flick of a switch, rated up to 300 watts. Handles all black and white TV sets. Uses heavy toggle switches which are necessary with heavy loads. Takes care of 95 percent of power troubles.  
**MODEL LB2 ... DEALER NET \$5.97**  
**IDENTICAL TO LB2 UP-DOWN WITH THE ADDITION OF A NEON VOLTAGE INDICATING LAMP** Lamp is set to glow at 126 volts as a warning to turn booster off. Designed for areas with voltage fluctuations.  
**MODEL LB2N ... DEALER NET \$7.17**



## TRANSISTOR and CRYSTAL DIODE CHECKER

**PROVIDES 4 IMPORTANT CHECKS ON ALL TRANSISTORS:**

- Open - Short - Current Gain - Leakage
  - Wanted and Needed by Every Serviceman
  - ★ Complete set-up chart and instruction booklet attached to back
  - ★ Will never become obsolete, with test leads and socket, replaceable up-to-date set-up chart and gain control to vary battery voltage
  - ★ Accurate and simple to operate—takes less than 50 seconds to test either TRANSISTORS of crystal diodes
  - ★ Uses test leads which eliminates need of completely removing transistor from circuit
  - ★ Checks forward to backward resistance of all diodes
- MODEL TDC22 ... DEALER NET \$15.95**  
 Approved by leading manufacturers



## ALIGN-O-PACK FOR TV ALIGNMENT AND AGC TROUBLE SHOOTING

Now—Provides from 0 to 18 Volts DC Positive or Negative

Completely isolated power supply with less than 1/10 of 1% ripple. For alignment, merely plug in 115V AC and set knob at required voltage. Provides all DC voltages recommended by TV manufacturers. Wire wound control for calibration accuracy.

For AGC trouble shooting, connect to AGC buss and vary voltage from 0 to 18 volts negative. If picture stabilizes at any voltage, AGC is defective.

Complete with test leads in handsome aluminum panel and black hammertone case.  
**MODEL BE3 ... DEALER NET \$7.85**  
 Leatherette Carrying Case .....\$2.95

## TV JUMPER CORD

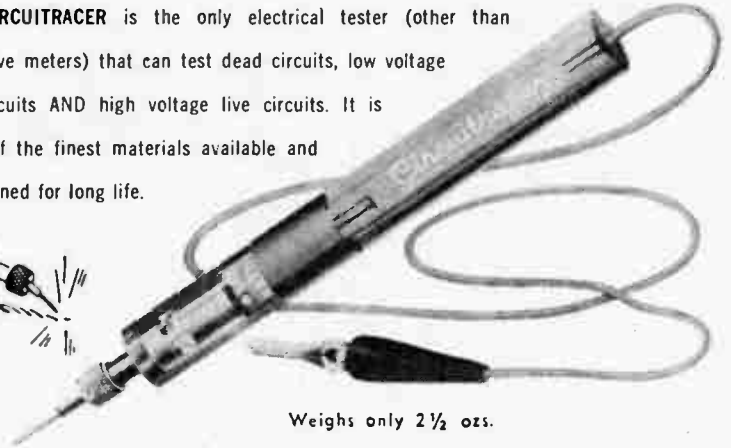
**JUMPS POWER FROM TV BACK TO CHASSIS**  
 No more plugging into wall sockets — moving of furniture — winding and unwinding cords. It's universal—fits any set.  
**DEALER NET \$1.95**  
**MODEL JC2**

Mfd. by SERVICE INSTRUMENTS CORPORATION • Addison, Illinois

Tracks 'em Down Dead or Alive



The **CIRCUITRACER** is the only electrical tester (other than expensive meters) that can test dead circuits, low voltage live circuits AND high voltage live circuits. It is made of the finest materials available and is designed for long life.



Weights only 2 1/2 ozs.



**Circuitracer**\*

**THE ONLY POCKET SIZE 3-IN-1 ELECTRICAL TEST "LAB"**

**DON'T SEND A MAN TO DO A BOY'S JOB!** An expensive meter should be used only when the value of voltage, resistance or current must be known. Under any other conditions a Circuitracer will provide simple continuity and voltage checks faster and easier than an expensive, bulky meter.

**CIRCUIT TESTING WITH A CIRCUITRACER IS FASTER** because the signal light is in the tip at the point of contact. This makes it possible to determine the existence of a circuit or voltage without looking away from the test point to read a meter.

**SAVE METER REPAIR MONEY BY USING DESCO CIRCUITRACERS.** An overvoltage across a meter usually results in extensive damage which takes the meter out of service until repaired or replaced. The worst that can happen to your Circuitracer is a burned out lamp that costs ten or fifteen cents and can be replaced by the operator in less than a minute!

**LIST PRICE \$4.95**



The Desco patented Circuitracer Tip adapted for use with a Flexiprobe. More convenient than the Adapter Nut for production use.

**LIST \$1.50**



Special Adapter Nut and Flexiprobe for your Circuitracer. Just screw it on the Circuitracer tip and it's ready to test those delicate receptacles.

**LIST \$1.25**

*Without the vital connector the electronic business could not exist . . .*

**PROTECT THOSE DELICATE CONTACTS** with



**Flexiprobe**

Since reliability of electronic connectors is an important aspect of good circuit design, the technician must exercise great care when inserting a test probe into pin and printed circuit receptacles. Use of an oversize probe or accidental lateral movement of the handle warps or bends the receptacle's spring contacts. While this damage may not be apparent, it will show up under operating conditions . . . causing aborted missions in the case of aircraft and missile guidance systems or expensive shutdowns in the case of industrial control equipment.



Desco Flexiprobe in a standard pin vice type handle.

**ELIMINATES POSSIBILITY OF DAMAGE TO A-N AND PRINTED CIRCUIT RECEPTACLES**

The Desco Flexiprobe is particularly well adapted to testing subminiature assemblies. It can be inserted into even the smallest connector with a smooth, spring-loaded wiping action which assures positive electrical contact with no chance of damage to the receptacle. Made in two sizes and adapted to various types of testers, the Desco Flexiprobe is available at most electronics parts distributors.

The Desco Flexiprobe for testing pin type receptacles.

PRICE: 40 cents each, list.  
Packed 1 of each (2) in cellophane envelope, two for 75 cents list.  
Write for bulk prices.

\*T.M.

DESCO

**DESCO MFG. CO., GLENDALE, CALIF.**



## Thank You!

When ordering products shown in this book or writing for additional information, please be sure to specify:

1. **Manufacturer's Catalog Numbers and Page Numbers.**
2. **The Year and Edition of This MASTER.**

This will avoid confusion and expedite delivery.

**The**  
*Radio-Electronic*  
**MASTER**

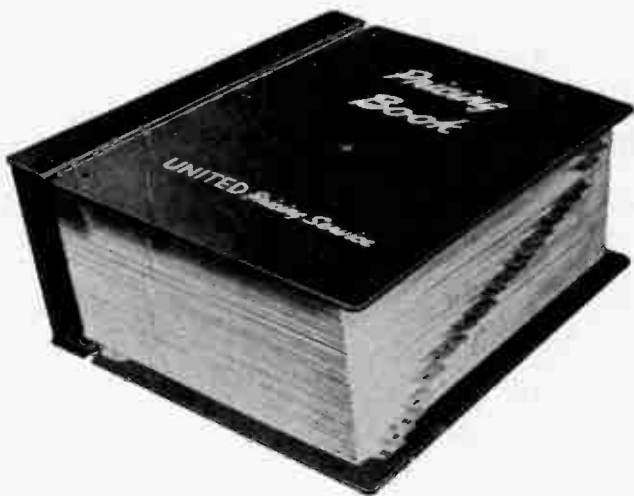
# PRICES

All prices listed in The MASTER are subject to change without notice — they should not be considered final.

Get quick-on-the-spot quotations from your distributor who subscribes to the up-to-the-minute

## UNITED PRICING SERVICE

The Perpetual Pricing System for  
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# DELIVERY

Delivery is often dependent on availability of raw materials. Check with your distributor for delivery information at the time you place your order.

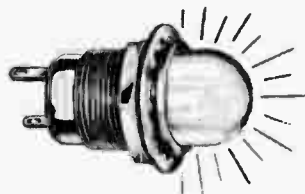


# Sub-Miniature PILOT LIGHTS

## Two Terminal • Fully Insulated

*The Ultimate in Compactness*

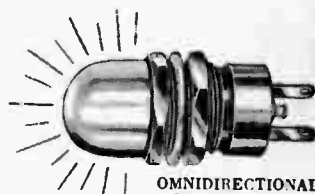
(Illustrations are approx. actual size)



**THESE PILOT LIGHTS CONFORM TO ALL APPLICABLE MILITARY SPECIFICATIONS.**

For **FRONT** of  
Panel Insertion:  
Requires single 17/32"  
clearance hole.

For **BACK** of  
Panel Insertion:  
Requires single 15/32"  
clearance hole.



OMNIDIRECTIONAL  
PLASTIC DOME

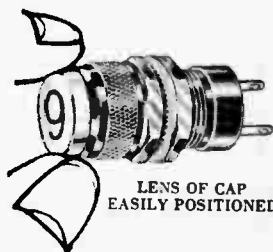
**EASY LAMP REPLACEMENT:** All assemblies (whether for front or rear insertion) have this important feature: The plastic domes or metal caps are easily removed from front of panel — thus making the lamps accessible for easy lamp replacement. Please refer to our Form L-156A which describes these units in detail.

**PLASTIC DOME — OMNIDIRECTIONAL:** The unique "stovepipe" lens, moulded of high heat plastic, radiates light in all directions. Heavy plastic walls are reinforced by threaded brass insert. This fitting receives lamp well up into plastic dome for maximum light dispersion.

**LENS WITH MESSAGE — easily positioned.** A DIALCO exclusive is the specially designed cap-and-lens (as shown at right). By pressing on spring-mounted lens and rotating in either direction the legends may be positioned *after* installation of the assembly.

**INSULATED:** Lamp, socket, and all connections are completely insulated from the bushing and panel to which it is attached.

**FINISH:** Black nickel.



LENS OF CAP  
EASILY POSITIONED



NON-DIMMING



DIMMING



**LIGHT SOURCE:** T-1 1/4 midget flanged incandescent lamps. Available in the following voltages.

Lamp No.	Volts	Amps	Life (Hours)
331	1.3	.06	500
338	2.7	.06	500
328	6.0	.2	500
330	14.0	.08	750
327	28.0	.04	1000

### CATALOGUE NUMBERS

#### PLASTIC DOME TYPES

All caps are available in transparent or completely diffusing plastic. Two colors only are made in light diffusing material.

#### Non-diffusing (transparent) colors

Color	Catalogue No. (Back insertion)	Catalogue No. (Front insertion)
Red	101-3830-931	101-5030-931
Green	101-3830-932	101-5030-932
Amber	101-3830-933	101-5030-933
Blue	101-3830-934	101-5030-934
White (Opal)	101-3830-935	101-5030-935
Yellow	101-3830-936	101-5030-936
Clear (Colorless)	101-3830-937	101-5030-937

#### Completely diffusing colors

Red	101-3830-971	101-5030-971
Green	101-3830-972	101-5030-972
Amber	101-3830-973	101-5030-973
Blue	101-3830-974	101-5030-974
White (Opal)	101-3830-975	101-5030-975
Yellow	101-3830-976	101-5030-976

#### Light diffusing colors

Red	101-3830-951	101-5030-951
Green	101-3830-952	101-5030-952

#### INDICATOR LIGHT (Non-dimming)

Lens, frosted back	Lens, frosted all over	Lens, unfrosted
111-3830-111	111-3830-121	111-3830-131

#### DIMMER TYPES (Mechanical or Polaroid)

Semi-Blackout	Lens, frosted back	Lens, frosted all over	Lens, unfrosted
109-3830-111	109-3830-121	109-3830-131	109-3830-131
108-3830-111	108-3830-121	108-3830-131	108-3830-131
112-3830-111	112-3830-121	112-3830-131	112-3830-131

#### LIGHTS WITH MESSAGES

Translucent Colors	(Back insertion)	(Front insertion)
Red	134-3830-351	134-5030-351
Green	134-3830-352	134-5030-352
Amber	134-3830-373	134-5030-373
White	134-3830-375	134-5030-375
Yellow	134-3830-376	134-5030-376

**LENS COLOR:** The final figure in the catalogue number indicates that the lens has RED color. When color other than red is desired, change this digit to a figure from the listing below. Note that white lenses are translucent and are always furnished unfrosted.

Red—1 Green—2 Amber—3 Blue—4  
White Trans.—5 Yellow—6 Clear (Colorless)—7

Also **ONE** terminal units



For use on grounded circuits

DIALCO also makes a complete line of single terminal sub-miniature pilot lights intended for use where it is desired to ground one side of circuit. Available in the

styles similar to the above. Instead of the single soldering terminal, a binding screw terminal may be specified. Brochure L-157 describes these units in detail.

**ORDER COMPLETE WITH LAMPS** so that you will be assured of receiving the pilot lights and correct lamps at one time, ready for immediate use.

# DIALIGHT CORPORATION

Foremost Manufacturer of Pilot Lights

BROOKLYN 37, N. Y.

## PILOT LIGHT ASSEMBLIES

for T-3 $\frac{1}{4}$  NEON LAMP • NE-51

For 11/16"\* and 1"\*\* MOUNTING HOLES

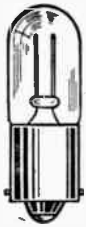
### BUILT-IN RESISTORS

(Patent No. 2,421,321)

For operation on 105-125V. or 210-250V. . . . The required resistor is an integral part of the unit — BUILT IN. (See below.) Also, simple external resistors for all higher voltages.

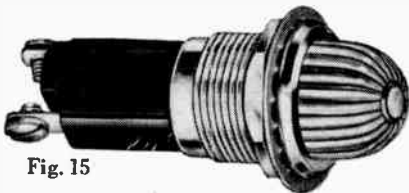


All of these assemblies are listed by Underwriters' Laboratories, Inc.



NE-51

#### Equipped with BINDING SCREWS



Multivue caps

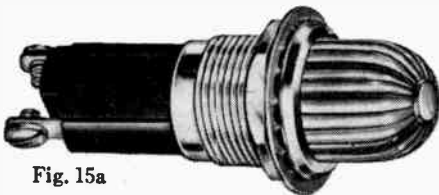


Fig. 15a

#### Equipped with SOLDERING TERMINALS



Fig. 16a



Fig. 16

The new NE-51 lamp is especially useful for pilot lights to be operated on commercial voltages. It has a distinctive orange-red glow and consumes very little current.

#### MULTI-VUE or CLEAR CAPS

In addition to the advantages given by the provision of the built-in resistor, these assemblies offer another feature that is especially important in obtaining effective indication with the NE-51 lamp. The "Multi-vue" cap shown at the left gives a high degree of visibility by directing an increased amount of light toward the eye when the indicator is viewed from any angle. When it is desirable to view the electrodes directly, the CLEAR CAPS shown below are very effective. For concentrating the light into a beam the metal lens holders are equipped with convex lenses as shown.

#### CATALOGUE NUMBERS

##### \*For 11/16" Mounting Hole

- 521308-991 Short multivue cap, Screw terminals (Fig. 15)
- 531308-991 Long multivue cap, Screw terminals (Fig. 15a)
- 91408-931 Long clear cap, Soldering terminals (Fig. 16)
- 95408-931 Short clear cap, Soldering terminals (Fig. 16a)
- 81408-111 Screw-in cap, Convex lens, Soldering terminals (Fig. 17)

Units for 9/16" Mounting Hole are also available

##### \*\*For 1" Mounting Hole

- 80408-831 Screw cap, Dome plastic lens, Soldering terminals (Fig. 18)
- 801308-831 Screw cap, Dome plastic lens (Fig. 18). Screw terminals similar to those in Fig. 15
- 51408-111 Screw cap, Convex lens, Soldering terminals (Fig. 19)
- 511308-111 Screw cap, Convex lens (Fig. 19). Screw terminals similar to those in Fig. 15

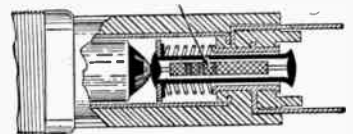
**LENS COLOR:** The *final figure* in the catalogue number indicates that the lens has RED color. When color other than red is desired, change this digit to a figure from the listing below. Note: white lenses are translucent and are always furnished unfrosted.

Red—1      Green—2\*      Amber—3      Blue—4\*  
White Translucent—5      Yellow—6      Clear (Colorless)—7

\* Not recommended with neon lamps.

**ORDER COMPLETE WITH LAMPS** so that you will be assured of receiving the pilot lights and correct lamps at one time, ready for immediate use.

#### BUILT-IN RESISTOR



**PATENTED No. 2,421,321**  
External resistors will be furnished which will permit use of these pilot lights on voltages higher than 250 volts.

# DIALIGHT CORPORATION

Foremost Manufacturer of Pilot Lights

BROOKLYN 37, N. Y.

## PILOT LIGHT ASSEMBLIES

FOR T-3 $\frac{1}{4}$  BULB WITH  
MINIATURE BAYONET BASE



### CATALOGUE NUMBERS

#### \*For 11/16" Mounting Hole

- 521310-991 Short multivue cap, Screw terminals (Fig. 15)
- 531310-991 Long multivue cap, Screw terminals (Fig. 15a)
- 91410-931 Long clear cap, Soldering terminals (Fig. 16)
- 95410-931 Short clear cap, Soldering terminals (Fig. 16a)
- 81410-111 Screw-in, Convex lens, Soldering terminals (Fig. 17)
- 211310 Light shield, Screw terminals (Fig. 20)
- 93410-111 Polaroid dimmer cap, Convex lens, Soldering terminals (Fig. 21a)
- 98B410-111 Dimmer cap, Convex lens, Soldering terminals (Fig. 21)  
or 98SB410-111



for low voltages



Fig. 17

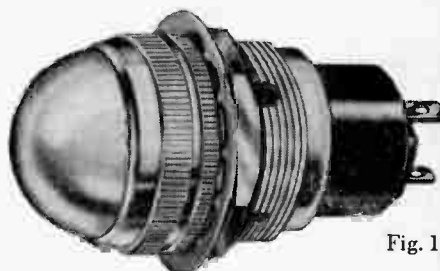


Fig. 18

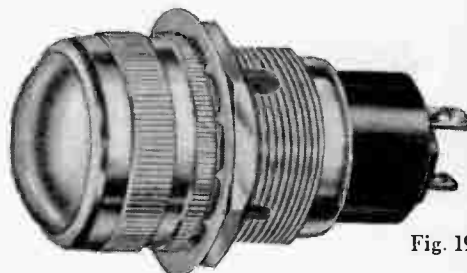


Fig. 19



Fig. 20

#### \*\*For 1" Mounting Hole

- 80410-831 Screw cap, Dome plastic lens, Soldering terminals (Fig. 18)
- 801310-831 Screw cap, Dome plastic lens, (Fig. 18). Screw terminals similar to those in Fig. 20
- 51410-111 Screw cap, Convex lens, Soldering terminals (Fig. 19)
- 511310-111 Screw cap, Convex lens, (Fig. 19). Screw terminals similar to those in Fig. 20

**LENS COLOR:** The *final figure* in the catalogue number indicates that the lens has RED color. When color other than red is desired, change this digit to a figure from the listing below. Note that white lenses are translucent and are always furnished unfrosted.

Red—1      Green—2      Amber—3      Blue—4  
White Translucent—5      Yellow—6      Clear (Colorless)—7

**ORDER COMPLETE WITH LAMPS** so that you will be assured of receiving the pilot lights and correct lamps at one time, ready for immediate use.

### MECHANICAL and POLAROID DIMMERS



mechanical

Fig. 21



polaroid

Fig. 21a

Any of the mechanical dimmers can be supplied either for "Complete Blackout" or for "Semi-Blackout". Typical Catalogue Numbers are as follows:  
**98B410-111** ("Complete Blackout" . . . **98SB410-111** ("Semi-Blackout")

# DIALIGHT CORPORATION

Foremost Manufacturer of Pilot Lights

BROOKLYN 37, N. Y.

All illustrations are approximately actual size

## LENS CAPS

### FRICTION

Convex



Fig. 34

### BAYONET

Convex



Fig. 6

### SCREW

Large Convex



Fig. 2

Torpedo



Fig. 3

Small Convex



Fig. 1

Large Torpedo



Fig. 4

Dome



Fig. 35

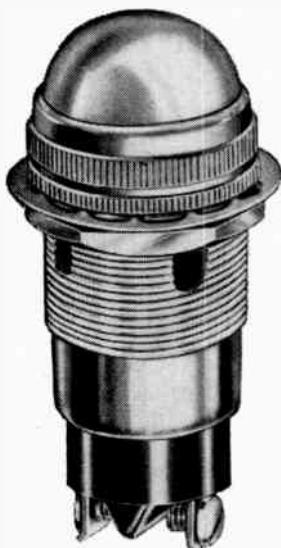
### SCREW

Faceted



Fig. 5

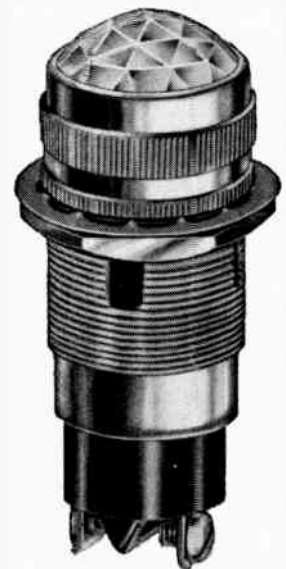
## ASSEMBLIES FOR 1 INCH MOUNTING HOLE DOUBLE CONTACT BAYONET



Screw terminals Fig. 11  
(moveable type)

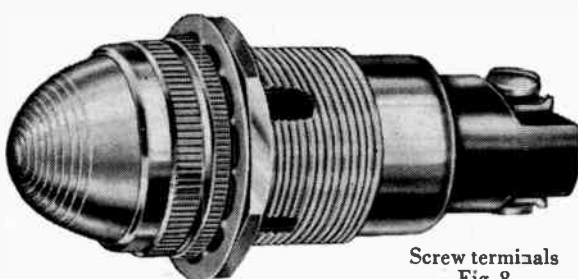


Soldering terminals Fig. 12

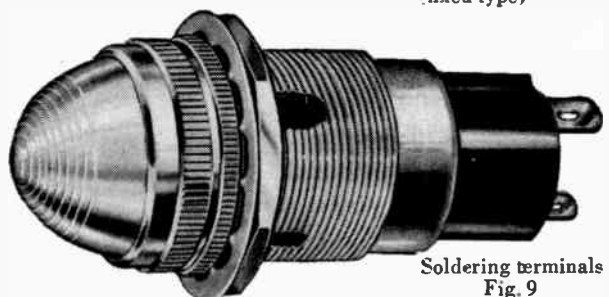


Screw terminals Fig. 10  
(fixed type)

## CANDELABRA SCREW



Screw terminals  
Fig. 8



Soldering terminals  
Fig. 9

# DIALIGHT CORPORATION

Foremost Manufacturer of Pilot Lights

BROOKLYN 37, N. Y.

## CATALOG NUMBERS FOR ENCLOSED ASSEMBLIES

Mount in ONE INCH clearance hole

### UNDERWRITERS' LISTED

#### For S-6 Lamp with Candelabra Screw Base

- 51901-111 Screw cap, Convex lens, frosted back (Fig. 1). Screw terminals (Fig. 8)
- 61901-211 Screw cap, Large convex lens, frosted back (Fig. 2). Screw terminals (Fig. 8)
- 51901-431 Screw cap, Faceted lens (Fig. 5). Screw terminals (Fig. 8)
- 19901-531 Screw cap, Large torpedo lens (Fig. 4). Screw terminals (Fig. 8)
- 514001-111 Screw cap, Convex lens, frosted back (Fig. 1). Soldering terminals (Fig. 9)
- 41901-111 Bayonet cap, Convex lens, frosted back (Fig. 6). Screw terminals (Fig. 8)
- 31901-431 Friction cap, Convex lens, frosted back (Fig. 34). Screw terminals (Fig. 8)
- 47901 Light Shield cap (Fig. 13). Binding Screw terminals (Fig. 8)
- 71B4001-111 Mechanical dimmer, Screw cap, Convex lens, frosted back (Fig. 14)
- 784001-111 Polaroid dimmer, Screw cap, Convex lens, frosted back (Fig. 14)

#### For S-6 Lamp with Double Contact Bayonet Base

- 513202-111 Screw cap, Convex lens, frosted back (Fig. 1) Screw terminals (Fig. 10)
- 613202-211 Screw cap, Large convex lens, frosted back (Fig. 2) Screw terminals (Fig. 10)
- 513202-431 Screw cap, Faceted lens (Fig. 5) Screw terminals (Fig. 10)
- 803202-531 Screw cap, Torpedo lens (Fig. 3) Screw terminals (Fig. 10)
- 413202-111 Bayonet cap, Convex lens, frosted back (Fig. 6) Screw terminals (Fig. 10)
- 313202-111 Friction cap, Convex lens, frosted back (Fig. 34) Screw terminals (Fig. 10)

#### For G-6 Lamp with Double Contact Bayonet Base

- 513504-111 Screw cap, Convex lens, frosted back (Fig. 1) Screw terminals (Fig. 11)
- 513504-431 Screw cap, Faceted lens (Fig. 5) Screw terminals (Fig. 11)
- 803504-531 Screw cap, Torpedo lens (Fig. 3) Screw terminals (Fig. 11)
- 803504-1211 Screw cap, Dome glass lens, frosted back (Fig. 35) Screw terminals (Fig. 11)
- 51204-111 Screw cap, Convex lens, frosted back (Fig. 1) Soldering terminals (Fig. 12)
- 41204-111 Bayonet cap, Convex lens, frosted back (Fig. 6) Soldering terminals (Fig. 12)
- 31204-111 Friction cap, Convex lens, frosted back (Fig. 34) Soldering terminals (Fig. 12)

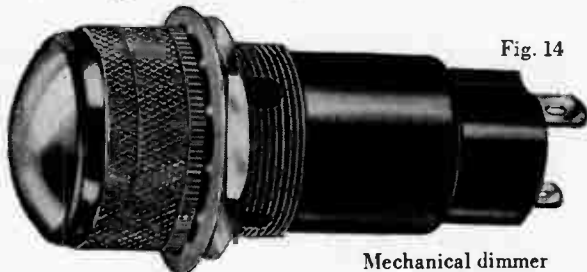
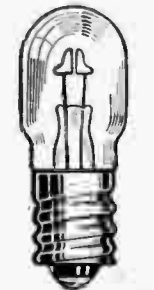
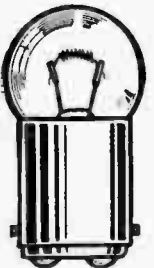
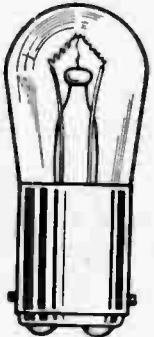
#### For NE-45 Neon Glow Lamp, Candelabra Screw Base

- 51914-131 Screw cap, Convex lens, unfrosted (Fig. 1) Screw terminals (Fig. 8)
- 80914-841 Screw cap, Dome lens, matted back (Fig. 35) Screw terminals (Fig. 8)
- 41914-131 Bayonet cap, Convex lens, unfrosted (Fig. 6) Screw terminals (Fig. 8)
- 31914-131 Friction cap, Convex lens, unfrosted (Fig. 34) Screw terminals (Fig. 8)
- 514014-131 Screw cap, Convex lens, unfrosted (Fig. 1) Soldering terminals (Fig. 9)
- 801014-531 Screw cap, Torpedo lens, unfrosted (Fig. 3) Soldering terminals (Fig. 9)

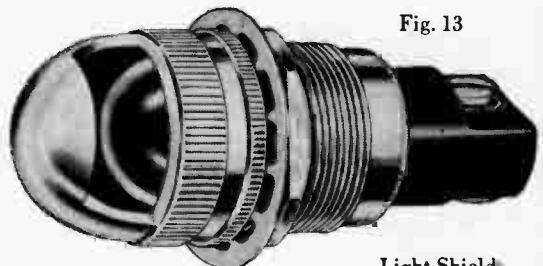
**LENS COLOR:** The final figure in the catalogue number indicates that the lens has RED color. When color other than red is desired, change this digit to a figure from the listing below. Note that white lenses are translucent and are always furnished unfrosted.

Red—1      \*Green—2      Amber—3      \*Blue—4  
 White Translucent—5      Yellow—6      Clear (Colorless)—7  
 \*Green and blue lenses are not recommended with neon glow lamps.

**ORDER COMPLETE WITH LAMPS** so that you will be assured of receiving the pilot lights and correct lamps at one time, ready for immediate use.



Mechanical dimmer  
Polaroid dimmer



Light Shield

# DIALIGHT CORPORATION

Foremost Manufacturer of Pilot Lights

BROOKLYN 37, N. Y.

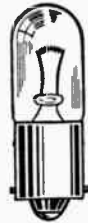
## PILOT LIGHT ASSEMBLIES

A SELECTION OF OPEN TYPES

For T-3 $\frac{1}{4}$  Low voltage Incandescent Lamps



Miniature Screw Base



Miniature Bayonet Base



FIG. 29

Typical assemblies for bayonet base lamp.  
Available also for screw type, see listing below.

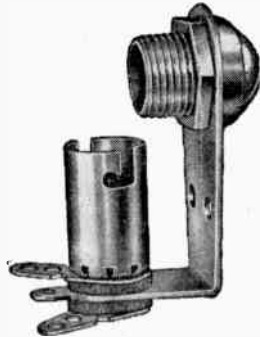


FIG. 31

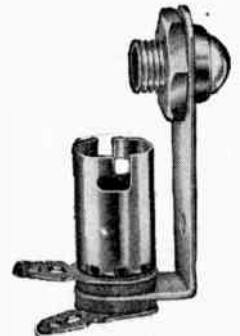


FIG. 30



### CATALOGUE NUMBERS

#### Assemblies for T-3 $\frac{1}{4}$ miniature bayonet base lamps

No. 810B-431	Faceted $\frac{1}{2}$ " lens.	For $\frac{1}{16}$ " mounting hole.	Fig. 29
No. 710-121	Convex $\frac{1}{2}$ " lens.	For $\frac{7}{16}$ " mounting hole.	Fig. 31
No. 755-621	Convex $\frac{1}{32}$ " lens.	For $\frac{9}{32}$ " mounting hole.	Fig. 30
No. 857B-431	Faceted $\frac{1}{2}$ " lens.	For $\frac{1}{16}$ " mounting hole.	Fig. 32
No. 67B-111	Convex $\frac{3}{4}$ " lens.	For $\frac{13}{16}$ " mounting hole.	Fig. 33

#### Assemblies for T-3 $\frac{1}{4}$ miniature screw base lamps

No. 810M-431	Faceted $\frac{1}{2}$ " lens.	For $\frac{1}{16}$ " mounting hole.	Similar to Fig. 29
No. 510-121	Convex $\frac{1}{2}$ " lens.	For $\frac{7}{16}$ " mounting hole.	Similar to Fig. 31
No. 555-621	Convex $\frac{1}{32}$ " lens.	For $\frac{9}{32}$ " mounting hole.	Similar to Fig. 30
No. 855-431	Faceted $\frac{1}{2}$ " lens.	For $\frac{1}{16}$ " mounting hole.	Similar to Fig. 32
No. 66M-111	Convex $\frac{3}{4}$ " lens.	For $\frac{13}{16}$ " mounting hole.	Similar to Fig. 33

**LENS COLOR:** The final figure in the catalogue number indicates that the lens has RED color. When color other than red is desired, change this digit to a figure from the listing below. Note that white lenses are translucent and are always furnished unfrosted.

Red—1      Green—2      Amber—3      Blue—4  
White Translucent—5      Yellow—6      Clear (Colorless)—7

**ORDER COMPLETE WITH LAMPS** so that you will be assured of receiving the pilot lights and correct lamps at one time, ready for immediate use.

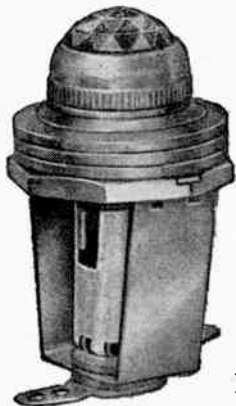


FIG. 32

Octagon lock nut and bracket on these two units welded into one-piece construction.

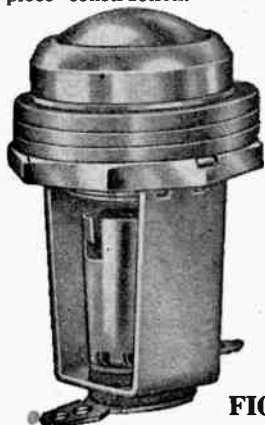


FIG. 33



# DIALIGHT CORPORATION

Foremost Manufacturer of Pilot Lights

BROOKLYN 37, N. Y.

## PILOT LIGHT ASSEMBLIES

### A SELECTION OF OPEN TYPES

For Candelabra Screw Base Lamps

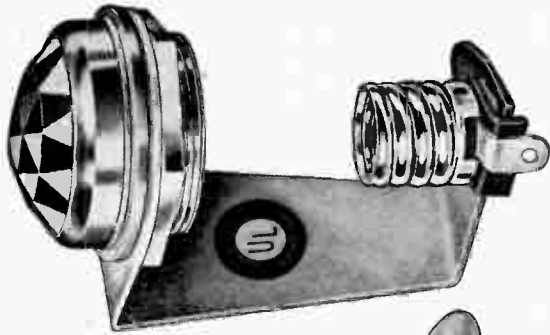


FIG. 24

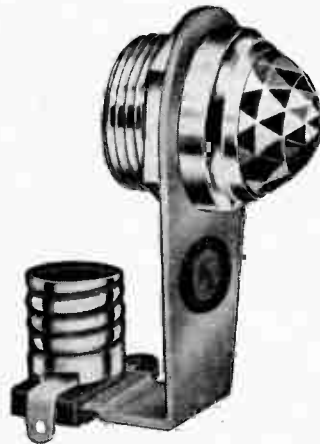


FIG. 23

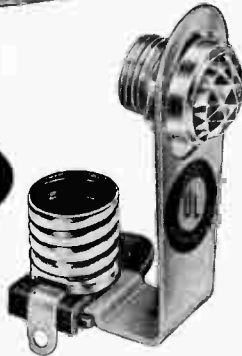
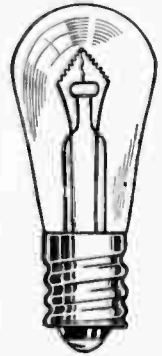


FIG. 22

For S-6 Incandescent Lamps, candelabra screw base

- No. 10-18-14-431 Faceted  $\frac{1}{2}$ " Lens (for  $\frac{7}{16}$ " mounting hole) (Fig. 22)
- No. 25-18-15-431 Faceted  $\frac{3}{8}$ " Lens (for  $\frac{11}{16}$ " mounting hole) (Fig. 23)
- No. 31-18-16-431 Faceted 1" Lens (for 1" mounting hole) (Fig. 24)

All of the above assemblies are listed by Underwriters' Laboratories, Inc.

**LENS COLOR:** The final figure in the catalogue number indicates that the lens has RED color. When color other than red is desired, change this digit to a figure from the listing below. Note that white lenses are translucent and are always furnished unfrosted.

Red—1 Green—2 Amber—3 Blue—4  
White Translucent—5 Yellow—6 Clear (Colorless)—7

**ORDER COMPLETE WITH LAMPS** so that you will be assured of receiving the pilot lights and correct lamps at one time, ready for immediate use.

*Octagon lock nut and bracket on these two units welded into one-piece construction.*

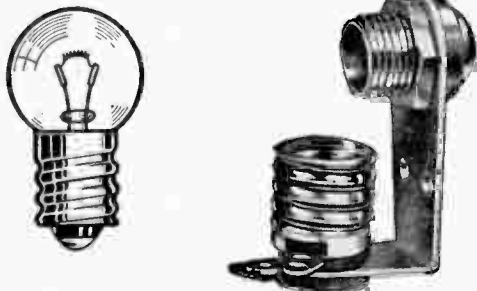


FIG. 25

For G-6 Low voltage lamps, candelabra screw base

- No. 610-121 Convex  $\frac{1}{2}$ " lens Fig. 25 (for  $\frac{7}{16}$ " mounting hole)

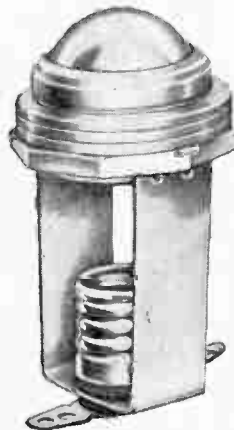


FIG. 26



FIG. 27

For NE-45 Neon Glow Lamps, candelabra screw base

- No. 67BN-831 Dome Plastic Lens ( $\frac{3}{4}$ " diam.) Fig. 26
  - No. 66N-131 Convex Glass Lens ( $\frac{3}{4}$ " diam.) Fig. 27
- (Both mount in  $\frac{13}{16}$ " hole. Cap removable)

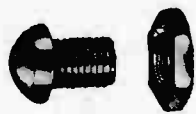
# DIALIGHT CORPORATION

Foremost Manufacturer of Pilot Lights

BROOKLYN 37, N. Y.

## Lens Holders with Lenses for Panel Mounting

Screw Types Are Complete With Nut for Shank



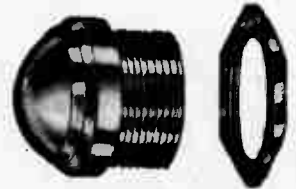
**5006-631**  
9/32"-32 thread



**7005-631**  
3/8"-24 thread



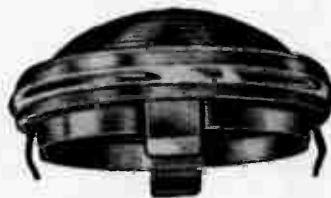
**10006-111**  
7/16"-27 thread



**25006-111**  
11/16"-27 thread



**34-431**  
GLASS LENS



**34-841**  
PLASTIC LENS



**6004-631**  
9/32" hole



**38003-631**  
3/8" hole

Shank, 3/16" long

### PUSH-IN TYPES

These holders snap into 1 1/2" hole

### FLAT



**76006-231**

### FACETED



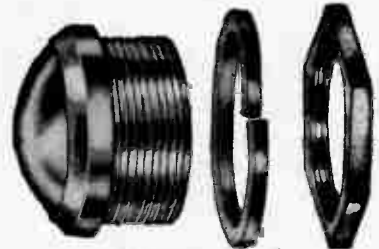
**76006-431**

### TORPEDO



**76006-531**

### CONVEX



**76006-111**

### FACETED



**31-431**

### TORPEDO



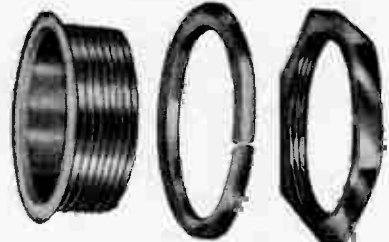
**31-531**

### CONVEX



**31-111**

### BUSHING



**31246**

The above two groups mount in 1" clearance hole. The upper series lock to the panel and are tamper proof. The lower series permit lamp replacement from the front of the panel.

**LENS COLOR:** The final figure in the catalogue number indicates that the lens has RED color. When color other than red is desired, change this digit to a figure from the listing below. Note that white lenses are translucent and are always furnished unfrosted.

Red—1      Green—2      Amber—3      Blue—4  
White Translucent—5      Yellow—6      Clear (Colorless)—7

**ORDER COMPLETE WITH LAMPS**  
so that you will be assured of receiving the pilot lights and correct lamps at one time, ready for immediate use.



# SOCKETS — Bracket Mounted



Underwriters Labs. Listed— 75 Watts, 125 Volts —Appr. Canadian Standards Assoc.



## Double Contact Candelabra Bayonet

### 12-200 Series



Cat. No. 12-258

12-200 Series Sockets are furnished with bakelite discs, including separately sprung contacts, and have 6" wire leads. They can also be furnished with ceramic discs (called 1200 Series) for heat-resistant applications.

5700 Series Sockets use tab terminals. These assemblies are ruggedly constructed with moulded bakelite housings and specially designed contacts.

### 5700 Series



Cat. No. 57-07

## CANDELABRA SCREW

### 400 Series



Cat. No. 4-45

400 Series Sockets are housed in heavy moulded bakelite. They are equipped with built-in wire leads, 6" long.

1800 Series Sockets are intended for use with lamps on commercial voltages. Terminals are locked in place and thoroughly insulated from the bracket and each other.

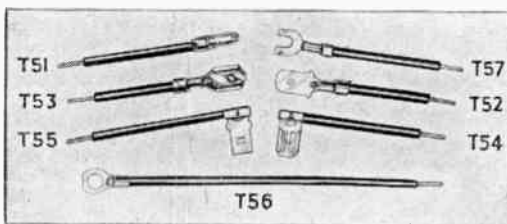
### 1800 Series



Cat. No. 18-79

## WIRE TERMINATIONS

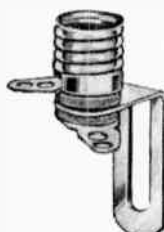
All wire assemblies are furnished with 6" long standard leads, ends stripped 1/2". Standard insulation is vinyl plastic with copper conductors. Special insulations such as Asbestos, 105°C Plastic,



Rubber, SRIR, etc., may be furnished.

A large variety of solderless terminals can be furnished with most wire lead assemblies. Some standard popular types are shown here. To assure your receiving the correct terminal, please specify our assembly part number as well as the terminal required.

### 600 Series



Cat. No. 6-06

## Candelabra Screw

600 Series Sockets have soldering terminals, and can be furnished with the same basic brackets as shown in grouped illustration below.

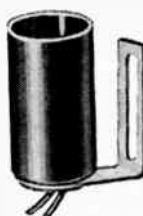
## MINIATURE BAYONET SOCKETS

300 Series Sockets have moulded bakelite housing. They are listed by Underwriters Laboratories, and have Canadian Standards Association approval.

700 Series Sockets have soldering terminals. Some popular basic types are shown in illustration below.

200 Series Sockets are supplied with insulating sleeves, eliminating any accidental grounding.

### 300 Series



Cat. No. 3-05

### 700 Series



Cat. No. 7-02

### 200 Series



Cat. No. 2-15

## Miniature Screw

### 500 Series



Cat. No. 5-03

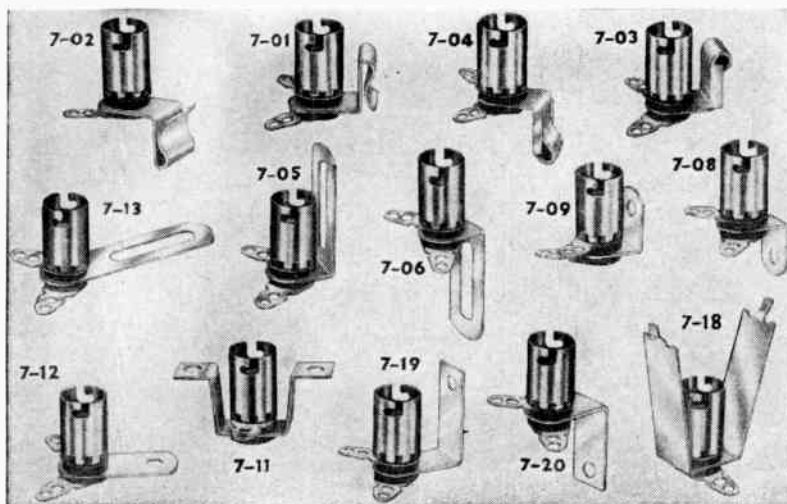
500 Series Sockets are supplied with soldering terminals. This group, as well as those sockets in the 600 and 700 Series, are also furnished for Grounded use.

When grounded sockets are required, one terminal only will be furnished.

**ORDER COMPLETE with LAMP** so that you will be assured of receiving the proper socket and correct lamp at one time, ready for immediate use.

## CHOICE OF BRACKETS

The series of brackets shown at the right can be used with any of our 200, 500, 600, and 700 Series Sockets. All the sockets have 2 terminals.



# DIALIGHT CORPORATION

Foremost Manufacturer of Pilot Lights

BROOKLYN 37, N. Y.

## CONNECTORS FOR SINGLE CONDUCTOR CABLE FOR MICROPHONES - SPEAKERS - PICK-UPS - JACKS

(using cable shield for second conductor)

The fittings shown here are designed for use with standard metal shielded single conductor cable up to 1/4" diameter. These connectors are heavily constructed from solid brass and all exposed parts are chrome plated and highly polished.

The cable end connectors are provided with rugged wire spring protectors which prevent sharp bends at the connection. The protector is soldered to the cable sheath and secured in the connector by a set screw so that all strain is relieved from the conductor.



No. 101

**No. 101 MALE CONNECTOR FOR CABLE** — With spring protector to prevent sharp bending of cable. Solders to cable sheath — secured by set screw.



No. 100

**No. 100 FEMALE CONNECTOR FOR CABLE** — With spring protector to prevent sharp bending of cable. Solders to cable sheath — secured by set screw.



No. 103

**No. 51 MALE CONNECTOR FOR CHASSIS** — Has sprung center contact which grounds before cable connection is broken preventing open circuit howls.

**No. 103 CAP AND CHAIN** — To protect unused male connectors. Chain secured by screw prevents loss when removed to make connection.

**No. 50 MALE CONNECTOR FOR CHASSIS** — Shell grounds to panel — or may be insulated by washers. Fit 3/8"-24 threaded hole or may be secured by nut.

**No. 50P MALE CONNECTOR FOR CHASSIS (Similar to No. 50 above)** — Designed for force fit in hole in panel. Requires no nut to secure in place.

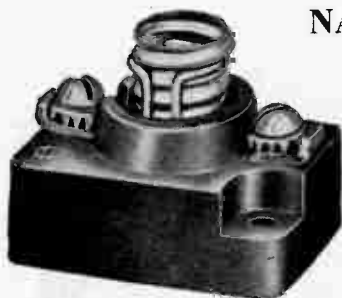


No. 51



No. 50

## NAVY SPECIFICATION SOCKETS



Candelabra screw 9S2036-L  
Candelabra screw 9S5038-L  
(not illustrated)



Double Contact bayonet 9S4634-L



Miniature bayonet  
9S4931-L

## LAMP INSTALLER

The DIALCO lamp installer shown below is a useful tool in installing lamps and in servicing pilot lights.

No. L-73

No. L-45

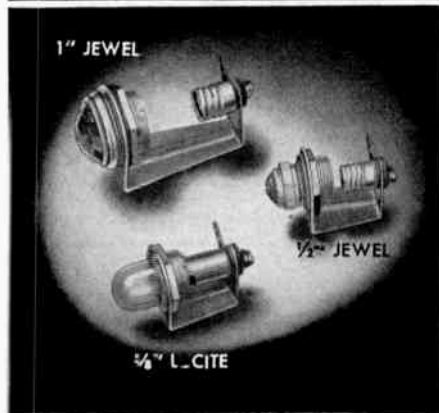
For NE-45 Necn





# E. F. Johnson Company

W A S E C A , M I N N E S O T A



## Quick and Easy... Pilot Light Selection!

Now you can save valuable replacement or specification time with Johnson Panel Indicators. Available in a wide variety of types, Johnson "preferred" units are immediately available at parts distributors throughout the country. Careful standardization, with an eye to replacement as well as interchangeability, makes Johnson Pilot Lights the first choice of leading manufacturers.

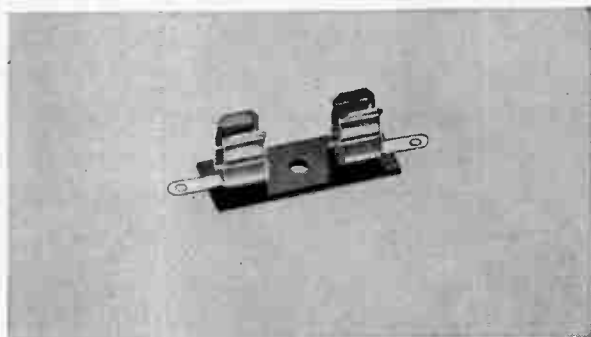
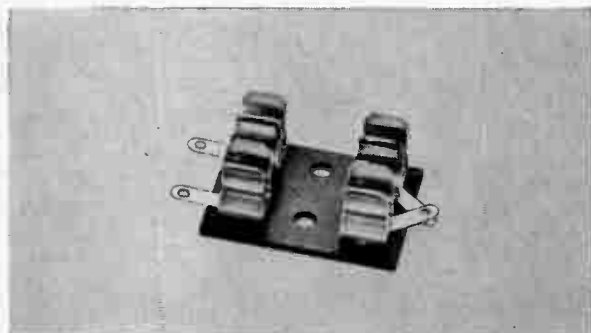
Available types include: continuous indication neon types; models for high and low voltage incandescent bulbs; standard or wide angle glass and lucite jewels in clear, red, green, amber, blue or opal. Specials, including those meeting military specifications are also available in production quantities. For full information, write today!

### NEW PILOT LIGHT CATALOG!

Write for your copy today. Complete specifications, prices and technical data . . . everything you need to pick a unit for original equipment manufacture or "in the field" replacement.



# ANOTHER LITTELFUSE FIRST



**MOUNTINGS**  
**DESIGNED AND**  
**DEVELOPED**  
**FOR THE NEW**  
**SARKES-**  
**TARZIAN**  
**SILICON**  
**RECTIFIERS**

Mountings listed below are now tooled and readily available. They are approved by Sarkes Tarzian engineers.

Mountings designed to your specifications are available upon request. Let our engineers assist you.

Part No.	Description	Length	Width	Thickness	List Price Each
099062	(a) 1 Pole .....	1-3/8"	1/2"	3/16"	\$ .25
099063	(a) 2 Pole .....	1-3/8"	1"	3/16"	.50
099065	(b) 2 Pole .....	1-3/8"	1"	1/16"	.27
099065-2	Fishpaper Insulator .....	2"	1/2"	1/32"	.009
099065-3	(b) Bakelite Insulator .....	1-3/8"	1"	1/16"	.018
099067	(b) 1 Pole .....	1-3/8"	1/2"	1/16"	.14
099067-2	Fishpaper Insulator .....	2"	1/2"	1/32"	.006
099067-3	(b) Bakelite Insulator .....	1-3/8"	1/2"	1/16"	.01
099077	(c) 2 Pole .....	1-3/8"	1-1/8"	3/16"	.51
099078	(c) 3 Pole .....	1-3/8"	1-11/16"	3/16"	.74
099079	(c) 4 Pole .....	1-3/8"	2-1/4"	3/16"	.99
099080	(c) 6 Pole .....	1-3/8"	3-3/8"	3/16"	1.48
099081	(c) 8 Pole .....	1-3/8"	4-1/2"	3/16"	1.97
099082	(c) 10 Pole .....	1-3/8"	5-5/8"	3/16"	2.46

NOTE: (a) Designed for M500 rectifier.

(b) Inexpensive style designed for M500 rectifier recommended particularly for use by the TV servicemen.

(c) Designed for use with either M500 or L1250 rectifier.

**LITTELFUSE**, *Des Plaines, Illinois*

# LITTELFUSE

"Quicker than a Short Circuit"

## 3 AG "LITTELFUSES"



¼" x 1¼"

Standard Package—100

Blow Time	Percentage of rating	Blow Time
	110%	Life
	135%	0-1 hour
	200%	0-2 minutes

311000 Series Littelfuses—Quick to medium-blowing fuses—for use in radios, auto-radios, amplifiers, etc. Straight-type fuse element—positioned to center of fuse—makes open link always in the visible portion of fuse.

Catalog No.	Amp. rating	Max. volt.	List Price, each
311005.	5	32	\$0.05
31107.5	7½	32	.05
311010.	10	32	.05
311015.	15	32	.05
311020.	20	32	.045
311025.	25	32	.06
311030.	30	32	.06

312000 Series Littelfuses—Quick-acting fuses—for low time-lag applications similar to the 311000 fuse series above. Protective-coated elements, on fuses to 3 amperes, prevent oxidation and promote clean break on fusion. Diagonal element alignment of this fuse assures accurate alignment and calibration, even when the fuse element is expanded by heat.

Catalog No.	Amp. rating	Max. volt.	List Price each
312.062	1/16	250	\$0.20
312.125	1/8	250	.20
312.150	15/100	250	.20
312.175	.175	250	.20
312.187	3/16	250	.20
312.250	1/4	250	.13
312.300	3/10	250	.13
312.375	3/8	250	.13
312.500	1/2	250	.13
312.750	3/4	250	.13
312001.	1	250	.08
31201.5	1½	250	.08
312002.	2	250	.08
312003.	3	250	.07
312004.	4	250	.10
312005.	5	250	.10
312006.	6	250	.10
312008.	8	125	.15

Approved by Underwriters' Laboratories.

## 3 AG "SLO-BLO" "LITTELFUSES"



¼" x 1¼"

Standard package—100

Blow time	Percentage of rating	Blow Time
	110%	Life
	135%	0-1 hour
	200	60 seconds max. 5 seconds min.

313000 Series Littelfuses—Slo-Blo fuses with high time-lag to withstand heavy surges—quick on shorts. Designed for circuits with equipment having high inductive or capacitive surges, such as magnets, solenoids, etc., and for circuits with heavy starting currents such as motors and lamp circuits. Anti-fatigue construction (compound element, with spring and resistor) makes these fuses ideal for intermittent-duty circuits on vibrators, control circuits, hi-tension electric fences, small magnets, coils, etc. "Pioneered by Littelfuse."

Catalog No.	Former No.	Amp. rating	Max. volt.	List Price, each
313.010	1259	1/100	125	\$0.36
313.032	1261	1/32	125	.36
313.062	1262	1/16	125	.27
313.100		1/10	125	.27
313.125	1263	1/8	125	.27
313.150		15/100	125	.27
313.175		.175	125	.27
313.187	1263-A	3/16	125	.27
313.200		2/10	125	.27
313.250	1264	1/4	125	.27
313.300		3/10	125	.27
313.375	1265	3/8	125	.27
313.400		4/10	125	.27
313.500	1266	1/2	125	.27
313.600		6/10	125	.27
313.700		7/10	125	.27
313.750	1267	3/4	125	.27
313.800		8/10	125	.27
313001.	1268	1	125	.27
31301.2		1½	125	.25
3131.25		1¼	125	.25
31301.5	1041-C	1½	125	.25
31301.6		1-6/10	125	.25
313002.	1042-C	2	125	.25
31302.5		2½	125	.20
313003.	1043-C	3	125	.20
31303.2		3-2/10	125	.20
313004.		4	125	.20
313005.	1080-C	5	125	.20
3136.25		6¼	32	.20
313008.		8	32	.20
313010.	1081-C	10	32	.20
313015.	1082-C	15	32	.20
313020.	1083-C	20	32	.20
313025		25	32	.20
313030		30	32	.20

Approved by Underwriters' Laboratories through 5 amps.

## 3 AB "TINY MIGHTY" "LITTELFUSES"



¼" x 1¼"

Standard package—100.

Blow Time	Percentage of rating	Blow Time
	110%	Life
	135%	0-1 hour
	200%	0-2 minutes

314000 Series Littelfuses—The smallest Underwriters' Laboratory approved fuses in ratings this high. Steatite enclosed, arc-quenching, powder filled fuses. Shatter-proofed against quick shorts. Medium time lag. Recommended for use with amplifiers, rectifiers, battery charging equipment, small generators, control panels, amusement devices, communication and electronic equipment, radios, signal apparatus, small motor circuits, etc. Take less space than N.E.C. fuses—"Pioneered by Littelfuse."

Catalog No.	Amp. rating	Max. volt.	List Price, each
314001.	1	250	\$0.17
314002.	2	250	.17
314003.	3	250	.17
314005.	5	250	.17
314008.	8	250	.17
314010.	10	250	.17
314012.	12	250	.17
314015.	15	250	.17
314020.	20	250	.17
314030.	36	125	.20

Approved by Underwriters' Laboratories 8 amps through 15 amps.

# LITTELFUSE

"Quicker than a Short Circuit"

## AIRCRAFT LITTELFUSES—ANTI-VIBRATION TYPE

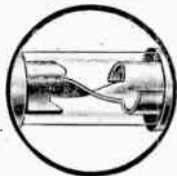
Especially designed for Aircraft Service. Characteristics: High Mechanical Strength—Resistance to Fatigue—Long Vibration Life

**CONSTRUCTION:** Glass-enclosed. Littelfuse Locked Cap Assembly (no cements) prevents loosening of caps. High visibility transparent label for amperage. Elements mechanically depolarized by twisting at 90° (see illustrations) are braced against extreme vibration. "Gooseneck" non-crystallizing fuse element takes up expansion and contraction. Ratings 5 amp. or less use Spring and Link. Service life six times simple wire. The 4 AG and 5 AG sizes are supplied for Aircraft services for their strength and greater carrying capacity than 3 AG fuses.

**CURRENT RATING:** Rated to NEC specifications to carry 10% overload indefinitely, to blow on 35% overload within 1 hr., and 100% overload within 2 min.

**VOLTAGE RATING:** Voltage at which fuses will break without arcing over, or bursting under short circuit conditions.

**VIBRATION FACTOR:** Minimum hours these fuses endure our Magnetic Vibrator operating 120 cycles a second, while carrying the rated current. Acceleration is 10 times the worst field conditions.



4 AG Aircraft Fuse showing reinforced twisted element



Bakelite-enclosed 4 AB Fuse

**BAKELITE-ENCLOSED:** 4 AB and 5 AB fuses recommended where severe overloads might shatter glass.

4AG "LITTELFUSES"				
1 1/4" x 1/2" Dia. Unit Wt.—3.5 Gms.				
Cat. No.	Former No.	Amp. Rating	Max. Volt.	Price Each
"Slo-Blo"	—	—	—	—
413.100	—	1;10	250	.35
413.150	—	15;100	250	.35
413.200	—	2;10	250	.35
413.250	1452C1;4	1;4	250	.35
413.300	—	3;10	250	.35
413.400	—	4;10	250	.35
413.500	1452C1;2	1;2	250	.35
413.600	—	6;10	250	.35
413.750	—	3;4	250	.35
413.800	—	8;10	250	.35
413001	1091C	1	250	.35
4131.25	—	1-1;4	250	.35
41301.6	—	1-6;10	250	.35
413002	1092C	2	250	.27
41302.5	—	2-1*2	250	.27
413003	109 C	3	250	.27

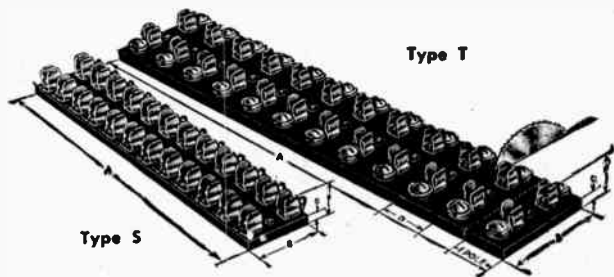
4AG "LITTELFUSES" (Con.)				
1 1/4" x 1/2" Dia. Unit Wt.—3.5 Gms.				
Cat. No.	Former No.	Amp. Rating	Max. Volt.	Price Each
41303.2	—	3-2;10	250	.27
413004	—	4	32	.27
413005	1094C	5	32	.27
4136.25	—	6-1;4	32	.27
413008	—	8	32	.27
413010	1095C	10	32	.27
413015	1096C	15	32	.27
413020	1097C	20	32	.27
413025	1098C	25	32	.27
413030	1099C	30	32	.27
Aircraft	—	—	—	—
411010.	1095	10	32	.15
411015.	1096	15	32	.15
411020.	1097	20	32	.15
411025.	1098	25	32	.15
411030.	1099	30	32	.15
411035.	—	35	32	.15

4AB "LITTELFUSES"				
1 1/4" x 1/2" Dia. Unit Wt.—3.75 Gms.				
Cat. No.	Former No.	Amp. Rating	Max. Volt.	Price Each
414001.	1091B	1	250	.25
414002.	1092B	2	250	.25
414003.	1093B	3	250	.25
414005.	1094B	5	125*	.25
414005.	—	8	125*	.25
414010.	1095B	10	125*	.25
414015.	1096B	15	125*	.25
414020.	1097B	20	125*	.25
414025.	1098B	25	32	.25
414030.	1099B	30	32	.25
414035.	—	35	32	.25
414040.	1100B	40	32	.25

\*Good for power supplies up to 25 KVA at 115V—400 cycles.

5AG "LITTELFUSES"				
1 1/4" x 1/2" Dia. Unit Wt.—8.5 Gms.				
Cat. No.	Former No.	Amp. Rating	Max. Volt.	Price Each
"Slo-Blo"	—	—	—	—
513001.	1160C	1	250	\$0.45
513002.	1161C	2	250	.45
513003	1162C	3	250	.35
513005.	1163C	5	32	.35
513010.	1164C	10	32	.35
513015	1165C	15	32	.35
513020	1166C	20	32	.35
513025	—	25	32	.40
513030.	1167C	30	32	.40
513040	1168C	40	32	.40
513050.	1169C	50	32	.40
513060.	1222C	60*	32	.40
Aircraft	—	—	—	—
511005.	—	5	32	.20
511010.	1164	10	32	.20
511015.	1165	15	32	.20
511020.	1166	20	32	.20
511025.	1167	25	32	.20
511030.	1168	30	32	.20
511035.	1169	35	32	.20
511040.	1168	40	32	.20
511050.	1169	50	32	.20
511060.	1222	60*	32	.20

\*Carries only 100% rating on life test.



## NEW FUSE MOUNTING PANELS

Open type fuse panels, stocked in 12-pole units as shown—we cut them to 1, 2, 3, 4 or more poles as ordered, or you may cut them in your plant (1/8" allowance for saw cut).

Fuse Type	Mtg. Type	Dim. "B"	Dim. "C"	Dim. "D"	Dim. "E"
8AG	S	1 3/8	3/4	5/8	2 1/2
3AG	S	1 5/8	3/4	5/8	2 1/2
3AG	T	2 5/8	3/4	5/8	1 1/4
4AG	T	2 5/8	3/4	5/8	1 1/4
5AG	T	2 5/8	3/4	5/8	1 1/4

**Mountings with Solder Terminals—Type "S".** Phosphor-Bronze, bright-dipped finish "Lug-Clips" are firmly anchored to black Bakelite base—have non-turning anchors. For 8AG and 3AG size fuses.

**Mountings with Screw Terminals—Type "T".** Spaced to U/L requirements for equipment circuit protection. Nickel plated brass screw terminals, nickel plated fuse clips. Type 456 (4AG) and type 556 (5AG or Midget) have cupped wire-retaining washers under terminal screws as required by U/L.

### FOR 4AG FUSES—TYPE "T"

Catalog No.	No. Poles	Dim. "A"	List Price Each
456001	1	2 5/8	\$0.55
456002	2	1 11/16	1.10
456003	3	2 19/32	1.65

Prices 456004 to 456012, 4 to 12 poles, on special quotation only.

### FOR 3AG FUSES—TYPE "S"

Catalog No.	No. Poles	Dim. "A"	List Price Each
357001	1	1 3/8	\$0.20
357002	2	1 11/16	.40
357003	3	1 3/4	.60

Prices 357004 to 357012, 4 to 12 poles, on special quotation only.

### FOR 3AG FUSES—TYPE "T"

Catalog No.	No. Poles	Dim. "A"	List Price Each
356001	1	1 3/8	\$0.43
356002	2	1 11/16	.86
356003	3	2 1/8	1.29

Prices 356004 to 356012, 4 to 12 poles, on special quotation only.

### FOR 5AG FUSES—TYPE "T"

Catalog No.	No. Poles	Dim. "A"	List Price Each
556001	1	2 1/2	\$0.65
556002	2	1 11/16	1.30
556003	3	2 5/8	1.95

Prices 556004 to 556012, 4 poles, on special quotation only.

### FOR 8AG FUSES—TYPE "S"

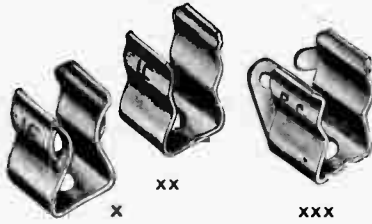
Catalog No.	No. Poles	Dim. "A"	List Price Each
387001	1	1 3/8	\$0.20
387002	2	1 11/16	.40
387003	3	1 3/4	.60



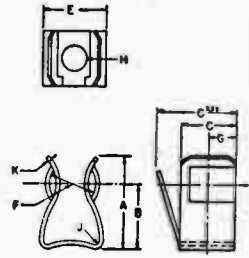
# LITTELFUSE

"Quicker than a Short Circuit"

## LITTELFUSE BERYLLIUM COPPER AND PHOSPHOR BRONZE FUSE CLIPS



Littelfuse fuse clips are available in three standard styles: "X," with "ears" or fuse stops; "XX," earless; and "XXX," "Lug-Clips," a new Littelfuse clip having a lug or solder terminal made as an integral part of the clip. All styles are furnished in either Phosphor-Bronze or Beryllium Copper.



Catalog Number	Former Number	Fuse Adaptation	Type	DIMENSIONS								Unit Wt. grams	Std. Pkg. 100 Wt.—lbs.	List Price Each
				A	B	C	E	F	G	H				

### BERYLLIUM COPPER CLIPS SILVER PLATED—WITH FUSE STOP "EARS"

121001	1216B	SFE, 3AG & 8AG Fuses	X	$31\frac{3}{4}$	$\frac{5}{16}$	$1\frac{1}{2}$	.300	$\frac{1}{4}$	$\frac{5}{32}$	$\frac{1}{2}$	.131	1	1	\$0.06
123001	1217B	4AG & 4AB Fuses	X	$1\frac{1}{4}$	$\frac{3}{8}$	$1\frac{1}{2}$	.385	$\frac{1}{2}$	$\frac{5}{32}$	$\frac{1}{2}$	.171	1.6	1	.09
125001	1218B	5AG, Hi-Voltage-Midget	X	$\frac{3}{4}$	$\frac{1}{2}$	$\frac{1}{2}$	$\frac{1}{2}$	$\frac{1}{2}$	$\frac{1}{2}$	$\frac{1}{2}$	.196	3	2	.15
127001	1219	N.E.C.-30 Fuses	XX	$1\frac{1}{2}$	$\frac{1}{2}$	$1\frac{1}{2}$	$\frac{3}{8}$	$\frac{3}{8}$	$\frac{1}{2}$	$\frac{1}{2}$	.203	5.5	2	.20
129001	1221	Standard Hi-Voltage	X	$1\frac{1}{2}$	$1\frac{1}{2}$	.750	$\frac{7}{8}$	$\frac{1}{2}$	$\frac{1}{2}$	$\frac{1}{2}$	.265	14.5	4	.50

### SILVER PLATED—EARLESS TYPE

121002	1417	SFE, 3AG & AB, & 8AG	XX	$31\frac{3}{4}$	$\frac{5}{16}$	$1\frac{1}{2}$	.300	$\frac{1}{4}$	$\frac{5}{32}$	$\frac{1}{2}$	.131	1	1	.06
123002	1437	4AG & 4AB	XX	$1\frac{1}{4}$	$\frac{3}{8}$	$1\frac{1}{2}$	.385	$\frac{1}{2}$	$\frac{5}{32}$	$\frac{1}{2}$	.171	1.6	1	.09
125002		5AG, Hi-Voltage-Midget	XX	$\frac{3}{4}$	$\frac{1}{2}$	$\frac{1}{2}$	$\frac{1}{2}$	$\frac{1}{2}$	$\frac{1}{2}$	$\frac{1}{2}$	.196	3	2	.15
127002	1475	N.E.C.-30 Fuses	XX	$1\frac{1}{2}$	$\frac{1}{2}$	$1\frac{1}{2}$	$\frac{3}{8}$	$\frac{3}{8}$	$\frac{1}{2}$	$\frac{1}{2}$	.203	5.5	2	.20
129002	1476	Standard Hi-Voltage	XX	$1\frac{1}{2}$	$1\frac{1}{2}$	.750	$\frac{7}{8}$	$\frac{1}{2}$	$\frac{1}{2}$	$\frac{1}{2}$	.265	14.5	4	.50

### SILVER PLATED—"LUG-CLIP"—SOLDER TERMINAL ATTACHED

121004	New	SFE, 3AG, AB, & 8AG	XXX	$29\frac{3}{4}$	$\frac{1}{4}$	$31\frac{3}{4}$	$1\frac{1}{2}$	$\frac{1}{4}$	$\frac{5}{32}$	$\frac{1}{2}$	.131	1.2	1	.09
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### PHOSPHOR BRONZE CLIPS

#### BURNISHED NICKEL PLATE—WITH FUSE STOP "EARS"

101001	1011B	SFE, 3AG & AB, & 8AG	X	$31\frac{3}{4}$	$\frac{5}{16}$	.300	$1\frac{1}{2}$	$\frac{1}{4}$	$\frac{5}{32}$	$\frac{1}{2}$	.131	1	1	.025
103001	1319	4AG & 4AB	X	$1\frac{1}{4}$	$\frac{3}{8}$	$1\frac{1}{2}$	.385	$\frac{1}{2}$	$\frac{5}{32}$	$\frac{1}{2}$	.173	1.7	1	.05
105001	2049	5AG, Hi-Voltage-Midget	X	$\frac{3}{4}$	$\frac{1}{2}$	$\frac{1}{2}$	$\frac{1}{2}$	$\frac{1}{2}$	$\frac{1}{2}$	$\frac{1}{2}$	.196	3.2	2	.06
107001	5048	N.E.C.-30 Fuses	XX	$1\frac{1}{2}$	$\frac{1}{2}$	$1\frac{1}{2}$	$\frac{3}{8}$	$\frac{3}{8}$	$\frac{1}{2}$	$\frac{1}{2}$	.203	5.8	2	.08
109001	1463	Standard Hi-Voltage	X	$1\frac{1}{2}$	$1\frac{1}{2}$	.750	$\frac{7}{8}$	$\frac{1}{2}$	$\frac{1}{2}$	$\frac{1}{2}$	.265	15.6	4	.22

#### BURNISHED NICKEL PLATE—EARLESS TYPE

101002	125-2	SFE, 3AG & AB, 7AG & 8AG	XX	$31\frac{3}{4}$	$\frac{5}{16}$	.300	$1\frac{1}{2}$	$\frac{1}{4}$	$\frac{5}{32}$	$\frac{1}{2}$	.131	1	1	.025
104002		4AG & 4AB	XX	$1\frac{1}{4}$	$\frac{3}{8}$	$1\frac{1}{2}$	.385	$\frac{1}{2}$	$\frac{5}{32}$	$\frac{1}{2}$	.173	1.7	1	.05
105002	2049B	5AG, Hi-Voltage-Midget	XX	$\frac{3}{4}$	$\frac{1}{2}$	$\frac{1}{2}$	$\frac{1}{2}$	$\frac{1}{2}$	$\frac{1}{2}$	$\frac{1}{2}$	.196	3.2	2	.06
107002	SP-178	N.E.C.-30 Fuses	XX	$1\frac{1}{2}$	$\frac{1}{2}$	$1\frac{1}{2}$	$\frac{3}{8}$	$\frac{3}{8}$	$\frac{1}{2}$	$\frac{1}{2}$	.203	5.8	2	.08
109002		Standard Hi-Voltage	XX	$1\frac{1}{2}$	$1\frac{1}{2}$	.750	$\frac{7}{8}$	$\frac{1}{2}$	$\frac{1}{2}$	$\frac{1}{2}$	.265	14.5	4	.22

### BRIGHT-DIP PHOSPHOR BRONZE—"LUG CLIP" SOLDER TERMINAL ATTACHED

101003		SFE, 3AG & AB & 8AG	XXX	$29\frac{3}{4}$	$\frac{1}{4}$	$31\frac{3}{4}$	$1\frac{1}{2}$	$\frac{1}{4}$	$\frac{5}{32}$	$\frac{1}{2}$	.131	1.2	1	.035
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Finger Operated Knob



341001



342003

### "LITTELFUSE"

#### FUSE EXTRACTOR POSTS

Quicker, safer method for mounting and changing fuses. Held in end of removable knob, fuse is easily replaced by unscrewing knob. Available with finger-operated knob or with screw driver slot knob.

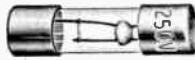
Catalog No.	Former No.	Descr.—Knob, How Operated	Mtg. Hole	Length Under Panel	List Price Each
341001	1075S	3AG—Screw Driver	.500-.505"	$2\frac{3}{4}$	\$0.50
342001	1075F	3AG—Finger	.500-.505"	$2\frac{3}{4}$	.50
342003		3AG—Miniature	.500-.505"	1.035	.50
342007		3AG—(elongated hole)	.535-.685" .540 x .690"	1.171	3.30
342008		3AG—Miniature—Dustproof	.500-.505"	1.035	.55
442001		4AG—Finger	.625-.630"	2.156	1.25
371001	1087S	8AG—Screw Driver	.500-.505"	$2\frac{3}{4}$	.50
372001	1087F	8AG—Finger	.500-.505"	$2\frac{3}{4}$	.50

# LITTELFUSE

"Quicker than a Short Circuit"

## 8AG INSTRUMENT high speed LITTELFUSES

Locked Cap Assembly and other exclusive Littelfuse features for protection of delicate test equipment, galvanometers, microammeters, milliammeters, voltmeters, etc. Glass-enclosed, 1 x 1/4" dia., accurately rated, high speed action, short time lag. Voltage ratings up to 250 V., AC or DC. For higher voltages use fuses in series.



Catalog No.	Former No.	Amp. Rating	Max. Volt.	APPLICATIONS			List Price Ea.
				Volt-meters Ohms P.V.	All Magnetic Movement Milliammeters	Thermocouples	
361.002	.....	1/500	250	Over 1000	Galvanometers	0-0.1 to 0-0.5	\$1.20
361.005	1000	1/200	250	Over 1000	Galvanometers	Up to 0.1	.50
361.010	1001	1/100	250	1000	Up to 0-1	0-5 to 0-10	.45
361.031	1002	1/25	250	500-1000	0-1 to 0-10	0-10 to 0-25	.40
361.062	1003	1/10	250	100-500	0-10 to 0-25	0-25 to 0-60	.27
361.125	1004	1/5	250	20-100	0-25 to 0-75	0-75 to 0-150	.20
361.250	1005	1/2	250	10-20	0-75 to 0-150	0-115 to 0-200	.13
361.375	1006	3/8	250	5-10	0-150 to 0-250	0-200 to 0-300	.13
361.500	1007	1/2	250	3-5	0-250 to 0-350	0-300 to 0-400	.13
361.750	1007-A	3/4	250		0-350 to 0-500	0-400 to 0-600	.13
361001.	1008	1	250		0-500 to 0-750	0-600 to 0-1000	.10
36101.5	1008-A	1 1/2	250		0-750 to 0-1000	0-1000 to 0-1500	.10
361002.	1009	2	250		0-1000 to 0-1500	0-1500 to 0-2000	.10
361003.		3	250		0-1500 to 0-2000	0-2000 to 0-3000	.10
361005.		5	32		0-2000 to 0-4000	0-3000 to 0-5000	.10

## BAKELITE IN-LINE FUSE RETAINER

Designed to hang in the cable or mount in the chassis, the nine fuse retainer molded of high impact bakelite is primarily for low-voltage applications: car radios, heaters, spot lights, clocks, etc.

The disassembled unit consists of the bakelite body receptacle, bakelite knob with metal insert, one spring, two knife-edge rivet contacts.

- 155000 Series—Assembled with a 19" loop of wire lead:
- 155004A For 4-amp SFE and 1AG fuses
  - 155006A For 6-amp SFE fuses
  - 155009A For 9-amp SFE and 7AG fuses
  - 155014A For 14-amp SFE and 8AG fuses
  - 155020A For 20-amp SFE and 3AG fuses

List Prices  
**.50 ea.**

In-line fuse retainer now assembled with 19" loop of wire lead.  
094020 FUSE RETAINER ASSORTMENT—\$6.00 EACH CARD



Catalog Number	Description	List Price Each	Catalog Number	Description	List Price Each
<b>3AG SLO-BLO PIGTAIL FUSES</b>			<b>3AG PIGTAIL FUSES</b>		
315.010	1/100 amp. (125 volt).....	\$.45	318.062	1/16 amp. (250 volt).....	\$.25
315.032	1/32 amp. (125 volt).....	.45	318.125	1/8 amp. (250 volt).....	.25
315.062	1/16 amp. (125 volt).....	.34	318.250*	1/4 amp. (250 volt).....	.23
315.100	1/10 amp. (125 volt).....	.34	318.375	3/8 amp. (250 volt).....	.23
315.150	15/100 amp. (125 volt).....	.34	318.500*	1/2 amp. (250 volt).....	.23
315.187	3/16 amp. (125 volt).....	.34	318.750	3/4 amp. (250 volt).....	.23
315.200	2/10 amp. (125 volt).....	.34	318001.	1 amp. (250 volt).....	.15
315.250*	1/4 amp. (125 volt).....	.34	31801.5	1 1/2 amp. (250 volt).....	.15
315.300	3/10 amp. (125 volt).....	.34	318002.	2 amp. (250 volt).....	.15
315.375	3/8 amp. (125 volt).....	.34	318003.	3 amp. (250 volt).....	.15
315.400	4/10 amp. (125 volt).....	.34	318004.	4 amp. (250 volt).....	.16
315.500*	1/2 amp. (125 volt).....	.34	318005.	5 amp. (250 volt).....	.16
315.600	6/10 amp. (125 volt).....	.34	318006.	6 amp. (250 volt).....	.16
315.750	3/4 amp. (125 volt).....	.34	<b>8AG T.V. FUSES (No Pigtail)</b>		
315.800	8/10 amp. (125 volt).....	.34	362.125	1/8 amp. (250 volt).....	.16
315001.	1 amp. (125 volt).....	.34	362.250*	1/4 amp. (250 volt).....	.13
3151.25	1 1/4 amp. (125 volt).....	.32	362.375*	3/8 amp. (250 volt).....	.13
31501.5	1 1/2 amp. (125 volt).....	.32	362.500	1/2 amp. (250 volt).....	.13
31501.6	1-6/10 amp. (125 volt).....	.32	362.750	3/4 amp. (250 volt).....	.13
315002.	2 amp. (125 volt).....	.32	362001.	1 amp. (250 volt).....	.08
31502.5	2 1/2 amp. (125 volt).....	.27	36201.5	1 1/2 amp. (125 volt).....	.08
215003.	3 amp. (125 volt).....	.27	362002.	2 amp. (125 volt).....	.08
31503.2	3-2/10 amp. (125 volt).....	.27	362003.	3 amp. (125 volt).....	.08
315004.	4 amp. (125 volt).....	.27	362005.	5 amp. (125 volt).....	.05
315005.	5 amp. (125 volt).....	.27			

\*Most commonly used by large volume set manufacturers.

All above fuses approved by Underwriters' Laboratories except 315004 and 315005.

## METER BACK MOUNTING



Cat. No. 383002 (1059)—Mounts directly on meter binding post. Will not touch other posts on smallest standard meter. Linen bakelite base, 1" x 1 1/8". Length over screw terminal, 1 1/2". Standard Package 20. Weight 1/2 lb.

List Price Each.....\$0.35



## FUSE CADDY

A handy fuse kit for instant accessibility—correct fuse at your fingertips. 18 individual compartments contains 15 boxes, 3 spare compartments.

- 3 AG 1/4 A
- 3 AG 1/2 A
- 3 AG 1 A
- 3 AG 2 A
- 3 AG 3 A
- 3 AG 5 A
- 3 AG 1/4 A SB
- 3 AG 1/2 A SB
- 8 AG 1/4
- 8 AG 1/2
- N 1/4 LC
- N 1 LC
- N 1 1/2 LC
- C 2 1/2 LC

Part 094037

List Price.....\$12.68

## LC FUSE CADDY

A handy all inclusive LC (Limited Current) Fuse Caddy for servicemen's tube caddy. One call is all. 18 individual compartments. LC Fuse Caddy comes with 75 fuses; 15 different types plus three spare compartments.

List Price.....\$16.98

## FUSE CHANNELS

Single channel fuse dispensers for servicemen to mount in multiple arrangements over workbench in store.

Part 890-62

- 1-48.....\$0.22
- 49-96......18
- 97 and over......14



## SNAP-ON MOUNTINGS

Time saver for pigtail replacement. Snap on blown pigtail, then use regular fuse in other side. No soldering. This Snap-On mounting has a cut out on both sides which makes the fuse accessible for replacement from both sides. They are available in bulk, on display cards of 24, or in handy merchandising plastic boxes of ten.

List Price  
Card of 24 No. 094024.....\$7.20  
Box of 10 No. 094025..... 3.00

# LITTELFUSE

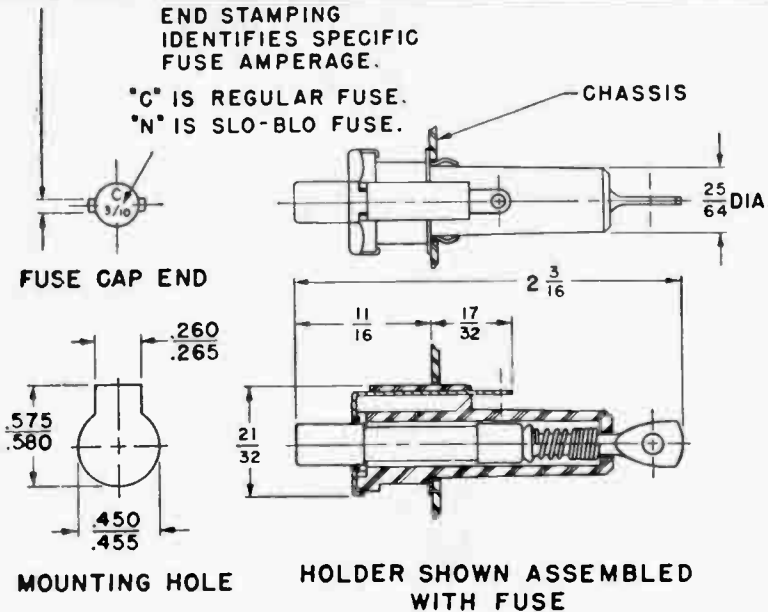
“Quicker than a Short Circuit”

TAB WIDTH VARIES WITH AMPERAGE

## THE LIMITED CURRENT (L.C.) LINE OF FUSES AND FUSE HOLDERS

END STAMPING IDENTIFIES SPECIFIC FUSE AMPERAGE.

"C" IS REGULAR FUSE.  
"N" IS SLO-BLO FUSE.



Here is a completely new approach to circuit protection to completely eliminate the possibility of over-fusing circuits.

This has been accomplished by a combination of three different fuse lengths and seven different widths of bayonet locking tabs on the fuse caps.

The fuse post is made to accept only the size amperage range and type (regular or slo blo) in its range. For example: a 1 amp. slo blo fuse is 1 1/4" long with .115 to .120 width tabs. The holder used with this will only accept a slo blo fuse (N type) above 3/4 to 1 1/4 amps.

The holder is a ruggedly designed unit, molded from high strength bakelite.

It snaps into a predetermined chassis mounting hole and locks into place by means of a quick snap-in type lock washer. It can be pressed into place by hand or simple tools.

The fuse locks into the holder by means of a bayonet lock which permits easy and quick insertion and removal of fuses.

Both solder connections are behind panel making the installation of the unit simple and inexpensive.

### REGULAR FUSES

### FUSE HOLDERS

### SLO BLO FUSES

### FUSE HOLDERS

Cat. No.	Type	Amps.	(Max.) Volts	Cat. No.	Range (Amps.)
332.032	C	1/32	250	346001	0 to 3/10
332.062	C	1/16	250		
332.125	C	1/8	250		
332.187	C	3/16	250		
332.250	C	1/4	250		
332.300	C	3/10	250		
332.375	C	3/8	250	346002	Over 3/10 to 1/2
332.500	C	1/2	250	346003	Over 1/2 to 3/4
332.750	C	3/4	250		
332001	C	1	250		
3321.25	C	1-1/4	250	346004	Over 3/4 to 1 1/4
33201.5	C	1-1/2	250	346005	Over 1 1/4 to 1 3/4
3321.75	C	1-3/4	250		
332002	C	2	250	346006	Over 1 3/4 to 2 1/2
33202.5	C	2-1/2	250		
332003	C	3	250	346007	Over 2 1/2 to 3 1/2
33203.5	C	3-1/2	250		
332004	C	4	250	346012	Over 3 1/2 to 5
332005	C	5	250		
332006	C	6	250	346013	Over 5 to 7
332007	C	7	125		
332008	C	8	125	346014	Over 7 to 10
332010	C	10	125		

Cat. No.	Type	Amps.	(Max.) Volts	Cat. No.	Range (Amps.)
333.010	N	1/100	125	346008	0 to 3/10
333.032	N	1/32	125		
333.062	N	1/16	125		
333.100	N	1/10	125		
333.150	N	15/100	125		
333.200	N	2/10	125		
333.250	N	1/4	125		
333.300	N	3/10	125		
333.400	N	4/10	125		
333.500	N	1/2	125		
333.600	N	6/10	125	346010	Over 1/2 to 3/4
333.750	N	3/4	125		
333.800	N	8/10	125	346011	Over 3/4 to 1 1/4
333001	N	1	125		
3331.25	N	1-1/4	125		
33301.6	N	1-6/10	125	346016	Over 1 1/4 to 1 3/4
3331.75	N	1-3/4	125		
333002	N	2	125	346017	Over 1 3/4 to 2 1/2
33302.5	N	2-1/2	125		
33302.8	N	2-8/10	125	346018	Over 2 1/2 to 3 1/2
33303.2	N	3-2/10	125		
33303.5	N	3-1/2	125		
333004	N	4	125	346019	Over 3 1/2 to 5
333005	N	5	125		
3336.25	N	6-1/4	32	346020	Over 5 to 7
333007	N	7	32		

# PILOT LIGHTS

## JIFFY MOUNTING



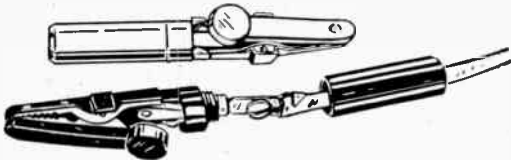
Tamper proof pilot light assembly requires no accessories.  $\frac{1}{2}$ " round hole in panel of any thickness is only preparation required. Instant mounting with supplied speed nut. NE51 neon lamp and built-in resistor in nylon housing suitable for temperature applications withstands vibration, shock and overloads for indefinite life over wide range of voltages.  $4\frac{1}{2}$ " leads stripped and tinned  $\frac{1}{2}$ ". Available in

red, clear, amber and white translucent as standard colors.

#1010A1—Red  
#1010A2—Clear

#1010A3—Amber  
#1010A4—White translucent

## SAFE-T-KLIP



Alligator test clips entirely encased in permanent tough high dielectric strength nylon. Approved for military applications.

Type 1410A—Assembles to test lead. Provides mechanical and/or solder joint with strain relief. Threaded sleeve completely insulated joint.

Model #1410A1—Black  
Model #1410A2—Red  
Model #1410A—Pair (Red & Black)

Type 1410B—Receives standard phone tip or .080 test prod. Entrance hole is tapped to mate with threaded prod.

Model #1410B1—Black  
Model #1410B2—Red  
Model #1410B—Pair (Red & Black)

Type 1410C—Receives standard banana plug as push-on accessory.

Model #1410C1—Black  
Model #1410C2—Red  
Model #1410C—Pair (Red & Black)

Type 1410D—Similar to #1410B but special entrance hole for Signal Corps test prod.

## HI-LO INDICATOR

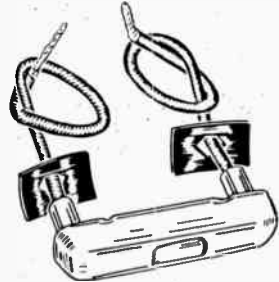


Compact, rugged voltage indicator with pilot-light assembly for instant indicating of normal and abnormal voltages. Bakelite panel also provides standard test jack receptors for voltage measurement at any time. Panel may be mounted on Type FS junction box for conduit installations. Will withstand mechanical vibration and shock.

Model 961—Indicates low of 95 to 105 volts; high of 130 to 140 volts.

Model 960—Indicates low of 190 to 210 volts; high of 235 to 255 volts.

## SPACE ECONOMY



A neon pilot light assembly which requires minimum back-of-panel space. Model #800 provides chrome finished all metal housing for NE2 lamp with 100K resistor. Instant mounting with furnished speed nuts thru two  $\frac{13}{64}$ " holes on  $1\frac{3}{8}$ " centers.  $4\frac{1}{2}$ " leads stripped and tinned  $\frac{1}{2}$ ". Operates over wide range of voltages and withstands temperatures, vibration, shock and overloads for indefinite life.

## CONTROL KNOBS



Series #1430 knobs are nylon equivalents of Signal Corps metal die cast knobs of GRC series.

Series #1431 knobs are  $1\frac{1}{4}$ " bar knobs for shafts up to  $\frac{1}{4}$ " dia. Set screw utilizes resilience of nylon as positive lock against thread. Completely free from brittleness without metal insert.

Model #1431-1—Black

Model #1431-2—Red

## NYLON LINE CORD PLUG



A line cord plug for use where the finest is desired. Smallest replacement plug meets military requirements for U-160/U connector. Strain relief built-in. Available in special colors.

Model #1420-33—S C Gray



For further information on these, or other Industrial Devices products, ask your distributor, or write . . .

# industrial devices, inc.

# BUSS Fuses

## FUSETRON DUAL-ELEMENT Fuses and Fuse Holders

for Protection of TV, Radios, Instruments and Electronic Equipment

### BUSS "QUICK-BLOWING" FUSES

600 Volt.  $1\frac{3}{32} \times 1\frac{3}{8}$  inch. Fibre tube. For protection of control circuits or fluorescent lighting circuits or wherever a fuse with "quick-blowing" characteristics is desirable. Listed as approved by Underwriters' Laboratories for voltages up to 600, 0 to 5 amperes.

Voltage	Symbol	Amperes	List Price
600 or less	BBS	$\frac{1}{10}$ , $\frac{3}{4}$ or $\frac{8}{10}$	\$0.22
600 or less	BBS	1, 2, 3, 4 or 5	0.20

Fuseholder for BBS fuses. Use HPC-L fuseholder or No. 3845 single pole, side barrier porcelain fuse block. Only BBS fuses (or others with exact same dimensions) will fit these holders. This assures replacement of proper size fuse.

### PANEL MOUNTED HOLDERS for $1\frac{3}{32} \times 1\frac{1}{2}$ inch Fuses



Screw type knob. Molded phenolic body. Holder attached to panel by screws or rivets. Strong coil spring provides contact pressure on ends of fuse. Normal current carrying capacity 30 amperes. Listed as approved by Underwriters' Laboratories for 15 ampere rating for any voltage up to 250.

HPC (for FNM and KLM fuses) ..... List Price \$0.75

#### HPC-L Holder for $1\frac{3}{32} \times 1\frac{3}{8}$ inch Fuses.

Like HPC Holder. Has Underwriters' Laboratories approved listing for 5 ampere rating and any voltage up to 600.

HPC-L (for BBS fuses) ..... List Price \$0.75

### PANEL MOUNTED HOLDERS for $\frac{1}{4}$ inch Fuses



Can be used on panels up to  $\frac{3}{16}$  inch thick.

Bayonet type knob. No



screw driver is needed.

Side terminal is held mechanically as well as by solder. Heat of soldering wire to it will not cause it to loosen.

Vibration will not cause failure of terminals as they are designed to stand severe service.

Neoprene washer and steel locking nut furnished with each holder.

Wire hole in terminals; .115 inch.

Normal current carrying capacity; 30 amperes.

Listed as approved by Underwriters' Laboratories.

Symbol	List Price
HJM for $\frac{1}{4} \times 1$ inch fuses (AGX, SFE 14)	\$0.50
HKP for $\frac{1}{4} \times 1\frac{1}{4}$ inch fuses (ABC, AGC, SFE20, MDL, MDX, MTH)	.50

### IN-THE-LINE HOLDERS for $\frac{1}{4}$ inch fuses

For mounting fuse in wire. Holders consist of body and bayonet type knob — two contacts ready to be staked on ends of wire — and a contact pressure spring.

Holders can also be mounted in panel up to  $\frac{5}{16}$  inch thick by means of a No. 9969 Spring nut (Nut not furnished). Flat area on holder permits locking against rotation.

Normal current carrying capacity: 15 amperes.

Symbol	List Price
HDI for $\frac{1}{4} \times 1$ inch fuses (AGX, SFE 14) Takes No. 18 or smaller wires.	\$0.20
HDJ-A for $\frac{1}{4} \times 1\frac{1}{4}$ inch fuses (ABC, AGC, MDL, MDX, MTH, SFE 20) Takes No. 18 or smaller wires.	.20
HDJ-B for $\frac{1}{4} \times 1\frac{1}{4}$ inch fuses (as above) Takes No. 14 or 16 wires.	.20
No. 9969 Spring nut for panel mounting above holders.	.04

### LAMP INDICATING FUSEHOLDERS

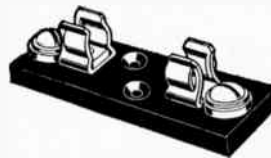


For panel mounting  $\frac{1}{4} \times 1$  and  $\frac{1}{4} \times 1\frac{1}{4}$  inch fuses. Bayonet type knob. Molded phenolic body. Strong coil spring provides contact pressure at ends of fuse. Transparent

knob permits indicating light to be readily seen.

Type	Fuse Size Inches	Circuit Voltage	Max. Amp. Rating	Type Lamp	List Price
HKL	$\frac{1}{4} \times 1\frac{1}{4}$	100 to 250	20	Neon	\$2.15
HKL-X	$\frac{1}{4} \times 1\frac{1}{4}$	100 to 250	20	Neon	2.15
HKR	$\frac{1}{4} \times 1\frac{1}{4}$	24 to 32	20	Incand.	3.50
HXX	$\frac{1}{4} \times 1\frac{1}{4}$	24 to 32	20	Incand.	3.50
HKT	$\frac{1}{4} \times 1\frac{1}{4}$	10 to 14	20	Incand.	3.50
HJL	$\frac{1}{4} \times 1$	100 to 250	20	Neon	2.15

### BUSS FUSE BLOCKS



Bakelite base blocks  $\frac{3}{16}$  inch thick. Countersunk mounting holes for No. 6 flat head screws. Brass No. 6 terminal screws and spring bronze clips.

#### Full base, Screw terminal Blocks

For Fuses	One Pole	List Price	Two Pole	List Price	Three Pole	List Price
SFE4	4511	\$0.43	4521	\$0.86	4531	\$1.29
SFE6	4516	.43	4526	.86	4536	1.29
SFE7 $\frac{1}{2}$ , 9	4517	.43	4527	.86	4537	1.29
SFE14, AGX	4514	.43	4524	.86	4534	1.29
SFE20, ABC, AGC, MDL, MDX, MTH	4512	.43	4522	.86	4532	1.29



#### Small base, Solder Terminal Blocks

For Fuses	One Pole	List Price	Two Pole	List Price	Three Pole	List Price
SFE14, AGX	4520	\$0.20	4485	\$0.40	4403	\$0.60
SFE20, ABC, AGC, MDL, MDX, MTH	4405	.20	4408	.40	4411	.60

### BUSS TWIN-CLIPS for $\frac{1}{4}$ " FUSES



Make it easy to replace blown pigtail fuses without cutting or unsoldering pigtails.

Just snap Twin-Clips on blown fuse and insert ordinary or Fusetron fuse of same amperage as blown fuse.

Strong spring clip pressure assures good contact.

No. 4121 BUSS Twin Clips One pair \$0.19

### Other standard and special fuses, fuse blocks and fuse holders

If the fuses, blocks and holders shown do not fit your requirements ask for information on other types.

Fuses and fuse mountings to meet JAN and Military specifications also are available.

If you have a special problem in protection send description or sketch giving number of circuits, type of fuse, terminals, etc., desired. We welcome such inquiries.

**BUSSMANN MFG. DIVISION**  
(McGraw-Edison Co.)  
ST. LOUIS 7, MO.

# BUSS Fuses

## FUSETRON DUAL-ELEMENT Fuses and Fuse Holders

for Protection of TV, Radios, Instruments and Electronic Equipment

### FAST ACTING FUSES for PROTECTION OF INSTRUMENTS, Etc.



Formerly called 8AG.  
Dimension 1/4 x 1 inch, Glass tube.

Provide high speed action necessary to protect sensitive instruments.

Test specification—carry 100%, open at 200% in 5 seconds.

Voltage	Symbol	Amperes	List Price
250 or less	AGX	1/500	\$1.20
"	AGX	1/200	.50
"	AGX	1/100	.45
"	AGX	1/32	.40
250 or less	AGX	1/16	.27
"	AGX	1/10, 1/8, 3/16, 1/10	.20
"	AGX	1/4, 3/8, 1/2 or 1/2	.13
125 or less	AGX	3/4	.13
"	AGX	1, 1 1/2 or 2	.08



Formerly called 8AG  
Dimension 1/4 x 1 inch, Glass tube.

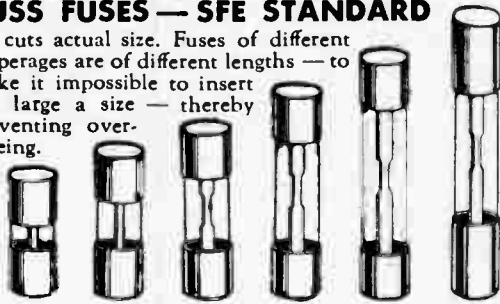
Test specification—carry 110%, open at 135% within 1 hour.  
AGX are listed as approved by Underwriters' Laboratories.

Voltage	Symbol	Amperes	List Price
125 or less	AGX	3, or 4	\$0.08
"	AGX	5	.05
32 or less	AGX	8, 10, 15 or 20	.05
"	AGX	25 or 30	.06

**MJB & MJW FUSES NOW CALLED AGX**

### BUSS FUSES — SFE STANDARD

All cuts actual size. Fuses of different amperages are of different lengths — to make it impossible to insert too large a size — thereby preventing over-fusing.



SFE 4    SFE 6    SFE 7 1/2 & SFE 9    SFE 14    SFE 20    SFE 30

Glass tube — diameter 1/4 inch. Length as per table below.  
Test specification—carry 100%, open at 125% in 1/2 hour.  
Listed as approved by Underwriters' Laboratories.  
Made according to specifications of Society of Automotive Engineers.

Voltage	Symbol & Amperes	Length Inches	Pounds per 100	List Price
32 or less	SFE 4	5/8	.73	\$0.055
"	SFE 6	3/4	.75	.055
"	SFE 7 1/2	7/8	.80	.05
"	SFE 9	7/8	.80	.05
"	SFE 14	1 1/8	.82	.045
"	SFE 20	1 1/4	.87	.045
"	SFE 30	1 1/2	1.60	.06

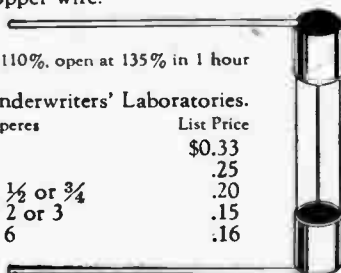
### BUSS PIG-TAIL FUSES

1/4 x 1 1/4 inch Glass tube fuse with 1/2 inch leads of No. 20 tinned copper wire.

Test specifications—carry 110%, open at 135% in 1 hour or less.

Listed as approved by Underwriters' Laboratories.

Voltage	Symbol	Amperes	List Price
250 or less	GJV	1/16	\$0.33
"	GJV	1/8	.25
"	GJV	1/4, 3/8, 1/2 or 3/4	.20
"	GJV	1, 1 1/2, 2 or 3	.15
"	GJV	4, 5 or 6	.16



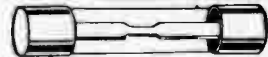
### BUSS GLASS TUBE FUSES, 1/4 x 1 1/4 inch



Formerly called 3AG

Test specification—carry 110%, open at 135% in 1 hour.  
Listed as approved by Underwriters' Laboratories.

Voltage	Symbol	Amperes	List Price	Voltage	Symbol	Amperes	List Price
250 or less	AGC	1/500	\$1.20	250 or less	AGC	17 1/2	\$0.20
"	AGC	1/200	.50	"	AGC	3/16	.20
"	AGC	1/100	.45	"	AGC	1/4, 3/10, 3/8	.13
"	AGC	1/32	.40	"	AGC	1/2, 3/4	.13
"	AGC	1/16	.27	"	AGC	1, 1 1/2, or 2	.08
"	AGC	1/8	.20	"	AGC	3	.07
"	AGC	1 1/100	.20	"	MTH	4, 5 or 6	.10



Formerly called 3AG

Test specification—carry 110%, open at 135% in 1 hour.

Voltage	Symbol	Amperes	List Price
125 or less	GLH	8	.15
32 or less	AGC	4	\$0.07
"	AGC	5, 6, 7 1/2, 8, 10 or 15	.05
"	AGC	25 or 30	.06

20 ampere size is an SFE 20 fuse.  
Sizes larger than 30 ampere are not recommended as clips or fuse holders would not permit fuse to carry such high currents. If surges or starting currents make heavier fuse necessary, use MDL Fuse-tron dual-element fuses.

**MBW & MBB FUSES NOW CALLED AGC**

### FUSETRON FUSES, 1/4 x 1 1/4 inch



**DUAL-ELEMENT SLOW BLOWING TYPE**

Stop needless blows from starting currents or surges. Fuse link operates only on very high overloads or short-circuits. Thermal cutout functions on low overloads — cannot operate quickly at any load, so long time-lag is obtained. Yet protection is afforded against short-circuits or continued overloads.

Test specification—carry 110%, open at 135% in 1 hour.

Approximate blowing time: at 200% load MDL 25 sec. MDX 12 sec.  
at 300% " " 8 " " 3 "  
at 500% " " 3 " " 1/2 "

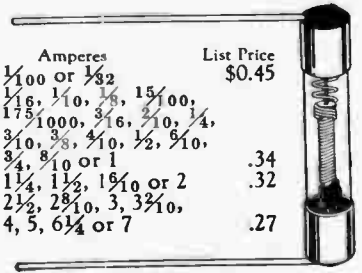
125 and 250 volt sizes listed as approved by Underwriters' Laboratories.

Voltage	Symbol	Amperes	List Price
250 or less	MDL	1/100 or 1/32	\$0.36
250 or less	MDL	1/16, 1/10, 1/8, 1 1/2, 1 5/10, 17 1/2, 1000,	
"	MDX	3/16, 1/10, 1/4, 3/10, 3/8, 1/2, 1/2, 3/10, 1/10, 3/4, 3/10 or 1	.27
"	MDX	1 1/4, 1 1/2, 1 3/4 or 2	.30
125 or less	MDL	1 1/4, 1 1/2, 1 3/4 or 2	.25
"	MDL	2 1/2 or 2 3/4	.20
"	MDX	3 or 3 1/2	.20
"	MDX	4, 5, 6 1/4 or 7	.23
32 or less	MDL	3, 3 1/2, 4, 5, 6 1/4, 8, 10, 15, 20, 25 or 30	.20

### FUSETRON PIG-TAIL FUSES

Leads are No. 20 tinned wire 1 1/2 inch long. Listed as approved by Underwriters' Laboratories. Test specifications and performance, MDV 1/100 to 2 1/2 10 amps. same as MDL fuses. 3 to 7 amps. same as MDX fuses.

Voltage	Symbol	Amperes	List Price
250 or less	MDV	1/100 or 1/32	\$0.45
"	MDV	1/16, 1/10, 1/8, 1 1/2, 1 5/10,	
"	MDV	17 1/2, 1000, 3/16, 1/10, 1/4, 3/10, 3/8, 1/2, 1/2, 3/10, 1/10, 3/4, 3/10 or 1	.34
125 or less	MDV	1 1/4, 1 1/2, 1 3/4 or 2	.32
"	MDV	2 1/2, 2 3/4, 3, 3 1/2, 4, 5, 6 1/4 or 7	.27

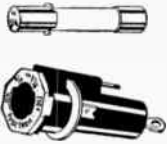


# BUSS Fuses

## FUSETRON DUAL-ELEMENT Fuses and Fuse Holders

for Protection of TV, Radios, Instruments and Electronic Equipment

### FUSETRON and BUSS MATCHED FUSES and FUSEHOLDERS



Safeguard against use of wrong size and type of fuse. FUSETRON Type N are "slow-blowing" fuses for use where harmless surges or starting currents might cause ordinary fuses to open needlessly. Use in Type HN fuseholder.

BUSS Type C are "quick-blowing" fuses for fast interruption of fault current. Use in Type HC fuseholder.

FUSETRON FUSE		FUSEHOLDER	
Symbol & Amperes	List Price	Symbol & Range	List Price
N 1/100	\$0.40		
N 1/32	.40		
N 1/16	.28		
N 1/10	.28		
N 1 1/100	.28	HN	
N 2/10	.28	0 to 3/10	\$0.20
N 1/4	.28		
N 3/10	.28		
N 4/10	.28	HN	
N 1/2	.28	3/10 to 1/2	.20
N 6/10	.28		
N 7/10	.28	HN	
N 3/4	.28	1/2 to 3/4	.20
N 8/10	.28		
N 1	.28	HN	
N 1 1/4	.26	3/4 to 1 1/4	.20
N 1 6/10	.26	HN	
N 1 3/4	.26	1 3/10 to 1 3/4	.20
N 2	.26	HN	
N 2 1/2	.24	1 3/4 to 2 1/2	.20
N 2 8/10	.24		
N 3 2/10	.24	HN	
N 3 1/2	.24	2 1/2 to 3 1/2	.20
N 4	.24	HN	
N 5	.24	3 1/2 to 5	.20
N 6 1/4	.24	HN	
N 7	.24	5 to 7	.20

BUSS FUSE		FUSEHOLDER	
Symbol & Amperes	List Price	Symbol & Range	List Price
C 1/32	\$0.42		
C 1/16	.27		
C 1/8	.21		
C 3/16	.21	HC	
C 1/4	.16	0 to 3/10	\$0.20
C 3/10	.16		
C 3/8	.16	HC	
C 1/2	.16	3/10 to 1/2	.20
C 3/4	.16	HC 1/2 to 3/4	.20
C 1	.09	HC	
C 1 1/4	.09	3/4 to 1 1/4	.20
C 1 1/2	.09	HC	
C 1 3/4	.09	1 1/4 to 1 3/4	.20
C 2	.09	HC	
C 2 1/2	.09	1 3/4 to 2 1/2	.20
C 3	.09	HC	
C 3 1/2	.12	2 1/2 to 3 1/2	.20
C 4	.12	HC	
C 5	.12	3 1/2 to 5	.20
C 6	.12	HC	
C 7	.12	5 to 7	.20
C 8	.17	HC	
C 10	.18	7 to 10	.20

### BUSS INDICATING FUSES, 1/4 x 1 1/4 inch



Fibre Tube. Silverplated indicating pin extends from end of fuse when fuse is blown.

This pin can also be used to actuate a signal by using fuses in BUSS HKA Fuseholders or BUSS Signal Fuse Blocks. GLD fuses in sizes larger than 5 amperes have dual tube construction. They can be used in BUSS Signal Fuse Blocks but not in HKA Fuseholders.

Test specifications—carry 110%, open at 135% in one hour or less.

Voltage	Symbol	Amperes	List Price
125 or less	GLD	3/4	\$0.56
"	GLD	1, 2, 3, or 5	.50
"	GLO	8, 10, 12 or 15	.26*

\*Plus \$2.50 set-up charge on each size or type on each shipment.

### 1 3/32 x 1 1/2 inch

Voltage	Symbol	Amperes	List Price
125 or less	MIC	1, 2, 3, 5, 10 or 15	.33
32 or less	MIC	20, 25 or 30	.33

### FUSETRON FIBRE TUBE FUSES

#### 1 3/32 x 1 1/2 inch



Dual-Element — Slow Blowing Type. Avoid needless blows from starting currents or

surges. Have fuse link that operates only on very high overloads or short-circuits, and thermal cutout on low overloads. Thermal cutout cannot operate quickly at any load, hence long time-lag is obtained. Yet protection is provided against short-circuits or continued overloads.

Test specification—carry 110%, open at 135% within 1 hour.

Approximate blowing time: at 200% load 25 seconds.  
at 300% load 8 seconds.  
at 500% load 5 seconds.

125 and 250 volt sizes listed as approved by Underwriters' Laboratories.

Voltage	Symbol	Amperes	List Price
250 or less	FNM	1/10, 1 1/100, 3/10, 3/10, 4/10, 1/2, 6/10, 8/10, 1, 1 1/8, 1 1/4, 1 1/10, 1 1/10, 1 1/10, 2, 2 1/4, 2 1/2, 2 8/10, 3 3/10, 3 1/2, 4, 4 1/2, 5, 5 6/10, 6 1/4, 7, 8, 9 or 10	\$0.33
125 or less	FNM	12 or 15	.33
32 or less	FNM	20, 25 or 30	.33

### SIGNAL OR VISUAL INDICATING TYPE

FNA are FNM Fusetron fuses with silverplated indicating pin that extends from fuse when fuse blows. Pin can also be used to actuate a signal by using fuse in BUSS Signal Fuse Block.

Voltage	Symbol	Amperes	List Price
125 or less	FNA	1/10, 1 1/100, 3/10, 3/10, 4/10, 1/2, 6/10, 8/10, 1, 1 1/8, 1 1/4, 1 1/10, 1 1/10, 1 1/10, 2, 2 1/4, 2 1/2, 2 8/10, 3, 3 3/10, 3 1/2, 4, 4 1/2, 5, 5 6/10, 6, 6 1/4, 8 or 10	\$0.625
"	FNA	12, 15, 20, 25 or 30	.688

### HIGH INTERRUPTING CAPACITY FUSES



#### 1 3/32 x 1 1/2 inch

Glass fibre melamine tube with sand filler surrounding a silver fuse element. For use on circuits capable of delivering currents as high as 68,000 amperes at voltages of 500 or less AC or DC.

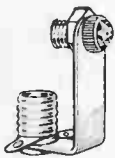
Test specification—carry 110%, open at 135% in 1 hour or less.

Voltage	Symbol	Amperes	Prices on request.
500 or less	KLM	1/10, 1/8, 2/10, 1/4, 3/10, 1/2, 3/4, 1, 1 1/2, 2, 3, 4, 5, 6, 8, 10, 15, 20, 25 or 30	



# Dial and Jewel PILOT LIGHT ASSEMBLIES

## JEWEL LIGHT ASSEMBLIES



No. 5 Type

### 11/32" JEWEL . . VERTICAL MOUNTING

Mounts in 5/16" diameter hole on panels up to 1/8" thick. Tested at 125 volts. Panel Hardware cadmium and iridite — other parts cadmium. Standard colors. Available with faceted plastic jewels as standard.

- No. 5.....Min. Screw (globular lamp).....List \$0.40  
 No. 5B .Min. Bayonet (globular lamp).....List .42  
 No. 5T .Min. Bayonet (tubular lamp).....List .42



No. 10 Type

### 1/2" JEWEL . . VERTICAL MOUNTING

Mounts in 7/16" hole on panels up to 1/4" thick. Tested at 125 volts. Standard colors. Panel Hardware, bright nickel — other parts cadmium. No. 10B has bracket with oblong hole permitting adjustment to obtain best position for lamp filament back of Jewel. (Frosted jewels, 7c extra).

- No. 10.....Min. Screw .....List \$0.42  
 No. 10G.....Min. Bayonet .....List .42  
 No. 10B.....Min. Bayonet .....List .42

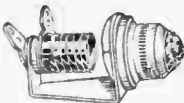


No. 10C Type

### 1/2" JEWEL . . VERTICAL MOUNTING UNDERWRITERS APPROVED

Candelabra screw base Jewel light which is Underwriters Approved for 75 watt — 125 volt service. Takes minimum depth behind panel. Oblong hole permits adjustment for placing lamp filament behind Jewel for maximum illumination. Mounts in 7/16" hole on panels up to 1/4" thick. Standard colors. (Frosted, 7c extra).

- No. 10C.....Candelabra Screw.....List \$0.48



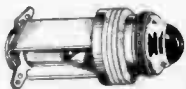
No. 20S Type

### 1/2" JEWEL HORIZONTAL MOUNTING

Lamp removable from front of panel. Mounts in 11/16" hole. Tested at 125 volts. Standard colors. Faceted glass. Bulk pack.

TYPE NUMBER	STYLE SOCKET	DEPTH BACK OF PANEL	PANEL THICKNESS	LIST PRICES
20.....Min. Bay.....		1-13/32"	0" to 7/64"	\$0.55
30.....Min. Bay.....		1-7/32"	1/4"	.55
40.....Min. Bay.....		1-11/32"	1/8" to 15/64"	.55
20S.....Min. Screw.....		1-1/16"	0" to 15/64"	.55
30S.....Min. Screw.....		15/16"	1/4"	.55

### 1/2" POLARIZED VARIABLE INTENSITY



No. 80 Type

Incorporates use of polarized discs to regulate light intensity. A partial turn of the Jewel dims the light. Supplied with three fibre washers to compensate for different panel thicknesses. Mounts in 11/16" hole. Finish bright nickel. Standard Colors. Regularly supplied with smooth glass frosted on back only. Other glass types optional.

TYPE NUMBER	STYLE SOCKET	LIST PRICE
80.....	Miniature Bayonet	\$1.62



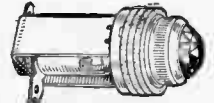
No. 75AP .....\$1.66

### 1" JEWEL . . . Underwriters App.

A heavy-duty Candelabra screw base assembly designed to be used on rugged equipment. UL for 125 volt 75 watt service. The socket assembly and mounting tube are one piece. Solder terminals. Mounts in 1" hole on panels up to 1/2" thick. Panel Hardware, highly polished chrome. All other parts cadmium plated. Standard colors in FAC, SP or SFB glass. Depth back of panel 2 1/4".

### 1/2" JEWEL . . . HORIZ. MOUNTING

Specially designed for use on more than one thickness of panel. Three fibre washers compensate for panel thicknesses. Mounts in 11/16" hole. Lamp removable from front of panel. Tested at 125 volts. Faceted glass in standard colors.



No. 50 Type

TYPE NUMBER	STYLE SOCKET	DEPTH BACK OF PANEL	PANEL THICKNESS	LIST PRICES
50.....Min. Bayonet.....		1-5/16"	0" to 1/4"	\$0.88
50S.....Min. Screw.....		1-1/4"	0" to 1/4"	.87

\*Subtract panel thickness.

### 3/8" PLASTIC CAP HORIZONTAL MOUNTING

Gives wide angle vision . . . easily seen from sides. Lamp removable from front of panel. Supplied with three 1/16" thick fibre washers for adjustment of thickness of panel. Mounts in 11/16" hole. Tested at 125 volts. Standard colors.



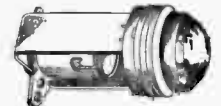
No. 51 Type

TYPE NUMBER	STYLE SOCKET	DEPTH BACK OF PANEL	PANEL THICKNESS	LIST PRICE
51.....Min. Bayonet.....		1-1/4"	0" to 1/4"	\$0.81

\*Subtract panel thickness.

### 3/4" JEWEL . . . HORIZ. MOUNTING

Polished chrome "slip-fit" bezel. Mounts in 13/16" hole. Supplied with fibre washers to compensate for panel thickness. Miniature types tested at 125 volts. Candelabra type UL listed for 75W — 125 V. Standard colors. No. 60 Types are regularly supplied with colorless smooth glass frosted on back, and bag of 6 colored discs with retaining ring; or with colored jewel.



No. 60 Type

TYPE NUMBER	STYLE SOCKET	LIST PRICES With Colored 6 Discs	Jewel
60.....	Miniature Bayonet	\$1.41	\$1.28
A460N-IL.....	Cand. Screw for NE45 Lamp	not avail.	1.41
60S.....	Miniature Screw	1.40	1.27
A460T-IL.....	Cand. Screw for 115V, 6W, T4 1/2 Lamp	1.54	1.43

### 1" JEWEL . . . HORIZ. MOUNTING

Easy to install. Has "slip-fit" bezel. Mounts in 1" diameter hole on panels up to 1/2" thick. UL listed. No. 75 will take any candelabra screw base lamp up to 2 1/8" long and 7/8" diameter. Nos. 175 and 275 take any miniature lamp up to 1-3/16" long and 7/8" diameter. The bezel has a highly polished chrome finish. Standard colors. No. 75 Types are regularly supplied with colorless smooth glass frosted on back, and bag of 6 colored discs with retaining ring; or with colored jewel. Comes in FAC, SP, or SFB. We recommend smooth plain glass for use with Neon Glow Lamps.



No. 75 Type

TYPE NUMBER	STYLE SOCKET	LIST PRICES With Colored 6 Discs	Jewel
75.....	Candelabra Screw	\$1.55	\$1.40
175.....	Miniature Screw	1.58	1.44
275.....	Miniature Bayonet	1.59	1.45





# Dial and Jewel PILOT LIGHT ASSEMBLIES

## TOTALLY ENCLOSED MINIATURE BAYONET ASSEMBLIES



UNDERWRITERS LISTED

No. 100 Type— $\frac{1}{2}$ " JEWEL No. 101 Type—PLASTIC DOME  
(ALSO Types 100N, 101N for Use with NE51 NEON GLOW LAMPS)

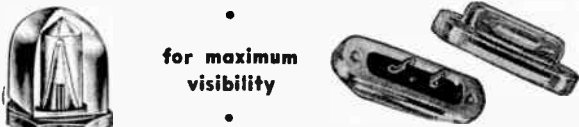
The 100 and 100N have glass Jewels. The 101 and 101N have transparent plastic domes. The fluted-on-inside type plastic dome has three times the visibility of the plain cap. All types mount in  $\frac{11}{16}$ " diameter hole on panels up to  $\frac{3}{8}$ " thick. Breakdown 2000 volts. 101 and 101N come in amber, colorless, red and milky white in the transparent; and standard colors in the translucent.

With proper current limiting resistors 100N and 101N can be operated on any voltage over 65 volts AC and 90 volts DC. Resistor is built into the housing. Units carried in stock have 100,000 ohm resistors for 115 volt operation.

### LIST PRICES

No. 100...\$1.03 No. 100N...\$1.24 No. 101...\$0.96 No. 101N...\$1.16  
With screw terminals, 13c extra (prefix BS to part no.)

## NEON INDICATOR LIGHTS



for maximum visibility

No. 110 FLUSHLITE

No. 110 FLUSHLITE comes equipped with NE-2 neon lamp with built-in 100,000 ohm resistor. Can be mounted by two screws or on studs on either front or back of panel. Body is milky white polystyrene. Rated at 125 volts, 1/10 watt.

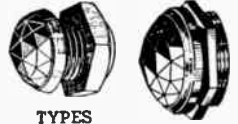
No. 105 POSTLITE comes equipped with NE-2 neon lamp with built-in 100,000 ohm resistor. Body and head molded in one piece from clear, colorless polystyrene. Mounts in  $\frac{1}{2}$ " diameter hole. Rated at 125 volts, 1/10 watt. Other colors available on special order on both items.

### LIST PRICES

No. 105 POSTLITE.....\$0.96 No. 110 FLUSHLITE.....\$0.71

## DIAMOND-CUT JEWELS IN STANDARD COLORS THREADED TYPE — WITH NUTS

TYPE NO.	SHANK	O.D.	LIST PRICE
*14-15	$\frac{1}{4}$ " long	$\frac{5}{16}$ "	\$.016
*16-17	$\frac{3}{8}$ " long	$\frac{7}{16}$ "	.17
*16L-17	$\frac{1}{2}$ " long	$\frac{7}{16}$ "	.22
*16S-17	$\frac{9}{32}$ " long	$\frac{7}{16}$ "	.18
60A3-27	$\frac{3}{8}$ " long	$\frac{11}{16}$ "	.64
(* Frosted Jewels, 7c extra)			
75A3-C	$\frac{3}{8}$ " long	1"	.84



TYPES 16-17  $\frac{11}{16}$ " Jewels

No. 60A3-27  $\frac{3}{4}$ " Jewels

No. 60A3-27 and 75A3-C POLISHED CHROME FINISH. OTHER NOS., NICKEL FINISH.

### SLOTTED TYPES

TYPE No.	SHANK	O.D.	LIST PRICES
23	$\frac{3}{16}$ " long	$\frac{3}{8}$ "	\$.015
24	$\frac{1}{4}$ " long	$\frac{9}{32}$ "	.15
(Frosted, 7c extra)			



No. 75A3-C 1" Jewels

No. 24 OTHER JEWEL FINISHES  
11/32" JEWEL  
SP.....Smooth Plain  
SFB.....Smooth Frosted Back  
SFA.....Smooth Frosted All Over

No. 23  $\frac{1}{2}$ " JEWEL



### LOOK FOR THIS

## DRAKE DISPLAY BOARD

AT YOUR DEALER'S

It shows a representative assortment of DRAKE units . . . will help you in selecting exactly the right Indicator Lights for your requirements.



## BASIC TYPES



117H MINIATURE SCREW



217H MINIATURE BAYONET

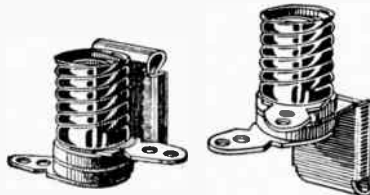


417H CANELABRA SCREW

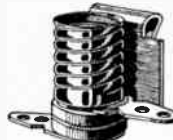
## LAMPHOLDER ASSEMBLIES

Code numbers for Types:  
MIN. SCREW — 100 SERIES MIN. BAYONET — 200 SERIES  
CAND. SCREW — 400 SERIES

### CLIP BRACKET TYPES



103AH - 203AH 103CE  
403AH 203CE - 403CE  
WITH FLANGE BRACKETS



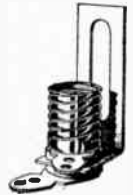
104AH - 204AH 404AH  
WITH FLAT BRACKETS

### LIST PRICES

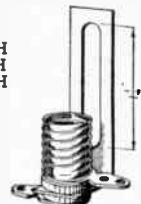
103	\$.14	109	.14	206	\$.15	403	\$.16	409	\$.16
104	.14	117H	\$.14	208	.15	404	.16	417H	.16
106	.14	203	.15	209	.15	406	.16	617H	.16
108	.14	204	.15	217H	.15	408	.16		

## MISCELLANEOUS TYPES

106AE  
206AE  
406AE



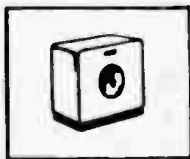
108AH  
208AH  
408AH



109CH  
209CH  
409CH



# PROTECT against Fire hazards!



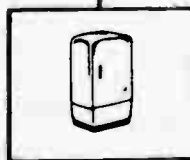
LIST PRICE  
**50¢**  
Less Fuses

# ELMENCO

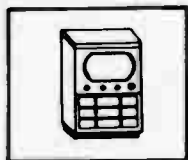


## FUSED PLUGS

NOW AVAILABLE IN A NEW  
IMPACT RESISTANT SHELL

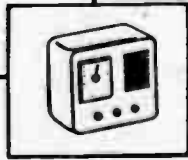
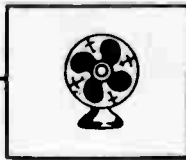
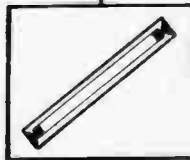


SALES GETTING DISPLAY  
MAKES ELMENCO  
EASY TO SELL  
EASY TO SEE



### COMPLETE PROTECTION!

The Elmenco Fused Plug is like any standard plug, is light in weight, but easier to handle because of finger grips. However, it contains 2 small fuses which provides complete protection against damage to the appliance and to the main line. The blown fuse is easy to remove and simple to replace. Fits any standard wall outlet.



### NEW MARKETS! GREATER VALUE!

Approved by Underwriters Laboratories and used by many of the largest manufacturers of radio and electronic equipment, battery chargers, washing machines, curling irons, lighting equipment, automatic relay equipment, motors of every description, and practically every other type of product that consumes electricity. Every wired home, office and store is a prospect.

MANUFACTURED BY

# ELMENCO PRODUCTS CO.

NEW YORK 13, NEW YORK

We list a few of the larger consumers of the  
ELMENCO FUSED PLUG

- Auto-Lite
- Bell Telephone Labs.
- Bulldog Electric
- Cambridge Instrument
- Canaday Cooler
- Dictaphone
- Dila-Therm
- Eagle Electric
- Eastman Kodak
- Electro-Physical Labs.
- General Electric
- Gerlat Lighting
- I. B. M.
- Buick Motors
- Philco
- R. C. A.
- Sylvania
- Thomas Edison
- Webster-Chicago
- Western Electric
- Westinghouse



# COMPONENT RECTIFIERS

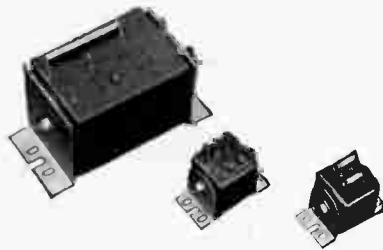
## SILICON, SELENIUM, GERMANIUM, AND COPPER-OXIDE

Rectifiers for practically any d-c power requirement are available. Vac-u-Sel\* rectifiers are a high-quality type of selenium rectifier produced by an exclusive

G-E sphere-type, vacuum-evaporation process. In addition, General Electric also makes a full line of copper-oxide, germanium, and silicon rectifiers.



New double diode for electronic applications



Embedded stacks for tough environmental applications



New 300-ampere silicon stack

### GENERAL ELECTRIC *Vac-u-Sel* RECTIFIERS

- 63 VOLTS PEAK INVERSE
- 150 C PLATE TEMPERATURE
- 80,000 HOURS LIFE EXPECTANCY

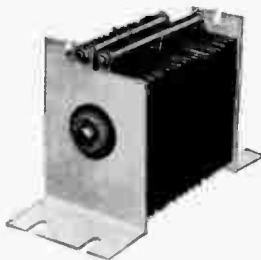
The special vacuum-evaporation process employed in making Vac-u-Sel rectifiers makes possible the outstanding performance characteristic of this selenium rectifier. With G-E Vac-u-Sel rectifiers, you can now match performance requirements for life expectancy, ambient operating temperature, and atmospheric protection, as well as electrical characteristics. Two (2) rectifier cells make up the line of Vac-u-Sel rectifiers: a 26-volt and a 45-volt cell. Both are high-temperature cells.

The 26-volt cell is a long-life, standard industrial cell with a life expectancy of 80,000 hours at normal current rating at 35 C ambient. The 26-volt cell can meet operating requirements up to 150 C at full voltage. Current need not be derated where shorter life is acceptable. Life expectancy at 150 C is 1000 hours.

The 45-volt cell has a 63-volt peak inverse voltage. Unlike most 45-volt rectifiers, this is a true, long-life industrial cell. Frequently, this rectifier may be substituted for those employing 26-volt cells. Since fewer cells are required, savings of up to 30 per cent in cost, and up to 35 per cent in the size of the stacks are possible. Life expectancy of the 45-volt cells at normal current rating at 35 C ambient is 60,000 hours, and they can be used at ambient temperatures up to 110 C.

All Vac-u-Sel rectifiers operate with exceptionally low forward-voltage drop and low reverse leakage, and their margin of superiority in these characteristics increases with service. All Vac-u-Sel rectifiers undergo extensive testing and grading, and matched cells are used in assembling stacks. A variety of finishes and mounting arrangements are available to meet virtually any requirement. Write for Bulletins GEA-6538 (double-diode) and GEC-1330 (application manual).

#### COPPER-OXIDE RECTIFIER STACKS



G-E copper-oxide rectifier stacks offer these outstanding features:

- No unforming
- Ability to withstand momentary current overloads
- Ability to withstand momentary voltage overloads
- Long life with little aging
- Highest efficiency at low voltages

These features of G-E copper-oxide rectifiers make them especially suited for certain types of magnetizing circuits,

which require the rectifier to withstand high current inrush and momentary voltage overload.

Perhaps the most widespread use of copper-oxide rectifiers is in the field of circuit-breaker operation. Here, the unique characteristics of copper-oxide rectifiers are especially important.

The above features also make G-E copper-oxide rectifiers ideal for the following applications: Blocking • Metering • Polarizing relays • High-speed relays • Electroplating • Electrolytic reduction • Telephone and telegraph equipment • Control contactors • Low-voltage, high-current power supplies • Testing equipment • High-voltage surge protectors • D-c welders. Write for Bulletin GEA-5699.

\*Registered trade-mark of General Electric Co.

#### INDUSTRIAL SILICON AND GERMANIUM RECTIFIERS



These heavy power rectifiers offer many outstanding features, such as:

- Best current output, smallest size, and lightest weight per watt output of existing metallic rectifiers
- Highest voltage rating per cell
- High efficiency
- No unforming
- Negligible aging

The new G-E germanium and silicon metallic rectifiers are of the broad-area type. Their very low forward-voltage drop gives excellent regulation. The high output voltage per cell permits the use of fewer cells, and rectifying properties are instantaneous since they do not require artificial forming. These rectifiers can be operated at extremely high current densities, and a large d-c output is obtainable from a very small rectifier assembly.

The regulation is less than 6 per cent when operated at full current density. With most metallic rectifiers, regulation is usually between 15 and 20 per cent at their normal current densities. Germanium and silicon rectifiers have a broad application in power conversion where size and weight requirements are at a premium.

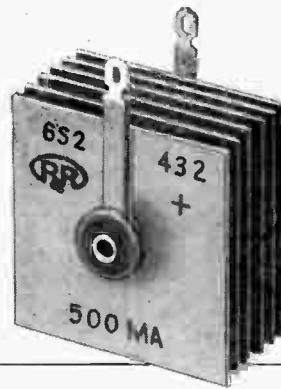
Complete information on all of these rectifiers is available from your nearest G-E Apparatus Sales Office, or by writing to Section 640-476, General Electric Company, Schenectady 5, N.Y.



**RADIO  
RECEPTOR**

# SELENIUM RECTIFIERS

*with  
SAFE  
CENTERS*



## RADIO AND TV SELENIUM RECTIFIERS — RATINGS AND DIMENSIONS

MAX. D. C. OUTPUT MA.	TYPE NO.	MAX. A. C. INPUT VOLTS	MIN. SERIES RESISTOR (OHMS)	MAX. PEAK INVERSE VOLTAGE	A (INCHES)	B (INCHES)	C + 0-1/32 (INCHES)	D ± 1/32 (INCHES)
STANDARD REPLACEMENT LINE								
65	8J1	130	33	380	1 1/8	1 1/8	1 1/32	1/2
75	5M4	130	22	380	1	1	1 1/8	1 1/8
100	5M1	130	22	380	1	1	1 1/8	3/4
150	5P1	130	15	380	1 1/8	1 1/8	1 1/8	3/4
200	5R1	130	5	380	1 1/2	1 1/4	1 1/8	3/8
250	5Q1	130	5	380	1 1/2	1 1/2	1 1/8	1 1/8
300	6QA1	130	5	380	1 1/2	1 1/2	1 1/8	1 3/8
350	6QA2*	130	5	380	1 1/2	1 1/2	1 1/8	1 1/8
400	6S4	156	5	456	2	2	1 1/8	1 1/8
500	6S2	156	5	456	2	2	1 1/8	1 1/8
SPECIAL REPLACEMENT LINE								
100	1M1	25	None	75	1	1	1 1/8	3/4
30	8Y1	130	47	380	1/2	1/2	1 1/32	1/2
25	16Y1	260	47	760	1/2	1/2	1 1/32	3/8
75	6M1	156	22	456	1	1	1 1/8	3/8
100	6M2	156	22	456	1	1	1 1/8	1 1/8
150	6P2	156	15	456	1 1/8	1 1/8	1 1/8	1 1/8
250	6R4*	130	5	380	1 1/2	1 1/4	1 1/8	1 3/8
250	6Q1	156	5	456	1 1/2	1 1/2	1 1/8	1 1/8
250	6Q2	156	5	456	1 1/2	1 1/2	1 1/8	1 3/8
300	6Q4*	130	5	380	1 1/2	1 1/2	1 1/8	1 3/8
350	5QS1	130	5	380	1 1/2	2	1 1/8	1 1/8
350	6QS2	156	5	456	1 1/2	2	1 1/8	1 3/8
350	6QS4*	156	5	456	1 1/2	2	1 1/8	1 3/8
350	6SQ1	156	5	456	2	1 1/2	1 1/8	1 3/8
400	5S2	130	5	380	2	2	1 1/8	1 1/8
500	5S3	130	5	380	2	2	1 1/8	1 1/8

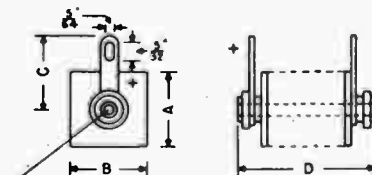
*...For complete protection in Radio and Television circuits*

Radio Receptor Selenium Rectifiers are built and tested to eliminate arc-over danger, short circuits and heating at the center contact point. This "Safe Center" feature is an added safety factor that gives protection during mounting and in use.

Because of their consistent dependability under all conditions — including high humidity — these bright green units are demanded by an ever increasing number of engineers and servicemen in the U.S. and throughout the world. The rectifiers listed to the right are normally stocked by distributors. Many other types available for special applications.

See your local distributor for your requirements.

\*Stud mounted—8-32 x 2" overall. Current ratings are for a maximum plate temperature of 75° C when the rectifiers are new, in a maximum ambient temperature of 45° C. Recommended plate temperature for new rectifiers is 70° C. Output current ratings are based on R.M.S. rectifier current not in excess of 2.5 times rated output current.



CLEARANCE FOR NO. 6 MACHINE SCREW (RETMA STANDARD).

*Semiconductor Division*  
**RADIO RECEPTOR COMPANY, INC.**

*Subsidiary of General Instrument Corporation*

Really



Reliable

*In Radio and Electronics Since 1922*



INDUSTRIAL TYPE POWER UNITS — SINGLE PHASE FULL WAVE

OUTPUT DC VOLTS	MAX. OUTPUT DC AMPS.	MAX. INPUT AC VOLTS	CIRCUIT	CATALOG NUMBER	NO. OF MOUNTING STUDS	APPROXIMATE DIMENSIONS IN INCHES				
						OVERALL LENGTH	MOUNTING DIMENSION	CELL HORIZONTAL	CELL VERTICAL	TERMINAL EXTENSION
0-10	.4	26†	C.T. Fig. 1	D101	1	1 1/4"	1 3/8"	1.0	1.0	3/8"
	1.5			D102	1	2 1/4"	1 3/8"	1.6	1.6	3/8"
	4.5			D103	1	2 1/4"	1 3/8"	2.6	2.6	3/8"
	8.0			D104	1	3 3/8"	2 3/8"	3.9	3.9	1 1/2"
	16.0			D105	2	3 3/8"	2 3/8"	7.8	3.9	1 1/2"
	24.0			D106	3	3 3/8"	2 3/8"	11.82	3.9	1 1/2"
	32.0			D107	4	3 1/4"	2 1/8"	7.87	7.87	1 1/2"
0-22	.4	26	Br. Fig. 2	D108	1	2 1/4"	1 3/8"	1.0	1.0	3/8"
	1.5			D109	1	2 1/4"	2 3/8"	1.6	1.6	3/8"
	4.5			D110	1	2 1/4"	2 3/8"	2.6	2.6	3/8"
	8.0			D111	1	4 3/8"	3 3/8"	3.9	3.9	1 1/2"
	16.0			D112	2	4 3/8"	3 3/8"	7.8	3.9	1 1/2"
	24.0			D113	3	4 3/8"	3 3/8"	11.82	3.9	1 1/2"
	32.0			D114	4	5"	4"	7.87	7.87	1 1/2"
0-42	.4	52	Br. Fig. 2	D115	1	3 3/8"	2 3/8"	1.0	1.0	3/8"
	1.5			D116	1	4 1/8"	3 1/8"	1.6	1.6	3/8"
	4.5			D117	1	4 3/8"	3 3/8"	2.6	2.6	3/8"
	8.0			D118	1	6 3/8"	5 3/8"	3.9	3.9	1 1/2"
	16.0			D119	2	6 3/8"	5 3/8"	7.8	3.9	1 1/2"
	24.0			D120	3	6 3/8"	5 3/8"	11.82	3.9	1 1/2"
	32.0			D121	4	8 3/8"	7 3/8"	7.87	7.87	1 1/2"
0-65	1.5	78	Br. Fig. 2	D122	1	6"	5"	1.6	1.6	3/8"
	4.5			D123	1	6 3/8"	5 3/8"	2.6	2.6	3/8"
	8.0			D124	1	8 3/8"	7 3/8"	3.9	3.9	1 1/2"
	16.0			D125	2	8 3/8"	7 3/8"	7.8	3.9	1 1/2"
	0-87			1.5	104	Br. Fig. 2	D126	1	7 3/8"	6 3/8"
4.5		D127	1	7 3/8"			6 3/8"	2.6	2.6	3/8"
8.0		D128	1	10 3/8"			9 3/8"	3.9	3.9	1 1/2"
16.0		D129	2	10 3/8"			9 3/8"	7.8	3.9	1 1/2"
0-107		.4	130	Br. Fig. 2			D130	1	5 7/8"	4 7/8"
	1.0	D131			1	7 1/4"	6 1/4"	1.3	1.3	3/8"
	1.5	D132			1	8 3/8"	7 3/8"	1.6	1.6	3/8"
	4.5	D133			1	8 3/8"	7 3/8"	2.6	2.6	3/8"
	8.0	D134			1	12 3/4"	11 3/4"	3.9	3.9	1 1/2"
	16.0	D135			2	12 3/4"	11 3/4"	7.8	3.9	1 1/2"
0-130	.4	156	Br. Fig. 2	D136	1	6 1/8"	5 1/8"	1.0	1.0	3/8"
	1.0			D137	1	8 1/4"	7 1/4"	1.3	1.3	3/8"
	1.5			D138	1	9 1/8"	8 1/8"	1.6	1.6	3/8"
	4.5			D139	1	11"	10"	2.6	2.6	3/8"
	8.0			D140	1	14 1/8"	13 1/8"	3.9	3.9	1 1/2"
	16.0			D141	2	14 1/8"	13 1/8"	7.8	3.9	1 1/2"

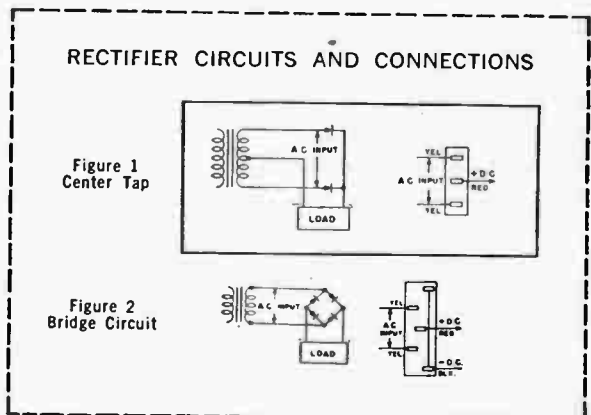
NOTES:

\*10-32 stud extends to one side only — one mounting bracket used.  
†Across outer legs of center tap connection.

MOUNTING: Mounting studs are centrally located on the cell and where more than one is used the measurement is 3 1/4" between centers. A 10-32 stud is used with cell sizes up to 3.9" square and a 1/8"-18 stud is used with the larger cell sizes.

The stacks shown above are adaptable for a wide range of common applications. The ratings are for stacks mounted with cells in a vertical position with normal convection cooling, and in an ambient temperature of 35°C (95°F) with a resistive or inductive load. Many other types are available for special requirements.

Developed by Siemens Organization of West Germany and now manufactured exclusively in the U.S.A. by Radio Receptor Co., Petti-Sel rectifiers are the result of an improved vacuum process requiring no artificial barrier layer. These rectifiers have an estimated life of 100,000 hours, low forward voltage drop, and much smaller cell sizes than conventional units of the same ratings.



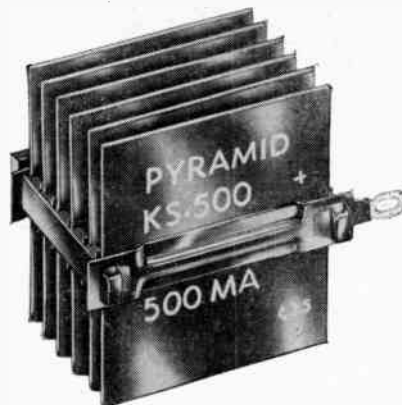
Semiconductor  
Division



**RADIO RECEPTOR COMPANY, INC.**  
Subsidiary of General Instrument Corporation



**PYRAMID ELECTRIC COMPANY • NORTH BERGEN, NEW JERSEY**  
**THE BIG NAME IN CAPACITORS AND SELENIUM RECTIFIERS TODAY**



### TECHNICAL CHARACTERISTICS

Power supply requirements for every radio, television and instrument use—ranging from small AC-DC receivers to large-screen TV—can be met with available Kool-Sel rectifiers. A summary of the important engineering characteristics of each Kool-Sel type is given on this page. You should consider the use of Kool-Sel components for the following applications:

**RADIOS and RADIO-PHONOGRAPHS** — Low-cost, efficient rectifiers for radios and radio-phonograph combinations are Kool-Sel KS-65, KS-75 and KS-150. The needs of most 5-tube chassis are met by the KS-65, while the KS-75 and KS-150 are used in sets with larger current requirements.

**RADIO ACCESSORIES** — TV boosters, UHF converters, phonograph oscillators, intercoms and the like gain compactness and dependability when you use small, cool-running Kool-Sel. Type KS-65 is suitable for most of these uses.

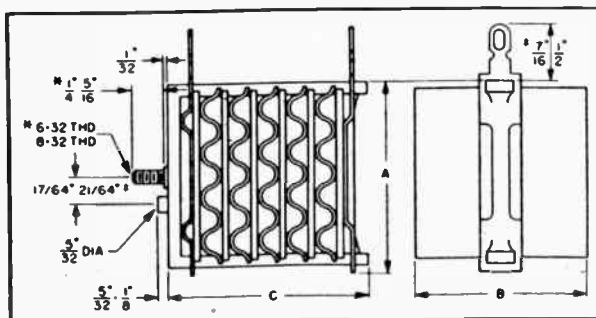
**TELEVISION** — High-voltage power supplies in television receivers — including color sets — use Kool-Sel rectifiers, Catalog Nos. KS-200, KS-250, KS-300, KS-350, KS-400 and KS-500. These rectifiers, used in voltage doubler or voltage tripler circuits, provide proper B-plus voltage, eliminating the size, cost, weight and hum problems of power transformers.

**LABORATORY INSTRUMENTS, POWER SUPPLIES, AMPLIFIERS** — Rectified high voltage through the use of voltage doubler and tripler circuits, for equipment where current requirements run as high as 500ma, may be provided with Kool-Sel rectifiers. Catalog Nos. KS-200, KS-250, KS-300, KS-350, KS-400 and KS-500 will be found useful for laboratory power supplies, DC filament supplies, motion picture projectors, amplifiers, test equipment and other specialized uses.

### DIMENSIONS

IN INCHES

Catalog No.	A	B	C
KS-65H	1	1 $\frac{1}{16}$	1 $\frac{1}{16}$
KS-75	1	1 $\frac{1}{16}$	2 $\frac{3}{32}$
KS-75N	1	1	$\frac{3}{4}$
KS-100	1	1	2 $\frac{1}{2}$
KS-150	1 $\frac{1}{32}$	1	1 $\frac{1}{2}$
KS-200	1 $\frac{1}{32}$	1 $\frac{1}{32}$	1 $\frac{1}{2}$
KS-250	1 $\frac{1}{32}$	1 $\frac{1}{2}$	1 $\frac{1}{2}$
KS-300	1 $\frac{1}{32}$	2 $\frac{1}{32}$	1 $\frac{1}{2}$
KS-300W	1 $\frac{1}{32}$	1 $\frac{1}{32}$	2
KS-350	2 $\frac{1}{32}$	1 $\frac{1}{2}$	1 $\frac{1}{2}$
KS-350W	1 $\frac{1}{32}$	2 $\frac{1}{32}$	2
KS-400	2 $\frac{1}{32}$	1 $\frac{1}{2}$	1 $\frac{1}{32}$
KS-400N	2	2	1 $\frac{1}{4}$
KS-500	2	2	1 $\frac{1}{32}$



\* KS-65H, KS-75, KS-75N, & KS-100 ONLY    † KS-300W & KS-350W ONLY

For more detailed information and specific data on any type, write directly to the PYRAMID ELECTRIC COMPANY.

### CHARACTERISTICS

CATALOG NUMBER	KS65	KS75	KS100	KS150	KS200	KS250	KS300	KS350	KS400	KS400N	KS500
Maximum RMS Input Voltage	130	130	130	130	130	130	130	130	130	130	130
Maximum Inverse Peak Voltage	380	380	380	380	380	380	380	380	380	380	380
Maximum Peak Current (MA)	650	750	1000	1500	2000	2500	3000	3500	4000	4000	5000
Maximum RMS Current (MA)	162	187	250	375	500	625	750	875	1050	1050	1250
Maximum DC Current (MA)	65	75	100	150	200	250	300	350	400	400	500
Approximate Rectifier Voltage Drop	5	5	5	5	5	5	5	5	7	7	5
Minimum Series Resistance	22	22	22	15	5	5	5	5	5	5	5
Maximum Operating Plate Temperature	85° C.	85° C.	85° C.	85° C.	85° C.	85° C.	85° C.	85° C.	85° C.	85° C.	85° C.



# RCA TECHNICAL LITERATURE

THE MOST AUTHORITATIVE IN THE INDUSTRY

## • RCA RECEIVING TUBE MANUAL

18 (8 3/4" x 5 3/4") — 352 pages. Revised, expanded, and brought up to date. Contains technical data on more than 575 receiving tubes, including types for black-and-white and color television and series-acting applications. Features tube theory written for the layman, application data for radio and television circuits, Resistance-Coupled Amplifier Section, and several circuits for high-fidelity audio amplifiers. Features lie-flat binding. Price 75 cents.\*



## • RCA PHOTSENSITIVE DEVICES AND CATHODE-RAY TUBES

Booklet CRPD-105 (10 7/8" x 8 3/8")—94 pages. Contains technical information on 109 RCA tubes including single-unit, twin-unit, and multiplier phototubes; flying-spot tubes; monitor, projection, transcriber, and view-finder kinescopes, and storage tubes. Price 20 cents.\*

## • RCA RECEIVING TUBES FOR AM, FM, & TELEVISION BROADCAST

Bulletin 1275-G (10 7/8" x 8 3/8") — 28 pages. Contains characteristics of more than 600 RCA entertaining receiving tubes and picture tubes. Socket connection diagrams arranged for quick and easy reference. Price 20 cents.\*



## • RCA POWER AND GAS TUBES

Bulletin PG-101-C (10 7/8" x 9 3/8") — 24 pages. Technical information on 174 RCA vacuum power tubes, rectifier tubes, thyratrons, ignitrons, magnetrons, and vacuum-gauge tubes. Includes terminal connections. Price 20 cents.\*

## • RCA PICTURE TUBES

Booklet KB-106 (10 7/8" x 8 3/8") 16 pages. Contains characteristics and base connection diagrams for RCA's complete line of picture tubes. Features an interchangeability directory on more than 150 types. Price 20 cents.\*



## • RCA INTERCHANGEABILITY DIRECTORY OF INDUSTRIAL-TYPE ELECTRON TUBES

Booklet 1D-1020A (10 7/8" x 8 3/8") — 16 pages. Lists more than 2000 type designations of 26 different manufacturers arranged in alphabetical-numerical sequence; shows the RCA Direct Replacement Type or the RCA Similar Type, when available. Price 20 cents.\*

## • RADIOTRON DESIGNER'S HANDBOOK

4th Edition—1500 pages. Comprehensive reference thoroughly covering the design of radio and audio circuits and equipment. Written for the design engineer, student, and experimenter. Contains 1000 illustrations, 2500 references, and cross-referenced index of 7000 entries. Price \$7.00\*

SP-1006C



## • RCA RECEIVING-TYPE TUBES FOR INDUSTRY AND COMMUNICATIONS

Booklet RIT-104 (10 7/8" x 8 3/8") — 20 pages. Technical information on 130 RCA special red tubes, premium tubes, computer tubes, pencil tubes, glow-discharge tubes, small thyratrons, low-microphonic amplifier tubes, and other special types. Includes socket connection diagrams. Price 20 cents.\*

## • RCA TUBE HANDBOOK

HIB-3 (7 7/8" x 5") Five deluxe 2-inch capacity binders imprinted in gold. The bible of the industry — contains over 3100 pages of loose-leaf data and curves on RCA receiving tubes, picture tubes, power tubes, cathode-ray tubes, phototubes, special tubes, and semiconductor devices. Available on subscription basis. Price \$17.50\* including service for first year. Write to Commercial Engineering for descriptive folder and order form.



## • RCA TRANSISTORS AND SEMICONDUCTOR DIODES

Booklet SCD-108 (10 7/8" x 8 3/8")—This new 24-page booklet includes a wide variety of practical circuit diagrams which will be welcomed by experimenters, radio amateurs, hobbyists, and others who wish to build transistor projects. The booklet also contains extensive technical data on RCA's line of transistors and semiconductor diodes, an interchangeability directory listing more than 500 type designations for 27 different manufacturers, and a discussion of transistor theory written for the student and the experimenter. Price: 25 cents



## • TECHNICAL DATA BULLETINS

Complete authorized information on RCA transmitting tubes and other tubes for communications and industry. Be sure to mention tube type booklet desired. Single copy on any type free on request.

## • RCA HEADLINERS FOR HAMS

Booklet HAM-103B (10 7/8" x 8 3/8") — 4 pages. Technical information and terminal connection diagrams for 48 RCA "HAM" PREFERENCE TYPES: modulators, class C amplifiers and oscillators, frequency multipliers, rectifier tubes, thyratrons, cold-cathode (glow-discharge) tubes, and cathode-ray tubes. Single copy free on request.

## • RCA POWER-TUBE FITTINGS

Booklet PTF-1012A (10 7/8" x 8 3/8") — 24 pages. A 24-page booklet listing 39 power-tube fittings designed for supporting and cooling power tubes, and illustrating their use with power tubes made by RCA and other manufacturers. Includes exploded-view assembly drawings as well as detail drawings of all fittings. Price 25 cents.



## • RCA TRANSMITTING TUBES

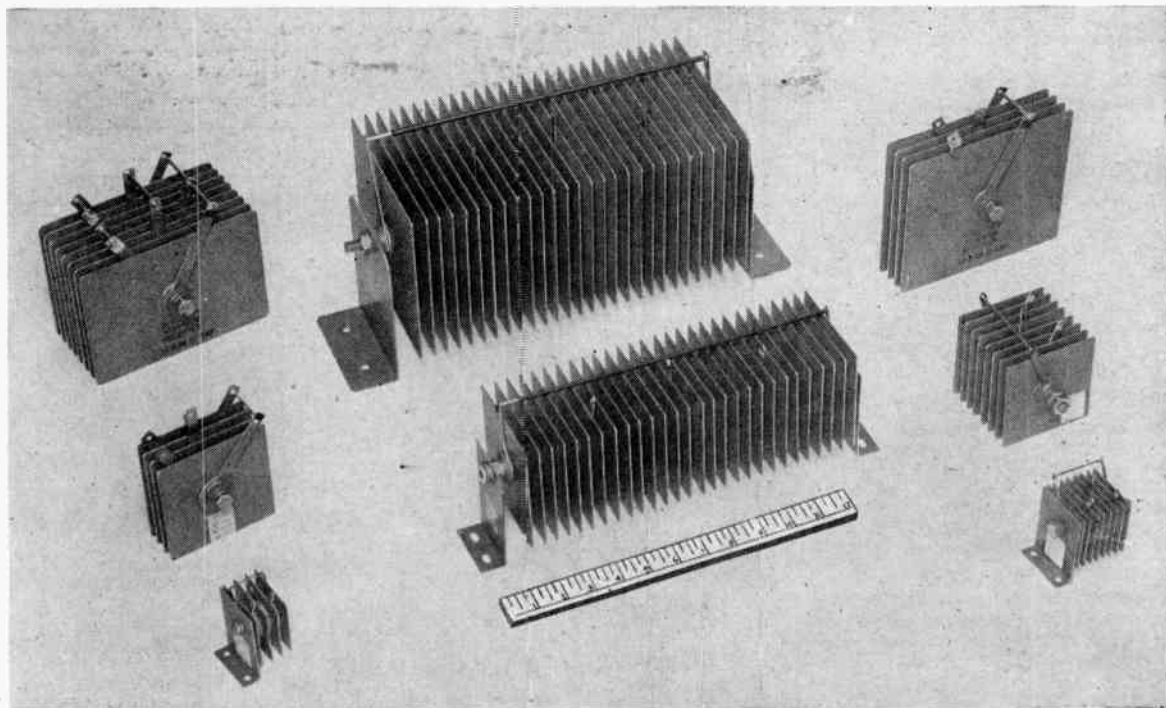
TT-4 (8 3/4" x 5 3/4") 256 pages. Written for the engineer, service technician, radio amateur, student, and experimenter. Contains basic information on generic tube types, on tube parts and materials, on tube installation and application, and on interpretation of tube data. Includes maximum ratings, typical operating values, and characteristics curves for power tubes having plate-input ratings up to 4 kilowatts, and maximum ratings and operating values for associated rectifier tubes. Contains sections on transmitter-design considerations and on rectifier circuits and filters. Features classification charts for quick, easy selection of tubes, and circuit diagrams for transmitting and industrial applications. Features lie-flat binding. Price \$1.00\*.

Copies of the publications listed above may be obtained from your RCA Tube Distrib. or direct from Commercial Engineering, Radio Corporation of America, Harrison, New Jersey.

\*Prices shown apply in U.S.A. and are subject to change without notice.

# DIRECTRON

Industrial Selenium Rectifiers, Transformers, Chokes and Power Supplies



FULL WAVE BRIDGE RECTIFIERS, SINGLE PHASE, RESISTIVE-INDUCTIVE LOADS  
ALL PRICES SHOWN ARE USER NET PRICES

Max. Amps.	18v. in—14v. out	36v. in—28v. out	54v. in—42v. out	130v. in—100v. out
1/2	\$ 1.20	\$ 2.10	\$ 3.20	\$ 6.00
1	1.50	2.40	3.80	9.00
2	2.40	3.30	5.40	12.00
3	3.00	4.20	6.60	15.00
4	3.75	7.50	11.50	25.25
6	4.50	9.00	13.00	33.00
10	6.60	12.75	20.00	42.50
12	8.20	16.25	22.50	46.00
15	10.50	21.00	30.00	60.00
20	13.25	25.50	38.00	79.50
24	16.25	32.50	45.00	86.50
30	20.00	38.00	57.00	.....
36	25.00	48.50	.....	.....

For Half-Wave, Center-Tap, Doubler, Tripler or 3-Phase, Quotations on Request  
Custom Built Stacks — 24 Hour Service

## SELENIUM RECTIFIER TRANSFORMERS

Now with 2 — 18 volt center-tapped windings. Connected in series delivers 36 volts as rated. Connected in parallel — delivers 18 volts at twice rated current. (Taps 9, 18, 27, 36 V.)

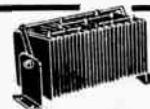
	User's Net Price
4 Amps .....	\$ 8.75
12 Amps .....	16.75
24 Amps .....	35.75
30 Amps .....	45.00
50 Amps — 9, 12, 18, 24 and 36 V. Out .....	59.75

Primary taps at 100, 105, 110 and 115 volts now available on 12 amp, 24 amp, 30 amp and 50 amp transformers. No extra charge. Custom built transformers — 48 hour service.

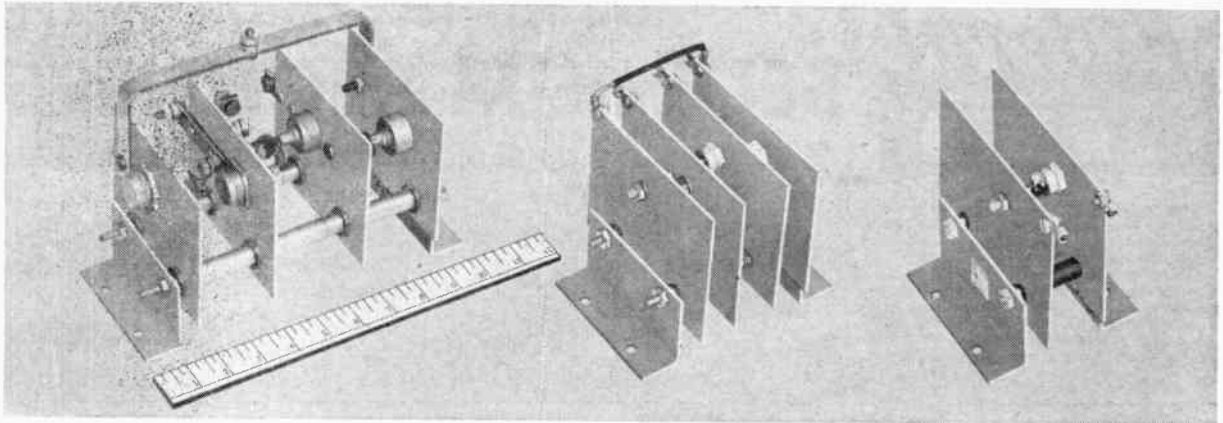
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			User's Net Price
2.5 Amps	.01 hy	.1 ohm	\$ 3.60
4 Amps	.07 hy	.6 ohm	7.95
8 Amps	.03 hy	.3 ohm	12.00
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20 Amps	.004 hy	.05 ohm	15.00
24 Amps	.004 hy	.025 ohm	29.95
50 Amps	.001 hy	.001 ohm	48.00

Mfd. by **SANFORD MILLER COMPANY**  
BROOKLYN 6, N. Y.







**DIRECTRON**



**NEW! SILICON POWER RECTIFIERS**

**FEATURES**

- High forward current (Low voltage drop)
- High efficiency (99% compared to about 75% for selenium)
- High operating temperature, 190°C (Up to 120°C ambient)
- High operating voltage (Up to 600 p.i.v.)
- No noticeable aging (Long life)
- Hermetically sealed
- Excellent regulation (4% compared to about 15% for selenium)
- Small size (Easy to fan cool)

Stock No.	Type	AC Input up to	DC Output up to	Max. Amps. Self Cooled	Max. Amps. Fan Cooled	Size and Weight	User Net
SI-HW-A	Half Wave	35v.	16v.	20	40	A	\$ 15.00
SI-HW-B	Half Wave	70v.	32v.	20	40	A	20.00
SI-HW-C	Half Wave	105v.	48v.	20	40	A	25.00
SI-HW-D	Half Wave	140v.	64v.	20	40	A	30.00
SI-HW-E	Half Wave	175v.	80v.	20	40	A	35.00
SI-HW-F	Half Wave	210v.	96v.	20	40	A	40.00
SJ-HW-A	Half Wave	35v.	16v.	60	120	B	45.00
SJ-HW-B	Half Wave	70v.	32v.	60	120	B	70.00
SJ-HW-C	Half Wave	105v.	48v.	60	120	B	80.00
SJ-HW-D	Half Wave	140v.	64v.	60	120	B	90.00
SI-CT-A	Center-tap	18-0-18v.	16v.	40	80	C	30.00
SI-CT-B	Center-tap	36-0-36v.	32v.	40	80	C	42.00
SI-CT-C	Center-tap	54-0-54v.	48v.	40	80	C	50.00
SI-CT-D	Center-tap	72-0-72v.	64v.	40	80	C	60.00
SI-CT-E	Center-tap	90-0-90v.	80v.	40	80	C	70.00
SA-BR-D	1Ø Bridge	140v.	125v.	1	—	—	9.00
SC-BR-D	1Ø Bridge	140v.	125v.	2	—	—	10.50
SC-BR-F	1Ø Bridge	280v.	250v.	2	—	—	14.00
SD-BR-D	1Ø Bridge	140v.	125v.	6	—	—	33.00
SE-BR-D	1Ø Bridge	140v.	125v.	10	—	—	40.00
SE-BR-F	1Ø Bridge	280v.	250v.	10	—	—	48.00
SI-BR-A	1Ø Bridge	36v.	32v.	40	80	D	60.00
SI-BR-B	1Ø Bridge	72v.	64v.	40	80	D	84.00
SI-BR-C	1Ø Bridge	105v.	95v.	40	80	D	96.00
SI-BR-D	1Ø Bridge	140v.	125v.	40	80	D	110.00
SK-BR-A	1Ø Bridge	36v.	32v.	75	150	—	120.00
SK-BR-B	1Ø Bridge	72v.	64v.	75	150	—	144.00
SK-BR-C	1Ø Bridge	105v.	95v.	75	150	—	165.00
SK-BR-D	1Ø Bridge	140v.	125v.	75	150	—	210.00
SK-BR-F	1Ø Bridge	210v.	190v.	75	150	—	270.00
SJ-BR-A	1Ø Bridge	36v.	32v.	130	300	E	180.00
SJ-BR-B	1Ø Bridge	72v.	64v.	130	300	E	250.00
SJ-BR-C	1Ø Bridge	105v.	95v.	130	300	E	300.00
SJ-BR-D	1Ø Bridge	140v.	125v.	130	300	E	360.00
SI-PH-A	3Ø Bridge	36v.	48v.	60	120	F	90.00
SI-PH-B	3Ø Bridge	72v.	96v.	60	120	F	125.00
SI-PH-C	3Ø Bridge	105v.	144v.	60	120	F	144.00
SI-PH-D	3Ø Bridge	140v.	188v.	60	120	F	165.00

All above ratings based on 30°C ambient. Fan-cooled ratings based on air velocity of 1000 linear ft/minute.

For resistive or inductive loads, as rated. For capacitive or battery loads, derate amperage 20%.

Doublers, triplers, 3 phase half wave and 3 phase center-tap also available.

Custom-built stacks, 24 hour service.

Size	DIMENSIONS WITH BRACKETS			Weight
	Length	Height	Width	
A	2"	6"	5"	4 oz.
B	3"	6"	5"	12 oz.
C	3"	6"	5"	16 oz.
D	6"	6"	5"	1¼ lbs.
E	8"	6"	5"	3 lbs.
F	9"	7"	5"	2¼ lbs.

**Mfd. by SANFORD MILLER COMPANY** BROOKLYN 6, N. Y.



# RADIO - TELEVISION SELENIUM RECTIFIERS

FOR USE IN RADIO — TV — ELECTRONICS

Federal's HI-DENSITY rectifiers make servicing simpler than ever . . . save shelf, bench and kit space . . . save time on calls . . . make calls more profitable . . . all with just five rectifier types. The efficiency, dependability and long life of these lighter, smaller-plate, high temperature rectifiers by FEDERAL are made by a new exclusive process and have been proved-in by the most rugged service testing.



FTR Catalog No.	Max. D-C Ma.	Max. RMS Volts	Plate Size	Mfg. "H" Dim. (Max.)	Application
<b>FEDERAL'S HI-DENSITY SELENIUM RECTIFIER LINE</b>					
*1101 A-H	65-100	130	1"	1-1/8"	B+ Television
*1236 A-H	250-300	130	1-1/4"	1-3/8"	B+ Television
*1241 A-H	350-400	130	1-17/32"	1-1/4"	B+ Television
*1237 A-H	450-500	130	1-17/32"	1-3/8"	B+ Television
1207 A-H	550-600	130	1-3/4"	1-3/8"	B+ Television
<b>FEDERAL'S UNIVERSAL SELENIUM RECTIFIER LINE</b>					
1386 (1263 A)	65	130	11/16" sq.	1-3/16"±1/32"	B+ AC-DC (5 tube)
*1236 A	300	130	1-5/8" sq.	1-3/8"±1/32"	B+ Television
*1238 A	350	130	1-3/4" sq.	1-3/8"±1/32"	B+ Television
*1241 A	400	130	2" sq.	1-1/4"±1/32"	B+ Television
*1237 A	500	130	2" sq.	1-3/8"±1/32"	B+ Television
<b>FEDERAL'S STANDARD SELENIUM RECTIFIER LINE</b>					
1159	20	130	3/8" dia.		B+ Booster-Bias
*1002 A	65	130	1" sq.	9/16"	B+ AC-DC (5 Tube)
*1003 A	75	130	1" sq.	3/4"	B+ 3 Way Radio
*1101 A	100	130	1" sq.	1-1/8"	B+ Radio-TV
*1004 A	100	130	1-13/64"x1-9/32"	3/4"	B+ Radio-TV
*1005 A	150	130	1-13/64"x1-9/32"	1"	B+ Radio-TV
*1006 A	200	130	1-17/32" sq.	1"	B+ Television
*1028 (1010)	250	130	1-17/32" sq.	1-1/4"	B+ Booster-Bias
1090 A	300	130	1-17/32" sq.	2-7/32"	B+ Television
1023 A (1206)	350	130	1-3/4" sq.	2-7/32"	B+ Television
1130 (1056)	400	130	2" sq.	1-1/4"	B+ Television
1179 (1021)	500	130	2" sq.	2-7/32"	B+ Television
<b>FEDERAL'S SPECIAL PURPOSE RECTIFIERS</b>					
1015	150	25	1" sq.	1" sq.	Filament Supply
*1512 (1018)	1600	18	2-1/2" sq.	15/16"	Power Supply
1014	100	172	1-9/32" max.	1" sq.	Battery Charger
1007	75	172	1" sq.	2-1/16"	Power Supply
1008	100	172	1-17/32" sq.	2-1/16"	High Voltage
1009	200	172	1-13/64" sq.	2-21/32"	Power Supply
1022	450	172	2" sq.	2-13/16"	High Voltage
*1016	300	25	1-13/64"x1-9/32"	3/4"	Power Supply
*1017	600	25	1-17/32" sq.	3/4"	Filament Supply
*1013	700	18	1-17/32" sq.	1/4"	Filament Supply
*1001	75	20	1" sq.	3/8"	Bias-Rectifier
1265	65	130	1" sq.	±5/16" + 1/16" - 0	AC-DC (Radio)
1090 AP	300	130	1-17/32" sq.	±1-5/8" ± 1/16"	Plug-in Type
1356 AP	350	130	1-5/8" sq.	±1-13/16" ± 1/16"	B+ Television
1319 A	600	195	2" sq.	3-1/2"	B+ Color Television
1090 C	300	130	1-17/32" sq.	2-7/32"	B+ Television
1179 C (1021 C)	500	130	2" sq.	2-7/32"	B+ Television

Letter "A" after catalog number indicates locking lug.

\*Eyelet construction.

6/32" x 4-1/2" Mounting Bolts for use in mounting two rectifiers in tandem are available.

† Terminal to terminal dimensions.

Order bolts by Part #IDR-6131; nuts by Part #IDR-6015.

**Prompt Delivery of Federal Products Made From Our Coast-to-Coast Warehouses:**  
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Semi-Conductor Division  
**Federal Telephone and Radio Company**

A Division of INTERNATIONAL TELEPHONE AND TELEGRAPH CORPORATION  
CLIFTON, N. J.

# "PACKAGED POWER" SELENIUM RECTIFIERS



Federal has America's largest stock of Rectifiers for all popular applications . . . available for prompt shipment. Special design data available upon request.

Catalog Number	Old Catalog Number	Rectifier Stack Code Number	Max. D.C. Output		Max. A.C. Input Volts	Rectifier Stack Dimensions		
			Volts	Amps.		'A'	'B'±1/16"	'C'
010	2100S	106C1SAX1	10	3	13	3"	1-1/2"	3"
011	—	*107C1SAX1	10	5	13	4"	1-1/2"	4"
012	2101S	133C1SAX1	10	6	13	4"	1-3/4"	4"
013	—	*135C1AX1	10	8	13	6"	1-9/16"	5"
014	2102	136C1AX1	10	12	13	6"	1-3/4"	5"
015	—	*169C1AX1	10	16	13	10"	2-3/16"	6"
016	—	*170C1AX1	10	24	13	10"	2-3/8"	6"
210	—	*142B1AX1	20	1.5	26	2"	1-7/8"	2"
211	2103S	106B1SAX1	20	3	26	3"	2-1/16"	3"
212	—	*107B1SAX1	20	5	26	4"	2-1/16"	4"
213	2104S	133B1SAX1	20	6	26	4"	2-11/16"	4"
214	—	*135B1AX1	20	8	26	6"	2-1/8"	5"
215	2105	136B1AX1	20	12	26	6"	2-3/4"	5"
216	—	*169B1AX1	20	16	26	10"	2-7/8"	6"
217	—	*170B1AX1	20	24	26	10"	3-1/2"	6"
310	2026S	106B2SAX1	40	3	52	3"	3-9/16"	3"
311	—	*107B2SAX1	40	5	52	4"	3-9/16"	4"
312	2107S	133B2SAX1	40	6	52	4"	5"	4"
313	—	*135B2AX1	40	8	52	6"	3-13/16"	5"
314	2108	136B2AX1	40	12	52	6"	5-1/4"	5"
315	—	*169B2AX1	40	16	52	10"	4-1/2"	6"
316	—	*170B2AX1	40	24	52	10"	5-15/16"	6"
410	2118S	106B3SAX1	60	2.6	78	3"	4-1/2"	3"
411	—	*107B3SAX1	60	4.5	78	4"	4-1/2"	4"
412	2033S	133B3SAX1	60	6	78	4"	6-3/4"	4"
413	—	*135B3AX1	60	8	78	6"	5"	5"
414	2085	136B3AX1	60	12	78	6"	7-5/16"	5"
415	—	*169B3AX1	60	16	78	10"	6-1/16"	6"
416	—	*170B3AX1	60	24	78	10"	8-5/16"	6"
510	2109S	106B4SAX1	80	2.6	104	3"	5-1/2"	3"
511	—	*107B4SAX1	80	4.5	104	4"	5-1/2"	4"
512	2110S	133B4SAX1	80	6	104	4"	8-9/16"	4"
513	—	*135B4AX1	80	8	104	6"	6-3/16"	5"
514	2111	136B4AX1	80	12	104	6"	9-5/16"	5"
515	—	*169B4AX1	80	16	104	10"	7-5/8"	6"
516	—	*170B4AX1	80	24	104	10"	10-11/16"	6"
710	—	*104B5AX1	100	.6	130	1-1/2"	4-3/16"	1-1/2"
711	2112	139B5AX1	100	1	130	2"	5-3/8"	2"
712	2113S	106B5SAX1	100	2.4	130	3"	6-5/8"	3"
713	—	*107B5SAX1	100	4	130	4"	6-5/8"	4"
714	2114S	133B5SAX1	100	6	130	4"	10-9/16"	4"
715	—	*135B5SAX1	100	8	130	6"	7-9/16"	5"
716	—	*136B5SAX1	100	12	130	6"	11-1/2"	5"
810	2115	103B6AX1	120	.3	156	1-1/4"	4-3/4"	1-1/4"
811	2036	104B6AX1	120	.6	156	1-1/2"	4-7/8"	1-1/2"
812	2116	139B6AX1	120	1	156	2"	6-7/16"	2"
813	2038S	106B6SAX1	120	2.4	156	3"	7-5/8"	3"
814	—	*107B6SAX1	120	4	156	4"	7-5/8"	4"
815	2117S	133B6SAX1	120	6	156	4"	12-5/16"	4"
816	—	135B6AX1	120	8	156	6"	8-3/4"	5"
817	—	*136B6AX1	120	12	156	6"	13-1/2"	5"

\*Asterisks indicate new Type Rectifiers. Bold face type indicates Rectifiers recommended for stocking. Note: Ratings for 35° C Ambient; Resistive or Inductive loads.

## FEDERAL'S CONTACT PROTECTORS

- End arcing contacts
- Stop erosion of switch contact surfaces
- Extend contact life by more than 1000 times
- Eliminate circuit failure and interference caused by arcing contacts



These Contact Protectors will accommodate all signal and telephone type relays which operate up to 40 times per second and draw up to 600 ma operating current at 150 volts AC or DC.

FOR DC APPLICATIONS					FOR AC APPLICATIONS						
Max. Volts	Max. Coil Current Ma.	Minimum Volts	Federal Code # (Paper Tube Only)	Dimensions		Max. Volts	Max. Coil Current Ma.	Minimum Volts	Federal Code # (Paper Tube Only)	Dimensions	
				A	B					A	B
22	100	15	8A1PS1	25/64"	5/8"	26	100	15	8A1PS1	25/64"	5/8"
22	200	15	15A1PS1	1/2"	5/8"	26	200	15	15A1PS1	1/2"	5/8"
44	200	23	8A2PS1	25/64"	3/4"	52	200	27	8A2PS2	25/64"	3/4"
44	500	23	15A2PS1	1/2"	3/4"	52	400	27	15A2PS2	1/2"	3/4"
66	250	45	8A3PS2	25/64"	3/4"	78	200	53	8A3PS3	25/64"	3/4"
66	500	45	15A3PS2	1/2"	3/4"	78	400	53	15A3PS3	1/2"	3/4"
88	250	67	8A4PS2	25/64"	3/4"	104	200	79	8A4PS4	25/64"	13/16"
88	500	67	15A4PS2	1/2"	3/4"	104	400	79	15A4PS4	1/2"	13/16"
110	250	89	8A5PS2	25/64"	13/16"	130	200	105	8A5PS5	25/64"	13/16"
110	600	89	15A5PS2	1/2"	13/16"	130	400	105	15A5PS5	1/2"	13/16"
132	250	111	8A6PS2	25/64"	13/16"	156	200	131	8A6PS6	25/64"	11/8"
132	600	111	15A6PS2	1/2"	13/16"	156	400	131	15A6PS6	25/64"	11/8"
154	250	133	8A7PS2	25/64"	13/16"						
154	600	133	15A7PS2	1/2"	13/16"						



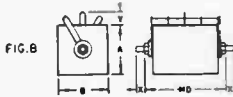
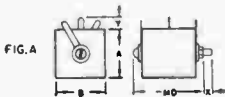
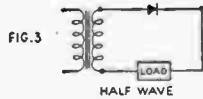
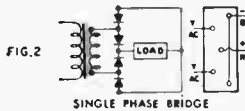
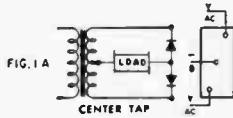
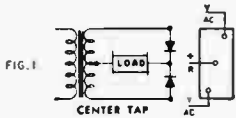
# International Rectifier

C O R P O R A T I O N

## INDUSTRIAL POWER RECTIFIERS



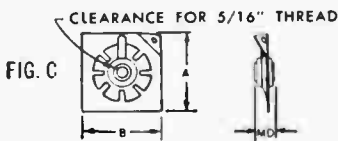
Manufactured by the World's Largest Supplier of Industrial Rectifiers. Ratings: to 250 KW, 50 ma to 2,300 amperes and up. 6 volts to 30,000 volts and up. Efficiency to 87%. Power factor to 95%.



Stock Number	Code Number	Output		Max. Input AC Volts	Circuit & Connecting Diag. Fig.	Dimensions (Inches)					
		DC Volts	DC Amp.			Fig.	A	B	MD*	X	Y
JD-500G	B1C1SDAGX	0.4	13/26	1	A	1 1/4	1 1/4	1 1/2	3/8	3/8	8-32
JD-501G	C1C1SOAGX	0.7	13/26	1	A	1 1/2	1 1/2	1 1/2	3/8	3/8	8-32
JD-3011	L1C1SOAGX	1.5	13/26	1	A	2	2	1 3/8	3/8	3/8	1/2-20
JD-503G	O1C1SOAGX	3.0	13/26	1	A	3	3	2	1/2	3/8	3/8-16
JD-504P	P1C1SOAGX	5.5	13/26	1	A	4	4	2	1/2	3/8	3/8-16
JD-505G	F1C1SDAGX	9.5	13/26	1	A	6	5	2 1/2	3/8	1 1/8	3/8-16
JD-506G	H1C1SDAGX	15.0	13/26	1	A	7 1/4	6 1/4	2 1/2	3/8	1 1/4	3/8-16
JD-4346B	F1J3N0BKX	30.0†	16.5/33	1A	B	6	5	4 1/4	3/4	1 1/4	3/8-16
JD-507G	B1B1SOAGX	0.4	26	2	A	1 1/4	1 1/4	1 1/2	3/8	3/8	8-32
JD-508G	C1B1SOAGX	0.7	26	2	A	1 1/2	1 1/2	1 1/2	3/8	3/8	8-32
JD-3022	L1B1SOAGX	1.5	26	2	A	2	2	1 7/8	3/8	3/8	1/2-20
JD-510G	O1B1SOAGX	3.0	26	2	A	3	3	2 1/2	1/2	3/8	3/8-16
JD-511P	P1B1SOAGX	5.5	26	2	A	4	4	2 3/4	1/2	3/8	3/8-16
JD-512G	F1B1SOAGX	9.5	26	2	A	6	5	3 1/4	3/4	1 1/4	3/8-16
JD-513G	H1B1SOAGX	15.0	26	2	A	7 1/4	6 1/4	3 1/4	3/4	1 1/4	3/8-16
JD-514G	B2B1SDBGX	0.4	52	2	B	1 1/4	1 1/4	2 1/8	3/8	3/8	8-32
JD-515G	C2B1SDBGX	0.7	52	2	B	1 1/2	1 1/2	2 1/8	3/8	3/8	8-32
JD-3023	L2B1SDBGX	1.5	52	2	B	2	2	3	3/8	3/8	1/2-20
JD-517G	D2B1SDBGX	3.0	52	2	B	3	3	4 1/8	1/2	3/8	3/8-16
JD-518P	P2B1SDBGX	5.5	52	2	B	4	4	4 1/8	1/2	3/8	3/8-16
JD-519G	F2B1SDBGX	9.5	52	2	B	6	5	5 1/2	3/4	1 1/4	3/8-16
JD-520G	H2B1SDBGX	15.0	52	2	B	7 1/4	6 1/4	5 1/2	3/4	1 1/4	3/8-16
JD-9317	O3B1SDBGX	2.4	78	2	B	3	3	5 1/4	3/4	3/8	3/8-16
JD-9318P	P3B1SDBGX	4.2	78	2	B	4	4	5 1/4	3/4	3/8	3/8-16
JD-9319	F3B1SDBGX	8.5	78	2	B	6	5	7 1/4	3/4	1 1/4	3/8-16
JD-9320	D4B1SDBGX	2.4	104	2	B	3	3	7 3/8	3/4	3/8	3/8-16
JD-9321P	P4B1SDBGX	4.2	104	2	B	4	4	7 3/8	3/4	3/8	3/8-16
JD-9322	F4B1SDBGX	8.5	104	2	B	6	5	10 1/4	3/4	1 1/4	3/8-16
JD-3012	B5B1SDBGX	0.3	130	2	B	1 1/4	1 1/4	4 1/8	3/8	3/8	8-32
JD-3007	C5B1SDBGX	0.6	130	2	B	1 1/2	1 1/2	4 1/8	3/8	3/8	8-32
JD-3008	L5B1SDBGX	1.2	130	2	B	2	2	6 1/4	3/8	3/8	1/2-20
JD-3009	O5B1SDBGX	2.4	130	2	B	3	3	8 1/8	1/2	3/8	3/8-16
JD-3010P	P5B1SDBGX	4.2	130	2	B	4	4	8 1/8	1/2	3/8	3/8-16
JD-3013	F5B1SDBGX	8.5	130	2	B	6	5	12 3/8	3/4	1 1/8	3/8-16
JD-3014	H5B1SDBGX	13.0	130	2	B	7 1/4	6 1/4	12 3/8	3/4	1 1/8	3/8-16
JD-3015	B6B1SDBGX	0.3	156	2	B	1 1/4	1 1/4	5 1/8	3/8	3/8	8-32
JD-3016	C6B1SDBGX	0.6	156	2	B	1 1/2	1 1/2	5 1/8	3/8	3/8	8-32
JD-3017	L6B1SDBGX	1.2	156	2	B	2	2	7 3/8	3/8	3/8	1/2-20
JD-3018	O6B1SDBGX	2.4	156	2	B	3	3	10 1/4	1/2	3/8	3/8-16
JD-3019P	P6B1SDBGX	4.2	156	2	B	4	4	10 1/4	1/2	3/8	3/8-16
JD-3020	F6B1SDBGX	8.5	156	2	B	6	5	15	3/4	1 1/8	3/8-16
JD-3021	H6B1SDBGX	13.0	156	2	B	7 1/4	6 1/4	15	3/4	1 1/8	3/8-16

† Rated 100 amp DC for fast battery charging when fan cooled at 800 linear feet/min.  
All ratings for Ambient Temperature of 35°C \* Tolerance: ± 1/32"

## BATTERY CHARGING TYPES



JD-116G	D-116G	2	26	3	C	3	3	1/2	Eyelet type
JD-116G**	D-116G**	4	13/26	1	C	3	3	1/2	Eyelet type
JD-117P	D-117P	2.7	26	3	C	4	4	1/2	Eyelet type
JD-117P**	D-117P**	5.5	13/26	1	C	4	4	1/2	Eyelet type
JD-241G	D-241G	6	26	3	C	6	5	1/2	Eyelet type
JD-241G**	D-241G**	12	13/26	1	C	6	5	1/2	Eyelet type
JD-240G	D-240G	9	26	3	C	7 1/4	6 1/4	1 1/2	Eyelet type
JD-240G**	D-240G**	18	13/26	1	C	7 1/4	6 1/4	1 1/2	Eyelet type

\*\* Two stacks of this type number required.

A WORLD OF DIFFERENCE



THROUGH RESEARCH

# International Rectifier

C O R P O R A T I O N

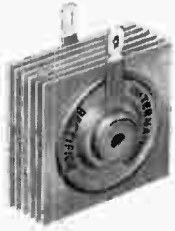
El Segundo, California • In Canada: Atlas Radio Corp., Ltd., Toronto, Ontario

Descriptive literature available on request. Write Product Information Department on your letterhead.

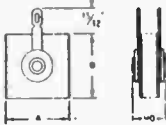
THE WORLD'S LARGEST SUPPLIER OF INDUSTRIAL METALLIC RECTIFIERS



• TV AND RADIO RECTIFIERS



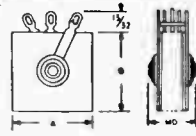
The basic replacement rectifier line offering the widest range in the industry. Input ratings from 25 to 195 volts AC and up. DC output current 10 to 1,200 MA. Also useful for amateur and experimental applications.



SINGLE PLATE HALF WAVE RECTIFIERS



These rectifiers are used for small power applications. Voltage regulation of 15% to 20% may be realized. Ratings shown are for resistive load.



Catalog Number	Max DC MA	Max RMS Volts	Min Series Resistor Ohms	Dimensions			Catalog Number
				Nominal		Max	
				A	B		
Q1H	65	25	47	.67"	.67"	3/4"	Q1H
A1H	100	25	22	1"	1"	3/4"	A1H
B1H	150	25	15	1.2"	1.2"	3/4"	B1H
C1H	250	25	5	1.5"	1.5"	3/4"	C1H
M1H	500	25	5	2"	2"	3/4"	M1H

• FULL WAVE BRIDGE RECTIFIERS

Q1B	100	25	.67"	.67"	3/4"	Q1B
Q4B	100	130	.67"	.67"	1 1/8"	Q4B
A1B	180	25	1"	1"	3/4"	A1B
B1B	300	25	1.2"	1.2"	3/4"	B1B
C1B	600	25	1.5"	1.5"	3/4"	C1B
M1B	1200	25	2"	2"	3/4"	M1B

Trade discounts apply only to list price items. Prices subject to change without notice.

• HIGH VOLTAGE CARTRIDGE RECTIFIERS



These rectifiers are designed with ferule terminals for quick insertion into, and withdrawal from, standard fuse clips. Recommended for high voltage power supplies where long life and extreme reliability are of prime importance.

standard types							
Catalog Number	Max DC MA	Max RMS Volts	Min Series Resistor Ohms	Dimensions			Catalog Number
				Nominal		Max	
				A	B		
RS050	50	130	22	.67"	.67"	3/4"	RS050
RS065	65	130	22	1"	1"	3/4"	RS065
RS075	75	130	22	1"	1"	3/4"	RS075
RS100	100	130	22	1.2"	1.2"	3/4"	RS100
RS150	150	130	15	1.2"	1.2"	1 1/8"	RS150
6RS150	150	156	15	1.2"	1.2"	1 1/8"	6RS150
RS200	200	130	5	1.5"	1.5"	1 1/8"	RS200
RS250	250	130	5	1.5"	1.5"	1 1/8"	RS250
6RS250	250	156	5	1.5"	1.5"	1 1/8"	6RS250
RS300SL	300	130	5	1.5"	1.5"	2 1/8"	RS300SL
RS350SL	350	130	5	2"	2"	1 1/8"	RS350SL
6RS350SL	350	156	5	2"	2"	1 1/8"	6RS350SL
RS400SL	400	130	5	2"	2"	1 1/8"	RS400SL
RS450SL	450	130	5	2"	2"	2 1/8"	RS450SL
RS500SL	500	130	5	2"	2"	2 1/8"	RS500SL
6RS500SL	500	156	5	2"	2"	2 1/8"	6RS500SL
RS1000S	1000	130	2	3"	3"	3 1/8"	RS1000S

universal replacement type

MR300	300	130	5	1.5"	1.5"	1 1/8"	MR300
RS350	350	130	5	2"	2"	1 1/8"	RS350
RS400	400	130	5	2"	2"	1 1/8"	RS400
MR500	500	130	5	2"	2"	1 1/8"	MR500

• PHOTOELECTRIC CELLS



International's self-generating selenium photo-cells are supplied mounted or unmounted and are available in custom and standard sizes. Optimum-load resistance range 10 to 10,000 ohms. Output in average sunlight from .2 MA to 60 MA.

Type	Style	Cell Size	Average Output (μA)	Type
A-15	Unmounted	2" diam.	750	A-15
A-10	Unmounted	1 3/4" diam.	500	A-10
A-5	Unmounted	1 1/8" diam.	250	A-5
B-15	Unmounted	1 1/8" x 1 1/8"	750	B-15
B-10	Unmounted	1 1/8" x 3/8"	350	B-10
B-5	Unmounted	1 1/8" x 4/16"	220	B-5
B-2	Unmounted	23/32" x 3/16"	75	B-2
A-15M	Mounted	2" diam.	750	A-15M
A-10M	Mounted	1 3/4" diam.	350	A-10M
A-5M	Mounted	1 1/8" diam.	220	A-5M
B-10M	Mounted	1 1/8" x 3/8"	350	B-10M
**DP-2	Mounted	1 1/2" x 3/16"	24	**DP-2
**DP-3	Mounted	3/8" x 3/16"	60	**DP-3
**DP-5	Mounted	1 1/16" x 1 1/16"	600	**DP-5
B-2M	Mounted	23/32" x 3/16"	55	B-2M

\* At 100 ft. candles illumination & 100 ohm external resistance. \*\* Hermetically sealed.

PB-1 The Use of Selenium Photocells & Sun Batteries PB-1

A WORLD OF DIFFERENCE THROUGH RESEARCH

# International Rectifier CORPORATION

El Segundo, California • In Canada: Atlas Radio Corp., Ltd., Toronto, Ontario

Descriptive literature available on request. Write Product Information Department on your letterhead.

THE WORLD'S LARGEST SUPPLIER OF INDUSTRIAL METALLIC RECTIFIERS



# SILICON and SELENIUM Rectifiers

Sarkes Tarzian area type silicon rectifiers are made by a special process that provides optimum forward to reverse ratios and long useful life. Current ratings for half wave application range from 500 milliamperes dc to 15 amperes dc and voltage ratings per unit range from 50 to 400 volts peak inverse. Small size coupled with high efficiency and allowable high ambient temperatures make silicon rectifiers the practical component for most applications that require dc power. Our staff of competent power conversion engineers is ready to consider your application for prompt recommendations. Write, wire or phone.

**Type M** silicon rectifiers are rated at 500 milliamperes dc with peak inverse voltage ratings of 100 to 400 volts. Connection is made by means of end ferrules that fit standard fuse clips. Low cost holders are available.

**Type N**—Four basic terminal arrangements are available in the N series of silicon rectifiers. (1) Axial leads, (2) Axial stud and lead, (3) Axial stud and lug, (4) Axial studs. The convection cooled current rating is 500 milliamperes and the conduction cooled rating is 1 ampere provided an adequate heat sink is used. Voltage ratings range from 50 to 400 volts peak inverse.

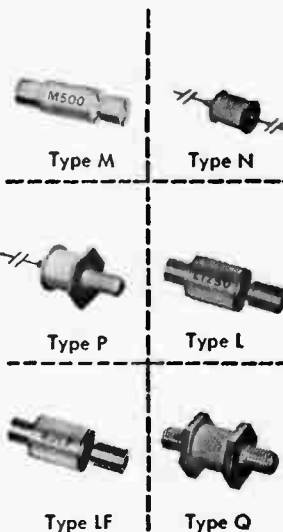
**Type P**—The P series of silicon rectifiers includes the same end terminal designs as the N series. The dc current ratings, however, are 1.5 amperes with convection cooling and 5 amperes when a heat sink is used. Voltage ratings range from 50 to 400 volts peak inverse.

**Type L** silicon rectifiers are rated at 1.5 amps in half wave circuits with peak inverse voltage ratings of 100 to 400 volts. Mounting is by means of ferrules that fit standard fuse clips. Low cost holders are available.

**Type LF**—Use of a special heat sink arrangement and hardware allows a current rating of 5 amperes dc from the Type L rectifier. Precautions must be taken, however, to provide adequate cooling area to limit case temperature. Voltage ratings range from 100 to 400 volts peak inverse.

**Type Q**—The Q series of rectifiers is provided with axial studs only, however, it is possible to attach special end terminals. The current rating is 7.5 amperes in convection cooled applications and 15 amperes when a heat sink is used. Peak inverse voltage ratings range from 50 to 300 volts.

Write for complete information



SILICON

## A Rectifier for Every Application

A wide selection of Selenium Rectifier designs is offered to the design engineer by the Sarkes Tarzian line. It is possible to provide ratings of a few milliamperes to thousands of amperes and from a few volts to thousands of volts by using series, parallel and series-parallel arrangements. Whatever your power conversion problem write for specific recommendations for your application.

**Standard and High Temperature**—Sarkes Tarzian standard and high temperature selenium rectifiers offer the design engineer a variety of combinations. The standard line includes fourteen basic cell sizes and the high temperature line includes nine cell sizes. Maximum permissible cell temperature an high temperature types is 150°C.

**Radio-Television Types**—Radio and Television type selenium rectifiers are mass produced under tight quality control standards. The resultant good availability, good quality and low price have made these types popular in a variety of electronic equipments.

**Embedments**—Embedments provide a small unit at relatively low cost when extreme environmental or shock conditions are anticipated. Six basic cell sizes are available to assemble various combinations.

**High Voltage**—Series stacking of cells in glass or phenolic enclosures increases voltage ratings and half wave units are available with ratings as high as 7500 volts peak inverse with current ratings as high as 25 milliamperes. Axial leads or ferrules are available for connection.

Remember—whatever your problem on power conversion, let Sarkes Tarzian applications engineers provide you with the practical answer.

Send for your copies of the Selenium and Silicon rectifier handbooks.

Standard and High Temperature



Radio-Television

Embedments

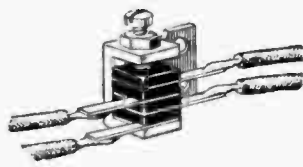


High Voltage

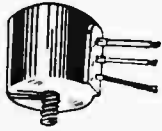
SELENIUM

**Sarkes Tarzian, Inc.** RECTIFIER DIVISION  
DEPT. RM, BLOOMINGTON, IND.

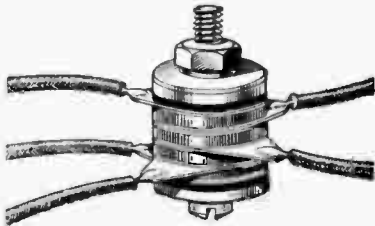
# SCHAUER INSTRUMENT RECTIFIERS



TYPE A-4M



TYPE B2



TYPE C-4

Schauer copper oxide rectifiers for instrument and other uses are processed and individually tested to meet the requirements of the user. Versatile processing techniques make possible variations in characteristics for special or unusual applications. Each rectifier is rated conservatively for long life and dependable operation.

Size "B" Rectifiers are encapsulated—fully sealed in special formula polyester plastic in attractive red color. Cells are specially processed with vacuum evaporated gold contact areas to give maximum efficiency, stable operation and low aging characteristics. All rectifiers are supplied with 3" leads, color-coded. (Red, positive; black, negative; yellow, A.C.) Plastic encapsulated rectifiers have lead insulation imbedded in the plastic for better sealing, eliminating short circuits at the rectifier. Lead lengths of other

than 3" can be supplied on special order.

"A" SIZE CELLS have good frequency response above the audio range and can be used at higher frequencies. Recommended for meter applications needing 1MA or less for operation. Can be used for other applications requiring up to 5 MA.

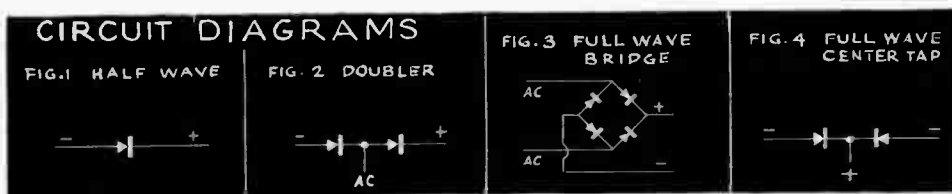
"B" SIZE CELLS are for meter, relay and other applications requiring 1MA up to their maximum rating. Recommended for commercial and low audio frequency operation.

"C" SIZE CELLS are for general applications requiring larger output currents and operation of meters, relays and other apparatus. Special process cells for varistor applications.

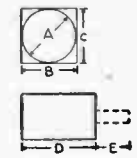
Write, wire or telephone for complete information. We welcome your inquiries concerning any special rectification problem.

**NOTE:** The Schauer Mfg. Corp. is the exclusive manufacturer of replacement Westinghouse copper oxide rectifiers.

Max. Cont. Rating			Circuit Diagram Fig.	Cell Dia. Inches	No. of Cells	Leads	Mounting Screw Size	DIMENSIONS*					Type
D.C. M.A.	D.C. Volts	Max. RMS Volts						(Dia.) A	B	C	D	E	
5	1.5	2.5	2	$\frac{3}{16}$ sq.	2	3	Hole for 2-56		$\frac{3}{8}$	$\frac{1}{4}$	$\frac{1}{16}$		A2M
5	3.0	5.0	3	$\frac{3}{16}$ sq.	4	4	Hole for 2-56		$\frac{3}{8}$	$\frac{1}{4}$	$\frac{1}{16}$		A4M
13	1.5	2.5	1	$\frac{1}{16}$	1	2	6-32	$\frac{3}{16}$			$\frac{1}{16}$	$\frac{1}{32}$	B1
13	1.5	2.5	2	$\frac{1}{16}$	2	3	6-32	$\frac{3}{16}$			$\frac{1}{8}$	$\frac{1}{16}$	B2
26	1.5	2.5	4	$\frac{1}{16}$	2	3	6-32	$\frac{3}{16}$			$\frac{1}{8}$	$\frac{1}{16}$	B2
26	3.0	5.0	3	$\frac{1}{16}$	4	5	6-32	$\frac{3}{16}$			$\frac{1}{8}$	$\frac{1}{16}$	B4
32	1.5	2.5	1	$\frac{3}{4}$	1	2	10-32	$\frac{3}{4}$			$\frac{11}{16}$	$\frac{1}{16}$	C1
32	1.5	2.5	2	$\frac{3}{4}$	2	3	10-32	$\frac{3}{4}$			$\frac{3}{4}$	$\frac{1}{16}$	C2
64	1.5	2.5	4	$\frac{3}{4}$	2	3	10-32	$\frac{3}{4}$			$\frac{3}{4}$	$\frac{1}{16}$	C3
64	3.0	5.0	3	$\frac{3}{4}$	4	5	10-32	$\frac{3}{4}$			$\frac{11}{16}$	$\frac{1}{16}$	C4



\*Dimensions



**SCHAUER MANUFACTURING CORP. • Cincinnati 42, Ohio**

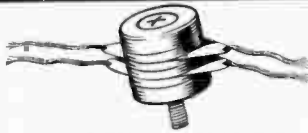
*Manufacturers of high-quality, dry-disc rectifiers since 1930.*

# CONANT

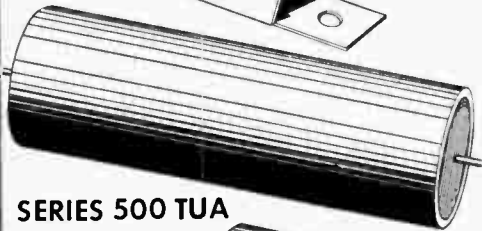
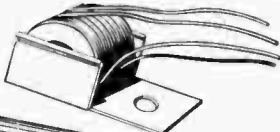
# Miniature Metallic Rectifiers

STANDARD SINCE 1933

**SERIES 500**

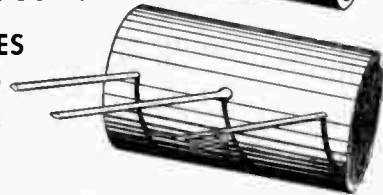


**SERIES 500 ERM**



**SERIES 500 TUA**

**SERIES 500 TUR**



**SERIES 280 ERM**

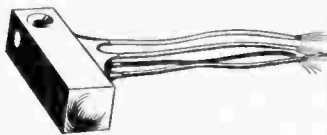


**SERIES 280 TUA**

**SERIES 280 TUR**



**SERIES 160**



**SERIES 160C**



**SERIES 160 ERM**



ALL RECTIFIERS SHOWN ACTUAL SIZE

### INTERNAL CIRCUITS

Standard rectifiers are connected internally according to one of the five circuit diagrams shown.

**SERIES 500** Copper oxide only. Color coded. Welded lead wires 3" long. Synthetic lacquer-enamel finish. Single 6-32 stud mounting. Available in special types. Cell diameter .500". Cell rating 5 r.m.s. volts, 30 average mils.

**SERIES 500-ERM** Copper oxide or selenium. Color coded. Solid lead wires 3" long. Lacquer finish. Single hole mounting. Available in special types. Cell diameter .500". Cell ratings, copper oxide 5 r.m.s. volts, 30 average mils; selenium, 25 r.m.s. volts, 30 average mils.

**SERIES 500-TUA** Selenium only. Color coded. Solid axial leads 3" long. Lacquer finish. Mounts by lead wires only. Fully enclosed and sealed in phenolic tube. Half wave types only for high voltage. Cell diameter .500". Cell rating 25 r.m.s. volts, 30 average mils. Per cell ratings subject to derating according to rectifier design.

**SERIES 500-TUR** Selenium only. Color coded. Solid radial leads 3" long. Lacquer finish. Mounts by lead wires only. Fully enclosed and sealed in phenolic tube. Cell diameter, .500". Cell rating 25 r.m.s. volts, 30 average mils. Per cell ratings subject to derating according to rectifier design.

**SERIES 280-ERM** Copper oxide or selenium. Color coded. Solid lead wires 3" long. Lacquer finish. Mounts by "Bracketterminal" combining cathode (plus) terminal and mounting bracket. Available in standard types only. Cell diameter .280". Cell rating, copper oxide, 5 r.m.s. volts, 10 average mils; selenium, 25 r.m.s. volts, 10 average mils.

**SERIES 280-TUA** Selenium only. Color coded. Solid axial leads 3" long. Lacquer finish. Mounts by lead wires only. Fully enclosed and sealed in phenolic tube. Half wave types only, for high voltage. Cell diameter .280". Cell rating 25 r.m.s. volts, 10 average mils. Per cell rating subject to derating according to rectifier design.

**SERIES 280-TUR** Selenium only. Color coded. Solid radial leads 3" long. Lacquer finish. Mounts by lead wires only. Fully enclosed and sealed in phenolic tube. Cell diameter .280". Cell rating 25 r.m.s. volts, 10 average mils. Per cell rating subject to derating according to rectifier design.

**SERIES 160** Copper oxide or selenium. Color coded. Welded lead wires 3" long. Fully enclosed and sealed in molded phenolic case. Mounts by #2 screw. Cell diameter .160". Cell rating, copper oxide, 5 r.m.s. volts, 5 average mils; selenium, 25 r.m.s. volts, 5 average mils.

**SERIES 160-C** Copper oxide or selenium. Color coded. Welded lead wires 3" long. Fully enclosed and sealed in welded brass case. Mounts in midget fuse clip. Cell diameter .160". Cell rating, copper oxide, 5 r.m.s. volts, 5 average mils; selenium, 25 r.m.s. volts, 5 average mils.

**SERIES 160-ERM** Copper oxide or selenium. Color coded. Solid leads 1" long. Lacquer finish. Mounts by lead wires only. Cell diameter .160". Cell rating, copper oxide, 5 r.m.s. volts, 5 average mils; selenium, 25 r.m.s. volts, 5 average mils.

Standard rectifiers are connected internally according to one of the five circuit diagrams shown.

Series 500, 160 and 160-C are the well known standard line of instrument rectifiers and are constructed to the highest standards of quality. Construction is conventional.

TUA (tubular, axial leads) and TUR (tubular, radial leads) construction is desirable especially in rectifiers designed for high voltage operation. Total enclosure of the stack however limits heat radiation necessitating derating of cells.

ERM (external resilient member) construction insures maintenance of optimum stack pressures regardless of ambient or operating temperatures. Rectifiers in ERM construction are smaller, lighter and cheaper.



STANDARD SINCE 1933



# Harvey - WELLS ELECTRONICS, INC.

## T-90 BANDMASTER TRANSMITTER

The T-90 is the result of our long study concerning the operating requirements of most amateurs. Sufficient power to "get out" on all bands, either fixed or mobile, under today's QRM conditions, plus space limitations of the average home, has been the prime objective in its design. The many refinements contributing to smooth and efficient operation which have been incorporated in the T-90, have up to this time been found only in transmitters selling at a much higher price. A close study of the following features will provide convincing evidence that the T-90 is the transmitter YOU WANT for your shack or car.

**DIMENSIONS (overall):** Cabinet 12 3/4" wide, 10 1/2" deep, 6 3/4" high; weight 17 3/4 lbs. Factory built and tested complete with tubes, less power supply.

**\$179.50\***  
Amateur Net

## R-9 BANDMASTER RECEIVER

In our further studies of amateur requirements, we found that the ultimate desire of all was to have equipment which "went together." The difficulty of installing odd sizes of cabinets has always been a source of irritation to the neat and efficient operator. The R-9 is physically an identical twin to the T-90. Now at last, without any reservation, you can have fixed station performance either in your shack or in your car. This highly stable all-band double conversion receiver has a versatility and a number of refinements which have never before been offered in such small space. Price is complete with tubes. Dimensions same as transmitter.

**\$149.50\***  
Amateur Net



### FEATURES — T-90 TRANSMITTER

- 1—TVI Suppressed; 2—Complete band-switching; no plug-in coils;
  - 3—Complete Break-in Keying — or keying of multiplier stages only;
  - 4—VFO Tuning without carrier on; 5—Cathode biased Exciter tubes and clamp tube control of Final Amplifier Screen Voltage; 6—Initial tuning at reduced power; 7—Three position excitation control; 8—Antenna loading flexibility; 9—Selector switch allows metering of PA Grid, PA Cathode and Modulator currents; 10—Remote Break-in and Receiver muting provided by relay control; 11—VFO voltage regulated and temperature compensated; 12—Illuminated dial and meter; 13—Crystal door on front panel; 14—Filament Operation 6 or 12 volts AC/DC; 15—Low average Modulator current; 16—Built-in provision for either Carbon, Crystal or Dynamic microphone and push-to-talk.
- \*PRICE SUBJECT TO CHANGE WITHOUT NOTICE.

### FEATURES — R9 RECEIVER

- 1—Double conversion on all bands; 2—Three tuned circuits on each band, in R.F. section; 3—All coils slug tuned, providing high "Q" circuits; 4—Separate oscillator coils for each band (no spurious response); 5—Bandwidth: Four kilocycles wide at the 6 db point; 6—Complete with tubes and built-in AC power supply. 6/12 volt DC power supply available; 7—Crystal filter and crystal calibrator available as accessories; 8—Approximately 6" of dial spread on all bands. Accurately calibrated; 9—Rigid Steel construction (Vibration-Proof); 10—6 3/4" height enables easy under dash mounting for mobile installation.

## BANDMASTER Z-MATCH

- 1—The tuning arrangement covers from 3.5 mc. to 30.00 mc. continuous tuning with no switching of R.F. circuits, thereby eliminating losses in R.F. band switches.
- 2—No reversing of R.F. cables for forward and reflected power readings.
- 3—R.F. wattmeter is in the circuit at all times.
- 4—Dummy load may be used to tune your transmitter before going on the air, in accordance with F.C.C. regulations.

Featuring the famous M. C. Jones micro-match circuit.

**NOW ONLY \$89.00**



## POWER SUPPLIES AND ACCESSORIES



APS-90 POWER SUPPLY  
(115 V. A.C.)

Cabinet same size as transmitter. Supplied complete with cables.

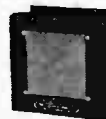
**\$79.50\***



VPS-T90  
MOBILE POWER SUPPLY

For 6/12 volt D.C. operation. Designed for easy operation and service.

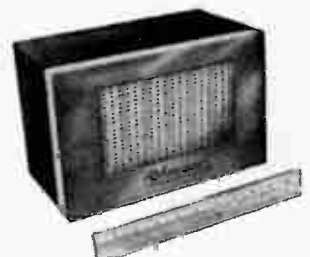
**\$89.50\***



SPEAKER FOR  
MOBILE  
OPERATION

**\$7.50\***

\*All prices subject to change without notice.



SPEAKER FOR FIXED STATION  
OPERATION

High quality oval—6" x 9". Cabinet matches other units.

**\$10.50\***



# E. F. Johnson Company

W A S E C A , M I N N E S O T A

## EXPLANATION OF TYPE NUMBERS

The first portion of the type number indicates the capacity per section in mmfd. The following letter indicates the frame size or type. A second letter "D" indicates a two-section type—"A" differential, "B" butterfly. The final number multiplied by 100 is the approximate peak break-down voltage.

## TYPE "M" CAPACITORS

Requiring a panel area just  $\frac{5}{8}$ " wide by  $\frac{3}{4}$ " high, these diminutive capacitors provide the perfect answer to problems encountered in the design of compact radio frequency equipment. Bridge type stator terminal provides extremely low inductance path to both stator supports. Soldered plate construction, oversize bearing, and heavily anchored stator supports insure extreme rigidity. Relatively large beryllium copper compression spring rotor contact provides steady torque—rotor stays "put" where set. Rotor contact nickel plated—all other metal parts nickel plated. Steatite end frames DC-200 treated. Mounting bushing threaded  $\frac{1}{4}$ "-32 with flats to prevent turning—mounting nut furnished. Peak voltage 1250 volts on .017" spaced units—850 volts on 160-130 which is spaced .013"— $\frac{3}{16}$ " diameter shaft\* slotted for screwdriver adjustment. JOHNSON Miniature Air Variables are available in production quantities with the following features: 1. Locking bearing. 2. 180° stop. 3. Various shaft extensions. 4. High torque. 5. Silver or other platings.

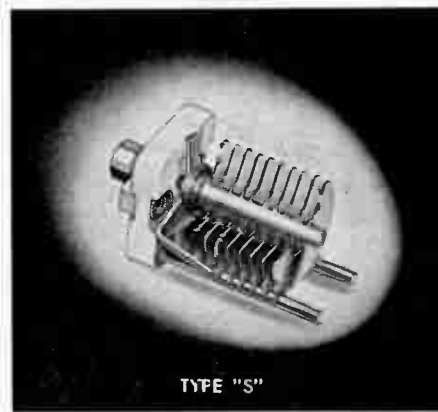
\*Instrument type tuning knob to fit  $\frac{3}{16}$ " shaft available. (See knob and dial section of this catalog.)



TYPE "M" SINGLE



TYPE "M" BUTTERFLY



TYPE "M" DIFFERENTIAL

## SINGLE SECTION

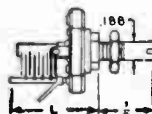
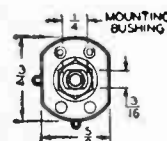
Cat. No.	Type No.	Cap./Sec.		Plates per Sec.	L	Net Price
		Max.	Min.			
160-102	5M11	5	1.5	5	$\frac{45}{64}$ "	\$1.00
160-104	9M11	8.7	1.8	9	$\frac{15}{16}$ "	1.05
160-107	15M11	14.2	2.3	15	1"	1.20
160-110	20M11	19.6	2.7	21	$1\frac{1}{16}$ "	1.35
160-110	30M8	32	3	28	$1\frac{13}{64}$ "	1.40

## BUTTERFLY

160-303	3MB11	3.1	1.5	5	$\frac{43}{64}$ "	\$1.40
160-305	5MB11	5.1	1.8	9	$\frac{15}{16}$ "	1.60
160-308	9MB11	8	2.2	16	1"	1.80
160-211	11MB11	10.8	2.7	22	$1\frac{1}{64}$ "	2.00

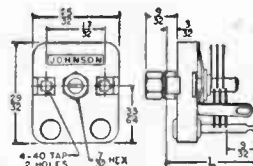
## DIFFERENTIAL

160-303	6MA11	5.0	1.5	5	$\frac{45}{64}$ "	\$1.45
160-305	9MA11	8.7	1.8	9	$\frac{15}{16}$ "	1.65
160-308	15MA11	14.2	2.3	15	1"	1.85
160-311	19MA11	19.6	2.7	21	$1\frac{1}{64}$ "	2.10



## TYPE "S" CAPACITORS

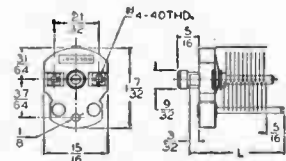
The JOHNSON type "S" capacitor falls midway between the type "M" and "K" capacitors in physical size. Design is compact—construction rugged. Equipped with DC-200 treated steatite end frame and nickel plated brass plates. Available only as a "single" type, the "S" capacitor has a plate spacing of .013" with a peak voltage rating of 850 volts. Other spacings available on special order. Square mounting studs topped 4-40 on  $\frac{11}{32}$ " centers. Available with straight shaft, screwdriver shaft, or locking type screwdriver shaft. Single hole mounting types available on special order.



Cat. No.	Type No.	Cap. per Sec.		Plates per Sec.	L	Net Price
		Max.	Min.			
148-1	15S8	15	2.3	6	$\frac{43}{64}$ "	\$1.10
148-2	25S8	25	2.6	10	$\frac{15}{16}$ "	1.15
148-3	35S8	35	2.9	14	1"	1.20
148-4	50S8	50	3.2	19	$1\frac{1}{8}$ "	1.30
148-5	75S8	75	3.9	29	$1\frac{13}{32}$ "	1.45
148-6	100S8	100	4.5	38	$1\frac{13}{64}$ "	1.65

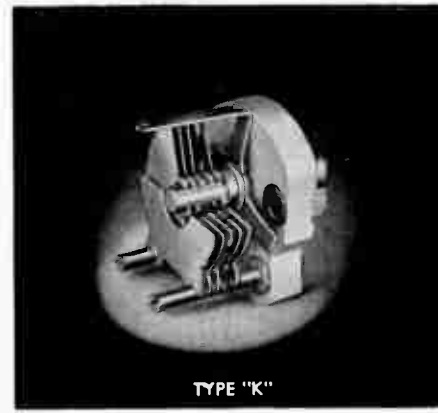
## TYPE "K" CAPACITORS

Widely used for military and many commercial applications, the JOHNSON type "K" features DC 200 impregnated steatite end frames, slotted stator contacts and extra rigid soldered plate construction. Plates are brass, nickel plated. Available in production quantities in accordance with military specifications JAN C92.



Cat. No.	Type No.	Cap. per Sec.		Plates per Sec.	L	Net Price
		Max.	Min.			
158-1	10K10	10	2.9	3	$\frac{7}{8}$ "	\$1.25
158-2	25K10	25	3.7	7	1"	1.35
158-3	50K10	50	4.6	14	$1\frac{1}{16}$ "	1.55
158-4	75K10	75	5.5	20	$1\frac{3}{8}$ "	1.70
158-5	100K10	100	6.4	27	$1\frac{1}{8}$ "	1.85

Other capacities and variations for special military and commercial specifications available in production quantities.



TYPE "K"



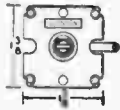
# E. F. Johnson Company

W A S E C A , M I N N E S O T A

## TYPE "L" CAPACITORS

A superior quality general purpose capacitor by JOHNSON embodying important advances in design and construction. The rotor bearing and stator support rods are actually soldered directly to the ceramic (steatite) end frames making the capacitor virtually vibration proof. A special split sleeve tension bearing and silver plated beryllium copper contact provide constant torque and smooth, silent capacity variation. Heavy brass soldered plates and large diameter tie rods provide great rigidity. Plating is heavy nickel. Bearings threaded  $\frac{3}{8}$ "-32, mounting nut provided. Removable chassis mounting brackets can be used to mount auxiliary equipment. Plate spacing .030". Available with .020", .060" and .080" spacing as well as special platings, shaft lengths and stator terminal locations in production quantities. Models with 6-32 tapped mounting posts soldered to end frame are also available on special order.

### SINGLE SECTION



Cat. No.	Type No.	Cap./Sec.		Plates per Sec.	L	Net Price
		Max.	Min.			
<b>Single End Plate</b>						
167-1	10L15	11	2.8	3	$\frac{3}{4}$ "	\$1.60
167-2	25L15	27	3.5	7	$\frac{61}{64}$ "	1.70
167-3	50L15	51	4.6	13	$1\frac{1}{4}$ "	1.90
167-4	75L15	75	5.7	19	$1\frac{15}{16}$ "	2.10

### Double End Plate

167-11	100L15	99	6.8	25	$2\frac{1}{4}$ "	3.30
167-12	200L15	202	11.6	51	$2\frac{21}{64}$ "	4.20

### BUTTERFLY

167-21	10LB15	10.5	2.8	5	$\frac{55}{64}$ "	1.95
167-22	25LB15	26	4.3	12	$1\frac{1}{8}$ "	2.25
167-23	50LB15	51	6.8	23	$1\frac{3}{4}$ "	2.75

### DIFFERENTIAL

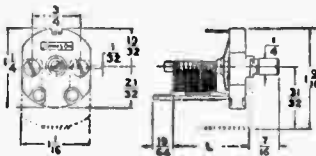
167-31	10LA15	11	2.8	3	$\frac{3}{4}$ "	2.00
167-32	25LA15	27	3.5	7	$\frac{61}{64}$ "	2.20
167-33	50LA15	51	4.6	13	$1\frac{1}{4}$ "	2.50

### DUAL SECTION

167-51	25LD15	27	5.0	7	$1\frac{5}{8}$ "	3.60
167-52	50LD15	51	6.5	13	$2\frac{15}{64}$ "	4.05
167-53	100LD15	99	9.8	25	$3\frac{1}{16}$ "	4.95

## TYPE "J" CAPACITORS

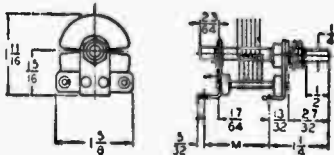
A heavy duty miniature type, has wider spacing (.025") than most small air variables, yet occupies little more space. Useful for small space plate tank circuits in low power stages where standard miniatures have insufficient plate spacing. Soldered plate construction. 6-32 tapped mounting studs on  $\frac{3}{4}$ " centers. Mounting brackets and 6-32 screws provided.



Cat. No.	Type No.	Cap. per Sec.		Plates per Sec.	L	Net Price
		Max.	Min.			
157-1	7J12	8	2.6	3	$\frac{19}{32}$ "	\$1.85
157-2	15J12	17	3.3	6	$\frac{25}{32}$ "	1.95
157-3	25J12	29	3.6	10	$\frac{7}{8}$ "	2.10
157-4	50J12	52	4.9	19	$1\frac{1}{4}$ "	2.35
157-5	75J12	73	6	26	$1\frac{17}{32}$ "	2.65
157-6	100J12	102	7	36	$1\frac{31}{32}$ "	3.00

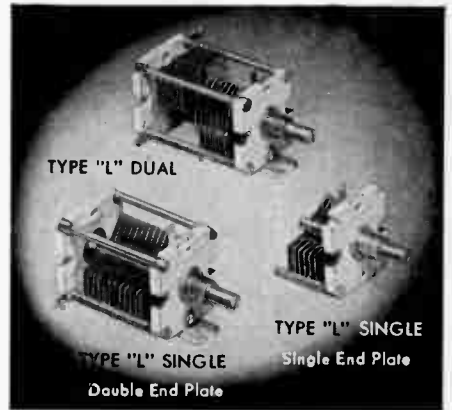
## TYPE "R" CAPACITORS

The rugged JOHNSON version of a popular standardized capacitor. Featuring extra heavy steatite stator support insulators and soldered .023" thick brass plates, all metal parts are heavily nickel plated for corrosion resistance. Heavy brass end frames provide superior rigidity. Double bearing construction and silver plated beryllium copper wiping contacts provide smooth, reliable performance in a wide variety of electronics applications. Plate spacing .024", bearing threaded  $\frac{3}{8}$ "-32.



Cat. No.	Type No.	Cap. per Sec.		Plates per Sec.	M	Net Price
		Max.	Min.			
149-1	20R12	20	5	3	$1\frac{7}{8}$ "	\$2.25
149-2	35R12	35	6.5	5	$1\frac{7}{8}$ "	2.35
149-3	50R12	50	8	7	$1\frac{7}{8}$ "	2.45
149-4	75R12	80	8	11	$1\frac{7}{8}$ "	2.60
149-5	100R12	102	8.5	14	$1\frac{15}{16}$ "	2.75
149-6	140R12	140	13.5	19	$1\frac{15}{16}$ "	2.95

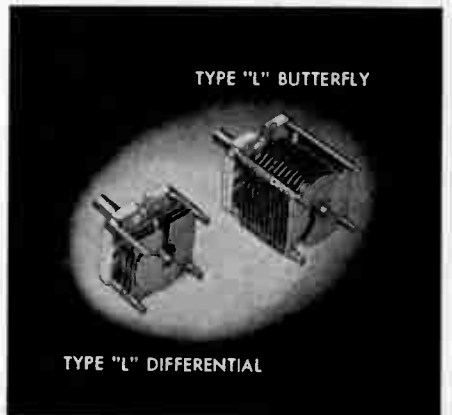
Johnson type "R" capacitors are available with .036", .050", .071" or .095" plate spacings as well as special platings and shaft lengths in production quantities. Also available without mounting feet for panel mounting applications.



TYPE "L" DUAL

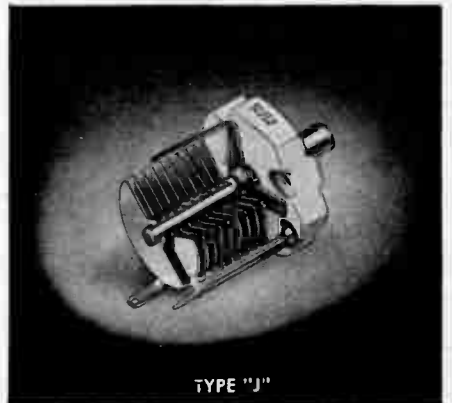
TYPE "L" SINGLE  
Double End Plate

TYPE "L" SINGLE  
Single End Plate

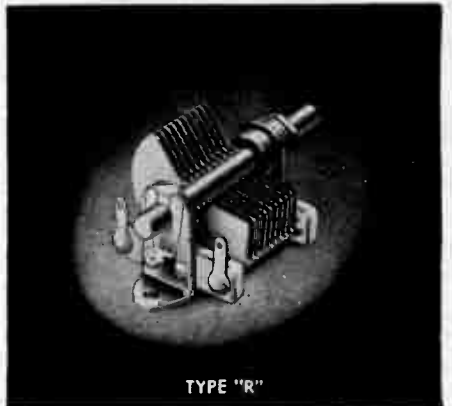


TYPE "L" BUTTERFLY

TYPE "L" DIFFERENTIAL



TYPE "J"

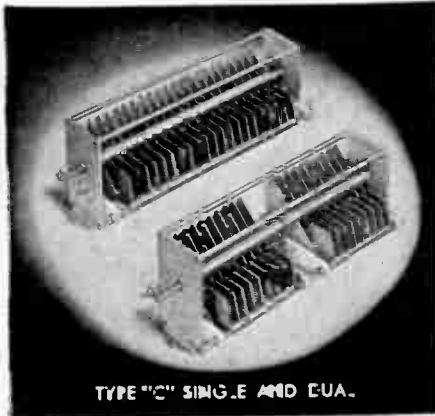


TYPE "R"

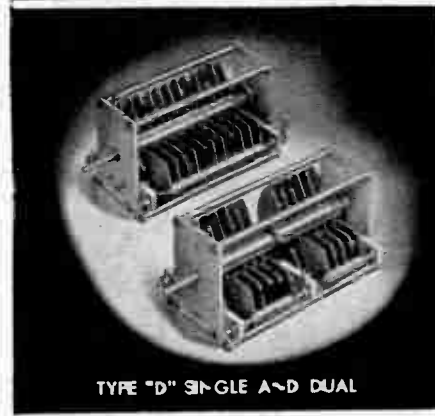


# E. F. Johnson Company

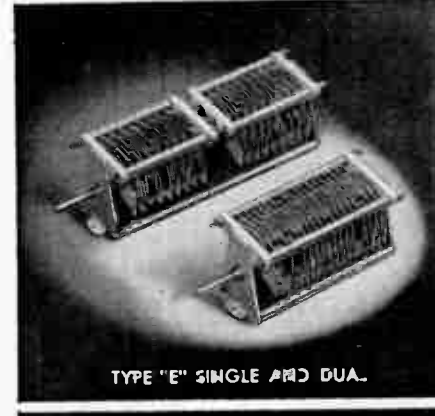
## W A S E C A , M I N N E S O T A



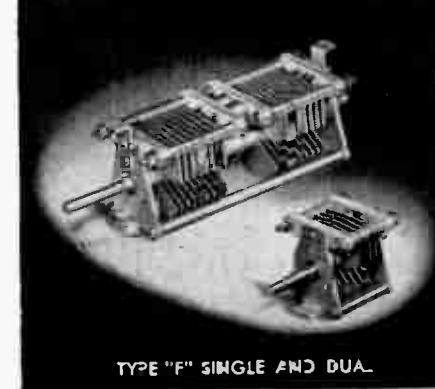
TYPE "C" SINGLE AND DUAL



TYPE "D" SINGLE AND DUAL



TYPE "E" SINGLE AND DUAL



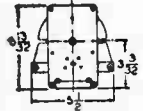
TYPE "F" SINGLE AND DUAL

### TYPE "C" AND "D" CAPACITORS

Functional favorites built to exacting standards for medium power RF equipment. Heavy .051" aluminum plates and  $\frac{3}{16}$ " tie rods. Laminated phosphor bronze contacts. Dual types have center rotor connection for panel mounting. End frames tapped for panel mounting. Brackets furnished for chassis mounting.

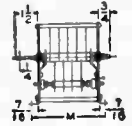
#### TYPE C SINGLE SECTION

Cat. No.	Type No.	Cap./Sec. Max.	Cap./Sec. Min.	Air Gap	Plates per Sec.	M	Net Price
152-1	250C70	252	34	.175"	24	7 $\frac{1}{16}$ "	\$17.95
152-2	500C70	496	56	.175"	47	13 $\frac{1}{16}$ "	21.80
152-6	100C110	103	30	.350"	17	9 $\frac{1}{16}$ "	13.65
152-8	50C130	51	24	.500"	10	8 $\frac{3}{16}$ "	11.90
152-9	100C130	102	42	.500"	21	14 $\frac{1}{16}$ "	15.95



#### TYPE C DUAL SECTION

152-501	200CD45	204	21	.125"	15	9 $\frac{1}{16}$ "	18.75
152-502	300CD45	290	26	.125"	21	11 $\frac{3}{16}$ "	21.95
152-503	200CD70	198	27	.175"	19	13 $\frac{1}{16}$ "	21.80
152-504	300CD70	305	37	.175"	29	17 $\frac{1}{16}$ "	27.20
152-505	150CD90	147	30	.250"	19	15 $\frac{3}{16}$ "	23.65
152-507	50CD110	50	18	.350"	8	11 $\frac{3}{16}$ "	15.95
152-509	100CD110	103	32	.350"	17	17 $\frac{1}{16}$ "	23.20



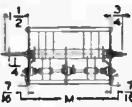
#### TYPE D SINGLE SECTION

153-6	500D35	496	36	.080"	39	7 $\frac{1}{16}$ "	16.50
153-8	150D45	146	23	.125"	17	5 $\frac{1}{16}$ "	10.40
153-11	100D70	98	23	.175"	15	5 $\frac{1}{16}$ "	10.15
153-12	150D70	151	31	.175"	23	7 $\frac{1}{16}$ "	11.95
153-13	250D70	244	45	.175"	37	11 $\frac{1}{16}$ "	15.20
153-15	50D90	53	20	.250"	10	5 $\frac{1}{16}$ "	9.35
153-16	70D90	73	25	.250"	14	6 $\frac{1}{16}$ "	10.35
153-17	100D90	99	30	.250"	19	8 $\frac{3}{16}$ "	11.55
153-18	150D90	149	43	.250"	29	11 $\frac{3}{16}$ "	13.90



#### TYPE D DUAL SECTION

153-501	100DD35	95	13	.080"	8	5 $\frac{1}{16}$ "	11.60
153-502	150DD35	147	15	.080"	12	6 $\frac{1}{16}$ "	13.35
153-503	200DD35	202	19	.080"	16	8 $\frac{1}{16}$ "	15.95
153-504	300DD35	291	24	.080"	23	10 $\frac{1}{16}$ "	18.35
153-505	500DD35	496	38	.080"	39	14 $\frac{1}{16}$ "	25.40
153-506	150DD45	155	24	.125"	17	10 $\frac{1}{16}$ "	16.60
153-507	200DD45	198	27	.125"	23	13 $\frac{1}{16}$ "	18.60
153-508	50DD70	52	15	.175"	8	6 $\frac{1}{16}$ "	11.95
153-509	70DD70	72	17	.175"	11	8 $\frac{1}{16}$ "	13.70
153-510	100DD70	97	22	.175"	15	10 $\frac{1}{16}$ "	15.55
153-511	150DD70	151	31	.175"	23	14 $\frac{1}{16}$ "	19.95
153-513	50DD90	52	19	.250"	10	10 $\frac{1}{16}$ "	14.25
153-514	100DD90	97	30	.250"	19	15 $\frac{3}{16}$ "	19.10

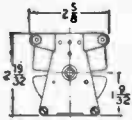


### TYPE "E" AND "F" CAPACITORS

Rugged units providing a large amount of capacity per cubic inch and extremely low capacity to chassis. Panel or chassis mounting. Aluminum plates .032" thick with rounded edges—stainless steel shafts—heavy, phosphor bronze contact springs—center contact on duals—large  $\frac{1}{4}$ " tie rods. Extra mounting brackets furnished.

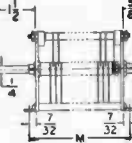
#### TYPE E SINGLE SECTION

Cat. No.	Type No.	Cap./Sec. Max.	Cap./Sec. Min.	Air Gap	Plates per Sec.	M	Net Price
154-1	250E20	244	12	.045"	23	3 $\frac{1}{16}$ "	\$6.65
154-2	350E20	353	15	.045"	33	3 $\frac{3}{16}$ "	7.60
154-3	500E20	488	19	.045"	45	4 $\frac{2}{16}$ "	8.75
154-7	100E30	100	11	.075"	15	3"	5.95
154-8	150E30	154	14	.075"	23	3 $\frac{3}{16}$ "	6.75
154-9	250E30	251	20	.075"	37	5 $\frac{3}{16}$ "	8.25
154-10	350E30	347	25	.075"	51	6 $\frac{1}{16}$ "	9.70
154-11	35E45	38	9	.125"	9	2 $\frac{3}{16}$ "	5.40
154-12	50E45	53	11	.125"	12	3 $\frac{1}{16}$ "	5.80
154-13	70E45	74	13	.125"	17	4 $\frac{1}{16}$ "	6.30
154-14	100E45	101	16	.125"	23	4 $\frac{1}{16}$ "	6.90
154-15	150E45	145	20	.125"	33	6 $\frac{1}{16}$ "	7.85
154-16	250E45	241	32	.125"	55	10"	10.50



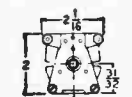
#### TYPE E DUAL SECTION

154-502	300ED20	312	13	.045"	29	7 $\frac{3}{16}$ "	12.30
154-503	50ED30	52	8	.075"	8	4 $\frac{1}{16}$ "	8.35
154-504	70ED30	72	8	.075"	11	4 $\frac{1}{16}$ "	8.85
154-505	100ED30	99	10	.075"	15	5 $\frac{1}{16}$ "	9.70
154-506	150ED30	153	13	.075"	23	7 $\frac{3}{16}$ "	11.35
154-507	200ED30	196	15	.075"	29	8 $\frac{1}{16}$ "	13.25
154-508	50ED45	52	10	.125"	12	6 $\frac{1}{16}$ "	8.95
154-509	70ED45	74	12	.125"	17	7 $\frac{3}{16}$ "	10.20
154-510	100ED45	100	15	.125"	23	9 $\frac{3}{16}$ "	11.60



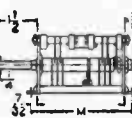
#### TYPE F SINGLE SECTION

155-1	35F20	35	7	.045"	6	1 $\frac{3}{16}$ "	4.95
155-2	50F20	54	8	.045"	9	2 $\frac{1}{16}$ "	5.20
155-3	70F20	66	8	.045"	11	2 $\frac{1}{16}$ "	5.35
155-4	100F20	106	10	.045"	17	2 $\frac{1}{16}$ "	5.85
155-5	150F20	154	12	.045"	25	3 $\frac{1}{16}$ "	6.50
155-6	250F20	252	17	.045"	41	4 $\frac{1}{16}$ "	7.75
155-8	50F30	52	9	.075"	13	2 $\frac{3}{16}$ "	5.50
155-9	70F30	67	11	.075"	17	3 $\frac{1}{16}$ "	5.90
155-10	100F30	99	14	.075"	25	4 $\frac{1}{16}$ "	6.50
155-11	150F30	148	18	.075"	37	5 $\frac{1}{16}$ "	7.65



#### TYPE F DUAL SECTION

155-501	50FD20	53	7	.045"	9	3 $\frac{1}{16}$ "	7.95
155-502	70FD20	66	7	.045"	11	4 $\frac{1}{16}$ "	8.45
155-503	100FD20	104	9	.045"	17	5 $\frac{1}{16}$ "	9.45
155-504	150FD20	153	11	.045"	25	6 $\frac{1}{16}$ "	10.95
155-505	200FD20	202	14	.045"	33	7 $\frac{3}{16}$ "	12.20
155-506	50FD30	51	8	.075"	13	5 $\frac{1}{16}$ "	8.80
155-507	70FD30	66	10	.075"	17	6 $\frac{1}{16}$ "	9.80
155-508	100FD30	99	13	.075"	25	7 $\frac{3}{16}$ "	11.10





# E. F. Johnson Company

W A S E C A , M I N N E S O T A

## TYPE "G" CAPACITORS

Neutralizing capacitor for medium and low power stages. .032" rounded aluminum plates, steatite insulation. Universal mounting bracket and locking nut. Mounting space required:  $2\frac{1}{16}$ " wide,  $2\frac{17}{64}$ " high.

Cat. No.	Type No.	Cap. per Sec.			Plates per Sec.	L	Net Price
		Max.	Min.	Spacing			
165-2	50G20	52	5	.045"	9	$1\frac{5}{16}$ "	\$3.50
165-4	13G45	13	4.7	.125"	5	$1\frac{5}{16}$ "	3.15
165-5	23G45	23	6.4	.125"	9	$1\frac{5}{16}$ "	3.50
165-6	6G70	5.7	3.5	.225"	3	$1\frac{1}{16}$ "	3.30
165-7	12G70	12	6	.225"	7	$2\frac{5}{8}$ "	4.15

## TYPE "N" CAPACITORS

Extremely high voltage rating in proportion to size requiring a small mounting area. Constant voltage rating throughout full capacity range. Plates are aluminum cups supported by steatite frame with cast aluminum mounting bracket. Peak RF breakdown ratings at 2 MC., N125-8,500, N250-11,500, N375-14,500.

Cat. No.	Type No.	Max.	Min.	D	C	G	V	Spacing	Net Price
159-125	N125	11.0	1.1	$1\frac{3}{8}$ "	$3\frac{1}{8}$ "	$6\frac{13}{64}$ "	$1\frac{15}{16}$ "	.125"	\$7.30
159-250	N250	10.6	1.4	$1\frac{47}{64}$ "	$3\frac{3}{4}$ "	$7\frac{17}{64}$ "	$2\frac{3}{16}$ "	.250"	8.45
159-375	N375	10.7	1.7	$2\frac{3}{8}$ "	$5\frac{19}{32}$ "	$8\frac{23}{64}$ "	$2\frac{15}{16}$ "	.375"	10.50

## JOHNSON KNOBS AND DIALS

A distinctive line of matching knobs and dials, derived from a new basic knob design. Knobs have twelve well defined flutes and present an essentially round appearance.

Tough, scratch resistant black phenolic is used for all molded parts (meets MIL-P-14). Metal dials are etched satin aluminum, anodized finish. This contrasts greatly with deeply etched and filled engraving, provides maximum legibility under poor lighting conditions. All types have accurately centered metal inserts for  $\frac{1}{8}$ " shafts except 116-214-2.

Variations available, such as special shaft sizes, scales or indicators in production quantities.

Cat. No.	Illus.	A				Net Price
		B	C	E		
<b>KNOBS</b>						
116-220	1	$1\frac{1}{8}$ "	$\frac{5}{8}$ "	$1\frac{3}{8}$ "	$\frac{3}{4}$ "	\$0.32
116-260	1	$1\frac{5}{8}$ "	$\frac{3}{4}$ "	$1\frac{1}{2}$ "	$1\frac{7}{32}$ "	.45
116-280	1	$2\frac{3}{8}$ "	$1\frac{1}{8}$ "	$1\frac{3}{4}$ "	$1\frac{11}{16}$ "	.59

### SPINNER KNOBS

For multi-turn devices such as variable inductors, potentiometers etc. Spinner handle is machined aluminum and projects  $\frac{3}{16}$ " from knob.

116-226	2	$1\frac{1}{8}$ "	$\frac{5}{8}$ "	$1\frac{3}{8}$ "	$\frac{3}{4}$ "	\$0.64
116-266	2	$1\frac{5}{8}$ "	$\frac{3}{4}$ "	$1\frac{1}{2}$ "	$1\frac{7}{32}$ "	.73
116-286	2	$2\frac{3}{8}$ "	$1\frac{1}{8}$ "	$1\frac{3}{4}$ "	$1\frac{11}{16}$ "	.89

### INSTRUMENT KNOBS

Unique black phenolic knob may be finger operated or mounted so as to project thru panel and screwdriver actuated. The 116-214-1 is for  $\frac{1}{8}$ " shafts. The 116-214-2 fits  $\frac{3}{16}$ " shafts.

116-214-1	3	$\frac{1}{8}$ "	$\frac{1}{2}$ "	$\frac{3}{4}$ "	$\frac{5}{8}$ "	\$0.33
116-214-2	3	$\frac{1}{8}$ "	$\frac{1}{2}$ "	$\frac{3}{4}$ "	$\frac{5}{8}$ "	.33

### SKIRTED KNOBS

Black phenolic skirts with indicator mark. (May be white filled.)

116-221	4	$1\frac{1}{8}$ "	$\frac{49}{64}$ "	$1\frac{1}{8}$ "	$\frac{21}{64}$ "	\$0.69
116-261	4	$1\frac{5}{8}$ "	$\frac{57}{64}$ "	$1\frac{1}{2}$ "	$\frac{41}{64}$ "	.85
116-281	4	$2\frac{3}{8}$ "	$1\frac{59}{64}$ "	$1\frac{3}{4}$ "	$\frac{51}{64}$ "	.98

### DIALS

Etched beveled satin aluminum skirts, anodized finish, markings clearly visible even in dim light.

Cat. No.	Illus.	Calibration	A	B	C	E	Net Price
116-222-1	5	100-0 over 180°	$1\frac{1}{8}$ "	$\frac{49}{64}$ "	$1\frac{1}{8}$ "	$\frac{43}{64}$ "	\$0.69
116-222-2	5	10-0 over 300°	$1\frac{1}{8}$ "	$\frac{49}{64}$ "	$1\frac{1}{8}$ "	$\frac{43}{64}$ "	.69
116-222-3	5	7-1 over 180°	$1\frac{1}{8}$ "	$\frac{49}{64}$ "	$1\frac{1}{8}$ "	$\frac{43}{64}$ "	.69
116-222-4	5	ON-OFF over 60°	$1\frac{1}{8}$ "	$\frac{49}{64}$ "	$1\frac{1}{8}$ "	$\frac{43}{64}$ "	.69
116-222-5	5	Line indicator	$1\frac{1}{8}$ "	$\frac{49}{64}$ "	$1\frac{1}{8}$ "	$\frac{43}{64}$ "	.69

Knobs have black phenolic skirts and flat etched satin aluminum calibrated dial scales. Indicator button furnished.

116-262	6	0-100 over 180°	$1\frac{5}{8}$ "	$\frac{57}{64}$ "	$2\frac{3}{8}$ "	$\frac{45}{64}$ "	\$1.95
116-282	6	0-100 over 180°	$2\frac{3}{8}$ "	$1\frac{57}{64}$ "	$4\frac{1}{4}$ "	$\frac{53}{64}$ "	2.95

### VERNIER DIALS

Friction vernier etched satin aluminum dials with calibrated dial scales. Vernier knobs same as 116-220 above except have friction driving wheel and bearing to mount on panels up to  $\frac{1}{4}$ " thick. The 116-265 has 3 to 1 vernier, 116-285 has 5 to 1 ratio.

Cat. No.	Calibration	A	B	C	E	Net Price
116-265	0-100 over 180°	$1\frac{5}{8}$ "	$1\frac{57}{64}$ "	$2\frac{3}{8}$ "	$\frac{45}{64}$ "	\$2.50
116-285	0-100 over 180°	$2\frac{3}{8}$ "	$1\frac{57}{64}$ "	$4\frac{1}{4}$ "	$\frac{53}{64}$ "	4.60

### COUNTER DIAL

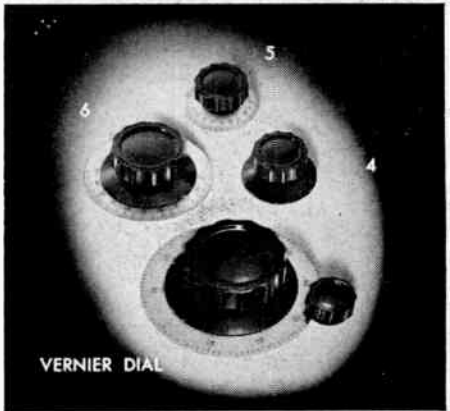
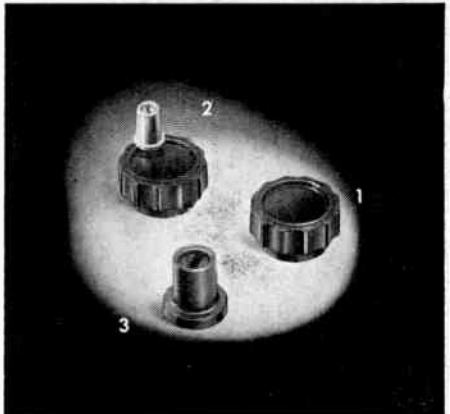
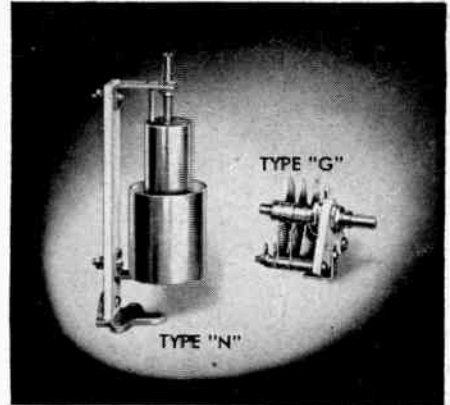
A positively calibrated drive for rotary variable inductors and other multi-turn devices. Counter records up to 99 turns. Vernier dial calibrated 100-0 over 360 degrees, making possible accurate return to any pre-determined setting. Built-in dial lock, "spinner knob" and attractive black phenolic escutcheon. Furnished with mounting template for easy installation.

116-208-1	Counter dial with dial lock, escutcheon and $2\frac{3}{8}$ " spinner knob	\$11.10
116-208-4	Same as above without dial lock	9.80

### ESCUTCHEON PLATE

Attractive black phenolic escutcheon shown on 116-208-1 counter dial. Provides neat "window" for back-of-panel dial plate mounting. One edge of escutcheon suitable for attaching standard  $\frac{3}{8}$ " wide etched name plate. Opening  $1\frac{1}{8}$ " wide x  $\frac{3}{8}$ " high. Overall size  $2\frac{3}{8}$ " x  $1\frac{11}{16}$ ". Furnished with No. 2 screws.

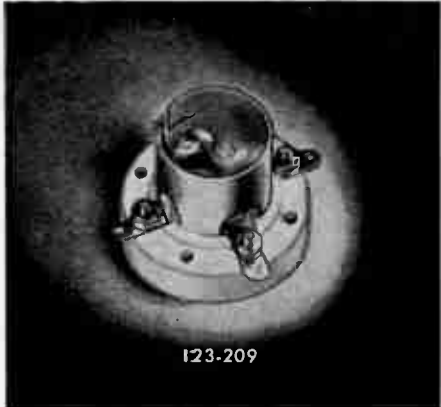
116-201	Escutcheon plate	\$0.65
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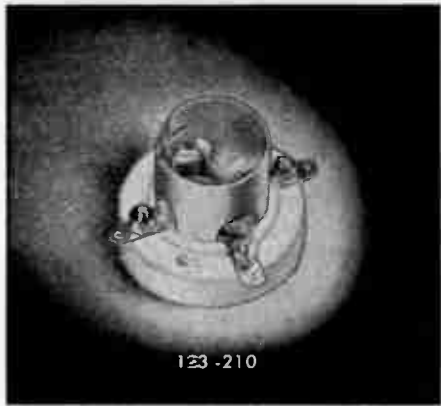


# E. F. Johnson Company

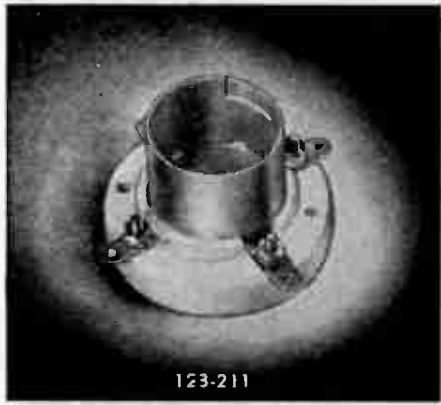
W A S E C A , M I N N E S O T A



123-209



123-210



123-211



123-206

## TUBE SOCKETS

A new standardization program calculated to simplify the selection of sockets and to provide complete specifications for standard, industrial and military requirements has been instituted recently. By reducing the number of variations in special socket types, it will permit the maintenance of stocks of military and industrial types as well as standard sockets and provide shorter delivery cycles on quantity orders. Specifications for the three variations of each socket type are as follows:

### BAYONET SOCKETS—GENERAL SPECIFICATIONS

**Standard** (designated -1) A commercial grade socket suitable for general requirements. Porcelain bases, glazed top and sides—phosphor bronze contacts, cadmium plated .0002. Nickel plated hardware. Bayonet shells are etched aluminum.

**Industrial** (designated -100) Superior in quality to Standard types, Industrial types have glazed steatite bases, DC200 treated. Phosphor bronze or beryllium copper contacts, .0005 silver plated. Aluminum bayonet shells, iridite No. 14 treated. Fungus resistant cushion washers under contacts.

**Military** (designated -200) Top quality for military requirements. Glazed L4 steatite bases, DC200 treated. Beryllium copper contacts .0005 silver plated. Hot tin-dipped terminals—brass bayonet shells, .0003 nickel plated. Threaded hardware .0002 nickel plated, unthreaded hardware .0003. Fungus resistant cushion washers under contacts.

### WAFER SOCKETS—GENERAL SPECIFICATIONS

**Standard** (designated -1) A commercial grade socket suitable for general requirements. Glazed steatite base is DC200 treated—contacts are of plated brass with steel springs. Etched aluminum shields on shielded types.

**Industrial** (designated -100) Superior in quality to Standard types, Industrial types have glazed steatite bases, DC200 treated. Contacts are phosphor bronze with beryllium copper springs .0005 silver plated. Shields on shield types are iridite No. 14 treated aluminum. Fungus resistant cushion washers under contacts.

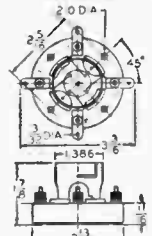
**Military** (designated -200) Top quality for all military requirements. Glazed steatite bases, DC200 impregnated. Phosphor bronze contacts and beryllium copper springs silver plated .001—hot tin-dipped solder terminals. Fungus resistant glass base melamine cushion washers iridite No. 14 treated aluminum shields on shielded types. Entire socket protected for 200 hour salt spray test.

Write for your copy of Standardization Booklet 536, containing complete information on Johnson tube sockets for commercial, industrial and military applications.

## HEAVY DUTY MEDIUM 4 PIN BAYONET

A rugged bayonet socket for medium 4 pin bayonet based tubes such as the 866A or 811A with RETMA Base No. A4-10. Designed with extra heavy, side wiping contacts and extended creepage paths to resist high voltage breakdown. Four mounting holes in base.

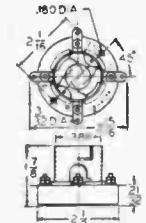
Cat. No.	Type	Net Price
123-209-1	Standard	\$1.50
123-209-100	Industrial	3.30
123-209-200	Military	3.95



## MEDIUM 4 PIN BAYONET

A compact, economical socket for medium 4 pin bayonet based tubes (RETMA Base No. A4-10). Two mounting holes.

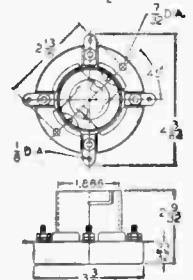
Cat. No.	Type	Net Price
123-210-1	Standard	\$1.45
123-210-100	Industrial	3.25
123-210-200	Military	3.90



## JUMBO 4 PIN BAYONET

A popular "50 watt" socket for medium power bayonet based tubes such as the 872A, 211 and others with RETMA Base No. A4-29. Double wiping filament contacts will handle heavy current. Terminals are designed for solder or screw connections. Two mounting holes.

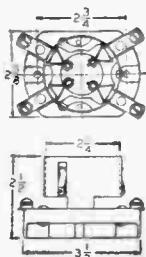
Cat. No.	Type	Net Price
123-211-1	Standard	\$1.95
123-211-100	Industrial	3.90
123-211-200	Military	4.80



## SUPER JUMBO 4 PIN SOCKET

A heavy duty industrial type socket designed for high voltages and/or heavy current. Accommodates tubes such as the 800B, 5C22, FG104, GL146, and others with RETMA Base No. A4-18. Special high current, insertion type spring contacts. Two mounting holes are recessed to prevent flashover. Three heavy retaining springs in shell hold tube securely. Furnished with screw terminals.

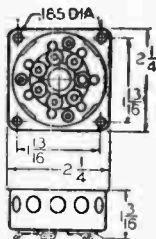
Cat. No.	Type	Net Price
123-206-1	Standard or Industrial	\$4.30
123-206-200	Military	4.85





# E. F. Johnson Company

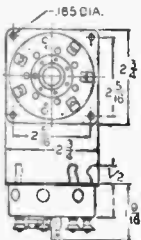
W A S E C A , M I N N E S O T A



## VHF SEPTAR SOCKETS

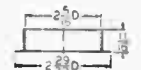
This 7-pin VHF septar socket takes  $\frac{1}{4}$  less space than previously available types—permits compact design when using septar base tubes such as the 5824, 6524, and 6252. Base is grade L4 steatite, glazed on top and sides—underside DC200 impregnated. Molded recesses in base for each contact prevent turning. Contact cushion washers of fungus-resistant glass base melamine. Aluminum shell sub-mounts tube for optimum input and output shielding;  $\frac{3}{8}$ " holes provide adequate ventilation.

Col. No.	Type	Net Price
122-105-1	Standard	\$1.25
122-105-100	Industrial	1.45
122-105-200	Military	1.70



A 7 pin wafer socket designed for tubes with medium molded flare Septar base, RETMA Base No. E7-2. Equipped with a ventilated shield, five tube retainer springs. Provision for mounting button mica capacitors directly to socket. Designed for VHF use with tubes such as the 826, 832, 4D32, 4D22, PL6549, and PL6569, etc. Special terminals permit direct mounting of grid coils. Two holes provided for mounting of bus bar neutralizing leads. Standard model has silver plated phosphor bronze contacts for maximum VHF efficiency.

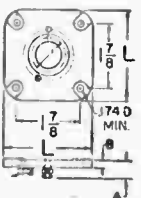
Col. No.	Type	Net Price
122-101-1	Standard or Industrial	\$2.35
122-101-200	Military	2.65



## SEPTAR SOCKETS

Sockets 122-247 and 122-248 are designed for 7 pin tubes, RETMA Base No. E7-2. Each socket is furnished with a separate aluminum shield ring.

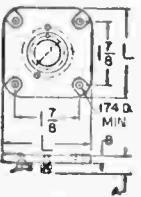
Col. No.	Type	A	B	L	Net Price
122-247-1	Standard	1 1/2"	1 1/2"	2 5/8"	\$1.45
122-247-100	Industrial	1 1/2"	1 1/2"	2 5/8"	1.65
122-247-200	Military	1 1/2"	1 1/2"	2 5/8"	1.90
122-248-1	Standard	1 1/2"	1 1/2"	2 5/8"	1.30
122-248-100	Industrial	1 1/2"	1 1/2"	2 5/8"	1.50
122-248-200	Military	1 1/2"	1 1/2"	2 5/8"	1.75



## SUPER JUMBO 4 PIN SOCKETS

A heavy duty, steatite insulated, 4 pin wafer. Accommodates super jumbo base tubes such as the 8008 and many rectifier and thyratron types, RETMA Base No. A4-15, 16, and 18. Long, parallel contacts are designed to withstand high current.

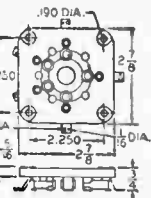
Col. No.	Type	A	B	L	Net Price
122-244-1	Standard	1 1/16"	9/16"	2 5/8"	\$1.60
122-244-100	Industrial	1 1/16"	9/16"	2 5/8"	1.80
122-244-200	Military	1 1/16"	9/16"	2 5/8"	2.15



## GIANT 7 PIN SOCKET

A rugged wafer socket for tubes with a Giant 7 pin base, RETMA Base No. A7-17 such as the 4E27, HK257 and 813. Contacts are designed with maximum surface area against tube prongs. Ventilating hole in base  $\frac{3}{4}$ " diameter provides tube seal cooling.

Col. No.	Type	A	B	L	Net Price
122-237-1	Standard	9/16"	1 1/4"	2 5/8"	\$1.20
122-237-100	Industrial	9/16"	1 1/4"	2 5/8"	1.40
122-237-200	Military	9/16"	1 1/4"	2 5/8"	1.60



## GIANT 5 PIN SOCKET

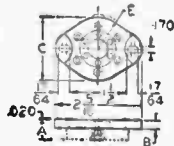
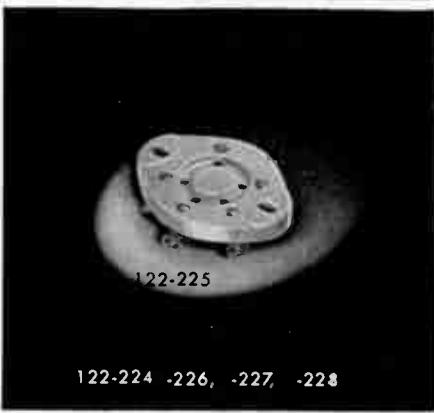
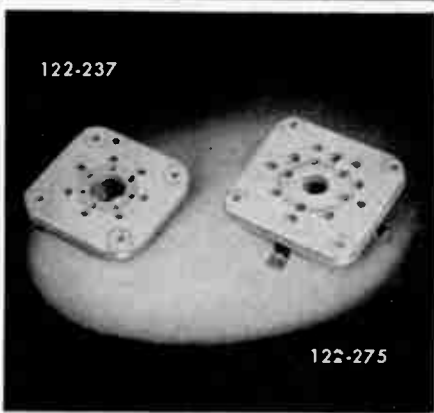
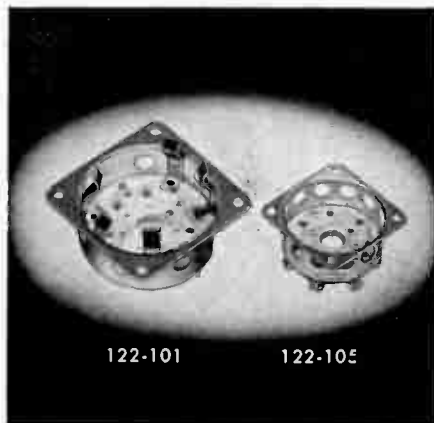
A large steatite wafer socket for tubes with a Giant 5 pin base, RETMA Base No. A5-19, such as the 4-25A, 4-250A, and RK-48. Tube seal ventilation is provided by one central and five ventilating holes located between contacts. Contacts are designed to withstand heavy current.

Col. No.	Type	Net Price
122-275-1	Standard	\$1.90
122-275-100	Industrial	2.20
122-275-200	Military	2.60

## STANDARD WAFER SOCKETS

Steatite sockets for receiving and low power transmitting tubes.

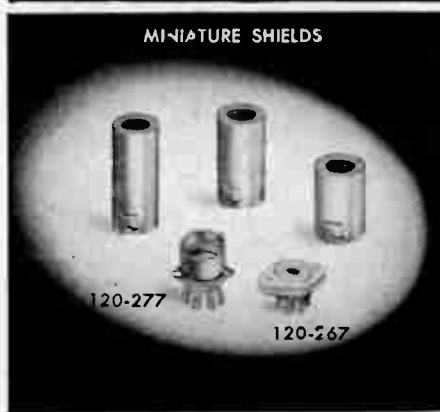
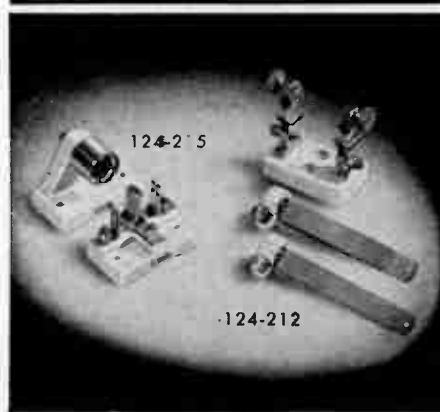
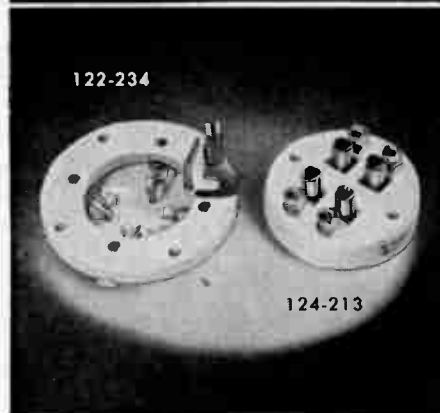
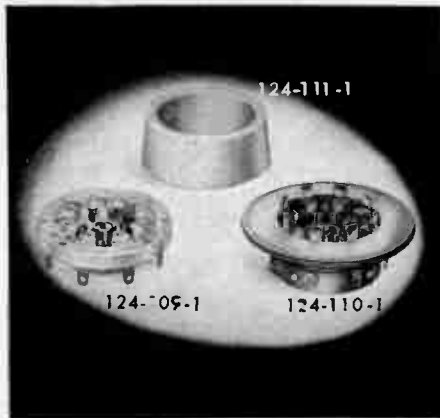
Col. No.	Type	A	B	C	E	For Tube	Net Price
122-224-1	Standard	9/16"	1 1/4"	1 1/16"	7/8"	4 Pin	\$0.69
122-224-100	Industrial	9/16"	1 1/4"	1 1/16"	7/8"	4 Pin	.79
122-224-200	Military	9/16"	1 1/4"	1 1/16"	7/8"	4 Pin	.93
122-225-1	Standard	9/16"	1 1/4"	1 1/16"	5/8"	4 Pin	.76
122-225-100	Industrial	9/16"	1 1/4"	1 1/16"	5/8"	5 Pin	.89
122-225-200	Military	9/16"	1 1/4"	1 1/16"	5/8"	5 Pin	1.05
122-226-1	Standard	9/16"	1 1/4"	1 1/16"	5/8"	6 Pin	.94
122-226-100	Industrial	9/16"	1 1/4"	1 1/16"	5/8"	6 Pin	1.10
122-226-200	Military	9/16"	1 1/4"	1 1/16"	5/8"	6 Pin	1.30
122-227-1	Standard	9/16"	1 1/4"	1 1/16"	3/4"	7 Pin	.90
122-227-100	Industrial	9/16"	1 1/4"	1 1/16"	3/4"	7 Pin	1.10
122-227-200	Military	9/16"	1 1/4"	1 1/16"	3/4"	7 Pin	1.35
122-228-1	Standard	1 1/8"	1 1/2"	1 1/16"	5/8"	Octal	.97
122-228-100	Industrial	1 1/8"	1 1/2"	1 1/16"	5/8"	Octal	1.20
122-228-200	Military	1 1/8"	1 1/2"	1 1/16"	5/8"	Octal	1.45





# E. F. Johnson Company

W A S E C A , M I N N E S O T A



## SOCKET FOR 4X150A, 4X150D, 4X250B, 4X250F

Designed for ultra-high frequency use with high power tubes. Socket is available with or without screen by-pass capacitor. Basic socket is molded of Kel-F plastic—consists of two sections. Lower section holds contacts including center control grid contact—upper section insulates and protects contacts. Control grid contact "guide" is machined for greater alignment accuracy—contacts are silver plated beryllium copper. Tube pin contacts are heat treated to provide positive contact pressure as well as extended tube life; annealed soldering tabs may be easily bent or formed.

Basic socket less mounting ring and screen grid by-pass capacitor. Socket has eight .128" diameter holes equally spaced on 1 1/8" diameter circle for mounting under chassis through 1 1/2" dia. hole.

Cat. No. 124-109-1 . . . . . Net Price \$5.00

Basic socket with mounting ring and 9700 mmd grid by-pass capacitor is mounted above chassis through 2 1/4" diameter hole with 3 clips drilled for 6-32 screws. Cathode contacts not grounded.

Cat. No. 124-110-1 . . Available Summer 1957 . . Net Price \$12.50\*

Same as 124-110-1 but with four cathode contacts grounded to shell.

Cat. No. 124-112-1 . . Available Summer 1957 . . Net Price \$13.00\*

Basic socket with metal mounting saddle. Requires four .136" diameter holes on 2 1/2" diameter circle for mounting below chassis through 1 1/2" diameter clearance hole.

Cat. No. 124-107-1 . . Available in Late 1957 . . Net Price \$7.50\*

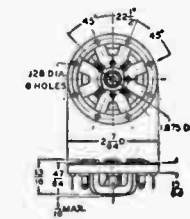
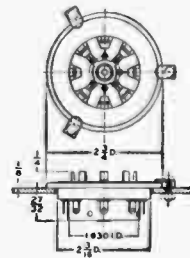
Same as 124-107-1 except cathode terminals grounded.

Cat. No. 124-108-1 . . Available in Late 1957 . . Net Price \$7.95\*

High quality heat resistant steatite chimney for use with above sockets. Tapered construction directs air flow through tube cooling fins. Outside dimensions; 2 1/2" maximum base diameter x 1 3/8" high.

Cat. No. 124-111-1 . . Available Summer 1957 . . Net Price \$4.00\*

\*Prices subject to change at time of delivery.



## SOCKET FOR EIMAC 152TL AND 304TL

Base is glazed porcelain—contacts, nickel plated. Standard has .0001 nickel plating, Military has .0005 silver. Note: Not subject to military inspection due to porcelain base.

Cat. No. . . . . Type . . . . . Net Price

124-213-1 . . Standard or Industrial . . \$1.85

124-213-200 . . . . . Military . . . . . 2.30

124-214-1, 124-214-200 . . . . . Designed for use with tubes such as the 750TL, 1500T, 2000T, 2-2000A and the new Eimac High Vacuum Rectifier 2-450A. Write for further information.

## SOCKET FOR 5D21, 705A AND 715A & B

Designed for Western Electric tubes 5D21, 705A and 715A & B. Heavy, top and sides glazed, grade L4 steatite base and special locking device for retaining tube in socket. Contacts .0003 silver plated on Standard, .001 on Military. Long post single lock .0003 nickel plated on both types.

Cat. No. . . . . Type . . . . . Net Price

122-234-1 . . Standard or Industrial . . \$2.20

122-234-200 . . . . . Military . . . . . 2.75

## 250 WATT SOCKET

A two unit socket for "250 watt" tubes such as the 904A and 849. Anode cap RETMA Nos. C1-8, C1-9, and C1-10, cathode mounting RETMA Base Nos. A3-20, A3-21, A3-23. Bases are of glazed porcelain—contacts are phosphor bronze, nickel plated.

Cat. No. . . . . Net Price

124-215 . . . . . \$5.95

## SOCKET FOR 833 AND 833A

A special socket assembly for the 833 and 833A consisting of a steatite base which supports the tube and a pair of 119-843 tube cap connectors. Knurled thumb nuts permit easy tube installation. Base is designed to minimize strain on the tube envelope and prevent breakage. Heat radiating aluminum plate terminals have 4 3/8" flexible laminated leads.

Cat. No. . . . . Net Price . . . . . Heat radiating plate connector only as used on 124-212.

124-212 . . . . . \$8.10 . . . . . 119-843 . . . . . \$1.35

## MINIATURE SOCKETS

Wafer type, all steatite socket for miniature 7 pin tubes RETMA Base No. E7-1. Silver plated phosphor bronze contacts.

Cat. No. . . . . Net Price

120-267 . . . . . \$0.41

Standard shield base type 7 pin miniature, RETMA Base No. E7-1, of two piece steatite construction with silver plated phosphor bronze contacts, hot tin-dipped. Shield base is brass, nickel plated.

Cat. No. . . . . Pins . . . . . L . . . . . M . . . . . C . . . . . A . . . . . B . . . . . Net Price

120-277 . . . . . 7 . . . . . 1 1/4" . . . . . 3/8" . . . . . .375" . . . . . .625" . . . . . .770" . . . . . \$0.59

## MINIATURE TUBE SHIELDS

Brass, nickel plated to meet JAN specifications. Twist to lock type construction with internal tube retaining spring. Both spring and shield are non-ferrous, non-magnetic material. First three shields are for standard 7 contact miniature socket, next three for standard 9 contact miniature socket.

Cat. No. . . . . Military . . . . . L . . . . . D . . . . . Net Price

133-278-6 . . TS102U01 . . 1 3/8" . . . . . .930" . . . . . \$0.15

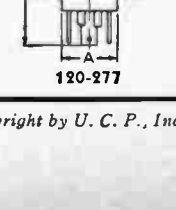
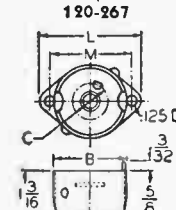
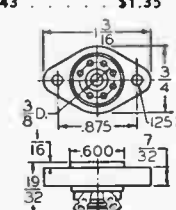
133-278-7 . . TS102U02 . . 1 3/8" . . . . . .930" . . . . . .16

133-278-8 . . TS102U03 . . 2 1/4" . . . . . .930" . . . . . .18

133-278-9 . . TS103U01 . . 1 1/2" . . . . . 1.065" . . . . . .16

133-278-10 . TS103U02 . . 1 1/2" . . . . . 1.065" . . . . . .18

133-278-11 . TS103U03 . . 2 3/8" . . . . . 1.065" . . . . . .20







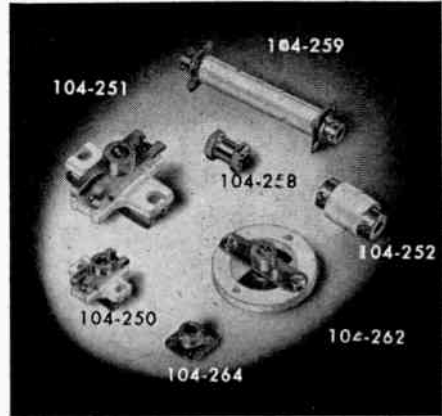
# E. F. Johnson Company

W A S E C A , M I N N E S O T A

## SHAFT COUPLINGS

Flexible and rigid models for coupling shafts,  $\frac{1}{8}$ " to  $\frac{1}{4}$ ",  $\frac{1}{4}$ " to  $\frac{3}{8}$ " and  $\frac{3}{8}$ " to  $\frac{1}{2}$ ".  
 104-250 and -251 series steatite insulated couplings will adjust to both axial and angular shaft misalignment. Spring material is plated phosphor bronze.  
 104-252 is a rigid coupling with glazed porcelain insulation.  
 104-258 is an all-metal, rigid coupling with locking nuts for friction fit to shafts.  
 104-259, -262 and -264 will adjust to minor angular shaft misalignment; -259 and -262 have steatite insulation, the -264 has bakelite.

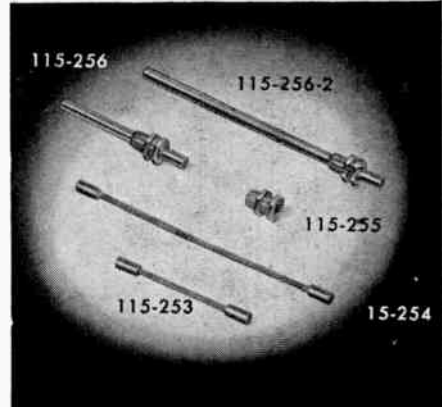
Cat. No.	DC Breakdown	Type	Overall Length	Maximum Diameter	Couples Shafts	Net Price
104-250	4000	Flexible	1 $\frac{1}{8}$ "	1 $\frac{1}{16}$ "	$\frac{1}{8}$ " to $\frac{1}{4}$ "	\$0.88
104-250-3	4000	Flexible	1 $\frac{3}{8}$ "	1 $\frac{1}{16}$ "	$\frac{1}{8}$ " to $\frac{3}{8}$ "	1.00
104-251	8000	Flexible	1 $\frac{1}{2}$ "	2 $\frac{1}{16}$ "	$\frac{3}{8}$ " to $\frac{1}{2}$ "	1.40
104-251-2	8000	Flexible	1 $\frac{3}{8}$ "	2 $\frac{1}{16}$ "	$\frac{1}{4}$ " to $\frac{1}{2}$ "	1.40
104-251-3	8000	Flexible	1 $\frac{1}{4}$ "	2 $\frac{1}{16}$ "	$\frac{1}{4}$ " to $\frac{3}{8}$ "	1.40
104-252	7000	Rigid	1 $\frac{1}{4}$ "	1 $\frac{1}{16}$ "	$\frac{1}{8}$ " to $\frac{1}{4}$ "	.80
104-258	....	Rigid	$\frac{3}{4}$ "	$\frac{3}{16}$ "	$\frac{1}{8}$ " to $\frac{1}{4}$ "	.33
104-259	8000	Semi-Flex.	3 $\frac{3}{8}$ "	1 $\frac{1}{16}$ "	$\frac{1}{8}$ " to $\frac{1}{4}$ "	1.60
104-262	5000	Semi-Flex.	$\frac{3}{8}$ "	2"	$\frac{1}{8}$ " to $\frac{1}{4}$ "	1.20
104-264	750	Semi-Flex.	$\frac{3}{4}$ "	1 $\frac{1}{16}$ "	$\frac{1}{8}$ " to $\frac{1}{4}$ "	.65



## FLEXIBLE SHAFTS

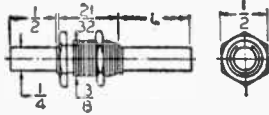
Phosphor bronze, non-rusting flexible shafts with  $\frac{1}{4}$ " brass hubs. Permit out of line or up to 90 degree angular control. Will withstand torque in either direction with minimum backlash.

Cat. No.	Net Price
115-253 3" Flexible Shaft	\$0.50
115-254 6" Flexible Shaft	.75



## PANEL BEARINGS

Number 115-255 is nickel plated brass for  $\frac{1}{4}$ " shaft and up to  $\frac{3}{8}$ " panels. The 115-256 and 115-256-2 have 3" and 6" nickel plated brass shafts. Standard  $\frac{3}{8}$ "-24 nut furnished. Models with locking nut and special shaft lengths available on production quantity orders.

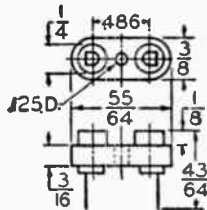
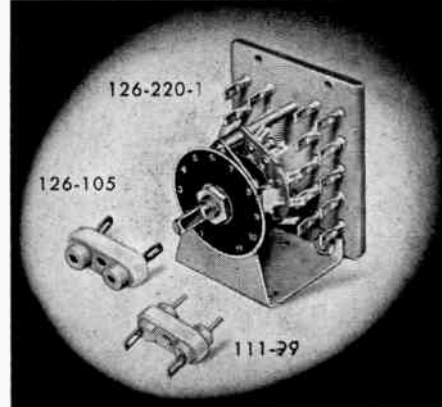


Cat. No.	L	Net Price
115-255 Panel Bearing Only		\$0.19
115-256 Bearing and Shaft	1 $\frac{3}{16}$ "	.37
115-256-2 Bearing and Shaft	4 $\frac{3}{16}$ "	.50

## MULTIPLE CRYSTAL SELECTOR

Designed to accommodate up to ten FT-243 crystals (.093" diameter pins spaced .486"). Base is mica filled phenolic, 2  $\frac{5}{8}$ " x 3  $\frac{1}{8}$ "; switch has 11 positions and includes index plate and universal bracket.

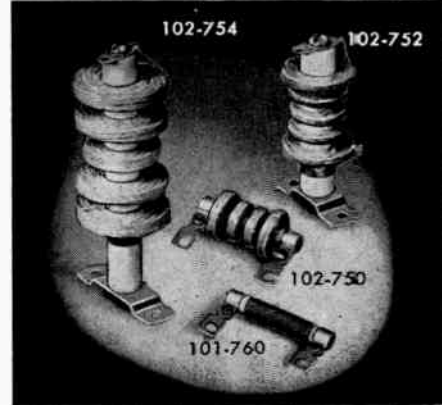
Cat. No.	Net Price
126-220-1 Crystal Selector Assembly	\$5.80
126-120-1 Crystal Board Only (no switch or bracket).	2.60



## CERAMIC CONNECTORS—CRYSTAL SOCKETS

Steatite connectors for low capacity, high voltage, and high temperature operation. May be used as crystal sockets, antenna relay connectors, VFO input connectors, antenna plugs, or AC line connectors. Glazed steatite L4 or better, DC-200 impregnated. Contacts spaced .486", for pins .051" diameter,  $\frac{1}{4}$ " long. Capacity between terminals with socket engaged is less than 1.5 mmf.  $\frac{1}{8}$ " mounting hole also provides for attachment of strain relief cord. 5000 volts breakdown, 10 ampere current carrying capacity. Female connector will accept a type HC-6/U crystal holder.

Cat. No.	Net Price
126-105 Ceramic connector, female, phosphor bronze contacts	\$0.16
126-105-2 Ceramic connector, female, beryllium copper contacts	.19
111-99 Ceramic connector, male, silver plated brass pins	.21



## RADIO FREQUENCY CHOKES

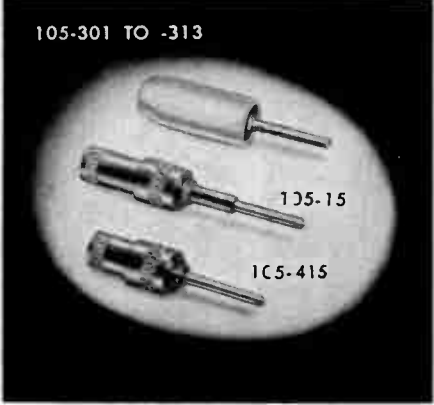
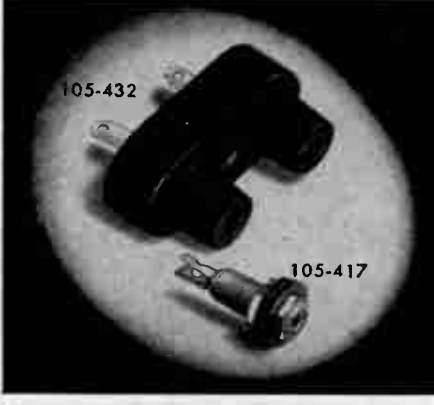
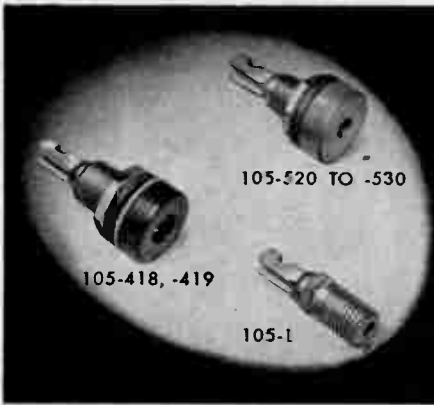
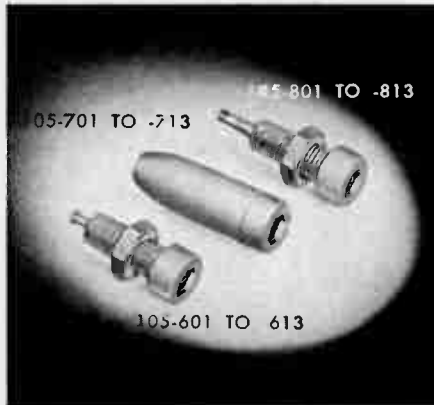
Have high reactance over the range for which they are designed. Coils are of enamelled silk-covered wire impregnated with high grade RF lacquer and wound on steatite cores. Current ratings may be increased for intermittent use.

Cat. No.	Frequency	Current	Induct. (1 mc.)	Ohms DC	Length	Net Price
102-750	1.7 to 30 mc	150 ma	.83 mh	15	1 $\frac{1}{2}$ "	\$1.25
102-752	1.7 to 30 mc	500 ma	1.0 mh	5.2	2 $\frac{1}{8}$ "	1.95
102-754	1.7 to 30 mc	750 ma	1.9 mh	4	4 $\frac{1}{8}$ "	2.90
101-760	VHF	250 ma	6.8 uh	.33	1 $\frac{1}{8}$ "	.62



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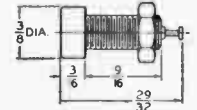
W A S E C A , M I N N E S O T A



## NYLON TIP JACKS

Deluxe, completely insulated jack, body molded from tough, low loss nylon. Retains low loss characteristics through extremely wide temperature range and high relative humidity conditions. Current rating 10 amps. Voltage breakdown 11000 volts D.C.; capacity to 1/4" metal panel only 2.0 mmf. Machined beryllium copper contact, silver plated, is recessed in head for safety. Integral solder terminal hot tin dipped. Single 1/4"-32 nut for mounting, no auxiliary mounting hardware needed. Mounts in 1/4" hole.

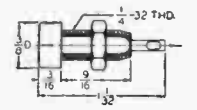
Cat. No.	Color	Net Price	Cat. No.	Color	Net Price
105-601	White	\$0.25	105-607	Yellow	\$0.25
105-602	Red	.25	105-608	Brown	.25
105-603	Black	.25	105-609	Light Green	.25
105-604	Dark Green	.25	105-610	Dark Blue	.25
105-605	Light Blue	.25	105-611	Ivory	.25
105-606	Orange	.25	105-612	Violet	.25
			105-613	Grey	.25



U.S. Pat. No. 2,704,357

Low cost nylon tip jack with formed silver-plated phosphor bronze contact. Current rating: 10 amps. Voltage breakdown 9,000 volts DC; capacity to 3/8" panel, 2.0 mmf. 1/4"-32 nut furnished; mounts in 1/4" hole or double flat hole.

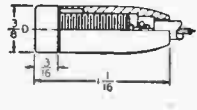
Cat. No.	Color	Net Price	Cat. No.	Color	Net Price
105-801	White	\$0.13	105-807	Yellow	\$0.13
105-802	Red	.13	105-808	Brown	.13
105-803	Black	.13	105-809	Light Green	.13
105-804	Dark Blue	.13	105-810	Dark Blue	.13
105-805	Light Blue	.13	105-811	Ivory	.13
105-806	Orange	.13	105-812	Violet	.13
			105-813	Grey	.13



## NYLON JACK AND SLEEVE ASSEMBLY

Deluxe nylon tip jack as described above without mounting nut, equipped with an inside threaded molded nylon insulating sleeve. Ideal for patch cords or where rear connection of panel mounted jack must be insulated.

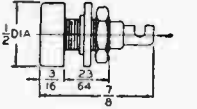
Cat. No.	Color	Net Price	Cat. No.	Color	Net Price
105-701	White	\$0.30	105-707	Yellow	\$0.30
105-702	Red	.30	105-708	Brown	.30
105-703	Black	.30	105-709	Light Green	.30
105-704	Dark Green	.30	105-710	Dark Blue	.30
105-705	Light Blue	.30	105-711	Ivory	.30
105-706	Orange	.30	105-712	Violet	.30
			105-713	Grey	.30



## PLASTIC HEAD TIP JACKS

Popular general purpose jack for a wide variety of applications. Specially formed beryllium copper contact, cadmium plated, grips tip plug along almost entire length—has large, easy wiring terminal with solder barrier and ample room for several wires. Body nickel plated, threaded 1/4"-32. Supplied with extruded shoulder bushing and nickel plated hex nut. Mounts in 3/8" hole. Maximum panel thickness, 5/8" where insulating washers are used, 1/2" where omitted.

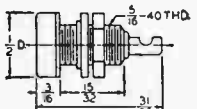
Cat. No.	Color	Net Price	Cat. No.	Color	Net Price
105-520	Red	\$0.18	105-526	Orange	\$0.18
105-521	Black	.18	105-527	Yellow	.18
105-522	Dark Green	.18	105-528	Light Green	.18
105-523	Brown	.18	105-529	Dark Blue	.18
105-525	Light Blue	.18	105-530	Ivory	.18



## HEAVY DUTY TIP JACKS

Plastic head molded integral with rugged nickel plated brass body. Popular for military and heavy duty industrial applications. Contacts, beryllium copper, cadmium plated. Furnished with extruded shoulder washer, extra phenolic washer and nickel plated hex nut. 5/16"-40 thread. Red and Black only.

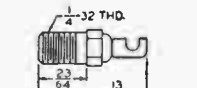
Cat. No.	Color	Net Price	Cat. No.	Color	Net Price
105-418	Red	\$0.25	105-419	Black	\$0.25



## HEADLESS TIP JACK

Economical headless jack for molded plastic instrument cases or insulated jack strip panels where jack body can be screwed into tapped panel. Body has hex shoulder for tightening—is threaded 1/4"-32. Contact, beryllium copper, cadmium plated.

Cat. No.	Net Price
105-1	\$0.11



## HEX HEAD TIP JACK

All metal construction, brass nickel plated body with beryllium copper contact, cadmium plated. Threaded 1/4"-32, supplied with one extruded washer, one flat washer, and nickel plated nut. Mounts in 3/8" hole.

Cat. No.	Net Price
105-417	\$0.18

## SHORTING TYPE TWIN TIP JACK

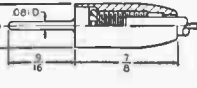
Circuit closes automatically when tips are removed. Jacks spaced 7/8". Singlehole mounting. Molded black body.

Cat. No.	Net Price
105-432	\$0.53

## NYLON INSULATED SOLDERLESS TIP PLUG (PAT. PENDING)

Companion unit for the famous JOHNSON nylon tip jack. Durable molded nylon insulating sleeve designed so no metal surfaces are exposed when plug is inserted in jack. Quick, sure, solderless connection of up to 16 gauge stranded wire. Withstands high voltages and a wide temperature range. Current rating 10 amps. Standard .081" diameter pin fits all standard tip jacks.

Cat. No.	Color	Net Price	Cat. No.	Color	Net Price
105-301	White	\$0.16	105-307	Yellow	\$0.16
105-302	Red	.16	105-308	Brown	.16
105-303	Black	.16	105-309	Light Green	.16
105-304	Dark Green	.16	105-310	Dark Blue	.16
105-305	Light Blue	.16	105-311	Ivory	.16
105-306	Orange	.16	105-312	Violet	.16
			105-313	Grey	.16



## SOLDERLESS PHONE TIP PLUGS

105-15 has a 13/16" pin with the last 3/8" of tip .081" diameter. Knurled body and sleeve permit leads to be firmly secured without soldering. Body and sleeve brass, nickel plated. May be used with all standard tip jacks.

105-415 is the same as 105-15 above except tip is 5/16" long and .081" diameter throughout its length. For all standard tip jacks.

Cat. No.	Net Price	Cat. No.	Net Price
105-15	\$0.18	105-415	\$0.17

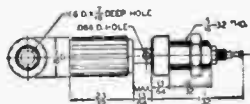


# E. F. Johnson Company

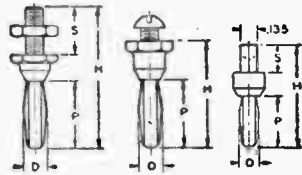
W A S E C A , M I N N E S O T A

## NYLON "SIX-WAY" BINDING POST (PATENT PENDING)

Compact, completely insulated pre-assembled 6-way binding post. Body molded of tough, durable, low-loss nylon. Retains low loss characteristics through extremely wide temperature range and high relative humidity conditions. Insulation resistance greater than 200 meg. after MIL-T-5422B humidity test. Voltage breakdown 8000 volts D.C., capacity to 1/8" panel, 3.3 mmf., current carrying capacity, 15 amperes. Shank is silver-plated brass—thumb nut is self-captivated and cannot be removed. Connection is made at the solder stud, or a lug may be slipped over the threaded portion and secured with a nut. Single 3/16"—32 nut for mounting; no auxiliary mounting hardware needed. Mounts in 2 1/4" hole, "D" hole or double flat hole. (1/4" across flats). Standard banana plug fits into .166" diameter hole in top of binding post.



Cat. No.	Color	Net Price	Cat. No.	Color	Net Price
111-101	White	\$0.30	111-107	Yellow	\$0.30
111-102	Red	.30	111-108	Brown	.30
111-103	Black	.30	111-109	Light Green	.30
111-104	Dark Green	.30	111-110	Dark Blue	.30
111-105	Light Blue	.30	111-111	Ivory	.30
111-106	Orange	.30	111-112	Violet	.30
			111-113	Grey	.30



## STANDARD BANANA PLUGS

Banana plugs of advanced design. Accurately machined brass studs extend full length of pins for extra strength. Springs are nickel silver—highly resistant to corrosion. Bodies and hardware .0001 nickel plated. Solder terminals furnished. 108-770 and 108-771 are jumbo types. 108-754 designed for riveting, has beryllium copper springs and is cadmium plated.

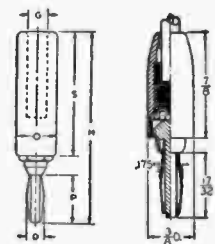
Cat. No.	Old No.	Dwg.	S	P	D	H	Thread	Net Price
108-750	108-75	A	3/8"	1 1/2"	.175"	1 1/2"	6-32	\$0.13
108-750-2	108-75A	A	3/8"	1 1/2"	.175"	1 1/2"	6-32	.14
108-753	108-75C	B	1/2"	1 1/2"	.175"	1 1/2"	6-32	.14
108-754	108-75D	C	1/2"	1 1/2"	.155"	1 1/2"		.09
108-770	108-77	A	3/8"	3"	.300"	1 1/2"	1/2"-28	.30
108-771	108-77A	B	3/8"	3"	.300"	1 1/2"	10-32	.34

JOHNSON banana plugs can be furnished with beryllium copper springs and are available plated nickel, cadmium or silver when required. A selection of miniature solder type plugs is available also. Orders for special plugs should be of sufficient quantity for economical runs.

## INSULATED BANANA PLUGS (PATENT PENDING)

### Nylon Insulated Solderless Plug

Compact high voltage insulated plug for a wide variety of applications. Easy solderless connection of up to 16 gauge stranded wire. Nylon insulating sleeve retains strength and low loss characteristics over a wide range of temperatures and withstands high voltages. Body and pin one piece nickel plated brass with high grade nickel silver springs.



Cat. No.	Color	Net Price	Cat. No.	Color	Net Price
108-301	White	\$0.21	108-307	Yellow	\$0.21
108-302	Red	.21	108-308	Brown	.21
108-303	Black	.21	108-309	Light Green	.21
108-304	Dark Green	.21	108-310	Dark Blue	.21
108-305	Light Blue	.21	108-311	Ivory	.21
108-306	Orange	.21	108-312	Violet	.21
			108-313	Grey	.21

### Standard and Jumbo Insulated Plugs

The 108-752-1 is a standard size insulated plug with a black plastic handle, 108-752-2 same as above with red plastic handle. Both have brass, nickel plated bodies with nickel silver springs.

The 108-772-1 is a jumbo size insulated plug with a black plastic handle, 108-772-2 same but equipped with red plastic handle. Both have brass, nickel plated bodies with nickel silver springs.

Cat. No.	Old No.	S	P	D	H	G	O	Net Price
108-752-1	108-75BB	1 3/8"	1 1/2"	.175"	2 1/8"	1/2"	1/8"	\$0.36
108-752-2	108-75BR	1 3/8"	1 1/2"	.175"	2 1/8"	1/2"	1/8"	.36
108-772-1	108-77BB	1 3/8"	3"	.300"	2 1/8"	3/8"	1/8"	.48
108-772-2	108-77BR	1 3/8"	3"	.300"	2 1/8"	3/8"	1/8"	.48

## BANANA JACKS Nylon Insulated Banana Jacks

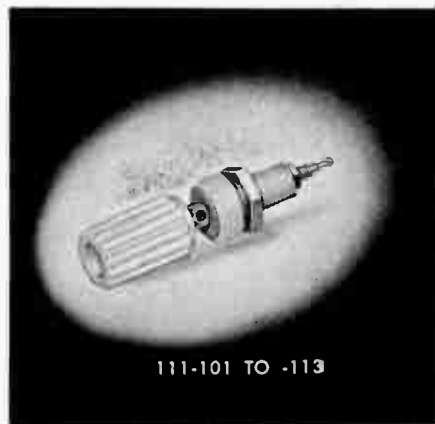
Completely insulated banana jack; body molded of tough, low-loss nylon. Retains low-loss characteristics through extremely wide temperature range and high relative humidity conditions. Voltage breakdown 12,500 volts D.C., capacity to 1/4" panel only 1.5 mmf. Insert is cadmium-plated. Accommodates banana plugs of a nominal diameter of .175". Single 3/16"—32 nut for mounting, no auxiliary mounting hardware needed. Mounts in 2 1/4" hole.

Cat. No.	Color	Net Price	Cat. No.	Color	Net Price
108-901	White	\$0.14	108-907	Yellow	\$0.14
108-902	Red	.14	108-908	Brown	.14
108-903	Black	.14	108-909	Light Green	.14
108-904	Dark Green	.14	108-910	Dark Blue	.14
108-905	Light Blue	.14	108-911	Ivory	.14
108-906	Orange	.14	108-912	Violet	.14
			108-913	Grey	.14

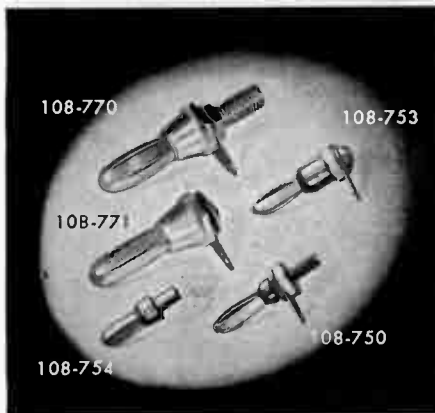
### Standard Banana Jacks

108-740(74) is a quality nickel plated jack of machined brass. Solder terminal and nut furnished. 108-745-1(7451) similar to the 108-740 with a red plastic head molded integral with body. Supplied with fibre insulating washers, terminal and nut. 108-745-2 (7452) same as 108-745-1 but black. 108-760 (76) for jumbo plugs. Supplied with solder terminal and nickel plated hex nut.

Cat. No.	Old No.	Dwg.	F	D	S	H	Hole Dia.	Thread	Net Price
108-740	108-74	D	3/8"	1 1/2"	1 1/2"	5/8"	.166"	1/4"-28	\$0.12
108-745-1	108-7451	D	1/2"	1 1/2"	3 1/4"	2 1/2"	.166"	1/4"-28	.22
108-745-2	108-7452	D	1/2"	1 1/2"	3 1/4"	2 1/2"	.166"	1/4"-28	.22
108-760	108-76	F	3/8"	3"	2 1/2"	1"	.277"	3/8"-24	.31



111-101 TO -113



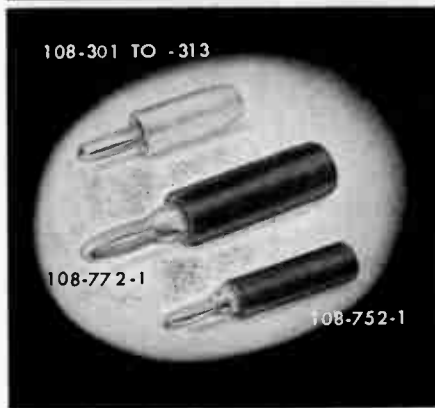
108-770

108-753

108-771

108-750

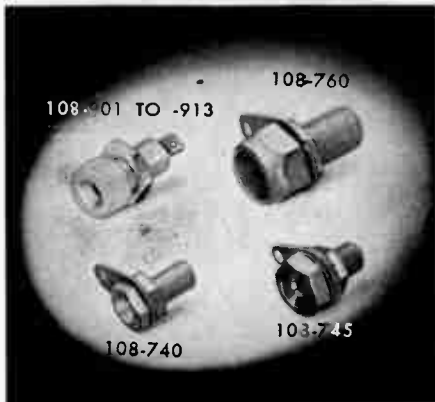
108-754



108-301 TO -313

108-772-1

108-752-1



108-760

108-901 TO -913

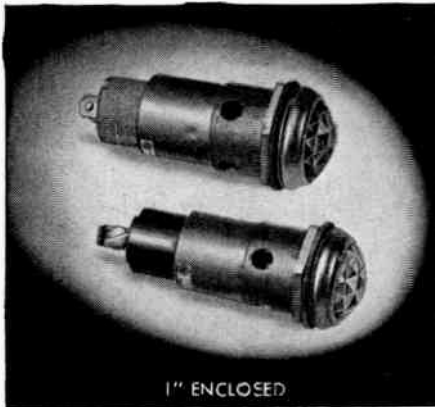
108-740

108-745

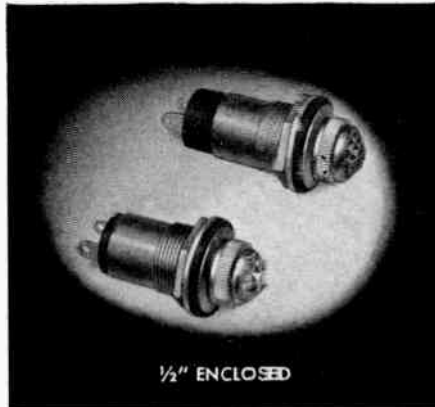


# E. F. Johnson Company

W A S E C A , M I N N E S O T A



1" ENCLOSED



1/2" ENCLOSED



3/8" W<sup>▲</sup> LUCITE



1" W<sup>▲</sup> GLASS

1" DETACHABLE SOCKET

PANEL LIGHT

## PILOT LIGHTS—GENERAL SPECIFICATIONS

As a result of a comprehensive survey recently conducted among Design and Development Engineers, the following listing of Pilot and Indicator lights are classified by the E. F. Johnson Company as "PREFERRED." Pilot lights selected from this group may be quickly obtained from the factory or are immediately available at parts distributors throughout the country. Specials, including those meeting military specifications are available in production quantities.

Standard jewel colors are clear, red, green, amber, blue, and opal; green and blue not recommended for use with neon lamps. When ordering -.1 indicates clear; -.2, red; -.3, green; .4, amber; .5, blue; .6, opal.

For a complete listing of all available Johnson pilot lights and jewels, write for your copy of Johnson Pilot Light Catalog No. 750.

### 1" ENCLOSED—GLASS JEWELS

U. L. approved. Friction type jewel holder, bright chrome plated brass. Nickel plated, brass body—porcelain insulation. Bulb replaceable from front panel. Solder terminals. Available in two lengths for either 110 volt, S6 candelabra screw lamp or for shorter T 4 1/2 lamps such as the NE 45. 147-1000 has faceted jewel, 147-1004 has smooth jewel for maximum visibility with neon lamps. 1" mounting hole required. Mounting nut and fibre washer furnished. Jewels available in clear, amber, red, green, blue, and opal.

Cat. No.	Length Behind Panel	Bulb Shape	Lamp Base	Net Price
147-1000	2 1/8"	S6	Candelabra Screw	\$1.12
147-1004	2 3/8"	T 4 1/2	Candelabra Screw	1.10

Identical to 147-1000 listed above, except socket housing is phenolic and assembly has screw terminals to meet MIL-P14-CFG.

147-1032	2 3/8"	S6	Candelabra Screw	1.38
U. L. approved. Threaded jewel holder, knurled brass, bright chrome plated. Nickel plated brass body 147-1200 has porcelain insulation, 147-1209 has phenolic insulation. 147-1200 has solder terminals, 147-1209 has screw terminals. 1" mounting hole required. Mounting nut and fibre washer furnished. Faceted jewels available in clear, red, green, amber, blue and opal.				
147-1200	2 1/8"	S6	Candelabra Screw	1.39
147-1209	2 3/8"	S6	Candelabra Screw	1.49

### 1/2" ENCLOSED—FACETED GLASS JEWELS

U. L. approved. Threaded jewel holder, knurled brass, nickel plated. Assembly is available in two different lengths to accommodate the long, T 3 1/2 miniature bayonet bulbs or the short, round G3 1/2 miniature bayonet types. Threaded jewel holders are removable and assemblies are designed so bulbs may be replaced from front panel without using a special tool. Equipped with solder terminals. Mounting nut, fibre washer, and lock washer furnished. May be used in panels up to 3/8" thick. 1 1/8" mounting hole required. Faceted jewels available in clear, red, green, amber, blue, and opal.

Cat. No.	Length Behind Panel	Bulb Shape	Lamp Base	Net Price
147-1110	1 3/8"	T 3 1/2	Miniature Bayonet	\$0.84
147-1112	1 3/8"	G3 1/2	Miniature Bayonet	.84

### ENCLOSED TYPES—WIDE ANGLE LUCITE LENS

U. L. approved. Designed for economical continuous operation utilizing neon or low power incandescent bulbs. Sockets are located so bulbs extend far forward in assemblies for maximum wide angle visibility. Tiny hemispheres on interior of lucite lens diffuse light for maximum visibility with uniform light intensity from front or sides. One inch types have chrome plated, threaded lens holders which may be removed to replace bulbs. On 3/8" types, lucite lens cap is threaded and screws out of bezel on housing for bulb replacement. Mounting nut and fibre washer furnished with both types. Recommended lens colors: clear, amber, red, or opal.

#### 1" ENCLOSED—LUCITE LENS

1" mounting hole required; screw terminals on 147-1217, 147-1218 has solder terminals.

Cat. No.	Length Behind Panel	Bulb Shape	Lamp Base	Net Price
147-1217	1 13/16"	T 4 1/2	Candelabra Screw	\$1.57
147-1218	1 1/2"	T 3 1/2	Miniature Bayonet	1.21

#### 3/8" ENCLOSED—LUCITE LENS

1 1/8" mounting hole required; solder terminals, lock washer.

Cat. No.	Length Behind Panel	Bulb Shape	Lamp Base	Net Price
147-1142	1 1/8"	T 3 1/2	Miniature Bayonet	\$0.75
147-1143*	1 1/8"	T 3 1/2	Miniature Bayonet	.98
147-1144**	1 1/8"	T 3 1/2	Miniature Bayonet	.98

\*Built in 180,000 ohm resistor

\*\*Built in 100,000 ohm resistor

### 1" ENCLOSED—WIDE ANGLE "BULLSEYE" LENS

U. L. approved. Threaded jewel holder, knurled brass, chrome plated. An extremely attractive assembly designed to provide excellent visibility from any angle. Jewel has large inside diameter permitting bulb to set well forward for maximum illumination. Hundreds of tiny hemispheres on interior surface of glass jewel provide diffusion of light in all directions. Lens exterior surface is smooth preventing the accumulation of dirt and dust. Bulb is replaceable from front panel. Phenolic insulation—screw terminals. May be used on panels up to 3/8" thick. 1" mounting hole required. Mounting nut and fibre washer furnished. Jewels available in clear, red, green, amber, blue, or opal.

Cat. No.	Length Behind Panel	Bulb Shape	Lamp Base	Net Price
147-1600	2 1/8"	S6	Candelabra Screw	\$1.69

### 1" DETACHABLE SOCKET TYPE

Economical semi-enclosed assembly with chrome plated jewel bezel. Friction fit jewel holder easily removable for bulb replacement from front panel. Socket portion detaches from panel housing allowing panel removal without disconnection of wiring. Body and bracket nickel plated. Fibre washer and nut furnished. 1" mounting hole required. Faceted jewels available in clear, red, green, amber, blue, and opal.

Cat. No.	Length Behind Panel	Bulb Shape	Lamp Base	Net Price
147-800	1 1/8"	G3 1/2, T3 1/2	Miniature Screw	\$0.79
147-802	2 3/8"	T 4 1/2	Candelabra Screw	.78
147-804	1 1/8"	G3 1/2, T3 1/2	Miniature Bayonet	.79

### PANEL LIGHT

For front panel illumination. Polished nickel plated hood, easily removable for lamp replacement, rotates to any position. 3/8" mounting hole required.

Cat. No.	Bulb Shape	Lamp Base	Net Price
147-330	T 3 1/2, G3 1/2	Miniature Screw	\$0.82
147-329	T 3 1/2, G3 1/2	Miniature Bayonet	.91



# E. F. Johnson Company

W A S E C A , M I N N E S O T A

## OPEN PILOT LIGHTS—HORIZONTAL MOUNTING

Designed to permit bulb replacement from the panel. Heavy gauge brackets are nickel plated—jewel holders are finished same as enclosed assemblies of comparable size. A special bushing and mounting nut serves as a jewel receptacle and as a mounting for the bracket.

### 1" HORIZONTAL OPEN—FACETED GLASS JEWELS

Friction type jewel holder, chrome plated. 1" mounting hole required. May be used on panels up to 3/8" thick. Faceted jewels available in clear, red, green, amber, blue, and opal.

Cat. No.	Length Behind Panel	Bulb Shape	Base	Net Price
147-100	1 1/2"	G3 1/2, T3 1/4	Miniature Screw	\$.66
147-103	2 1/4"	S6	Candelabra Screw	.67
147-106	1 3/4"	G3 1/2, T3 1/4	Miniature Bayonet	.69

### 1/2" HORIZONTAL OPEN—FACETED GLASS JEWELS

Threaded jewel holder, bright nickel plated. 1 1/16" mounting hole required. May be used on panels up to 1/2" thick. Faceted jewels available in clear, red, green, amber, blue, and opal.

Cat. No.	Length Behind Panel	Bulb Shape	Base	Net Price
147-400	1 1/8"	G3 1/2, T3 1/4	Miniature Screw	\$0.52
147-403	1 3/8"	G3 1/2, T3 1/4	Miniature Bayonet	.55

### 3/4" HORIZONTAL OPEN—LUCITE LENS

For efficient utilization of low powered light sources. Wide angle visibility, low cost. Use with neon or incandescent lamps with 3 watts or less dissipation. 1 1/16" mounting hole required. Recommended lens colors: clear, amber, red, or opal.

Cat. No.	Length Behind Panel	Bulb Shape	Base	Net Price
147-406	1 1/8"	T3 1/4	Miniature Bayonet	\$0.46
147-407	1 1/4"	NE51	Miniature Bayonet*	.73

\*180,000 resistor built in

## OPEN PILOT LIGHTS—VERTICAL MOUNTING

Sturdy, heavily plated units for application where bulb is accessible from behind panel. Jewel holders are polished, nickel plated, and fasten with nut on rear of panel so assembly is tamper proof from front. All have solder terminals.

### 3/4" VERTICAL OPEN—FACETED JEWELS—ALL COLORS

1 1/16" Mounting Hole Required—Bright Chrome Plated Jewel Holder.

Cat. No.	Length Behind Panel	Bulb Shape	Base	Net Price
147-200	1 1/8"	G3 1/2	Miniature Screw	\$0.54
147-203	1 3/8"	S6	Candelabra Screw	.55
147-206	1"	G3 1/2	Miniature Bayonet	.58

### 1/2" VERTICAL OPEN—FACETED JEWELS—ALL COLORS

1/16" Mounting Hole Required.

Cat. No.	Length Behind Panel	Bulb Shape	Base	Net Price
147-300	1 3/16"	G3 1/2	Miniature Screw	\$0.33
147-303	1 1/4"	S6	Candelabra Screw	.34
147-306	1"	G3 1/2	Miniature Bayonet	.36

### 3/4" VERTICAL OPEN—FACETED JEWELS—ALL COLORS

1/2" Mounting Hole Required

Cat. No.	Length Behind Panel	Bulb Shape	Base	Net Price
147-500	1 1/8"	G3 1/2	Miniature Screw	\$0.28
147-503	1"	G3 1/2	Miniature Bayonet	.31

## JEWEL-BUSHING AND JEWEL ASSEMBLIES

(For use with brackets listed below)

### 1" JEWEL AND BUSHING ASSEMBLY

Friction fit jewel holders. Chrome plated bezel fits into threaded brass, nickel plated bushing. Furnished with fibre compression washer and nut. 1" mounting hole required. Faceted jewels available in clear, red, green, amber, blue, and opal.

Cat. No.	Net Price
147-110	\$0.49

### 1/2" JEWEL AND BUSHING ASSEMBLY

Threaded jewel holder, knurled brass, nickel plated. Includes jewel assembly and threaded bushing with mounting nut. 1 1/16" mounting hole required. Faceted jewels available in clear, red, green, amber, blue, and opal.

Cat. No.	Net Price
147-410	\$0.38

### 3/4" JEWEL

Threaded jewel assembly. Bright nickel plated bezel. Mounting nut furnished. 3/16" mounting hole required. Faceted jewels available in clear, red, green, amber, blue, and opal.

Cat. No.	Net Price
147-310	\$0.20

### 3/4" MINIATURE JEWEL

Miniature threaded jewel assembly with nut. Bright nickel plated bezel. 9/32" mounting hole required. Faceted jewels available in clear, red, green, amber, and opal.

Cat. No.	Net Price
147-510	\$0.14

### 3/4" LUCITE LENS

Lucite lens threaded 9/16"-27 as shown on 147-406 and -407 above. Recommended colors, clear, amber, red, or opal.

Cat. No.	Net Price
147-10	\$0.10

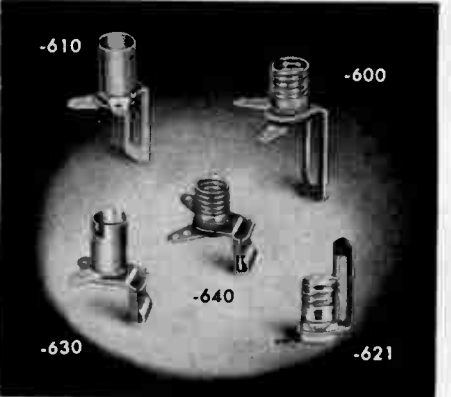
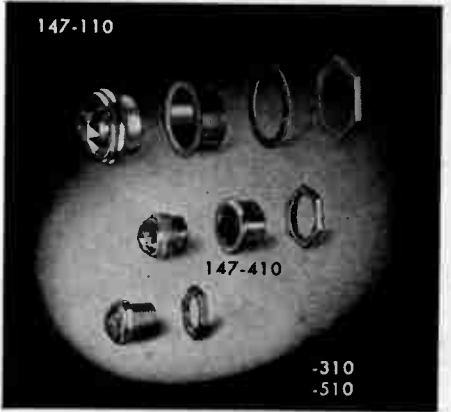
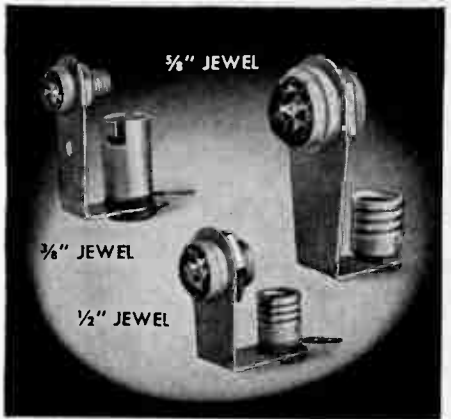
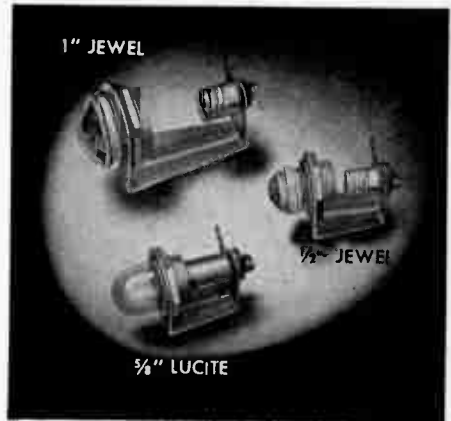
## DIAL LIGHT BRACKETS

Designed with exclusive features for long life and dependability. Socket shells are of extra heavy material and feature seamless construction. Terminals are tin plated for easy solder connection—all other parts are heavily nickel plated. Heavy gauge contact springs on bayonet types retain lens on indefinitely.

Cat. No.	Socket	Net Price	Cat. No.	Socket	Net Price
147-600	Min. Screw (Bracket down)	\$0.12	147-621	Cand. Screw (Bracket up)	.13
147-601	Min. Screw (Bracket up)	.12	147-630	Min. Bay. (Clip down)	.16
147-610	Min. Bay. (Bracket down)	.14	147-631	Min. Bay. (Clip up)	.16
147-611	Min. Bay. (Bracket up)	.14	147-640	Min. Screw (Clip down)	.14
147-620	Cand. Screw (Bracket down)	.13	147-641	Min. Screw (Clip up)	.14



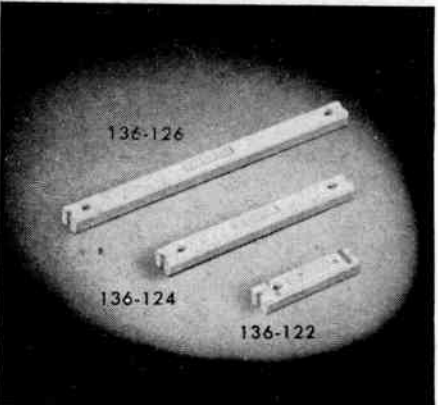
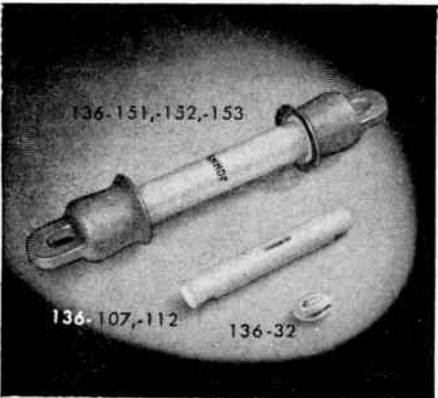
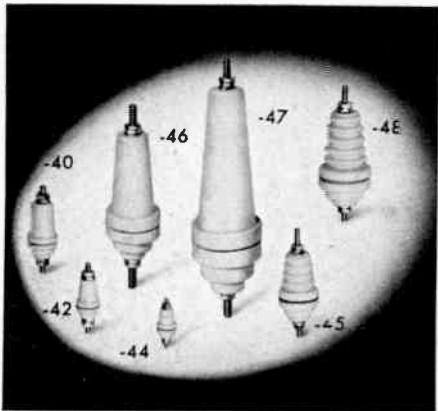
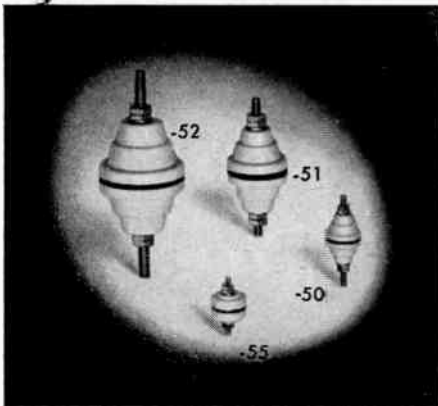
Bulbs used on all pilot lights may be identified from these illustrations. (Not included in prices.)





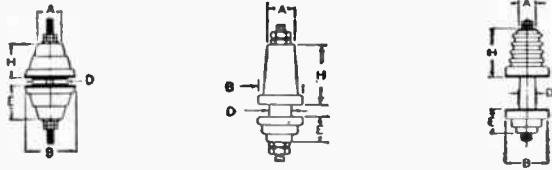
# E. F. Johnson Company

W A S E C A , M I N N E S O T A



## INSULATORS

Superior quality steatite and porcelain insulators. Heavily glazed surfaces and heavy nickel plated brass hardware suitable for exposed applications. Types designated -2 have jack to accommodate JOHNSON or other standard banana plugs.



## INSULATED THRU-PANEL BUSHINGS

Assemblies consist of a pair of identical steatite insulators, hardware, and cushion washers. The 135-55 assembly has interlocking insulators which are self-centering in mounting hole and may be used on very thin panels.

Cat. No.	H	B	D	A	Hardware	Net Price
135-50	3/8"	3/4"	15/32"	3/8"	6-32	\$0.33
135-51	13/16"	1 1/4"	27/32"	5/8"	10-32	.54
135-52	1 1/8"	1 3/4"	1 1/32"	7/8"	3/4"-20	.78
135-55	3/4"	3/4"	15/32"	1/2"	6-32	.31

## THRU-PANEL INSULATORS

High voltage insulators compression mounted by means of a stud throughout length. Extrusion of insulator base extends thru mounting hole increasing breakdown rating. Flat mounting surfaces with cushion washer. Types with jacks have terminal permitting connection above as well as below panel.

### STEATITE

Cat. No.	H	B	D	E	A	Hardware	Net Price
135-40	1 1/4"	1 5/8"	7/16"	3/8"	19/32"	10-32	\$0.35
135-40-2	1 1/4"	1 5/8"	7/16"	3/8"	19/32"	108-740 Jack	.45
135-42	7/8"	3/4"	13/32"	3/8"	1 1/2"	10-32	.35
135-42-2	7/8"	3/4"	13/32"	3/8"	1 1/2"	108-740 Jack	.45
135-44	5/8"	5/8"	5/8"	5/16"	3/8"	6-32	.27

### PORCELAIN

Cat. No.	H	B	D	E	A	Hardware	Net Price
135-45	1 3/8"	1 3/4"	3/8"	1 1/16"	5/8"	10-32	\$0.47
135-45-2	1 3/8"	1 3/4"	3/8"	1 1/16"	5/8"	108-740 Jack	.57
135-46	2 3/4"	1 3/8"	1 1/16"	1"	1 5/16"	3/4"-20	1.30
135-46-2	2 3/4"	1 3/8"	1 1/16"	1"	1 5/16"	108-760 Jack	1.50
135-47	4 1/2"	2 1/8"	2 1/32"	1 1/2"	1 1/8"	3/4"-20	1.85
135-47-2	4 1/2"	2 1/8"	2 1/32"	1 1/2"	1 1/8"	108-760 Jack	2.15
135-48	2"	1 3/8"	1 1/16"	7/8"	3/4"	10-32	.70
135-48-2	2"	1 3/8"	1 1/16"	7/8"	3/4"	108-740 Jack	.83

## ANTENNA STRAIN INSULATORS

The 136-151, 136-152, and 136-153 are heavy duty 1 1/2" diameter wet process porcelain with specially sealed end bells of non-corrosive aluminum alloy. Porcelain glazed to prevent moisture absorption.

Numbers 136-107 and 136-112 are wet process, glazed porcelain 1" diameter round. Number 136-104 is dry process, glazed 3/8" square.

The 136-32 is a compression type strain insulator for aircraft or guy wire applications. Dry process, glazed porcelain.

Cat. No.	Breaking Strength	Length		Net Price
		Net	Overall	
136-151	5000 lbs.	8"	15 1/2"	\$9.50
136-152	5000 lbs.	12"	19 1/2"	10.50
136-153	5000 lbs.	20"	25 1/2"	14.70
136-104	400 lbs.	..	4"	.26
136-107	800 lbs.	..	7"	1.18
136-112	800 lbs.	..	12"	1.25
136-32	.....	..	1 1/2"	.12

## FEEDER INSULATORS

Numbers 136-122, 136-124, and 136-126 are conventional feeder spreaders for constructing open-wire antenna feeders and transmission lines. Made of high grade, low absorption porcelain, they are silicone impregnated for moisture resistance. Number 136-122 has extra notches for 1 1/2" line spacing. All have 3/8" x 1/2" cross section.

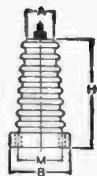
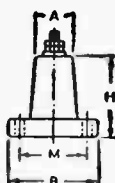
Cat. No.	Length	Net Price
136-122	2"	\$0.17
136-124	4"	.24
136-126	6"	.32



# E. F. Johnson Company

W A S E C A , M I N N E S O T A

## INSULATORS



### STEATITE CONE INSULATORS

Material, grade L-4 or better, steatite. Deep, clean threads are tapped directly into the ceramic. Furnished complete with two nickel plated machine screws, nickel plated brass washers, and a cork cushion washer.

Cat. No.	H	B	A	Hardware	Net Price
135-500	5/8"	1 1/8"	1 1/8"	6-32	\$0.23
135-501	1"	1 1/4"	1 1/4"	8-32	.31
135-502	1 1/2"	1 3/4"	1 3/4"	8-32	.51
135-503	2"	1 3/4"	1 3/4"	10-32	.71
135-504	3"	1 3/4"	1 3/4"	10-32	1.20

### STEATITE STAND-OFF INSULATORS

Glozed steatite insulators combining excellent strength with economy. Relatively large mounting surface combined with two hole mounting permit substantial lateral loads. Hardware includes screw, flat washer, and two nuts.

Parts designated -2 have a standard banana jack and a solder lug mounted on the top of the insulator. Jacks, .166" inside diameter, fit standard banana plugs.

Cat. No.	H	B	M	A	Hardware	Net Price
135-20	1 1/8"	1 3/8"	1 1/8"	3/4"	10-32	\$0.25
135-20-2	1 1/8"	1 3/8"	1 1/8"	3/4"	108-740 Jack	.30
135-22	1"	1 1/2"	1 1/2"	15/16"	8-32	.19
135-22-2	1"	1 1/2"	1 1/2"	15/16"	108-740 Jack	.23
135-24	5/8"	1"	1 1/8"	3/8"	6-32	.15

### PORCELAIN STAND-OFF INSULATORS

Ribbed porcelain insulators with square mounting bases and four mounting holes. Porcelain dense molded and glazed except on mounting surfaces.

Cat. No.	H	B	M	A	Hardware	Net Price
135-60	4 1/2"	2 1/2"	1 7/8"	1 1/2"	3/4"-20	\$0.98
135-62	2 3/4"	1 7/8"	1 3/8"	1 1/8"	3/4"-20	.60

Surface mounting porcelain insulators with drawn and etched aluminum bases. Numbers 135-65, 135-65-2, 135-68 and 135-68-2 are ribbed, 135-66, 135-66-2 and 135-67 and 135-67-2 are smooth surfaced. Types 135-65-2 and 135-68-2 have standard, .166" inside diameter banana jacks; types 135-66-2 and 135-67-2 have .277" inside diameter jacks to fit jumbo banana plugs.

Cat. No.	H	B	M	A	Hardware	Net Price
135-65	1 3/8"	1 1/2"	1 1/2"	5/8"	10-32	\$0.30
135-65-2	1 3/8"	1 1/2"	1 1/2"	5/8"	108-740 Jack	.39
135-66	2 3/4"	1 3/4"	1 3/8"	15/16"	3/4"-20	.87
135-66-2	2 3/4"	1 3/4"	1 3/8"	15/16"	108-760 Jack	.98
135-67	4 1/2"	2 1/4"	1 3/8"	1 1/8"	3/4"-20	.98
135-67-2	4 1/2"	2 1/4"	1 3/8"	1 1/8"	108-760 Jack	1.25
135-68	2"	1 3/4"	1 3/8"	1 1/8"	10-32	.46
135-68-2	2"	1 3/4"	1 3/8"	1 1/8"	108-740 Jack	.54

### LEAD-IN BUSHINGS

Single porcelain insulators less all hardware except cushion washer. Mounting flanges and threaded lead-in rods listed below.

Cat. No.	H	B	A	Net Price
135-53	1 3/4"	2 1/2"	1 1/16"	\$0.29
135-54	4"	3 1/2"	1"	.79

Threaded rod for use with lead-in bushings 135-53 and 135-54. Rod threaded overall 1/4"-20. Complete assembly includes rod, 4 brass washers and 4 nuts, all parts heavily nickel plated.

Cat. No.	Length	Net Price
115-240	8"	\$0.57
115-241	10"	.71
115-242	15"	.88

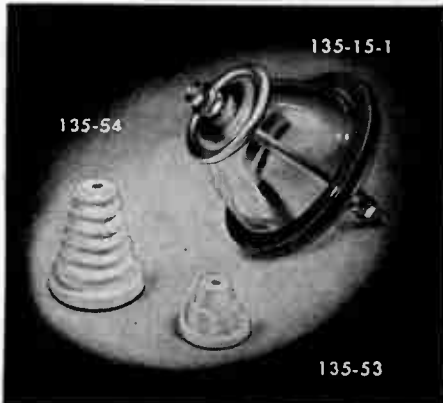
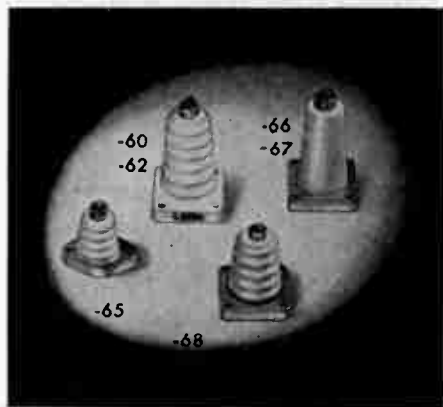
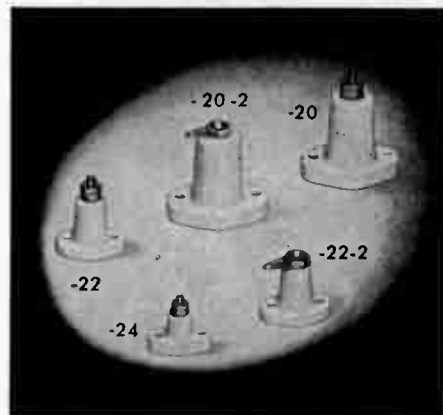
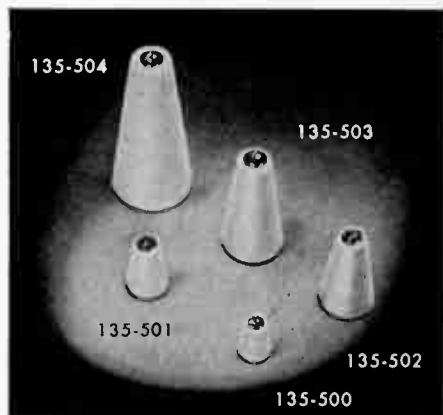
Stamped aluminum mounting flanges for lead-in bushings 135-53 and 135-54. Three mounting holes spaced 120 degrees apart.

Cat. No.	For Bushing No.	Net Price
135-90	135-53	\$0.34
135-91	135-54	.84

### FEED-THRU BOWL ASSEMBLIES

Bowls, electrical glass, 6 13/16" maximum diameter, 4 3/8" high. Steel mounting flange 7 3/4" dia. Stud threaded 1/2"-13. Cork gaskets and spun aluminum corona shields included in fittings. 135-15-1 consists of single bowl with fittings, 10 1/4" stud. 135-15-3 two bowls and fittings with 16" stud for walls up to 4". 135-15-7 with 24" stud for walls up to 12". Can also be furnished with special hollow studs.

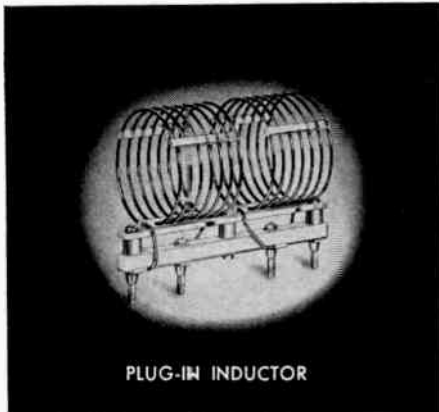
Cat. No.	Net Price
135-15-1	One bowl and fittings . . . . . \$15.40
135-15-3	Two bowls and fittings . . . . . 27.10
135-15-7	Two bowls and fittings . . . . . 27.60
135-15-11	Glass bowl only, less fittings . . . . . 8.65



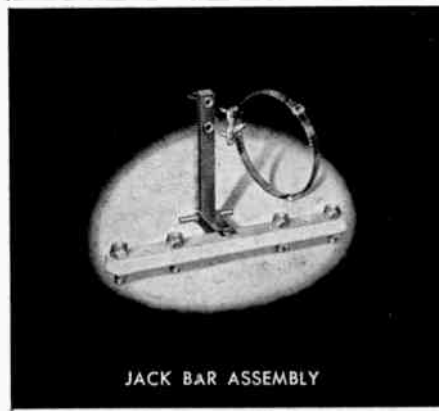


# E. F. Johnson Company

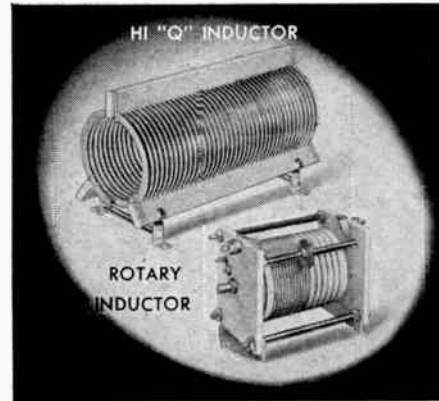
W A S E C A , M I N N E S O T A



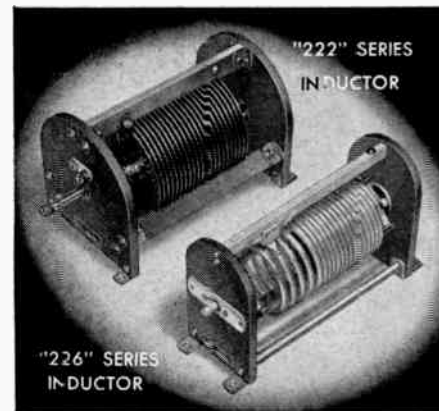
PLUG-IN INDUCTOR



JACK BAR ASSEMBLY



HI "Q" INDUCTOR  
ROTARY INDUCTOR



"222" SERIES INDUCTOR

"226" SERIES INDUCTOR

## SWINGING LINK INDUCTORS

Swinging link inductors for amateur bands 160 thru 6 meters; 150, 500 and 1000 watt sizes. Polystyrene insulation, steatite bases and heavy wire sizes. HCS-Inductors match high voltage, low current tubes. LCS-Inductors match low voltage, high current tubes. Complete assembly includes Inductors for bands desired, Jack Bar, Link Arm Assembly and Plug-in Links required for matching to line or antenna coupler.

Cat. No.	Type No.	1,000 watts		Height	Width	Net Price
		Wire Size	Cap. mmf.			
238-106	1000HCS160	10	99	5 1/16"	4 1/2"	\$9.80
238-107	1000LCS160	10	140	5 1/16"	4 1/2"	9.80
238-101	1000HCS80	10	46	5"	3 23/32"	8.90
238-102	1000LCS80	10	73	5"	3 23/32"	8.90
238-103	1000HCS40	10	94	5"	3 23/32"	7.80
238-104	1000LCS40	8	55	5"	3 3/8"	7.80
238-105	1000HCS20	8	19	4 7/8"	4 23/32"	7.50
238-111	1000LCS20	.250"	26	5 1/8"	4 23/32"	7.50
238-112	1000H/LCS14	.250"	19	4 7/8"	3 1/2"	6.60
238-113	1000H/LCS10	.250"	18	4 7/8"	3 1/2"	6.00
500 watts						
238-125	500HCS160	14	100	4 7/32"	3 1/2"	6.95
238-126	500LCS160	14	148	4 7/32"	3 1/2"	6.95
238-121	500HCS80	14	45	3 3/32"	2 5/8"	6.75
238-122	500LCS80	12	76	3 3/4"	2 21/32"	6.75
238-123	500HCS40	12	27	3 3/4"	2 21/32"	6.50
238-124	500LCS40	10	50	3 23/32"	2 23/32"	6.50
238-131	500HCS20	6	25	3 13/16"	2 13/16"	5.25
238-132	500LCS20	6	37	3 13/16"	2 13/16"	5.25
238-133	500H/LCS14	6	19	3 11/16"	2 9/16"	4.95
238-134	500H/LCS10	6	19	3 9/16"	2 9/16"	4.50
238-135	500H/LCS6	6	18	3 9/16"	2 9/16"	4.50
150 watts						
238-147	150HCS160	18	102	4 3/16"	3 1/16"	4.65
238-148	150LCS160	16	151	4 7/32"	3 3/8"	4.65
238-141	150HCS80	16	51	4 7/32"	2 19/32"	4.40
238-142	150LCS80	16	68	4 7/32"	2 19/32"	4.40
238-143	150HCS40	14	28	3 23/32"	2 5/8"	4.15
238-144	150LCS40	12	57	3 3/4"	2 21/32"	4.15
238-145	150HCS20	12	21	3 1/2"	2 13/32"	3.95
238-146	150LCS20	12	32	3 1/2"	2 13/32"	3.95
238-151	150H/LCS14	8	19	3 21/32"	2 1/2"	3.20
238-152	150H/LCS10	8	19	3 21/32"	2 1/2"	2.95
238-153	150H/LCS6	8	16	3 13/32"	2 1/2"	2.95

\*Total circuit capacity to effect resonance at low frequency end of band.

To determine split-stator capacitor, subtract tube output and wiring capacity (usually 5 to 20 mmf.) from total capacity in chart; then double result for capacity per section needed.

## PLUG-IN SWINGING LINKS

Select the link to match your line, coupler or output filter for optimum power transfer.

Cat. No.	Type No.	No. Turns	Net Price	Cat. No.	Type No.	No. Turns	Net Price
238-181	150/500SL12	12	\$1.80	238-191	1000SL10	10	\$2.50
238-182	150/500SL5	5	1.15	238-192	1000SL5	5	1.35
238-183	150/500SL2	2	1.00	238-193	1000SL2	2	1.20

## SWINGING LINK ARM ASSEMBLIES

238-179	150/500SLA—for 150/500 watt inductors	\$1.60
238-180	1000SLA—for 1000 watt inductors	1.80

## JACK BAR ASSEMBLIES

238-171	150JBS—150 watt, 3 3/4" x 1/8" x 3/8"	\$1.15
238-172	500JBS—500 watt, 5 3/4" x 3/8" x 3/8"	1.40
238-173	1000JBS—1000 watt, 7 1/2" x 1/8" x 3/8"	2.50

## INDUCTORS

### "229" SERIES WIRE WOUND VARIABLE INDUCTORS—3 AMPS.

Efficient, all steatite insulated variable inductors for amateur transmitters or low power commercial equipment. Variable pitch, tinned copper wire windings on grooved steatite forms. 1/4" shafts extend 1/2" on both ends. Length dimension is over mounting feet.

Cat. No.	Inductance	Mounting	Overall Dimensions			Wire Size	Net Price
			L	W	H		
229-201	10 uh	3 15/16"	4 3/8"	2 1/2"	2 1/2"	No. 14	\$9.50
229-202	15 uh	5 15/32"	5 29/32"	2 1/2"	2 1/2"	No. 12	10.50
229-203	25 uh	6 25/32"	7 5/32"	2 1/2"	2 1/2"	No. 12	11.50

### "232" SERIES "HI-Q" COILS—1/4" x .054" RIBBON—5 AMPS.

Fixed coils wound with 1/4" copper strip, cadmium plated. Glass bonded mica support bars.

232-610	31 uh	3 1/2" x 6"	7 31/32"	3 3/8"	4 5/8"	11.50
232-620	84 uh	3 3/8" x 7 1/8"	9 3/32"	4 3/8"	6"	14.80
232-622	41 uh	3 1/2" x 4 5/8"	6 19/32"	3 3/8"	4 3/8"	11.35
232-624	20 uh	3 1/2" x 4 1/4"	6 7/32"	3 3/8"	4 3/8"	8.85
232-626	10 uh	3 1/2" x 3"	4 31/32"	3 3/8"	4 3/8"	7.35

### "222" SERIES VARIABLE INDUCTORS—1/2" x .090" RIBBON—15 AMPS.

Excellent for medium power RF equipment where high current operation is required in minimum space. Heavy nickel plated copper ribbon windings and silver plated beryllium copper contacts with solid silver buttons. Glass bonded mica end frames and support bars. 3/8" shafts extend 1 1/4" front and rear. Length dimension is over mounting feet—does not include shaft extensions.

Cat. No.	Type No.	Inductance	Mounting	Overall Dimensions			Net Price
				L	W	H	
222-1	4224MS4	25 uh	5 3/4" x 10 3/8"	11 1/8"	6 3/8"	6 3/8"	\$48.25
222-2	4275MS4	50 uh	6 3/8" x 11 3/8"	12 3/8"	7 1/8"	7 1/8"	60.00
222-3	4084MS6	5 uh	5 3/4" x 7 1/8"	8 5/8"	6 1/8"	6 1/8"	40.25
222-5	4134MS6	10 uh	5 3/4" x 9 3/8"	10 1/8"	6 1/8"	6 1/8"	44.00
222-7	4325MS4	62.5 uh	6 3/4" x 12 1/8"	13 5/8"	7 1/8"	7 1/8"	63.00

### "226" SERIES VARIABLE INDUCTORS—1/4" x 1/8" RIBBON—10 AMPS.

Popular for commercial and amateur use, these moving coil type inductors easily handle well over a kilowatt of plate modulated RF energy to 30 mc. Heavy silver plated conductors and silver plated contact bars and contacts. Glass bonded mica end frames and support bars. 3/8" shafts extend 3/4" front and rear. Length dimension is over mounting feet, does not include shaft extensions.

226-1	22.5 uh	3" x 12 3/4"	13 1/4"	4"	6 1/4"	\$63.85
226-3	13.5 uh	3" x 10 3/4"	11 1/4"	4"	6 1/4"	58.30
226-5	8 uh	3" x 9 3/4"	10"	4"	6 1/4"	51.20





# E. F. Johnson Company

W A S E C A , M I N N E S O T A

## "200" SERIES FIXED COILS

Economical—compact—edgewise copper windings. Airwound with slotted, glass bonded mica supports. Construction provides exceptional current carrying capacity for size.

### "200" FIXED COILS— $\frac{1}{4}$ " x .054" RIBBON—10 AMPERES

Cat. No.	Type No.	Inductance	Mounting Dimensions		Overall Dimensions			Net Price
			L	W	L	W	H	
200-101	2224N4	26 uh	2" x 8 $\frac{1}{2}$ "	8 $\frac{3}{8}$ "	5 $\frac{1}{8}$ "	5 $\frac{1}{8}$ "	\$14.10	
200-107	2105N4	13 uh	2" x 5 $\frac{1}{2}$ "	5 $\frac{3}{8}$ "	6 $\frac{3}{8}$ "	6 $\frac{3}{8}$ "	10.70	
200-114	2284N3	45 uh	2" x 7 $\frac{1}{2}$ "	8 $\frac{3}{8}$ "	5 $\frac{1}{8}$ "	5 $\frac{1}{8}$ "	17.90	
200-105	2455N3	120 uh	2" x 11 $\frac{1}{4}$ "	11 $\frac{1}{4}$ "	5 $\frac{1}{8}$ "	5 $\frac{1}{8}$ "	24.90	
200-407	2497N4	200 uh	3" x 14 $\frac{1}{4}$ "	15 $\frac{1}{4}$ "	7 $\frac{1}{2}$ "	7 $\frac{1}{2}$ "	36.10	

### "200" FIXED COILS— $\frac{3}{8}$ " x .072" RIBBON—15 AMPERES

Cat. No.	Type No.	Inductance	Mounting Dimensions		Overall Dimensions			Net Price
			L	W	L	W	H	
200-205	3164N5	15 uh	2" x 7 $\frac{1}{2}$ "	8 $\frac{3}{8}$ "	5 $\frac{1}{8}$ "	5 $\frac{1}{8}$ "	\$13.90	
200-206	3275N4	50 uh	2" x 9 $\frac{1}{2}$ "	10"	6 $\frac{3}{8}$ "	6 $\frac{1}{8}$ "	21.80	
200-211	3336N5	73 uh	2 $\frac{1}{2}$ " x 12 $\frac{1}{2}$ "	13 $\frac{3}{8}$ "	7 $\frac{1}{8}$ "	7 $\frac{1}{8}$ "	27.10	
200-213	3376N4	102 uh	2 $\frac{1}{2}$ " x 11 $\frac{1}{4}$ "	12 $\frac{3}{8}$ "	7 $\frac{1}{8}$ "	7 $\frac{1}{8}$ "	30.40	

### "200" FIXED COILS— $\frac{1}{2}$ " x .090" RIBBON—20 AMPERES

Cat. No.	Type No.	Inductance	Mounting Dimensions		Overall Dimensions			Net Price
			L	W	L	W	H	
200-301	4205N6	25 uh	2" x 10 $\frac{1}{2}$ "	11 $\frac{3}{8}$ "	7 $\frac{1}{8}$ "	7"	\$27.90	
200-302	4346N5	78 uh	2 $\frac{1}{2}$ " x 13 $\frac{3}{4}$ "	14 $\frac{3}{8}$ "	8"	8"	38.40	
200-303	4275N4	50 uh	2" x 9 $\frac{1}{2}$ "	10 $\frac{3}{8}$ "	7 $\frac{3}{8}$ "	7"	31.40	
200-306	4164N5	15 uh	2" x 8 $\frac{1}{2}$ "	8 $\frac{3}{8}$ "	6 $\frac{3}{8}$ "	6"	20.09	
200-308	4366N4	100 uh	2 $\frac{1}{2}$ " x 12 $\frac{1}{4}$ "	12 $\frac{3}{8}$ "	8"	8"	40.50	

Other standard inductance values available on special order.

## "202" SERIES FIXED COILS

Large surface area  $\frac{1}{4}$ ",  $\frac{3}{8}$ " and  $\frac{1}{2}$ " copper tubing wound coils provide low resistance and working temperatures for continuous high current applications. Simple, rugged "airwound" design with glass bonded mica support bars.

### "202" FIXED COILS— $\frac{1}{4}$ " TUBING—20 AMPERES

Cat. No.	Type No.	Inductance	Mounting Dimensions		Overall Dimensions			Net Price
			L	W	L	W	H	
202-101	2166NT8	21 uh	2 $\frac{1}{2}$ " x 14 $\frac{3}{8}$ "	15 $\frac{1}{8}$ "	6 $\frac{3}{8}$ "	6 $\frac{3}{8}$ "	\$32.10	
202-401	2308NT8	76 uh	2 $\frac{1}{2}$ " x 21 $\frac{1}{8}$ "	21 $\frac{3}{8}$ "	8 $\frac{3}{8}$ "	8 $\frac{3}{8}$ "	61.20	
202-402	2328NT6	102 uh	2 $\frac{1}{2}$ " x 18 $\frac{3}{8}$ "	18 $\frac{3}{8}$ "	8 $\frac{3}{8}$ "	8 $\frac{3}{8}$ "	58.00	

### "202" FIXED COILS— $\frac{3}{8}$ " TUBING—30 AMPERES

Cat. No.	Type No.	Inductance	Mounting Dimensions		Overall Dimensions			Net Price
			L	W	L	W	H	
202-201	3106NT12	9 uh	2 $\frac{1}{2}$ " x 13 $\frac{3}{8}$ "	14 $\frac{3}{8}$ "	6 $\frac{3}{8}$ "	7 $\frac{1}{8}$ "	\$31.60	
202-502	32410NT12	64 uh	2 $\frac{1}{2}$ " x 24 $\frac{1}{8}$ "	24 $\frac{1}{8}$ "	10 $\frac{3}{8}$ "	10 $\frac{3}{8}$ "	76.65	
202-507	3148NT12	24 uh	2 $\frac{1}{2}$ " x 16 $\frac{3}{8}$ "	17 $\frac{3}{8}$ "	8 $\frac{3}{8}$ "	8 $\frac{3}{8}$ "	46.20	

### "202" FIXED COILS— $\frac{1}{2}$ " TUBING—40 AMPERES

Cat. No.	Type No.	Inductance	Mounting Dimensions		Overall Dimensions			Net Price
			L	W	L	W	H	
202-601	4127NT14	12 uh	1 $\frac{1}{2}$ " x 16 $\frac{1}{2}$ "	17 $\frac{3}{8}$ "	8"	8"	\$45.75	
202-602	41410NT14	30 uh	2 $\frac{1}{2}$ " x 18 $\frac{3}{8}$ "	19 $\frac{1}{2}$ "	11"	11"	67.00	
202-604	4147NT14	18 uh	1 $\frac{1}{2}$ " x 18 $\frac{3}{8}$ "	19 $\frac{1}{8}$ "	8"	8"	51.00	

## CLIPS FOR TAPPING "200" AND "202" SERIES INDUCTORS

Cat. No.	Type No.	Fits Winding	Net Price
235-804	LC4	$\frac{1}{4}$ " x .054"	\$0.26
235-807	LC7	$\frac{3}{8}$ " x .072"	.45
235-808	LC8	$\frac{1}{2}$ " x .090"	.65
235-824	RC4	$\frac{1}{4}$ " tubing	1.55
235-826	RC6	$\frac{3}{8}$ " tubing	1.65
235-828	RC8	$\frac{1}{2}$ " tubing	1.94
235-860	....	No. 14 Wire	.12

## "224" SERIES VARIABLE INDUCTORS

For high power RF applications, the 224 series copper tubing inductors are especially designed to handle heavy current in continuous duty. Contact wheel is heavily silver plated for optimum electrical efficiency. Inductors have cast aluminum end frames and glass bonded mica support bars.  $\frac{3}{8}$ " shafts extended  $2\frac{1}{4}$ " from end frames at each end. Overall length dimension includes mounting feet.

### "224" VARIABLE INDUCTORS— $\frac{3}{8}$ " TUBING—30 AMPERES

Cat. No.	Type No.	Inductance	Mounting	L	W	H	Net Price
224-3	3168MST10	30 uh	8 $\frac{1}{2}$ " x 19 $\frac{1}{8}$ "	20 $\frac{3}{8}$ "	12"	12 $\frac{1}{8}$ "	\$156.50
224-4	3108MST12	14.5 uh	8 $\frac{1}{2}$ " x 16 $\frac{3}{8}$ "	18 $\frac{1}{8}$ "	12"	12 $\frac{1}{8}$ "	148.00
224-6	32111MST12	75 uh	8 $\frac{1}{2}$ " x 24 $\frac{1}{8}$ "	26 $\frac{3}{8}$ "	12"	12 $\frac{1}{8}$ "	172.50

### "224" VARIABLE INDUCTORS— $\frac{1}{2}$ " TUBING—40 AMPERES

Cat. No.	Type No.	Inductance	Mounting	L	W	H	Net Price
224-1	41410MST14	30 uh	8 $\frac{1}{2}$ " x 21 $\frac{3}{8}$ "	22 $\frac{1}{8}$ "	12"	12 $\frac{1}{8}$ "	\$185.00
224-2	4128MST14	16.5 uh	8 $\frac{1}{2}$ " x 19 $\frac{3}{8}$ "	21 $\frac{1}{8}$ "	12"	12 $\frac{1}{8}$ "	158.00
224-5	41711MST14	50 uh	8 $\frac{1}{2}$ " x 24"	25 $\frac{1}{8}$ "	12"	12 $\frac{1}{8}$ "	189.75

## R. F. CONTACTORS

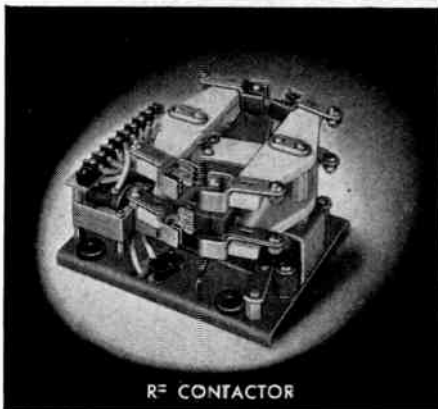
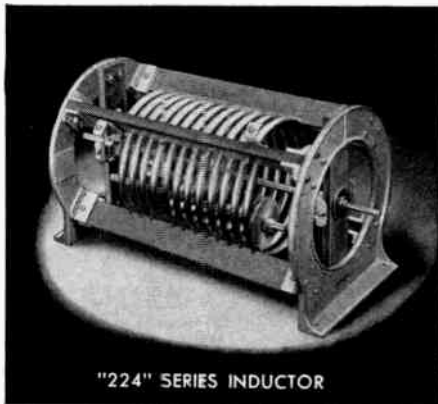
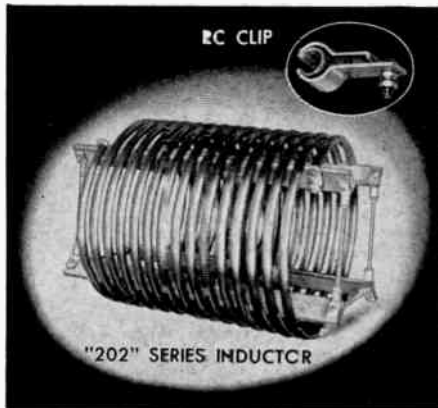
Contactors for switching high voltage, high current RF or DC. Operated by momentarily energized 220 VAC solenoids (may also be connected for 110 VAC), toggle action contacts snap into position; no holding current is required. Extremely compact for voltage ratings; overall dimensions of 145-100 series 7 $\frac{1}{2}$ " long, 6 $\frac{1}{2}$ " wide, 5 $\frac{1}{2}$ " high; of 145-200 series, 10 $\frac{1}{2}$ " long, 8 $\frac{1}{2}$ " wide, 6 $\frac{1}{2}$ " high. Four auxiliary micro snap switches (10 amp. at 220 VAC), actuated by contact armature. Two control solenoid voltage, two may be used to operate signaling devices or for other related functions.

Cat. No.	Type	Peak Voltage	Current	Net Price
145-101-13	SPDT	17000	25 amp.	\$106.00
145-102-13	DPDT	17000	25 amp.	116.00
145-201-13	SPDT	22000	25 amp.	125.00
145-202-13	DPDT	22000	25 amp.	134.00

## EXPLANATION OF TYPE NUMBERS



Write for your copy of Industrial and Broadcast R.F. Component Catalog 535.





# E. F. Johnson Company

W A S E C A , M I N N E S O T A

## Keys and Practice Sets

### DELUXE SEMI-AUTOMATIC KEYS

Adjustable from lowest to highest speeds, this handsomely finished semi-automatic key has a smooth, easy action. Vibrator, posts, circuit closing switch, and all machine parts heavily chrome plated. Five adjustments with lock nuts — black fibre paddles adjust separately to best height. Heavy steel base  $6\frac{1}{4} \times 3\frac{1}{2} \times \frac{1}{2}$  — complete with adjustable weight and rubber feet.

Car. No.	Net Price
114-500 $\frac{1}{8}$ " contacts, black wrinkle base.....	\$17.95
114-501 $\frac{1}{8}$ " contacts, polished chrome base.....	20.65

### SPECIAL SEMI-AUTOMATIC KEY

Many operating features — attractively finished, black wrinkle enamel base. All hardware and vibrator heavily chrome plated. Some vibrator as on deluxe key. Easy action, adjustable from lowest to highest speeds.  $\frac{1}{8}$ " coin silver contacts — circuit closing switch — rubber mounting feet.

114-520 Special Model, Semi-Automatic.....	\$13.95
--	---------

### HEAVY DUTY KEYS

Heavy die cast base, chrome plated key arm. Well insulated for heavy duty service. Large  $\frac{1}{8}$ " coin silver contacts. Improved Navy-type knob. Adjustable steel bearings and spring design give light keying touch.

114-320 Black wrinkle enamel base.....	\$4.70
114-321 Polished chrome plated base.....	5.85

### STANDARD KEYS

Heavy die cast base. Smooth adjustable bearings. Provision for plugging in semi-automatic keys  $\frac{1}{8}$ " coin silver contacts. A high quality key at a low cost.

114-310 Black wrinkle, no switch.....	\$3.10
114-310-3 Black wrinkle with switch.....	3.90
114-311 Chrome plated, no switch.....	5.20
114-311-3 Chrome plated with switch.....	6.10

### HIGH SPEED STANDARD KEYS

Fully adjustable spring tension, contact spacing and bearings. Brass base and binding posts — instrument lacquer finish. .072" platinum contacts.

114-100 R48 Key, satin brass, no switch.....	\$5.95
114-100-3 M100 Key, satin brass with switch.....	6.85

### PRACTICE KEY

An inexpensive practice key — perfect in design for the average beginner. All the metal parts except the base are nickel plated. Furnished with an adjustable key arm, spring and smooth action bearings. Contacts are of  $\frac{1}{8}$ " coin silver.

114-300 Molded phenolic base.....	\$2.25
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### PHENOLIC BASE KEYS

High quality key with adjustable bearings. Improved spring-pigtail connection.  $\frac{1}{8}$ " coin silver contacts — nickel plated metal parts.

114-301 Molded phenolic base, no switch.....	\$2.50
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### CORD AND WEDGE

Cord and wedge for easy attachment of semi-automatic key across circuit-closing switch of a standard hand key. Used almost universally by railroad telegraphers — ideal for amateur service where both hand key and semi-automatic are used.

114-380 Cord and wedge.....	\$1.15
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-520



-321

-310



-100

-300



-301

-380



### PRACTICE SET

Constant frequency buzzer and key on a 4"x6" molded bakelite base. Buzzer tone is fully adjustable. Coin silver contacts. Uses two dry cells or "C" battery. Connect singly or in pairs for code practice.

Car. No.	Net Price
114-450 Practice Set.....	\$4.90
114-400 Buzzer.....	\$1.85

### TELEGRAPH SOUNDER

Designed for instant response, brass sounder provides clear, resonant tone. Steel bar frame, black enamel finish. Brass bridge and adjustment screws, instrument lacquer finish. Sounder plate is black lacquered steel. Mahogany finished wood base, brass binding posts and rubber mounting feet.

114-112 Sounder (4 ohms).....	\$9.95
114-113 Sounder (20 ohms).....	10.45

### LEARNER SET

Telegraph practice set. Bar frame steel, brass bridge and adjustment screws. Brass lacquer finish. Brass sounding bar—black lacquered steel sounder plate. Adjustable, brass finished key arm. Mahogany finished wood base, brass binding posts, rubber feet.

114-110 (4 ohms).....	\$14.95
114-111 (20 ohms).....	15.45

### PONY RELAY

Polished, plated steel armature—all other metal parts brass with lacquer finish. Non-adjustable magnets. Mahogany finished wood sub-base—cast iron black enamel base.

114-105 (20 ohms).....	\$13.80
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## Viking Amateur Radio Equipment

The products briefly described below are from JOHNSON'S complete line of transmitting equipment and accessories for amateur and commercial use. For detailed information on these and other popular JOHNSON products, write for your free copy of the newest amateur catalog.

### "Adventurer"

50 watt CW transmitter used to earn first novice WACI



### "Ranger"

75 watts CW input, 65 watts phone — a flexible, TVI suppressed transmitter!



### "Vallant"

270 watts CW input, 200 watts phone—built-in VFO—a transmitter with power and flexibility.



### "Pacemaker"

For Single Sideband — more than just an exciter — 90 watts P.E.P. input — rugged, stable VFO!



### "Five Hundred"

600 watts CW input, 500 watts phone—VFO and all exciter stages gang-tuned—may be used for SSB with an auxiliary exciter!



### "6N2"

150 watts CW input, 100 watts phone — rugged construction, thorough engineering — the same Johnson quality, for 6 and 2 meters!



### "Mobile"

Rugged 60 watt mobile transmitter with an enviable DX record — under-dash mounting — convenient to operate!



### "Kilowatt" Power Amplifier

Maximum legal input in all modes — the ultimate in styling and operating convenience!



*Johnson amateur  
equipment... for full  
communication*

**POWER!**

**40 Watt CW Transmitter-Exciter • All Band,  
Bandswitching VFO • Power Supply Self Contained**

**VIKING "NAVIGATOR"**

This splendid new JOHNSON Transmitter/Exciter will appeal particularly to the discriminating CW operator who requires a flexible, highly stable VFO, a first rate keying system, means for rapid QSY and bandswitching, with substantial RF output. Ample RF power to excite most high powered final amplifiers on CW or AM. A wide range pi output network will match transmission line impedances from approximately 40 to 600 ohms. Bandswitching 160 through 10 meters. Internal VFO or crystal control provides flexibility with full TVI suppression and filtering. The timed sequence keying system applies wave shaping to the keyed amplifier stages for perfect "make" and "break" on your keyed signal. Signal clicks and chirps are eliminated, yet the "break-in" advantages of a keyed VFO are retained. The system may be set to operate so fast that a breaking station may be heard between transmitted dots! Electronic time sequence keying uses no relays and only one dual triode plus a rectifier tube for the grid block bias.



Cat. No. 240-126-1 Viking "Navigator" Kit with tubes.  
Amateur Net \$149.50  
Cat. No. 240-126-2 Viking "Navigator" wired and tested  
with tubes. Amateur Net \$199.50



**T-R SWITCH**

This new Johnson T-R Switch provides instantaneous high-efficiency electronic antenna switching. Exclusive double-gated circuitry, with 6BL7 dual triode, gives excellent receiver isolation — printed circuit wiring means extra durability. Gain: 0 db at 30 mcs., ...6 db at 3.5 mcs. Will handle high peak power capabilities of new linear amplifiers — rated at 4,000 watts peak power. Instantaneous break-in on SSB, DSB, CW or AM. Will not affect transmission line SWR — will provide an effective impedance match to most receivers through the 3 to 30 megacycle range. Nylon tip jack facilitates connection to an internal RF probe for driving an oscilloscope or other monitoring device.

Cat. No. 250-39 — T-R Switch wired and tested, with tube and power supply.  
Prices subject to change at time of delivery. **\$25.00 Amateur Net**

**DIRECTIONAL COUPLER AND INDICATOR**

The new Johnson Directional Coupler and Indicator provides a continuous reading of SWR and relative power in the transmission line. Coupler may be permanently installed in 52 ohm coaxial line — will readily handle maximum legal power as specified by the FCC for amateur service. Standard tip jacks will permit the use of a commercial multimeter as an indicating instrument — reference sheets showing curves are supplied with each coupler for popular multimeter basic ranges. Indicator consists of a 0-100 micro-ammeter calibrated directly in SWR and relative power. Continuous monitoring of either incident or reflected power may be quickly selected with a switch on the front of the meter cabinet. A second control on the front panel, permits easy adjustment and calibration of the meter.

Cat. No. 250-37 — Directional Coupler, wired and tested... **\$11.75 Amateur Net**  
Cat. No. 250-38 — Indicator, wired and tested... **\$25.00 Amateur Net**  
Prices subject to change at time of delivery.



**E.F. Johnson Company**  
WASECA, MINNESOTA

*Johnson amateur  
equipment...for full  
communication*

**POWER!**

**For the First Time 2000 WATTS P.E.P.\* INPUT**

**VIKING "THUNDERBOLT"**

JOHNSON breaks through the power barrier with the new Viking "THUNDERBOLT." Rated at 2000 watts peak envelope power (2 tone), the "THUNDERBOLT" may be driven by the Viking "Navigator," "Ranger," "Pacemaker" or other unit of comparable output. Drive requirements are approximately 10 watts in Class AB<sub>2</sub> linear, 20 watts class C continuous wave. When used with the Viking "Pacemaker" or similar exciter, the non-inductive input circuit requires no grid tuning. Wide range pi-network will match transmission line impedances from 40 to 600 ohms. Completely self-contained with internal blocking bias, voltage regulator, screen and bias supplies. Two meters provide constant visual check of operation. Plate current meter also reads watts input and a second meter reads grid current or plate voltage.

\*P.E.P. input with exciter.

NOTE: The F.C.C. permits maximum one kilowatt average two tone input for the amateur service. This is equivalent to 2000 watts P.E.P. input.



Cat. No. 240-353-1 Viking "Thunderbolt" Kit with tubes.  
Amateur Net \$450.00

Cat. No. 240-353-2 Viking "Thunderbolt" wired and tested with tubes.  
Amateur Net \$525.00

Prices subject to change at time of delivery.

**500 Watt Linear Amplifier Compact, Bandswitching**

**VIKING "COURIER"**



Cat. No. 240-352-1 Viking "Courier" Kit with tubes.  
Amateur Net \$235.00

Cat. No. 240-352-2 Viking "Courier" wired and tested with tubes.  
Amateur Net \$295.00

Prices subject to change at time of delivery.

The new Viking "COURIER" delivers full communication power — one-half kilowatt P.E.P.\* input as a class B linear amplifier; one-half kilowatt input on CW or 200 watts input in AM linear mode. Drive requirements are 5 to 35 watts depending upon mode and frequency desired. May be driven by the Viking "Navigator," "Ranger," "Pacemaker" or other comparable units. High efficiency pi-network output circuit will match transmission line impedances from 40 to 600 ohms. Built-in blocking bias for full protection at all times. Fully TVI suppressed and filtered; power supply completely self-contained.

\*P.E.P. input with exciter.



**E. F. Johnson Company**

WASECA, MINNESOTA



# COMMUNICATIONS EQUIPMENT

## MODEL 4350 DUAL-CONVERSION RECEIVER

- CRYSTAL-CONTROLLED DUAL CONVERSION
- 1 TO 2 MV SENSITIVITY, 2.8 KC SELECTIVITY
- 75:1 AND 1:1 TWO-SPEED TUNING KNOB

The RME 4350 is a completely new amateur receiver of professional quality incorporating crystal-controlled dual conversion and many other deluxe features usually found only in higher priced models. Designed specifically for communications on amateur frequencies, the Model 4350 has a large, evenly graduated, illuminated dial covering the following six bands: 1.76 to 2.2 mc; 3.48 to 4.26 mc; 6.98 to 7.32 mc; 13.98 to 14.43 mc; 20.8 to 21.52 mc; 26.95 to 29.8 mc. Smooth, even tuning without backlash is provided by the unique differential, ball planetary type tuning knob with choice of 75-to-1 or 1-to-1 ratios by selection of coaxially mounted rims; triple spaced plates in tuning condenser greatly reduce microphonic susceptibility; 1st IF 2195 kc, 2nd IF 455 kc.

With RME crystal-controlled dual conversion, noise factor is maintained at from 3.5 to 6 while images are greatly reduced, no less than 54 db on any band.

Selectivity control offers four positions; nose of curve is 3 kc wide without crystal filter with attenuation 60 db down seven kc above or below desired frequency. Crystal filter has phasing control for variable rejection of unwanted adjacent signals. High sensitivity of 2 microvolts for 10 db signal-to-noise ratio; excellent image rejection; extremely low noise figure. Temperature-compensated components with heavy steel chassis, sturdy steel cabinet and pressure-cast control panel hold drift to  $\pm .01\%$  for first 20 minutes with zero drift after warm-up. Extreme stability permits single sideband reception with or without adapters. BFO injection control for accurate carrier frequency insertion for SSB operation.

Other features include "S" meter calibrated in steps of 6 db from S1 to S9, plus 10 db units over S9; automatic noise limiter of the peaked type set for 85% modulation, may be switched in and out of circuit; front panel frequency correction control to set frequency exactly at any scale point. Antenna trimmer on front panel permits peak adjustment for different antennas. Smooth acting RF gain control with 6 db attenuation for each 5 degrees rotation; function switch selects receiver operation—MGC-BFO, AGC-AM phone, AGC-SSB, MGC-SSB. Two coaxial jacks provided for addition of Model 4301 single sideband adapter or other adapters; 4-ohm speaker terminals; antenna connections for doublet and Marconi-type; transmitter relay control. Precision 100 kc marker crystal.

Controls: Dual-speed tuning, AF gain, BFO pitch, BFO injection, antenna trimmer, calibration adjust, band selector, RF gain—on-off, function switch, stand-by—receive—transmit switch, crystal filter selectivity selector, crystal filter phasing-rejector control, ANL on-off. Tubes: 6BZ6 RF, 6U8 1st Mixer, 6CB6 1st IF Amp, 6U8 2nd Mixer, 6U8 2nd IF Amp-BFO, 6T8 2nd Det-ANL-1st AF, 6AQ5 AF Output, 5Y3 Rect, OA2 Voltage Regulator. 117 v. 50-60 cycle AC.

Sturdy steel console-type case with rounded corners finished in attractive instrument gray anti-glare finish. Size: 10" h. x 16½" w. x 10" d. Shipping Weight, 36 lbs. Net Each.....\$229.00



4350



4301

## MODEL 4301 SIDEBAND DETECTOR-SELECTOR

The Model 4301 is a new sideband detector-selector which provides outstanding, easy-to-tune SSB reception of both carrier present and carrier suppressed types. Using the cables supplied, the Model 4301 plugs directly into the Model 4350 receiver, forming an attractive, functional addition. Easily connects between the IF and audio stages to any other communications receiver; adds up to 15 db gain to receiver.

Complete with built-in power supply, the Model 4301 has an extremely stable BFO, balanced detector circuit, and accurate phase shift network. Included are adder and subtractor circuits to provide single side reception of either upper or lower sideband separately, double sideband exalted carrier reception or normal receiver operation. Selection is made with panel-mounted rotary switch which provides instantaneous switching between upper and lower sideband with 40 db attenuation of unwanted sideband; this feature improves system selectivity and SNR for standard AM and CW reception as well as SSB.

Controls: Sideband selector, vernier frequency control, on-off switch. Tubes: 2-12AT7, 12AX7, 6AL5, plus selenium rectifier.

Sturdy steel case and cast aluminum control panel in attractive instrument gray finish. Size: 10" h. x 8½" w. x 10" d. Shipping Weight, 16 lbs. Net Each.....\$75.00



4302

## MODEL 4302 SPEAKER

Housed in a sturdy steel case with cast aluminum front panel, the Model 4302 speaker is styled and finished to complement perfectly the Model 4350 and other quality receivers. For operation with any receiver having 4-ohm speaker output terminals. The acoustic properties of the unit are tailored for optimum readability in communications operation. Finished in anti-glare instrument gray. Size: 10" h. x 8½" w. x 5½" d. Shipping Weight, 6 lbs. Net Each.....\$17.50

## MODEL DB23 PRESELECTOR

Substantially improves the performance of any receiver. Employs three 6J6 twin triodes as neutralized push-pull stages in a unique combination of selective and wide band RF amplifiers. Provides minimum gain of 20 db throughout all ham bands from 3.5 to 30 mc with substantial image rejection. Signal-to-noise ratio improvement is better than 7.5 db over that of the receiver alone. Permits optimum use of mechanical, crystal or audio filters. Input circuits accurately match any standard type antenna. Operation is simple; merely set band selector and adjust peaking control for maximum signal.

Entirely self-contained with built-in power supply. Handsome cabinet is small, compact and finished in blue-gray. Complete with all tubes and instruction sheet. Size: 5" h., 7½" w., 6" d. Shipping Weight, 6½ lbs. Net Each.....\$49.50



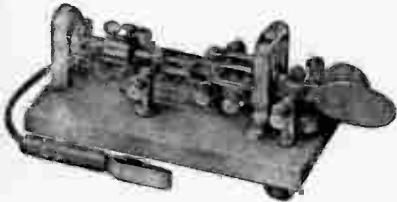
DB 23

# The Vibroplex



Telegraph & Wireless  
Transmitting Machines

→ CORD & WEDGE AVAILABLE FOR ALL MODELS AT \$1.75 ADDITIONAL ←



Your name engraved on base, \$1.50  
Additional engraving, 15c per letter

## New SUPER DE LUXE "PRESENTATION" VIBROPLEX

The Finest Bug Ever Built! 24K Gold-Plated Base Top,  
Patented Jewel Movement and Super-Speed Control!

New patented adjustable main spring affords wider range of speed than ever obtained before in semi-automatic transmitting key. Beautifully-designed with polished chromium precision-machined parts mounted on a 24K gold-plated base top with colorful red switch knob, finger and thumb piece. This new Super-DeLuxe "Presentation" Vibroplex key at \$29.95 affords a life-time of sending enjoyment. Harder than metal, the jewels in this key reduce friction. Maintain smoother, easier operation and prolong-life.

Amateur Net Price.....\$29.95

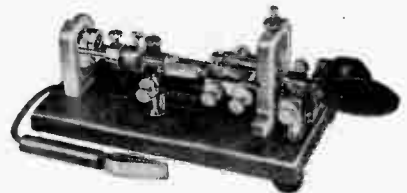
## THE Improved "ORIGINAL" VIBROPLEX

Suitable for All Classes of Transmitting work Where Speed and Perfect Morse Are Prime Essentials

This great new Vibroplex is a smooth and easy working BUG. It has won fame on land and sea for its clarity, precision and ease of manipulation. Can be slowed down to 10 words per minute or less or geared to as high rate of speed as desired. Maintains the same high quality signal at whatever speed, insuring easy reception under all conditions. Weight, 3 lbs. 8 oz.

Standard—Chromium top parts, grey base. Amateur Net Price.....\$19.95

DeLuxe—Chromium base and top parts, with jeweled movement. Amateur Net Price 23.95



De Luxe Model



## THE "LIGHTNING BUG" VIBROPLEX

High Quality Signals at All Speeds

Flat pendulum model. Weight 3 lbs. 8 oz.

Standard—Polished Chromium top parts, grey base.

Amateur Net Price.....\$18.95

DeLuxe—Polished Chromium base and top parts, with jeweled movement.

Amateur Net Price.....22.95



## THE "CHAMPION" VIBROPLEX

Weight 3 lbs. 8 oz. Without circuit closer. Standard finish only. Chromium finished top parts, with grey crystal base.

Amateur Net Price.....\$15.95

## THE "BLUE RACER" VIBROPLEX

Weight, 2 lbs. 8 ozs.

Standard—Finish Chromium top parts, grey base . . . Amateur Net Price.....\$19.95

DeLuxe—Polished Chromium base and top parts, with jeweled movement.

Amateur Net Price.....\$23.95

NOTE: All Machines Above Available in Left Hand Models \$2.50 Extra.



Small and Compact

## VIBROPLEX CARRYING CASE

Keeps the Machine Free From



Dust, Dirt &  
Moisture —  
Insures Safe-  
keeping when  
Not in Use.

A cloth-lined case, finished in handsome simulated black morocco. Has lock and key.

PRICE.....\$6.75

Announcing the new edition of the

## PHILLIPS CODE

SPECIAL EDITION Including:

- Radio Code Signals
- International Morse
- American Morse
- Russian, Greek, Arabic, Turkish
- and Japanese Morse Codes
- World Time Chart
- United States Time Chart
  - Commercial "Z" Code
  - Aeronautical "Q" Code



\$2.75 Post Paid

# JAMES MILLEN

MALDEN · MASSACHUSETTS



909C1

### ONE INCH INSTRUMENTATION OSCILLOSCOPE

Miniaturized, packaged panel mounting cathode ray oscilloscope designed for use in instrumentation in place of the conventional "painter type" moving coil meters uses the 1" tube. Panel bezel matches in size and type the standard 2" square meters. Magnitude, phase displacement, wave shape, etc. are constantly visible on scope screen.  
No. 90901, 1CP1, less tube.....  
No. 90911, 1EP1, less tube.....

### POWER SUPPLY FOR OSCILLOSCOPE

750 volts d.c. at 3 ma. and 6.3 volts a.c. at 600 ma. 117 volts 50-60 cycle input. Designed especially for use with No. 90901 and No. 90911 one inch instrumentation oscilloscopes. 5 in. high x 2 1/2 x 2 in. Octal plug for input and output. Entire assembly including rectifier is encapsulated.  
No. 90202 Power Supply (complete).....



90202



90651

### GRID DIP METER

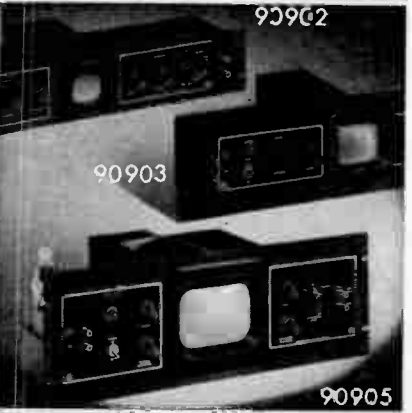
The No. 90651 MILLEN GRID DIP METER is compact and completely self contained. The AC power supply is of the "transformer" type. The drum dial has seven calibrated uniform length scales from 1.7 MC to 300 MC with generous over laps plus an arbitrary scale for use with special application inductors. Internal terminal strip permits battery operation for antenna measurement.  
No. 90651, with tube.....

### Additional Inductors for Lower Frequencies

- No. 46702—925 to 2000 KC.....
- No. 46703—500 to 1050 KC.....
- No. 46704—325 to 600 KC.....
- No. 46705—220 to 350 KC.....

### LABORATORY SYNCHROSCOPES

The 5" laboratory synchroscopes are available with and without detector-video strips.  
Model P-4-2, with tubes.....  
Model P-4E-2, with tubes.....



90902

90903

90905

### MINIATURE SYNCHROSCOPE

The compact design of the No. 90952, measuring only 7 1/2" x 5 3/4" x 13", and weighing only 17 lbs., makes available for the first time a truly DESIGNED FOR APPLICATION "field service" Synchroscope  
No. 90952 with tubes.....

### CATHODE RAY OSCILLOSCOPES

The No. 90902, No. 90903 and No. 90905 Rack Panel Oscilloscopes, for two, three and five inch tubes, respectively, are inexpensive basic units comprising power supply, brilliancy and centering controls, safety features, magnetic shielding, switches, etc. As a transmitter monitor, no additional equipment or accessories are required. The well-known trapezoidal monitoring patterns are secured by feeding modulated carrier voltage from a pickup loop directly to vertical plates of the cathode ray tube and audio modulating voltage to horizontal plates. By the addition of such units as sweeps, pulse generators, amplifiers, servo sweeps, etc., all of which can be conveniently and neatly constructed on companion rack panels, the original basic scope unit may be expanded to serve any conceivable industrial or laboratory application.  
No. 90902, less tubes.....  
No. 90903, less tubes.....  
No. 90905, less tubes.....



90952



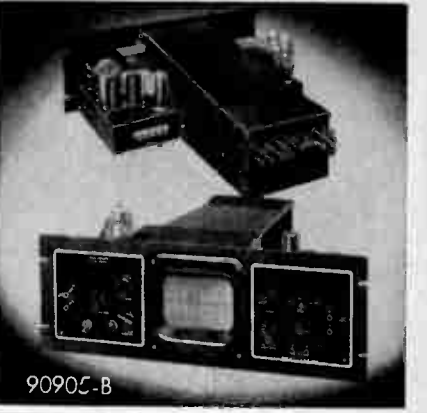
90921

### SCOPE AMPLIFIER—SWEEP UNIT

Vertical and horizontal amplifiers along with hard-tube, saw tooth sweep generator. Complete with power supply mounted on a standard 5 1/4" rack panel.  
No. 90921, with tubes.....

### FLAT FACE OSCILLOSCOPE

90905-B 5-inch Rack Mounting Basic Oscilloscope features include: balanced deflection, front panel input terminals, rear panel input terminals, astigmatism control, blanking input terminals, flat face precision tolerance Dumont 5ADP1 tube, 1800 or 2500 volts accelerating, good sensitivity, sharp focus, horizontal selector switch, 60 cycle sine wave sweep available, power supply available to operate external equipment, minimum control interaction, rugged construction, light filter. 7 x 19 in. panel.  
No. 90905-B Oscilloscope, less tubes.....



90905-B

# JAMES MILLEN

MALDEN · MASSACHUSETTS



90672

### STANDING WAVE RATIO BRIDGE

The Millen S.W.R. bridge provides easy and inexpensive measurement of standing wave ratio on antennas using co-ax cable. As assembled the bridge is set up for 52 ohm line. A calibrated 75 ohm resistor is mounted inside the case for substitution in the circuit when 75 ohm line is used.

No. 90671.....

### BALUNS

The No. 46672 (1 far each amateur band) wound Balun is an accurate 2 to 1 turns ratio, high Q auto transformer with the residual reactances tuned out and with very tight coupling between the two halves of the total winding. The points of series and parallel resonance are selected so that each Balun provides an accurate 4 to 1 impedance ratio over the entire band of frequencies for which it was designed. Suitable for use with the No. 90672 Antenna Bridge or medium power transmitters.

No. 46672-80/40/20/15/10.....

### ANTENNA BRIDGE

The Millen 90672 Antenna Bridge is an accurate and sensitive bridge for measuring impedances in the range of 5 to 500 ohms (or 20 to 2000 ohms with balun) at radio frequencies up to 200 mc. The variable element is an especially designed differential variable capacitor capable of high accuracy and permanency of calibration. Readily driven by No. 90651 Grid Dipper.

No. 90672.....

### 50 WATT EXCITER-TRANSMITTER

Modern design includes features and shielding for TVI reduction, bandswitching for 4-7-14-21-28 megacycle bands, circuit metering. Conservatively rated for use either as a transmitter or exciter for high power PA stages. 5763 oscillator-buffer-multiplier and 6146 power amplifier. Rack mounted.

No. 90801, less tubes.....

### VARIABLE FREQUENCY OSCILLATOR

The No. 90711 is a complete transmitter control unit with 6SK7 temperature-compensated, electron coupled oscillator of exceptional stability and low drift, a 6SK7 broad-band buffer or frequency doubler, a 6AG7 tuned amplifier which tracks with the oscillator tuning, and a regulated power supply. Output sufficient to drive a 6146 is available on 160, 80 and 40 meters and reduced output is available on 20 meters. Since the output is isolated from the oscillator by two stages, zero frequency shift occurs when the output load is varied from open circuit to short circuit. The entire unit is unusually solidly built so that no frequency shift occurs due to vibration. The keying is clean and free from annoying chirp, quick drift, jump, and similar difficulties often encountered in keying variable frequency oscillators.

No. 90711, with tubes.....

### HIGH VOLTAGE POWER SUPPLY

The No. 90281 high voltage power supply has a d.c. output of 700 volts, with maximum current of 235 ma. In addition, a.c. filament power of 6.3 volts at 4 amperes is also available so that this power supply is an ideal unit for use with transmitters, such as the Millen No. 90801, as well as general laboratory purposes. The power supply uses two No. 816 rectifiers. The panel is standard 8 3/4" x 19" rack mounting.

No. 90281, less tubes.....

### HIGH FREQUENCY RF AMPLIFIER

A physically small unit capable of a power output of 70 to 85 watts on 7M or 87 to 110 watts on C-W on 20, 15, 11, 10, 6 or 2 meter amateur bands. Provision is made for quick band shift by means of the No. 48000 series VHF plug-in coils. The No. 90811 unit uses either an 829-B or 3E29.

No. 90811 with 10 meter band coils, less tube.....

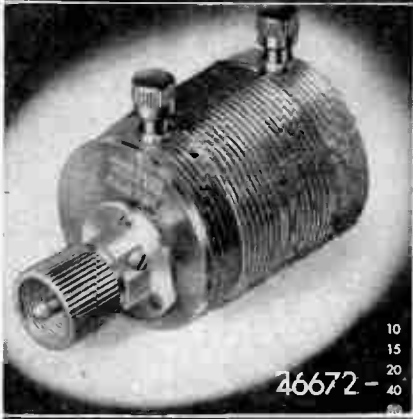
### RF POWER AMPLIFIER

This 500 watt amplifier may be used as the basis of a high power amateur transmitter. The No. 90881 RF power amplifier is wired for use with the popular "812A" type tubes. Other popular tubes may be used. The amplifier is of unusually sturdy mechanical construction, on a 10 1/2" relay rack panel. Plug-in inductors are furnished for operation on 10, 20, 40 or 80 meter amateur bands. The standard Millen No. 90801 exciter unit is an ideal driver for the No. 90881 RF power amplifier.

No. 90881, with one set of coils, but less tubes.....



90671



46672-  
10  
15  
20  
40



90801



90711



90281



90811



90881



# JAMES MILLEN

MALDEN · MASSACHUSETTS



90201

### REGULATED POWER SUPPLY

A compact uncased, regulated power supply, either for table use in the laboratory or for incorporation as an integral part of larger equipment. 250 v.d.c. unregulated at 115 ma. 105 v.d.c. regulated at 35 ma. Minus 105 v.d.c. regulated bias at 4 ma. 6.3 v. a.c. at 4.2 amps. No. 90201, with tubes. ....

### INSTRUMENT DIAL

The No. 10030 is an extremely sturdy instrument type indicator. Central shaft has 1 to 1 ratio. Veeder type counter is direct reading in 99 revolutions and vernier scale permits readings to 1 part in 100 of a single revolution. Has built-in dial lock and 1/4" drive shaft coupling. May be used with multi-revolution transmitter controls, etc., or through gear reduction mechanism for control of fractional revolution capacitors, etc., in receivers or laboratory instrument. No. 10030. ....



10030

### PHASE-SHIFT NETWORK

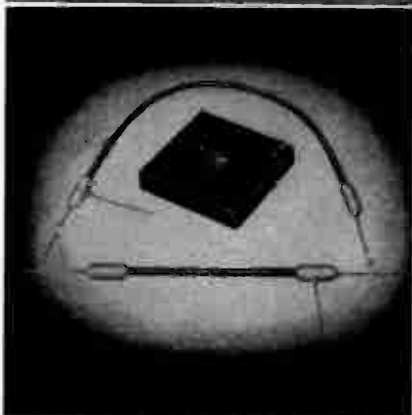
A complete and laboratory aligned pair of phase-shift networks in a single compact 2" x 1 1/4" x 4" case with characteristics so as to provide a phase shift between the two networks of 90° ± 1.3° over a frequency range of 225 cycles to 2750 cycles. Well adapted for use in either single sideband transmitter or receiver. Possible to obtain a 40 db suppression of the unwanted sideband. The No. 75012 precision adjusted phase-shift network eliminates the necessity of complicated laboratory equipment for network adjustment. No. 75012. ....



75012

### DELAY LINES

No. 34721—Sealed flexible distributed constants line. Excellent rise time. 1350 ohms, 22 inches per microsecond or 550 ohms, 50 inches per mu.-sec. Delay cut to specifications.  
No. 34730—Hermetically sealed enclosed line. Good rise time. 0-0.45 mu.-sec. 1350 ohm line or 0.22 mu. sec. 500 ohm line in 1" x 1" x 5 1/2" in case. Also larger standard cases and cases made to order. Special impedances 400 to 2200 ohms.  
No. 34600—Lumped delay line built to specifications. Delays 0.05 mu.-sec. to 250 mu.-sec. Impedance 50 ohms to 2000 ohms.



### PHOTO MULTIPLIER SHIELDS MU-METAL

The photo multiplier tube operates most effectively when perfectly shielded. Careful study has proven that mu-metal provides superior shielding. Millen Mu-Metal shields are available from stock for the most popular tubes.  
No. 80801B for the 1P21. ....  
No. 80802B for the 5819, 6217, 6292, 6343. ....  
No. 80802C for the 6199, 6291, 6497. ....  
No. 80802E for the 6866. ....  
No. 80803J for the 6363. ....  
No. 80805M for the 6364. ....



8007C SERIES

### BEZELS FOR CATHODE RAY TUBES

Standard types are of satin finish black plastic. 5" size has neoprene support cushion and green lucite filter. 3" and 2" sizes have integral cushioning.  
No. 80075—5" . . . . .  
No. 80073—3" . . . . .  
No. 80072—2" . . . . .  
No. 80071—1" . . . . .



80805-M

80802-E

80802-C

80803-J

80802-B2

30301-B

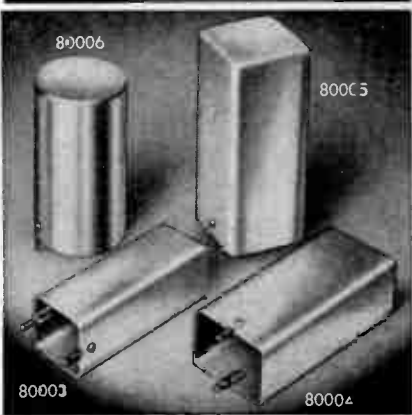
### CATHODE RAY TUBE SHIELDS

For many years we have specialized in the design and manufacture of magnetic metal shields of nicolai and mumetal for cathode ray tubes in our own complete equipment, as well as for applications of all other principal complete equipment manufacturers. Stock types as well as special designs to customers' specifications promptly available.  
No. 80045—Nicalai for 5BP1. ....  
No. 80055—Nicalai for 5CP1. ....  
No. 80043—Nicalai for 3" tube. ....  
No. 80042—Nicalai for 2" tube. ....



### SHIELD CASES ALUMINUM

Effective RF shielding for coils and transformers can be provided by Millen Aluminum cans. Available in several sizes from stock.  
No. 80003—1 1/2" x 1 3/4" x 4" . . . . .  
No. 80004—1 3/4" x 1 7/8" x 4 1/2" . . . . .  
No. 80005—2" x 2" x 4 1/4" . . . . .  
No. 80006—2 1/4" round x 4" . . . . .  
No. 80007—2 1/4" round x 2 3/8" open ends



80006

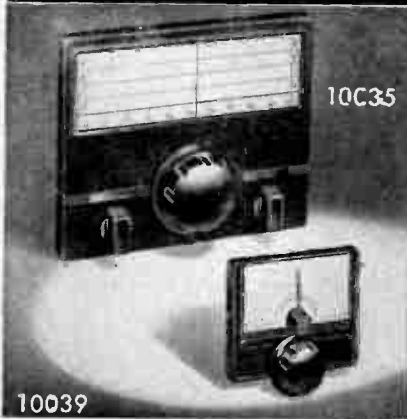
80005

80003

80004

# JAMES MILLEN

MALDEN · MASSACHUSETTS



10035

10039

### PANEL DIALS

The No. 10035 illuminated panel dial has 12 to 1 ratio; size, 8½" x 6½". Small No. 10039 has 8 to 1 ratio; size, 4" x 3¼". Both are of compact mechanical design, easy to mount and have totally self-contained mechanism, thus eliminating back of panel interference. Provision for mounting and marking auxiliary controls, such as switches, potentiometers, etc., provided on the No. 10035. Standard finish, either size, flat black art metal.

- No. 10039.....
- No. 10035.....

### WORM DRIVE UNIT

Cast aluminum frame may be panel or base mounted. Spring loaded split gears to minimize back lash.

- Standard ratio 16/1. Also in 48/1 on request.
- No. 10000—(state ratio).....

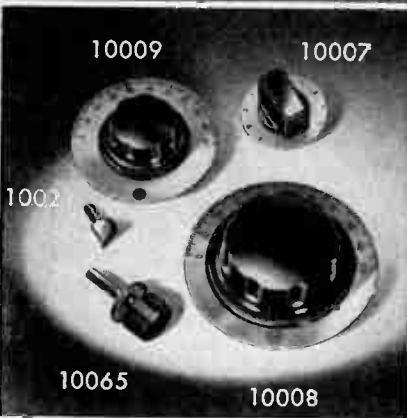


10000

### DIALS AND KNOBS

Just a few of the many stock types of small dials and knobs are illustrated herewith, 10007 is 1½" diameter, 10009 is 2¾" and 10008 is 3½".

- No. 10002.....
- No. 10007.....
- No. 10008.....
- No. 10009.....
- No. 10015.....
- No. 10018.....
- No. 10021.....
- No. 10065.....



10009

10007

10002

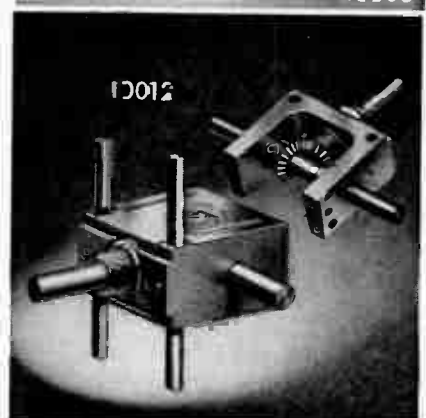
10065

10008

### RIGHT ANGLE DRIVE

Extremely compact, with provisions for many methods of mounting. Ideal for operating potentiometers, switches, etc., that must be located, for short leads, in remote parts of chassis.

- No. 10012.....



10012

### HIGH VOLTAGE INSULATED SHAFT EXTENSION

No. 10061 shaft locks and the No. 39023 insulated high voltage potentiometer extension mountings are available as a single integrated unit—the No. 39024. The proper shaft length is independent of the panel thickness. The standard shaft has provision for screw driver adjustment. Special shaft arrangements are available for industrial applications. Extension shaft and insulated coupling are mated as a single unit to provide accuracy of alignment and ease of installation.

- No. 39023, non locking type.....
- No. 39024, locking type.....



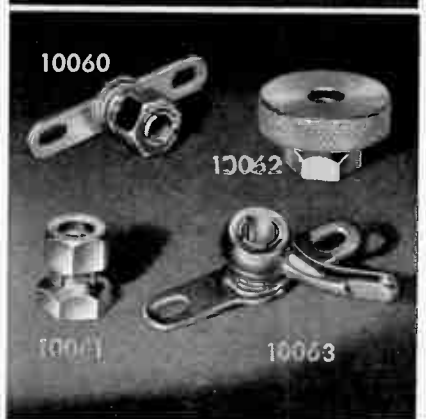
39024

10061

### SHAFT LOCKS

In addition to the original No. 10060 and No. 10061 "DESIGNED FOR APPLICATION" shaft locks, we can also furnish such variations as the No. 10062 and No. 10063 for easy thumb operation as illustrated above. The No. 10061 instantly converts any plain ¼" shaft" volume control, condenser, etc. from "plain" to "shaft locked" type. Easy to mount in place of regular mounting nut.

- No. 10060.....
- No. 10061.....
- No. 10062.....
- No. 10063.....



10060

10062

10060

10063

### TRANSMISSION LINE PLUG

An inexpensive, compact, and efficient polystyrene unit for use with the 300 ohm ribbon type polyethylene transmission lines. Fits into standard Millen No. 33102 (crystal) socket. Pin spacing ½", diameter .095".

- No. 37412.....



37412

331C2

FULL SIZE

### DIAL LOCK

Compact, easy to mount, positive in action, does not alter dial setting in operation! Rotation of knob "A" depresses finger "B" and "C" without imparting any rotary motion to Dial. Single hole mounted.

- No. 10050.....



FULL SIZE

# JAMES M MILLEN

MALDEN · MASSACHUSETTS

## TUBE SOCKETS DESIGNED FOR APPLICATION

MODERN SOCKETS for MODERN TUBES! Long Flashover path to chassis permits use with transmitting tubes, 866 rectifiers, etc. Long leakage path between con acts. Contacts are type proven by hundreds of millions already in government, commercial and broadcast service, to be extremely dependable. Sockets may be mounted either with or without metal flange. Mounts in standard size chassis hole. All types have barrier between contacts and chassis. All but octal and crystal sockets also have barriers between individual contacts in addition.

The No. 33E88 shield is for use with the 33008 octal socket. By its use, the electrostatic isolation of the grid and plate circuits of single-ended metal tubes can be increased to secure greater stability and gain.

The 33087 tube clamp is easy to use, easy to install, effective in function. Available in special sizes for all types of tubes. Single hole mounting. Spring steel, cadmium plated.

Cavity Socket Contact Discs, 33446 are for use with the "Lighthouse" ultra high frequency tube. This set consists of three different size unhardened beryllium copper multifinger contact discs. Heat treating instructions forwarded with each kit for hardening after spinning or forming to frequency requirements.

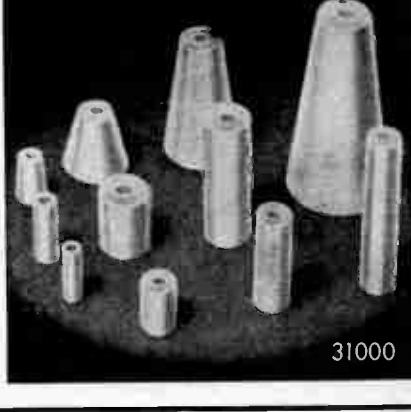
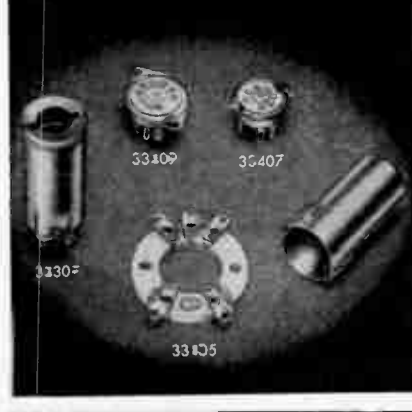
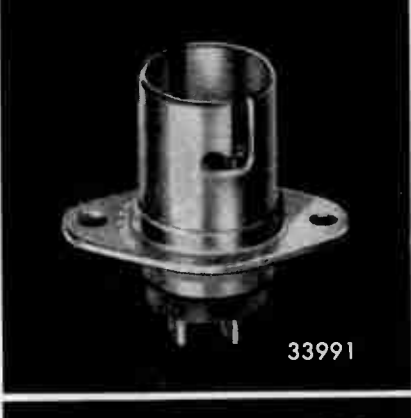
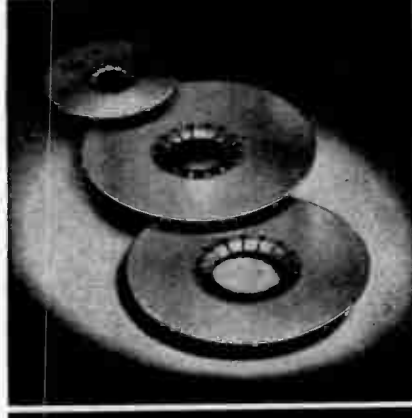
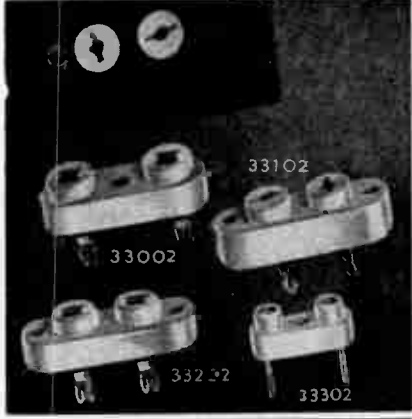
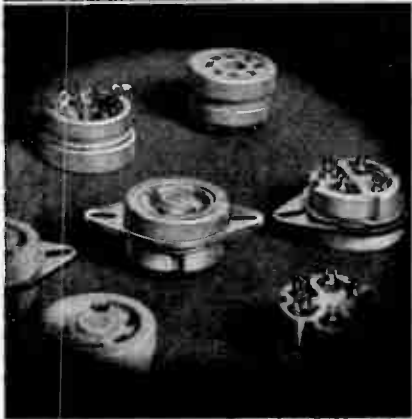
Voltage regulator dual contact bayonet socket, 33991 black phenolic insulation and 33992 with low loss high leakage mica filled phenolic insulation.

- No. 33004—4 Pin Tube Socket.....
- No. 33005—5 Pin Tube Socket.....
- No. 33006—6 Pin Tube Socket.....
- No. 33008—8 Pin Tube Socket.....
- No. 33888—Shield for 33008.....
- No. 33087—Tube Clamp.....
- No. 33002—Crystal Socket 3/4" x .125" ..
- No. 33102—Crystal Socket .487" x .095"
- No. 33202—Crystal Socket 1/2" x .125" ..
- No. 33302—Crystal Socket .487" x .050"
- No. 33446—Contact Discs.....
- No. 33991—Socket for 991.....
- No. 33992—Socket for 991.....
- No. 33207—829 Socket.....
- No. 33305—Acorn Socket.....
- No. 33307—Miniature Socket and Shield, ceramic.....
- No. 33308—Noval Socket and Shield, ceramic.....
- No. 33403—5 Pin Socket Eimac.....
- No. 33407—Miniature Socket only, ceramic
- No. 33409—Noval Socket only, ceramic..

## STAND-OFF INSULATORS

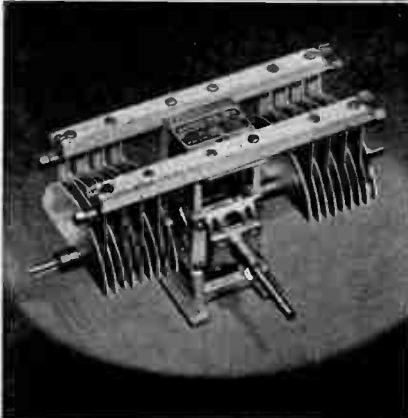
Steatite insulators are available in a variety of sizes—Listed below are some of the most popular.

- No. 310C1—Stand-off 1/2" x 1".....
- No. 310C2—Stand-off 1/2" x 2 1/2".....
- No. 31003—Stand-off 3/4" x 2".....
- No. 31004—Stand-off 3/4" x 3 1/2".....
- No. 31006—Stand-off 1/2" x 7/8".....
- No. 31007—Stand-off 3/8" x 1".....
- No. 31011—Cone 3/4" x 1/2" (box of 5)..
- No. 31012—Cone 1" x 1".....
- No. 31013—Cone 1 1/2" x 1".....
- No. 31014—Cone 2" x 1".....
- No. 31015—Cone 3" x 1 1/2".....



# JAMES MILLEN

MALDEN · MASSACHUSETTS



### 04000 and 11000 SERIES TRANSMITTING CONDENSERS

Another member of the "Designed for Application" series of transmitting variable air capacitors is the 04000 series with peak voltage ratings of 3000, 6000, and 9000 volts. Right angle drive, 1-1 ratio. Adjustable drive shaft angle for either vertical or sloping panels. Sturdy construction, thick, round-edged, polished aluminum plates with  $1\frac{3}{4}$ " radius. Constant impedance, heavy current, multiple finger rotor contactor of new design. Available in all normal capacities.

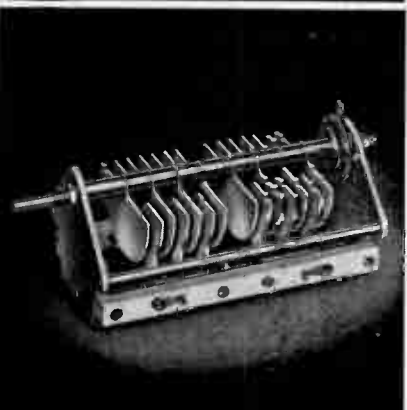
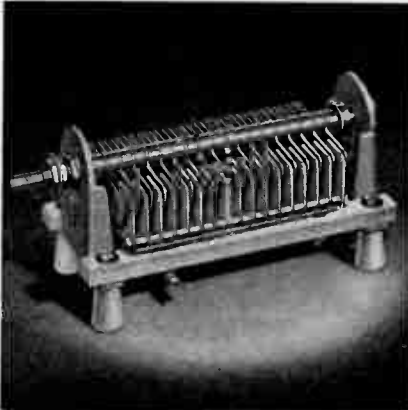
The 11000 series has 16/1 ratio center drive and fixed angle drive shaft.



### 12000 and 16000 SERIES TRANSMITTING CONDENSERS

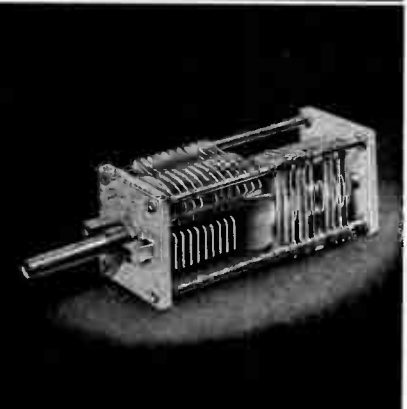
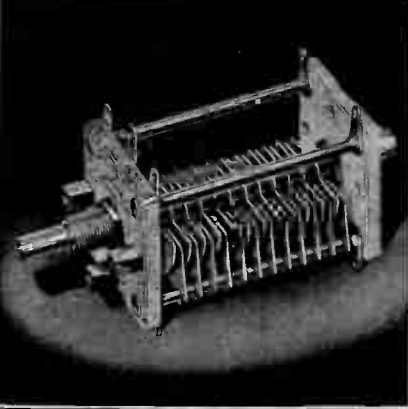
Rigid heavy channeled aluminum end plates. Isolantite insulation, polished or plain edges. One piece rotor contact spring and connection lug. Compact, easy to mount with connector lugs in convenient locations. Same plate sizes as 11000 series above.

The 16000 series has same plate sizes as 04000 series. Also has constant impedance, heavy current, multiple finger rotor contactor of new design. Both 12000 and 16000 series available in single and double sections and many capacities and plate spacing.



### THE 28000-29000 SERIES VARIABLE AIR CAPACITORS

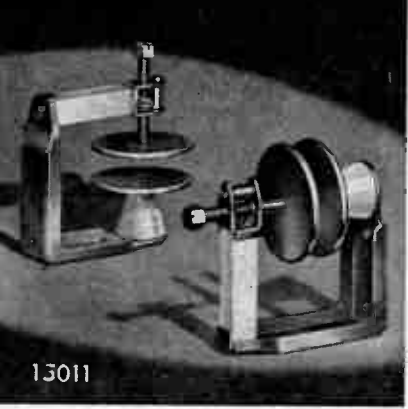
"Designed for Application," double bearings, steatite end plates, cadmium or silver plated brass plates. Single or double section .022" or .066" air gap. End plate size: 19/16" x 11/16". Rotor plate radius:  $\frac{3}{4}$ ". Shaft lock, rear shaft extension, special mounting brackets, etc., to meet your requirements. The 28000 series has semi-circular rotor plate shape. The 29000 series has approximately straight frequency line rotor plate shape. Prices quoted on request. Many stock sizes.



### NEUTRALIZING CAPACITOR

Designed originally for use in our own No. 90881 Power Amplifier, the No. 15011 disc neutralizing capacitor has such unique features as rigid channel frame, horizontal or vertical mounting, fine thread over-size lead screw with stop to prevent shorting and rotor lock. Heavy rounded-edged polished aluminum plates are 2" diameter. Glazed Steatite insulation.

No. 15011 .....



15011

### PERMEABILITY TUNED CERAMIC FORMS

In addition to the popular shielded plug-in permeability tuned forms, 74000 series, the 69040 series of ceramic permeability, tuned unshielded forms are available as standard stock items. Winding diameters available from  $\frac{3}{8}$ " to  $\frac{1}{2}$ " and winding space from  $1\frac{1}{2}$ " to  $1\frac{1}{2}$ ".

- No. 69041—(Copper Slug) .....
- No. 69042—(Iron Core) .....
- No. 69043—(Copper Slug) .....
- No. 69044—(Iron Core) .....
- No. 69045—(Copper Slug) .....
- No. 69046—(Iron Core) .....
- No. 69047—(Copper Slug) .....
- No. 69048—(Iron Core) .....
- No. 69051—(Copper Slug) .....
- No. 69052—(Iron Core) .....
- No. 69054—(Iron Core) .....
- No. 69055—(Copper Slug) .....
- No. 69056—(Iron Core) .....
- No. 69057—(Copper Slug) .....
- No. 69058—(Iron Core) .....
- No. 69061—(Copper Slug) .....
- No. 69062—(Iron Core) .....



69C57  
69C58

69051  
69052

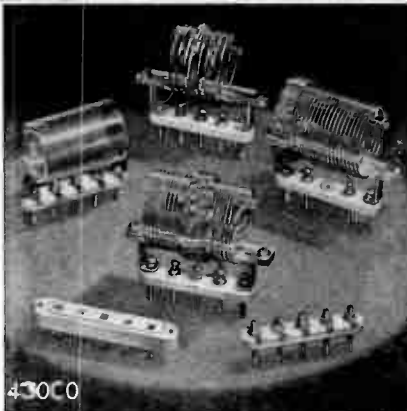
69043

69045  
69046

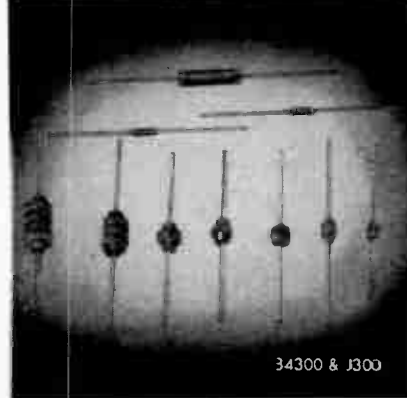
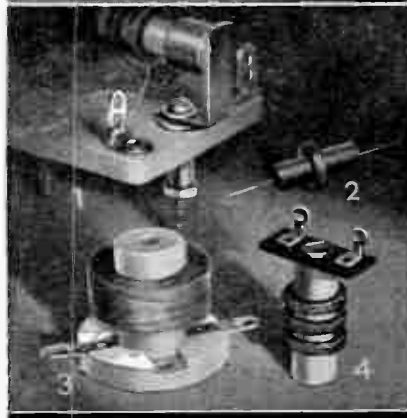
69041  
69042

# JAMES M. MILLEN

MALDEN · MASSACHUSETTS



43000



34300 & J300

**TRANSMITTING TANK COILS**  
A full line—all popular wattages for all bands. Send for special catalog sheet.

**TUNABLE COIL FORM**  
Standard octal base of low loss mica-filled bakelite, polystyrene 1/2" diameter coil form, heavy aluminum shield iron tuning slug of high frequency type, suitable for use up to 35 mc. Adjusting screw protrudes through center hole of standard octal socket.  
No. 74001, with iron core.....  
No. 74002, less iron core.....

**RF CHOKES**  
Many have copied, few have equalled, and none have surpassed the genuine original design Millen. Designed for Application series of midget RF Chokes. The more popular styles now in constant production are illustrated herewith. Special styles and variations to meet unusual requirements quickly furnished.

Figures 1 and 4 illustrate special types of RF chokes available on order. The popular 34300 and 34200 series are shown in figures 2 and 3 respectively.  
General Specifications: 2.5 mH, 250 mA for types 34100, 34101, 34102, 34103, 34104 and 1 mH, 300 mA for types 34105, 34106, 34107, 34108, 34109.  
No. 34100.....  
No. 34101.....  
No. 34102.....  
No. 34103.....  
No. 34104.....

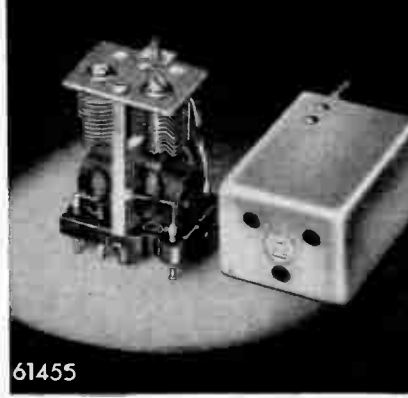
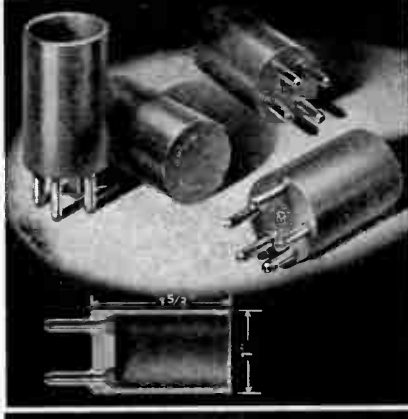
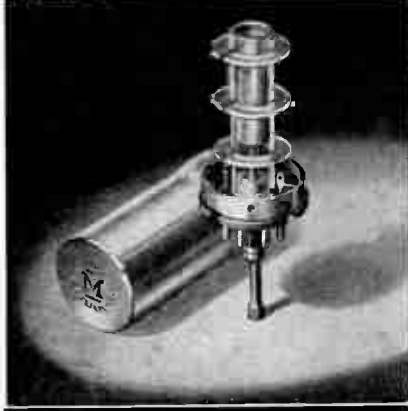
**MIDGET COIL FORMS**  
Made of low loss mica filled brown bakelite. Guide funnel makes for easy threading of leads through pins.  
No. 45000.....  
No. 45004.....  
No. 45005.....

**OCTAL BASE AND SHIELD**  
Low loss phenolic base with octal socket plug and aluminum shield con 1 1/8 x 1 1/8 x 3 1/8.  
No. 74400.....

**MINIATURE POWDERED IRON CORE RF INDUCTANCES**  
The No. J300—Miniature powdered iron core inductances. 0.107 in dia. x 3/8 in. long. Inductances from 25 microhenries to 2.5 millihenries ± 5%. RETMA standard values plus 25, 50, 150, 250, 350, 500, and 2500 microhenries. Three layer solenoids from 25 to 350 microhenries. 1/4 in. wide single pi from 360 to 2500 microhenries. Current rating 50 mill amperes. Special coils an order.

**PHENOLIC FORM RF INDUCTANCES**  
The No. 34300 Inductances—Phenolic coil form with axial leads. Inductances from 1 microhenry to 2.5 millihenries ± 5%. RETMA standard values plus 25, 50, 150, 250, 350, 500, and 2500 microhenries. Solenoids from 1 to 16 microhenries. Single pi from 18 to 300 microhenries. Multiple pi for higher inductances. Forms 7/32" dia. x 3/16 in. long, 3/16" x 3/8", 1/4" x 3/4", and 1/4" x 1". Current rating 250 milliamperes. Special coils on order.

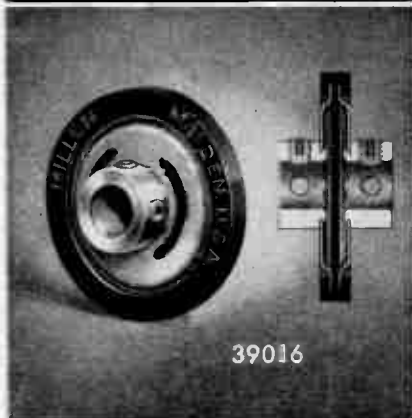
**MINIATURE IF TRANSFORMERS**  
Extremely high Q—approximately 200 Variable Coupling—(under, critical, and over) with all adjustments on op. Small size 1 1/8" x 1 1/8" x 1 1/8" Molded terminal base. Air capacitor tuned. Coils completely enclosed in cup cores. Topped primary and secondary. Rugged construction. High electrical stability.  
No. 61455, ~55 kc. Universal Trans.....  
No. 61453, ~55 kc. BFO.....  
No. 61160, 600 kc. Universal Trans.....  
No. 61163, 600 kc. BFO.....



61455

# JAMES M MILLEN

MALDEN · MASSACHUSETTS



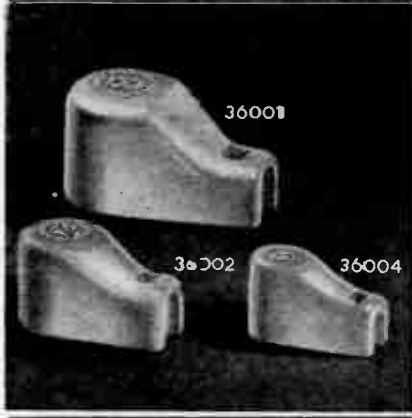
39016

### FLEXIBLE COUPLINGS

The No. 39000 series of Miller "Designed for Application" flexible coupling units include, in addition to improved versions of the conventional types, also such exclusive original designs as the No. 39001 insulated universal joint and the No. 39006 "slide-action" coupling (in both steatite and bakelite insulation).

The No. 39006 "slide-action" coupling permits longitudinal shaft motion, eccentric shaft motion and out-of-line operation, as well as angular drive without backlash.

The No. 39005 and 39005-B (high torque) are similar to the No. 39001, but are not insulated. The steatite insulated No. 39001 has a special anti-backlash pivot and socket grip feature. All of the above illustrated units are for 1/4" shaft and are standard production type units. The No. 39016 incorporates features which have long been desired in a flexible coupling. No Back Lash—Higher Flexibility—Higher Breakdown Voltage—Smaller Diameter—Shorter Length—Higher Alignment Accuracy—Higher Resistance to Mechanical Shock—Solid Insulating Barrier Diaphragm—Molded as a Single Unit.



36001

36002

36004

### CERAMIC PLATE OR GRID CAPS

Soldering lug and contact one-piece. Lug ears annealed and solder dipped to facilitate each combination "mechanical plus soldered" connection of cable.

No. 36001—3/8"

No. 36002—3/4"

No. 36004—1/4"



### SNAP LOCK PLATE CAP

For Mobile, Industrial and other applications where tighter than normal grip with multiple finger 360° low resistance contact is required. Contact self-locking when cap is pressed into position. Insulated snap button at top releases contact grip for easy removal without damage to tube.

No. 36011—3/16"

No. 36012—3/8"



3/4 SIZE

### SAFETY TERMINAL

Combination high voltage terminal and thru-bushing. Tapered contact pin fits firmly into conical socket providing large area, low resistance connection. Pin is swivel mounted in cap to prevent twisting of lead wire.

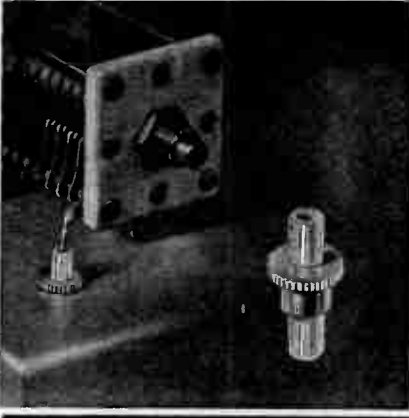
No. 37001, Black or Red.....

No. 37501, Low loss.....

### THRU-BUSHING

Efficient, compact, easy to use and neat appearing. Fits 1/4" hole in chassis. Held in place with a drop of solder or a "nick" from a crimping tool.

No. 32150.....



37201

37223

37291

37222

3721

3722

### POSTS, PLATES, AND PLUGS

The No. 37200 series, including both insulated and non-insulated binding posts with associated plates and plugs, provide various combinations to meet most requirements. The posts have captive heads and keyed mounting.

The No. 37291 and No. 37223 are standard in black or red with other colors on special order. No. 37201, No. 37202, and No. 37204 and No. 37222 are available in black, red, or low loss. The No. 37202 is also available in steatite.

No. 37201—Single plates, pr.....

No. 37291—Single plates (tapered), pr.....

No. 37202—Dual plates, pr.....

No. 37204—Double dual plates, pr.....

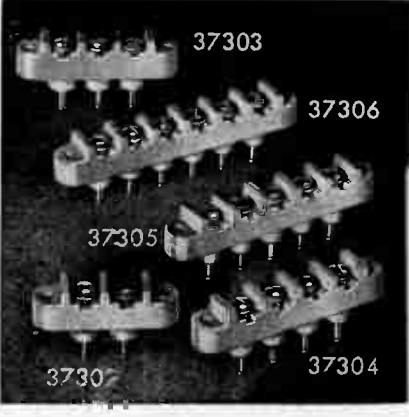
No. 37212—Dual plug.....

No. 37222—Non-insulated binding post, ea.....

No. 37223—Insulated binding posts, ea.....

### STEATITE TERMINAL STRIPS

Terminal and lug are one piece. Lugs are Navy turret type and are free floating so as not to strain steatite during wide temperature variations. Easy to mount with series of round holes for integral chassis bushings.



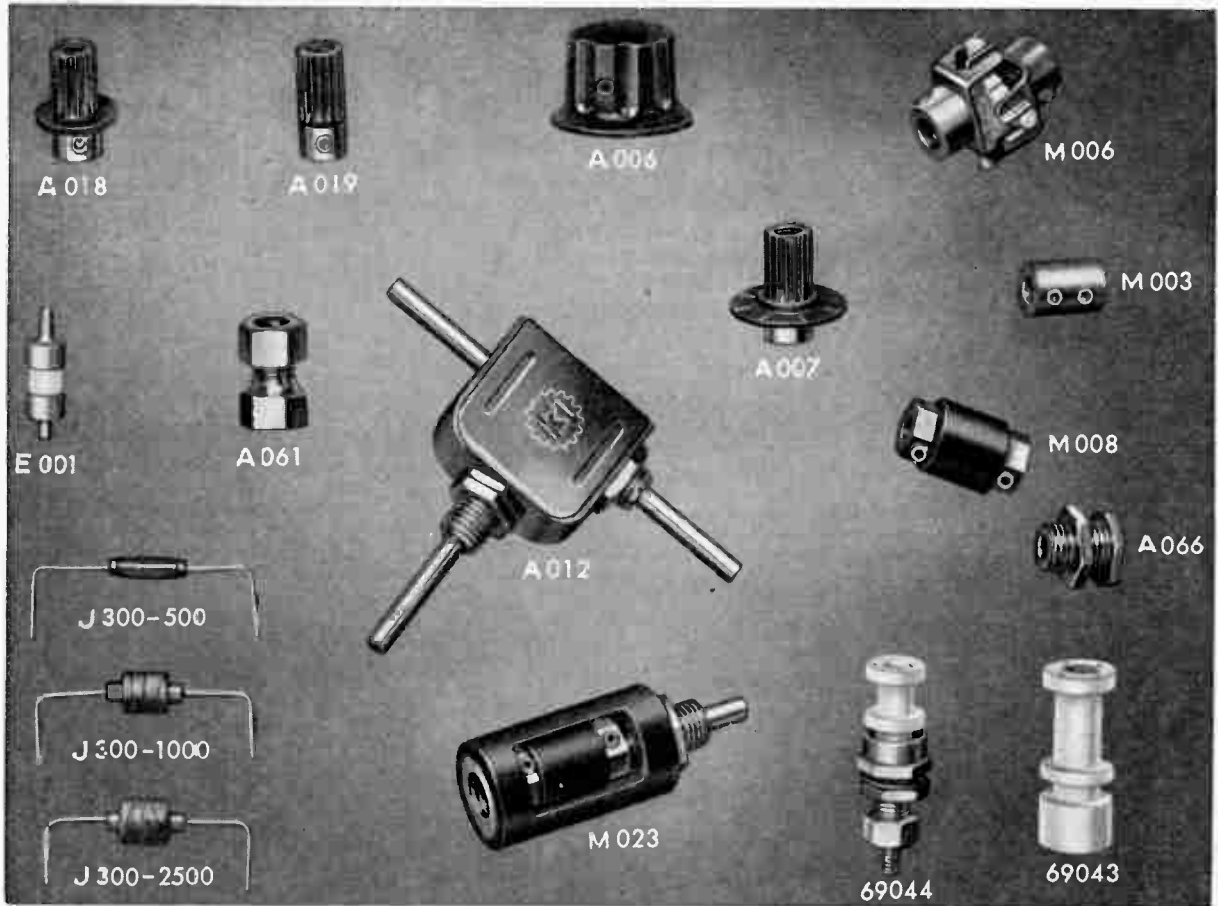
37303

37306

37305

3730

37304



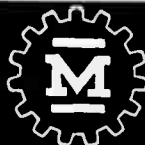
## MINIATURIZED COMPONENTS

**DESIGNED for APPLICATION** miniaturized components developed for use in our own equipment such as the 90901 Oscilloscope, are now available for separate sale. Many of these parts are similar in most details except size with their equivalents in our standard component parts group and in certain devices where complete miniaturization is not paramount, a combination of standard and miniature components may possibly be used to advantage. For convenience, we have also listed on this page the extremely small sized coil forms from our standard catalogue. Additional miniature and subminiature components are in process of design and will be announced shortly.

CODE	DESCRIPTION
A006	Matches standard knobs in style. Black plastic with brass insert. For $\frac{1}{8}$ " shaft. Overall height $\frac{1}{2}$ ". Diameter $\frac{3}{4}$ ".
A007	Same as A018 except for $\frac{3}{8}$ " diameter plastic dial with 5 index lines.
A012	Right angle drive. $\frac{1}{8}$ " diameter shafts. Single hole mounting bushing $\frac{1}{4}$ "-32 diameter.
A018	$\frac{1}{4}$ " diameter black plastic knob with brass insert for $\frac{1}{8}$ " shaft. Skirt diameter $\frac{3}{8}$ ". Overall height $\frac{3}{8}$ ". Unique design has screwdriver slot in top.

CODE	DESCRIPTION
A019	Similar to A018, but without flange.
A061	Shaft lock for $\frac{1}{8}$ " diameter shaft. $\frac{1}{4}$ "-32 bushing. Nickel plated brass.
A066	Shaft bearing for $\frac{1}{8}$ " diameter shafts. Nickel plated brass. Fits $\frac{1}{4}$ " diameter hole.
E001	Steatite standoff or tie-point integral mounting eyelet .205 overall diameter. Box of five.
J300-500	Iron core RF choke 500 uh.
J300-1000	Iron core RF choke 1000 uh.
J300-2500	Iron core RF choke 2½ mh.
M003	Solid coupling for $\frac{1}{8}$ " diameter shaft. Nickel plated brass.
M006	Universal joint style flexible coupling. Spring finger. Steatite insulation. Nickel plated brass for $\frac{1}{8}$ " diameter shafts.
M008	Insulated coupling, with nickel plated brass inserts for $\frac{1}{8}$ " diameter shafts.
M023	Insulated shaft extension for mounting sub miniature potentiometer with $\frac{1}{8}$ " diameter shafts and $\frac{1}{4}$ "-32 bushing.
69043	Steatite coil form. Adjustable core. Top tuned. Tapped 4-40 hole in base for mounting. Winding space $\frac{1}{4}$ " diameter x $1\frac{1}{2}$ " length.
69044	Steatite coil form. Adjustable brass core. Bottom tuned. Mounting by No. 10-32 brass base. Winding space .187 diameter by $\frac{3}{4}$ " length.

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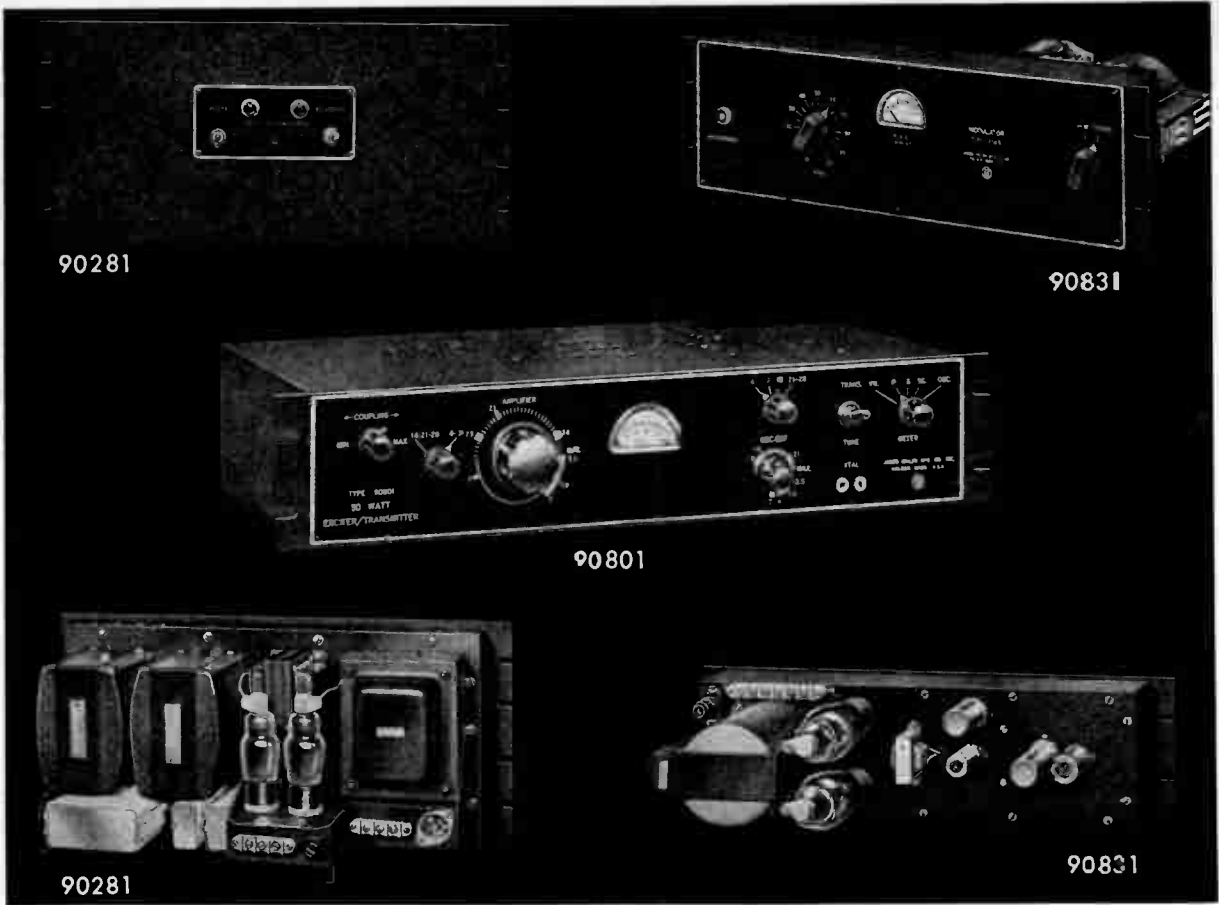


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## Exciters, Modulators and Power Supplies

### EXCITER-TRANSMITTER

The 90801 Exciter-Transmitter is of the most modern design including features and shielding for TVI reduction, band-switching for the 4-7-14-21 and 28 megacycle bands, circuit metering. Conservatively rated for use either as a transmitter or exciter. 5763 oscillator-buffer-multiplier and 6146 power amplifier. 90 watts input for CW. Can be keyed in the oscillator and/or amplifier or by means of keyed external V.F.O. such as the 90711. 67 watts input phone. Rack mounted. 3½" panel height.

No. 90801, less tubes.....

### MODULATOR

The 90831 40 watt modulator designed especially for use with 90801 transmitter. 12AX7 speech amplifier-6C4 voltage amplifier-class AB1 6146's. Suitable for modulating transmitters with power input up to 80 watts. Gain is ample for the use of low level, high impedance crystal or dynamic microphones. Frequency response is adjusted for good communication intelligibility with limited side bands. Modulator incorporates a switch for complete change-over of modulator and transmitter from CW to 'phone. Rack mounted. 5¼" panel height.

No. 90831, less tubes.....

### HIGH VOLTAGE POWER SUPPLY

The 90281 high voltage power supply has a d.c. output of 550 to 700 volts, with maximum current of 235 ma. In addition, a.c. filament power of 6.3 volts at 4 amperes is also available. This power supply is an ideal unit for use with transmitters as well as general laboratory purposes. A single power supply will provide high voltage for both the 90801 Transmitter and the 90831 Modulator. Uses 2 — 816 mercury vapor rectifiers and incorporates a two section filter which results in excellent regulation and very low ripple. Rack mounted, 8¾" panel height.

No. 90281, less tubes.....

### LOW VOLTAGE POWER SUPPLY

(not illustrated)

The 90201 is a compact uncased regulated and general purpose power supply either for table use, in the laboratory or for incorporation as an integral part of larger equipments. It will provide modulator and exciter low voltage as well as bias and heater voltages when used with the 90801 and 90831. Its multiple outputs include 250 volt 125 ma. unregulated — .05 volt 35 ma. regulated-bias voltage of minus 100 volts — 6.3 volt filament power at 4.2 amperes.

Model 90201, with tubes.....

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## The Oscilloscopes and the Amplifier Sweep

The oscilloscopes in their packaged form are entirely adequate for many laboratory as well as industrial and communication uses. As a transmitter modulation monitor; no additional equipments or accessories are required. By the addition of such units as sweeps, pulse generators, amplifiers, servo sweeps, etc., all of which can be conveniently and neatly constructed on companion rack panels, the original basic scope unit can be expanded to serve any conceivable application. Here again the research engineer is freed of the drudgery of time consuming mechanical construction and other such details of the basic scope before being able to proceed with his specialized work. The oscilloscopes are designed for standard rack mounting and incorporate metal shielding and power supply as well as functional controls.

### NO. 90902 TWO INCH OSCILLOSCOPE

Power Supply: 105-125 volts — 60 cycles. Power consumption — 19 watts  
Physical Dimensions: Height — 3½ Inches. Width — 19 Inches. Depth — 9¼ Inches. Weight — 12 Pounds  
Tube Complement: 1 — 2BP1 — C.R.T., 1 — 2X2-A High Voltage Rectifier  
Deflection Sensitivity d.c. volts per inch: Vertical — 100. Horizontal — 120

### NO. 90903 THREE INCH OSCILLOSCOPE

Power Supply: 105-125 volts — 60 cycles. Power consumption — 19 watts  
Physical Dimensions: Height — 5¼ Inches. Width — 19 Inches. Depth — 13¼ Inches. Weight — 14 Pounds  
Tube Complement: 1 — 3KP1 C.R.T., 1 — 2X2-A High Voltage Rectifier  
Deflection Sensitivity d.c. volts per inch: Vertical — 40. Horizontal — 46

### NO. 90905 FIVE INCH OSCILLOSCOPE

Power Supply: 105-125 volts — 60 cycles. Power consumption — 32 watts  
Physical Dimensions: Height — 6½ Inches. Width — 19 Inches. Depth (Overall) — 16½ Inches. Weight — 24 Pounds

Tube Complement: 1 — 5UP1 — C.R.T., 1 — 2X2-A — Negative High Voltage Rectifier, 1 — 5Y3-GT-Positive High Voltage Rectifier  
Deflection Sensitivity d.c. volts per inch: Vertical — 50. Horizontal — 60

### NO. 90905-B FLAT FACE FIVE INCH OSCILLOSCOPE

Power Supply: 105-125 volts — 60 cycles. Power consumption — 35 watts  
Physical Dimensions: Height — 6½ Inches. Width — 19 Inches  
Tube Complement: 1 — 5A1P1 — C.R.T., 2 — 2X2-A High Voltage Rectifiers, 1 — 5Y3-GT Low Voltage Rectifier  
Deflection Sensitivity d.c. volts per inch: Vertical 32 to 43. Horizontal 41 to 51

### NO. 90921 AMPLIFIER SWEEP

The Milten 90921 Amplifier-Sweep may be used with any basic oscilloscope even though designed especially for use with the Milten 90902, 90903 and 90905 basic oscilloscopes. It contains both horizontal and vertical amplifiers together with a sawtooth sweep generator using a "hard" tube oscillator. The sweep amplifier is designed for standard rack mounting and matches the MILLEN basic oscilloscopes in appearance.

Power Supply: 105-125 volts — 60 cycles. Power consumption — 32 watts  
Physical Dimensions: Height — 5¼ Inches. Width — 19 Inches. Depth (Overall) — 8¾ Inches. Weight — 13 Pounds  
Tube Complement: 2 — 6SJ7s Vertical and Horizontal Amplifiers, 1 — 6SN7-GT-Sweep Generator, 1 — 5Y3-GT-Rectifier

Gain of each amplifier — Approximately 25 db.  
Frequency Response — 15 cycles to 125 kilocycles. Flat within 2 db.  
Sweep Frequencies — 15 cycles to 10 kilocycles. 4 overlapping ranges  
Maximum D.C. to amplifier input — 400 volts  
Maximum undistorted amplifier output — Approximately 70 volts peak to peak both vertical and horizontal amplifiers

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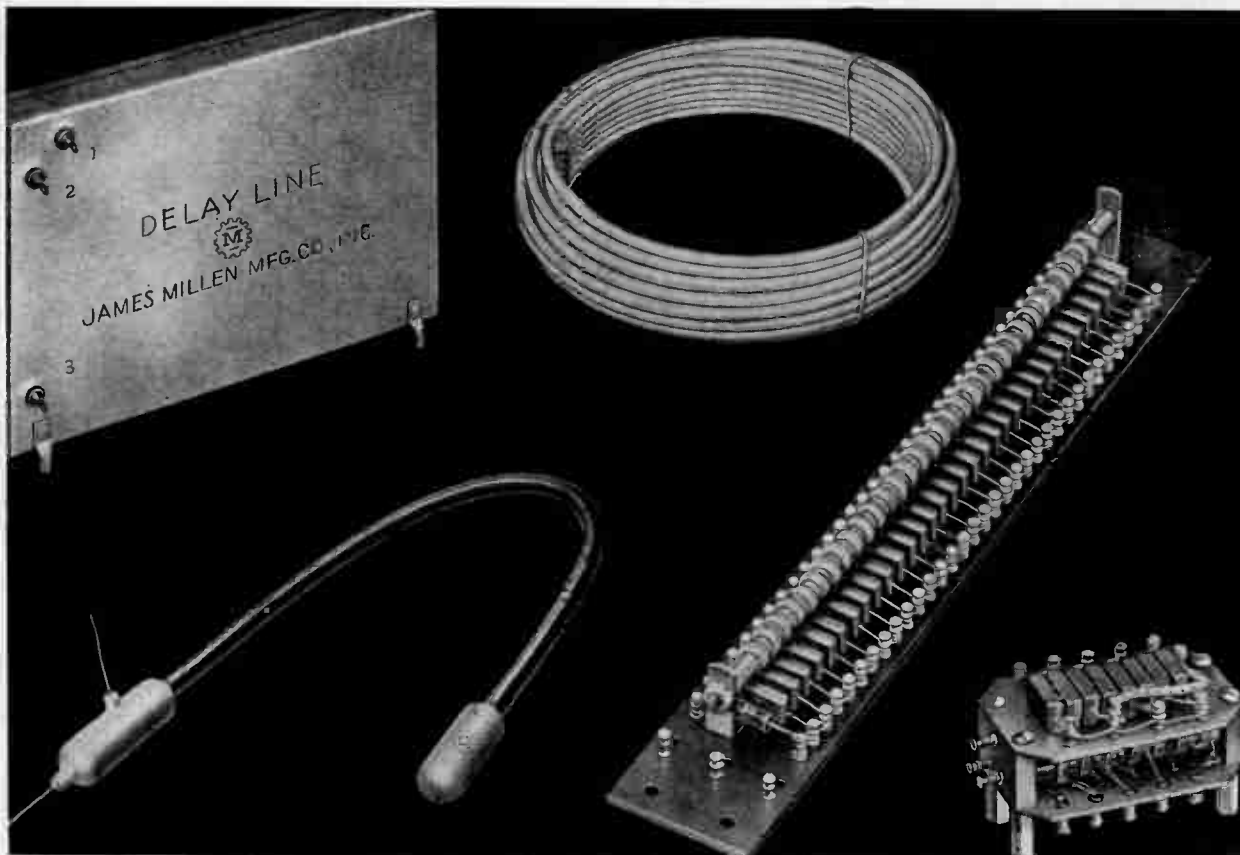


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## Delay Lines and Networks • "Designed for Application"

The James Millen Mfg. Co., Inc. has been producing continuous delay lines and lump constant delay networks since the origination of the demand for these components in pulse formation and other circuits requiring time delay. The most modern of these is the distributed constant delay line designed to comply with the most stringent electrical and mechanical requirements for military, commercial and laboratory equipment.

Distributed-constants delay line is furnished in three forms:

1. Bulk line
2. Flexible sealed completed units
3. Cased hermetically sealed completed units

The bulk delay line is approximately  $\frac{3}{16}$  in. diameter and is furnished in random lengths. It is priced "by the foot."

The flexible, sealed, complete lines are furnished with delay time of from 0.1 microseconds to 10 microseconds. The terminals are No. 18 tinned leads, extended through molded end caps. This form of line is particularly useful in applications where space is at a premium, as the line can be tucked around the edges of the chassis, in otherwise waste space. The flexible lines are furnished with terminals on both ends for transmission use or with a dummy molded end replacing one of the terminals for pulse forming lines. Delay time is specified as time required for the transmission through one length of line only.

Care must be used not to coil line around a diameter of less than  $\frac{1}{2}$  in.

The cased lines are mounted in hermetically sealed metal containers with "metal to glass" terminals. Lines of this type can be furnished in values up to approximately 36 microseconds and with multiple sections, in a single case. Delay lines from 0.5 microsecond to 1.5 microseconds 1350 ohm characteristic impedance are mounted in a standard can  $\frac{3}{4}$  in. long by  $\frac{1}{2}$  in. high, by 1 in. thick. Delay lines from 0.1 microseconds to 0.5 microseconds are mounted in a standard can 1 inch by 1 inch square and length to accommodate the particular time-delay line requirements. Delay lines 550 ohm impedance from 0.1 microseconds to 0.25 microseconds are also mounted in the standard 1 x 1 inch square can.

Case size, terminal arrangement, mounting feet or lugs, etc., can be furnished to customer's requirements.

Due to the special nature of delay line applications, we list no standard units, but solicit correspondence regarding your exact requirements.

### ELECTRICAL CHARACTERISTICS:

Characteristic Impedance: 1350 ohms  $\pm$  20% or 550 ohms  $\pm$  20%. Special lines of any impedance between 400 ohms and 2000 ohms can be supplied.

Time Delay: Approximately 22 inches per microsecond for 1350 ohm line. Approximately  $\pm$  1 feet per microsecond for 550 ohm line.

Frequency Response: 1350 ohm line — When a 1 microsecond square pulse is applied to the line, the leading edge of the pulse after transmission through 4 microseconds of line has a time rise of not more than 0.2 microseconds and the duration of the pulse is less than 1.5 microseconds. (Line terminated by characteristic impedance.) Rise time is a function of delay.

Band Pass: A function of delay.

Attenuation: Approximately 1.0 db. per foot for one microsecond pulse. With a four microsecond delay line terminated in its characteristic impedance and a one microsecond square pulse input, the transmitted pulse height is no less than 35% of the input pulse height.

Test Voltage: 600 volts d.c. between winding and shield, between winding and case and between shield and case.

Leakage Resistance: 100 megohms or more between winding and shield and between winding and case.

Ambient Temperature Range: Minus 50 degrees centigrade to plus 85 degrees centigrade.

Thermal Drift: Less than 0.00038 microseconds per microsecond delay per degree centigrade.

Weight: Approximately 0.6 ounce per foot.

Many special applications require lumped-constant delay line. We are in a position to manufacture such lines to your specifications. The above illustrations are typical examples. Other designs including hermetically sealed units can be supplied.

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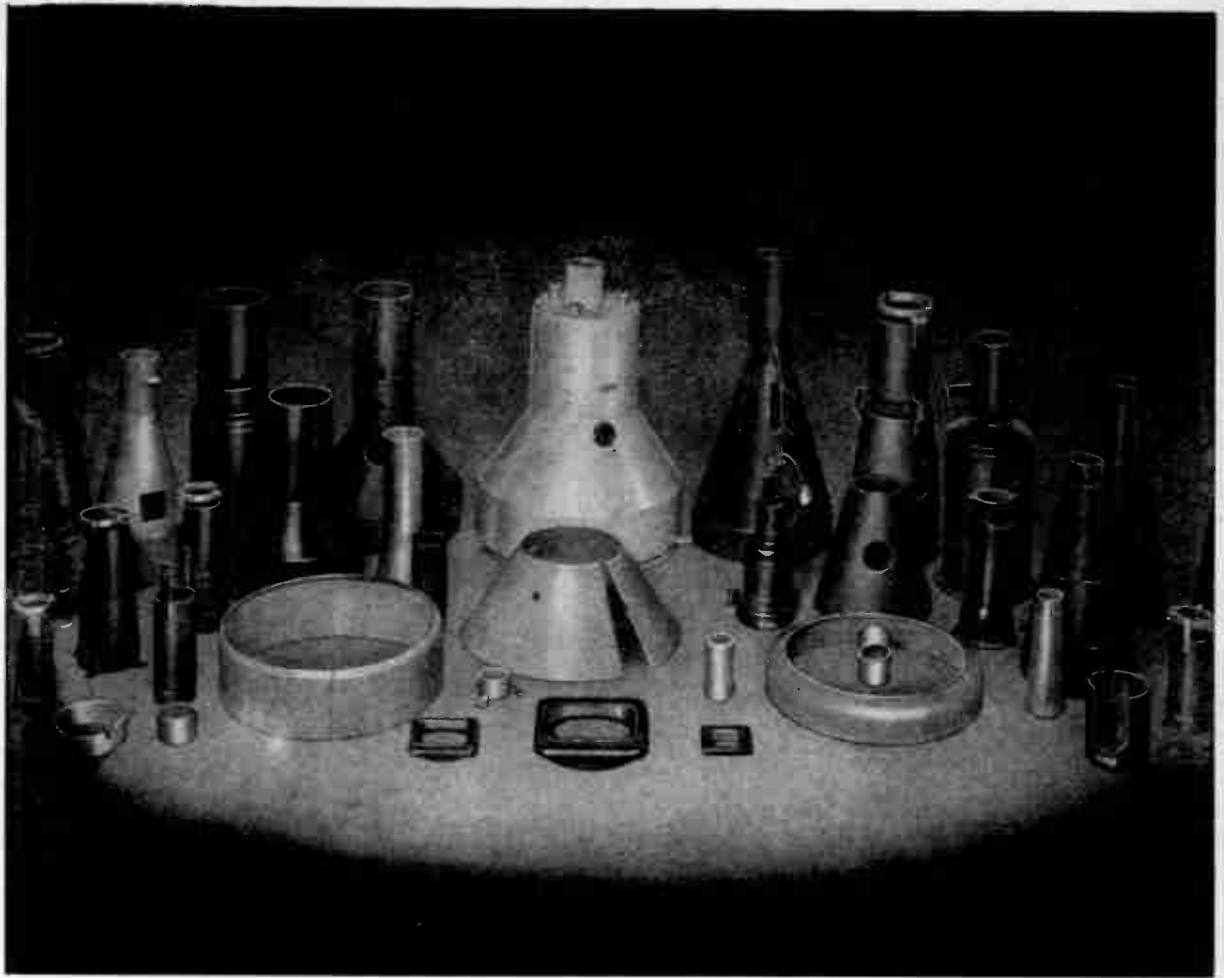


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## Magnetic Metal Shields

The James Millen Mfg. Co., Inc. has for many years specialized in the production of magnetic metal cathode ray tube shields and bezels for the entire electronic industry, supplying magnetic metal shields to manufacturing companies, laboratories and research organizations. The study of such problems has resulted in the use of two outstanding metals for this purpose: NICOLOI and MUMETAL. It is possible by selecting the proper material, that is, Mumetal or Nicoloi, or the correct combination of these materials, to reduce the effect of undesired magnetic fields.

Mumetal is generally used on equipment requiring the most thorough shielding, and where the trouble-causing field is not of excessive magnitude. Nicoloi is very effective in reducing fields of high flux concentration. Single Nicoloi shields are satisfactory for general purpose applications where the ultimate design does not necessitate too critical consideration of the effect of external fields. Where there is a combination of the requirement for optimum shielding and an abnormally high external field, the combination of Nicoloi outer shield and a Mumetal inner shield is used. The Nicoloi outer shield reduces the high field most effectively; and the Mumetal inner shield is then operating under the best condition whereby it reduces the interference from a low field to a minimum. For most applications, however, the single Mumetal shield is entirely adequate and to be recommended.

Both Nicoloi and Mumetal obtain their effectiveness due to the correct selection or allows on one hand, and the process of annealing so as to relieve stresses and provide the best possible molecular structure for effective shielding, on the other.

Magnetic metal shields can be furnished to meet the most stringent requirements and match the color of the equipment incorporating such shields. Due to the high alloy

content neither Nicoloi or Mumetal is subject to corrosion and, in general, it is recommended that a zinc chromate primer and a high heat lacquer be used in finishing the shields. Plating is generally avoided due to the possibility that the shields might become magnetized in the plating process which necessarily is done after annealing. Care is used in the selection of materials used in conjunction with the shields for such purposes as brackets, supports, etc., so as to minimize many operations on the shields after annealing.

Cold rolled or stainless steel brackets are recommended as it is impractical to use brass which would melt under the high annealing temperature. Tube clamps must necessarily be made of spring metal which would lose its temper during annealing. In order to avoid this clamps are mounted on the shields after treatment by means of spun rivets so as to avoid any shock to the shield.

Shields and bezels have been designed to meet the stringent requirements of military, laboratory and industrial uses and still provide units which are economical and can be assembled into the complete equipment without complexity. Our standard shields and bezels are arranged to support the cathode ray tube from the front panel without addition of complicated supports and brackets.

Standard shields and bezels for the more popular tubes are available from stock for both production and research programs.

Many production programs, however, make desirable shields designed in conjunction with the specialized requirements of the basis apparatus. Our Custom Shield design and fabrication department is at the service of our customers for the development of magnetic metal shields for such specialized application.

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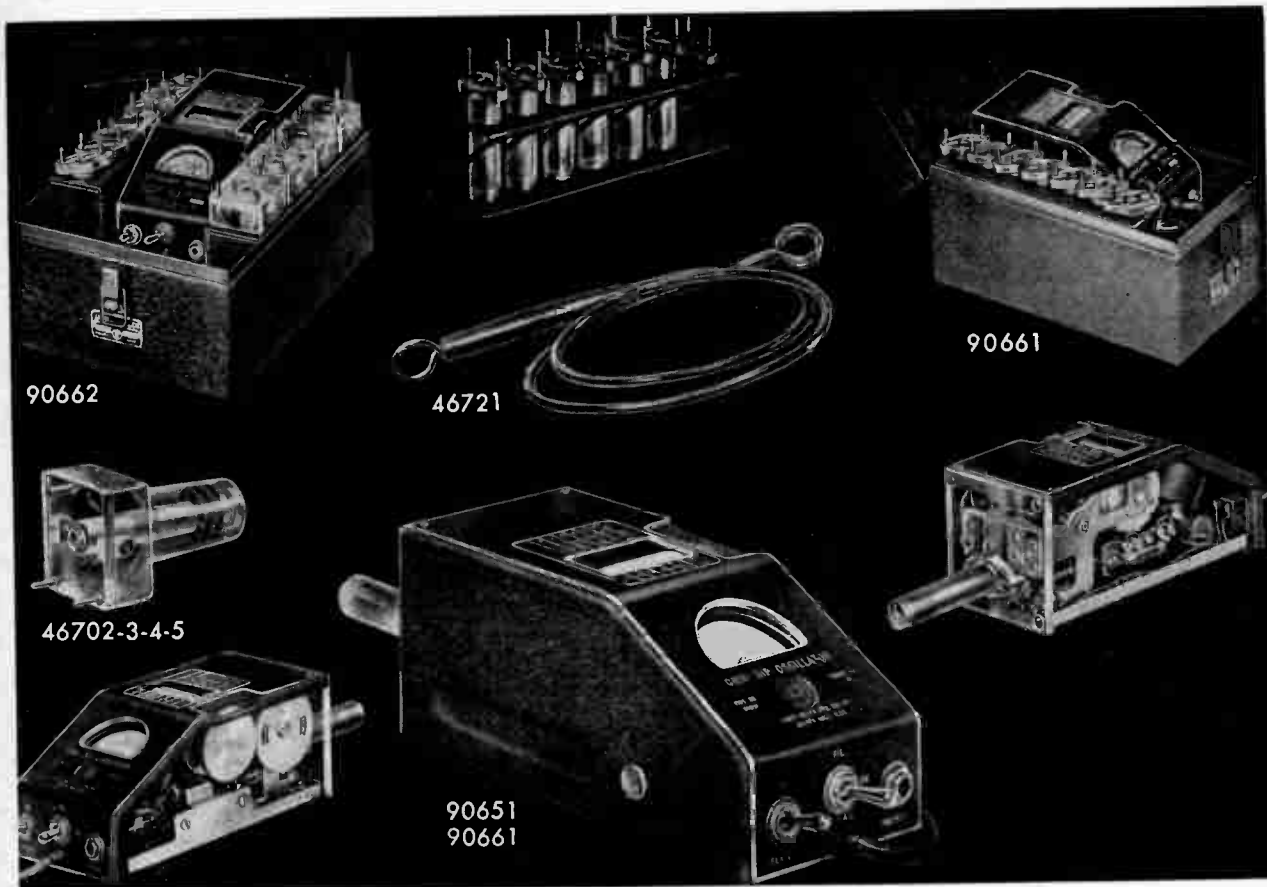
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## Designed for Application

### Grid Dip Meters

Millen Grid Dip Meters are available to meet all various laboratory and servicing requirements.

The 90662 Industrial Grid Dip Meter hand calibrated  $\pm 0.5\%$  for laboratory use with a range from 225 kc. to 300 mc. incorporates features desired for both industrial and laboratory application, including three wire grounding type power cord and suitable carrying case.

The 90661 Industrial Grid Dip Meter is similar to the 90662 except for a reduced range of 1.7 to 300 mc. It likewise incorporates the three wire grounding type cord and metal carrying case.

The 90651 Standard Grid Dip Meter is a somewhat less expensive version of the grid dip meter. The  $\pm 2.0\%$  calibration is adequate for general usage. It is supplied without grounding lead and without carrying case. The range is 1.7 to 300 mc. Extra inductors available extends range to 220 kc.

The Millen Grid Dip Meter is a calibrated stable RF oscillator unit with a meter to read grid current. The frequency determining coil is plugged into the unit so that it may be used as a probe.

These instruments are complete with a built-in transformer type A.C. power supply and internal terminal board to provide connections for battery operation where it is desirable to use the unit on antenna measurements and other usages where A.C. power is not available. Compactness

has been achieved without loss of performance or convenience of usage. The incorporation of the power supply, oscillator and probe into a single unit provides a convenient device for checking all types of circuits. The indicating instrument is a standard 2 inch instrument with an easy to read scale. The calibrated dial is a large 205° drum dial which provides seven direct reading scales, plus an additional universal scale, all with the same length and readability. Each range has its individual plug-in probe completely enclosed in a contour fitting polystyrene case for assurance of permanence of calibration as well as to prevent any possibility of mechanical damage or of unintentional contact with the components of the circuit being tested.

The Grid Dip Meters may be used as:

1. A grid Dip Oscillator
2. An Oscillating Detector
3. A Signal Generator
4. An Indicating Absorption Wavemeter

The most common usage of the Grid Dip Meter is as an oscillating frequency meter to determine the resonant frequencies of de-energized tuned circuits.

Size of Grid Dip Meter only (less probe): 7 in. x 3 $\frac{1}{2}$  in. x 3 $\frac{3}{8}$  in.

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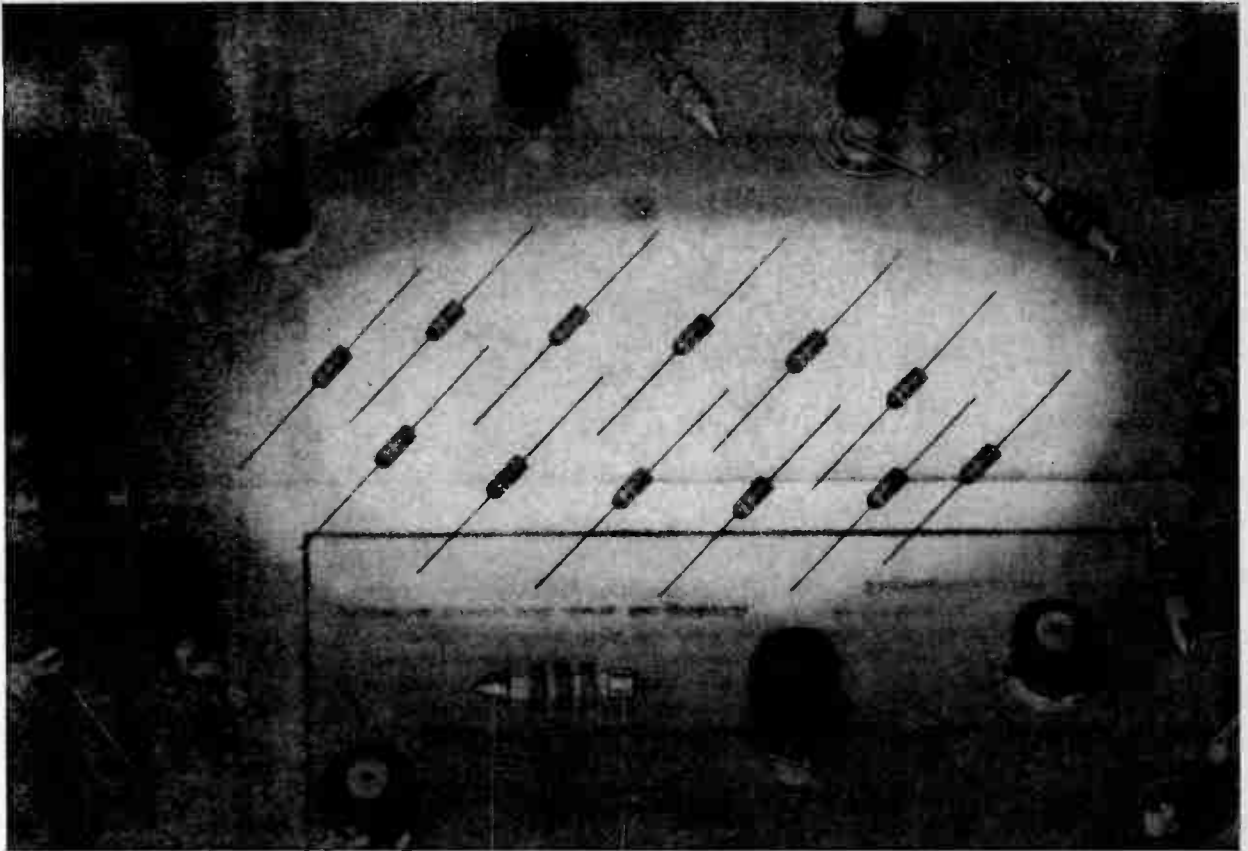


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## Encapsulated Inductances

Millen **DESIGNED** for APPLICATION encapsulated coils provide another advance in the r-f inductor field. Modern application requires miniature, heat and cold resistant, hermetically sealed, and abrasion resistant r-f inductor assemblies. The James Millen Manufacturing Company has pioneered many advances in the r-f inductor field, including the now standard 4 pi r-f choke, the axial lead r-f choke, and the miniature r-f choke. Developments have now made possible another advance, the No. 34301 and No. J301 encapsulated inductors—hermetically sealed—miniature size. Ambient temperature minus 55 degrees to plus 100 degrees C.

### NO. J301 MINIATURE ENCAPSULATED INDUCTANCES

**DESIGNED** for APPLICATION miniature inductances are: extremely small (see table at right)—hermetically sealed—wound on axial lead Carbonyl cores—color coded. Coils are available in RETMA standard values plus 25, 50, 150, 250, 350, 500, and 2500 microhenries. Coils are three layer solenoids up to 350 microhenries. From 360 to 2500 microhenries coils are pi-wound. Current rating 50 to 600 milliamperes depending on coil size. Inductance  $\pm$  5%. Special coils on order.

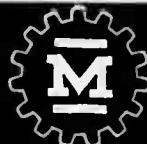
### NO. 34301 STANDARD ENCAPSULATED INDUCTANCES

Encapsulated **DESIGNED** for APPLICATION axial lead phenolic form r-f inductances. Hermetically sealed—heat resistant—abrasion proof—color coded. 1 to 350 microhenries available in RETMA standard values plus 25, 50, 150, 250, and 350 microhenries. Inductance  $\pm$  5%. Values available in same progression as J301 coils listed in the table at the right. Solenoid winding for 1 to 15 microhenries. Universal pi winding from 20 microhenries to 350 microhenries. Current rating 250 to 1500 milliamperes, depending on coil size. Ambient temperature range—minus 55 degrees to plus 100 degrees Centigrade. Size:  $\frac{3}{8}$  inches diameter X  $\frac{1}{8}$  inches long. Special coils on order.

COIL NUMBER	INDUCTANCE MICROHENRIES	DIAMETER INCHES	LENGTH INCHES
J301-25	25	$\frac{3}{16}$	$\frac{7}{16}$
J301-33	33	$\frac{3}{16}$	$\frac{9}{16}$
J301-47	47	$\frac{3}{16}$	$\frac{9}{16}$
J301-50	50	$\frac{3}{16}$	$\frac{9}{16}$
J301-82	82	$\frac{3}{16}$	$\frac{9}{16}$
J301-100	100	$\frac{3}{16}$	$\frac{9}{16}$
J301-120	120	$\frac{3}{16}$	$\frac{9}{16}$
J301-150	150	$\frac{3}{16}$	$\frac{9}{16}$
J301-200	200	$\frac{3}{16}$	$\frac{9}{16}$
J301-220	220	$\frac{3}{16}$	$\frac{9}{16}$
J301-250	250	$\frac{3}{16}$	$\frac{9}{16}$
J301-300	300	$\frac{3}{16}$	$\frac{9}{16}$
J301-330	330	$\frac{3}{16}$	$\frac{9}{16}$
J301-350	350	$\frac{3}{16}$	$\frac{9}{16}$
J301-360	360	$\frac{7}{32}$	$\frac{9}{16}$
J301-390	390	$\frac{7}{32}$	$\frac{9}{16}$
J301-430	430	$\frac{7}{32}$	$\frac{9}{16}$
J301-470	470	$\frac{1}{4}$	$1\frac{1}{16}$
J301-500	500	$\frac{1}{4}$	$1\frac{1}{16}$
J301-510	510	$\frac{1}{4}$	$1\frac{1}{16}$
J301-560	560	$\frac{1}{4}$	$1\frac{1}{16}$
J301-620	620	$\frac{1}{4}$	$1\frac{1}{16}$
J301-680	680	$\frac{9}{32}$	$\frac{3}{4}$
J301-750	750	$\frac{9}{32}$	$\frac{3}{4}$
J301-820	820	$\frac{9}{32}$	$\frac{3}{4}$
J301-910	910	$\frac{9}{32}$	$\frac{3}{4}$
J301-1000	1000	$\frac{9}{32}$	$\frac{3}{4}$
J301-1200	1200	$\frac{9}{32}$	$1\frac{1}{16}$
J301-1300	1300	$\frac{9}{32}$	$1\frac{1}{16}$
J301-1500	1500	$\frac{9}{32}$	$1\frac{1}{16}$
J301-1800	1800	$\frac{9}{32}$	$1\frac{1}{16}$
J301-2000	2000	$\frac{9}{32}$	$\frac{3}{4}$
J301-2200	2200	$\frac{9}{32}$	$\frac{3}{4}$
J301-2400	2400	$\frac{9}{32}$	$\frac{3}{4}$
J301-2500	2500	$\frac{9}{32}$	$\frac{3}{4}$

**JAMES MILLEN**

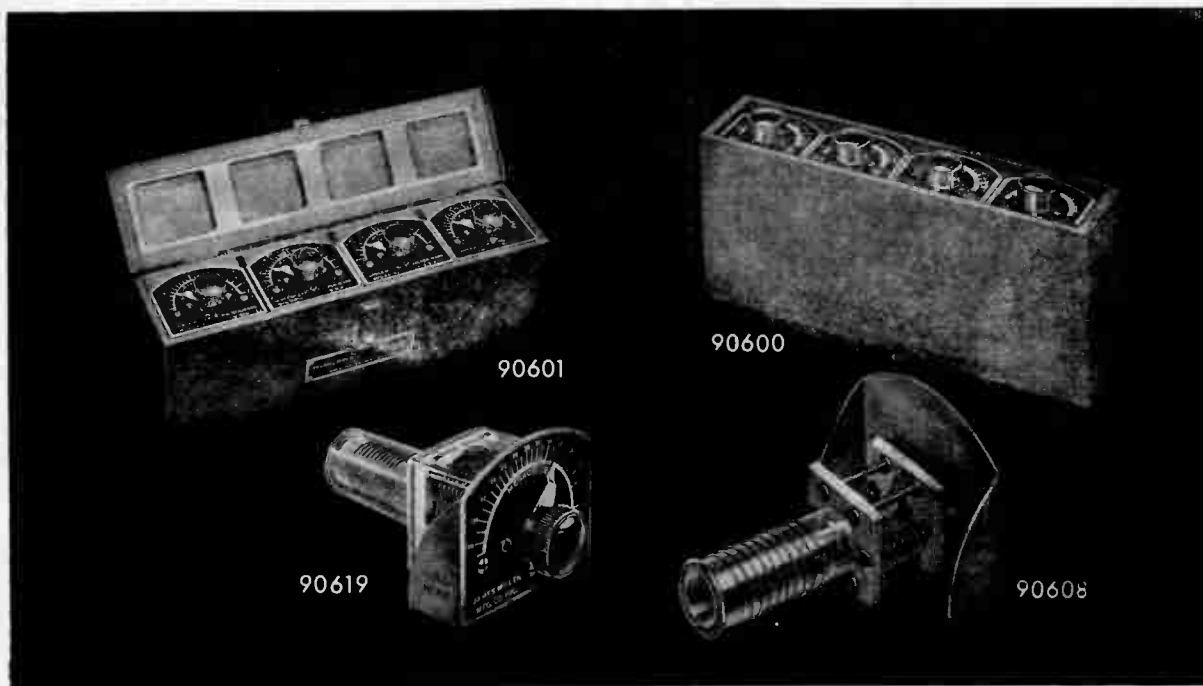
MAIN OFFICE



**MFG. CO., INC.**

AND FACTORY

**MALDEN, MASSACHUSETTS, U. S. A.**



## Midget Absorption Frequency Meters

Many amateurs and experimenters do not realize that one of the most useful "tools" of the commercial transmitter designer is a series of very small absorption type frequency meters. These handy instruments can be poked into small shield compartments, coil cans, corners of chassis, etc., to check harmonics; parasitics; oscillator-doubler, etc., tank tuning; and a host of other such applications. Quickly enables the design engineer to find out what is really "going on" in a circuit.

Types 90604 thru 90610 are extremely small and designed primarily for engineering laboratory use where they

will be handled with reasonable care. The most useful combination being the group of four under code No. 90600 and covering the total range of from 3.0 to 140 megacycles. When purchased in sets of four under code No. 90601 a convenient carrying and storage case is included. Series 90601 are slightly larger and very much more rugged. They are further protected by a contour fitting transparent polystyrene case to protect against damage and dirt. This latter series is designed primarily for field use and are not quite as convenient for laboratory use as the 90605 thru 90608 types. All types have dials directly calibrated in frequency.

Code	Description	Net Price
90604	Range 160 to 210 mc.	
90605	Range 3.0 to 10 mc.	
90606	Range 9.0 to 23 mc.	
90607	Range 23 to 60 mc.	
90608	Range 50 to 140 mc.	
90609	Range 130 to 170 mc.	
90610	Range 105 to 150 mc.	
90611	Range 1.5 to 3.5 mc.	
90612	Range 3.5 to 8 mc.	
90613	Range 8 to 18.5 mc.	
90614	Range 18 to 41 mc.	
90619	Range 0.35 to 1.0 mc.—Neon Indicator	
90620	Range 0.15 to 0.35 mc.—Neon Indicator	
90625	Range 2 to 6 mc.—Neon Indicator	
90626	Range 5.5 to 15 mc.—Neon Indicator	
90600	Complete set of 90605 thru 90608, in case	
90601	Complete set Field type Frequency Meters in metal carrying case 1.5 to 40 mc.	

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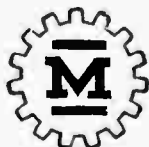
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## Thank You!

When ordering products shown in this book or writing for additional information, please be sure to specify:

1. **Manufacturer's Catalog Numbers and Page Numbers.**
2. **The Year and Edition of This MASTER.**

This will avoid confusion and expedite delivery.

**The**  
*Radio - Electronic*  
**MASTER**



# JENNINGS VACUUM

## VACUUM FIXED CAPACITORS

FIG.	TYPE		CAPACITY MMFD	PEAK VOLTAGE KILOVOLTS	RMS AMPERES <sup>(1)</sup>		NOMINAL DIMENSIONS <sup>(2)</sup>			
	NICKEL	COPPER			NICKEL	COPPER	LENGTH	DIAMETER		
2 to 5 KV	L	JCSL	100, 250	3.5		35	2 1/4	1 1/2		
	M	JSLF	250, 450	3.5		30	1 3/4	1 1/2		
	B	JCSL	500, 750, 1000, 1500	3.5		42	3 1/2	2 1/2		
7.5 to 15 KV	B	JCSL	2000	2.3		42	4	2 1/2		
	M	JCSF	25, 40, 80, 120, 150	7.5, 10, 15		30	1 3/8	1 1/8		
	L	JCS2	10, 20, 25, 50, 75, 100, 150	7.5, 10, 15		20	3/8	1 1/8		
	B	JCS1	25, 50, 75, 100, 150	7.5, 10, 15		50	3 3/4	2 1/2		
	B	JCS	250, 400, 500	7.5, 10, 15		42	4	3 1/8		
	A	JCS	900, 1000	7.5, 10, 12		42	4 1/8	3 3/8		
	D	MC1	500, 750, 1000	10, 15		75	4 1/8	4 1/8		
	C	M	MC	500, 750, 1000	10, 15, 20		21	120	8 3/4	5
	J	MM	MMC	1500, 2000	10, 15		35	125	9 1/4	6 1/8
	F		MMC1	2000	10, 15		105	5	6 1/8	5
17 to 30 KV	E		5000	10, 15		125	13	9 1/4	5	
	K	V	1, 2, 3, 4, 5	17		7	3 1/4	1 1/2		
	K	X	5, 10, 15, 20, 25	17		7	3 1/4	1 1/2		
	N	W	6, 12, 25, 50, 100	20, 25		10.5	4 1/2	2 1/2		
	I	VCC	6, 12, 25, 50, 75, 100, 150	20, 30		60	4 1/2	2 1/2		
	I	VC	VCC	6, 12, 25, 50, 75, 100, 150	20, 30, 35		14	60	6 1/2	2 1/2
	I	VC	VCC	200, 250	20, 30		14	60	6 1/2	2 1/2
	M	JMF	50, 75, 100	20, 30		40	2 3/4	2 1/2		
	H	JC2	25, 50, 75, 100	20, 30		42	4	3 1/4		
	C	M.L	MLC	500, 750, 1000	25, 30		21	125	9 1/4	5
35 to 60 KV	A	JHC	75	50, 60		42	4	3 1/2		
	Q	JC3	20, 40, 50, 60	35, 45, 55, 60		140	8 1/4	3 1/2		
	G	JC4	75, 100, 125	35, 45, 55, 60		175	9 1/4	5		
	G	JC5	200	35, 45, 55, 60		225	11 1/4	7		
	J	MMH	MMHC	450	35, 45, 55		21	125	9 1/4	6 1/8
	E		MMHC	1000	35, 40, 45		125	13	9 1/4	

(1) Current ratings can usually be doubled with forced air cooling. Water cooled units are also available.  
 (2) Nominal Dimensions are for the largest unit of each type.  
 NOTE: Intermediate capacities, feed-thru capacitors, and glass insulators are available.

The all copper construction of Vacuum Fixed Capacitors give high current ratings, long life and stability of operation.



Type MMC  
2000 mmfd  
15 kv



Type JCS1  
1500 mmfd  
5 kv



Type JCSF  
150 mmfd  
15 kv

## TYPES R & RH VACUUM SWITCHES

### VACUUM SWITCH RATINGS

#### For RF and DC Transfer Switching

Jennings Type	R5C	R1	R1K	R2	R8	RH6	RH7
Test Voltage (300 kc dry)—peak kv	20, 30	40, 50	30, 40	50, 60	70, 85, 95	85, 100	85, 100
Operating Voltage—peak kv	15	30	20	40	30 to 85	85	85
Continuous Current (rms amp)—dc <sup>(1)</sup>	50	50, 100	100, 200	50, 100	100, 200	50, 200	50, 400
—300 kc	30	35	100	35	100	100	100
—10 mc	25	25	50	25	50	50	50
—30 mc		15	25*	15	25	25	25
RF Interrupting Power—kilowatts	50	250	500	250	1000		

(1) DC continuous currents may be increased as shown by using special connectors.

#### For DC Switching Under Load or Capacitor Discharging

Jennings Type	R5C	R1G	R1J	R2G	R8G	R9G	RH4G	RH1G	RH7G
Test Voltage (60 cycles dry)—peak kv	20, 30	40, 50	30, 40	50, 60	50, 70	50, 70, 85	30, 40	35, 45	85, 100
Max. Operating Voltage—peak kv	15	20	20	30	50	60	10	20	70
Continuous Current—dc amp <sup>(1)</sup>	50	50, 100	50, 100	50, 100	100, 200	100, 200	50, 60D	50, 400	50, 400
DC Interruption—power in kw	5	25	50	25	50	100	250	200	250
—current in amp	5	25	50	25	50	100	250	200	250
Capacitor Discharge—decaying initial amp to 30% in 1 millisecond or less		500	1000	500	1000	1500	10,000	5000	5000
—peak kv		30	25	40	50	60	20	30	70

(1) DC continuous currents may be increased as shown by using special connectors.

(2) For DC interruption in continuous operation, neither power nor current rating should be exceeded.

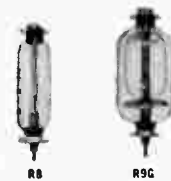
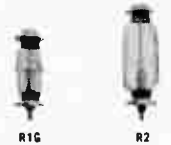
#### For 60 Cycle Power Switching

Jennings Type	R1J	R2G	R8G	R9G	RH1G	RH4G
Operating Voltage Class—rms kv line to line } grounded Y capacitor load to 85% lag pf	2.5	8.25	12	15.5	2.5	2.5
Withstand Voltage—rms kv (60 cycle, 1 min. dry test)	19	26	36	50	19	19
Impulse Voltage—peak kv (1 1/2 x 40 μs NEMA test)	60	75	95	110	60	40
Operating Current—rms amp at 0% lead (capacitor load) to 85% lag pf	100	60	100	200	100	600
—NEMA one time	50	30	50	100	50	400
Interrupting Current (rms amp)—NEMA one time	1500	800	2000	2500	1500	2500
—NEMA ten times	1000	500	1500	1500	1000	1500
Short Time Surge Currents (rms amp)—NEMA 4 second	2000	500	2000	2500	2500	4000
—NEMA 10 cycle mom.	4000	1500	4000	5000	5000	10,000
Thermal Current (for 30° C. rise—rms amperes)	100	100	200	200	400	600

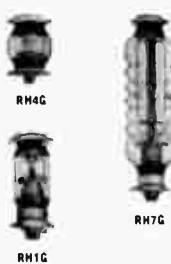
### RELAYS USING VACUUM SWITCHES

Type R and RH Vacuum Switches are available from Jennings mounted as relays for indoor use. They may be mounted with contacts normally open or normally closed or two switches may be mounted in a single pole double throw arrangement. Either ac or dc solenoids may be used. Insulation between the switch and its actuating solenoid is provided by a 2 to 8 inch puller rod providing 40 to 100 kv insulation. CE grade phenolic laminate is recommended for dc or 60 cycle use; Grade G7 silicone glass laminate is recommended for radio frequency applications.

#### TYPE R VACUUM SWITCHES



#### TYPE RH VACUUM SWITCHES





# CAPACITORS & RELAYS



## VACUUM VARIABLE CAPACITORS

FIG.	TYPE		CAPACITY MMFD	PEAK VOLTAGE KILOVOLTS	RMS AMPERES <sup>①</sup>		NOMINAL DIMENSIONS <sup>②</sup>	
	NICKEL	COPPER			NICKEL	COPPER	LENGTH	DIAMETER
2 to 5 KV	E	UCSL	4-250	3.5		30	4 1/8	2 1/4
	B	USL	5-500	3.5		40	5 1/2	2 3/4
	B	USLS	5-485 shorting	3.5		40	5 1/8	2 3/4
	B	UCSL	5-500	3.5		30	5	2 1/4
	A	UCSL	5-750, 7-1000	3.5		42	7 1/2	3 1/4
7.5 to 15 KV	A	UCSL	20-2000	2.3		42	8 1/4	3 1/4
	E	GCS	5-100	7.5, 10, 15		40	4 3/4	2 1/4
	I	UCSV	8-110, 125-250	7.5, 10, 15		50	5 1/4	2 1/4
	K	ATCS	10-150, 15-200	7.5, 10, 15		20	7	3 1/4
	L	UCS	5-200, 10-300	7.5, 10, 15		42	8 3/4	2 3/4
	L	UCS	10-400, 25-500	7.5, 10, 15		42	9	3 1/4
	A	UCSF	5-250, 12-500	7.5, 10, 15		45	7 3/4	3 3/4
	H	UCSX	25-700, 25-1000	7.5, 10, 15		45	9 7/8	3 3/4
	M	UCSXF	12-1000, 15-1200	7.5, 10, 15		45	10	4 1/4
	N	UCSXF	20-1500, 50-2000	7.5, 10, 12		45	10	5 1/4
10 to 20 KV	C	ECS	2.8, 3-30	10, 15		20	4	1 3/4
	K	TC	5-25	20	10.5	20	6 1/4	2 1/4
	K	ATC	10-50, 15-75	20, 30	10.5	20	6 7/8	3 1/4
	F	UC	50-250	10, 15, 20	21	60	11 1/2	5
	D	UXC	25-500	10, 15, 20	21	60	14	5
	M	UXCF	10-250, 20-500	10, 15, 20		60	9 7/8	4 3/4
	J	VMMC	50-1000, 100-2000	10, 15	35	125	15 7/8	6 1/4
	G	VMMC	100-5000	7.5, 10, 15		125	19	9 1/4
	I	UCSVH	8-35	25, 35		60	4 3/4	3
	35 to 60 KV	F	UHC	10-75, 75-150	35, 45, 55, 60	21	60	12
D		UXHC	25-150	35, 45, 55	21	60	14 1/2	5
H		UCSXH	10-200	35, 45		60	10	4 1/2
M		UCSXHF	25-450	35, 40		60	10 1/2	4 1/2
J		VMMHC	10-250, 25-450	35, 45, 55		125	16	8 1/4
N		VMMHCW	25-250, 50-400	35, 45, 55		500	17	9 1/4
Q		VMMHC	50-1000	35, 40, 45		125	19 1/4	9 1/4
G		VMMHC	25-200	120		125	20 1/4	9 1/4

The Vacuum Variable Capacitors combine extreme high ratio of capacitance change with small physical size.



Type UCSL  
7-1000 mmfd  
5 kv



Type UCSXF  
50-2000 mmfd  
12 kv



Type GCS  
5-100 mmfd  
15 kv

<sup>①</sup> Current ratings can usually be doubled with forced air cooling. Water cooled units are also available.  
<sup>②</sup> Nominal Dimensions are for the largest unit of each type.  
NOTE: A series of adjustable capacitors are available to cover the range of 8 to 1000 mmfd at 10 K.V.

## VACUUM TRANSFER RELAYS



Jennings type	RD1	RD2	RD3	RA1	RE2	RE3	RE4	RM2	RM4	RA4
Contact arrangement	N/O	N/C	N/O	SPDT	SPDT	SPDT	SPDT	2PDT	4PDT	4PDT
Rated operating voltage	10 kv	10 kv	25 kv	300 v	10 kv	2.5 kv	25 kv	12 kv	12 kv	300 v
Test voltage between terminals	15 kv	15 kv	40 kv	1500 v	15 kv	3 kv	30 kv	18 kv	18 kv	1500 v
Test voltage terminals to ground	12 kv	12 kv	40 kv	1500 v	15 kv	3 kv	30 kv	18 kv	18 kv	1500 v
Continuous rf current	15 amp	15 amp	12 amp	25 amp	15 amp	15 amp	12 amp	15 amp	15 amp	25 amp
Contact resistance	.01 ohms	.01 ohms	.01 ohms	.01 ohms	.02 ohms	.02 ohms	.015 ohms	.010 ohms	.015 ohms	.01 ohms
Contact capacitance	.09 mmfd	.09 mmfd	.09 mmfd	.17 mmfd	.25 mmfd	.25 mmfd	.25 mmfd	.33 mmfd	.33 mmfd	.17 mmfd

**DC ACTUATING COILS**  
Standard actuating coils are rated for operation at 26.5 vdc and draw 2 to 10 watts of power. Coils rated for operation at 110 vdc are also available for most types.

## HIGH VOLTAGE VACUUM RELAYS



**MODEL JP 325 HIGH VOLTAGE PROBE**  
VOLTAGE RATINGS 40, 50 or 60 KV peak.  
VOLTAGE DIVISION RATIO 325 to 1 to termination of 3 ft. of RG 58 A U cable.  
**INPUT IMPEDANCE**  
Resistance above 10<sup>12</sup> ohms  
Capacitance 4 mmfd

**FREQUENCY RESPONSE:** High frequency limited by that of measuring instrument. (Internal resonances are above 200 mc.) Low frequency response is 100 cps if operating into 10 megohm shunt resistance, 1000 cps if operating into 1 megohm shunt resistance.



**MODEL J 1003 HIGH VOLTAGE VACUUM TUBE VOLTMETER** for use in pulse, rf, and 60 cycle circuits at voltages up to 100 KV.  
**VOLTAGE RANGES** (peak volts full scale)  
Single Ended: 2.5, 5, 10, 25, 50 KV.  
Double Ended: 2.5, 5, 10, 25, 50, 100 KV  
(By using Type JCD Series capacitor, these ranges can be more than doubled.)

**OSCILSCOPE CONNECTION:** 300 to 1 division ratio.

**TYPE JCD 5 MMFD SERIES CAPACITOR** attaches to HV end of the VDF 2 B divider in the J1003 meter and the JP 325 probe doubling the division ratio and the voltage rating in each case. Decreases total loading capacity of meter or probe from 4 mmfd to 2 mmfd.  
Sold without corona sphere unless ordered.  
**VOLTAGE RATING:** 60 KV peak.

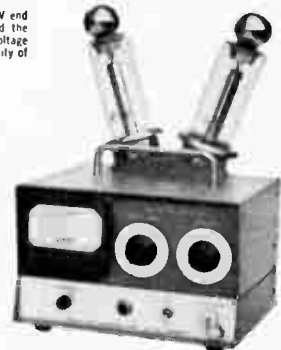
**FREQUENCY RESPONSE:** 10 cycles to 20 megacycles at full rated voltage and up to 50 megacycles for lower voltages with low harmonic content

**INPUT IMPEDANCE:** 10<sup>12</sup> ohms and 4 mmfd.

**CALIBRATION ACCURACY:** ±3% of full scale

**POWER SUPPLY:** 117 volt, 50/60 cy

**DIMENSIONS:** 16 1/2" x 11" x 9".



JENNINGS RADIO MANUFACTURING CORPORATION • 970 McLAUGHLIN AVE. P. O. BOX 1278 • SAN JOSE 8, CALIF.

# GONSET

DIVISION OF L. A. YOUNG  
SPRING & WIRE CORP.



# Communications Equipment

ANTENNAS... ACCESSORIES...



### G-66B COMPLETE FIXED-MOBILE RECEIVER

A highly flexible receiver, well suited for fixed station use... without equal for superior mobile reception. 6-band coverage, stable, sensitive, selective.

6 bands: .54 to 2 mcs. 3.54 mcs. 7-7.3 mcs. 14-14.35 mcs. 21-21.45 mcs. 28-29.7 mcs. AM, CW, SSB reception. Highly stable HF and BF oscillators and xtal controlled second conversion oscillator. Steep skirt selectivity by 265 kc 2nd I-F with 8 tuned circuits. Double conversion all bands. AVC and famous Gonset noise limiter, antenna trimmer, "S" meter. Slide rule dial exposes only band in use. 40:1 tuning ratio. Universal power supply is a separate unit, operates on 6V or 12V DC and 115V AC. Loudspeaker is built into power supply unit. Specify whether operation is to be 6V or 12V DC.

"Thin pack" power supply is available for 12 volt DC only operation. Only 2 1/2" thick, plugs directly to G-66B as cabinet extension or can be connected with patch cable. Less speaker.

G-66B, less power supply.....#3046.....209.50

Universal "three way" power supply/speaker unit.  
(6V-12V DC-115V AC).....#3069.....44.50

"Thin pack" power supply.  
(12V DC only).....#3098.....29.50

### AUDIO AMPLIFIER-POWER SUPPLY



An audio amplifier-power supply specifically designed to supply output audio and power for tuners with low-level audio outputs. Has built-in PM panel speaker, audio gain and tone controls. Ideal for use with Gonset FM-AM tuners, two meter tuners, to provide a complete, independent communications receiver. Size 6 1/8" deep, 7" wide, 6 1/4" high.

Model #3034 (6V input), Model #3035 (12V input),  
Model #3036 (115V-AC) (all models)- Net-47.50

### 6 METER CONVERTER...



An effective converter which provides excellent 6 meter reception when operated in conjunction with conventional automobile broadcast receivers or with communications or broadcast type home receivers.

Has full-vision calibrated dial. Is compact, simple to install. Has switch for 6 or 12V filaments. Also has Gonset noise clipper built as separate unit for connection to receivers which do not have such provisions.

Model #3066 52.50



### "SUPER-CEIVER"

Used with any good converter, (as Super-Six) provides a complete receiver of outstanding performance on AM-CW.

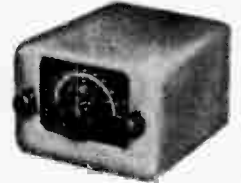
Unit is xtal controlled for maximum stability and utilizes 8 tuned circuits at 262 kcs for steep-shoulder selectivity. Self-contained vibrator supply furnishes regulated DC to converter and BFO. Latter is very stable and has pitch adjustment. Power pack is designed for quick conversion to 12V DC.....

Also available on special order as an excellent xtal controlled, fixed frequency receiver for many commercial applications. Information on request.

Model 3041, less converter.....Net 119.50

### 2 METER TUNER WITH CASCODE

The receiver portion of the extremely popular "Communicator" is now available as a separate unit. Has 6BQ7A Cascode RF, 12AT7 Mixer-oscillator, three stages of I.F., second detector and low-level audio. Includes the famous Gonset Noise Clipper and Squelch. Requires power supply and output audio which may be ideally supplied by Gonset Audio-Amplifier Power Supply unit. Size: 5 1/4" x 3 1/2" x 5 1/4" deep.



De Luxe Model #3038-with squelch-Net-99.50



### "SUPER-SIX" SIX BAND CONVERTER

The new six band de luxe converter covering 10-11, 15, 20, 40, and 75 meters. Improved sensitivity and added band spread. Also covers 19 and 49 meter SW broadcast bands. Built-in BC trap. Separate isolated antenna inputs for converter and BC set. Oscillator correction control on rear of chassis. Sturdy, drawn aluminum outer case...

Model #3030...  
Net.....57.50

### COMMUNICATIONS MONITOR RECEIVERS, FM AND AM TYPES



A new, economically-priced series of FM and AM receivers for communications monitoring and emergency applications in the VHF region. Complete with AC power supply, speaker, "built in" antenna, calibrated slide rule dial. Each has 8 tubes plus rectifier. Oscillator is temperature compensated, has low radiation. Excellent AVC and adjustable squelch.

30 to 50 mcs, FM.....#3155.....79.50  
112 to 132 mcs, AM.....#3156.....79.50  
132 to 152 mcs, AM.....#3157.....79.50  
152 to 174 mcs, FM.....#3158.....79.50



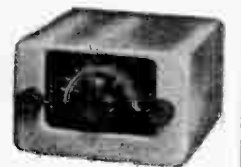
### "3-30" SW CONVERTER

An excellent general coverage converter where extreme band-spread is not required. Covers 3 to 30 mcs in three ranges. Uses four tubes: 6BH6 RF, 6AV6 mixer, 6C4 oscillator and 6BH6 I.F. stage. Extremely compact and easy to install with any car radio.

Model #3002.....Net.....49.50

### COMMERCIAL-TYPE FM-AM TUNERS

Gonset tuners provide an inexpensive yet sensitive and stable receiver when used in conjunction with ordinary auto, home or communication receivers or with the Gonset Audio-Amplifier Power Supply unit. Tuners include squelch and noise clipper, I.F. and low-level audio. Very compact... mounts on steering post or under dash for mobile applications. 50 ohm input, simple to connect to Audio-Power supply unit or equivalent sections of L.F. receiver.



30-40 mc. FM-Model #3009 152-162 mc. FM Model #3012  
40-50 mc. FM-Model #3010 162-174 mc. FM Model #3013  
88-108 mc. FM Model #3011\* (all models)-Net-69.50  
\*(Less squelch)



### POLICE-MARINE CONVERTER

Overall performance and construction comparable to 3-30 model except covers 1.6 to 6 mcs in two bands and employs 1 mc output. Ideal for police, marine, CAP, Civil Defense, disaster communications as well as amateur 75 and 160 meter mobile work. Compact, efficient, ruggedly constructed.

Model #3003...  
Net.....49.50

# GONSET

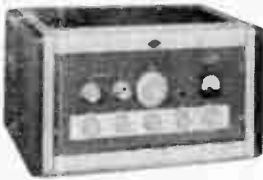
DIVISION OF L. A. YOUNG  
SPRING & WIRE CORP.



# Communications Equipment

ANTENNAS... ACCESSORIES...

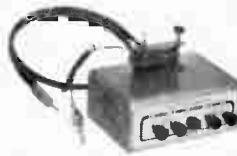
### LINEAR RF POWER AMPLIFIER



A complete, ready to operate RF linear amplifier with single control bandswitching for 10-11-15-20-40-80 meter amateur bands. Operates in Class AB<sub>2</sub> to provide substantial power output with very low grid drive. Uses 4-807's with pi network output, is completely free from parasitic or self oscillation. Heavy duty AC power supply uses 4-866 JR's in bridge with 80 mfd output filter. Excitation control and complete metering, (cathodes, grid and RF output) simplifies linear amp adjustments. Screen relay circuit prevents underload. Operation may be AM, SSB, C.W.

SSB—250-300W P.E.P. OUTPUT  
CW—220-240W OUTPUT  
AM—80—100W CARRIER  
Model #3018 Net \$39.00

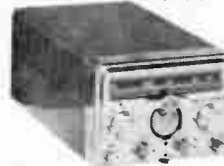
### 12 VOLT PUSH BUTTON CONVERTER



New push-button SW converter patches quickly and simply to any 12 volt, manually-tuned auto radio without internal connections or alterations to latter. Push buttons select 49, 31, 19 or 13 meter international SW bands or return auto set to BC. Tuning is done with auto set dial. Size 2 1/4" high, 5 1/4" wide, 4 1/2" deep. All necessary plugs and cables supplied.

Model #3128 ..... \$29.95

### G-77 MOBILE TRANSMITTER . . .



A new mobile transmitter with every desirable feature. A companion unit to the G-66B, same size and appearance. Covers 80-40-20-15-10 meters, has built-in, stable, calibrated VFO with xtl optional. Power input 50-60 watts, modulated. Pi network output. Full press-to-talk with built-in antenna relay. Power supply and modulator are in separate unit. 6 and 12 volt operation. Output voltage is 500-600 volts full load. Selenium rectifiers avoid rectifier filament standby drain.

G-77 Transmitter with power supply and installation kit.

Model #3116 ..... \$289.50

### MONITONE



Monitone is a multi-purpose instrument for use as a code practice oscillator or an effective monitor for phone and C.W. xmtrs. Has audio oscillator controlled by external circuit, provides audible tone on panel speaker or earphones. Separate pitch and volume controls. Uses small RF from xmtr to operate as effective C.W. or phone monitor. Operates from 115V AC with isolating circuitry so that neither keying or earphone leads are "Hot" to ground.

Model #3022 ..... Net \$22.50

### STEERING POST MOUNTING BRACKET

Can be mounted on either right or left hand side of steering post. May be rotated to mount the converter above or below the steering post in the most convenient position in relation to the driver of the automobile. Complete with mounting straps and hardware.



Model #3006—Net—4.50

### TWO METER VFO



Designed for use with Communicator or most any other 2 meter rig. Has output at 24 mcs., and plugs directly into existing xtal socket. Multiple tuned circuits minimize spurious radiations. Also has built-in audio preamplifier to increase mike pickup where desired. Has self-contained 115V AC power supply, panel switch to permit "Zeroing in" on received signals. Attractive cabinet matches Communicator—same height, half as wide. Highly stable, rugged.

Model #3024—Net—\$4.50

### VHF AIRCRAFT ADAPTER

Used in conjunction with auto radio or LF aircraft receiver etc., to provide inexpensive, sensitive receiver covering 108-128 mcs. For 6 or 12 volt operation with 24 volt special. Includes series gate noise clipper. Installation does not affect operation of existent equipment. Rugged, stable and compact. Specify 6 or 12 volts. (Add \$5.00 for 24 volts.)



Model #3014... Net... \$69.50

Model #3015 (squelch)  
Net ..... \$79.50

### DE LUXE NOISE CLIPPER-SQUELCHER

The combination is applicable to any amateur mobile or communications receiver. Small size permits easy mounting directly beneath any of the Gonset standard converters. The unit is very simply connected to existing auto receivers. Size: 4 1/8" deep x 5 1/8" wide x 2 1/8" high.



Model #3000—Net—\$27.50

### NOISE CLIPPER



A "must" for every mobile installation operating above 2 or 3 mc to reduce ignition interference. Works with all AM receivers using conventional diode detectors, easy to install. Complete instructions furnished.

Model #3001 Net \$9.95

### GROUND-TO-AIR COMMUNICATOR



An effective, 2 way VHF station in a convenient, portable package. On de luxe models, dual voltage supply permits operation from 115V AC mains or from 6 V. (12V optional) vehicular battery. Xtl controlled xmtr supplies full 6-7 watts output power with either primary power source. Superhet receiver has "Cascade" RF, 3 stages I.F., noise clipper, "Squelch", is continuously tunable from 108 to 128 mcs. (112-133 mcs on special order.) Operation is simple, non technical. Size and weight same as other Communicator models. Can be used with integral whip or remote antenna and 52 ohm coax.

115V AC only, 60-400 cps ..... #3074 ..... Net \$99.50  
115V AC/6V DC ..... #3043 ..... Net \$50.00  
115V AC/12V DC ..... #3073 ..... Net \$50.00  
Plus Federal Excise Tax

ACCESSORY KIT ..... #3019 ..... Net \$49.50  
Includes 50 feet RG8/U coax cable with fittings, outside ground plane antenna, table model microphone.

### FIXED FREQ. COMMUNICATOR 25-300 MCS .

A new Communicator for all VHF-AM applications on fixed frequencies from 25 to 300 megacycles. Unit is compact, 7" high, 13" wide and 10" deep, includes speaker and dual power supply for 12 volt DC or 115 volt AC operation.



Transmitter is fixed, xtl controlled, uses Type 6360 twin tetrode in P-P, plate modulated by 2-12AB5's. Integral speech clipping prevents modulation in excess of 100%. Spurious transmitter emissions down more than 60 db at 230 mcs. Power output is 10 watts carrier with A3 emission at 150 mcs, 7 watts at 300 mcs. Operation is P-T.

Receiver is fixed, xtl controlled, utilizes double conversion. Excellent noise figure assured by use of X-155 Cascode RF tube. Spurious receiver responses are down greater than 60 db at 230 mcs.

Model #3111, (Specify frequency) ..... \$495.00

# GONSET

DIVISION OF L. A. YOUNG  
SPRING & WIRE CORP.



# Communications Equipment

ANTENNAS... ACCESSORIES...

## 2 AND 6 METER DE LUXE COMMUNICATOR

The very well known Communicator is now available in several different models to meet fully the varied requirements of Amateur, CAP, Commercial, Industrial and Airport services. Each model is a complete station... superhet receiver with "Cascode" RF, xtl controlled transmitter. (VFO is also available separately.) Self-contained power supply for 115V AC and 6V DC. (Also 115V AC and 12V DC) Modulator may also be used as a PA system, mobile or fixed. All models highly compact, 7 3/4" x 10 3/8" x 9 1/2". All are light in weight and conveniently portable.



### 2 METER DE LUXE COMMUNICATOR

Tunable receiver, xtl controlled transmitter, (AM). Covers 144-148.3 mcs. 2E26 final delivers 6-7 watts output. Has adjustable squelch, (silent standby), famous Gonset noise clipper, phone jack and speaker muting, dial light switch.

### 6 METER DE LUXE COMMUNICATOR

General size and appearance is identical to 2 meter Communicators. Operates on amateur 6 meter band. Has Cascode front end, double conversion for increased selectivity usable on 6 meters. Transmitter delivers 6 to 8 watts output with either 6, (or 12) volt DC or 115V universal supply.

### ZIPPER CARRYING BAG FOR COMMUNICATORS

Convenient carrying bag for all models. Holds unit plus mike, antenna, coax and other accessories. Made of heavy canvas, padded. Attractive green color.

6 METER DE LUXE COMMUNICATOR	.....	
115V AC/6V DC	..... #3049	Net 239.50
115V AC/12V DC	..... #3058	Net 239.50
ZIPPER CARRYING BAG	..... #3023	Net 14.95

2 METER DE LUXE COMMUNICATOR	.....	
115V AC/6V DC	..... #3025	Net 239.50
115V AC/12V DC	..... #3057	Net 239.50

## C-D COMMUNICATORS

### FOR 2 AND 6 METERS

Now available... special Communicator and Linear amplifier models which meet applicable FCDA specifications.

These new units are similar to their commercial-type 2 and 6 meter counterparts, are the same size but are finished in an attractive yellow color. Because of their extreme compactness and the fact that they will operate from car battery or AC mains, these units have great utility as mobile, portable or fixed stations in Civil Defense applications.



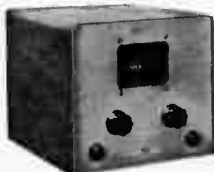
Receiver is a sensitive superheterodyne with "Cascode" RF and three stages of I-F. Six meter models incorporate double conversion for added selectivity desirable in this lower frequency range. Receivers of both models are tunable, the two meter model covering 144-148.3 mcs, the 6 meter model, 49-54 mcs. Noise clipper, adjustable squelch, pilot light on-off switch, earphone jack with speaker muting, are all desirable features. Transmitter utilizes 2E26 output tube delivering about 6 watts of carrier with AM modulation. Four crystal controlled frequencies are selectable by panel switch.

2 METER (FCDA ITEM No. U-16)	.....	
6V DC/115V AC	..... #3087	299.50
12V DC/115V AC	..... #3077	299.50

6 METER (FCDA ITEM No. U-14)	.....	
6V DC/115V AC	..... #3088	299.50
12V DC/115V AC	..... #3079	299.50

Prices include tubes, microphone, one crystal, canvas carrying case and portable antenna.

## STANDARD, RF LINEAR AMPLIFIERS...



RF linear amplifiers for 2 or 6 meter Communicators to increase carrier output to 50-60 watts. No alterations required on Communicator. Tune up is easy, foolproof, with no danger to tubes. Switching the Communicator to transmit automatically activates the amplifier including the internal antenna relay. Amplifier uses 2-826 VHF triodes with forced air cooling. Heavy duty power-supply uses 2-5U4GB rectifiers.

2 METERS... #3063	159.50	6 METERS... #3065	159.50
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## C-D, RF LINEAR AMPLIFIERS

### FOR 2 AND 6 METERS

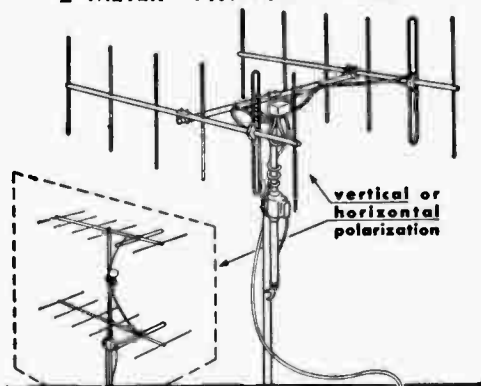


A new linear RF amplifier to match the new Gonset C-D Communicators. These new linears have the same front panel size and are finished in the same bright yellow color.

They are similar to the Gonset commercial version linear, will increase C-D Communicator carrier power output to 50 watts. They are easy to adjust, foolproof, non-critical. Push pull 826 VHF triodes with forced air cooling are used.

2 METERS... #3089	199.50	6 METERS... #3090	199.50
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## 2 METER "TWIN-SIX" BEAM



Twin-six, a rugged, quickly assembled dual Yagi, provides well over 10 db gain and FBR throughout the 2 meter band. Special balun and matching networks assure symmetry and low SWR with 52 ohm coax line feed. Array is largely preassembled and designed for use with standard TV rotator. Antenna may be arranged for horizontal or vertical polarization. De Luxe model includes braced 5' boom and mast section.

DE LUXE TWIN SIX BEAM	..... #1560	Net 36.25
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## C-D COMMUNICATORS... FOR FIXED FREQUENCIES 25-250 MCS...

A new Communicator for C-D applications on fixed frequencies from 25 to 250 mcs. Standby models are currently available for amateur 6, 2 and 1 1/4 meter bands. Receiver is fixed, xtl controlled, utilizes double conversion. Excellent noise figure assured by X-155 Cascode RF tube. Spurious responses are down more than 60 db.

Transmitter is fixed, xtl controlled, uses Type 6360 twin tetrode in P-P, plate modulated by 2-6CM6's. Power output is 7-10 watts carrier with A3 emission. Spurious emissions down more than 60 db. Operation is P-T-T.

Size, 7" high, 13" wide and 10" deep. Finish is bright yellow with C-D symbol in red and dark blue. All models operate both on 12V DC and 115V, 60 cycle, AC.

Equipment is certified by manufacturer, meets applicable FCDA specifications for mobile AM Receivers and Transmitters above 25 mcs.



6 meter model #3112-50	.....	495.00
2 meter model #3112-144	.....	495.00
1 1/4 meter model #3112-220	.....	495.00

Prices include tubes, microphone, two crystals.

# GONSET

DIVISION OF L. A. YOUNG  
SPRING & WIRE CORP.



# Communications Equipment

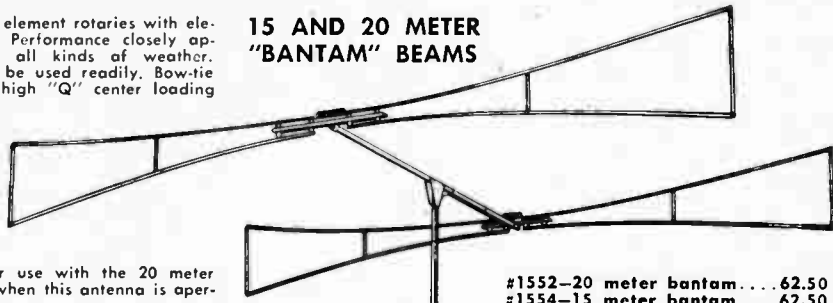
ANTENNAS... ACCESSORIES...

Highly effective 15 and 20 meter, 2 element rotaries with element lengths only 16 1/2' tip-to-tip. Performance closely approaches full length antennas in all kinds of weather. Lightweight... TV-type rotator can be used readily. Bow-tie elements for broad banding, very high "Q" center loading inductors for lowest possible losses.

Single 52 ohm coax feed with link coupling and "Magic match" termination assures low VSWR, symmetry, balanced pattern. Antennas are factory tuned, require no field adjustments.

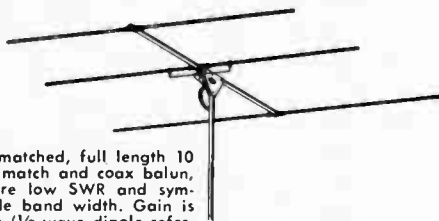
A Booster element is available for use with the 20 meter Bantam for improved performance when this antenna is operated on 10 meters.

## 15 AND 20 METER "BANTAM" BEAMS



- #1552-20 meter bantam... 62.50
- #1554-15 meter bantam... 62.50
- #1552-10-Booster element.. 8.95

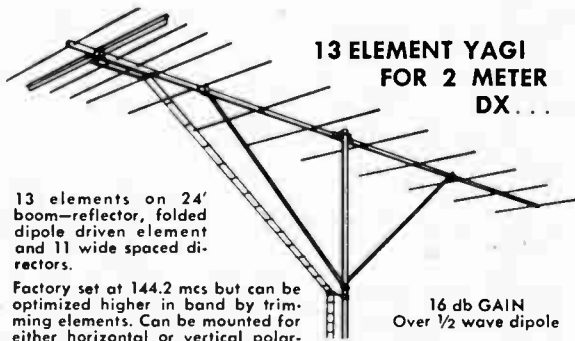
## 10 METER 3 ELEMENT BEAM...



Pre-tuned and matched, full length 10 meter beam. T match and coax balun, (supplied) assure low SWR and symmetry over wide band width. Gain is more than 8 db (1/2 wave dipole reference) and FBR exceeds 20 db at peak frequency. Boom is 10', 1 1/2" and stub mast 40", 1 1/4" galvanized steel tubing. Elements are 3/4" aluminum alloy. Strong, lightweight, easy assembly.

With coax balun and stub mast .....  
#1587...Net 34.50

## 13 ELEMENT YAGI FOR 2 METER DX...

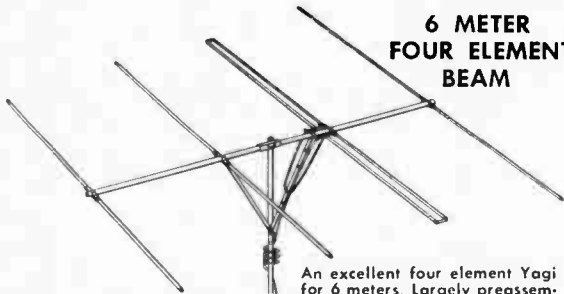


13 elements on 24' boom-reflector, folded dipole driven element and 11 wide spaced directors.

Factory set at 144.2 mcs but can be optimized higher in band by trimming elements. Can be mounted for either horizontal or vertical polarization. Open wire line or coax feed possible.

16 db GAIN  
Over 1/2 wave dipole  
#1572..... 34.50

## 6 METER FOUR ELEMENT BEAM



Includes special balun for balance and match of folded dipole driven element to 52 ohm coax.

An excellent four element Yagi for 6 meters. Largely preassembled for easy installation. Features high forward gain, low SWR and symmetrical pattern.  
#1523 ..... 25.75

## STANDARD 2 METER ANTENNAS



#1621

- DROOPING GROUND PLANE
- #1621 .....net 6.50
- COAX TYPE, VEHICULAR
- #1623 .....net 18.25\*
- CAR ROOF TYPE
- #1624 .....net 5.50\*
- \*Supplied with 10' of cable.



#1623

#1624

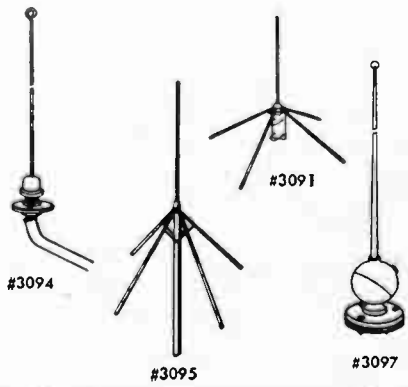
## C-D ANTENNA KITS

### 2 METER

#### 6 METER

- GROUND PLANE ANTENNA. Includes: 50' coax, PL259 fitting, 8' mast with clamp, base mount, guys, etc.  
#3095 ..... 39.50
- BEAM ANTENNA KIT FOR POINT-TO-POINT COMMUNICATION. Includes: 1-6 meter, 4 element yagi, 50' coax, 2-PL259's. (Mast not supplied.)  
#3096 ..... 44.50
- MOBILE ANTENNA KIT. Includes: 1-6 meter stainless steel whip, 1-universal base mounting, 15' coax cable, 2-PL259 fittings.  
#3097 ..... 21.50

- COMPLETE GROUND PLANE KIT. Includes: 1-ground plane antenna, 50' coax cable and 2-PL259 fittings, 1-8' mast with clamp, base mounting, guys, etc.  
#3091 ..... 29.50
- BEAM ANTENNA KIT FOR POINT TO POINT COMMUNICATION. Includes: 1-de luxe Twin-six beam, 50' coax, 2-PL259 fittings. (Mast not supplied).  
#3092 ..... 52.50
- PORTABLE ANTENNA KIT. Includes: Universal window mounting and rain drip mounting, 12' coax, 1-PL259.  
#3093 ..... 7.50
- AUTO ROOF-TYPE ANTENNA KIT. Includes: Quarter-wave whip for single hole mount, 12' coax cable, 1-PL259 fitting.  
#3094 ..... 7.50



#3094

#3095

#3091

#3097



# TWO-WAY RADIO

communications equipment

### VHF-FM FOR:

MOBILE  
AIRCRAFT  
MARINE  
MOTORCYCLE  
PORTABLE  
BASE

### VHF-AM FOR:

AIRPORT VEHICLES  
GROUND STATIONS  
POINT-TO-POINT

### VHF

ANTENNAS  
REMOTE CONTROLS  
ACCESSORIES



# FLIGHTCOM

MODEL 400-12/24 SERIES

VHF-FM for AIRCRAFT

Provides communications between ground FM systems and executive, patrolling and utility aircraft. Used by fishing fleets, petroleum producers, pipe line helicopters, State police, Conservation departments, crop dusters, power companies and departments, of the U. S. government.

All FLIGHTCOM models are on FCC "List of equipment acceptable for licensing" and are certified with the Federal Civil Defense Administration.



Model  
400-12/24  
Chassis

## FLIGHTCOM PACKAGE



Model 400-12/24

## FEATURES:

- **COMPACT** . . . Case size 14" x 11 1/2" x 6 1/2"
- **LIGHT** . . . 22 lbs. (without antenna and speaker)
- **POWERFUL** . . . 25 watts output
- **UNIVERSAL** . . . instantly changed from 12 volt to 24 volt operation.
- **EFFICIENT** . . . low battery drain: on 12 volt—total standby, 4.5 amps, transmitting 10 amps, on 24 volt—total standby 2.5 amps, transmitting 5 amps.
- **LOUD** . . . 1 watt minimum with less than 8% distortion.
- **PERFORMANCE** . . . identical with ground systems.
- **QUALITY** . . . exceptional value/price ratio.



DESIGNERS AND MANUFACTURERS OF

RADIO COMMUNICATIONS EQUIPMENT

# COMMUNICATIONS COMPANY, Inc.

FOUNDED 1942

CORAL GABLES, MIAMI 34, FLORIDA



**NOW! 6/12 VOLT**

# MODEL 278 6/12 SERIES **CONTROLLER** VHF-AM TWO-WAY RADIO FOR AIRPORT VEHICLES AND GROUND STATIONS!



**Complete Mobile Package**  
Model 278-E-6/12-2

**\$398** F.O.B. Miami



The CONTROLLER mobile unit was specifically designed for airport vehicles requiring two-way communication with control towers and other aeronautical services such as airlines, flying schools, C.A.P., etc.

For use in ramp, jeeps, electrician's trucks, crash trucks, tow tractors, snow plows, executive cars, police cars and at temporary locations such as construction sites.

Complete specifications and price list sent on request.

## **FEATURES:**

**FREQUENCY RANGE:** 118 to 152 MC. crystal controlled (CR-18/U crystals).

**SINGLE OR DUAL CHANNEL:** maximum spread 500 Kc.

**POWER OUTPUT:** 3 to 4 watts, more than enough for airport service.

**LOW BATTERY DRAIN:** total standby 10 amps. at 6 volts, 5 amps. at 12 volts.

**UNIVERSAL:** instantly changeable from 6 to 12 volt operation.

**COMPACT:** under dash or trunk mounting, case 5½" x 11" x 13".

**LOW COST MAINTENANCE:** the CONTROLLER has earned an excellent reputation for trouble-free operation. High quality standard manufacturers parts used and identified for easy replacement at your local supplier.

**OPTIONAL ITEMS:** ✓ AC adapter for operating mobile unit from 110 or 220 volt AC.

✓ Hand carried case for portable use.

✓ Weatherproof case and speaker.



**ATTENTION DEALERS!**  
Write for available territories.

DESIGNERS AND MANUFACTURERS OF

RADIO COMMUNICATIONS EQUIPMENT

# COMMUNICATIONS COMPANY, Inc.

FOUNDED 1938

CORAL GABLES, MIAMI 34, FLORIDA

# WRL Electronics

COUNCIL BLUFFS, IOWA  
AMATEUR RADIO TRANSMITTERS AND ALLIED HAM PRODUCTS . . .

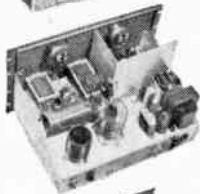


## THE WRL Globe King 500B

Bandswitching, 10-160M Transmitter for 540W on fone & CW; 540W on SSB (P. E. P.), with any external exciter of 10-15W.

Outperforming any rig in its price and wattage range, the King is housed in a handsome 31x22x14 1/4" cabinet, specially designed for TVI-suppression. Relay controlled; includes a built-in antenna relay; built-in VFO; separate power supply for modulator section, allowing better over-all voltage regulation. Commercial type compression circuit keeps modulation at high level. Features grid-block keying for signal clarity. Pi-net matches most antennas. 52-600 ohms. Provisions for crystal operation. New 4-400A Final Amplifier tube used for increased safety factor.

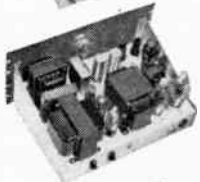
Cat. No. 145AF001  
Wired & Tested, \$725.00



### King; RF Section

A completely bandswitching exciter, buffer and final amplifier, completely screened and bypassed for TVI-suppression. Faced with 10 1/2" panel. Both meters individually shielded and bypassed. AC input fused and bypassed. Complete with six tubes.

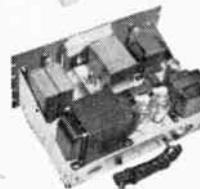
Cat. No. 145AF002  
Wired & Tested, \$299.50



### King; Speech Modulator Section

Speech amplifier and modulator complete with power supply, capable of delivering over 250 watts of class "B", low distortion audio to modulate RF inputs in excess of 540 watts. Faced with 8 3/4" panel. Contains new audio compression circuit. Nine tubes.

Cat. No. 145AF003  
Wired & Tested, \$249.00



### King; Power Supply Section

Dual power supply for RF Section or any transmitter requiring a maximum rating of 540 volts at 125 MA and 1800 volts at 350 MA. Faced with 8 3/4" panel. Built-in VFO with separate power supply. Antenna relay terminals on rear apron. Six tubes.

Cat. No. 145AF004  
Wired & Tested, \$189.00

## THE Globe Champion 300

Single-switch bandswitching, 10-160M. Transmitter for 350W CW, 275W fone, and 300W SSB (P. E. P.), with any external exciter of 10-15 watts.

This handsome rig is extensively TVI-suppressed, filtered and bypassed. High level Class "B" modulation sustained without usual clipping distortion through new-commercial-type compression circuit. Pi-net output circuit, 48-700 ohms, built-in VFO, push-to-talk, antenna change-over relay, and improved Time-Sequence Keying. 1000 volt plate capacity of Final tubes allow 33 1/3% safety factor. 12x21 3/8x17", self contained.

Cat. No. 145AF010  
Wired & Tested, \$449.00



## THE Globe Champion 300 Kit

Identical to the wired model, yet in kit form. Major features include a pre-assembled VFO for problem-free assembly of kit, and complete, simplified, step-by-step instruction manual with over 75 pages and numerous schematic drawings.

Cat. No. 145AF011  
Kit, \$375.00

## THE WRL Universal Speech Modulator

For use with a variety of tubes to produce 5-50W Audio; plate modulating up to 100W RF input. 500 ohm output. For speech modulator, intercom paging system or sound amplifier.

Cat. No. 145AF016  
Net (with tubes) \$49.50  
Cat. No. 145AF017  
Kit, (less tubes) \$29.95

## THE WRL Antenna Tuner AT-3 (MIDGET MATCHER)

Will match most antenna systems, handles all Xmtrs. up to 100 watts.

Cat. No. 89A013  
Net, \$15.95  
Cat. No. 89A014  
Kit, \$10.95

## THE WRL Antenna Tuner AT-4

Combination tuner and SWR Bridge, will match most antenna systems, handling all Xmtrs. up to 500 watts.

Cat. No. 145AF014  
Wired & Tested, \$79.00  
Cat. No. 145AF015  
Kit, \$69.00

FCOA Certified on factory wired and tested models for crystal controlled operation.

All WRL Electronics Transmitters operate on most CAP and MARS frequencies.



# WRL Electronics

COUNCIL BLUFFS, IOWA

AMATEUR RADIO TRANSMITTERS AND ALLIED HAM PRODUCTS . . .



## THE Globe Scout 680

A compact, self-contained, bandswitching transmitter for 6-80M, 65W CW, 50W fone, plate modulated. Built-in power supply. High level modulation maintained. TVI-suppressed cabinet. Pi-net output on 10-80M; link-coupled on 6M, matching into low impedance beams. New type, shielded meter.

Cat. No. 145AF006  
Wired & Tested, \$109.95

## THE Globe Scout 680 Kit

All parts, five tubes, pre-punched chassis, and completely detailed instruction manual included.

Cat. No. 145AF007  
Kit, \$84.95

## THE WRL Globe Scout 66

Identical in appearance and features to the Globe Scout 680, with the exception of bandswitching 10-160 meters.

Cat. No. 145AF005  
Wired & Tested, \$99.95

## THE Globe Chief 90



A compact, completely bandswitching, 90 watt transmitter for 10-160M, with well-filtered, built-in power supply. Pi-network matches most antennas from 52-600 ohms. Modified grid-block keying used for maximum safety. Provisions for VFO input and operation. Meter and cabinet shielded for TVI reduction.

Cat. No. 145AF012  
Wired & Tested, \$67.50

## THE Globe Chief 90 Kit

Contains all parts, four tubes, pre-punched chassis, and detailed, step-by-step instruction manual.

Cat. No. 145AF013  
Kit, \$54.95

## WRL VFO Model 755



Completely bandswitching, with "crystal stability". Calibrated, 160-10M, output on 160 & 40M. Built-in power supply. Calibrate switch for zero beating signal frequency. Temperature compensated. Approx. 50 RF volts output. Compact.

Cat. No. 145AF008  
Net, \$59.95

### Kit

Cat. No. 145AF009  
Net, \$49.95

## THE WRL Screen Modulator Kit



Designed for use with the Globe Chief, but containing instructions for use with other CW transmitters. Permits radio-telephone operation of CW Xmtrr at minimum cost. Self contained. All connections from Modulator to Xmtrr. included. Complete with printed circuit board and all parts.

Cat. No. 89B009  
Net, \$13.95

## THE WRL Code Oscillator Kit



Transistor-type, Code Practice Oscillator with printed circuit for ease in assembly. Pleasant audio tone. Screw terminal input for key; output jacks receive standard phone tips. Complete with 2 pen cell batteries and detailed instructions.

Cat. No. 89B001  
Net, \$3.95

## THE WRL SWR Bridge



Designed for 52 ohms; furnished for 72 ohms when specified. High power type for up to 600W fone or 1000W CW input, when line has very low SWR. May be used with any VOM, VTVM, Microammeter or 0-1 Milli-ammeter. Accurate well past 30 megacycles. Usable with Xmtrrs. as low as 30 watts.

Cat. No. 89B008  
Net, \$16.95

## THE WRL 6 Meter Converter



Compact, highly stable, crystal converter for receivers tuning output frequencies 10-14mc. Any 4mc. band within range of 7-35mc. available on special order at \$10.00 additional. Cascade RF stage, bandpass coupling, shielded input and output and high sensitivity.

Cat. No. 89A011  
Net, \$24.95

### Kit

Cat. No. 89A010  
Net, \$18.95

## THE WRL Conelrad Alarm



A Fail-Safe, completely automatic alarm, with visual indication of alert, also, for use with Xmtrrs. up to 500 W. Compact, operates from any receiver with AVC; two leads to receiver, receives AC plug from transmitter. Utilizes printed circuit.

Cat. No. 89B006  
Net, \$22.50

### Kit

Cat. No. 89B007  
Net, \$29.50

## Thank You!

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1. **Manufacturer's Catalog Numbers and Page Numbers.**
2. **The Year and Edition of This MASTER.**

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*Radio-Electronic*  
**MASTER**

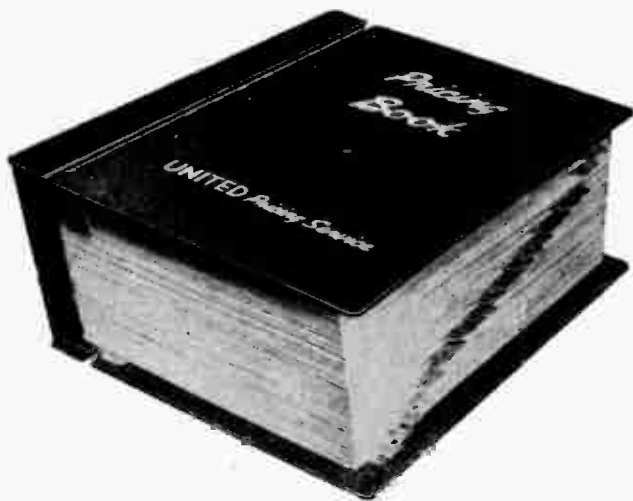
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# HAMMARLUND

## COMMUNICATIONS RECEIVERS

Every Hammarlund communications receiver, today as in the past, is built to the highest quality standards. Every model has been designed to fill a specific need. In addition to the models listed,

Hammarlund manufactures receivers for industrial and military use for operation in unusual frequency ranges.

### "HQ-100" COMMUNICATIONS RECEIVER

A general purpose receiver designed for SWL or amateur use. Continuously tunable from 540 KCS to 30 MCS. Outstanding sensitivity and selectivity. Electrical bandspread tuning with direct calibration. Q Multiplier for variable selectivity. Voltage regulated and temperature compensated high frequency oscillator for high degree stability. S Meter. Auto-response circuit automatically adjusts audio passband for best sound. Automatic noise limiter. 10-tube superheterodyne circuit. Rugged die-cast aluminum front panel. Clock-timer optional accessory.



### "HQ-110" COMMUNICATIONS RECEIVER



A receiver designed specifically for the amateur with every feature the amateur wants. Dual conversion; 12 tube superheterodyne circuit. Frequency range covering the 6, 10, 15, 20, 40, 80, and 160 meter amateur bands. Electrical bandspread tuning. S. Meter. Q Multiplier. Separate linear detector for optimum reception of SSB and CW signals. Separate beat frequency oscillator for extra stability. Crystal controlled second conversion oscillator. Built-in 100 KC crystal controlled calibrator. Adjustable dial calibration. Automatic noise limiter. Cast aluminum front panel. Clock-timer optional accessory.

### "HQ-150" COMMUNICATIONS RECEIVER

The only receiver that offers a Q Multiplier plus exclusive Hammarlund crystal filter. Permits unusual choice of tuning techniques. Ideal receiver for amateur or SWL use. Tunes from 540 KCS to 31 MCS. Electrical bandspread tuning with direct calibration. Built in crystal calibrator with check points every 100 KCS. Uniformly high sensitivity on all bands with extra high signal-to-noise ratio. Extremely stable beat frequency oscillator for clear reception of SSB and CW signals. 13 tube superheterodyne circuit with noise limiter. Illuminated S Meter. Attractive steel cabinet.



### "HQ-140-XA" COMMUNICATIONS RECEIVER

Same circuitry as HQ 150 but without Q Multiplier and crystal calibrator. All other features included.

### "HC-10-SSB" CONVERTER



A SSB/CW and AM/MCW converter that provides reception equal to or exceeding the most expensive receivers available. May be used with any receiver having a stable front end and an IF frequency in the range of 450 through 500 KCS. Supplied with adapter that fits between last IF tube and socket. Does not affect normal operation of receiver. Completely self-contained with own power supply and audio output. Switch for either upper or lower or both sidebands. Permits passband width of .5, 1, 2, 3, 4, and 6 KCS. Also adjustable notch filter for up to 60 db attenuation. Seven selectivity positions, approaching mechanical filter skirt selectivity. Vernier type sideband tuning. Automatic noise limiter.

### "SP-600-JX" COMMUNICATIONS RECEIVER

In a class by itself for superior quality and performance. 20-tube, dual conversion superheterodyne covering the range of 540 KCS to 54 MCS in six bands. Operation on any one of 6 crystal controlled fixed frequencies instantly available on switch. Stability from

.01 percent at 540 KCS to less than .001 percent at 54 MCS. Extremely high image rejection. Ideal for diversity reception and point-to-point reception. Available as table top or rack mounting model.

**NOTE:—The Hammarlund SP 600 Series Receiver is available in an extensive range of models for varying frequencies.**

# HAMMARLUND

## STANDARD VARIABLE CAPACITORS

### "RMC" CAPACITORS

**FEATURES**—The "RMC" was designed specifically for applications requiring an "MC" type tuning capacitor with very rigid construction. Its sturdy frame consists of heavy gauge aluminum end panels held together by three aluminum tie rods. It has a brass sleeve front bearing and a single ball thrust rear bearing for smooth tuning and a high degree of resetability. The rotor contact is a forked silver plated beryllium copper spring wiping against a wide disc on the rotor. The plate shape and other constructional features are the same as on the "MC." Tapped holes in front panel and in mounting feet, as well as additional brackets for inverted mounting permit a wide variety of assembly methods.

**SPECIFICATIONS**—Straight line capacity. Air gap is 0.0245" nominal. Tested at 1000 V. R.M.S., 60 cycles.

#### CAPACITY\*

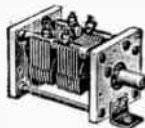
CODE	CAPACITY*		
	Max.	Min.	PLATES
RMC-50-S	50.	7.3	7
RMC-100-S	105.	9.5	14
RMC-140-S	143.5	11.0	19
RMC-325-S	327.	17.5	43



RMC

\* Nominal Values.

### "VU" CAPACITORS



VU

**FEATURES**—The "VU" is a uniquely designed UHF tuning capacitor using completely original concepts. With it, conventional "lumped constant" circuits, rather than tuned cavity techniques, can be efficiently used up to 500 megacycles. In addition to employing the capacitor sections in series to eliminate the rotor wiper, the design also utilizes Pyrex balls to form precision bearings and to completely isolate the rotor. Thus, noise generated by rubbing metal-to-metal contacts and variable resistance paths in the bearings have been totally eliminated. Circuit connections are made to threaded studs on each stator. This permits vacuum tube and inductor to minimize circuit inductance. The symmetrical design is ideal for tuned circuits operating up to 500 megacycles.

**CONSTRUCTION**—Rotors and stators are of brass with plates soldered in precisely located grooves and then silver plated to increase the "Q" of the capacitor. The insulation is silicone treated steatite. All lengthwise frame members are of brass to minimize temperature effects. Base mounting brackets are provided. **SPECIFICATIONS**—The capacity characteristic approaches a straight line frequency curve as indicated by nominal values in table. Air gap is .0168" nominal. Tested at 700 V. R.M.S., 60 cycles, between rotor and each stator.

CODE	SERIES CAPACITY*		PLATES/SECTION	DIAL % ROTATION	EFFECTIVE SERIES CAPACITY			DIAL % ROTATION	EFFECTIVE SERIES CAPACITY		
	Em.	Min.			VC-20	VU-30	VU-45		VU-20	VU-30	VU-45
VU-20	22.5	3.35	11	0	0.	0.	0.	70	11.2	15.7	22.4
VU-30	31.5	3.5	15	10	.55	.8	1.15	80	14.65	20.55	29.35
				20	1.55	2.2	3.15	90	18.6	26.05	37.2
VU-45	45.0	3.8	21	30	2.75	3.85	5.45	100	22.5	31.5	45.0
				40	4.2	5.85	8.35				
				50	6.0	8.4	12.0				
				60	8.35	11.65	16.65				

Cap. Tol.:  $\pm .15\text{MMFD}$ , or  $1\frac{1}{2}\%$  whichever is greater.

\* Nominal Values.

### "BFC" CAPACITORS

**FEATURES**—The "BFC" "butterfly" type capacitor has very low minimum capacity, low inductance and isolated rotor for use in VHF applications as a series capacitor with no rotor connection. For dual split-stator capacitor use, it has a low-loss positive rotor contact. Mechanical and electrical symmetry and stator terminal locations minimize circuit inductance. **CONSTRUCTION**—Brass rotors and stators are soldered and nickel-plated. The contact wiper is heavily silver plated beryllium copper. Tapped studs on the silicone treated steatite front panel permit mounting the capacitor without grounding the rotor. The sleeve type bearing is nickel-plated brass. **SPECIFICATIONS**—Straight line capacity. 90° rotation from minimum to maximum capacity position. Air gap is 0.030" nominal. Tested at 1200 V. R.M.S., 60 cycles between rotor and each stator.

High Speed Ball-Bearing Models Also Are Available.

CODE	CAPACITY SECTION*		SERIES CAPACITY*		PLATES	
	Max.	Min.	Max.	Min.	Rotor	Each Stator
BFC-12	14.5	3.4	7.8	2.2	4	3
BFC-25	27.3	4.8	14.1	2.9	7	6
BFC-38	40.1	6.2	20.6	3.6	10	9

\* Nominal Values.



### "MAC" CAPACITORS

**FEATURES**—The "MAC" provides the low minimum capacity essential for use as a trimmer in the VHF range. It was engineered to achieve the smallest dimensions practical to meet the requirements of a miniaturized component.

**CONSTRUCTION**—Its silicone treated steatite base is only  $\frac{3}{8}$ " x  $\frac{3}{8}$ ". Rotor and stator are soldered assemblies and are of brass, nickel-plated. Rotor and stator terminals are positioned to permit short leads. The threaded bearing is provided with flat sides to permit single hole mounting.

**SPECIFICATIONS**—Straight line capacity. Screwdriver adjustment. Air gap is 0.017" nominal. Tested at 250 V. R.M.S., 60 cycles.

#### CAPACITY\*

CODE	Max.	Min.	PLATES
MAC-5	5.0	1.4	5
MAC-10	8.7	1.7	9
MAC-15	14.2	2.2	15
MAC-20	19.6	2.7	21

\* Nominal Values.



MAC

# HAMMARLUND

## STANDARD VARIABLE CAPACITORS

### "APC" CAPACITORS

**FEATURES**—The "APC" trimmer capacitor originated by Hammarlund over twenty years ago is still widely recognized as the standard capacitor of its type. Its use is indicated in all classes of equipment where a compact, high quality air dielectric trimmer is required. It was designed to resist effects of temperature, moisture and vibration. Silicone treated steatite insulation is used to insure high leakage resistance.

**CONSTRUCTION**—Brass rotor and stator plates are soldered to brass supports. Nickel-plated phosphor bronze wiper assures positive rotor contact. All metal parts are nickel-plated. Terminals are hot-tin dipped. Tapped brass mounting studs fastened to silicone treated steatite base permit mounting capacitor without grounding the rotor.



APC

**SPECIFICATIONS**—Straight line capacity characteristic. Available either with hexagonal collar on slotted shaft to permit rotor adjustments to be made with wrench or screwdriver or with 1/8" extended shaft for knob control or shaft coupling. "APC-C" Lock Type now also available through distributors. Air Gap is 0.013" nominal. Tested at 600 V. R.M.S., 60 cycles.

CODE	CAPACITY*		PLATES
	Max.	Min.	
APC-25	25.	3.0	7
APC-50	50.	3.9	14
APC-75	75.	4.6	20
APC-100	100.	5.5	27
APC-140	140.	6.7	37

\*Nominal Values.

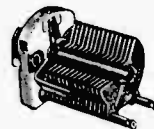
### "MAPC" CAPACITORS

**FEATURES**—The "MAPC" capacitor is representative of Hammarlund's efforts to meet the demand for smaller dependable components. It is a sealed-down version of the popular "APC" with everything reduced except the quality and performance characteristics. For example, an "MAPC" is about half the size and weight of an "APC." Lower minimum capacities and low inductance make the "MAPC" suitable for VHF use. **CONSTRUCTION**—The standard "APC" construction is used in this capacitor. Rotors and stators are fabricated by soldering brass plates to supporting members and nickel-plating the assemblies. Nickel-plated Beryl. Copper wiper assures positive rotor contact. Tapped brass mounting studs fastened to silicone treated steatite base permit mounting capacitor without grounding rotor.

**SPECIFICATIONS**—Straight line capacity. Available either with screwdriver or socket wrench adjustment or with 7/16" extended shaft for knob control or shaft coupling. "MAPC-C" Lock Type now also available through distributors. Air Gap is 0.0135" nominal. Tested at 600 V. R.M.S., 60 cycles.

CODE	CAPACITY*		PLATES
	Max.	Min.	
MAPC-15	15.	2.3	6
MAPC-25	25.	2.6	10
MAPC-35	35.	2.9	14
MAPC-50	50.	3.2	19
MAPC-75	75.	3.9	29
MAPC-100	100.	4.5	38

\*Nominal Values.



MAPC

### "NZ-10" CAPACITORS

**FEATURES**—The "NZ-10" is a compact transmitter neutralizing capacitor designed for easy and accurate adjustment. The rotor is attached to a fine-thread lead screw which may be adjusted with smooth and precise action by a screwdriver and locked securely by a readily accessible clamping screw. A stop prevents shoring of plates at maximum capacity. Long leakage paths to ground from both rotor and stator are provided. Glazed steatite insulators and smoothly rounded aluminum plates minimize flashover.

**SPECIFICATIONS**—Capacity is adjustable from 2.3 to 10 mmf. Peak voltage rating is 3000 V. at maximum capacity (minimum gap) position.



NZ-10

### "FC" and "FNC" COUPLINGS

**FEATURES**—The "FC-46-S" is an insulated flexible coupling designed to provide for mechanical ganging of shafts even though angularly misaligned. The smallest dimensions have been incorporated consistent with the rugged construction necessary for general service. A high degree of electrical isolation is achieved through the use of silicone treated steatite insulation. Flashover voltage is approximately 5000 V. R.M.S. Brass hubs and spring

temper phosphor bronze flexible arms are nickel plated. An exclusive and important feature of this coupling is its characteristic of uniform side-thrust through 360° of rotation. This eliminates tendency to vibrate at high speeds, minimizes bearing wear and assures accurate tracking.

The "FNC-46-S" is a non-insulated coupling for use where electrical continuity between shafts is required. The flexible arms are held securely to a nickel plated brass ring instead of an insulator.

#### STANDARD STOCK TYPES

CODE FC-46-S	Insulated flexible coupling
CODE FNC-46-S	Non-insulated flexible coupling

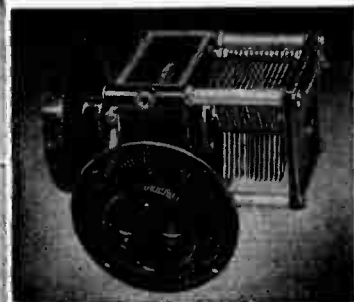
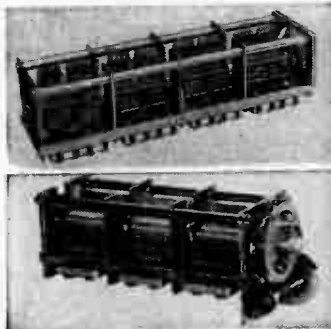


## SPECIAL VARIABLE CAPACITORS FOR ALL NEEDS

### HAMMARLUND CUSTOM ENGINEERED CAPACITORS

Hammarlund has for many years been considered the foremost designer and producer of variable capacitors for special military, scientific and precision applications. Should you have a special capacitor requirement, your engineers will find the services of our capacitor design group to be of inestimable value. Illustrated are two communications receiver multiple-section tuning capacitors and a single-section frequency meter capacitor. All of these capacitors feature exceptionally precise calibration accuracy, the highest possible degree of re-stability, essentially zero temperature coefficient, close tolerances on starting and running torque, high "Q" under adverse operating conditions and complete freedom from noise. To produce these and similar capacitor designs involve the techniques of metallurgy, gearing, finishing, bearing design, ceramics, vibration and shock—to mention but a few. These techniques are possessed to a high degree here at Hammarlund.

Should you have need for facilities such as ours, we will welcome your inquiry.



# HAMMARLUND

## STANDARD VARIABLE CAPACITORS

### "MC" and "MCD" CAPACITORS



MC



MCD

**FEATURES**—The "MC" is a versatile single section tuning capacitor designed to give the equipment engineer a choice of mountings, connections and capacity characteristics. The threaded brass front bearing and tapped aluminum end brackets permit panel or base mounting. A rotor stop permits 180° clockwise rotation for increasing capacity. "MC-S" capacitors have a straight line capacity characteristic. "MC-M" units have offset plates resulting in a "Midline" characteristic which more equally spaces frequencies. "MC-X" units are wide-spaced for high voltages. For optimum performance all Hammarlund "MC" capacitors have silver plated beryllium copper wiping contact, silicone-treated steatite insulation, soldered nickel-plated brass rotors and stators, rotor shaft supported on bearings at both front and rear of capacitor. The "MCD" is a split-stator panel-mounted capacitor with all the "MC" features. Stators have terminals on both sides. Stators on single-spaced capacitors are separated by a shield. Wide-spaced units have no shield. **SPECIFICATIONS**—Straight line or "Midline" capacity characteristic. Single-spaced types have 0.0215" nominal air gap and are tested at 1000 V. R.M.S., 60 cycles. Wide-spaced ("X") types have 0.0715" nominal air gap and are tested at 1750 V. R.M.S., 60 cycles.

CODE	CAPACITY*		PLATES/ SECTION	CODE	CAPACITY*		PLATES/ SECTION
	Max.	Min.			Max.	Min.	
MC-20-S	20.	5.5	8	MC-20-SX	20.	6.8	7
MC-35-S	35.	6.0	6	MC-35-MX	32.	7.8	11
MC-50-M	50.	6.3	7	MC-35-SX	32.	8.5	11
MC-50-S	50.	6.5	7	MC-50-MX	53.	10.5	19
MC-75-M	80.	7.3	11	MC-50-SX	53.	11.5	19
MC-75-S	80.	8.0	11	MC-100-SX	100.	16.5	35
MC-100-M	100.	7.7	14	MCD-50-M	50.	5.5	7
MC-100-S	100.	8.3	14	MCD-100-M	100.	6.3	14
MC-140-M	140.	9.0	19	MCD-100-S	100.	7.0	14
MC-140-S	140.	10.0	19	MCD-140-M	140.	7.8	19
MC-200-M	200.	10.3	27	MCD-35-MX	31.	6.0	11
MC-250-M	250.	12.0	34	MCD-35-SX	31.	6.8	11
MC-325-M	320.	13.5	43				

M-Midline plates. S-Straightline plates. X-Wide-Spaced. \*Nominal Values.

### "HF" and "HFD" CAPACITORS

**SINGLE SECTION CAPACITOR**—The "HF" is a single section tuning capacitor employing "APC" rotor and stator design. Extra long sleeve bearing and positive contact nickel-plated phosphor bronze wiper make this unit ideally suited to high frequency applications. Silicone treated steatite insulation. Single hole or base mounting. Special spacing, capacity values, finishes and other modifications are available to manufacturers on special order.

**DOUBLE SECTION CAPACITOR**—The "HFD" dual capacitors, like the "HF" singles, incorporate advanced features providing for maximum efficiency at high frequency. Soldered brass plates are nickel-plated. Aluminum front and rear end panels are mounted on a heavy silicone treated steatite base. Wide front and rear bearings with individual silver plated beryllium copper wipers for each section assure long life and maximum contact efficiency. Single hole panel mount or base mounting. Electrostatic shield between sections. Terminals are provided on both sides of each stator to permit mounting tube and inductor on opposite sides. **SPECIFICATIONS**—Straight line capacity. Single spaced types (HF and HFD) have 0.015" air gap and are tested at 600 V. R.M.S., 60 cycles. Wide spaced types (HF-X and HFD-X) have 0.045" air gap and are tested at 1400 V. R.M.S., 60 cycles.



HF



HFD

CODE	CAPACITY*		PLATES/ SECTION	CODE	CAPACITY*		PLATES/ SECTION
	Max.	Min.			Max.	Min.	
HF-15	17.5	2.8	5	HF-30-X	30.	5.2	20
HF-35	36.	3.2	10	HFD-50	52.	3.6	14
HF-50	52.	3.7	14	HFD-100	102.	5.0	27
HF-100	102.	5.3	27	HFD-140	142.	6.0	37
HF-140	142.	6.3	37	HFD-15-X	16.	3.8	11
HF-15-X	15.	3.6	10	HFD-30-X	28.5	5.0	19

D-Split stator. X-Wide-Spaced. \*Nominal Values.

### MACBF CAPACITORS

**FEATURES**—The "MACBF" is a miniaturized butterfly capacitor providing extremely low capacity for the VHF range. It is of the straight-line capacity type. **CONSTRUCTION**—Rotor and stator of brass, solder assembled, and nickel-plated. Base is of silicone-treated steatite. Terminals are hot-tinned dipped. Threaded bushing with datted sides for panel or chassis mounting. **SPECIFICATIONS**—Straight line capacity. Screwdriver adjustment. Air gap is 0.017" nominal. Tested at 750 V. R.M.S., 60 cycles.



MACBF

CODE	Part No.	CAPACITY (per section)		No. of PLATES	
		Max. ±10%	Min. ±15%	Rotor	Stator
MACBF-3	34604-G1	3.1	1.3	3	4
MACBF-5	34604-G2	5.0	1.6	5	8
MACBF-8	34604-G3	7.9	2.0	8	14
MACBF-11	34604-G4	10.8	2.4	11	20

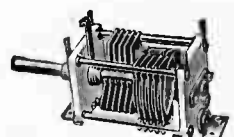
### "HFA" and "HFB" CAPACITORS

**SINGLE SECTION CAPACITOR**—The "HFA" is a single section tuning capacitor similar to the "HF" except that larger plates permit wider air-gaps for the same capacitance values. Resultant higher break-down ratings extend the use of the capacitor into the high frequency low-power transmitter field. A threaded sleeve bearing permits single hole mounting and the bracket supplied may be used for base mounting. A lug-type terminal mounted with the bearing provides an efficient rotor connection.

**DOUBLE SECTION CAPACITOR**—The "HFB" is a dual, balanced rotor transmitting capacitor employing front and rear panels plus a ball-thrust rear bearing, but other incorporating constructional features identical to the smaller "HFA." An insulated shaft extension safeguards operating personnel from the high voltages which may be applied to the rotor. The small size, rugged construction, balanced rotor and range of capacitance values and breakdown voltages make this capacitor ideally suited to many applications.



HFA



HFB

CODE	CAPACITY**		PLATES/ SEC- TION	CODE	CAPACITY**		PLATES/ SEC- TION		
	Max.	Min.			Max.	Min.			
HFA-100-A	102.	4.5	0.020	19	HFA-100-B†	100.	7.5	0.030	27
HFA-140-A	145.	6.0	0.020	27	HFA-15-E	16.	4.0	0.070	9
HFA-10-B	9.	2.3	0.030	3	HFBC-50-C	50.	9.0	0.050	11
HFA-15-B	16.	2.8	0.030	5	HFB-100-C	105.	14.0	0.050	23
HFA-25-B	25.	3.0	0.030	7	HFB-35-E*	37.	9.5	0.070	11
HFA-50-B	50.	4.3	0.030	14	HFB-65-E*	63.	12.5	0.070	19

60 cycle voltage: "HFA"—"A" 800 V. R.M.S. "B" 1200 V. R.M.S. "E" 1750 V. R.M.S. "HFB"—"C" 1500 V. R.M.S. "E" 3000 V. R.M.S.; plates have rounded edges. †Has front and rear supporting panels. \*\*Nominal Values.

**SPECIFICATIONS**—Straight line capacity. Air gaps and test voltages are as indicated in table. However, "HFB" breakdown voltages are doubled and capacitance values approximately halved when stator sections are connected in series.



# Miller

## Radio Frequency Chokes



### R.F. Chokes with Axial Leads

These chokes cover an inductance range from .1 microhenry to 10 millihenries in 5 decades with 8 coils per decade. Inductance values increase in steps of approximately 50%. Either single layer or 3-pi universal windings are used to insure low distributed capacity. Chokes are wound on low-loss molded phenolic or powdered iron core forms and are impregnated with a moisture- and fungus-resistant varnish. The type of powdered iron used allows the chokes to operate at all frequencies up into the ultra-high frequency region.

Dimensions: Phenolic form  $\frac{3}{8}$ " diameter x  $\frac{3}{4}$ " long. Iron core form  $\frac{3}{8}$ " diameter x  $\frac{7}{8}$ " long. Leads are  $1\frac{1}{2}$ " long. Inductance tolerance: plus or minus 5%.

**Phenolic Form Single Layer Windings**

Cat. No.	uh.	Ohms	ma	List Price
4580	0.1	.01	300	\$ .55
4582	0.15	.012	300	.55
4584	0.22	.017	300	.55
4586	0.33	.022	300	.55
4588	0.47	.022	300	.55
4590	0.68	.03	300	.55
4592	0.75	.033	300	.55
4594	0.82	.035	300	.55
4602	1.	.05	300	.55
4604	1.5	.08	300	.55
4606	2.4	.16	300	.55
4608	3.9	.5	300	.55
4609	5.5	.69	300	.60
4610	6.2	.75	300	.60
4611	8.2	1.12	300	.60
4612	10	1.5	200	.60

**Iron Core Form Single Layer Windings**

Cat. No.	uh.	Ohms	ma	List Price
4622	10	.06	300	\$ .65
4624	15	.12	300	.65
4626	24	.28	300	.70
4628	39	.65	300	.70
4629	55	.92	300	.75
4630	62	1.0	300	.75
4631	82	1.6	300	.75
4632	100	2.0	200	.75

**Phenolic Form 3-Section Windings**

Cat. No.	mh.	Ohms	ma	List Price
4642	0.1	4.1	125	\$ .75
4644	0.15	5	125	.75
4646	0.24	6.6	125	.75
4648	0.39	8.7	125	.80
4649	0.55	10	125	.80
4650	0.62	11	125	.80
4651	0.75	13	125	.80
4652	1.0	15	125	.80

**Iron Core Form 3-Section Windings**

Cat. No.	mh.	Ohms	ma	List Price
4662	1	7	125	\$ .85
4664	1.5	9	125	.90
4666	2.4	12	125	1.00
4668	3.9	17	125	1.10
4669	5.5	22	125	1.25
4670	6.2	33	100	1.25
4671	8.2	45	100	1.50
4672	10	47	50	1.25

**Ferrite Core R.F. Chokes**

A new series of R.F. Chokes taking advantage of the high permeability of ferrite cores. These chokes combine high inductance and low D.C. resistance with a small physical size. Dimensions of core:  $\frac{1}{4}$ " diameter x  $\frac{7}{8}$ " long.  $1\frac{1}{2}$ " long axial leads.

Cat. No.	mh.	Ohms	ma	List Price
6302	2.5	8.3	200	\$1.00
6304	5	13.5	200	1.25
6306	10	28	125	1.50
6308	25	70	75	1.75
6310	50	110	75	2.00



### Adjustable Ceramic Forms and R.F. Coils

Permeability tuned coils wound on silicone impregnated ceramic forms. Hardware necessary for assembly is supplied.

#### Standard Adjustable Ceramic Form and R.F. Coils

Dimensions (form):  $\frac{3}{8}$ " diameter x  $1\frac{1}{8}$ " long.

Cat. No.	Microhenries	List Price
4400	Form only	\$1.65
4403	0.9- 1.6	2.20
4404	1.5- 3.2	2.25
4405	3.1- 6.8	2.30
4406	6.7- 15	2.40
4407	14.8- 31	2.50
4408	30 - 69	2.55
4409	68 - 130	2.65
4410	126 - 250	2.65
4411	245 - 475	2.70
4412	450 - 800	2.70
4413	750 -1400	2.75
4414	1300 -2100	2.75

#4400 comes complete with hardware and core"

#4400 Bulk packed per 100 List Price \$140.00

#### Miniature Adjustable R.F. Coils

Dimensions (form):  $\frac{1}{4}$ " diameter x  $\frac{7}{8}$ " long.

Cat. No.	Microhenries	List Price
4500	Form only	\$1.50
4501	.4- .8	2.00
4502	1.0- 1.6	2.00
4503	1.6- 2.8	2.10
4504	2.8- 5	2.20
4505	5 - 9	2.30
4506	9 - 16	2.40
4507	16 - 24	2.50
4508	24 - 35	2.50
4509	35 - 60	2.50
4511	60 -120	2.50
4512	110 -200	2.60
4513	190 -330	2.60
4514	320 -500	2.60
4514-1	480 -800	2.75

#4500 comes complete with hardware and core"

#4500 Bulk packed per 100 List Price \$115.00

#### Sub-miniature Adjustable R.F. Coils

Dimensions (form):  $\frac{3}{16}$ " diameter x  $\frac{9}{16}$ " long.

Cat. No.	Microhenries	List Price
4300	Form only	\$1.50
4301	0.17- 0.27	2.00
4302	0.27- 0.41	2.00
4303	0.40- 0.65	2.10
4304	0.64- 0.95	2.20
4305	0.94- 1.55	2.25
4306	1.5 - 2.57	2.30
4307	2.5 - 4.40	2.40
4308	4.3 - 7.15	2.40
4309	7.1 - 12.5	2.50
4310	12.4 - 20.3	2.50
4311	20.1 - 32.8	2.50
4312	32.5 - 51.5	2.50
4313	51. -102.	2.60
4314	101. -180.	2.60
4315	178. -300.	2.60

#4300 comes complete with hardware and core"

#4300 Bulk packed per 100 List Price \$115.00

Quantity orders can be wound to your specific requirements with extended inductances and Q values other than those shown. Your inquiries invited.

\*When ordering forms alone, the type of core should be specified by the addition of a suffix taken from the following.

Suffix	Frequency Range of Core Material
Y	50-1000 kc.
R	1- 30 Mc.
W	30- 300 Mc.



### Multiple Pi Chokes

These Multiple Pi dual-lateral chokes have a low distributed capacity of 1.2-1.3 mmf. The current carrying capacity is comparatively high for this type of choke.

Cat. No.	Mh.	Ohms	MA	List Price
4531-0	.25	8	200	\$ .90
4531	.5	12	200	.90
4531-1	1	17	200	.90
4532	1.5	21	200	.90
4537	2.5	28	200	.90
4538	5	42	125	1.10
4539	7.5	82	125	1.40
4540	10	95	125	1.65
4541	25	160	125	1.95

#4537 Bulk packed per 100 — List Price \$75.00

R.F. Chokes wound to closer tolerances if required in lots of 100 pieces or more at slightly higher prices.



### Unshielded Chokes

These single section R.F. Chokes are ideally suited for general purpose applications in receiver and filter circuit. Solder lug terminals and single hole mounting. Inductance tol.  $\pm 5\%$ .

**Air Core Type**  
Dimensions:  $1\frac{1}{8}$ " diameter x  $\frac{3}{8}$ ".

Cat. No.	MH	Ohms	MA	List Price
510	.25	8	125	\$ .60
620	.75	17	125	.65
630	1.50	21	125	.65
640	2.50	28	125	.75
650	5.0	41	125	.75
560	7.5	53	125	.80
670	10	67	125	.85
670-T	10	67	125	1.05
680	12.5	74	125	.85
690	15.0	83	125	.90
691	20	100	125	1.00
691-T	20	100	125	1.20
592	30.0	120	100	1.05
693	60	200	100	1.20
693-T	60	200	100	1.40
694	80.0	230	100	1.45

**Iron Core Type**  
These chokes are similar in construction to the No. 600 series except that they are wound on powdered iron cores.

Cat. No.	MH	Ohms	MA	List Price
951	.5	6.8	125	\$1.00
952	1.0	10.9	125	1.10
953	2.5	19.5	125	1.15
954	5.0	23.0	125	1.30
955	7.5	37.0	125	1.40
956	10.0	45.0	125	1.45
957	25.0	78.0	100	1.75
958	50.0	130.0	100	1.95
959	75.0	200.0	100	2.20
960	100.0	210.0	100	2.50
961	150.0	268.0	100	2.75



### Shielded Chokes

Single section wound R.F. Chokes assembled in round aluminum shield with two spode bolts for mounting. Solder lug terminals.

**Iron Core Type**  
Dimensions:  $1\frac{1}{4}$ " dia. x 1" high.

Cat. No.	MH	Ohms	MA	List Price
851	.5	8.6	125	\$1.40
852	1.0	11.5	125	1.50
853	2.5	22.0	125	1.55
854	5.0	31.0	125	1.70
855	7.5	42.0	125	1.75
856	10.0	47.0	125	1.80
857	25.0	100.0	125	2.15

Dimensions:  $1\frac{3}{8}$ " dia. x 1" high.

858	50.0	160.0	100	2.30
859	75.0	222.0	100	2.60
860	100.0	348.0	100	2.85
861	150.0	520.0	100	3.15

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# Miller



## Transistor Components & Misc. R.F. Chokes

### Ferrite Antenna Rods

All loops described below have a secondary which is overcoupled for maximum gain stability with a variation in output load. Designed to match an input impedance of approximately 600 ohms.

These loops can be easily removed from their mounting boards if an alternate method of mounting is desired. Care should be exercised when mounting loops to insure that they are not in close proximity to large metal objects. This precaution will greatly increase loop efficiency.

These loops also make excellent antenna coils for conventional vacuum tube receivers. They offer better signal pickup and increased selectivity over ordinary air loops.

### Standard Transistor Antenna Rod



Due to its large pickup area the #2000 is one of our most popular loops. It has a fixed inductance of 240 uh and covers a band of 540-1650 KC when used with a variable condenser having a range of 15-365 mmf. Dimensions: 3/4" x 9".

Cat. No.	Q @ 790 KC	Freq. Range	Tuning Cond. Max. Capacity	List Price
2000	450	540-1650 KC	365 mmf.	\$2.75

### Miniature Transistor Antenna Rods



Similar to the #2000 described above but smaller in size for miniature sets. Slightly less signal pickup than the #2000, but extremely high Q. Catalog #2001 has an inductance of 240 uh for use with a standard 365 mmf. condenser (Miller #2112). The #2003 has an inductance of 700 uh for use with a miniature 130 mmf. condenser (Miller #2110). Dimensions: 3/4" x 3 3/4".

Cat. No.	Q @ 790 KC	Freq. Range	Tuning Cond. Max. Capacity	List Price
2001	550	540-1650 KC	365 mmf.	\$2.50
2003	500	540-1650 KC	130 mmf.	2.50

### Ferrite-Strip Transistor Antenna Rods



These coils are wound on flat ferrite strips rather than the normal ferrite rods. Due to this unique physical configuration they are remarkably sensitive for their small size. The #2004 has an inductance of 240 uh. To be used with a condenser of 365 mmf. (Miller #2112). The #2005 has an inductance of 700 uh. To be used with a condenser of 130 mmf. (Miller #2110). Dimensions: 1/4" x 3/4" x 3 3/4".

Cat. No.	Q @ 790 KC	Freq. Range	Tuning Cond. Max. Capacity	List Price
2004	500	540-1650 KC	365 mmf.	\$2.50
2005	450	540-1650 KC	130 mmf.	2.50

### Sub-Miniature Transistor Antenna Rods



Adjustable antenna coils with high Q ferrite cores. Inductance range of part #2002 is 40-300 uh; part #2007 is 150-1000 uh. The inductances ranges shown allow for the use of variable capacitors outside our recommended values. Dimensions: 1/2" x 2 1/2".

Cat. No.	Q @ 790 KC	Freq. Range	Tuning Cond. Max. Capacity	List Price
2002	250	540-1650 KC	250-450 mmf.	\$1.50
2007	220	540-1650 KC	100-250 mmf.	2.00

### Transistor I.F. & Osc. Coils

A large variety of miniature I.F. and oscillator coils which makes possible a high degree of flexibility in new equipment design and also provides the serviceman with ideal replacement coils for existing equipment.

### Sub-Miniature Transistor I.F. Transformers



To our knowledge the smallest I.F. transformers in existence. A high impedance, tapped primary winding coupled to a low impedance secondary provides optimum energy transfer between stages.

Dimensions: 3/8" sq. x 5/8" high.

Cat. No.	Freq.	Impedance	Use	List Price
9-C1	455 KC	25K-600 Ohms	Input	\$3.75
9-C2	455 KC	25K-1000 Ohms	Output	3.75

### Miniature Transistor I.F. Transformers



Having a tapped tuned primary and untuned secondary windings. Proper impedance match between primary and secondary insures optimum performance.

Dimensions: 1/2" sq. x 3/4" high.

Cat. No.	Freq.	Impedance	Use	List Price
2031	455 KC	10K-600 Ohms	Input	\$3.00
2032	455 KC	10K-1000 Ohms	Output	3.00
2041	455 KC	25K-600 Ohms	Input	3.00
2042	455 KC	25K-1000 Ohms	Output	3.00
2051	455 KC	100K-1000 Ohms	Input	3.00

### Shielded Sub-Miniature Transistor Oscillator



A shielded oscillator coil designed for use in a converter circuit employing only one transistor for both the oscillator and mixer.

Dimensions: 3/8" sq. x 5/8" high.

Cat. No.	Tuning Cond. Max. Capacity	I.F. Freq.	Lugs	List Price
2021	78	455 KC	Osc.	\$2.75

### Unshielded Miniature Transistor Oscillators



The 2020 oscillator coil (Revised 5-lug) is designed for use in a converter oscillator circuit where only a single transistor is required. The 2023 oscillator coil (6-lug) is for use where a separate transistor is used for the oscillator and another transistor for the mixer. The #2022 is similar to the #2020 except it is for use with a cut section variable (Miller #2110). Dimensions: 3/8" x 1" high.

Cat. No.	Tuning Cond. Max. Capacity	I.F. Freq.	List Price
2020	365 mmf.	455 KC	\$2.25
2022	78 mmf.	455 KC	2.25
2023	365 mmf.	455 KC	2.25

### Variable Condensers



A miniature 2-gang variable condenser. The antenna section has a range of 10-130 mmf. The oscillator section has a range of 10-78 mmf. Counter clockwise rotation. Shaft is 1/4" dia. x 3/4" long. Catalog #2112 is a standard size 2-gang condenser having a range of 10-365 mmf. for both sections. Shaft is 1/4" dia. x 1 1/8" long.

Cat. No.	Max. Cap.	Dimensions	List Price
2110	78-130 mmf.	1 1/4" x 1 3/8" x 1 1/8"	\$3.00
2112	365 mmf.	2 1/4" x 1 1/2" x 1 5/8"	3.50

### Miniature Adjustable R.F. Chokes



These chokes have a threaded ferrite iron core confined entirely within a nylon coil form. They are especially suitable as peaking coils in video amplifiers for accurate adjustment of the frequency response. Range is greater than specified.

Dimensions: 3/8" diameter x 1" long.

Cat. No.	Microhenries	List Price
4562	35-70	\$.85
4563	60-120	.95
4564	110-200	1.05
4565	190-330	1.15
4566	320-500	1.25

### Economy Adjustable R.F. Chokes



Through the use of a recently developed Nylon molding process we are able to offer an inexpensive line of adjustable chokes. They can be adjusted from either the top or bottom. This lends a degree of flexibility to your design. Mounting is achieved by means of a metal clip in a 1/8" hole.

Dimensions: 3/8" x 1 3/8" long.

Cat. No.	Microhenries	List Price
4200	Form only	\$.75
4202	1-2.5	1.25
4203	2-5.5	1.25
4204	6-12	1.25
4205	10-25	1.25
4206	20-55	1.50
4207	50-140	1.50
4208	120-330	1.50
4209	310-860	1.50

#4200 complete with hardware and core

### Ceramic Core R.F. Chokes



Dimensions: (form) 1/4" diameter x 1 1/2" long.

All chokes are impregnated with a moisture- and fungus resistant varnish. Inductance tolerance: ± 5%.

### Single Layer Chokes

The following R.F. chokes are solenoid wound. They have a distributed capacity of 0.7 mmf and may be used in ultra-high-frequency receivers and low-power transmitters.

Cat. No.	uH.	Ohms	MA	List Price
4528-1	1	.03	300	\$.70
4528	2.5	.09	300	.70
4529	5	.25	300	.70
4529-10	10	.95	300	.70

### Progressive Wound Chokes

These chokes, with a distributed capacity of 1 mmf., fill the gap between layer and pi-wound coils. The distributed capacity is lower than that obtainable in sectional wound coils.

Cat. No.	uH.	Ohms	MA	List Price
4515	25	1.6	300	\$.80
4517	50	2.1	300	.80
4519	100	3	300	.80

### FM I.F. Trans. (10.7 MC)



These permeability tuned 10.7 MC intermediate frequency transformers are assembled in aluminum shields 1 1/8" square x 2 1/2" high. Mounting is by two #6-32 spade bolts on a 1-1/16" centers. Three interstage transformers Cat. No. 1451 are usually required when followed by a discriminator transformer Cat. No. 1452, while two may be sufficient in conjunction with a ratio detector transformer.

Cat. No.	Item	List Price
1451	10.7 MC Interstage Trans.	\$2.50
1452	10.7 MC Discriminator Trans.	3.40
1453	10.7 MC Ratio Detector Trans.	3.40

For a Complete Listing of MILLER PRODUCTS ask for a copy of our Latest General Catalog.



# Miller



## Kits, Filters, Chokes, and Traps

### TV Antenna Coupling Transformers



Matches antenna impedance to line or line to T.V. receiver. Signal input may be improved as much as four times. Housed in impregnated, weather-tight aluminum shield.

Cat. No.	Impedance Ratio	List Price
6161	52/300 or 300/52 ohms	\$2.75
6162	72/300 or 300/72 ohms	2.75
6201	450/300 or 300/450 ohms	2.75

### TV High-Pass Filter



Improves picture clarity by rejecting interference from short wave stations, amateur transmitters, X-ray and diathermy equipment, electric appliances, etc. Attenuates all signals from zero to 40 MC. Posses all television channels with minimum loss. Installed easily in on-tune lead-in of receiver. No tuning required.

Dimensions:	1 1/8" x 1 7/8" x 3 1/2" high.	List Pr.
Cat. No.	Use	\$5.50
6167	TV High-Pass Filter—72-ohm line	5.50
6168	TV High-Pass Filter—300-ohm line	5.50

### TV and FM Wave Traps



These new high-Q series-resonant traps may completely eliminate interference and undesirable images in television and FM receivers. Assembled in aluminum shields designed for connection direct to antenna twin-lead. Convenient screwdriver tuning adjustment at top. Four traps will cover frequency ranges from 20 to 250 megacycles.

Dimensions:	1 1/8" x 1 7/8" x 3 1/2" high.	List Price
Cat. No.	Freq. Range	\$4.40
6163	150-250 mc	4.40
6164	75-150 mc	4.40
6165	40-80 mc	4.40
6166	20-40 mc	4.40

### TV Appliance Filter



These filters are designed to eliminate radio interference caused by horizontal oscillators in T.V. receivers and small electrical appliances such as sewing machines, vacuum cleaners, food mixers, and other similar devices requiring less than 550 watts. Inductive capacitive circuit assures maximum attenuation of interference.

Dimensions:	2 1/4" square x 4" long.	List Price	
Cat. No.	Volts	Watts	\$8.25
7815	115	550	8.25

### General Purpose Filter



This filter is recommended for use with marine and D.C. appliances and radios. It is also for use with extremely noisy A.C. appliances. A good, permanent connection to ground should be used with this filter.

Dimensions:	2 1/4" square x 5" long.	List Price	
Cat. No.	Volts	Watts	\$8.75
7813	115	200	8.75



### All Transistor No. 555

### Super-Reflex Receiver Kit

The introduction of the Miller #555 "Transistor" marks the successful culmination of months of exhaustive research. Full 4 transistor performance is achieved by a unique circuit employing only 3 transistors and 2 crystal diodes.

The average hobbyist or experimenter will experience no difficulty in the construction of the #555. All components are mounted on a printed circuit board thus eliminating tedious and time consuming wiring difficulties. All coils and transformers are factory adjusted to forestall alignment problems. The kit is supplied complete with detailed step-by-step assembly instructions, schematic diagram, alignment instructions, and pictorial diagrams.

Cat. No.	Net Price
555	Transistor Radio Kit \$29.50



### Build It Yourself

### No. 565 High Fidelity

### Germanium Diode AM Tuner Kit

The No. 565 Tuner Kit is the result of masterful engineering and careful planning. Previously sold only as a factory assembled unit the tuner has received overwhelming acceptance by the most critical audiophiles, and is far superior to all other such tuner kits.

Assembly and wiring of this tuner is not difficult. Instructions with exploded views, pictures, and circuit diagrams are supplied.

Cat. No.	Net Price
565	Kit \$14.70

### No. 595 High Fidelity Germanium Diode Broadcast Band Tuner

The most amazing High Fidelity Broadcast tuner ever offered to music lovers anywhere. The tonal quality, selectivity, and sensitivity are features of this marvelous tuner.

A beautiful ebony black or ivory bakelite cabinet houses the tuner with a Richlow brass etched panel for the escutcheon.

Because of the broad band-pass of the No. 595 tuner and the absence of tube noise and AC hum, it is especially recommended as a companion to an FM tuner.

The tuner is complete in every detail, ready to be connected to an amplifier.

Cat. No.	Net Price
595	TUNER \$19.50

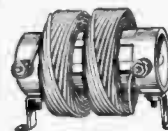
### Ferrite Rod Loop Antenna



The electrical characteristics of this newly developed type Ferrite Rod Loop Antenna make possible a general replacement loop that offers outstanding performance. The Loop Rod Antenna has an adjustable inductance which makes it possible to peak the antenna stage by merely sliding the coil along the ferrite rod; this also enables it to be used with a variety of tuning condensers.

Cat. No.	Dimensions	List Price
705-A	3 1/4" x 9 1/2"	\$2.75

### Heavy Duty Line Filter Chokes



For installation in noise producing equipment such as flasher signs, farm lighting plants, motor generators, etc. Also used with radio transmitters to prevent R.F. energy feeding back into the power circuits. Typical circuit diagrams are supplied with each choke. Chokes are dual-lateral wound on ceramic forms.

### Single Line Filter Chokes

For filtering individual and branch circuits. Can be wound on order to carry 150 amperes.

Dimensions:	2 1/2" x 4"	List Price		
Cat. No.	Amps.	Ohms	Mh	\$4.85
7826	5	.28	.57	5.45
7827	10	.15	.37	6.00
7828	20	.08	.20	6.60
7829	30	.05	.13	6.60

### Dual Line Filter Chokes

For filtering both sides of single phase circuits. Dimensions: 4 1/2" x 4"

Cat. No.	Amps.	Ohms	Mh	List Price
D-7826	5	.28	.57	\$7.25
D-7827	10	.15	.37	8.50
D-7828	20	.08	.20	9.70
D-7829	30	.05	.13	10.80

### Light Duty Line Filter Chokes



For use in the same applications as our Heavy Duty Line Filter Chokes where the load is of a lighter nature. Chokes are wound on bakelite forms.

### Single Line Filter Chokes

For filtering individual and branch circuits. Dimensions: 1 7/8" x 1 3/4"

Cat. No.	Amps.	Ohms	Mh	List Price
7825	2	.7	.600	\$2.00
7825-3	3	.25	.250	2.00
7825-5	5	.1	.100	2.00
7825-8	8	.05	.050	2.00

### Dual Line Filter Chokes

For filtering both sides of single phase circuits. Dimensions: 3 1/4" x 2 1/8"

Cat. No.	Amps.	Ohms	Mh	List Price
D-7825	2	.7	.600	\$4.00
D-7825-3	3	.25	.250	4.00
D-7825-5	5	.1	.100	4.00
D-7825-8	8	.05	.050	4.00



### Filament Choke

Enclosed solenoid wound chokes for use in the filament and vibrator circuits of battery operated receiver, transmitters, etc.

Dimensions:	3/4" dia. x 1 7/8" long, plus 3" leads.	List Price		
Cat. No.	uH	Ohms	Amps	\$9.00
5221	4	.02	6	9.00

### Transmitter Chokes



For use in transmitter circuits of either medium or high power installations. Low distributed capacity. Dimensions: Form 1/2" x 2 1/2" long.

Cat. No.	MH	Ohms	MA	List Price
4550	2.0	6.5	400	\$2.00
4551	4.0	10.0	400	2.25
Dimensions: (form) 1/2" diameter x 3 1/2" long.				
4534	1.0	2.5	1000	2.20
4535	1.5	3.6	1000	2.50
4533	2.5	4.5	750	2.75
4536	4.0	5.5	750	3.05
2881	7.0	7.2	750	4.95

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# Miller

## Intermediate Frequency Transformers



### Permeability Tuned Transformers

Miller permeability tuned intermediate frequency transformers are recommended for all applications where a high degree of frequency stability and operation under humid conditions will be encountered.

Dimensions: 1 3/8" square x 3 1/4" high. #6/32 spade bolt mounting.

Cat. No.	Freq.	KC Range	Use	List Price
912-H1	262	250-275	Input	\$4.00
912-H2	262	250-275	Interstage	4.00
912-H3	262	250-275	Full-Wave	4.00
912-H4	262	250-275	Half-Wave	4.00
912-C1	455	450-475	Input	4.00
912-C2	455	450-475	Interstage	4.00
912-C3	455	450-475	Full-Wave	4.00
912-C4	455	450-475	Half-Wave	4.00
912-W1	1500	1400-1600	Input	4.00
912-W2	1500	1400-1600	Interstage	4.00
912-W3	1500	1400-1600	Full-Wave	4.00
912-W4	1500	1400-1600	Half-Wave	4.00

### Perm. Tuned I.F. and Disc. Trans.



For use in communications receivers designed for A.M. or Narrow Band F.M. These transformers feature high gain along with a high degree of frequency stability.

Dimensions: 1 3/8" sq. x 2 1/2" high. #6-32 spade bolt mounting.

Cat No.	Freq.	Kc Range	Use	List Price
913-C1	455	450-475	Input or Interstage	\$3.00
913-C4	455	450-475	Output	3.00
913-CD	455	450-475	Discriminator	3.30
913-W1	1500	1400-1600	Input or Interstage	3.00
913-W4	1500	1400-1600	Output	3.00
913-WD	1500	1400-1600	Discriminator	3.30



### Replacement I.F. Transformers

These transformers are an essential part of the stock of every serviceman and dealer. In many cases they will give better performance than the original transformer. These transformers may be used as replacements in most makes of receivers using transformers of the same physical size.

Dimensions: 1 3/8" square x 2 3/4" high. #6/32 spade bolt mounting.

Cat. No.	Freq.	KC Range	Use	List Price
512-H1	262	250-275	Input	\$2.75
512-H2	262	250-275	Interstage	2.75
512-H3	262	250-275	Full-Wave	2.75
512-H4	262	250-275	Half-Wave	2.75
512-C1	455	450-475	Input	2.60
512-C2	455	450-475	Interstage	2.60
512-C3	455	450-475	Full-Wave	2.60
512-C4	455	450-475	Half-Wave	2.60
512-W1	1500	1400-1600	Input	2.60
512-W2	1500	1400-1600	Interstage	2.60
512-W3	1500	1400-1600	Full-Wave	2.60
512-W4	1500	1400-1600	Half-Wave	2.60

### Iron Core Transformers

Dimensions: 1 3/8" square x 3 1/4" high. #6/32 spade bolt mounting.

Cat. No.	Freq.	KC Range	Use	List Price
612-K1	175	165-185	Input	\$3.50
612-K2	175	165-185	Interstage	3.50
612-K3	175	165-185	Full-Wave	3.50
612-K4	175	165-185	Half-Wave	3.50
612-H1	262	250-275	Input	3.00
612-H2	262	250-275	Interstage	3.00
612-H3	262	250-275	Full-Wave	3.00
612-H4	262	250-275	Half-Wave	3.00
612-C1	455	450-475	Input	3.00
612-C2	455	450-475	Interstage	3.00
612-C3	455	450-475	Full-Wave	3.00
612-C4	455	450-475	Half-Wave	3.00



### Sub-Miniature I.F. Transformers

Through the use of a Ferrite shell core material these Sub-Miniature I.F. Transformers offer the gain and bandwidth characteristics previously obtained in only larger I.F. assemblies. (For Battery or AC-DC Radios.)

Dimensions: 1/2" sq. x 1 1/2" high.

Cat. No.	Item	List Price
10-C1	455 KC Input I.F. Trans.	\$2.60
10-C2	455 KC Output I.F. Trans.	2.60



### Universal I.F. Transformers

For general replacement purposes in auto receivers and many types of household and portable receivers.

Dimensions: 1 1/4" square x 2 1/2" high.

Cat. No.	Freq.	KC Range	Use	List Price
312-H1	262	250-275	Input	\$2.40
312-H2	262	250-275	Interstage	2.40
312-H4	262	250-275	Output	2.40
312-H6	262	250-275	Output & Filter	2.90
312-C1	455	440-470	Input	2.40
312-C2	455	440-470	Interstage	2.40
312-C4	455	440-475	Output	2.40
312-C6	455	440-470	Output & Filter	2.90

### Type No. 412 Iron Core Transformers

Dimensions: 1 1/4" square x 2 1/2" high.

Cat. No.	Freq.	KC Range	Use	List Price
412-H1	262	250-275	Input	\$2.60
412-H2	262	250-275	Interstage	2.60
412-H4	262	250-275	Output	2.60
412-C1	455	440-470	Input	2.60
412-C2	455	440-470	Interstage	2.60
412-C4	455	440-470	Output	2.60



### Midget I.F. Transformers

Dimensions:

1 1/8" square x 2" high. #6/32 spade bolt mounting.

### Air Core Transformers

Cat. No.	Freq.	KC Range	Use	List Price
112-H1	262	250-275	Input	2.60
112-H2	262	250-275	Interstage	2.60
112-H3	262	250-275	Full-Wave	2.60
112-H4	262	250-275	Half-Wave	2.60
112-H6	262	250-275	Output Stage & Filter	2.80
112-C1	455	450-475	Input	2.50
112-C2	455	450-475	Interstage	2.50
112-C3	455	450-475	Full-Wave	2.50
112-C4	455	450-475	Half-Wave	2.50
112-W1	1500	1400-1600	Input	2.50
112-W2	1500	1400-1600	Interstage	2.50
112-W3	1500	1400-1600	Full-Wave	2.50
112-W4	1500	1400-1600	Half-Wave	2.50

### Iron Core Transformers

Cat. No.	Freq.	KC Range	Use	List Price
012-K1	175	165-185	Input	\$2.85
012-K2	175	165-185	Interstage	2.85
012-K3	175	165-185	Full-Wave	2.85
012-K4	175	165-185	Half-Wave	2.85
012-H1	262	250-275	Input	2.75
012-H2	262	250-275	Interstage	2.75
012-H3	262	250-275	Full-Wave	2.75
012-H4	262	250-275	Half-Wave	2.75
012-C1	455	450-475	Input	2.75
012-C2	455	450-475	Interstage	2.75
012-C3	455	450-475	Full-Wave	2.75
012-C4	455	450-475	Half-Wave	2.75



### Miniature I.F. Transformers

Designed for experimental use and for general replacement in "personal" radio receivers, this series of shell core permeability tuned transformers are becoming increasingly popular. Tuning from top and bottom of the shield. Transformers are available for all standard I.F. frequencies. Supplied with a mounting clip.

Dimensions: 3/4" by 3/4" by 2" high.

Cat. No.	Item	List Price
12-H1	262 KC Output I.F. Trans.	\$2.60
12-H2	262 KC Input I.F. Trans.	2.60
12-H6	262 KC Output I.F. Trans.	

Cat. No.	Item	List Price
12-C1	455 KC Input I.F. Trans. with diode filter capacitors	2.75
12-C2	455 KC Output I.F. Trans.	2.30
12-C6	455 KC Output I.F. Trans. with diode filter capacitors	2.45

Cat. No.	Item	List Price
12-C7	455 KC Input I.F. Battery	2.30
12-C8	455 KC Output I.F. Battery	2.30
12-C9	455 KC Input I.F. AC-DC	2.30
12-C10	455 KC Output I.F. AC-DC	2.30

Cat. No.	Item	List Price
13-W1	1500 KC Input or Interstage	2.50
13-W2	1500 KC Output I.F. Trans.	2.50

Cat. No.	Item	List Price
1463	10.7 MC Input or Interstage	2.85
1464	10.7 MC Discriminator	3.40
1465	10.7 MC Ratio Detector	3.40

Cat. No.	Item	List Price
6203	4.5 MC Input or Interstage	2.85
6204	4.5 MC Discriminator	3.40
6205	4.5 MC Ratio Detector	3.40

Cat. No.	Item	List Price
6261	21.25 MC Discriminator	3.40
6262	21.25 MC Radio Detector	3.40

Cat. No.	Item	List Price
6230	TV Converter I.F.	2.50
6231	TV 44 MC First I.F. Trap	2.50
6232	TV 42.5 MC Second I.F. 41.25 MC	2.10
6233	TV 45.5 MC Third I.F. 47.25 MC	2.50
6234	TV 44 MC Fourth I.F.	1.85

### Miniature Printed Circuit I.F. Trans.



This series of miniature I.F. transformers have been specifically designed for printed circuit applications. May be used in new equipment design, or as replacement transformers.

Same as our regular miniature I.F. transformers shown above, except for terminals and mounting. Supplied in all standard I.F. frequencies.

Dimensions: 3/4" sq. x 2" high.

Cat. No.	Item	List Price
13-PH1	262 KC Input I.F. Trans.	\$2.60
13-PH2	262 KC Output I.F. Trans.	2.60
13-PH6	262 KC Output I.F. Trans. with diode filter	2.75

Cat. No.	Item	List Price
13-PC1	455 KC Input I.F. Trans.	2.50
13-PC2	455 KC Output I.F. Trans.	2.50
13-PC6	455 KC Output I.F. Trans. with diode filter	2.65

Cat. No.	Item	List Price
13-PC7	455 KC Input I.F. Trans. Battery	2.50
13-PC8	455 KC Output I.F. Trans. Battery	2.50
13-PC9	455 KC Input I.F. Trans. AC-DC	2.50
13-PC10	455 KC Output I.F. Trans. AC-DC	2.50

Cat. No.	Item	List Price
6203-PC	4.5 MC Input or Interstage	2.85
6204-PC	4.5 MC Discriminator Trans.	3.40
6205-PC	4.5 MC Ratio Detector Trans.	3.40

Cat. No.	Item	List Price
1463-PC	10.7 MC Input or Interstage	2.85
1464-PC	10.7 MC Discriminator Trans.	3.40
1465-PC	10.7 MC Ratio Detector Trans.	3.40

Cat. No.	Item	List Price
6230-PC	TV 44 MC Converter I.F. Trans.	2.75
6231-PC	TV 44 MC First I.F. Trans. Trap	2.75
6232-PC	TV 42.5 MC Second I.F. Trans. 41.25 MC	2.40

Cat. No.	Item	List Price
6233-PC	TV 45.5 MC Third I.F. Trans. 47.25 MC	2.75
6234-PC	TV 44 MC Fourth I.F. Trans.	2.25

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# Miller

## Television Components



### 24 MC Unshielded Picture I.F. Transformers



For use as replacement units in television receivers where unshielded coils are called for and standard circuitry is employed. Mounting

clip to fit  $\frac{1}{8}$ " hole in chassis. Shielded I.F. Trans. are  $\frac{3}{4}$ " sq. x 2" high. Maximum Dimensions:  $2\frac{1}{2}$ " long.

Cat. No.	Description	Trap	List Price
6245	25.5 MC First I.F.	27.25 MC	\$2.50
6246	22 MC Second I.F.	21.2 MC	2.50
6247	21.25 MC Cathode Trap		2.50
6248	24.5 MC Video Det. I.F.		1.50
6249	21-25 MC Bifilar Wound I.F.		1.50
6250	25-29 MC Bifilar Wound I.F.		1.50
6251	21-25 MC Bifilar I.F. Shielded		2.25
6252	25-29 MC Bifilar I.F. Shielded		2.25
6253	21-25 MC Bifilar I.F.	20-23 MC	2.75
6254	25-29 MC Bifilar I.F.	24-29 MC	2.75



### Converter and Picture I.F. Transformers

Dimensions:  $\frac{7}{8}$ " x  $\frac{7}{8}$ " x  $2\frac{1}{4}$ " high.

Description	Trap	List Pr.
6185 21.8 MC Conv. I.F. Trans.	21.25 MC	\$2.75
6186 25.3 MC 1st Pix I.F. Trans.	27.25 MC	2.75
6187 22.3 MC 2nd Pix I.F. Trans.	19.75 MC	2.10



### Picture I.F. Inductors Unshielded

Dimensions:  $\frac{1}{2}$ " max. o.d. x  $1\frac{1}{2}$ " long.

Cat. No.	Description	Freq.	List Pr.
6188	3rd Pix I.F. Trans.	25.2 MC	\$1.25
6189	Video Detector I.F. Trans.	23.4 MC	1.25
6193	Cathode Sound Trap	21-25 MC	2.00
6171	Tunable Choke	21-25 MC	1.25
6171A	Tunable Choke	25-29 MC	1.25



### 21.25 MC Television Sound I.F. Transformers

Dimensions:

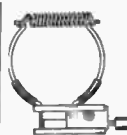
6170, 6190 and 6191  $\frac{7}{8}$ " sq. x  $2\frac{1}{4}$ " hi  
6184 and 6192  $1\frac{1}{8}$ " x  $1\frac{1}{8}$ " x  $2\frac{1}{2}$ " high.  
6261 and 6262  $\frac{3}{4}$ " sq. x 2" high clip mtg.

Item	Freq.	List Pr.
6190 1st Sound I.F. Trans.	21.25 MC	\$2.40
6191 2nd Sound I.F. Trans.	21.25 MC	2.40
6192 Sound Disc. Trans.	21.25 MC	3.00
6184 Sound Ratio Det. Trans.	21.25 MC	3.30
6170 Sound Disc. Trans.	21.25 MC	3.30
6261 Sound Disc. Trans.	21.25 MC	3.40
6262 Sound Ratio Det. Trans.	21.25 MC	3.40

### 4.5 MC Intercarrier Sound I.F. Components

Dimensions 1466-67-68:  $1\frac{1}{8}$ " x  $1\frac{1}{8}$ " x  $2\frac{1}{2}$ " high.  
#1469, 1470 and 1480 Unshielded, Mounting hole  $\frac{1}{8}$ "  
1470-A and 1481  $\frac{3}{4}$ " x  $\frac{3}{4}$ " x 2" hi  
#1498  $1\frac{3}{8}$ " x  $1\frac{3}{8}$ " x  $2\frac{1}{2}$ " high

Cat. No.	Item	Freq.	List Pr.
1466	Input or Inter. I.F. Trans.	4.5 MC	\$2.60
1467	Sound Discrim. Trans.	4.5 MC	3.00
1468	Sound Ratio Det. Trans.	4.5 MC	3.30
1469	Sound Pick Off Coil	4.5 MC	1.25
1470	Sound Trap Unshielded	4.5 MC	1.25
1470-A	Sound Trap Shielded	4.5 MC	1.65
1480	Quadrature Coil	4.5 MC	1.25
1481	Quadrature Coil Sh'l'd.	4.5 MC	1.65
1498	Sound Ratio Det. Trans.	4.5 MC	3.30



### Adjustable Ion Trap

Due to its adjustable feature, which allows the magnetic field to be varied between 32-55 gauss, this trap will, in most instances, replace the older style ion traps having a specific magnetic field.

Cat. No.	Description	List Price
6295	Adjustable Ion Trap	\$1.25



### "40 MC" TV Picture I.F. Transformers

Converter transformer and 1st pix I.F. grid transformer have 75-ohm link winding.

Used in R.C.A. current models. Dimensions:  $\frac{7}{8}$ " x  $\frac{7}{8}$ " x  $2\frac{1}{4}$ " high.

Description	Trap	List Pr.
6215 Converter I.F. Trans.		\$2.50
6216 1st Pix I.F. Grid Trans.	39.25 MC	3.00
6217 1st Pix I.F. Plate Trans.	41.25 MC	3.00
6218 2nd Pix I.F. Grid Trans.	47.25 MC	2.75

### Unshielded



Dimensions:  $\frac{1}{2}$ " O.D. x  $2\frac{1}{4}$ " long.

6219 3rd-4th & 5th I.F.	41.75-45.75 MC	1.25
6220 41-45 MC Converter I.F.		1.25
6221 43.5 MC First I.F.	41.25 MC	2.50
6222 45.5 MC Second I.F.	47.25 MC	2.50
6223 40.0 MC Third I.F.	39.25 MC	2.50
6224 44 MC Fourth I.F.		1.40
6225 41-45 MC I.F., Single Winding		1.55
6226 Hi Q Trap	40-46 MC	1.40



### Video Peaking Coils, Filament Choke

No. 6175 Filament Choke— $\frac{3}{8}$ " dia. x  $\frac{7}{8}$ " long.  
Video Peaking Coils— $\frac{3}{8}$ " dia. x  $\frac{1}{2}$ " long.

Cat. No.	Use	—ohy	Resistor	List Price
6175	Filament	0.8	None	\$.50
6152	Peaking	20	None	.50
6176	Peaking	36	None	.50
6110	Peaking	60	None	.50
6172	Peaking	73	None	.60
6177	Peaking	93	None	.60
6112	Peaking	100	None	.60
6178	Peaking	120	22K	.60
6153	Peaking	120	None	.60
6120	Peaking	155	None	.60
6179	Peaking	180	39K	.60
6180	Peaking	180	None	.60
6154	Peaking	200	None	.60
6173	Peaking	250	22K	.60
6181	Peaking	250	None	.60
6130	Peaking	275	None	.60
6155	Peaking	300	None	.60
6132	Peaking	330	None	.60
6134	Peaking	375	None	.60
6136	Peaking	420	None	.60
6138	Peaking	470	None	.60
6174	Peaking	500	None	.60
6144	Peaking	550	None	.60
6146	Peaking	600	None	.60
6148	Peaking	700	None	.60
6156	Peaking	800	None	.60
6157	Peaking	950	None	.60

### Antenna Matching Coils (Balun)



When two of these coils are connected in parallel at one end and in series at the other end, a 75 ohm to 300 ohm impedance matching transformer is obtained. This impedance match holds over the entire television range from channel 2 to 13 thus including the F.M. channels.

Cat. No.	Description	Size	List Price
6103	Ant. Matching Coil	$\frac{1}{4}$ " x $1\frac{1}{2}$ "	\$1.25
6104	Ant. Matching Coil	$\frac{1}{4}$ " x $1\frac{3}{4}$ "	1.00
6200	Ant. Matching Coil	$\frac{3}{8}$ " x $2\frac{1}{2}$ "	2.00
6202	Ant. Matching Coil	$\frac{3}{8}$ " x $1\frac{3}{4}$ "	2.00



### Horizontal Oscillator & Sync. Control Coils

Dimensions:  $1\frac{7}{8}$ " x  $1\frac{1}{8}$ " x  $2\frac{1}{2}$ " high.  
6212 Unshielded, Mounting hole  $\frac{1}{8}$ "  
6211 and 6324 Unshielded, Mounting hole  $\frac{7}{8}$ "—6183 may be reversed in shield for top or bottom mounting. 6183-A coils reversed on form to tune Horiz. Osc. through chassis.

Cat. No.	Item	List Price
6194	Osc. & A.F.C. Discrim. Trans.	\$2.75
6182	Osc. and Sync. Control Coil	2.25
6183	Osc. and Sync. Stabilizer Coil	2.75
6210	Sync. Stabilizer Coil 16-42 mh	2.25
6211	Sync. Stabilizer tapped 16-42 mh	2.25
6212	Horiz. Osc. tapped 12-35 mh	2.25
6324	Horiz. Osc. tapped 60-130 mh	2.25
6183-A	Horiz. Osc. coil position reversed	2.75



### Linearity & Width Controls

Dimensions:  $\frac{3}{4}$ " x  $2\frac{1}{2}$ " Max.

Cat. No.	Inductance Range	List Price
6313	.50- 5.0 Mh	\$1.50
6314	2.0 -18. Mh	1.75
6315	4.0 -30 Mh	1.80
6316	4.0 -30 Mh with A.G.C.	2.25
6317	3.2 - 9.0 Mh with A.G.C.	2.25
6318	.20- 3.0 Mh	1.50
6319	15 -60 Mh	2.25
6320	.20- 3.0 Mh tapped	1.50
6321	1.0 - 5.0 Mh tapped	1.50
6322	1.5 -10 Mh	1.75
6323	.50- 5.0 Mh tapped	1.50
6324	60-130 Mh tapped	2.25
6195	.185-1 Mh	1.25
6196	.054- .245 Mh	1.10
6196-A	.054- .50 Mh tapped	1.25
6197	.55 -2.3 Mh tapped	1.25
6198	.170- .61 Mh	1.10
6199-A	1.3 -4.1 Mh tapped	1.30
6199-B	.50 -1.7 Mh	1.25



### Miniature 44 MC Picture Trans.

Converter and 1st pix I.F. Grid transformer have 75 ohm link winding. Dimensions:  $\frac{3}{4}$ " Square x 2" high.

Manufactured under patents of and by Automatic Manufacturing Corp.

Cat. No.	Description	Trap	List Pr.
6230	Converter I.F.		\$2.50
6231	44 MC First I.F.		2.50
6232	42.5 MC Second I.F.	41.25 MC	2.10
6233	45.5 MC Third I.F.	47.25 MC	2.50
6234	44 MC Fourth I.F.		1.85



### 4.5 MC Miniature Intercarrier Sound I.F. Transformers

Clip Mounting  
Dimensions:  $\frac{3}{4}$ " square by 2" high.  
Shell Core Permeability tuned  
Manufactured under patents of and by Automatic Manufacturing Corp.

Cat. No.	Item	List Price
6203	4.5 MC Input or Interstage	\$2.85
6204	4.5 MC Discriminator	3.40
6205	4.5 MC Ratio Detector	3.40



### HV R.F. Power Trans.

These R.F. power supply transformers make an inexpensive source of high voltage. Two types are available, the 4525 for voltages to 5000 DC, and the 4526 for voltages to 10,000 DC (or 30,000 DC) in a voltage rectifier tripler circuit).

Cat. No.	Item	List Price
4525	H.V. R.F. Trans. (to 5 KV)	\$8.25
Dimensions: $1\frac{1}{2}$ " dia. x $3\frac{3}{4}$ " high. (illus.)		
4526	H.V. R.F. Trans. (to 30 KV)	\$13.75
Dimensions: $2\frac{1}{4}$ " dia. x 6" high.		

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# Miller

## Radio Frequency Coils



### Miniature Adjustable R.F. Coils

These high Q adjustable iron core coils are for general replacement use.

Dimensions:

70-A	Antenna Stage	540-1600 KC	\$1.50
70-RF	R.F. Stage	540-1600 KC	1.50
70-OSC	Oscillator Stage	540-1600 KC	1.50
Has pri. and tapped sec. (I.F. 100-550 KC)			
69-OSC	Oscillator Stage	540-1600 KC	1.50
Capacity coupled type (100-550 KC)			



### Universal Adjustable Oscillator Coil

These adjustable iron core oscillator coils are for general replacement use.

Dimensions:  $\frac{3}{8}$ " x  $1\frac{1}{2}$ " high.

71-OSC	Oscillator Stage	R.F. 500-1800 KC	\$2.00
(I.F. 100-550 KC)			



### High-Q Ferrite Antenna Coil

Supplied with mounting bracket

6300	Antenna Stage	540-1700 KC	\$1.25
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### Adjustable FM R.F. Coils

Dimensions:  $\frac{1}{2}$ " O.D. x  $1\frac{1}{2}$ " long.

1474	88-108 MC Antenna Coil	\$1.50
1475	88-108 MC R.F. Coil	1.50
1476	88-108 MC Osc. Coil (10.7 MC I.F.)	1.50



### Unshielded High-Q R.F. Coils

A complete line of Unshielded Permeability tuned coils for replacement use as far as the front end components in new receiver design. These #5495 series coils can be shielded in our #5.32 shields ( $1\frac{1}{8}$ " sq.) with very little loss in Q. Mounting is by means of a single  $\frac{1}{4}$ " hole. Ranges shown are for use with a 365 mmfd. variable tuning condenser.

#### Long Wave Coils (140-420 KC)

X-5495-A	Antenna Stage	\$2.10
X-5495-RF	RF Stage	2.10
X-5495-C	Standard Osc. 455 KC	2.10
X-5496-C	Tapped Osc. 455 KC	2.10

#### Broadcast Band Coils (540-1700 KC)

A-5495-A	Antenna Stage	\$2.10
A-5495-RF	RF Stage	2.10
A-5495-C	Standard Osc. 455 KC	2.10
A-5496-C	Tapped Osc. 455 KC	2.10

#### Medium Wave Coils (1.7-5.5 MC)

B-5495-A	Antenna Stage	\$2.10
B-5495-RF	RF Stage	2.10
B-5495-C	Standard Osc. 455 KC	2.10
B-5496-C	Tapped Osc. 455 KC	2.10

#### Short Wave Broadcast Coils (5-18 MC)

C-5495-A	Antenna Stage	\$2.10
C-5495-RF	RF Stage	2.10
C-5495-C	Standard Osc. 455 KC	2.10
C-5496-C	Tapped Osc. 455 KC	2.10

#### High Frequency Coils (12-36 MC)

D-5495-A	Antenna Stage	\$2.10
D-5495-RF	RF Stage	2.10
D-5495-C	Standard Osc. 455 KC	2.10
D-5496-C	Tapped Osc. 455 KC	2.10



### Midget Variable Condensers

Split outer plates on the rotors permit accurate alignment. High frequency trimmers are provided on the short side of the condenser.

Mounting is provided by tapped holes in the frame of the condenser. Counter-clock rotation for capacity increase. Shaft dia. is  $\frac{1}{4}$ " x  $1\frac{1}{2}$ " long. Capacity range—10 to 365 mmf.

Cat. No.	Sections	Dimensions	List Price
2111	1	$1\frac{1}{8}$ " x $1\frac{1}{8}$ " x $1\frac{1}{8}$ "	\$2.75
2112	2	$2\frac{1}{8}$ " x $1\frac{1}{8}$ " x $1\frac{1}{8}$ "	3.50
2113	3	$3\frac{1}{8}$ " x $1\frac{1}{8}$ " x $1\frac{1}{8}$ "	5.00

### Adjustable Padder Condensers

Used as adjustable oscillator padding condenser in super-het receivers to insure proper three-point tracking. They also find application as the horizontal drive control in television receivers.

Dimensions:  $\frac{3}{8}$ " x  $1\frac{1}{2}$ " x  $\frac{3}{8}$ " thick.

Cat. No.	Capacity Range	List Price
160-A	360-1000 mmfd.	.90
160-B	50-400 mmfd.	.75
160-C	200-600 mmfd.	.85
160-D	10-160 mmfd.	.65
160-E	25-280 mmfd.	.70



### Adjustable R.F. Coils

Particularly recommended for aircraft, marine and mobile equipment and general custom receiver construction. Coils are designed for use with standard 365 mmfd. tuning condenser.

Dimensions:  $1\frac{1}{8}$ " square x 2" high.

#### Broadcast Band 540-1700 KC

Cat. No.	Use	I.F. Freq.	List Pr.
A-320-A	Antenna		\$2.20
A-320-RF	Interstage		2.20
A-320-M	2-coil Osc.	132 KC	2.20
A-320-C	2-coil Osc.	455 KC	2.20
A-321-M	Tapped Osc.	132 KC	2.20
A-321-C	Tapped Osc.	455 KC	2.20

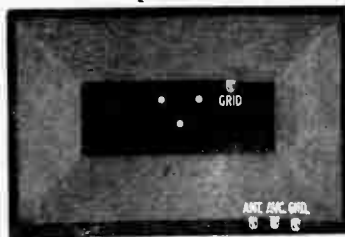
#### Marine & Aircraft Band 2100-6300 KC

B-320-A	Antenna	\$2.20
B-320-RF	Interstage	2.20
B-320-M	2-coil Osc.	132 KC 2.20
B-320-C	2-coil Osc.	455 KC 2.20
B-321-M	Tapped Osc.	132 KC 2.20
B-321-C	Tapped Osc.	455 KC 2.20

#### Short Wave Band 6.0-18 MC

C-320-A	Antenna	\$2.20
C-320-RF	Interstage	2.20
C-320-C	2-coil Osc.	455 KC 2.20
C-321-C	Tapped Osc.	455 KC 2.20

### Loop Antenna



The Miller No. 703A Loop Antenna utilizes the patented "Air Loop" construction which provides high Q and mechanical rigidity. The Q of the loop is 150 at 790 KC and is substantially uniform throughout the standard broadcast band. Secondary inductance 253 microhenries. Inductance may be reduced as necessary by removing turns from the inside terminal.

Cat. No.	Frequency Range	List Price
703A	540-1700 KC	\$2.75



### Miniature Hi-Q Coils

Cup core construction for high Q. Permeability tuning to adjust inductance. Antenna and oscillator coils have tapped windings. R.F. coil features impedance coupling.

Dimensions of shield:  $\frac{3}{4}$ " sq. x  $1\frac{3}{8}$ " high.

Cat. No.	Use	Freq. Range	List Price
A-123-A	Antenna Stage	535—1700 KC	\$2.25
A-123-RF	R.F. Stage	535—1700 kc	2.25
A-123-C	Osc. Stage	455 kc—	
	.0004 Pad		2.00



### Universal Replacement Coils

(Permeability Tuned)

This series of variable inductance iron core coils are well suited for general replacement. Adjusted to cover the standard broadcast band with a tuning condenser having a maximum capacity of between 250 and 450 mmfd. The oscillator coils may be used with any I.F. amplifier operating in the 100 to 550 KC range.

Dimensions:  $\frac{3}{8}$ " diameter x 2" hi

Unshielded  $\frac{1}{4}$ " mtg. bracket.

Cat. No.	Use	Freq. Range	List Pr.
72-A	Antenna Stage	500-1800 KC	\$2.30
72-RF	R.F. Stage	500-1800 KC	2.30
72-OSC	Oscillator Stage (see text above)		2.30

Shielded Dimensions:  $1\frac{1}{8}$ " square x  $2\frac{1}{2}$ " hi

Cat. No. Use Freq. Range List Pr.

73-A	Antenna Stage	500-1800 KC	\$2.85
73-RF	R.F. Stage	500-1800 KC	2.85
73-OSC	Oscillator Stage (see text above)		2.85



### Standard Bank Wound Coils

High gain general purpose coils featuring high impedance coupled antenna and R.F. units with progressive wound litz wire secondaries (except oscillator coils).

Far use with standard 365 mmfd

tuning condenser. All windings are thoroughly impregnated with tropicalized R.F. lacquer.

Dimensions:  $1\frac{1}{8}$ " square x  $2\frac{1}{2}$ " high.

Cat. No. Use Freq. Range List Pr.

44-A	Antenna Stage	540-1700 KC	\$1.50
44-RF	R.F. Stage	540-1700 KC	1.50
44-BP	Band-Pass Stage	540-1700 KC	1.50

Cat. No.	I.F. Freq.	Series Pad	List Price
44-H	262 KC	.0006 "	1.50
44-C	455 KC	.0004 "	1.50

Tapped asc. coils (for 6SA7 and similar tubes)

Cat. No.	I.F. Freq.	Series Pad	List Price
41-H	262 KC	.0006 "	1.45
41-C	455 KC	.0004 "	1.45

### Unshielded

Dimensions:  $\frac{3}{8}$ " diameter (form) x  $2\frac{1}{2}$ " high.

Cat. No. Use Freq. Range List Pr.

43-A	Antenna Stage	540-1700 KC	\$1.25
43-RF	R.F. Stage	540-1700 KC	1.25
43-BP	Band-Pass Stage	540-1700 KC	1.25

Cat. No. I.F. Freq. Series Pad List Price

43-H	262 KC	.0006 "	1.20
43-C	455 KC	.0004 "	1.20

Tapped asc. coils (for 6SA7 and similar tubes)

Cat. No.	I.F. Freq.	Series Pad	List Price
45-H	262 KC	.0006 "	1.20
45-C	455 KC	.0004 "	1.20



### Electric Shaver Filter

This filter contains an inductive-capacitive circuit consisting of two duo-lateral wound chokes and a non-inductive condenser, giving complete freedom from radio interference. Most electric shavers act as miniature transmitters and feed interference energy into the house wiring and it is then picked up by the radio receiver. Dimensions:  $1\frac{1}{8}$ " diameter x 3" long.

Cat. No.	Volts	Watts	Finish	List Price
7817	115	50	Black	\$3.00
7817-I	115	50	Ivory	3.00

For a Complete Listing of MILLER PRODUCTS ask for a copy of our Latest General Catalog.

# STANWYCK COILS Mfrd. by STANWYCK WINDING CO.

TELEVISION - I.F. - ANT. - R.F. - F.M. - OSCILLATOR COILS

## TELEVISION REPLACEMENT COMPONENTS FOR MOTOROLA, TELEKING, MAGNAVOX, EMERSON, HALLICRAFTER, AND OTHER TELEVISION RECEIVERS

### NEW ABOVE CHASSIS TYPE TUNED 455 K.C. I.F. COILS

The latest in IF coils featuring the complete above chassis type tuned IF coils that are permeability tuned resulting in high Q, no drift for stable long life operation, supplied with snap spring clip for mounting through suitable holes in chassis.

- S-1601 Miniature size IF high Q high gain for battery filament type tubes Size  $\frac{3}{4}$  x 2" Shielded  
List Price, \$1.90
- S-1617 Miniature size IF high Q high gain for AC DC Filament type tubes. Size  $\frac{3}{4}$  x 2" Shielded  
List Price, \$1.65
- S-1607 Miniature size IF with exceptionally high Q and gain in many cases this IF will outperform standard IF transformers, Size  $\frac{3}{4}$  x 2" Shielded  
List Price, \$1.90



S-949

### 4.5 mc IF COMPONENTS

Featuring the latest all above chassis type tuning using internal type hex wrenching eliminating core breakage. They are of the permeability tuned type using fixed silver mica condensers insuring high Q no drift long life operation supplied with snap spring clip for mounting through suitable holes in chassis.

- S-985 4.5 mc Sound ratio detector Size  $\frac{3}{4}$  x 2" Shielded  
List Price, \$2.90
- S-986 4.5 mc Sound discriminator transformer  $\frac{3}{4}$  x 2" Shielded  
List Price, 2.90
- S-989 4.5 mc Sound take off coil Size  $\frac{3}{4}$  x 2" Shielded  
List Price, 2.40
- S-974 4.5 mc Sound trap  $\frac{1}{8}$  chassis hole mount. Unshielded  
List Price, 1.10

### TELEVISION REPLACEMENT COMPONENTS FOR RCA REPLACEMENT

RCA Stanwyck	List Price	RCA Stanwyck	List Price
203-L1 S-943 Video peaking 180 uh-39K	\$0.50	203-K1 S-954 Sound discriminator	\$2.55
203-L2 S-944 Video peaking 250 uh-10 meg.	.50	202-K1 S-955 Converter Trans.	2.65
203-L3 S-945 Video peaking 120 uh-22K	.50	204-L1 S-956 Fil. Choke	.70
203-L4 S-946 Video peaking 93 uh-10 meg.	.50	201-R1 S-957 Hor. width control	.95
202-K2 S-949 1st Pix IF	3.00	201-R3 S-958 Linearity control	.95
202-K3 S-950 2nd Pix IF	2.10	208-T8 S-959 Syncrolock	2.75
202-L1 S-951 3rd & 4th Pix IF	2.75	203-R1 S-966 Syncroguide	2.00
202-K4 S-952 Cathode trap	.55	205-R1 S-977 Hor. Freq. & Phase coil	2.25
201-K1 S-953 Sound IF	2.10		

### HIGH VOLTAGE COILS

- S-999 High voltage flyback. This transformer is similar to the GE No. 77J1 and delivers approximately 14KV for ample width and picture brilliancy up to 21" picture tubes.  
List Price, \$11.00
- S-980 GE type linearity coil 5 to 36 mh  
List Price, \$1.55
- S-981 GE type width coil with AGC winding  
List Price, \$1.75
- S-930 10 KV R. F. power transformer designed for corona-less performance at full rated output.  
List Price, \$11.55
- S-918 R.F. Filament transformer will deliver 30 KV when used with one S-930 and two S-918 in a voltage tripler circuit.  
List Price, \$2.20



S-930

### NEW ABOVE CHASSIS 10.7 PERMEABILITY TYPE TUNED MIDGET FM COILS

- S-626 Midget ratio detector to meet the critical demands for a sensitive and unusually stable FM detector. A peak to peak band width of 325 Kc with linearity exceeding plus or minus 125 Kc results in a high quality audio reproduction. Permeability tuned plus silver mica condensers offers long life low drift for the ultimate in fine FM reproduction.  
List Price, \$3.30
- S-625 Midget FM IF High performance in gain and band width with symmetrical wave shape is a result of correct L/C ratio, High Q iron cores and low drift silver mica capacitors make this a much desired IF for net set or replacement.  
List Price, \$2.50
- S-627 Midget FM Discriminator. The electrically centered secondary results in perfect symmetry between negative and positive peaks. High output and excellent discrimination are obtained.  
List Price, \$3.30
- S-609 FM Choke. An excellent parasitic suppressor in the oscillator plate and filament circuits. 200 ma. MF Choke. An excellent parasitic suppressor in the oscillator plate and filament circuits. 200 ma.  
List Price, \$0.45

### CUSTOM HIGH PERFORMANCE FERRITE LOOPSTICKS

- S-537 Adjustable design for small midget sets will outperform standard loop.  
List Price, \$0.90
- S-538 Adjustable design for average table size set has exceptionally high gain and low ant. connection.  
List Price, \$1.25
- S-540 This antenna coil has twice the gain of the S-538 with a Q of over 300 over the entire broadcast and eliminating an outside antenna.  
List Price, \$1.50

# THORDARSON MEISSNER

**WORLD'S OLDEST and LARGEST  
TRANSFORMER and COIL  
MANUFACTURER**  
Mt. Carmel, Illinois.  
Phone 1200

## IF TRANSFORMERS

### AIR CORE "PLASTIC"

PART NO	LIST PRICE	FIG	USE	PEAK FACTORY SETTING	SELECTIVITY		MTG	DIMENSIONS	
					2X	10X		H	W x D
16-8652	\$ 2.40	MT	Input	262KC	9.5	24.7	1-1/4	2-1/2	1-1/4 x 1-1/4
16-8653	2.40	MT	Interstage	262KC	10.4	27.6	1-1/4	2-1/2	1-1/4 x 1-1/4
16-8654	2.40	MT	Output	262KC	20.5	57.1	1-1/4	2-1/2	1-1/4 x 1-1/4
16-8658	2.40	MT	Input	456KC	18.8	46.6	1-1/4	2-1/2	1-1/4 x 1-1/4
16-8659	2.40	MT	Interstage	456KC	12.5	33.0	1-1/4	2-1/2	1-1/4 x 1-1/4
16-8660	2.40	MT	Output	456KC	17.5	50.5	1-1/4	2-1/2	1-1/4 x 1-1/4

### HIGH Q IRON CORE "PLASTIC"

PART NO	LIST PRICE	FIG	USE	PEAK FACTORY SETTING	SELECTIVITY		MTG	DIMENSIONS	
					2X	10X		H	W x D
16-8662	\$ 2.80	MT	Input	456KC	11.2	30.0	1-1/4	2-1/2	1-1/4 x 1-1/4
16-8663	2.50	MT	Output	456KC	11.2	30.0	1-1/4	2-1/2	1-1/4 x 1-1/4

### HIGH Q IRON CORE "STANDARD"

PART NO	LIST PRICE	FIG	USE	PEAK FACTORY SETTING	SELECTIVITY		MTG	DIMENSIONS	
					2X	10X		H	W x D
16-5712	\$ 2.50	MT	Input	456KC	11.1	27.7	1-3/8	3	1-3/8 x 1-3/8
16-6133	2.75	MT	Interstage	456KC	14.5	38.5	1-3/8	3	1-3/8 x 1-3/8
16-5714	2.50	MT	Output	456KC	12.3	37.2	1-3/8	3	1-3/8 x 1-3/8
16-6668	3.00	MT	(Battery Input)	456KC	22.5	54.3	3/4	2	3/4 x 3/4
16-6869	3.00	MT	(Battery Output)	456KC	22.5	58.0	3/4	2	3/4 x 3/4
16-6678	3.00	MT	ACDC Input/Output	456KC	16.6	41.1	3/4	2	3/4 x 3/4
16-5740	3.50	MT	Input	456KC	8.4	20.0	1-3/8	3-1/2	1-3/8 x 1-3/8
16-6131	3.50	MT	Interstage	456KC	6.9	13.3	1-3/8	3-1/2	1-3/8 x 1-3/8
16-5742	3.00	MT	Output	456KC	13.8	38.0	1-3/8	3-1/2	1-3/8 x 1-3/8

### MINIATURE I.F.'S - PERMEABILITY TUNED

PART NO	LIST PRICE	FIG	USE	PEAK FACTORY SETTING	SELECTIVITY		MTG	DIMENSIONS	
					2X	10X		H	W x D
16-6800	\$ 2.50	KT	Input-Interstage	456KC	16	34	1/2	1-1/2	1/2 x 1/2
16-6801	2.50	KT	Output	456KC	18	38	1/2	1-1/2	1/2 x 1/2
16-6752	2.50	UM	Input	262KC	12	35	3/4 -1-1/2	2	3/4 x 3/4
16-6754	2.60	UM	Output	262KC	18	45	3/4 -1-1/2	2	3/4 x 3/4
16-6756	2.75	PW	Input or Output	262KC	12	35	Snap	1-3/4	3/4 x 3/4
16-6758	2.20	UM	Input or Output	456KC	14	38	3/4 -1-1/2	2	3/4 x 3/4
16-6770	2.30	UM	Output	456KC	18	42	3/4 -1-1/2	2	3/4 x 3/4
16-6780	2.40	PW	Input or Output	456KC	14	38	Snap	2	3/4 x 3/4

## ANTENNA - RF - OSCILLATOR

### ADJUSTABLE INDUCTANCE COILS

PART NO	LIST PRICE	FIG	USE	MTG	DIMENSIONS	
					H	W x D
14-1075	\$ 2.20	IF	Antenna Coil	5/16 hole	1-5/8	5/8 Dia.
14-1076	2.20	IF	RF Coil	5/16 hole	1-5/8	5/8 Dia.
14-1077	3.00	IF	Oscillator Coil	5/16 hole	1-1/4	5/8 Dia.
14-7413	3.00	AE	Antenna Coil	1-3/4	2-1/2	1-3/4 x 1-3/4
14-7558	3.00	AE	RF Coil	1-3/4	2-1/2	1-3/4 x 1-3/4
14-7560	3.00	AE	Oscillator Coil	1-3/4	2-1/2	1-3/4 x 1-3/4
14-1410	2.00	UM	Antenna Coil	Clip	2	3/4 x 3/4
14-1411	2.00	UM	RF Coil	Clip	2	3/4 x 3/4
14-1412	2.00	UM	Oscillator Coil	Clip	2	3/4 x 3/4
14-4034	2.00	PC	Adj. Oscillator Coil 450KC I.F. 350 UUFDPadder	3-1/6 hole	1-1/8	1 x 1
14-1040	2.50	PT	Adj. Oscillator Coil 456KC I.F.	1/4 hole	1-7/8	5/8" Dia.
14-1060	2.50	PT	Adj. Oscillator Coil 456KC I.F.	1/4 hole	1-3/4	3/4" Dia.
14-1071	1.75	MF	Antenna Coil	Leads	1-1/2	3/8
14-1072	1.75	MF	R.F. Coil	Leads	1-1/2	1/2
14-1073	1.75	MF	Oscillator Coil (Pentagrid Converter 456KC)	Leads	1	3/8
14-1074	1.75	MF	Oscillator Coil ( Battery Type 456KC)	Leads	1	3/8

### "PENTAGRID" OSCILLATOR COILS

PART NO	LIST PRICE	FIG	USE	MTG	DIMENSIONS	
					H	W x D
14-1033	\$ 1.75	SM	With 420 UUFDC Condenser and Padder	1/8 hole	1	3/4 Dia.
14-1033	1.75	SM	With 162 UUFDC "Cut" Section Condenser	1/8 hole	1	3/4 Dia.
14-1035	2.25	PT	"Adjustable"-May be adjusted to track with IF Amplifier between 175 and 500 KC with various Tuning Condensers	1/4 hole	1-1/2	3/4 Dia.

### AIR CORE RF CHOKES

PART NO	LIST PRICE	FIG.	INDUCTANCE MH	DC RES OHMS	CURRENT CAPAC	MTG	DIMENSIONS	
							H	W x D
19-1894	.90	BC	2.5	40	20	6-32 hole	7/8	1-1/8 Dia.
19-4551	.90	BC	5.5	57.5	20	6-32 hole	7/8	1-1/8 Dia.
19-2078	.90	BC	8	75	20	6-32 hole	7/8	1-1/8 Dia.
19-8770	.90	BC	10	82.5	20	6-32 hole	7/8	1-1/8 Dia.
19-1995	.90	BC	16	108	20	6-32 hole	7/8	1-1/8 Dia.
19-1991	1.00	BC	20	140	20	6-32 hole	7/8	1-1/8 Dia.
19-2330	1.30	BC	30	159	20	6-32 hole	7/8	1-1/8 Dia.
19-3247	1.40	BC	60	258	20	6-32 hole	7/8	1-1/8 Dia.
19-2709	1.40	BC	80	372	16	6-32 hole	7/8	1-1/8 Dia.



# BURNELL Adjustoroid®

## VARIABLE TOROIDAL INDUCTORS

Now the advantages of the Rotoroid principle of inductance variation—simplicity, stability, linearity, and high “Q”—can be realized economically in the numerous applications where toroid with a limited variation of inductance is desired. Using similar construction to the Rotoroid, the Adjustoroid allows a total inductance variation of approx. 10%.



## PRICE LIST

### WILL MEET MIL-E-15305A SPECIFICATIONS

AT-6 Height: 1" • Diameter: 1-1/16"		AT-10 Height: 1 1/4" • Diameter: 1 1/4"		AT-11 45/64" Square • Height 3/4"	
IND. MHY	NET PRICE	IND. MHY	NET PRICE	IND. MHY	NET PRICE
1	\$ 7.45	1	\$ 8.25	1	\$ 6.35
5	7.45	5	8.25	5	6.35
10	7.45	10	8.25	10	6.35
20	7.70	20	8.25	20	6.60
30	8.00	30	8.25	30	6.90
50	8.25	50	8.25	50	7.15
100	9.25	100	8.50	100	8.15
250	9.85	250	8.80	250	8.75
500	10.50	500	9.10	500	9.40
		750	9.35	750	10.00
				1000	10.25
				1500	10.60
				2000	11.00

AT-0 Height: 1" • Diameter: 1-1/16" SEE TC-0 CURVE		AT-4 Height: 1 1/4" • Diameter: 1 1/4" SEE TC-4 CURVE	
IND. MHY	NET PRICE	IND. MHY	NET PRICE
1	\$ 6.00	1	\$ 7.70
5	6.00	5	7.70
10	6.00	10	7.70
20	6.00	20	7.70
30	6.00	30	7.70
50	6.00	50	7.70
100	6.35	100	8.00
250	6.60	250	8.25
500	6.90	500	8.50
750	7.15	750	8.80
1000	7.45	1000	9.10
1500	7.70	1500	9.35
2000	8.00	2000	9.65
3000	8.50	3000	9.90
		4000	10.15
		5000	10.45
		6000	10.75
		7000	11.00
		7500	11.25
		10 HYS	11.55

AT-12 45/64" Square • Height 3/4"	
IND. MHY	NET PRICE
1	\$ 6.35
5	6.35
10	6.35
20	6.60
30	6.90
50	7.15
100	8.15
250	8.75
500	9.40

Special Taps available at percentage of turns or inductance at \$.75 additional

Other values are readily available.

Write for Adjustoroid

Technical Brochure which gives detailed information.



**BURNELL & CO., INC.**

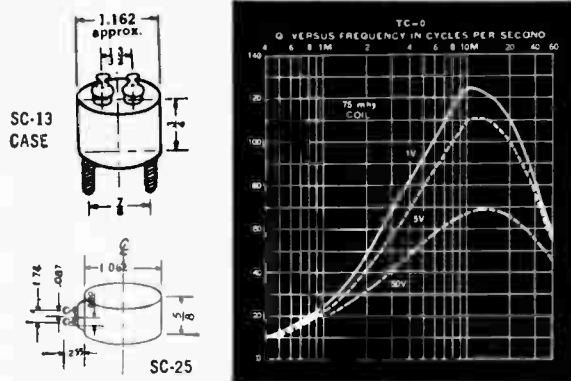
PELHAM MANOR, NEW YORK  
PACIFIC DIVISION: South Pasadena, Calif.  
First in Toroids, Filters and Related Networks



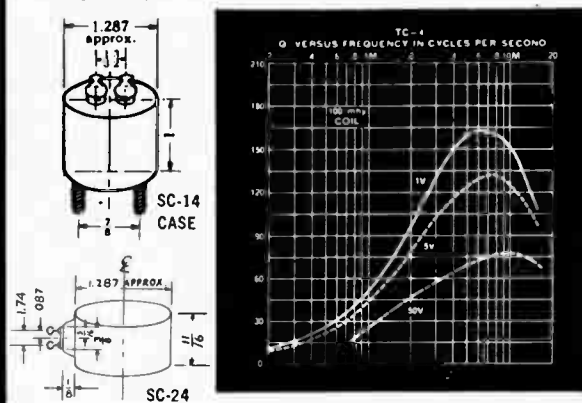
# BURNELL TOROIDAL INDUCTORS

Write for Catalogue

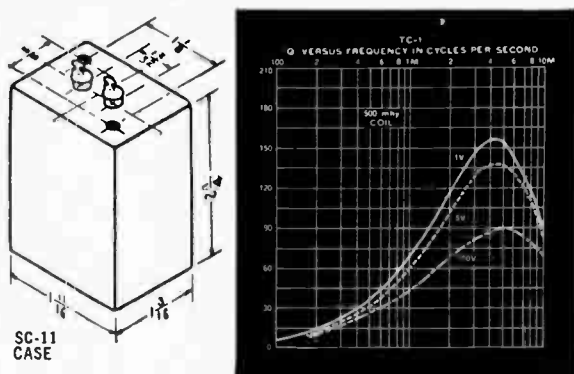
**TC-0**—Frequency Range 1 KC to 20 KC. Inductance Range .001 to 3 HYS. Nominal coil size  $\frac{5}{8} \times 1\frac{1}{4}$ .



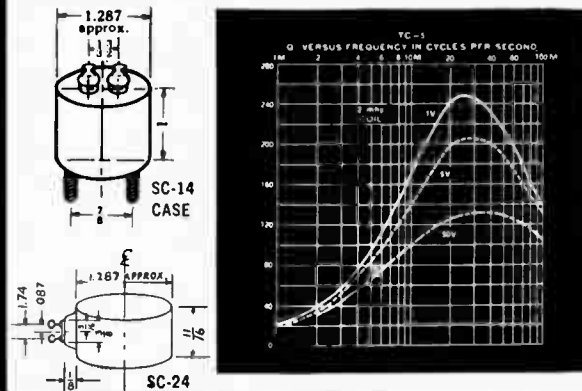
**TC-4**—Frequency Range same as TC-1. Inductance Range .001 to 10 HYS. Nominal coil size  $1\frac{1}{32} \times 1\frac{1}{32}$ .



**TC-1**—Frequency Range 400 CPS to 10 KC. Inductance Range .001 to 15 HYS. Nominal coil size  $1\frac{1}{8} \times \frac{5}{8}$ .



**TC-5**—Frequency Range 1 KC to 100 KC. Inductance Range .001 to 750 MHY. Nominal coil size  $1\frac{1}{32} \times 1\frac{1}{32}$ .



## PRICE LIST

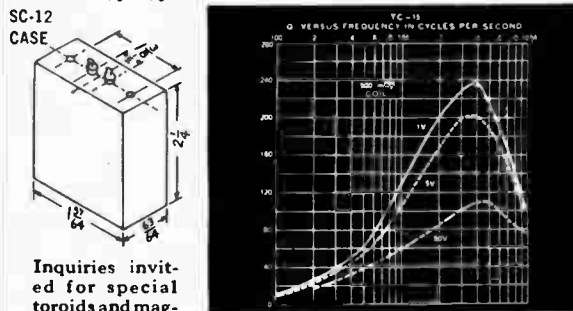
TC-0		TC-4		TC-15	
IND. MHY	NET PRICE	IND. MHY	NET PRICE	IND. MHY	NET PRICE
1	\$ 5.30	1	\$ 6.25	1	\$ 7.45
10	5.30	10	6.25	10	7.45
20	5.30	20	6.25	20	7.45
30	5.40	30	6.25	30	7.45
50	5.50	50	6.25	50	7.45
100	5.60	100	6.45	100	7.60
250	5.85	250	6.85	250	7.95
500	6.25	500	7.15	500	8.45
750	6.70	750	7.40	750	8.70
1000	6.90	1000	7.60	1000	9.20
1500	7.15	1500	8.00	1500	9.70
2000	7.40	2000	8.45	2000	10.35
		3000	8.65	3000	11.25
		4000	9.05	4000	11.85
		5000	9.30	5000	12.10
		6000	9.55	6000	12.65
		7000	9.85	7000	12.90
		10 HYS	10.30	10 HYS	13.60
				12.5 HYS	14.25
				15 HYS	14.90
				17.5 HYS	15.50
				20 HYS	16.20
				30 HYS	17.50
				50 HYS	20.00
				75 HYS	24.15
				100 HYS	28.45
				125 HYS	31.00
				add \$.50 for each tap.	

**TC-1**

IND. MHY	NET PRICE
1	\$ 6.25
10	6.25
20	6.25
30	6.25
50	6.25
100	6.45
250	6.85
500	7.15
750	7.40
1000	7.60
1500	8.00
2000	8.45
3000	8.65
4000	9.05
5000	9.30
6000	9.55
7000	9.85
10 HYS	10.30
12.5 HYS	10.65
15 HYS	10.95

Other values readily available. All prices for hermetically sealed coils. For uncased coils subtract \$1.00 each.

**TC-15**—Frequency Range 100 to 5000 CPS. Inductance Range .001 to 125 HYS. Nominal coil size  $1\frac{1}{8} \times \frac{5}{8}$ .



Inquiries invited for special toroids and magnetic amplifier coils.

Toroids are available in a wide variety of finishes including several molded types.



**BURNELL & CO., INC.**

PELHAM MANOR, NEW YORK  
PACIFIC DIVISION: South Pasadena, Calif.

First in Toroids, Filters and Related Networks

# BURNELL FILTERS

All Burnell Filters employ the highest quality toroids and stabilized capacitor components. They have been designed to withstand the rigorous service conditions at communications stations throughout the world...and to comply with the requirements of the MIL-T-27 Government Specifications.

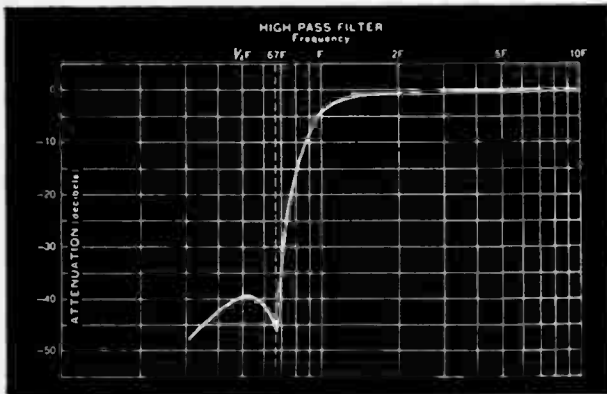
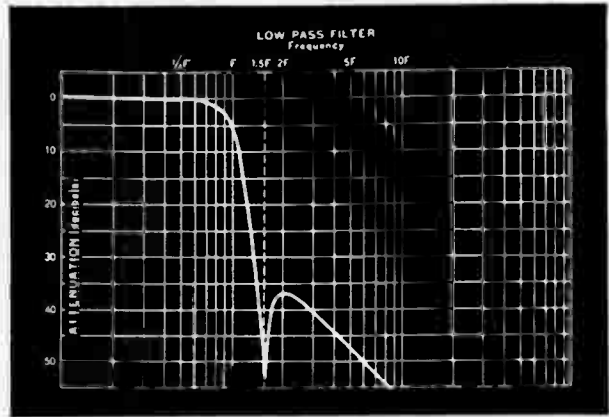
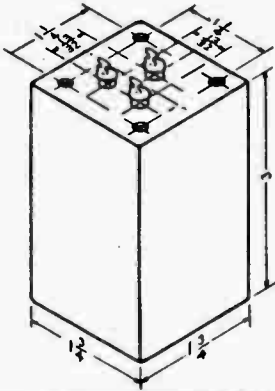
## TC-L LOW PASS FILTERS\*

600 ohm impedance  
up to 350 cycles—  
\$36.00 NET PRICE

10,000 ohm impedance  
up to 350 cycles—  
\$34.00 NET PRICE

All filters above 400  
cycles, either 600 or  
10,000 impedance—  
\$32.00 NET PRICE

**Important:** Specify  
impedance when ordering.



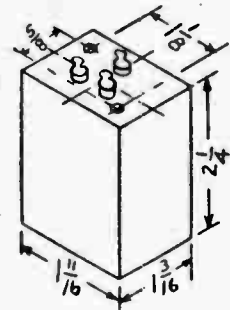
## TC-H HIGH PASS FILTERS\*

600 ohm impedance  
up to 350 cycles—  
\$34.00 NET PRICE

10,000 ohm impedance  
up to 350 cycles—  
\$34.00 NET PRICE

All filters above 400  
cycles, either 600 or  
10,000 impedance—  
\$32.00 NET PRICE

**Important:** Specify  
impedance when ordering.



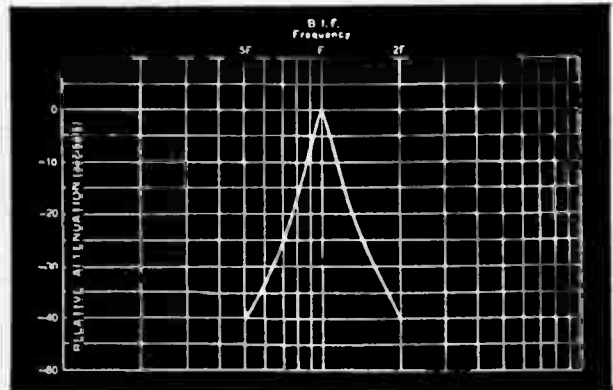
\*Available on various cut-off frequencies from 60 to 20,000 cycles.

## B.I.F. (Band Pass Interstage Filters)

This series of interstage band pass filters will be of interest to project and design engineers to whom the time required for specially designed filters is prohibitive. A stock supply will be maintained for most commonly used center frequencies\*\* between 60 and 50,000 cycles. The filter is designed to operate between the triode plate and the grid of a tube and provides a voltage gain of approximately 6DB. Filters are hermetically sealed. Small size permits use in compact or even miniaturized equipment. Dimensions are  $1\frac{3}{16}$ " x  $1\frac{1}{16}$ " x  $2\frac{3}{4}$ ". When ordering, specify BIF.....Cycles.

B/W =  $\pm 3\%$                       Z IN = 10 K ohms  
40 db/octave                      Z Out = to grid

BIF Net Price \$24.00 Each



\*\*Frequencies in cycles available from stock: 60, 100, 120, 200, 300, 400, 500, 750, 1000, 1500, 2000, 2500, 3000, 5000, 7500, 10 KC, 20 KC, 25 KC, 30 KC, 40 KC and 50 KC. Special frequencies not listed are available with minimum delay. Catalog on additional Burnell products available upon request.



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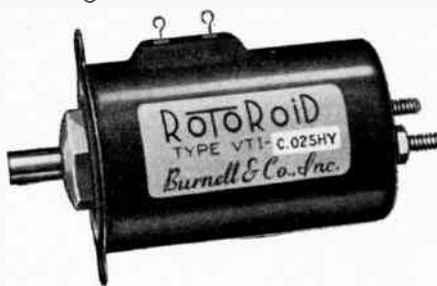
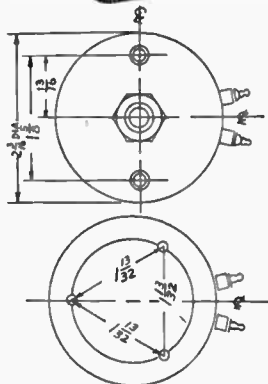
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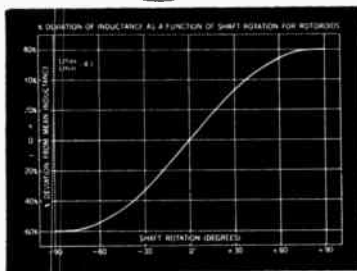
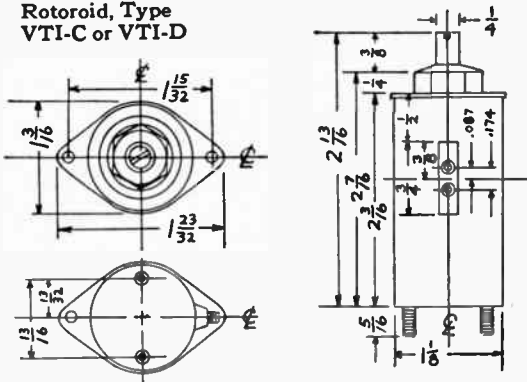
# BURNELL ROTOROID®



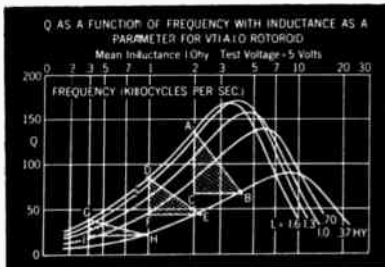
Standard-Size Rotoroid, Type VTI-A or VTI-B



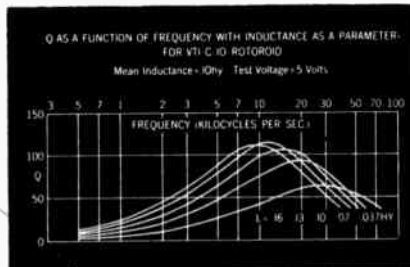
Miniature Rotoroid, Type VTI-C or VTI-D



Induction variation as function of shaft rotation for VTI-A and VTI-B units. Inductance ratio 4:1.



Variation in Q as a function of inductance and frequency for VTI-A-1.0. Mean inductance is 1.0 Hy.



Variation in Q as a function of inductance and frequency for VTI-C-10. Mean inductance is .10 Hy.

## NOMINAL INDUCTANCE VALUES\*

(available from stock)

VTI-A (TC-16 Core)			VTI-B (TC-3 Core)			VTI-C (TC-0 Core)			VTI-D (TC-6 Core)		
10.0	Hys.	\$24.00	.5	Hys.	\$17.90	3.2	Hys.	\$14.50	.5	Hys.	\$15.50
3.2	"	20.50	.32	"	17.35	1.0	"	12.95	.32	"	14.90
1.0	"	18.50	.1	"	16.95	.32	"	12.00	.1	"	14.25
.32	"	17.35	.032	"	16.50	.1	"	11.85	.032	"	12.65
.1	"	16.95	.01	"	16.50	.032	"	11.25	.01	"	12.10
.032	"	16.50	.0032	"	16.50	.01	"	11.25	.0032	"	11.85
.01	"	16.50	.001	"	16.50	.0032	"	11.25	.001	"	11.85
.0032	"	16.50	.00032	"	16.50	.001	"	11.25	.00032	"	11.85
.0010	"	16.50									

Add \$.50 for each tap.



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Inquiries invited on "ROTOROIDs" with special features such as taps, additional windings, tracking characteristics, etc. Refer to Catalog 103 data for information on characteristics.

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The MASTER — 22nd Edition

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# AMATEUR EQUIPMENT



## CODE PRACTICE OSCILLATOR AND MONITOR CPO-128A



The BUD CODEMASTER is a real money-saver. No longer do you have to consider your code practice oscillator useless after you have learned the code. A flip of the switch and you have a good CW monitor. This is a really versatile instrument. It has a 4" built-in permanent magnetic dynamic speaker and will operate up to twenty earphones. 2 tubes—50C5 and 35W4. A volume control, and pitch control permit adjustments to suit individual requirements.

Any number of keys can be connected in parallel to the oscillator for group practice.

This unit will operate on 110 volts A.C. or D.C. An external speaker may be plugged in without the use of an output transformer. All controls are placed on the front of the unit and all jacks are in the rear. The unit is 6 1/2" high, 5 1/2" wide and 3 1/2" deep. It is finished in Grey Hammertone enamel with red lettering.

Catalog No.  
CPO-128A

Dealer Cost  
\$19.13

## CODE PRACTICE OSCILLATOR AND MONITOR-EARPHONE MODEL CPO-130-A



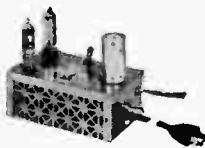
This unit is similar to the CPO-128A. The difference is that the 4" speaker is not included. The monitor feature, however, is included. A phone jack is provided for the output and as many as 20 pairs of phones and keys can be operated at one time for classroom operation. This model will also operate a permanent magnetic dynamic speaker.

Plug the voice coil leads into the phone jack—no output transformer is needed. Size of case is 5 1/2" wide, 4 1/2" high and 3 1/2" deep.

Catalog No.  
CPO-130A

Dealer Cost  
\$16.50

## FREQUENCY CALIBRATOR FCC-90A



To comply with federal regulations, some means of accurately checking transmitter frequency must be available at every "ham" station. The BUD FCC-90A consists of a 100 kc. crystal oscillator that is Completely Self-Powered and has 2 tubes. It will give 100 kc. check points on all bands up to 30 megacycles. This enables the operator to determine exact band edges.

No extra wiring is required to install this unit. Plug the FCC-90A into a 110 volt receptacle, connect the pick-up lead to the antenna binding post of the receiver and the unit is ready for operation. An ON-OFF switch and a STANDBY switch are provided.

Catalog No.  
FCC-90A

Dealer Cost  
\$19.50

## WIRELESS PHONO OSCILLATOR WO-6A



This compact unit is designed to enable any standard record player to be easily converted to wireless operation. Record reproduction is then possible through a regular radio receiver without the necessity of cumbersome inter-connecting wires. Installation is simple according to the complete instructions furnished with each unit.

The circuit incorporated in the Wireless Oscillator is of such design that faithful reproduction is assured. The unit comes completely wired and tested including tubes and is finished in black enamel. Operates from 115 volts AC or DC. Frequency range is approximately 1100-2150 K.C. Actual weight 1 lb.

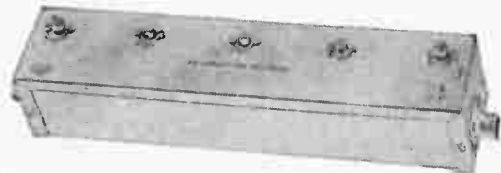
Catalog No.  
WO-6A

Dealer Cost  
\$10.80

## FILTERS TO REDUCE OR ELIMINATE TELEVISION INTERFERENCE

The sources of television interference are most often short wave broadcasting stations, amateur radio transmitting stations, diathermy equipment, X-ray equipment, automotive ignition noises or similar sources. The basic problem of eliminating this interference is that of rejection of the signals received from these sources.

### LF-601 LOW PASS FILTER



Interference to television receiver reception caused by transmissions from an amateur station can be caused by harmonics or by shock from the transmitter. The shock from the transmitter fundamental can be cured at the television receiver with a Bud HF-600 high pass filter. Harmonics can be greatly reduced or eliminated at the transmitter by use of a Bud LF-601 low pass filter.

The LF-601 high attenuation low pass filter has the following characteristics:

1. Minimum attenuation of 35 decibels on all frequencies above 54 megacycles and a minimum of 93 decibels above 70 megacycles.
2. Maximum rejection is adjustable from 55 to 90 megacycles. This tunable feature provides two slots at least 100 decibels down.
3. The cut-off frequency is 42 megacycles.
4. The unit will easily handle a full kilowatt modulated on a reasonably flat line.
5. The insertion loss is less than one DB.
6. Since the design of this filter provides an adjustable feature, the unit can be used with either 62 ohm or 72 ohm coax.
7. Each inductance is in an individually shielded compartment.
8. All capacitors used are variable.

Catalog No.  
LF-601

Dealer Cost  
\$21.00

### HF-600 HIGH PASS FILTER



The HF-600 high pass filter is designed to have a cut off frequency at 42 megacycles, thus this filter rejects signals from 0 to 42 megacycles. It is within this range that the majority of signals causing interference would be received. Since there is no attenuation above 42 megacycles, picture strength or quality is not affected.

This unit is easily installed and complete installation instructions are included. The filter is housed in an attractive aluminum case 3 1/4" x 2 1/8" x 1 1/8".

Catalog No.  
HF-600

Dealer Cost  
\$5.25

### GIMIX GX-79



The Bud Gimix is a multipurpose unit requiring no batteries or power supply. It is calibrated for use on the 10, 15, 20, 40 and 80 meter amateur bands. No additional coils are needed as the one coil does the work on all bands. It can be used as a Wave-Meter, a Monitor, a Field Strength Indicator, a Carrier Shift Indicator and a sensitive Neutralizing Instrument. Operating instructions supplied with each unit.

Catalog No.  
GX-79

Dealer Cost  
\$9.48

Prices subject to change without notice.

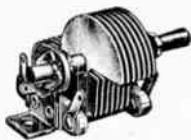
Only a few of many BUD Products are shown. Write for complete catalog.



# VARIABLE CONDENSERS



## BUD MIDGET CONDENSERS



Small size, sturdy construction and high mechanical and electrical efficiency are the outstanding features. Insulation used is Steatite. Rotor and Stator plates are brass and are electro-soldered to their respective rods. All metal parts are cadmium plated. These condensers have both front and rear bearings and are furnished in either mid-line type plates (straight line capacity).

(straight line wave length), or semi-circular plates (straight line capacity).

### SEMI-CIRCULAR TYPE — DOUBLE BEARING

Catalog Number	Cap. in MMFD. Max. Min.	Air Gap	Number Plates	Dealer Cost
MC-1850	15 3	.024"	3	\$1.82
MC-1852	33 4	.024"	5	1.88
MC-1853	50 5	.024"	7	2.48
MC-1855	100 7	.024"	14	2.70
MC-1856	140 7	.024"	19	2.78
MC-1858	190 9	.024"	27	3.00
MC-1859	235 10	.024"	33	3.45
MC-1860	300 12	.024"	43	2.40
MC-1861	15 4	.060"	5	2.48
MC-1862	35 5	.060"	11	2.48
MC-1865	100 12	.060"	31	3.25

### MID-LINE TYPE — DOUBLE BEARING

Catalog Number	Cap. in MMFD. Max. Min.	Air Gap	Number Plates	Dealer Cost
MC-900	25 4	.024"	4	\$2.28
MC-902	35 5	.024"	6	2.31
MC-903	50 6	.024"	8	2.43
MC-904	75 7	.024"	11	2.54
MC-905	100 7	.024"	15	2.76
MC-906	140 7	.024"	20	3.00
MC-909	250 11	.024"	36	3.36
MC-910	300 13	.024"	43	3.66

## BUD FEED-THROUGH AND BASE MOUNTED NEUTRALIZING CONDENSERS



In circuits utilizing tubes with the grid lead terminated in the base a feed-through type of neutralizing condenser is particularly suited. One hole is required for mounting of feed-through condensers. Neutralizing condenser illustrated is feed-through type. Plates are made of aluminum rounded at edges to cut down losses. After proper tuning is attained, movable plate can be locked with the knurled nut.

No. 852 is ideal for popular low power beam tubes.

Catalog Number	Plate Diameter	Size Hole for Mtg.	MMFD. Capacity Max. Min.	Dealer Cost
NC-852	1"	5/16"	6 5	\$2.10
NC-853	1-27/32"	13/32"	11 1	3.00

## BUD TINY MITE PADDERS



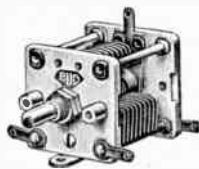
For applications requiring a constant padder capacity under all temperature and humidity conditions, these units are ideal. They lend themselves readily to I. F. transformer applications, fixed tuned circuits for exciters, ganged condenser air trimers, and plug-in-coil padding as they fit inside of standard 1 1/2" diameter coil forms. Rotor and stator assemblies are made up of brass plates (.0015" thick) and rods electrically soldered into a solid unit and then are bright cadmium plated. Insulation is Steatite. Each unit may be adjusted in capacity by either a screw-driver or a 1/4" hex. wrench.

Catalog Number	Max. Cap. MMFD.	Min. Cap. MMFD.	Air Gap	No. of Plates	Dealer Cost
LC-2076	15	2	.017"	5	\$1.65
LC-2077	25	2.5	.017"	7	1.73
LC-2078	35	3	.017"	10	1.80
LC-2079	50	3.9	.017"	14	1.95
LC-2080	75	4.5	.017"	20	2.10
LC-2081	100	5.5	.017"	27	2.25
LC-2082	140	6.5	.017"	37	2.40

## BUD TINY MITE DUAL CONDENSERS



The construction of these units is similar to the regular Tiny Mite Tuning Condensers. The two end pieces are held together firmly with three tie-rods. A separate round plate is soldered on rotor rod to shield the two stator sections. Large surface front and rear sleeve bearings, provide smooth rotation.



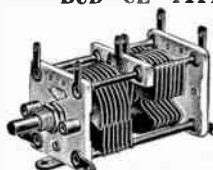
## BUD "CE" MIDGET CONDENSERS

These Midget Condensers were designed to meet the rigid requirements in design of efficient high frequency electronic devices and precision laboratory equipment. Brass rotor and stator plate stacks are assembled into permanent units by means of electro-soldering, which assures long life and accurate plate spacing. End-plates of Steatite

insulate the mounting bushings and angles from the rotor and stator assemblies. A large front sleeve bearing provides for smooth rotation. Special wiper contact provides noise-free tuning. All metal parts are cadmium plated. Rotor plates are semi-circular shaped. For either panel or base mounting.

Catalog Number	Max. Cap. MMFD.	Min. Cap. MMFD.	Air Gap	No. of Plates	Over-all Length	Dealer Cost
CE-2001	35	6	.030"	7	2-23/32"	\$3.00
CE-2002	50	7	.030"	9	2-27/32"	3.42
CE-2004	100	9	.030"	18	3-11/32"	4.05
CE-2005	150	10	.030"	27	3-13/16"	4.13
CE-2006	200	11	.030"	35	4 1/4"	4.80
CE-2007	250	12	.030"	44	4 3/4"	5.40
CE-2008	300	15	.030"	52	5-3/16"	5.48
CE-2015	100	13	.060"	31	4-29/32"	4.65

## BUD "CE" TYPE DUAL MIDGET CONDENSERS



These well constructed dual condensers are similar in design to the double-bearing "CE" types. They feature a rotor wiping contact placed at center of the rotor assembly to assure maximum efficiency at high frequency. Opposed rotor construction assures perfect counterbalance and provides even torque at any position of rotation. Steatite insulation eliminates closed induction loop in frame.

Catalog Number	Max. Cap. MMFD.	Min. Cap. MMFD.	No. of Plates	Air Gap	Distance Behind Panel	Dealer Cost
CE-2033	50	7	9	.030"	3 1/4"	\$4.50
CE-2035	100	9	18	.030"	4-3/32"	5.63
CE-2036	150	10	27	.030"	5-3/16"	6.45

## BUD TINY MITE TUNING CONDENSERS SINGLE SECTION



This series of condensers has been designed for applications where space or weight are limiting factors and for tuning of high frequency circuits. Rigid construction, close fitting bearing, positive rotor contact and Steatite insulation are the outstanding features. Cadmium plated, soldered, brass plates and rods insure high frequency efficiency.

Catalog Number	Max. Cap. MMFD.	Min. Cap. MMFD.	Air Gap	No. of Plates	Dealer Cost
LC-1640	3	2.5	.017"	3	\$1.71
LC-1641	15	3	.017"	5	1.82
LC-1642	25	4	.017"	9	1.95
LC-1643	35	5	.017"	13	1.95
LC-1644	50	6	.017"	19	1.83
LC-1645	75	7	.017"	29	2.33
LC-1646	100	9	.017"	37	2.40
LC-1650	25	5.5	.037"	17	2.01
LC-1655*	25	5	.073"	27	2.90

\*Denotes double bearing.

## NEW BUD THREE-GANG TINY MITE CONDENSERS



Hams, Radio Constructors and Experimenters can find many uses for these compact, three-gang condensers. Desirably particularly for high frequency use, they are adaptable for use in converters, preselectors and receivers covering the Amateur, Television and F.M. bands. Well constructed with soldered brass plates and ceramic brackets, Rotor shaft extended 1/4" at rear. Height 1-5/16", Width 1-3/16". Length behind panel 3/8". Mounting holes 2-3/16" apart.

Catalog Number	Cap. Per Section Max. Min.	No. of Plates Per Section	Dealer Cost
LC-1845	25 6	5	\$5.25
LC-1846	17 5	7	5.85
LC-1847	25 6	9	6.23

Catalog Number	Max. MMFD.	Min. MMFD.	Air Gap	No. Plates Per Section	Over all Length	Dealer Cost
LC-1659	8	2.5	.017"	3	2-17/32"	\$2.90
LC-1660	15	3	.017"	5	2-21/32"	3.30
LC-1661	25	4	.017"	9	2-15/16"	3.93
LC-1662	50	6	.017"	19	3-5/8"	4.35
LC-1663	100	9	.017"	37	4-27/32"	5.33
LC-1664	10	4	.037"	7	3-1/16"	3.51
LC-1665	15	5	.037"	11	3-17/32"	4.26

Prices subject to change without notice.

Only a few of many BUD Products are shown. Write for complete catalog.



# CONDENSERS



## BUTTERFLY TRANSMITTER CONDENSERS



These Butterfly condensers are unequalled for mechanical and electrical balance in push-pull amplifier circuits. Where space behind the panel will not permit the use of our Giant or Master condensers, these dual condensers are ideal.

Rotor and Stator plates are made from .062" thick, highly polished aluminum with all edges rounded and surfaces highly polished to minimize corona loss and danger of peak voltage flash-over Steatite bars are used as insulators.

These condensers are so designed that a pair of single plate neutralizing condensers can be fastened to the end plate. Brackets for mounting coil jack bars are furnished with the condensers.

All condensers that have an air gap of .5" are furnished with brackets for kilowatt coils and the condensers that have .3" air gap are furnished with brackets for the mounting of 500 watt coils. The height of the condensers is 6 1/4" and the width is 7".

.500" air gap available in 25 mmfd., 33 mmfd., 54 mmfd., 70 mmfd. and 86 mmfd. capacities.

.300" air gap available in 31 mmfd., 51 mmfd., 71 mmfd., 92 mmfd. and 114 mmfd. capacities.

For pricing information write our factory since these are custom built units.

## GIANT TRANSMITTER CONDENSERS



BUD GIANT TRANSMITTER CONDENSERS are built with a sturdy frame consisting of 3/16" thick aluminum end plates, connected by 1/2" diameter duraluminum rods. Formed brackets at top and bottom of end plates provide for mounting these units, and permit placing of associated inductances directly on the condenser.

Rotor and stator plates are accurately stamped from 0.064" thick highly polished aluminum with all edges rounded to minimize corona loss and danger of peak-voltage flash-over. The plates are separated by accurately machined duraluminum spacers that insure a constant air-gap throughout the entire length of the condenser.

The large two-finger rotor-contact spring, made from plated spring brass, assures positive contact with noise-free operation. Steatite bars insulate the stator, and are placed well outside the electrostatic field to keep dielectric losses at a minimum.

Available in both single and dual section.

In single section: .250" air gap available in 195 mmfd., 345 mmfd. and 530 mmfd. capacities. .500" air gap available in 55 mmfd., 95 mmfd., 150 mmfd. and 255 mmfd. capacities. .750 air gap available in 50 mmfd., 75 mmfd., 110 mmfd. and 160 mmfd. capacities. 1" air gap available in 55 mmfd., 85 mmfd. and 105 mmfd. capacities.

In dual section: .250" air gap available in 100 mmfd., 215 mmfd., and 320 mmfd. capacities. .500" air gap available in 55 mmfd., 80 mmfd., and 110 mmfd. capacities. .750" air gap available in 30 mmfd., 52 mmfd. and 70 mmfd. capacities. 1" air gap available in 35 mmfd. capacities.

For pricing information write our factory since these are custom built units.

## MASTER TRANSMITTING CONDENSERS



All tie-rods in this series are insulated by glazed Steatite pillars, thus completely eliminating all closed metallic loops in the condenser frame. A special outstanding feature, developed by BUD engineers, is that of placing the positive double wiping rotor contact between the two sections at the center of the rotor. These features contribute to perfect circuit balance and eliminate the majority of difficulties encountered in high frequency equipment due to parasitics, circulating currents and poor neutralization. Use BUD condensers throughout and be trouble free.

Available in both single and dual section.

In single section: .200" air gap available in 25 mmfd., 50 mmfd., 75 mmfd., 100 mmfd. and 145 mmfd. capacities. .300" air gap available in 35 mmfd., 55 mmfd., 75 mmfd. and 100 mmfd. capacities.

In dual section: .200" air gap available in 25 mmfd., 85 mmfd., 50 mmfd., 75 mmfd. and 100 mmfd. capacities. .300" air gap available in 50 mmfd. capacity.

For pricing information write our factory since these are custom built units.

## JUNIOR CONDENSERS



Electro-soldered plate assemblies are featured in the construction of these condensers. This assures correct plate spacing, overall rigidity and light weight. Losses are reduced to a minimum by this method of assembly. End plates are rigidly constructed. The frame has formed angles on top and bottom for mounting the condenser in any position which allows associated tuning inductance to be mounted on the condenser frame. The edges of the brass rotor and stator plates are

rounded and the assemblies are cadmium plated. Alsismag insulation is used throughout. Large surface front sleeve bearing and ball and cup rear bearings provide constantly smooth operation. A two finger spring brass pressure contact wiper assures noise-free and positive rotor contact at all times. The low minimum capacities of these units make them especially suitable for multi-band applications where a high ratio of maximum to minimum capacity is desired.

Available in both single and dual section.

In single section: .051" air gap available in 50 mmfd., 100 mmfd., 145 mmfd., 250 mmfd. and 340 mmfd. capacities. .078" air gap available in 25 mmfd., 55 mmfd., 110 mmfd., 150 mmfd., 190 mmfd. and 245 mmfd. capacities. .144" air gap available in 20 mmfd., 55 mmfd., 80 mmfd. and 105 mmfd. capacities. .175" air gap available in 18 mmfd., 40 mmfd., 55 mmfd. and 100 mmfd. capacities.

In dual section: .051" air gap available in 20 mmfd., 50 mmfd., 70 mmfd., 145 mmfd., 200 mmfd., and 250 mmfd. capacities. .078" air gap available in 25 mmfd., 55 mmfd., 80 mmfd., 110 mmfd. and 150 mmfd. capacities. .144" air gap available in 20 mmfd., 40 mmfd. and 55 mmfd. capacities. .175" air gap available in 18 mmfd. and 40 mmfd. capacities.

For pricing information write our factory since these are custom built units.

For complete information on these and other BUD Sheet Metal Products see pages K-601 to K-613.

## UTILITY CABINETS

A large number of sizes available makes this line useful for all types of electronic equipment. These cabinets have two removable panels for easy accessibility. Units prefixed by CU are made from cold rolled steel and are finished in black wrinkle or light grey hammertone. Those prefixed by AU are made from high grade sheet aluminum and have natural finish or light grey hammertone.



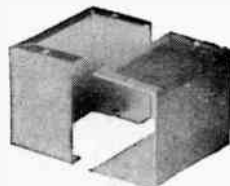
Cat. No.	STEEL (Black Wrinkle or Grey Hammertone)			Dealer Cost
	Depth	Width	Height	
CU-883	2"	4"	4"	\$1.04
CU-728	2"	5"	4"	1.14
CU-729	4"	5"	6"	1.38
CU-1098	6"	6"	6"	1.87
CU-1099	5"	6"	9"	2.08
CU-879	7"	8"	10"	3.00
CU-1124	6"	7"	12"	2.94
CU-880	8"	10"	10"	3.60
CU-881	8"	11"	12"	4.13
CU-882	7"	9"	15"	4.31

Cat. No.	ALUMINUM (Natural or Grey Hammertone)			Dealer Cost
	Depth	Width	Height	
AU-1083	2"	4"	4"	\$1.29
AU-1028	2"	5"	4"	1.37
AU-1029	4"	5"	6"	1.67
AU-1039	6"	6"	6"	1.85
AU-1048	5"	6"	9"	2.35

## MINIBOXES

There are thousands of uses in the field of radio and electronics for these boxes. They are made of high quality aluminum. The design of the box permits installation of more components than would be possible in the more conventionally designed box of the same size. Construction is of the two piece type, each half forming three sides. The flange type construction assures adequate shielding. These units are available in either natural aluminum finish or grey hammertone finish.



Cat. No.	Gray Etched	Cat. No.	Length	Height	Width	Dealer Cost	
						Natural	Gray
CU-2100	CU-3000	2 1/2"	2 1/4"	1 1/2"	1 1/2"	\$.60	\$.87
CU-2101	CU-3001	3 1/2"	3 1/4"	1 1/2"	1 1/2"	\$.60	\$.87
CU-2102	CU-3002	4"	3 1/4"	1 1/2"	1 1/2"	\$.63	\$.98
CU-2103	CU-3003	4"	3 1/4"	2 1/4"	1 1/2"	\$.82	\$.98
CU-2104	CU-3004	5"	2 1/4"	2 1/4"	1 1/2"	\$.88	1.18
CU-2105	CU-3005	5"	3"	2 1/4"	1 1/2"	\$.97	1.27
CU-2106	CU-3006	5 1/2"	3"	2 1/4"	1 1/2"	\$.95	1.12
CU-2107	CU-3007	6"	3"	3"	1 1/2"	1.20	1.82
CU-2108	CU-3008	7"	3"	3"	1 1/2"	1.32	1.85
CU-2109	CU-3009	8"	3"	3 1/4"	1 1/2"	1.98	2.83
CU-2110	CU-3010	10"	3"	3 1/4"	1 1/2"	2.17	2.74
CU-2111	CU-3011	12"	3"	4"	1 1/2"	2.77	3.23
CU-2112	CU-3012	17"	5"	4"	1 1/2"	3.21	3.80
CU-2113	CU-3013	10"	2"	1 1/2"	1 1/2"	1.25	1.38
CU-2114	CU-3014	12"	2 1/2"	2 1/2"	1 1/2"	1.22	1.59
CU-2115	CU-3015	4"	3"	2 1/2"	1 1/2"	\$.82	1.13
CU-2116	CU-3016	4 1/4"	2 1/4"	2 1/2"	1 1/2"	\$.85	1.17
CU-2117	CU-3017	3 1/2"	2 1/4"	1 1/2"	1 1/2"	\$.65	1.02


Only a few of many BUD Products are shown. Write for complete catalog.



# R. F. CHOKES - COUPLINGS



## LATTICE WOUND R. F. CHOKES

 For all general purpose applications requiring a high quality choke at a reasonable price, this line finds wide acceptance. Each choke is wound from silk-covered enameled copper wire on a white ceramic bobbin. Leads are terminated with two convenient soldering lugs. Chokes can be mounted with a 6-32 screw through the center of the form, and each winding is thoroughly impregnated against moisture. The wide range of sizes fills practically every choke requirement in standard radio circuits. Choke base diam. 1-1/16". distance between ends of leads 1 1/4"


Catalog Number	Inductance mh.	D.C. Res. Ohms	Current M.A.	Height	Dealer Cost
CH-1212	2.5	28	125	11/16"	\$.63
CH-1214	5.5	46	125	11/16"	.83
CH-1215	8.	60	125	11/16"	.83
CH-1217	16.	84	125	11/16"	.83
CH-1218	30.	190	100	15/16"	.85
CH-1219	60.	279	90	15/16"	1.01
CH-1220	80.	332	80	15/16"	1.08

## TRANSMITTING CHOKES

 Here are two heavy duty R. F. Chokes that can really take it in high powered transmitter plate circuits. Each choke is wound on 9/16" dia. Steatite rod, has connection lugs and a mounting foot. All chokes have a heavy ceramic coating which prevents moisture absorption and enables them to withstand momentary overloads without collapsing the individual pies. Consists of five graduated pies wound in continuous winding. Care has been taken to prevent any of the pies from being resonant on an amateur band and to keep the distributed capacity at a minimum. Overall height 3 1/4".


Catalog Number	Inductance mh.	Current Capacity	D. C. Resistance	Dealer Cost
CH-568	2.2 mh.	1 amp.	5 ohms	\$2.70
CH-569	4.3 mh.	.6 amp.	12 ohms	3.08

## IRON CORE R. F. CHOKES

 The efficiency of any circuit requiring an R. F. choke will be definitely improved by utilizing one of these chokes with a finely divided molded metallic core. The improved "Q" possible with this construction results from the D. C. resistance of these chokes being from 40 to 50% less for a given inductance than for regular air-core types. Thus, the D. C. voltage drop through the choke is considerably less, yet the choking action is equally as good. Windings are made with silk-covered enameled wire terminated on convenient soldering lugs, and the chokes are mounted in small square shield cans measuring 1 1/4" x 1 1/4" x 1-7/16".


Catalog Number	Inductance mh.	D. C. Resist. Ohms	Current ma.	Dealer Cost
CH-1283	16.	53.	125	1.46
CH-1284	30.	82.	100	1.50
CH-1285	60.	131.	100	1.71
CH-1286	30.	163.	90	1.83
CH-1287	125.	221.	90	2.03
SH-294	Shield Can Only		....	.30

## BUD HIGH VOLTAGE FLEXIBLE COUPLINGS

 A new type spring construction in these couplings permits a wide gap between shaft connections, freedom from back-lash, and unusual flexibility. The springs are attached to glazed Steatite discs 1 1/4" in diameter and 3/16" thick, and the overall diameter of the finished coupling is 1-15/16". Coupling accommodates standard 1/4" shaft.


Catalog No.	Insulation	Dealer Cost
FC-614	Steatite	\$1.05

## BUD INSULATED FLEXIBLE COUPLINGS

 Tandem operation of two or more units is readily accomplished through the use of these couplers. Direct shaft alignment is not essential, and all couplers are made to fit 1/4" shafts.

Cat. No.	Diameter	Height	Insulation	Dir. Cost
FC-795	1-1/16"	11/16"	Ceramic	\$.50
FC-845	1-1/16"	3/4"	Bakelite	.54
FC-855	1 1/2"	11/16"	Bakelite	.54

## PIE WOUND R. F. CHOKES

 Each choke has a continuous winding of silk covered enameled copper wire and the pies constituting this winding are wound on a 1/4" diameter ceramic core. Chokes are made with both strap and wire leads. The CH-876 is a heavy duty choke intended for circuits, such as transmitter plate circuits, where high currents are present. All chokes in this series have an overall length of 1 1/2".

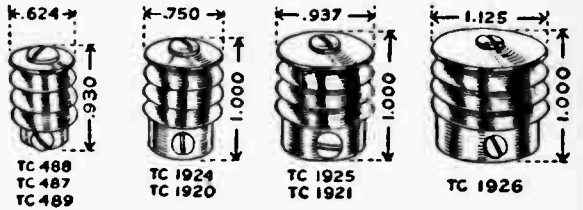
### WITH STRAP LEADS

Catalog Number	Inductance mh.	D. C. Resistance	Current Rating	Dealer Cost
CH-920S	2.5	45 ohms	125 ma	\$.63
CH-922S	5.5	60 ohms	125 ma	.75
CH-924S	10.0	78 ohms	100 ma	1.08
CH-876S	2.5	16 ohms	250 ma	.93

### WITH WIRE LEADS

Catalog Number	Inductance mh.	D. C. Resistance	Current Rating	Dealer Cost
CH-920W	2.5	45 ohms	125 ma	.63
CH-922W	5.5	60 ohms	125 ma	.75
CH-924W	10.0	78 ohms	100 ma	1.08
CH-876W	2.5	16 ohms	250 ma	.93

## HEAT RADIATING PLATE AND GRID TUBE CONNECTORS



Bud heat radiating connectors fit all sizes of industrial and transmitting vacuum tubes. These connectors serve a dual purpose, not only are they useful to make connections to plate or grid terminals, but they provide a large heat radiating surface that will dissipate heat from the glass seal and tube element. Eight sizes fit all grid and plate leads and also provide sufficient heat radiation for any tube operating in the range of 50 to 2000 watts. All radiators are machined from special aluminum rod. Edges are rounded to minimize corona loss.

Table below lists Connectors to fit various Tubes  
Cat. No. Hole Size for Lead Heat Radiating Connectors to Fit the Following Tubes Dealer Cost

Cat. No.	Hole Size for Lead	Heat Radiating Connectors to Fit the Following Tubes	Dealer Cost
TC-488	.052	3C24, 24, 24G, 25T, 27	\$.62
TC-487	.062	UH50, HK24, 304B, 829B, 832A, 834	.57
TC-489	.072	35T, 35TG, 75TH, HK254, HK257B, 484, 8001, 4E27	.54
TC-1924	.125	HK57, 152TH	.62
TC-1920	.375	4-125A, 150TH, 2-150D, 250R, 250TH, 250TL, 420A, 802, 803, 804, 807, 808 Grid, 814, 815, 828, 2E24, 2E26, 3E22, 4-65A, 4-250A, 816, 6146, 1625, 4032, 807W, 1B3GT, 6BG6G, 6CD6G	.60
TC-1925	.125	304TH, 304TL	.74
TC-1921	.570	ZB60, HF60, HF100, 111H, 211H, 203H, HF175, HF300 Grid, 100R, HK357C, 450TH, 454, 750TH, 805, 806, 808, 809, 810, 811, 812, 813, 828, 833, 866, 854, 1500T, 2000T, 1054, 5331, 5332, 8000, 8003, 8005	.65
TC-1926	.810	WL468, WL463, WL460, HF200, HF201, HF300	.89

NOTE: TC-1923 Heat Radiating Connector with hole size of .110" is still in our line and can be furnished. Dealer Cost \$ .63

Prices subject to change without notice. Only a few of many EUD Products are shown. Write for complete catalog.

FOR 26 YEARS

# BLILEY CRYSTALS

DEPENDABILITY... PRECISION PERFORMANCE  
... CRAFTSMANSHIP

★ AMATEUR ★ TV SERVICE ★ DIATHERMY  
★ SINGLE SIGNAL FILTERS ★ SHIP-TO-SHORE  
★ CITIZEN'S BAND ★ EXPERIMENTAL

AMATEUR FREQUENCIES • CRYSTAL FILTERS • STANDARD FREQUENCIES				
CODE	TYPE	APPLICATION	TOLERANCE	PRICE
E10	KV3	reference frequency 100 kc	±.005%	\$ 8.50
E11	MS433	reference frequency 1000 kc	±.005%	17.00
E11A	MC9	marker frequency 1000 kc	±.05%	8.00
E13	MC9	13.6275 mc (multiplier to 27.255 mc) CITIZEN'S RADIO SERVICE (CLASS "C")	±.04%	5.50
E13A	SR10	27.255 mc (3rd overtone crystal) CITIZEN'S RADIO SERVICE (CLASS "C")	±.04%	5.50
E14	CF3	455 kc—456 kc—465 kc Single Signal Filters	±5 kc	5.00
E15	CF6	455 kc—456 kc—465 kc Single Signal Filters	±5 kc	4.50
E17	AX2	1800-1825 kc; 1875-1900 kc; 1900-1925 kc; 1975-2000 kc	*	3.75
E18	AX2	3500-4000 kc	*	2.95
E19	AX2	7000-7425 kc; 8000-9000 kc	*	2.95
*Notes: We will supply to integral spot frequencies (no fractions) as ordered; calibration ± 500 cycles in factory test oscillator.				
E20	AX2	14-14.5 mc	±10 kc	3.95
SPOT FREQUENCIES FOR NET OPERATION				
E22	MC9	3 mc-12 mc experimental frequencies	±.03%	6.50
E22A	SR10	12 mc-27.5 mc experimental frequencies	±.03%	8.50

NOVICE BAND CRYSTALS	USE STANDARD BLILEY CRYSTALS FOR BEST PERFORMANCE					
	BAND	MULTIPLIER	CRYSTAL FREQ. RANGE	TYPE	CODE	PRICE
	80 Meters	1	3700.0 to 3750.0 kc's	AX2	E18	\$2.95
	40 Meters	2	3587.5 to 3600.0 kc's	AX2	E18	2.95
	40 Meters	1	7175.0 to 7200.0 kc's	AX2	E19	2.95
	15 Meters	1	21,100 to 21,250.0 kc's	SR10	E22A	8.50
	15 Meters	3	7033.33 to 7083.33 kc's	AX2	E19	2.95
	15 Meters	6	3516.66 to 3541.66 kc's	AX2	E18	2.95
	2 Meters	6	24,166.66 to 24,500.0 kc's	SR10	E22A	8.50



**SR10**  
CODE NO. E2 E4 E22A E13A

**KV3**  
CODE NO. E10

**MS433**  
CODE NO. E11

**MC9**  
CODE NO. E3 E8 E9 E11A E13 E22

**CF3**  
CODE NO. E14

**CF6**  
CODE NO. E15

**AX2**  
CODE NO. E17 THRU E20

**MC7**  
CODE NO. E5

**SR8**  
CODE NO. E7

**SR5**  
CODE NO. E6

**DIMENSIONS**

CODE	TYPE	CASE LENGTH	WIDTH	THICKNESS	PIN SIZE	PIN SPACE
E10	KV3	1 3/4"	1 3/16" (dia.)	----	.093"	.486"
E11	MS433	1 31/64"	1 33/64" (dia.)	----	.093"	OCTAL
E3, E8, E9, E11A, E13, E22	MC9	1 11/64"	1 3/16"	3/16"	.093"	.486"
E2, E4, E13A, E22A	SR10	31/64"	3/4"	1 1/64"	.093"	.486"
E14	CF3	1 15/64"	1 3/8"	3/4"	.125"	.750"
E15	CF6	1 7/64"	1 3/8"	.695"	----	----
E17, E18, E19, E20	AX2	1 5/16"	1 1/8"	3/16"	.093"	.486"
E5	MC7	1 33/64"	1 1/4"	21/64"	.125"	.500"
E6	SR5	1 1/4"	1 3/4"	3/16"	.125"	.500"
E7	SR8	1 1/4"	1 3/8"	3/16"	.093"	.486"

BLILEY ELECTRIC CO., UNION STATION BUILDING, ERIE, PA.



★ TV SERVICE ★ SINGLE SIGNAL FILTERS ★ EXPERIMENTAL  
★ SHIP-TO-SHORE ★ CITIZEN'S BAND ★ DIATHERMY

**Bliley**  
CRYSTALS

**NOTE:** Prices Are Based On "Standard" Specifications As Shown. Quotations Will Be Made On Any Special Requirements.

TV SERVICE CRYSTALS, SOUND AND PICTURE CHANNEL MARKERS (Sub-Multiple Frequencies ±.05%)						
CODE	TYPE	CHANNEL NO.	CHAN. FREQ. (mc)	SOUND CHAN. (mc)	CRYS. FREQ. (kc)	PRICE
E2	SR10	2	54-60	59.75	19916.666	\$6.95
E2	SR10	3	60-66	65.75	16437.500	6.95
E2	SR10	4	66-72	71.75	17937.500	6.95
E2	SR10	5	76-82	81.75	16350.000	6.95
E2	SR10	6	82-88	87.75	17350.000	6.95
E2	SR10	7	174-180	179.75	17975.000	6.95
E2	SR10	8	180-186	185.75	18575.000	6.95
E2	SR10	9	186-192	191.75	19175.000	6.95
E2	SR10	10	192-198	197.75	19775.000	6.95
E2	SR10	11	198-204	203.75	18522.727	6.95
E2	SR10	12	204-210	209.75	19068.181	6.95
E2	SR10	13	210-216	215.75	19613.636	6.95
E4	SR10	SPECIFY	SPECIFY	PICTURE CHANNEL	RANGE 15-27.5 mc	8.50

PRICES AND SPECIFICATIONS SUBJECT TO CHANGE WITHOUT NOTICE

TV SERVICE CRYSTALS, I-F ALIGNMENT AND TRAP FREQUENCIES					
CODE	TYPE	FREQUENCIES	TOLERANCE	APPLICATION	PRICE
E3	MC9	4.5 mc	±.02%	intercarrier	\$3.95
E4	SR10	15-27.5 mc	±.05%	video, sound i-f alignment, trap frequencies	8.50
E8	MC9	5.0 mc	±.02%	signal generator	3.95
E9	MC9	10.7 mc	±.05%	FM-i-f alignment	3.95

**THE BLILEY TCO-2L TEMPERATURE CONTROLLED OVEN WITH TYPE BH6A CRYSTAL AT 1000kc AND TYPE BH9A CRYSTAL AT 100kc . . . . .**

This compact temperature controlled package provides a high stability reference source at both 100 kc and 1000 kc. Recommended for general laboratory use and the precision calibration of signal generators or other test instrumentation.



**NEW**  
HIGH STABILITY PACKAGE  
with  
100kc and 1000kc  
CRYSTALS

TYPE	DESCRIPTION	STABILITY	PRICE	TCO-2L	CRYSTALS
TCO-2L	Oven	75°C ± 5°C	\$9.00	CODE E23 Operating Temperature 75°C	CODE E24 BH6A Length..... 1 1/2" Width..... 3/8" Thickness..... 1/16" Pin Size..... .050" Pin Space..... .486"
BH6A Crystal	1000kc	±.0002%	12.50		
BH9A Crystal	100 kc	±.0005%	11.00	Case Length 2 1/8" Diameter 1 1/4"	CODE E25 BH9A Length..... 1 1/2" Width..... 1/2" Thickness..... 1/16" Pin Size..... .050" Pin Space..... .486"
Crystal units described are calibrated in recommended oscillator circuit -adjustable to zero beat (at 75° C) in this circuit.				OCTAL BASE	
SPECIFY CODE E23 FOR TCO-2L OVEN ONLY SPECIFY CODE E24 FOR BH6A 1000 KC CRYSTAL ONLY SPECIFY CODE E25 FOR BH9A 100 KC CRYSTAL ONLY SPECIFY CODE E26 FOR OVEN WITH BH6A AND BH9A CRYSTALS					

**SHIP-TO-SHORE**

CODE	TYPE	APPLICATION	TOLERANCE	PRICE
E5	MC7	radiotelephone 2-3.5 mc	±.02%	\$7.50
E6	SR5	radiotelephone 2-3.5 mc	±.02%	\$7.50
E7	SR8	radiotelephone 2-3.5 mc	±.02%	\$7.50

**For EASY FAST TV SERVICING**  
*Select*  
**BLILEY CRYSTALS**

**STANDARD FREQUENCIES**


CODE	TYPE	APPLICATION	TOLERANCE	PRICE
E10	KV3	reference frequency 100 kc	±.005%	\$ 8.50
E11	MS433	reference frequency 1000 kc	±.005%	17.00
E11A	MC9	marker frequency 1000 kc	±.05%	8.00


**BLILEY ELECTRIC CO.**  
UNION STATION BLDG., ERIE, PA.

**DIATHERMY, SINGLE SIGNAL FILTERS, CITIZEN'S RADIO SERVICE (CLASS C) AND EXPERIMENTAL**

CODE	TYPE	APPLICATION	TOLERANCE	PRICE
E13	MC9	13.560 mc (multiplies to 27.12 mc) Diathermy 13.6275 mc (multiplies to 27.255 mc) Citizen's	±.04%	\$5.50
E13A	SR10	27.12 mc Diathermy; 27.255 mc Citizen's (3rd overtone crystals)	±.04%	5.50
E14	CF3	455 kc-456 kc-465 kc Single Signal Filter	±5 kc	5.00
E15	CF6	455 kc-456 kc-465 kc Single Signal Filter	±5 kc	4.50
E22	MC9	3-12 mc experimental frequencies	±.03%	6.50
E22A	SR10	12-27.5 mc experimental frequencies	±.03%	8.50

# PR Crystals

Since  1934

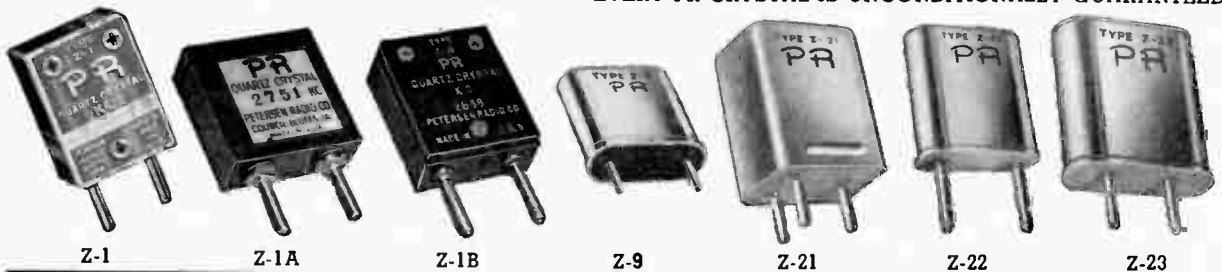
USE  AND KNOW WHERE YOU ARE

## COMMERCIAL TYPES — SPECIFICATIONS

Type	Frequency Range	Pin Spacing	Pin Diameter	Height Above Pins	Width	Depth	
Z-1 Fundamental	900 Kc. to 12000 Kc.	.486"	.093"	1-3/16"	13/16"	7/16"	
Z-1 Harmonic	12001 Kc. to 30000 Kc.	.486"	.093"	1-3/16"	13/16"	7/16"	
Z-1A Fundamental	500 Kc. to 2000 Kc.	3/4"	.125"	1 3/8"	1 3/8"	1/2"	
Z-1B Fundamental	1000 Kc. to 12000 Kc.	3/4"	.125"	1 3/8"	1-3/16"	1/2"	
Z-1B Harmonic	12001 Kc. to 30000 Kc.	3/4"	.125"	1 3/8"	1-3/16"	1/2"	
Z-1D Same as Z-1	Same as Z-1	1/2"	.125"	1-3/16"	13/16"	7/16"	
Z-1E Same as Z-1	Same as Z-1	1/2"	.125"	1 1/4"	1 1/8"	7/16"	
Z-1H Single or dual unit Fundamental	500 Kc. to 12000 Kc.	3-Pin W.E.	.157"	2-1/16"	1-19/32"	1-3/16"	
Z-1K Same as Z-1A except has .157" dia. pins	500 Kc. to 12000 Kc.	3/4"	.157"	1 3/8"	1 3/8"	1/2"	
Z-1M Fundamental	1000 Kc. to 10000 Kc.	7/8"	Std. Banana	2-3/32"	1-19/32"	3/4"	
Z-1R Fundamental	150 Kc. to 900 Kc.	1/2"	.093"	1 1/4"	1-3/32"	7/16"	
Z-4 Fundamental	1601 Kc. to 12000 Kc.	3/4"	.125"	.650"	Diameter	.995"	
Z-4 Harmonic	12001 Kc. to 30000 Kc.	3/4"	.125"	.650"	Diameter	.995"	
Z-7 Fundamental	Same as Z-1 Fundamental	3/4"	Std. Banana	1.660"	1.192"	.518"	
Z-8 Fundamental	500 Kc. to 1600 Kc.	3/4"	1/8"	1 3/4"	1-9/16"	1-11/16"	
Z-9 Fundamental	175 Kc. to 15000 Kc.	1/2"	.050"	.758"	.720"	.309"	
Z-9R Harmonic	15001 Kc. to 70000 Kc.	1/2"	.050"	.758"	.720"	.309"	
E-1 Fundamental	150 Kc. to 7000 Kc.	Interchangeable with FT-164 and AC-95					
Z-21 Fundamental	150 Kc. to 500 Kc.	3-Pin W.E.	.157"	2"	1-19/32"	1-3/16"	
Z-22 Fundamental	150 Kc. to 15000 Kc.	3/4"	.125"	1 1/4"	1-3/16"	7/16"	
Z-22 Harmonic	15001 Kc. to 50000 Kc.	3/4"	.125"	1 1/4"	1-3/16"	7/16"	
Z-23 Same as Z-22	Same as Z-22	.486"	.093"	1 1/4"	1-3/16"	7/16"	
Z-24 Same as Z-22	Same as Z-22	1/2"	.125"	1 1/4"	1-3/16"	7/16"	

\* Can be Supplied with Standard Banana Pins.

EVERY PR CRYSTAL IS UNCONDITIONALLY GUARANTEED



**PETERSEN RADIO Company, Inc., Council Bluffs, Iowa**

# PR Crystals

Since  1934

USE  AND KNOW WHERE YOU ARE

## PRICE LIST

Effective March 1, 1957  
Subject to Change Without Notice



## FOR AMATEUR SERVICE



Z-2 and Z-3 Crystals are supplied only in the following bands and calibrated integral kilocycles only, no fractions.

TYPE	FREQUENCY RANGE	PRICE	TYPE	FREQUENCY RANGE	PRICE
Z-2 Fundamental	1750 to 2000 Kc.	\$2.95	Z-3 3d Mode	12000 to 12333 Kc.	\$3.95
	3500 to 4000 Kc.			12500 to 13500 Kc.	
	5000 to 6000 Kc.			13480 to 13615 Kc.	
	6250 to 6750 Kc.			14000 to 14850 Kc.	
	6740 to 6807 Kc.		Z-9A 3d Mode	24000 to 24666 Kc.	\$4.95
	7000 to 7425 Kc.			25000 to 27000 Kc.	
8000 to 8222 Kc.					
8334 to 9000 Kc.					
9000 to 9250 Kc.					

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*25 years of engineering and manufacturing goes into each Monitor Crystal and Oven.*

## QUARTZ CRYSTALS



MC-4



MC-6



MC-13

Type	Pin Dia.	Pin Spacing	Max. Height	Max. Width	Max. Thickness	Nominal Frequency Range
MC-4	.125"	.750"	1.187"	1.125"	.4375"	80 kc. — 10 mc.
MC-6	.050"	.486"	.765"	.750"	.343"	75 kc. — 130 mc.
MC-62	.050"	.486"	.765"	.750"	.343"	5 — 87 mc.
MC-18	wire leads		.515"	.421"	.171"	5 — 75mc.
MC-13	.050"	.486"	1.516"	.750"	.343"	16 — 200 kc.
MC-131	.050"	.486"	2.00"	.750"	.343"	1.5 — 100 kc.
MC-132	.050"	.486"	2.500"	.750"	.343"	1 — 75 kc.
MC-100 MC-101 MC-102	Noval Based		1.75"	diameter .75"		3 — 500 kc.
			2.25"	.75"		1.5 — 100 kc.
			2.75"	.75"		1 — 75 kc.

## CRYSTAL OVENS



RM-2

Type	Base	Max. Height	Max. Width	Max. Thickness	Voltage	Normal Operating Temperature
YA	Octal or loctal	2.75"	1.4219"	1.0"	{ 6.3, 12, 24-28 AC or DC	75°C ±2°C.
YB		1.957"	1.4219"	1.0"		{ 6.3, 12, 24-28 AC or DC

The above types meet all Military specifications

RM-1	Octal or Standard 5 pin	2.6875"	diameter 1.375"	{ 6.3, 12, 24-28 AC or DC	75°C ±2°C.
RM-2		3.4375"	diameter 2.0"		{ 6.3, 12, 24-28, 115 AC or DC



YA



YB

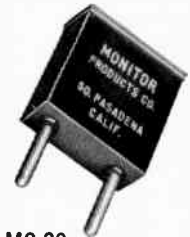
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## QUARTZ CRYSTALS

Type	Pin Dia.	Pin Spacing	Max. Height	Max. Width	Max. Thickness	Nominal Frequency Range
MC-14	.050"	.486"	.574"	.750"	.343"	4 — 15 mc.
MC-10	.062"	coaxial	.555"	.560" diameter		5 — 50 mc.
MC-15 MC-151	} Octal Based		1.75"	1.00" diameter		3 — 2500 kc.
			2.625"	1.00"		1.5 — 100 kc.
MC-1	.125"	.75"	1.375"	1.1875"	.5625"	1,000 — 10,000 kc.
MC-2	.125"	.75"	.625"	1.375" diameter		2,500 — 25,000 kc.
MC-5	3 pin	W.E.	2.025"	1.594"	1.187"	80 — 5,000 kc.
MC-11V	.125"	.75"	1.625"	1.5"	.625"	500 — 5,000 kc.
MC-20	} .093" .125"	.486"	1.156"	1.125"	.4375"	2,000 — 10,000 kc.
		.500"				
		.750"				
MC-243	.093"	.486"	1.125"	.8125"	.4375"	2,000 — 15,000 kc.



MC-20



MC-101



MC-243

## CRYSTAL OVENS

**ET** houses 1 or 2 HC-6 or HC-13 Crystals. 1-7/16 x 1-7/8 x 4" high. "A" series: Ambient temp. range -25°C to 5°C below specified operating temp. Nominal operating temp. 75°C (unless otherwise specified). Temp. variation after warmup ±.2°C. Power consumption 15 watts max. Heater voltage 115 AC (other voltages available). Low inductance windings. Warmup time 7 min. Octal based. 4 models. "B" series: Same characteristics as A, except ambient temp. range is 10°C to 5°C below specified operating temp. and power consumption is 8 watts max. "C" series: Same characteristics as above except ambient temp. range is -55°C to 5°C below specified operating temp., power consumption max. is 45 watts, normal operating power is 15 watts. Warmup time is 6 min. from -55°C to operating time. Will meet Mil-I-1681B and Mil-E-5400. ALL ET series ovens for use when high degree of stability is required under severe environmental conditions.



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**TYPE VR13** Hermetically sealed in compact metal case . . . frequency range 16 to 175 Kc . . . JAN Type HC-13/U. Pin is 0.050" dia., spaced 0.486".  
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**TYPE VM6** Midget unit with wire leads or .040" dia. pins hermetically sealed in compact metal case . . . frequency range 5 to 125 Mc . . . JAN Type HC-18/U.  
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**TYPE XL100** 100 Kc used extensively in frequency standards. Mounts in 3/4" crystal socket or standard 5-prong socket.  
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**TYPE DFS** Features separate 100 and 1,000 Kc crystals in same case . . . accuracy  $\pm 0.005$  percent from -10 deg. C. to +60 deg. C., when used in recommended circuits.  
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### OVENS

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**CLOSE FREQUENCY OVEN**  
Temperature controlled oven . . . mounts two VR6, VR13, CM1, or CM5 crystals. Heater, 18 watts . . . for 6, 10, 28 or 115V. Fits standard octal socket . . . with pilot lamp connection to thermostat.



#### TYPE VCO-2

**CLOSE FREQUENCY OVEN**  
Temperature controlled oven . . . mounts two JAN HC-6/U, HC 13/U, VR13 or VR6 crystals. Heater, 4 or 6 watts . . . for 6, 12.6 or 28V. Fits standard octal socket . . . with pilot lamp connection to thermostat.



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**FOR BROADCAST EQUIPMENT**

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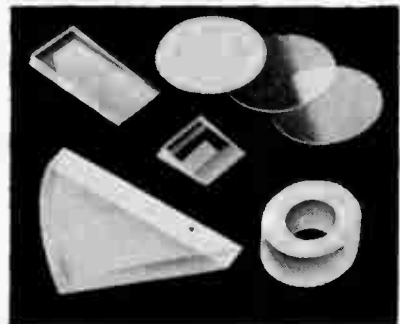
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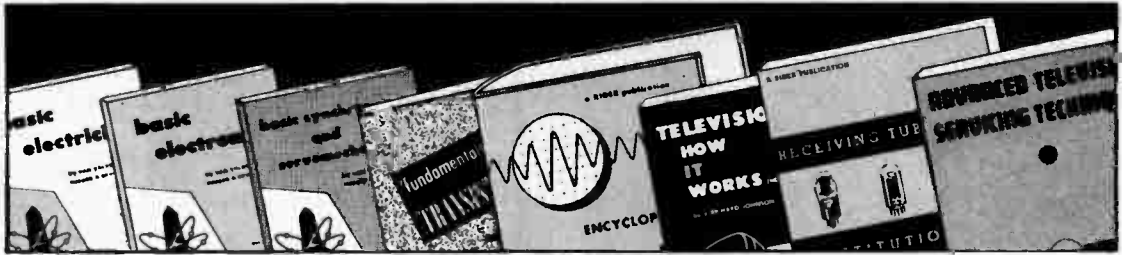
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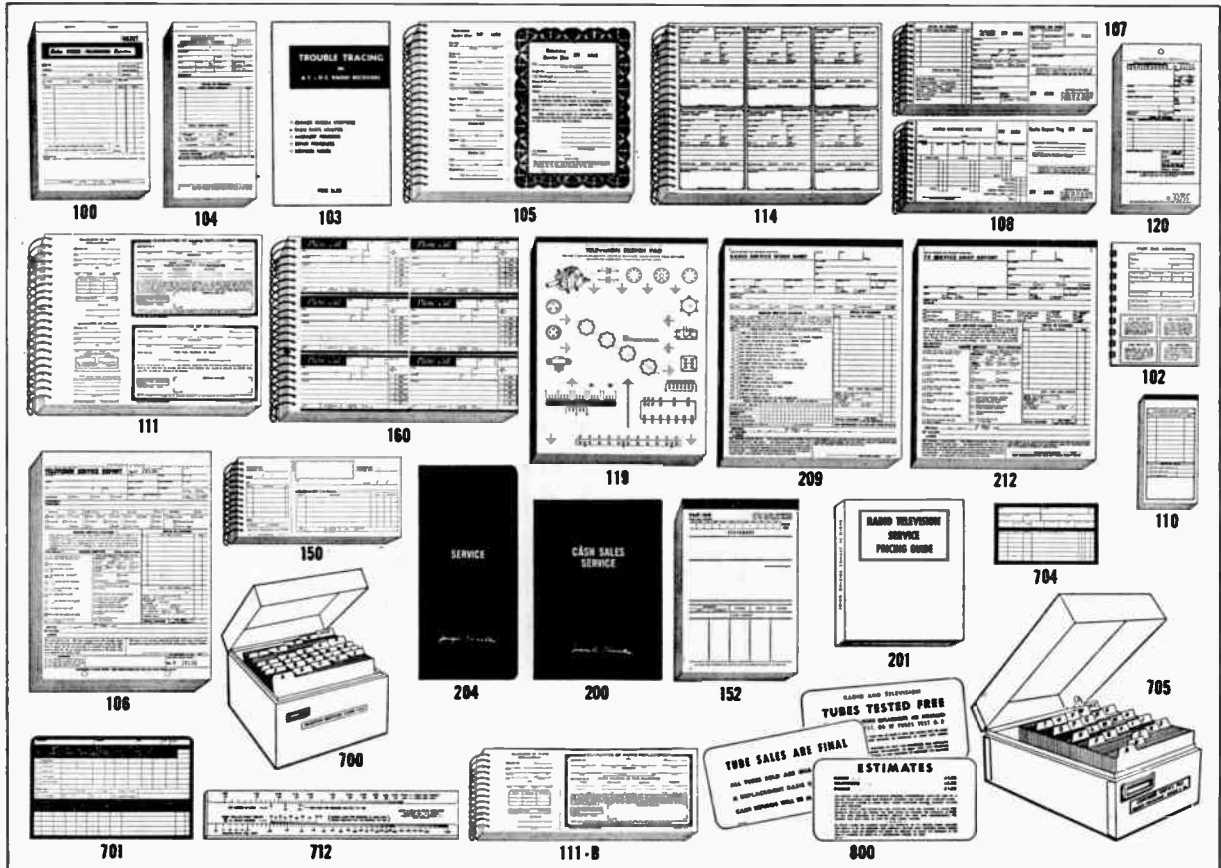
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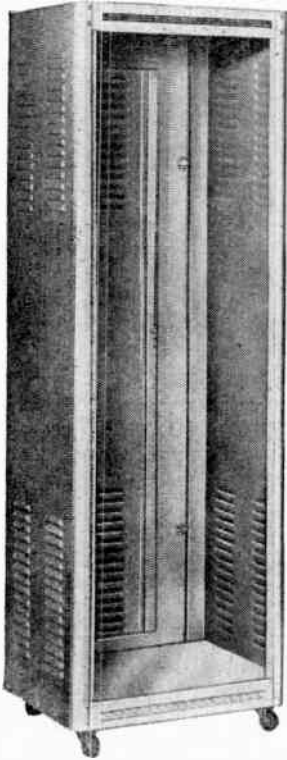
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# RELAY RACKS



## DELUXE RELAY RACKS



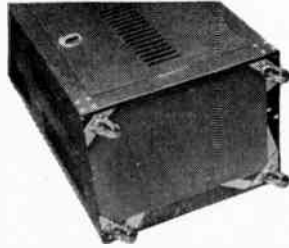
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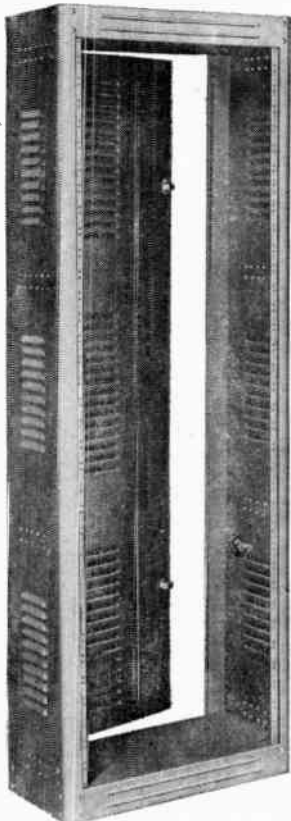
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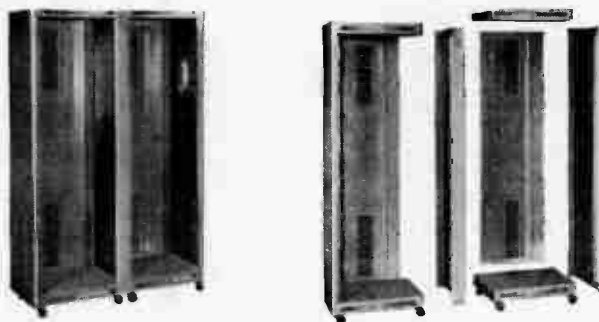
# RELAY RACKS



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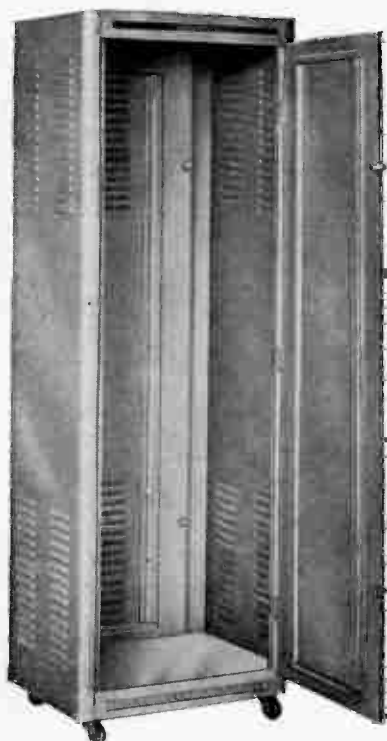
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Catalog No.	Used to Add-A-Rack to	Shipping Weight	Dealer Cost
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If black wrinkle finish is desired, use suffix letter "B". If grey wrinkle finish is desired, use suffix "G". If light grey hammered finish is desired, use suffix "HG".

## SUPER DELUXE 2 DOOR RACKS



This relay rack is an entirely new model that consists of a relay rack made of 16 gauge steel with 7/64" gauge panel mounting supports. The panel mounting supports are recessed so that no edges of the panel will be exposed. IN ADDITION, THEY ARE ADJUSTABLE FROM FRONT TO BACK IN VARIOUS STOPPING POINTS. THIS ENABLES YOU TO USE THE SPACE IN FRONT AND BEHIND THE PANEL TO ANY DEGREE THAT YOU MAY FIND NECESSARY. Overall width is 22". Depth 17 1/8". Inside clearance depth in back of panels 16 1/8". Clearance thru rear door 17 3/8". Clearance across panel mounting rails 17 3/4". Panel rails tapped 10/32 with W. E. spacing. Clearance behind panels is 15" to 9" in increments of 1 inch.

These racks are fitted with both front and rear doors. The louvred rear door is to cover any of the equipment behind the panel and at the same time provide easy accessibility to it. The front door, flush with front of rack, is to provide a means of concealing dials, knobs, etc., that may be in front of the panel.

The exclusive Bud feature of supports on the bottom so the casters may be fixed directly to the base, eliminating the need and expense of dollies, is also present in this series of racks. Bud RC-7756 casters will fit these units. The casters are not included in the price of the cabinet.

If black wrinkle finish is desired, use suffix letter "B." If grey wrinkle finish is desired, use suffix letter "G." If light grey hammered finish is desired, use suffix "HG."

Catalog No.	Overall Height	Panel Space	Shipping Weight	Dealer Cost
CR-2174	42-1/16"	36 3/4" x 19"	102 lbs.	\$57.80
CR-2171	47-5/16"	42" x 19"	117 lbs.	64.75
CR-2172	66-9/16"	61 1/4" x 19"	151 lbs.	83.59
CR-2173	82-5/16"	77" x 19"	183 lbs.	100.35

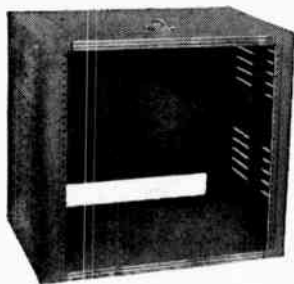
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Only a few of many BUD Products are shown. Write for complete catalog.



# CABINET RACKS—RELAY RACKS



## DELUXE CABINET RACKS

These cabinet racks are so made that a professional appearance is given. They are ideal for commercial broadcasters, for sound equipment or test equipment.

The five larger sizes have a hinged rear door, while the smaller sizes have the welded panel in the rear.

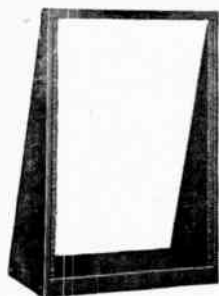
No other manufacturer has the wide variety of sizes that are included in the Bud line of deluxe cabinet racks.

Adequate ventilation is assured by means of louvered sides and a 2½" opening in the bottom of the back, which extends the entire width of the cabinet. "No scratch" extended metal feet are embossed on the bottom to minimize marring of the table top or any other equipment that this is placed on.

Catalog No.	Overall Height	Panel Space	Shipping Weight	Dealer Cost
CR-1726	8-25/32"	7"	25 lbs.	\$13.67
CR-1741	10-9/16"	8¾"	28 lbs.	14.90
CR-1740	12-5/16"	10½"	30 lbs.	17.00
CR-1742	14-1/16"	12¼"	32 lbs.	17.97
CR-1739	15-13/16"	14"	34 lbs.	19.58
CR-1743*	19-5/16"	17½"	38 lbs.	23.33
CR-1727*	22-13/16"	21"	39½ lbs.	25.00
CR-1744*	28-1/16"	26¼"	47½ lbs.	26.83
CR-1728*	33-5/16"	31½"	52 lbs.	28.50
CR-1745*	36-13/16"	35"	60 lbs.	30.00

\* These sizes have top and rear doors.

Specify a suffix "B" when black wrinkle is desired, the suffix "G" when grey wrinkle is desired, or the suffix "HG" when light grey hammered is desired.

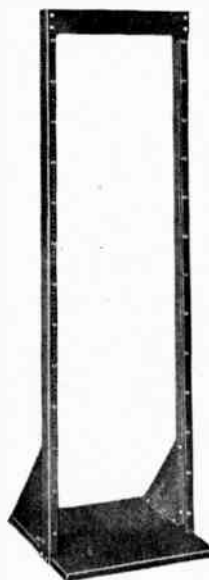


## DESK TYPE RELAY RACKS

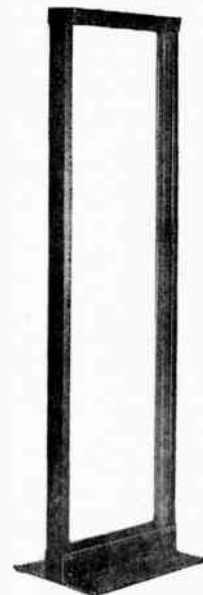
These racks are perfect for table mounting of low and medium powered transmitters, public address systems and other electronic instruments. The rack has strong chassis for mounting heavy components. These units are shipped knocked down with necessary hardware and are easy to assemble. Depth 12". Panel holes tapped 10/32 with W. E. spacing. Standard 19" wide panels can be used and the panels are set in recess so that no edges are exposed. Black wrinkle or light grey hammertone finish.

Catalog No.	Panel Space	Height	Actual Wt. Lbs.	Dealer Cost
RR-1248	21" x 19"	24"	15	\$ 8.25
RR-1249	28" x 19"	31"	17	10.20

## TELEPHONE TYPE RELAY RACKS



RR-1263  
RR-1264



RR-1265

RR-1366

Catalog Nos. RR-1263, RR-1264, RR-1363, RR-1364 & RR-1366 are made of 7/64" steel channels, three inches deep, with cross bars of the same thickness. The design of the base has been improved to incorporate a chassis type bottom, together with the usual side angles, making this rack exceptionally strong and stable.

Holes are provided in the base to accommodate Bud RC-7756 casters. Base is 20" x 22". Clearance between uprights 17½". Panel mounting rails tapped 10/32 with W. E. spacing. Finish black wrinkle or light grey hammertone.

The RR-1265 is a heavy duty rack, suitable for broadcast stations and other commercial installations, where it is desired that exceptionally sturdy construction be utilized. The usual manner of installation is to bolt this unit to the floor.

To emphasize the heavy duty construction, it is necessary to realize that the base is made of two angles 3½" x 5" x ¼", 20¾" long. The channels are 72" long and made of 3" x 1¾" x 3/16" steel plate. The two supporting cross bars are made of ½" x 2-3/32" steel angles. Base is 18" x 20¾". Panel holes are tapped 12-24 with W.E. spacing. Finish black wrinkle only.

Any of the panel chassis or the standard relay rack panels shown on page K-605 can be used with these racks.

Catalog No.	Height	Panel Space	Shipping Weight lbs.	Dealer Cost
RR-1263	35-39/64"	31½"	35	\$19.40
RR-1363	40-55/64"	36¾"	37	19.58
RR-1264	70-39/64"	66½"	46	22.10
RR-1364	75-55/64"	71¾"	47	22.42
RR-1366	81-7/64"	77"	48	26.70
RR-1265	72-1/4"	66½"	94	48.84

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# CABINET RACKS



## HEAVY DUTY CABINET RACKS



These Cabinet Racks are designed for installation where increased depth of cabinet is required. The cabinet racks are shipped knocked down with all necessary hardware for quick assembly.

All units have a hinged removable rear door. Adequate ventilation is assured by louvered sides and 21½" x 17½" opening in the bottom of the back. The top and bottom are similar to those furnished with our DeLuxe Relay Rack to provide additional sturdiness when the rack is assembled. Made from 16 gauge steel throughout.

The panel mounting rails are an integral part of the sides thereby facilitating the assembly of the cabinet since less parts are required.

These Heavy Duty Cabinet Racks are furnished in Grey Hammertone only. An additional charge of 10% will be made if Black or Grey Wrinkle Finish is ordered.

For the first time BUD RADIO, INC. is providing Add-A-Rack type mounting for a Cabinet Rack model. Listed in the table shown below are Add-A-Cabs for use with our Heavy Duty Cabinet Rack series. The construction is the same as our Add-A-Rack series except that the panel mounting rails are an integral part of the sides.

Overall Depth is 17½".

Clear Inside Depth is 16¼".

Overall Width is 22".

Catalog No.	Overall Height	Panel Space	Used to Add-A-Cab to	Shipping Weight	Dealer Cost
CR-1736	24½"	19¼"		48 lbs.	\$26.65
CR-1737	31½"	26¼"		55 lbs.	\$28.75
CR-1738	40¼"	35"		64 lbs.	\$34.15
ACR-1936	24½"	19¼"	CR-1736	41 lbs.	\$25.40
ACR-1937	31½"	26¼"	CR-1737	48 lbs.	\$27.40
ACR-1938	40¼"	35"	CR-1738	55 lbs.	\$32.55

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# PANELS



## STANDARD RELAY RACK PANELS



These panels are available in either steel or aluminum. The steel panels are made of high grade steel  $\frac{1}{8}$ " thick. Aluminum panels are standard at  $\frac{1}{8}$ " thick aluminum. All panels are 19" wide. Aluminum panels  $\frac{3}{16}$ " thick are

available at a 60% increase in cost over the standard  $\frac{1}{8}$ " panel.

For the first time, we are offering light grey hammered finish panels at no extra charge. Be sure to specify by use of suffix "B" for black wrinkle finish, suffix "G" for grey wrinkle finish or suffix "HG" for light grey hammered finish.

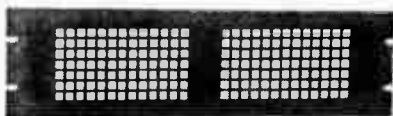
### STEEL

Catalog No.	Height	Actual Weight lbs.	Dealer Cost	Catalog No.	Height	Actual Weight lbs.	Dealer Cost
PS-1250	1 $\frac{3}{4}$ "	1 $\frac{1}{4}$	\$ .76	PS-1256	12 $\frac{1}{4}$ "	8 $\frac{1}{4}$	\$2.13
PS-1251	3 $\frac{1}{2}$ "	2 $\frac{1}{4}$	.86	PS-1257	14"	9 $\frac{1}{2}$	2.50
PS-1252	5 $\frac{1}{4}$ "	3 $\frac{3}{4}$	1.13	PS-1258	15 $\frac{3}{4}$ "	10 $\frac{3}{4}$	2.76
PS-1253	7"	4 $\frac{1}{2}$	1.27	PS-1259	17 $\frac{1}{2}$ "	11 $\frac{3}{4}$	3.10
PS-1254	8 $\frac{3}{4}$ "	6	1.58	PS-1260	19 $\frac{1}{4}$ "	13	3.46
PS-1255	10 $\frac{1}{2}$ "	7	1.84	PS-1261	21"	14 $\frac{1}{4}$	3.81

### ALUMINUM

Catalog No.	Height	Actual Weight lbs.	Dealer Cost	Catalog No.	Height	Actual Weight lbs.	Dealer Cost
PA-1101	1 $\frac{3}{4}$ "	$\frac{1}{4}$	\$ .99	PA-1107	12 $\frac{1}{4}$ "	2 $\frac{3}{4}$	\$3.75
PA-1102	3 $\frac{1}{2}$ "	$\frac{3}{4}$	1.30	PA-1108	14"	3	4.33
PA-1103	5 $\frac{1}{4}$ "	1	1.75	PA-1109	15 $\frac{3}{4}$ "	3 $\frac{1}{2}$	4.83
PA-1104	7"	1 $\frac{3}{4}$	2.16	PA-1110	17 $\frac{1}{2}$ "	4	5.33
PA-1105	8 $\frac{3}{4}$ "	2	2.58	PA-1111	19 $\frac{1}{4}$ "	4 $\frac{1}{4}$	5.83
PA-1106	10 $\frac{1}{2}$ "	2 $\frac{1}{2}$	3.25	PA-1112	21"	5	6.33

## VENTILATING GRILL PANELS

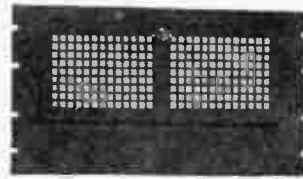


These panels are made of  $\frac{1}{8}$ " thick steel. The grill is stamped into the panel itself and is recommended for use where additional ventilation is desirable. All panels are 19" long and are furnished in black or grey wrinkle finish or light grey hammered finish. Please specify by proper suffix the color desired.

Catalog No.	Height	Grill Size	Actual Weight	Dealer Cost
PS-808	5 $\frac{1}{4}$ "	3 $\frac{3}{8}$ " x 13 $\frac{1}{2}$ "	2 $\frac{1}{2}$ lbs.	\$ 2.90
PS-809	7"	4 $\frac{7}{8}$ " x 13 $\frac{1}{2}$ "	3 $\frac{1}{2}$ lbs.	3.15
PS-810	8 $\frac{3}{4}$ "	3 $\frac{7}{8}$ " x 13 $\frac{1}{2}$ "	5 lbs.	3.80
PS-811	10 $\frac{1}{2}$ "	5 $\frac{7}{8}$ " x 13 $\frac{1}{2}$ "	5 $\frac{3}{4}$ lbs.	4.02
PS-812	12 $\frac{1}{4}$ "	7 $\frac{3}{8}$ " x 13 $\frac{1}{2}$ "	6 $\frac{1}{4}$ lbs.	4.30

\* Allows 3 $\frac{1}{2}$ " space for chassis mounting.

## VENTILATED DOOR RACK PANELS

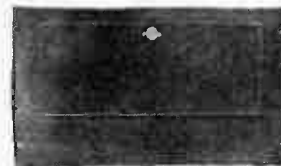


The Bud Ventilated Door Rack Panel has a generous perforated area in the door providing adequate ventilation for adjacent units. Distance from hinged side of opening to bottom 3 $\frac{1}{2}$ ". Distance from

lock side of opening to top 1". The panels are 19" long and are available in either black or grey wrinkle finish or light grey hammered finish. OF SPECIAL INTEREST TO THE USER IS THE NEWLY DESIGNED IMPROVED LOCK ON THIS PANEL. THE LOCK IS A PLUNGER TYPE THAT MAKES CERTAIN IT IS EASY TO OPEN THE DOOR.

Catalog No.	Height	Door Opening	Actual Weight	Dealer Cost
PS-814	10 $\frac{1}{2}$ "	15 $\frac{3}{8}$ " x 6"	6 lbs.	\$6.65
PS-815	12 $\frac{1}{4}$ "	15 $\frac{3}{8}$ " x 7 $\frac{1}{2}$ "	7 lbs.	7.34

## METAL DOOR RACK PANELS



When accessibility to component parts on the chassis is a vital point, this panel is extremely useful. The panels are available in either grey or black wrinkle finish or light grey hammered finish.

Please be certain that you specify, by use of the proper suffix, for color when ordering. Panels are made of  $\frac{1}{8}$ " sheet steel. Distance from hinged side of opening to bottom 3 $\frac{1}{2}$ ". Distance from lock side of opening to top 1".

Catalog No.	Height	Door Opening	Actual Weight	Dealer Cost
PS-615	10 $\frac{1}{2}$ "	15 $\frac{3}{8}$ " x 6"	7 $\frac{1}{4}$ lbs.	\$5.42
PS-616	12 $\frac{1}{4}$ "	15 $\frac{3}{8}$ " x 7 $\frac{1}{2}$ "	8 $\frac{1}{4}$ lbs.	6.67

## NEW PANEL CHASSIS



This new series of panel mounting chassis is for professional type installations primarily.

Made of .062" aluminum. The front flange has standard notching suitable for mounting to a rack.

Catalog No.	Width	Depth	Height	Dealer Cost
CB-1370	19"	5 $\frac{3}{32}$ "	1 $\frac{3}{4}$ "	\$2.03
CB-1371	19"	5 $\frac{3}{32}$ "	3 $\frac{1}{2}$ "	2.35
CB-1372	19"	5 $\frac{3}{32}$ "	5 $\frac{1}{4}$ "	2.62
CB-1373	19"	5 $\frac{3}{32}$ "	7"	3.00
CB-1374	19"	5 $\frac{3}{32}$ "	8 $\frac{3}{4}$ "	3.41
CB-1375	19"	5 $\frac{3}{32}$ "	10 $\frac{1}{2}$ "	3.84
CB-1376	19"	5 $\frac{3}{32}$ "	12 $\frac{1}{4}$ "	4.20
CB-1377	19"	5 $\frac{3}{32}$ "	14"	4.53

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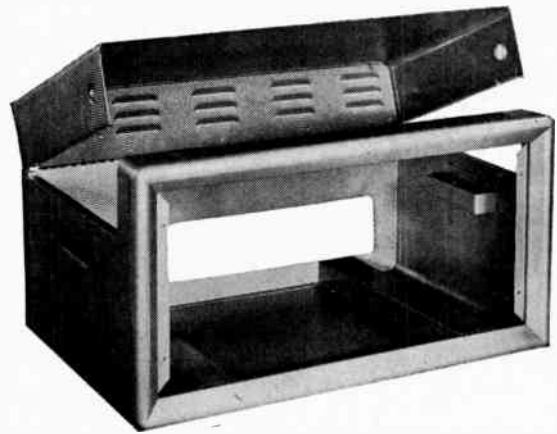
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# "PRESTIGE" CABINETS



## STANDARD "PRESTIGE" CABINETS



Bud Radio, Inc. proudly announces its new line of "PRESTIGE" Cabinets, with eye pleasing contours, highly stylized, yet with quiet dignity. These new cabinets are soundly engineered, versatile in usage; a stock cabinet of advanced design suitable for housing highest quality instruments, etc. We invite your inspection of the following details of construction.

Hinged cover; available—solid or perforated. Swings back completely for easy access to equipment within. Covers may be entirely removed if necessary. Perforated cover is reinforced to provide rigidity and sturdiness.

Smoothly grommeted finger holes assure easy cover lifting. Cover snaps closed to body of cabinet by means of pressure fasteners.

Cabinet is furnished complete with two supporting rails, which can be moved laterally to accommodate any width chassis or mounting platform. Supporting rails may be permanently fixed to cabinet base by means of screws or by welding.

Height of mounting rails permits free air flow under chassis, and provides easy removal of entire cabinet contents through front opening.

Additional ventilation is obtained by means of rear cabinet opening, and louvers in rear of cover.

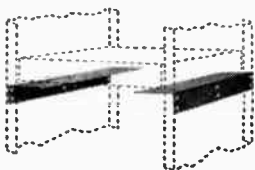
Cabinet may be comfortably carried by two recessed handle slots, safety shielded to prevent contact with equipment housed within.

Built of 16 gauge steel, and flawlessly finished in attractive grey hammertone, this cabinet will accommodate standard size relay rack panels. Embossed feet are attached to the bottom to prevent scratching of the surface upon which the cabinet rests.

Over-all width: 21-9/16"; over-all depth: 14 7/8"; clear inside depth: 13 1/8"; rear opening: 18" x 3"; cover opening 21-9/16" x 12 3/4".

Catalog Number	Cover	Over-All Height	Panel Space	Ship. Wgt.	Dealer Cost
C-1440	Solid	9 1/2"	7"	21 lbs.	\$25.15
C-1441	Solid	11 1/4"	8 3/4"	23 lbs.	26.75
C-1442	Solid	13"	10 1/2"	25 lbs.	29.25
C-1550	Perforated	9 1/2"	7"	20 lbs.	27.20
C-1551	Perforated	11 1/4"	8 3/4"	22 lbs.	29.20
C-1552	Perforated	13"	10 1/2"	24 lbs.	31.70

## CHASSIS SUPPORTING ANGLES



Where heavy weights are encountered in chassis construction, the Bud Chassis Supporting Angles will distribute the weight on the sides of the racks to relieve the panel. The angles

are made in two sizes from 7/64" thick. Width 3", height 1 3/8"; mounting hardware furnished. Finished in black enamel only. The drawing shown around the chassis supporting angles in the illustration is intended to show the manner in which the chassis will be supported by these angles. Sold in pairs only.

Catalog No.	Length	Actual Weight lbs.	Dealer Cost
SA-1349	14 1/2"	4	\$2.00 pr.
SA-1350	12"	3	1.92 pr.

## RACK SHELVES



Heavy power supplies, modulator units, etc., can be mounted on these rack shelves,

which are supported in the cabinet by the chassis supporting angles which are shown to the left. Shelves are 19" wide x 1" high. The shelves are made of heavy gauge steel and are finished in black enamel only.

Catalog No.	Depth	Actual Weight	Dealer Cost
CB-1976	15"	6 1/2 lbs.	\$ 3.10
CB-1977	12"	5 1/2 lbs.	2.35

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# "PRESTIGE" CABINETS



## SLOPING PANEL "PRESTIGE" CABINETS



### LEVER TYPE DOOR HANDLES

1. Ventilated Top.
2. Full Top Opening — With Recessed Handle for Easy Lift.
3. Shielded Handles in Sides.
4. Uses Standard 19" Relay Rack Panels.
5. Top Panel Swept-Back for Easy Viewing.
6. Rear Opening for Easy Cable or Control Access.
7. Grey Hammertone Finish for Neutral Color Match with Existing Equipment.
8. Three Standard Sizes.
9. Panel Trim Bar Removable Permitting Installation or Removal of Panels that Have Chassis Attached.

10. Cover can be Screw Fastened into Position to Minimize Tampering with Contents of Cabinet.

Rear Opening is 2½" x 18"      Panel Recess is 1¼"  
Top Depth is 9"                      Overall Width is 22"

Catalog No.	Overall Height	Panel Space	Overall Depth	Shp. Wgt.	Dealer Cost
C-1555	11 7/8"	3 1/2" Vertical plus 7" Sloping	14 3/4"	22 lbs.	\$36.00
C-1556	13 1/4"	3 1/2" Vertical plus 8 3/4" Sloping	15 1/2"	25 lbs.	\$38.65
C-1557	14 3/4"	3 1/2" Vertical plus 10 1/4" Sloping	16 1/4"	28 lbs.	\$41.95

### HANDLE-CATCH SET (Plunger Type)



CL-7777 is an attractive handle and catch set now featured on all Bud Cabinet Racks and Relay Racks. Handle is cast aluminum with chrome plated finish. Snap catch is spring type. **IMPORTANT FEATURE IS THE PLUNGER WHICH ASSURES EFFICIENCY AND EASY OPERATION.** Supplied complete with mounting hardware. Actual weight ¼ lb.  
CL-7777      Dealer Cost \$1.09

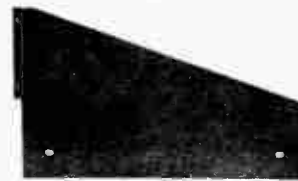
### LEVER TYPE DOOR HANDLES



Chrome plated, die cast handle and plate. Corrosion resistant steel spindle and can. Easily and quickly attached to the Bud Super Deluxe Relay Rack. Two models available. Catalog No. 9196 is non-locking. Catalog No. 9223 has a lock and two keys.

Catalog No.	Dealer Cost
9196	Non-locking \$3.00
9223	With lock \$5.00

### CHASSIS MOUNTING BRACKETS



Mounting brackets are essential to insure proper support of chassis. Mounting flange is 1" wide with 2 mounting holes. These brackets are formed of heavy gauge steel cut away at the bottom to provide chassis clearance so that the chassis can be mounted flush against the panel. Finished in black enamel only. Chassis mounting bracket Nos. MB-450 and MB-451 are designed for a chassis height of 4". These units are sold in pairs only.

Catalog No.	Height	Depth	Actual Weight	Dealer Cost
MB-458	6 1/2"	8"	1 1/4 lbs.	\$ .97 pr.
MB-448	6 1/2"	10"	1 3/4 lbs.	1.20 pr.
MB-459	6 1/2"	11"	2 lbs.	1.33 pr.
MB-449	6 1/2"	12"	2 lbs.	1.57 pr.
MB-460	6 1/2"	13"	2 1/2 lbs.	1.50 pr.
MB-450	8 1/2"	10"	2 1/4 lbs.	1.75 pr.
MB-451	8 1/2"	13"	3 lbs.	1.87 pr.

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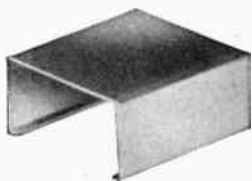
# CHASSIS



## OPEN END CHASSIS

These are primarily intended to be used with the various styles and sizes of Bud Metal Cabinets. These chassis are ideal for any type of small built-up units such as record amplifier, code oscillator, etc. From this you can see that there is a wide variety of applications. The U-shaped construction is used with ends folded over  $\frac{3}{8}$ " for additional strength. Made from aluminum (.040) natural finish.

Cat. No.	Depth	Width	Height	Fits Cab No.	Cost
CB-38	7"	6"	2"	C-1584	\$.92
CB-30	5"	7"	1½"		.87
CB-41	7"	7"	1½"	C-973	1.10
CB-39	7"	8"	2"	C-1585	1.04
CB-996	5½"	9"	1½"	C-993	1.00
CB-976	7½"	9"	1½"	C-999, C-1746	1.25
CB-40	7"	10"	2"	C-1586	1.25
CB-997	7"	11"	1½"	C-994, C-1747	1.17
CB-998	7"	13"	1½"	C-995, C-1748	1.42



## MINIATURE ALUMINUM CHASSIS

These small, open end aluminum chassis are the answer for miniature tube applications or sub-assemblies. They are made of hard aluminum with  $\frac{1}{4}$ " flanges on the bottom allowing the chassis to be fastened down, or allowing a bottom plate to be attached. They are extremely useful for a wide variety of applications such as small receivers, narrow band FM adapters or any place where the space is limited.

Cat No.	Depth	Width	Height	Fits Cabinet No.	Dealer Cost
CB-1623	2¾"	2¾"	1¼"	C-1784	\$.35
CB-1624	1¾"	3½"	1"	CU-883	.38
CB-1625	3¼"	4½"	2"	C-1788	.45
CB-1626	2¾"	4¾"	1"	CU-728	.41
CB-1627	3¾"	4¾"	1½"	CU-729	.41
CB-1628	3"	6¼"	1¼"	C-1785	.50
CB-1629	5¾"	4¾"	1½"	CU-1098	.54
CB-1617	4"	3½"	1"	C-1602	.41
CB-1618	4"	4¾"	1"	C-1603	.50
CB-1619	4"	5½"	1"	C-1604	.50
CB-1620	4"	6¼"	1"	C-1605	.54



## UTILITY HANDLES

These handles are designed to provide sufficient strength and comfortable hand grip. They are made from aluminum tubing and are given an etched aluminum finish.

Catalog No.	Overall Length	Mounting Hole Center	Actual Weight	Dealer Cost
UH-70A	5½"	4¾"	2 oz.	\$.36
UH-71A	3¾"	3¼"	1 oz.	.30

## HEAVY DUTY CHASSIS

(Furnished with Bottom Plate)



These chassis, made of 16 gauge steel, are designed for applications requiring unusual sturdiness and where large weights are involved. The bottom plates for these chassis are furnished at no extra charge. Available in either black wrinkle finish or electro-zinc plate. All chassis are 17" wide.

Black Wrinkle Cat. No.	Zinc Plated Cat. No.	Depth	Height	Dealer Cost Black Wrinkle	Dealer Cost Zinc Plated
CB-1758	CB-1765	8"	3"	\$4.00	\$4.60
CB-1760	CB-1767	11"	3"	4.04	5.17
CB-1761	CB-1768	13"	2"	4.33	5.50
CB-1762	CB-1769	13"	3"	4.75	5.83
CB-1763	CB-1770	13"	4"	5.08	6.65



## ALUMINUM CHASSIS

The construction and design of these chassis are exactly the same as that of our steel chassis bases. The aluminum chassis are welded on Government approved spot welders that are the same as those used in the welding of aluminum aircraft parts. As a result, you can depend on Bud Aluminum Chassis to do a perfect job and to stand up under all conditions.

Please note that the gauges shown in the table are aluminum gauges.

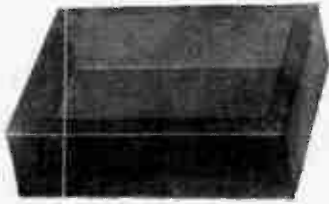
Catalog Number	Depth	Width	Height	Gauge	Dealer Cost
AC-430	4"	6"	3"	18	\$1.17
AC-431	4"	6"	2"	18	1.10
AC-432	4"	17"	3"	16	2.33
AC-402	5"	7"	2"	18	1.10
AC-429	5"	7"	3"	16	1.25
AC-403	5"	9½"	2"	18	1.15
AC-421	5"	9½"	3"	18	1.47
AC-404	5"	10"	3"	18	1.63
AC-422	5"	13"	3"	18	1.65
AC-433	6"	17"	3"	16	2.56
AC-405	7"	7"	2"	18	1.22
AC-406	7"	9"	2"	18	1.46
AC-407	7"	11"	2"	18	1.58
AC-408	7"	12"	3"	18	1.75
AC-409	7"	13"	2"	18	1.67
AC-411	7"	15"	3"	16	2.34
AC-423	7"	17"	3"	16	2.75
AC-424	8"	12"	3"	16	2.09
AC-425	8"	17"	2"	16	2.34
AC-412	8"	17"	3"	16	2.56
AC-413	10"	12"	3"	16	2.42
AC-414	10"	14"	3"	16	2.84
AC-415*	10"	17"	2"	16	2.68
AC-416*	10"	17"	3"	16	3.00
AC-426*	11"	17"	2"	14	3.31
AC-417*	11"	17"	3"	14	3.97
AC-418*	12"	17"	3"	14	4.08
AC-419*	13"	17"	2"	14	3.34
AC-420*	13"	17"	3"	14	4.15
AC-427*	10"	17"	4"	14	4.34
AC-428*	13"	17"	4"	14	4.59

\* Indicates chassis punched to accommodate Chassis Mounting Brackets.

Prices subject to change without notice.  
Prices on above slightly higher west of the Mississippi River.  
Only a few of many BUD Products are shown. Write for complete catalog.



# CHASSIS - PLATES - BRACKETS



## STEEL CHASSIS

These Chassis are made from one piece of steel. All corners are reinforced and spot welded. The four sides are folded at

the bottom for additional strength. This also permits a bottom plate to be attached if desired. As shown in table below, chassis are available in either black wrinkle finish or electro-zinc plated.

### STEEL

Black Wrinkle Cat. No.	Zinc Plated Cat. No.	Depth	Width	Height	Gauge	Dealer Cost	
						Black Wrinkle	Zinc Plated
CB-628	CB-629	5"	7"	2"	22	\$ .85	\$1.17
CB-644	CB-645	5"	9 1/2"	2 1/2"	22	1.22	1.48
CB-788	CB-776	5"	9 1/2"	1 1/2"	22	1.07	1.50
CB-604	CB-605	5"	10"	3"	22	1.14	1.64
CB-755	CB-756	5"	14"	3"	20	1.57	1.84
CB-789	CB-1191	7"	7"	2"	20	1.07	1.34
CB-790	CB-1192	7"	9"	2"	20	1.25	1.42
CB-791	CB-1193	7"	11"	2"	20	1.30	1.50
CB-792	CB-793	7"	12"	3"	20	1.40	1.84
CB-646	CB-1194	7"	13"	2"	20	1.36	1.75
CB-647	CB-1198	5"	13 1/2"	2 1/2"	20	1.58	1.90
CB-649	CB-1189	7"	15"	3"	20	1.79	2.15
CB-665	CB-666	8 1/2"	15"	3"	20	2.00	2.42
CB-1068	CB-1066	4"	17"	3"	20	1.60	1.92
CB-648	CB-1199	7"	17"	2 1/2"	20	1.77	2.12
CB-757	CB-758	7"	17"	3"	20	1.92	2.30
CB-701	CB-702	8"	10"	2 1/2"	20	1.54	1.80
CB-703	CB-704	8"	12"	2 1/2"	20	1.57	2.00
CB-759	CB-760	8"	12"	3"	20	1.65	2.08
CB-650	CB-774	8"	17"	2"	20	1.52	2.08
CB-651*	CB-776	8"	17"	3"	20	1.84	2.34
CB-652	CB-1195	10"	12"	3"	20	1.69	2.07
CB-653	CB-779	10"	14"	3"	20	1.81	2.17
CB-654*	CB-769	10"	17"	2"	20	1.78	2.14
CB-636*	CB-637	10"	17"	3"	20	1.82	2.34
CB-655*	CB-1196	10"	17"	3"	18	2.26	2.72
CB-656	CB-1197	10"	23"	3"	18	2.55	3.06
CB-657*	CB-779	11"	17"	2"	18	2.10	2.50
CB-658*	CB-771	11"	17"	3"	18	2.46	3.12
CB-663*	CB-661	12"	17"	2"	18	2.16	2.60
CB-664*	CB-662	12"	17"	3"	18	2.58	3.16
CB-659*	CB-772	13"	17"	2"	18	2.58	3.32
CB-660*	CB-773	13"	17"	3"	18	3.04	3.63
CB-640*	CB-641	10"	17"	4"	18	2.56	3.08
CB-642*	CB-643	13"	17"	4"	18	3.50	4.20
CB-625	CB-626	13"	17"	5"	18	4.00	4.80
CB-623	CB-624	10"	17"	5"	18	4.40	5.30

\* Indicates chassis punched to accommodate Chassis Mounting Brackets.



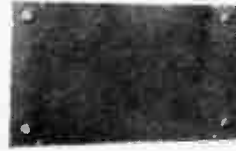
## CHASSIS DECKS

These chassis decks are suitable for use in carrying cases, utility cabinets, etc. Each unit is folded over 1 1/2" on the front, 1/2" on the side and is made from steel which is black palladin finish. They are also useful for interstage shielding and supports in regular panel and chassis layouts.

Cat No.	Width	Depth	Fits Cab. No.	Dealer Cost
CB-522	4 3/4"	5 1/2"	CU-1095	\$ .63
CB-523	4 3/4"	4 1/2"	CU-1099	.53
CB-525	5 3/4"	5 1/2"	CU-1124, CC-1096	.74

## CHASSIS BOTTOM PLATES

Steel and Aluminum



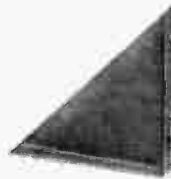
These bottom plates make excellent dust covers and protect all wiring and component parts of the chassis. Each plate has four formed bosses to prevent sharp edges from scratching a table top or other surface. Those numbers prefaced by "BP" are steel bottom plates, supplied in black wrinkle finish or electro-zinc plated finish. Those bottom plates prefaced by "BPA" are made of aluminum and have an etched finish.

### STEEL

Black Wrinkle Cat. No.	Zinc Plated Cat. No.	Fits Chassis	Dealer Cost	
			Black Wrinkle	Zinc Plated
BP-705	BP-706	5" x 7"	\$ .50	\$ .69
BP-680	BP-667	5" x 9 1/2"	.56	.68
BP-536	BP-538	5" x 10"	.53	.62
BP-681	BP-668	7" x 7"	.92	1.02
BP-682	BP-669	7" x 8"	.93	.90
BP-683	BP-670	7" x 11"	.87	1.07
BP-537	BP-539	7" x 12"	.80	.95
BP-684	BP-671	7" x 13"	.92	1.20
BP-685	BP-672	5" x 13 1/2"	.76	1.00
BP-1069	BP-1067	4" x 17"	.84	1.07
BP-686	BP-673	7" x 17"	.90	1.22
BP-707	BP-708	8" x 10"	.92	1.05
BP-709	BP-710	8" x 12"	1.06	1.34
BP-687	BP-674	8" x 17"	.95	1.37
BP-688	BP-675	10" x 12"	.95	1.40
BP-517	BP-514	10" x 14"	1.25	1.33
BP-689	BP-676	10" x 17"	1.20	1.44
BP-690	BP-677	11" x 17"	1.20	1.44
BP-691	BP-678	12" x 17"	1.27	1.57
BP-692	BP-679	13" x 17"	1.47	2.00

### ALUMINUM

BPA-1589	5" x 7"	\$ .74
BPA-1590	5" x 9 1/2"	.75
BPA-1591	5" x 10"	.75
BPA-1592	7" x 7"	.77
BPA-1593	7" x 9"	.80
BPA-1594	7" x 11"	.90
BPA-1595	7" x 12"	.97
BPA-1596	7" x 13"	1.14
BPA-1597	10" x 17"	1.52
BPA-1598	13" x 17"	2.07



## TRIANGULAR MOUNTING BRACKETS

For panel and chassis assemblies where large weights are involved, these triangular mounting brackets, with 3/4" flange, make extremely convenient supports. They are constructed of heavy gauge steel and are furnished in black enamel finish only. These are sold in pairs.

Catalog No.	Height	Depth	Actual Weight lbs.	Dealer Cost
MB-1266	5"	5"	1	\$ .92 pr.
MB-1267	7"	7"	1	1.07 pr.
MB-1268	9"	9"	1 1/2	1.27 pr.

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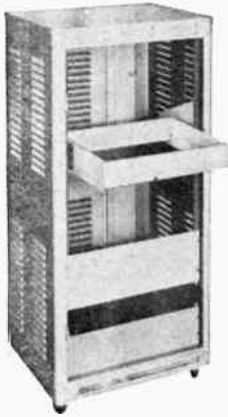
Only a few of many BUD Products are shown. Write for complete catalog.



# DRAWERS-SHELVES



## SLIDING DRAWER ASSEMBLY



The new Bud S.D. 1717 Sliding Drawer Assembly is easily and quickly assembled and installed in any standard rack. Can't fall out, can't tilt . . . perfectly safe mounting for any object placed on it. Slides easily in and out on ball bearing suspension in the same manner as the drawers in the most expensive steel filing cabinets.

Here are some of the many uses of the Bud Sliding Drawer Assembly:

1. Mounting for record player
2. Base for portable typewriter
3. Mounting for apparatus or instruments
4. Base for writing table
5. Handy drawer space

In addition, there are many other handy uses for this practical drawer.

### LOOK AT THESE CONSTRUCTION FEATURES:



Chassis formed from one piece of 14 gauge aluminum. Electrowelded. Chassis size 16 $\frac{1}{4}$ " x 14" x 3" with  $\frac{1}{2}$ " flange top and bottom.

Support brackets formed from one piece  $\frac{1}{8}$ " aluminum.

Accurately punched to conform with standard panel mounting holes.

Slide rail fastens securely to chassis, slides easily in and out on ball bearings in channel.

Stop screw on slide rail prevents drawer from falling out of channel.

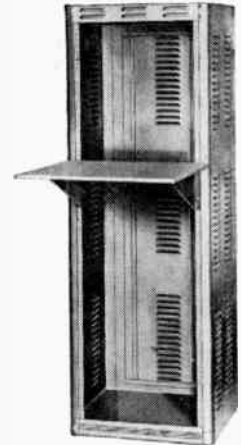
Support brackets and channel finished in etched aluminum.

Chassis finished in light grey hammertone. Will support up to 50 pounds.

Also available, aluminum plate which may be fastened to top of chassis as shelf, desk top or support; or attached to bottom of chassis to form drawer. Size 16 $\frac{1}{4}$ " x 14". Made of 14 gauge aluminum. Light grey hammertone finish. Punched with four mounting holes. Catalog No. T.P.-1718.

Catalog No.	Weight	Dealer Cost
SD-1717	5 lbs.	\$11.43
TP-1718	1 $\frac{1}{2}$ lbs.	2.08

## SHELF ASSEMBLY



The BUD SHELF ASSEMBLY immediately adds extra utility to a standard rack and at very little cost. Its practical design and attractive appearance immediately indicate its value and long lasting qualities. This sturdy shelf assembly is useful as a desk, as work space and for numerous other purposes. It is finished in black or grey wrinkle or grey hammertone at no extra cost. Thus it will match the finish on all BUD racks.

Can't fall off . . . can't tilt . . . the shelf assembly is perfectly safe and will support any reasonable load placed upon it. The shelf portion is supported by two sturdy brackets. These brackets are punched to fit standard panel mounting strips. Besides being low in cost, an outstanding feature is that no panel is needed for support. However, the shelf assembly may be attached over a panel if so desired.

This BUD SHELF ASSEMBLY really provides extra convenience, extra quality and extra value. It should be a part of every rack installation.



Note construction and assembly features. Slides are welded to bottom of shelf to add additional strength and rigidity. Mounting brackets slip in to slides and are fastened with two screws. All necessary hardware is furnished.

The shelf portion of the assembly is 20" x 22" x  $\frac{5}{8}$ ", or 16" x 22" x  $\frac{5}{8}$ ", formed from 16 gauge steel. There is a  $\frac{1}{2}$ " flange around the four sides which adds to the sturdiness. Supporting brackets 7" high, are made from  $\frac{1}{8}$ " steel. Overall height of assembly is 7".



Specify black or grey wrinkle or grey hammertone when ordering.

Catalog No.	Size	Weight	Dealer Cost
SA-1719	16" x 22"	12 lbs.	\$10.40
SA-1720	20" x 22"	15 lbs.	10.55

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# CABINETS-FOUNDATIONS



## STREAMLINED CABINETS



Distinctive features of these cabinets are the rounded front corners and recessed hinge tops.  $3\frac{1}{2}$ " opening in rear. All parts built into these cabinets are, therefore, easily accessible. Suitable chassis may be found under the listing of open

end chassis on page K-608. These units are furnished in black wrinkle only.

Catalog No.	Panel Size	Cabinet Width	Cabinet Depth	Cabinet Height	Dealer Cost
C-1789	8" x 8"	10½"	8¼"	8"	\$3.92
C-1746	8" x 10"	12½"	8¼"	8"	4.83
C-1747	8" x 12"	14½"	8¼"	8"	5.25
C-1748	8" x 14"	16½"	8¼"	8"	5.50
C-1790	8" x 16"	18½"	8¼"	8"	6.04
C-1730	12" x 18"	20½"	12"	12"	10.95

## DELUXE STREAMLINED CABINETS



These cabinets are identical with those listed above, except that they have a ½" vertical chrome strip at each side of the panel and are supplied in grey wrinkle enamel finish only.

Catalog No.	Panel Size	Cabinet Width	Cabinet Depth	Cabinet Height	Dealer Cost
C-1791	8" x 8"	10½"	8¼"	8"	\$ 5.85
C-1781	8" x 10"	12½"	8¼"	8"	5.92
C-1782	8" x 12"	14½"	8¼"	8"	6.25
C-1783	8" x 14"	16½"	8¼"	8"	6.67
C-1792	8" x 16"	18½"	8¼"	8"	7.33
C-1731	12" x 18"	20½"	12"	12"	13.33

## MINIATURE AMPLIFIER FOUNDATIONS



With the increased use of miniature tubes, smaller cabinets can be used when designing a compact amplifier. This amplifier foundation was designed expressly for this purpose. The chassis is 5" x 7" x 2". Height is 6". The cover is made of perforated

metal. A streamlined handle makes this cabinet portable. Black wrinkle finish only.

Cat. No.	Actual Weight lbs.	Dealer Cost
CA-1754	1½	\$4.00

## SLOPING PANEL UTILITY BOXES



The sloping panel utility box offers a streamlined appearance and enough space to house conveniently a two or three miniature tube amplifier or gadget. Height is 4", depth is 4¼". A ¾" flange around the rear opening of the cabinet provides convenient back cover mounting.

Extremely compact, it will accommodate a Bud Miniature Aluminum Chassis. Finished in black wrinkle enamel only.

Catalog No.	Width	Use Chassis No.	Actual Weight lbs.	Dealer Cost
C-1602	4"	CB-1617	½	\$1.22
C-1603	5"	CB-1618	¾	1.40
C-1604	6"	CB-1619	1	1.47
C-1605	7"	CB-1620	1	1.54

## INSTRUMENT & RECEIVER CABINETS



Each cabinet has an evenly recessed hinge cover with convenient finger lift. The panel in the front of the cabinet is readily attached with self tapping screws. No opening in rear. Louvers provide satisfactory ventilation. For chassis to fit these cabinets, see the

open end chassis listed on page K-608. Finished in black wrinkle enamel only.

Cat. No.	Height	Width	Depth	Dealer Cost
C-973	7"	8"	8"	\$3.36
C-993	7"	10"	8"	4.33
C-994	7"	12"	8"	4.58
C-995	7"	14"	8"	4.92
C-1190	8"	16"	8"	6.76
C-975	9"	15"	11"	6.92
C-999	12"	18"	12"	9.92

## SLOPING PANEL UTILITY CABINETS



This cabinet is similar to the Sloping Panel Utility Box, with the exception of the fact that the opening is on the bottom of the cabinet rather than in the back. It

is finished in black wrinkle enamel only. Height on all units 4", depth 4¼".

Catalog No.	Width	Actual Weight lbs.	Dealer Cost
C-1578	4"	¾	\$1.22
C-1579	5"	¾	1.40
C-1580	6"	1	1.47
C-1581	7"	1	1.54

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# CABINETS - CASES



## MINIATURE UTILITY CABINETS (With Attached Chassis)



A long sought for item has been a small cabinet with a chassis attached to the front panel. This is indispensable for building electronic devices using miniature tubes or transistors.

Front and rear panels are removable and fastened with self tapping screws that permit easy accessibility. Finished in black wrinkle enamel.

Cat. No.	Height	Width	Depth	CHASSIS SIZE			Dealer Cost
C-1793	4"	4"	2"	1"	3 $\frac{1}{8}$ "	1 $\frac{7}{8}$ "	\$1.34
C-1794	4"	5"	3"	1"	4 $\frac{1}{8}$ "	2 $\frac{7}{8}$ "	1.48
C-1795	5"	4"	3"	1 $\frac{1}{4}$ "	3 $\frac{1}{8}$ "	2 $\frac{7}{8}$ "	1.62
C-1796	6"	5"	4"	1 $\frac{3}{4}$ "	4 $\frac{1}{8}$ "	3 $\frac{7}{8}$ "	1.70
C-1797	5"	6"	4"	1 $\frac{3}{4}$ "	5 $\frac{1}{8}$ "	3 $\frac{7}{8}$ "	1.92
C-1798	6"	6"	6"	1 $\frac{3}{4}$ "	4 $\frac{7}{8}$ "	5 $\frac{7}{8}$ "	2.17

## UTILITY CABINETS



A large number of sizes available makes this line useful for all types of electronic equipment. These cabinets have two removable panels for easy accessibility. Units prefixed by CU are made from cold rolled steel and are finished in black wrinkle

or light grey hammertone. Those prefixed by AU are made from high grade sheet aluminum and have natural finish or light grey hammertone.

### STEEL (Black Wrinkle or Grey Hammertone)

Cat. No.	Depth	Width	Height	Dealer Cost	
CU-883	2"	4"	4"	\$1.04	
CU-728	3"	5"	4"	1.14	
CU-729	4"	5"	6"	1.38	
CU-1098	6"	6"	6"	1.87	
CU-1099	5"	6"	9"	2.08	
CU-879	7"	8"	10"	3.00	
CU-1124	6"	7"	12"	2.94	
CU-880	8"	10"	10"	3.60	
CU-881	8"	11"	12"	4.13	
CU-882	7"	9"	15"	4.31	

### ALUMINUM (Natural or Grey Hammertone)

Cat. No.	Depth	Width	Height	Dealer Natural	Dealer Grey
AU 1083	2"	4"	4"	\$1.29	\$1.50
AU-1028	3"	5"	4"	1.37	1.67
AU-1029	4"	5"	6"	1.67	1.92
AU-1039	6"	6"	6"	1.90	2.26
AU-1040	5"	6"	9"	2.35	2.76



## STREAMLINED MULTIPURPOSE CABINET

A handsome streamlined metal cabinet, finished in grey wrinkle enamel only. The back of the cabinet is completely open for ventilation purposes.

Cat. No.	Height	Width	Depth	Use Chassis No.	Dealer Cost
C-1787	4 $\frac{1}{2}$ "	5 $\frac{1}{2}$ "	3 $\frac{1}{2}$ "	CB-1625	1.70
C-1788	6 $\frac{1}{2}$ "	5 $\frac{1}{2}$ "	3 $\frac{1}{2}$ "	CB-1625	1.75

## CARRYING CASES



These carrying cases have many uses. An easy grip handle is fastened to the top. Front and back panels are removable. Welded construction assures maximum strength where needed, and this unit is also available in aluminum to provide minimum weight where required for portable work. For chassis to fit these cabinets, see the chassis decks on page K-609 Prefix "CC" represents steel construction. Available in black wrinkle or light grey hammertone finish. Prefix "ACC" represents aluminum construction. Available with natural finish or light grey hammertone.

### STEEL (Black Wrinkle or Grey Hammertone)

Cat. No.	Depth	Width	Height	Dealer Cost	
CC-1095	5"	6"	9"	\$2.66	
CC-1091	5"	9"	6"	2.66	
CC-1096	6"	7"	12"	3.75	
CC-1092	6"	12"	7"	3.75	
CC-1097	7"	7 $\frac{1}{4}$ "	15"	4.17	
CC-1100	5"	10"	10"	4.34	
CC-1093	7"	15"	9"	5.25	

### ALUMINUM (Natural Finish or Grey Hammertone)

Cat. No.	Depth	Width	Height	Dealer Natural	Dealer Grey
ACC-2095	5"	6"	9"	\$3.17	\$3.80
ACC-2091	5"	9"	6"	3.17	3.80
ACC-2096	6"	7"	12"	4.50	5.33
ACC-2092	6"	12"	7"	4.50	5.33

## SLOPING PANEL CABINETS



This entire front panel of this cabinet is removable if so desired. THIS CABINET IS ALSO PROVIDED WITH A HINGED TOP FOR EASY ACCESSIBILITY TO TUBES AND OTHER PARTS THAT ARE MOUNTED ON THE

CHASSIS, WITHOUT NECESSITATING REMOVAL OF THE FRONT PANEL. These cabinets are finished in black wrinkle enamel or light grey hammertone. Specify with suffix B for black, HG for grey hammertone.

Catalog Number	Height	Width	Depth	Fits Chassis	Dealer Cost
C-1584	6 $\frac{1}{2}$ "	7-1/16"	7 $\frac{1}{8}$ "	7" x 6" x 2"	\$3.30
C-1585	6 $\frac{1}{2}$ "	9-1/16"	7 $\frac{1}{8}$ "	7" x 8" x 2"	3.75
C-1586	6 $\frac{1}{2}$ "	11-1/16"	7 $\frac{1}{8}$ "	7" x 10" x 2"	4.15
C-1587	8"	8-1/16"	8"	7" x 7" x 2"	3.99
C-1588	8"	10-1/16"	8"	7" x 9" x 2"	4.41
C-1892	8"	13-1/16"	8 $\frac{1}{2}$ "	8" x 12" x 2 $\frac{1}{2}$ "	4.99
C-1893	10"	18-1/16"	10 $\frac{1}{2}$ "	10" x 17" x 3"	6.99
C-1894	8"	14-1/16"	8"	7" x 13" x 2"	4.79
C-1896	9"	18-1/16"	8 $\frac{1}{8}$ "	7" x 17" x 3"	6.84

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# FOUNDATIONS-BOXES-CASES



## SLOPING PANEL AMPLIFIER FOUNDATIONS

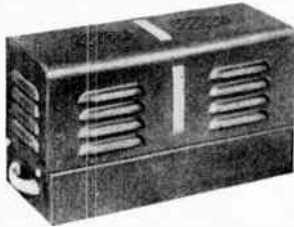


Each foundation consists of a 3½" sloping front chassis on which is mounted a removable top cover. The top cover, 6" high, contains grill cutouts

and louvers for adequate ventilation. All have handles mounted on the chassis. The cover is finished in grey wrinkle with chrome trim, and the chassis is finished in black wrinkle to give a unique and attractive appearance.

Catalog No.	Top Depth	Chassis Width	Chassis Depth	Dealer Cost
CA-1980	5"	10"	8"	\$8.00
CA-1981	7"	12"	10"	8.35
CA-1982	7"	17"	10"	9.50
CA-1983	10"	17"	13"	10.00

## STREAMLINED AMPLIFIER FOUNDATIONS

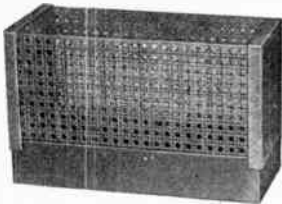


This unit is most often used to obtain beauty in an amplifier and similar apparatus. Each foundation consists of a standard chassis 3" high, on which is mounted a removable top cover. Chrome trim is used to give additional attractiveness to the equipment. Sturdy, easy grip handles are attached to the chassis. Specify with the suffix "B" for black wrinkle finish or the suffix "G" for grey wrinkle.

tractiveness to the equipment. Sturdy, easy grip handles are attached to the chassis. Specify with the suffix "B" for black wrinkle finish or the suffix "G" for grey wrinkle.

Catalog No.	Height	Width	Depth	Dealer Cost
CA-1750	9"	10-1/16"	5"	\$6.08
CA-1751	9"	12-1/16"	7"	7.17
CA-1752	9"	17-1/16"	7"	7.58
CA-1753	9"	17-1/16"	10"	8.25

## AMPLIFIER FOUNDATIONS



This standard Bud Amplifier Foundation consists of a regular chassis on which is attached a perforated metal cover providing all that you require in ventilation. Easy grip handles attached to the chassis.

These units are furnished in black wrinkle finish only.

Cat. No.	Height	Width	Depth	Chassis Height	Dealer Cost
CA-699	8-5/16"	9 5/8"	5 1/4"	2 1/2"	\$5.00
CA-1125	8-5/16"	13 5/8"	5 1/4"	2 1/2"	5.75
CA-1126	8-5/16"	17 1/8"	7 1/4"	2 1/2"	6.50
CA-1128	8-13/16"	12 1/8"	10 1/8"	3 3/4"	6.75

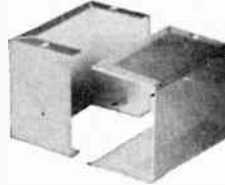
## HANDY BOXES



The design of the Handy Box permits a large number of small components to be easily wired or serviced. The cover is held by four self tapping screws. Made from 22 gauge steel and is furnished in black wrinkle finish only.

Catalog No.	Height	Length	Width	Actual Weight lbs.	Dealer Cost
HB-1621	2 1/4"	4 1/4"	1 1/2"	1/2	\$1.02
HB-1622	2"	4"	2 1/4"	3/2	1.07

## MINIBOXES



There are thousands of uses in the field of radio and electronics for these boxes. They are made of high quality aluminum. The design of the box permits installation of more components than would

be possible in the more conventionally designed box of the same size. Construction is of the two piece type, each half forming three sides. The flange type construction assures adequate shielding. These units are available in either natural aluminum finish or grey hammertone finish.

Gray Cat. No.	Natural Cat. No.	Length	Height	Width	Dealer Cost Natural	Dealer Cost Grey
CU-2100	CU-3000	2 3/4"	2 1/8"	1 5/8"	\$.60	\$.82
CU-2101	CU-3001	3 1/4"	2 1/8"	1 5/8"	.60	.87
CU-2102	CU-3002	4 1/4"	2 1/8"	1 5/8"	.63	.90
CU-2103	CU-3003	4"	2 1/8"	2 1/4"	.82	.93
CU-2104	CU-3004	5"	2 1/8"	2 1/4"	.88	1.18
CU-2105	CU-3005	5"	4"	3"	.97	1.27
CU-2106	CU-3006	5 1/4"	3"	2 1/8"	.95	1.12
CU-2107	CU-3007	6"	5"	4"	1.20	1.82
CU-2108	CU-3008	7"	5"	3"	1.32	1.85
CU-2109	CU-3009	8"	6"	3 1/2"	1.98	2.23
CU-2110	CU-3010	10"	6"	3 1/2"	2.17	2.74
CU-2111	CU-3011	12"	7"	4 1/2"	2.77	3.23
CU-2112	CU-3012	17"	5"	4"	3.21	3.80
CU-2113	CU-3013	10"	2"	1 5/8"	1.25	1.38
CU-2114	CU-3014	12"	2 1/2"	2 1/4"	1.22	1.59
CU-2115	CU-3015	4"	2"	2 3/4"	.82	1.13
CU-2116	CU-3016	4 3/4"	2 1/4"	1 1/4"	.85	1.17
CU-2117	CU-3017	3 1/4"	2 1/8"	1 1/4"	.65	1.02

## METER CASES



Designed for all applications requiring a modern meter case. Size: 4 1/4" height x 4" deep x 4" wide—rear of case open. All cases have a sloping front with the top corner rounded. Meter cases No. CM-1241 and CM-1242 have insulators on the top for leads to the meter. CM-1965 and CM-1966 are furnished without insulators. These steel units

are finished in black wrinkle enamel or light grey hammertone.

Also available are our new aluminum meter cases, prefixed by the letters CMA, as shown in the table below. These units are the same size and design as the steel meter cases, but are especially suitable for use when a case that will have no magnetic effect on a meter is required. No insulators furnished. These cases are natural aluminum finish or light grey hammertone.

Cat. No.	Hole Diameter	Fits Meter Size	Dealer Cost	
			Black	Natural Grey
CM-1241	2.334"	2"	\$1.32	\$1.32
CM-1242	2.835"	3"	1.32	1.32
CM-1965	2.334"	2"	1.00	1.00
CM-1966	2.835"	3"	1.00	1.00
CMA-2065	2.334"	2"	1.44	\$1.29
CMA-2066	2.835"	3"	1.44	1.29

Prices subject to change without notice. Prices on above slightly higher west of the Mississippi River. Only a few of many BUD Products are shown. Write for complete catalog.



## TYPE "C" UNIVERSAL CABINET RACKS

SERIES "PX" & "FX" RACKS WITH SOLID SIDE WALLS  
FOR 19"-24"-30" WIDE PANELS - 18" & 24" DEEP

**WITH REAR DOOR ONLY**



No. PX-6718

For over two decades, we have made various types of enclosed relay racks, differing in styling, specifications, and sizes. In presenting our **UNIVERSAL CABINET RACKS**, we offer a line with a complete range of sizes; one which combines all the advantages of racks previously listed; and which introduces new features of design providing greater flexibility and economy in assembly.

The advantages of **UNIVERSAL CABINET RACKS** may be summarized as follows:

**DIMENSIONS:** Racks are available for 19", 24", or 30" wide panels. Cabinet heights are 48 $\frac{1}{8}$ ", 67 $\frac{1}{8}$ ", 76 $\frac{1}{8}$ ", and 83 $\frac{1}{8}$ "; depths available are 18" or 24".

**DESIGN:** All sizes listed may be obtained with conventional solid side walls (listed on Page K-615), or with open side walls and detachable side panels (listed on Page K-617).

**DOORS:** All sizes may be ordered with rear doors only; or with matching front and rear doors.

**GROUPING:** All racks of the same height may be set up in "gangs" or rows; racks with 19", 24" or 30" wide panels may be intermixed; racks with or without front doors may also be intermixed.

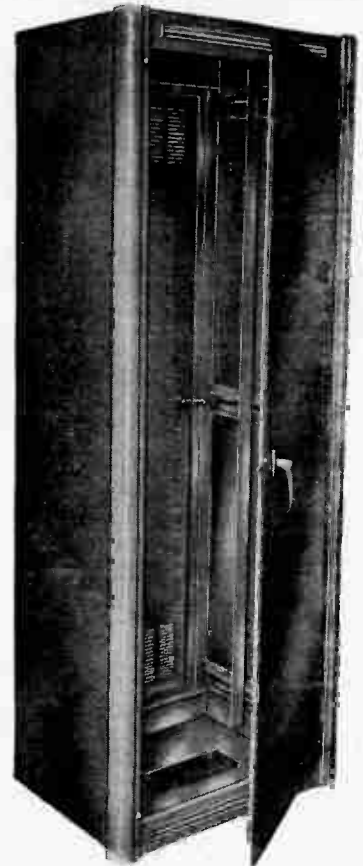
**MID-RAIL MOUNTING OF PANELS:** The panel mounting angles or "strips" are fully adjustable on all racks, and may be positioned at any location from front to back. Additional panel mounting angles may be easily inserted where needed for mounting terminal boards, etc.

**VERTICAL SIDE SUPPORTS:** These supports provide a new method for supporting chassis and other equipment in the racks. Installing brackets or shelves is now a simple procedure: the means of attaching such brackets is fully adjustable so that chassis may be accurately lined up with the front panels. No drilling or other fabrication is required. The chassis may then be installed or removed with a minimum of effort. The vertical slide supports also facilitate the installation of special sliding devices obtainable from slide manufacturers.

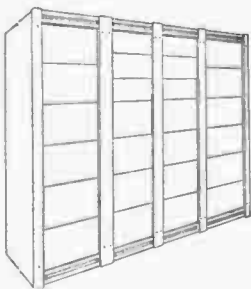
**SLIDING SHELVES AND DRAWERS:** Several models are listed on page K-619. These are constructed for mounting on the front of the racks the same as regular panels.

**FINISHES:** All racks may be obtained in any of the following finishes: **GREY RIPPLE ENAMEL, BLACK RIPPLE ENAMEL, GREY HAMMERTONE ENAMEL, ALUMINUM GREY LACQUER, and PRIMER COAT ONLY.** It is essential that the finish required be specified on your order to avoid subsequent inquiry and delay.

**WITH FRONT & REAR DOOR**



No. FX-6718



In this group are shown our standard "PX" type racks, 24" deep. The racks at the end positions are for 24" wide panels, and 19" wide panels are used on the two center racks. Regular width vertical trim strips covering the panel mounting screws are used in this arrangement.

Similar groupings could be made using "PX" racks of the same height in 18" or 24" deep racks, using 19" or 24" wide panels. All of the racks in this group have solid sides.



# TYPE "C" UNIVERSAL CABINET RACKS

**SERIES "PX" & "FX" RACKS WITH SOLID SIDE WALLS  
FOR 19"-24"-30" WIDE PANELS - 18" & 24" DEEP**



## CONSTRUCTIONAL SPECIFICATIONS FOR "PX" and "FX" SERIES RACKS

**CABINET:** Entire cabinet is welded together into one integral unit. Body of cabinet is made from 1/16" thick cold rolled sheet steel; top of cabinet is made from 5/64" thick steel; bottom of cabinet is made from 7/64" thick steel.

**PANEL MOUNTING:** Angle irons are 3/8" thick structural steel holes are accurately drilled and tapped 12/24 thread on standard 1 1/4" - 1/2" spacings. Additional pairs of panel mounting angles may be purchased separately. See page K-618 for listings.

**DOORS:** Doors are of a new type with vastly improved construction features. They are stamped from one piece of steel into a rigid unit. Door edges are folded to provide a smooth double thick edge. There are no "patch" type braces, etc., used for reinforcement.

**"FULL VENTILATING" type louvres** provide adequate ventilation in the rear doors.

**HARDWARE:** Doors are equipped with die-cast "automobile" type sturdy handles. Hinges are of the "slip joint" type so that doors may be easily removed. Screws for mounting panels are supplied. Front of rack is trimmed with chrome plated moldings at top and bottom.

**OUTLETS:** A duplex receptacle and outlet box are provided in the back under the door. A rectangular opening is provided in the bottom for conduits, leads, etc. "Knock-out" holes are provided at sides for wiring between racks.

**LOCKS:** Locking type handles are regularly supplied on front and rear of "FX" Series Racks only. They are available on rear doors of "PX" Series Racks at an extra charge of \$1.00.

**MODIFICATIONS:** Modified doors are available with louvres at TOP or BOTTOM only as required. Tops of cabinets can be supplied with round or rectangular openings, with or without grilles or baffles. Adjustable baffles to limit or increase ventilation in top openings are available. If air filters are required on doors, provision can be made for this purpose. Solid doors may be substituted for louvered doors.

### TYPE "PX" SERIES RACKS — WITH REAR DOORS ONLY

Catalog No.	Dimensions Height Width Depth	Panel Space	Clear Inside Depth	**Clear Inside Width (Front)	Clear Inside Width (Rear)	Shipping Wt. Lbs.	Net Price
<b>FOR 19" WIDE PANELS — 18" DEEP</b>							
PX-4818	48 1/4 x 22 x 18"	42 x 19"	16 1/4"	17 3/4"	19 1/2"	120	\$ 76.80
PX-6718	67 3/4 x 22 x 18"	61 1/4 x 19"	16 1/4"	17 3/4"	19 1/2"	155	87.80
PX-7718	76 1/2 x 22 x 18"	70 x 19"	16 1/4"	17 3/4"	19 1/2"	170	98.80
PX-8418	83 1/4 x 22 x 18"	77 x 19"	16 1/4"	17 3/4"	19 1/2"	185	109.75
<b>FOR 19" PANELS — 24" DEEP</b>							
PX-4824	48 1/4 x 22 x 24"	42 x 19"	22 3/4"	17 3/4"	19 1/2"	140	93.05
PX-6724	67 3/4 x 22 x 24"	61 1/4 x 19"	22 3/4"	17 3/4"	19 1/2"	180	106.65
PX-7724	76 1/2 x 22 x 24"	70 x 19"	22 3/4"	17 3/4"	19 1/2"	195	117.60
PX-8424	83 1/4 x 22 x 24"	77 x 19"	22 3/4"	17 3/4"	19 1/2"	210	131.70
<b>FOR 24" WIDE PANELS — 24" DEEP</b>							
PX-4827	48 1/4 x 27 x 24"	42 x 24"	22 3/4"	22 3/4"	24 1/2"	155	120.20
PX-6727	67 3/4 x 27 x 24"	61 1/4 x 24"	22 3/4"	22 3/4"	24 1/2"	200	136.95
PX-7727	76 1/2 x 27 x 24"	70 x 24"	22 3/4"	22 3/4"	24 1/2"	225	147.90
PX-8427	83 1/4 x 27 x 24"	77 x 24"	22 3/4"	22 3/4"	24 1/2"	240	164.10
<b>FOR 30" WIDE PANELS — 24" DEEP</b>							
PX-6733	67 3/4 x 33 x 24"	61 1/4 x 30"	22 3/4"	28 3/4"	30 1/2"	260	165.00
PX-7733	76 1/2 x 33 x 24"	70 x 30"	22 3/4"	28 3/4"	30 1/2"	280	180.00
PX-8433	83 1/4 x 33 x 24"	77 x 30"	22 3/4"	28 3/4"	30 1/2"	300	197.50

### TYPE "FX" SERIES RACKS — WITH FRONT AND REAR DOORS

Catalog No.	Dimensions Height Width Depth	Panel Space	*Clear Inside Depth	**Clear Inside Width (Front)	Clear Inside Width (Rear)	Shipping Wt. Lbs.	Net Price
<b>FOR 19" WIDE PANELS — 18" DEEP</b>							
FX-4818	48 1/4 x 22 x 18"	42 x 19"	16 1/4"	17 3/4"	19 1/2"	135	\$ 93.05
FX-6718	67 3/4 x 22 x 18"	61 1/4 x 19"	16 1/4"	17 3/4"	19 1/2"	175	109.75
FX-7718	76 1/2 x 22 x 18"	70 x 19"	16 1/4"	17 3/4"	19 1/2"	190	125.95
FX-8418	83 1/4 x 22 x 18"	77 x 19"	16 1/4"	17 3/4"	19 1/2"	205	136.95
<b>FOR 19" WIDE PANELS — 24" DEEP</b>							
FX-4824	48 1/4 x 22 x 24"	42 x 19"	22 1/4"	17 3/4"	19 1/2"	160	112.35
FX-6724	67 3/4 x 22 x 24"	61 1/4 x 19"	22 1/4"	17 3/4"	19 1/2"	205	128.50
FX-7724	76 1/2 x 22 x 24"	70 x 19"	22 1/4"	17 3/4"	19 1/2"	225	145.30
FX-8424	83 1/4 x 22 x 24"	77 x 19"	22 1/4"	17 3/4"	19 1/2"	235	158.90
<b>FOR 24" WIDE PANELS — 24" DEEP</b>							
FX-4827	48 1/4 x 27 x 24"	42 x 24"	22 1/4"	22 3/4"	24 1/2"	175	139.55
FX-6727	67 3/4 x 27 x 24"	61 1/4 x 24"	22 1/4"	22 3/4"	24 1/2"	235	164.65
FX-7727	76 1/2 x 27 x 24"	70 x 24"	22 1/4"	22 3/4"	24 1/2"	265	175.10
FX-8427	83 1/4 x 27 x 24"	77 x 24"	22 1/4"	22 3/4"	24 1/2"	270	197.55
<b>FOR 30" WIDE PANELS — 24" DEEP</b>							
FX-6733	67 3/4 x 33 x 24"	61 1/4 x 30"	22 1/4"	28 3/4"	30 1/2"	295	205.00
FX-7733	76 1/2 x 33 x 24"	70 x 30"	22 1/4"	28 3/4"	30 1/2"	320	225.00
FX-8433	83 1/4 x 33 x 24"	77 x 30"	22 1/4"	28 3/4"	30 1/2"	345	245.00

\* clearance between front and rear doors.

\*\* indicates clearance for chassis between panel mounting strips.

### BEFORE ORDERING, PLEASE READ INSTRUCTIONS BELOW:

**CORNER TRIMS ("PX" Series Racks):** Regular vertical trim strips to cover panel attachment screws supplied as standard. Where sliding drawers are used, "Narrow Type" trim strips should be specified. Where racks are set up in rows, front joining trims of either type are available, if so specified, at same price. Specify if required, otherwise standard corner trims will be supplied with each rack.

**CORNER TRIMS ("FX" Series Racks):** "Narrow Type" vertical trim strips are standard. Where Series "PX" and "FX" racks are intermixed in rows, "Narrow Type" trim strips must be used. Front joining trims are available at same price. Specify if required.

**FINISH:** Black Ripple Enamel is standard. Grey ripple or "Primer Coat" only are optional at same price. Other available finishes (at an additional cost of 10%) are Grey Hammertone enamel or Aluminum Grey Lacquer. **SPECIFY FINISH REQUIRED.**

**HOW TO ORDER:** Specify CATALOG NUMBER and FINISH. On "PX" Series Racks, standard vertical trim strips (to cover panel attachment screws) will be furnished unless "Narrow Type" trim strips are specified.

**PANELS:** Panels to fit these racks in 19", 24", and 30" widths are listed on Pages K-626 and K-627. Grille panels, etc. listed 19" wide can be supplied 24" wide to special order.

**ROLLER TRUCKS:** Roller trucks to fit these racks are listed on Pages K-618 and K-625.

**SHELVES:** Vertical side supports, brackets, and shelves are listed on Pages K-618 and K-619.

**ALL PRICES ARE F.O.B. LONG ISLAND CITY, NEW YORK**

**PAR-METAL PRODUCTS CORP. • Long Island City 3, N. Y.**



# TYPE "C" UNIVERSAL CABINET RACKS

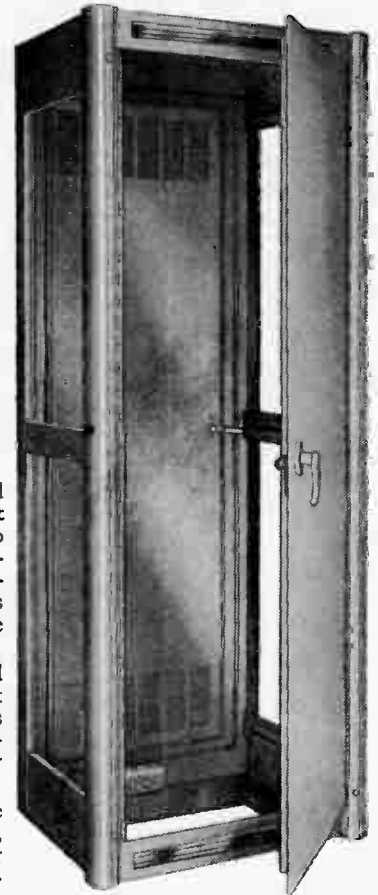
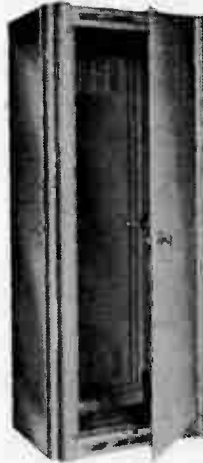
**SERIES "PR" & "FR" RACKS WITH OPEN SIDE WALLS  
FOR 19"-24"-30" WIDE PANELS - 18" & 24" DEEP  
with detachable side panels**

**WITH REAR DOOR ONLY**



**No. PR-6718**

**WITH FRONT & REAR DOORS**



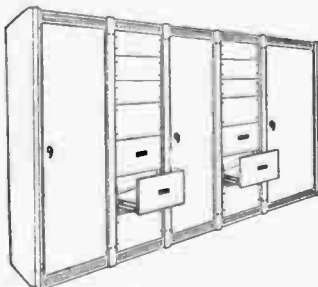
**No. FR-6718**

This Cabinet has Detachable Side Panels mounted.

Series "FR" cabinet shown above is equipped with detachable side panels. Universal Cabinet Racks illustrated on this page are similar to those on the preceding pages except for construction with OPEN SIDES and DETACHABLE SIDE PANELS. Illustrations at left and right show these racks with side panels removed.

In the price list on the opposite right-hand page, you will note the last two columns list the matching detachable side panels; prices are per pair. The illustrations below are typical assemblies of multiple installations; many others are possible.

UNIVERSAL CABINET RACKS facilitate the location and mounting of chassis supports, shelves, sliding shelves, and standard sliding devices. Panel mounting angles may be positioned at the sides of the racks at any location from front to back.



In this group, types "PR" and "FR" racks are intermixed.

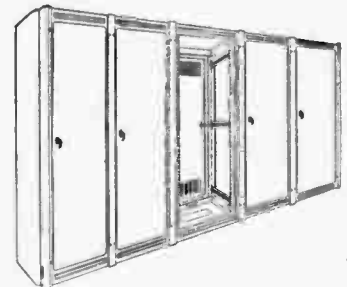
Racks for 24" wide panels are used on the ends, whereas the three center racks are for 19" wide panels. Three of the racks have front as well as rear doors. The position of the racks can be interchanged as desired.

Similar groupings can be made with our Solid Sides Cabinets illustrated on Page K-614.

Advantages of "UNIVERSAL" Type Racks may be summarized as follows:

1. A complete line of racks to provide unit row type assembly, or for use as single racks.
2. Racks with or without front doors, for either 19", 24" or 30" wide panels may be used singly, in rows, or intermixed.
3. The panel mounting angles on ALL racks are fully adjustable, and may be set at any position from front to back.
4. Vertical Side Supports (see Page K-618) for attaching chassis brackets, shelves, slides, etc., may be installed without drilling or fitting.
5. Either regular or "Narrow Type" vertical corner trims are available without additional cost.
6. A simplified method is provided for installing standard or custom-built slides.
7. Available finishes are black or grey ripple enamel, primer coat only, grey hammer-tone or aluminum grey lacquer.

**PLEASE SPECIFY FINISH DESIRED WITH YOUR ORDER. THANK YOU.**



This typical group consists of racks with open sides, using types "PR" and "FR" racks intermixed. Narrow trim strips are used throughout, because racks with front doors are in the assembly.

If "PR" racks (with rear doors only) were in the group exclusively, either regular width or "narrow" type trims could be installed at your option. Detachable side panels are installed on the end racks.

# TYPE "C" UNIVERSAL CABINET RACKS

**SERIES "PR" & "FR" RACKS WITH OPEN SIDE WALLS  
FOR 19"-24"-30" WIDE PANELS - 18" & 24" DEEP  
with detachable side panels**



## CONSTRUCTIONAL SPECIFICATIONS FOR "PR" and "FR" SERIES RACKS

**CABINET:** Entire cabinet is welded together into one integral unit. Door of cabinet is made from 1/16" thick cold rolled sheet steel; top of cabinet is made from 5/64" thick steel; corner posts and bottom of cabinet is made from 7/64" thick steel.

**DETACHABLE SIDE PANELS** are formed and welded construction. They are supported by brackets and are fastened by two "cow-type" fasteners.

**SIDE SHIELDS** for use between open walls are available for insertion when needed. See listing and description on page J-94.

**PANEL MOUNTING:** Angle irons are 3/16" thick structural steel, holes are accurately drilled and tapped 12/24 thread on standard 1 1/4"-1/2" spacings. Additional pairs of panel mounting angles may be purchased separately. See Page K-618 for listings.

**DOORS:** Doors are of a new type with vastly improved construction features. They are stamped from one piece of steel into a rigid unit. Door edges are folded to provide a smooth double thick edge. There are no "patch" type braces, etc., used for reinforcement. "FULL VENTILATING" type louvers provide adequate ventilation in the rear doors.

**HARDWARE:** Doors are equipped with die-cast "automobile" type sturdy handles. Hinges are of the "slip joint" type so that doors may be easily removed. Screws for mounting panels are supplied. Front of rack is trimmed with chrome plated mouldings at top and bottom.

**OUTLETS:** A duplex receptacle and outlet box are provided in the back under the door. A rectangular opening is provided in the bottom for conduits, leads, etc.

**KNOCKOUT HOLES** for interconnections AND **BOLTS** for assembling racks in rows are supplied.

**LOCKS:** Locking type handles are regularly supplied on front and rear of "FR" Series Racks only. They are available on rear doors of "PR" Series Racks at an extra charge of \$1.00.

**MODIFICATIONS:** Modified doors are available with louvers at TOP or BOTTOM only as required.

Detachable side panels may be ordered with louvers to your specifications. Tops of cabinets can be supplied with round or rectangular openings, with or without grilles or baffles. Adjustable baffles to limit or increase ventilation in top openings are available. If air filters are required on doors, provision can be made for this purpose.

### TYPE "PR" SERIES RACKS — WITH REAR DOORS ONLY

### DETACHABLE SIDE PANELS

Catalog No.	Dimensions			Panel Space	Clear Inside Depth	**Clear Inside Width (Front)	Clear Inside Width (Rear)	Shipping Wt. Lbs.	Net Price	Catalog No. (Per Pair)	Sh. Wt. Lbs. (Per Pair)	Net Price (Per Pair)
	Height	Width	Depth									
<b>FOR 19" WIDE PANELS — 18" DEEP</b>												
PR-4818	48 1/4"	22 1/8"	18"	42" x 19"	16 1/2"	17 1/2"	19 1/4"	110	\$ 76.80	RS-418	40	\$32.00
PR-6718	67 1/4"	22 1/8"	18"	61 1/4" x 19"	16 1/2"	17 1/2"	19 1/4"	150	87.80	RS-618	55	39.45
PR-7718	76 3/4"	22 1/8"	18"	70" x 19"	16 1/2"	17 1/2"	19 1/4"	160	98.80	RS-718	60	42.60
PR-8418	83 3/4"	22 1/8"	18"	77" x 19"	16 1/2"	17 1/2"	19 1/4"	180	109.75	RS-818	65	46.00
<b>FOR 19" WIDE PANELS — 24" DEEP</b>												
PR-4824	48 1/4"	22 1/8"	24"	42" x 19"	22 1/2"	17 1/2"	19 1/4"	125	93.05	RS-424	50	39.70
PR-6724	67 1/4"	22 1/8"	24"	61 1/4" x 19"	22 1/2"	17 1/2"	19 1/4"	165	106.65	RS-624	60	46.00
PR-7724	76 3/4"	22 1/8"	24"	70" x 19"	22 1/2"	17 1/2"	19 1/4"	175	117.60	RS-724	65	49.40
PR-8424	83 3/4"	22 1/8"	24"	77" x 19"	22 1/2"	17 1/2"	19 1/4"	190	131.70	RS-824	70	52.50
<b>FOR 24" WIDE PANELS — 24" DEEP</b>												
PR-4827	48 1/4"	27 1/8"	24"	42" x 24"	22 1/2"	22 1/2"	24 1/4"	150	120.20	RS-424	50	39.70
PR-6727	67 1/4"	27 1/8"	24"	61 1/4" x 24"	22 1/2"	22 1/2"	24 1/4"	185	136.85	RS-624	60	46.00
PR-7727	76 3/4"	27 1/8"	24"	70" x 24"	22 1/2"	22 1/2"	24 1/4"	200	147.90	RS-724	65	49.40
PR-8427	83 3/4"	27 1/8"	24"	77" x 24"	22 1/2"	22 1/2"	24 1/4"	215	164.10	RS-824	70	52.50
<b>FOR 30" WIDE PANELS — 24" DEEP</b>												
PR-6733	67 1/4"	33 1/8"	24"	61 1/4" x 30"	22 1/2"	28 3/4"	30 1/4"	215	165.00	RS-624	60	46.00
PR-7733	76 3/4"	33 1/8"	24"	70" x 30"	22 1/2"	28 3/4"	30 1/4"	270	180.00	RS-724	65	49.40
PR-8433	83 3/4"	33 1/8"	24"	77" x 30"	22 1/2"	28 3/4"	30 1/4"	285	197.50	RS-824	70	52.50

### TYPE "FR" SERIES RACKS — WITH FRONT AND REAR DOORS

### DETACHABLE SIDE PANELS

Catalog No.	Dimensions			Panel Space	*Clear Inside Depth	**Clear Inside Width (Front)	Clear Inside Width (Rear)	Shipping Wt. Lbs.	Net Price	Catalog No. (Per Pair)	Sh. Wt. Lbs. (Per Pair)	Net Price (Per Pair)
	Height	Width	Depth									
<b>FOR 19" WIDE PANELS — 18" DEEP</b>												
FR-4818	48 1/4"	22 1/8"	18"	42" x 19"	16 1/2"	17 1/2"	19 1/4"	125	\$ 93.05	RS-418	40	\$32.00
FR-6718	67 1/4"	22 1/8"	18"	61 1/4" x 19"	16 1/2"	17 1/2"	19 1/4"	170	109.75	RS-618	55	39.45
FR-7718	76 3/4"	22 1/8"	18"	70" x 19"	16 1/2"	17 1/2"	19 1/4"	180	125.95	RS-718	60	42.60
FR-8418	83 3/4"	22 1/8"	18"	77" x 19"	16 1/2"	17 1/2"	19 1/4"	200	136.95	RS-818	65	46.00
<b>FOR 19" WIDE PANELS — 24" DEEP</b>												
FR-4824	48 1/4"	22 1/8"	24"	42" x 19"	22 1/2"	17 1/2"	19 1/4"	145	112.35	RS-424	50	39.70
FR-6724	67 1/4"	22 1/8"	24"	61 1/4" x 19"	22 1/2"	17 1/2"	19 1/4"	190	128.50	RS-624	60	46.00
FR-7724	76 3/4"	22 1/8"	24"	70" x 19"	22 1/2"	17 1/2"	19 1/4"	205	145.30	RS-724	65	49.40
FR-8424	83 3/4"	22 1/8"	24"	77" x 19"	22 1/2"	17 1/2"	19 1/4"	215	158.90	RS-824	70	52.50
<b>FOR 24" WIDE PANELS — 24" DEEP</b>												
FR-4827	48 1/4"	27 1/8"	24"	42" x 24"	22 1/2"	22 1/2"	24 1/4"	170	139.55	RS-424	50	39.70
FR-6727	67 1/4"	27 1/8"	24"	61 1/4" x 24"	22 1/2"	22 1/2"	24 1/4"	220	164.65	RS-624	60	46.00
FR-7727	76 3/4"	27 1/8"	24"	70" x 24"	22 1/2"	22 1/2"	24 1/4"	240	175.10	RS-724	65	49.40
FR-8427	83 3/4"	27 1/8"	24"	77" x 24"	22 1/2"	22 1/2"	24 1/4"	245	197.55	RS-824	70	52.50
<b>FOR 30" WIDE PANELS — 24" DEEP</b>												
FR-6733	67 1/4"	33 1/8"	24"	61 1/4" x 30"	22 1/2"	28 3/4"	30 1/4"	280	205.00	RS-624	60	46.00
FR-7733	76 3/4"	33 1/8"	24"	70" x 30"	22 1/2"	28 3/4"	30 1/4"	310	225.00	RS-724	65	49.40
FR-8433	83 3/4"	33 1/8"	24"	77" x 30"	22 1/2"	28 3/4"	30 1/4"	325	245.00	RS-824	70	52.50

\* clearance between front and rear doors.

\*\* indicates clearance for chassis between panel mounting strips.

### BEFORE ORDERING, PLEASE READ INSTRUCTIONS BELOW:

**CORNER TRIMS ("PR" Series Racks):** Regular vertical trim strips to cover panel attachment screws supplied as standard. Where sliding drawers are used, "Narrow Type" trim strips should be specified. Where racks are set up in rows, front joining trims of either type are available, if so specified, at same price.

Specify if required, otherwise standard corner trims will be supplied with each rack.

**CORNER TRIMS ("FR" Series Racks):** "Narrow Type" vertical trim strips are standard. Where Series "PR" and "FR" racks are intermixed in rows, "Narrow Type" trim strips must be used. Front joining trims are available at same price. Specify if required.

### SPECIFY FINISH REQUIRED.

**FINISH:** Black Ripple Enamel is standard. Grey ripple or "Primer Coat" only are optional at same price. Other available finishes (at an additional cost of 10%) are Grey Hammer-tone enamel or Aluminum Grey Lacquer.

**HOW TO ORDER:** Specify CATALOG NUMBER and FINISH. On "PR" Series Racks, standard vertical trim strips (to cover panel attachment screws) will be furnished unless "Narrow Type" trim strips are specified. Order Detachable Side Panels if Required.

**PANELS:** Panels to fit these racks in 19", 24", and 30" widths are listed on Pages K-626 and K-627. Grille panels, etc. listed 19" wide can be supplied 24" wide to special order.

**ROLLER TRUCKS:** Roller trucks to fit these racks are listed on Pages K-618 and K-625.

**SHELVES:** Vertical side supports, brackets, and shelves are listed on Pages K-618 and K-619.

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**PAR-METAL PRODUCTS CORP.**

Long Island City 3, N. Y.



# UNIVERSAL CABINET RACK ACCESSORIES

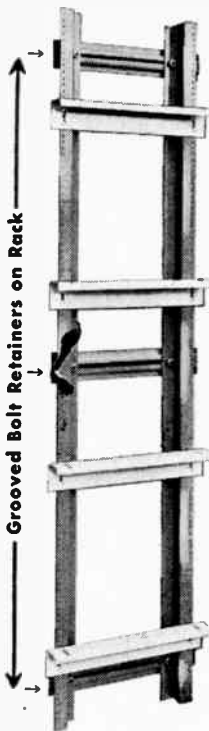
## VERTICAL SIDE SUPPORTS

These vertical side supports are supplied in sets of four uprights to fit type "PX," "PR," "FX" and "FR" racks listed on Pages K-614 thru K-617. (Cut shows side mounting brackets in place which are sold separately—see listing below).

Uprights are fastened to grooved bolt retainers which hold panel mounting angles in place, and are adjustably mounted from front to back of rack. Holes are drilled and tapped vertically on "universal centers" to provide adequate vertical adjustment for mounting brackets, shelves, and various sliding devices made for electronic equipment.

When installed in racks for 19" wide panels, the clearance between uprights (from right to left) is 17 3/4". On 24" wide panel racks, the clearance is 22 3/4"; on 30" wide panel racks, the clearance is 28 3/4". Uprights are 2 5/8" wide and 1 1/2" deep.

Uprights are made from 1/8" steel, finished in aluminum enamel. Each set is supplied with necessary bolts for rack mounting.



Cat. No.	Height	To Fit Racks	Sh. Wt. Lbs.	Net Price Set of 4
VS-42	46 1/2"	PX, PR, FX, FR-4818, 4824, 4827	25	\$14.95
VS-61	65 1/2"	PX, PR, FX, FR-6718, 6724, 6727, 6733	35	19.85
VS-70	74 1/2"	PX, PR, FX, FR-7718, 7724, 7727, 7733	39	23.10
VS-77	81 1/2"	PX, PR, FX, FR-8418, 8424, 8427, 8433	45	25.85

## SIDE MOUNTING BRACKETS



### Brackets BR-118 and Shelf SS-1918

These brackets will fit on Vertical Side Supports as listed above. They are sold in pairs, and slotted to provide vertical adjustment at any height required. Brackets are 2" wide and 1-13/16" high. The vertical face of the bracket is also slotted to match holes in equipment shelves listed below. Where desirable, the horizontal face of the bracket may be bolted to the vertical side supports. They are made from 1/8" steel, with zinc plated finish. Necessary bolts are supplied.

Cat. No.	Length	To Fit Racks	Ship. Wt. Lbs.	Net Price
BR-118	14"	All 18" deep racks	4	\$3.00 per pr.
BR-124	20"	All 24" deep racks	6	3.99 per pr.

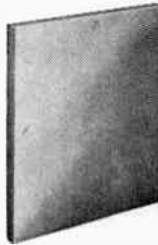
## EQUIPMENT SHELVES

These shelves will assemble with the side mounting brackets listed above, to make a complete shelf between Vertical Side Supports. Made from 1/16" steel, zinc plated. Necessary bolts for assembly are included. All shelves are 7/8" high.

Cat. No.	Width	Depth	To Fit Racks	Net Price
SS-1918	17 1/2"	14 1/4"	19" panels - 18" deep	\$3.15
SS-1924	17 1/2"	20 1/4"	19" panels - 24" deep	3.78
SS-2724	22 1/2"	20 1/4"	24" panels - 24" deep	4.47
SS-3324	28 1/2"	20 1/4"	30" panels - 24" deep	6.15

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## SIDE SHIELDS FOR PR & FR RACKS (Racks are Listed on Pages K-616 & K-617)



Where our PR, FR, Series Racks are used in groups, it is often desirable to use a shield between racks. The shield fits into the upper and lower opening of the rack, each one shielding one half of the side. They are attached with 2 latch screws—no drilling is necessary. One shield per side ONLY is required for Racks 48 1/2" in height.

Shield No.	To Fit Rack No.	Height	Size Depth	Net Price Per Shield
P-418	PR-4818	36"	13 1/2"	\$6.50
P-618	PR-6718	26 1/2"	13 1/2"	5.25
P-718	PR-7718	30 1/2"	13 1/2"	5.75
P-818	PR-8418	34"	13 1/2"	6.25
P-424	PR-4824	36"	19 1/2"	8.00
P-624	PR-6724	26 1/2"	19 1/2"	6.25
P-724	PR-7724	30 1/2"	19 1/2"	7.00
P-824	PR-8424	34"	19 1/2"	7.75
P-424	PR-4827	36"	19 1/2"	8.00
P-624	PR-6727, PR-6733	26 1/2"	19 1/2"	6.25
P-724	PR-7727, PR-7733	30 1/2"	19 1/2"	7.00
P-824	PR-8427, PR-8433	34"	19 1/2"	7.75

## PANEL MOUNTING ANGLES

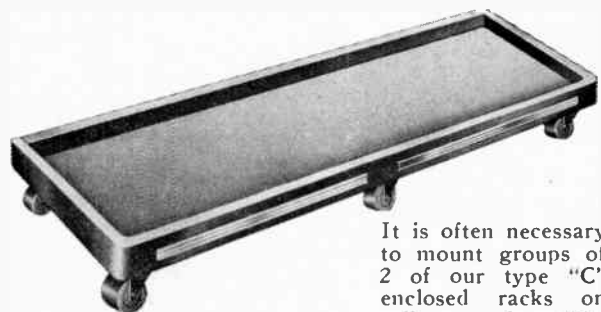
These panel mounting angles (or strips) are the same as used in all Universal type racks, and will fit in either PX, FX, PR or FR series racks (see Pages K-614 thru K-617). They are supplied with necessary bolts to fit into the grooved retainers which hold the pair of panel mounting angles regularly supplied with each rack.

It is often desirable to use an additional pair of panel mounting angles for mounting chassis, terminal strips, etc. They may be adjusted to any depth within the rack from front to back.



Angle No.	To Fit Racks Number	Net Price Per Pair
PA-42	PX, FX, PR, FR-4818, 4824, 4827	\$11.05
PA-61	PX, FX, PR, FR-6718, 6724, 6727, 6733	15.20
PA-70	PX, FX, PR, FR-7718, 7724, 7727, 7733	17.30
PA-77	PX, FX, PR, FR-8418, 8424, 8427, 8433	18.90

## DOUBLE WIDTH ROLLER TRUCKS



It is often necessary to mount groups of 2 of our type "C" enclosed racks on roller trucks. The

truck illustrated above is used for that purpose. They are similar to our heavy duty trucks (page K-625), except that they have been reinforced with heavier steel because of their greater length.

They are supplied with 6 - 3" diameter wheels with heavy duty type casters. They are available at double the cost of roller trucks for single racks listed on Page K-625. Please advise finish required. They may be obtained in black or grey ripple, grey hammertone enamel, grey lacquer, or primer coat only.

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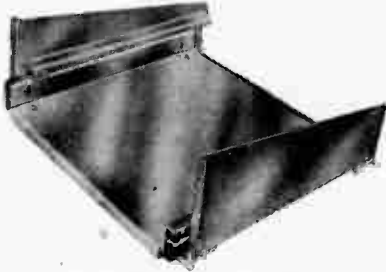
Long Island City 3, N. Y.

# UNIVERSAL CABINET RACK ACCESSORIES



## SLIDING SHELF UNITS

These sliding shelves may be mounted on all of the relay racks listed by us, as they are screw mounted to the front panel mounting angles, the same as regular panels.



Basic Slide Assembly SD-1916

The basic assembly illustrated is sold as a complete unit. Chassis may be bolted directly to the sliding shelf; panels may be attached to the shelf using standard chassis brackets listed on Page K-633. Formed panels with a minimum height of 7" are recommended. The forward movement of shelves for 18" deep racks is 13 1/4"; for 24" deep racks, it is 17 1/4". The shelf may be quickly removed from the slide while it is in an extended position.

The illustration shows a sliding shelf unit with the slide carrier in a vertical position. This type affords the maximum load capacity, but reduces the usable shelf space to 15 5/8" wide. The shelf height is only 1 1/4".

We also list shelves with slide carriers mounted horizontally under the shelf. This method permits the use of 17" wide chassis, but reduces the load capacity. The shelf height is also 1 1/4". All parts on both types are zinc plated.

### WITH VERTICAL SLIDE CARRIERS

Cat. No.	Usable Width	Space Depth	Panel Width	Rack Depth	Ship. Wt. Lbs.	Net Price
SD-1916	15 5/8"	14 1/4"	19"	18"	22	\$15.28
SD-2016	15 5/8"	20 1/4"	19"	24"	26	24.95
SD-2416	20 5/8"	20 1/4"	24"	24"	30	28.00

### WITH HORIZONTAL SLIDE CARRIERS

Cat. No.	Usable Width	Space Depth	Panel Width	Rack Depth	Ship. Wt. Lbs.	Net Price
SD-1920	17 1/8"	14 1/4"	19"	18"	23	\$16.50
SD-2020	17 1/8"	20 1/4"	19"	24"	29	24.95
SD-2420	22 1/8"	20 1/4"	24"	24"	35	28.00

## METAL BASE PANS



MB-88



MB-154, 155

Pans are made from steel with open tops. No. MB-88 has brackets for attaching changer; MB-154 and MB-155 have mounting flanges on top. Finish is grey wrinkle enamel.

Cat No.	Size	To Fit	Net Price
MB-88	15"x12 1/2"x3 3/4" to 4"	RC-88 or RC-98	\$4.74
MB-154	15 5/8"x14 1/8"x3 1/4"	general use	4.41
MB-155	15 5/8"x14 1/8"x5 1/4"	general use	4.41

## PHONO DRAWER ASSEMBLIES

Consists of basic sliding shelf assembly with a drawer front and handle as illustrated. Drawer front is same size as standard formed panel 10 1/2" high. (12 1/4" high drawer fronts are also available.) Vertical slide carriers are used for maximum load capacity.



Phono Drawer Assembly PH-1916

Where metal base pans are available with changers, it is recommended that such pans be used and bolted directly to the shelf.

For Garrard changers, a metal base pan is listed below. For other changers and turntables, we list two open top metal bases in 4" and 5" depths.

Forward movement of drawer is 13". No. PH-1916 will fit standard 18" deep racks; No. PH-2416 is for 24" deep racks.

Catalog No.	Usable Width	Space Depth	Height	Front Panel	Ship. Wt. Lbs.	Net Price
*PH-1916	15 5/8"	14 1/4"	9 1/2"	10 1/2"x19"	30	\$21.42
PH-2416	20 5/8"	20 1/4"	9 1/2"	10 1/2"x24"	42	34.35

\* Available with 12 1/4" high panels for Garrard RC-88, or similar changers at 5% increase.

FINISH: Available in black or grey ripple enamel, grey hammertone, or aluminum grey lacquer. SPECIFY FINISH REQUIRED.

## SLIDING DRAWER ASSEMBLY



This drawer is similar to our No. PH-1916 phono drawer except that the panel has been reduced to a 7" height, and the sides of the slide are completely enclosed to form a drawer. Horizontal slide carriers are used to provide a useable space approximately 17" wide, 14" long and 5" deep.

FINISH: Available in black or grey ripple enamel, grey hammertone, or aluminum grey lacquer. Shipping weight 35 lbs.

SPECIFY FINISH REQUIRED.

Catalog No. DD-1925, Net Price \$17.50

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PAR-METAL PRODUCTS CORP.

Long Island City 3, N. Y.



# TYPE "C" DELUXE CABINET RACKS

## FOR 19" WIDE PANELS - 18½" & 24" DEEP

**THESE RACKS** will appeal to those who desire to combine rugged construction with modern styling and improved design. Combining furniture steel with dependable workmanship and careful attention to mechanical detail, they have been adapted to a wide range of requirements in the electronic industry.

The design of the vertical posts permits these racks to be installed in rows or "gangs," without the use of front joining strips between the racks. This provides a greater flexibility in their installation, particularly in broadcast stations.

### SPECIFICATIONS FOR THESE DELUXE TYPE RACKS

**CABINET:** Entire cabinet is welded together into one integral unit. Body of cabinet is made from 1/8" thick cold rolled sheet steel; top of cabinet is made from 5/64" thick steel; bottom is made from 7/64" thick steel.

**PANEL MOUNTING:** Angle irons are 3/8" thick structural steel, holes are accurately drilled and tapped 12/24 thread on standard 1 1/4" - 1/2" spacings.

**DOOR:** Doors are stamped from one piece of steel into a rigid unit. Door edges are folded to provide a smooth double thick edge. There are no "patch" type braces, etc., used for reinforcement.

**HARDWARE:** Doors are equipped with die-cast "automobile" type sturdy handles. Hinges are of the "slip-joint" type so that doors may be easily removed. Screws for mounting panels are supplied. Front of rack is trimmed with chrome plated mouldings at top and bottom.

**OUTLETS:** A duplex receptacle and outlet box are provided in the back under the door. A rectangular opening is provided in the bottom for conduits, leads, etc.

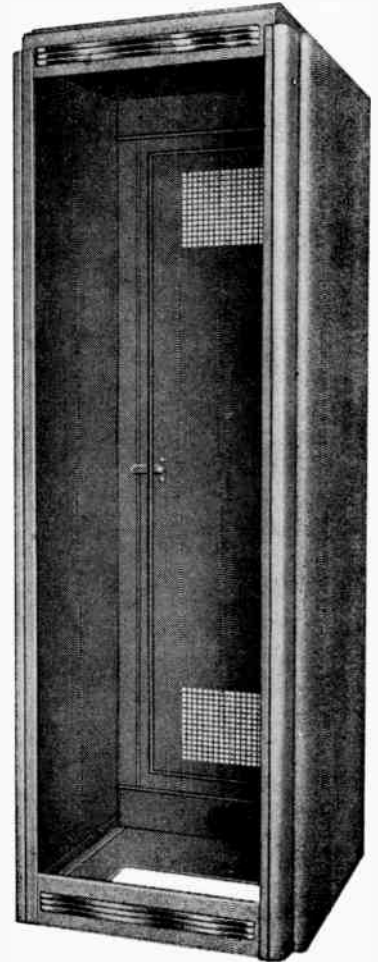
**CORNER TRIMS:** All racks have quick detachable corner trims, which are fastened to the rack by means of two "Cowl Type" fasteners on each trim.

**PANELS:** Panels 19" wide to fit these racks are described on K-626, K-627. **FINISH:** Black ripple with corner trims finished in dull black; or slate grey ripple with corner trims finished in slate grey are standard. The letter "P" before Catalog No. indicates black ripple enamel; the letter "PG" before Catalog No. indicates slate grey ripple enamel.

**OTHER OPTIONAL FINISHES:** Primer coat only is available at same price. Other obtainable finishes (at an additional cost of 10%) are grey hammertone enamel, or aluminum grey lacquer. Use prefix "P" when specifying optional finishes on your order.

**RACK SHELVES:** Shelf R-2218 fits the 18½" deep racks; and Shelf R-2224 fits the 24" deep racks. See Page K-625.

**ROLLER TRUCKS:** Truck RT-418 fits the 18½" deep racks; and Truck RT-424 fits the 24" deep racks. See Page K-625.



**No. P-6918**

**MODIFIED RACKS:** The deluxe type racks listed on this page can be supplied with grille openings in top for additional ventilation. Special openings in doors can also be provided.

### 18½" DEEP RACKS

Catalog No.	Finish	Overall Dimensions	Panel Spacing	Clear Inside Width (Front)	Clear Inside Width (Rear)	Clear Inside Depth	Shipping Wt. Lbs.	Net Price
P-6918	• Block Ripple	69 3/8" x 23 3/8" x 18 1/2"	61 1/4" x 19"	17 3/4"	19 1/8"	16 1/2"	155	\$ 99.25
P-7818	• Block Ripple	78 3/8" x 23 3/8" x 18 1/2"	70 x 19"	17 3/4"	19 1/8"	16 1/2"	165	108.70
P-8518	• Block Ripple	85 3/8" x 23 3/8" x 18 1/2"	77 x 19"	17 3/4"	19 1/8"	16 1/2"	180	122.85

### 24" DEEP RACKS

P-6924	• Block Ripple	69 3/8" x 23 3/8" x 24"	61 1/4" x 19"	17 3/4"	19 1/8"	22"	175	\$116.55
P-7824	• Block Ripple	78 3/8" x 23 3/8" x 24"	70 x 19"	17 3/4"	19 1/8"	22"	190	126.00
P-8524	• Block Ripple	85 3/8" x 23 3/8" x 24"	77 x 19"	17 3/4"	19 1/8"	22"	200	141.75

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# TYPE "C" STANDARD CABINET RACKS

## FOR 19" and 30" WIDE PANELS



No. P-6618

These racks have been a standard unit in the electronic industry for many years, and have been adapted to a broad field of requirements. The construction is essentially the same as our Racks on Pages K-614 and K-615, and similar specifications would apply as to **CABINET, PANEL MOUNTING, DOOR, HARDWARE and OUTLET.**

Models G-2218, G-2219 and G-3024 have additional reinforcement at the rear corners, and are suitable for transmitter equipment. The louvers on the rear door are covered with mesh screening in the inside, and additional knockouts are provided for conduit and 4" square duct.

Models P-6618 and P-8318 are listed primarily for replacement and extensions of installations already made. Our "PX" series on Pages K-614 and K-615 offer racks of the same dimensions with important additional features at a nominal increase in cost.

**CORNER TRIMS:** All racks have quick, detachable, new corner trims, which are fastened to front of rack with two finger type "captive screws." This permits quick, simple removal without the use of screw-drivers, etc.

**TO SET UP IN GANGS OR ROWS:** The racks may be joined together by means of a flat trim fastened to the front of the adjacent support angles, overlapping both racks. Knockout holes 1 1/8" in diameter are provided at the sides of the racks to permit connections between them.

Racks are regularly shipped with corner trim as illustrated; where specified, the front joining trim is furnished without additional charge in place of the corner trim.



No. G-2218

### 18" DEEP STANDARD RACKS

Catalog No.	Finish	Overall Dimensions	Panel Space	Clear Inside Depth	Clear Inside Width (Front)	Clear Inside Width (Rear)	Shipping Wt. Lbs.	Net Price
P-3618	• Black Ripple	42 1/8 x 22 x 18"	36 3/4 x 19"	16 7/8"	17 3/4"	19 1/8"	110	\$ 63.00
P-6618	• Black Ripple	67 3/8 x 22 x 18"	61 1/4 x 19"	16 7/8"	17 3/4"	19 1/8"	140	81.55
P-8318	• Black Ripple	83 1/8 x 22 x 18"	77 x 19"	16 7/8"	17 3/4"	19 1/8"	170	103.50

### 18" AND 24" DEEP TRANSMITTER RACKS

G-2218	• Black Ripple	76 1/8 x 22 x 18"	70 x 19"	16 7/8"	17 3/4"	19 1/8"	185	\$110.25
G-2219	• Black Ripple	83 1/8 x 22 x 18"	77 x 19"	16 7/8"	17 3/4"	19 1/8"	200	122.85
G-3024	• Black Ripple	76 1/8 x 33 x 24"	70 x 30"	28 1/2"	29 1/4"	24 1/8"	250	182.70

**FINISH:** Black ripple with corner trims finished in dull black; or slate grey ripple with corner trims finished in slate grey are standard. Prime coat only is optional in place of ripple enamel finish at no extra charge, if so specified in your order. Aluminum grey lacquer or grey hammertone enamel is available at an additional charge of 10%. The letter, "P" before Catalog No. indicates black ripple enamel; the letter "PG" before Catalog No. indicates slate grey ripple enamel.

**PANELS:** Panels 19" and 30" wide to fit these racks are described on Pages K-626 and K-627.

**ROLLER TRUCKS:** Truck RT-412 fits all 18" deep racks. Roller trucks are listed on Page K-625.

**RACK SHELVES:** Shelves are listed on Page K-625.

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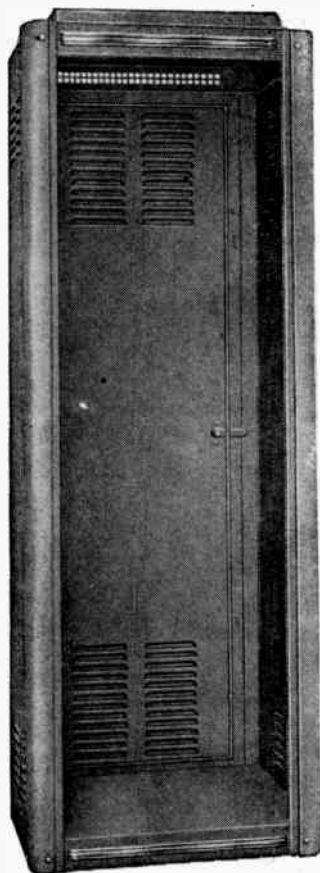
• Long Island City 3, N. Y.



# TYPE "A" ENCLOSED RELAY RACKS

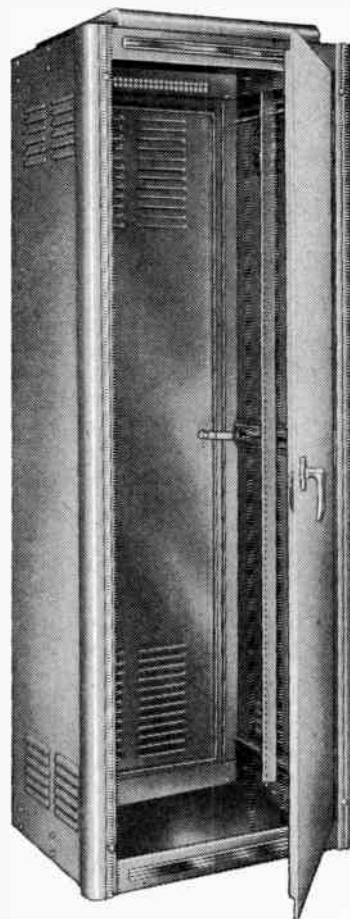
## DELUXE TYPE — FOR 19" WIDE PANELS

**WITH REAR DOOR ONLY**



**No. ER-225**

**WITH FRONT AND REAR DOORS**



**No. FD-225**

THESE DELUXE TYPE "A" RACKS are fully in keeping with modern streamlined styling. Vertical corner trims cover the panel mounting screws, similar to our Type "C" racks. Panels fit into a recess, so that the edges of panels are not exposed when corner trims are removed. Trimmed at top and bottom with chrome finished mouldings.

**CABINET:** Entire cabinet is constructed of 1/16" thick cold-rolled steel. These racks are shipped "knocked-down" with necessary bolts for easy assembly.

**PANEL MOUNTING:** Angle irons are of 7/64" thick steel, holes are accurately drilled and tapped 10-32 thread on universal centers for all types of panels.

**CORNER TRIMS:** All racks have quick detachable, new corner trims which are fastened to front with two studs. This provides for rapid, finger-tip removal without the use of screwdrivers, etc.

**HARDWARE:** Doors are of new design same as our Type "C" commercial racks. "Series ER-225" racks are equipped with "automobile" type non-locking handles on rear doors. On "Series FD-225" racks, similar handles with key locks are used on both front and rear doors. Hinges are the "slip-joint" type so that doors may be easily removed. Front of rack is trimmed with chrome finished mouldings. Screws for mounting panels are supplied.

**FINISH:** Slate grey ripple finish is standard. Black ripple enamel finish will be supplied without extra charge if so specified on your order.

**PANELS:** Panels 19" wide to fit these racks are listed on Pages K-626 and K-627.

**SERIES ER-225 RACKS:** These units may be ganged in double or "multi-rack" units. When so ordered, racks are supplied with common intermediate sides which are joined to adjacent tops and bottoms. Solid intermediate sides are supplied. In multiple units, center joining trims are supplied.

**SERIES FD-225 RACKS:** This series with front and rear doors have adjustable panel mounting angles, which may be located at any distance from front to rear of rack. VERTICAL SIDE SUPPORTS listed on Page K-618 will fit into these racks.

### S P E C I F I C A T I O N S

Catalog No.	Doors	Overall Dimensions	Panel Space	Clear Inside Width (Front)	Clear Inside Width (Rear)	Clear Inside Depth	Shipping Wt. Lbs.	Net Price
ER-223	Rear only	43 1/4 x 22 x 18"	36 3/4 x 19"	17 1/2"	19"	16 3/4"	90	\$48.15
ER-225	Rear only	67 3/4 x 22 x 18"	61 1/4 x 19"	17 1/2"	19"	16 3/4"	120	59.25
ER-227	Rear only	83 1/2 x 22 x 18"	77 x 19"	17 1/2"	19"	16 3/4"	140	71.70
FD-223	Front & Rear	43 1/4 x 22 x 18"	36 3/4 x 19"	19 1/2"	19"	*16"	110	60.80
FD-225	Front & Rear	67 3/4 x 22 x 18"	61 1/4 x 19"	19 1/2"	19"	*16"	150	75.60
FD-227	Front & Rear	83 1/2 x 22 x 18"	77 x 19"	19 1/2"	19"	*16"	175	94.50

\* clearance between front and rear doors.

**ROLLER TRUCK:** Roller truck No. RT-412 for Series ER-225 racks; use RT-418 for Series FD-225; both are listed on Pg. K-625.

**SHELVES:** For Series ER-225 Racks, use shelf No. ER-2212 listed on Pg. K-625. To install shelves in Series FD-225, it is recommended that Vertical Side Supports, brackets and shelves listed on Page K-618 be used.

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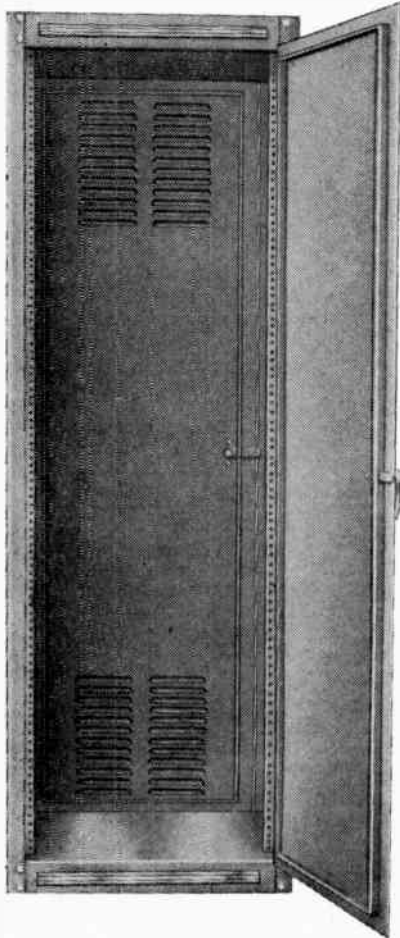


# TYPE "A" ENCLOSED RELAY RACKS



## ROUNDED CORNER TYPE — FOR 19" WIDE PANELS

### WITH FRONT AND REAR DOORS



No. FD-215

THESE RACKS ARE SIMILAR in construction to our Series ER-225 Racks. They provide a combination of standard functional design and superior construction at a modest price. The vertical front corners are nicely rounded, and the top and bottom are trimmed with red-stripped chrome finished mouldings. The panels fit into a recess, so that the edges are not exposed.

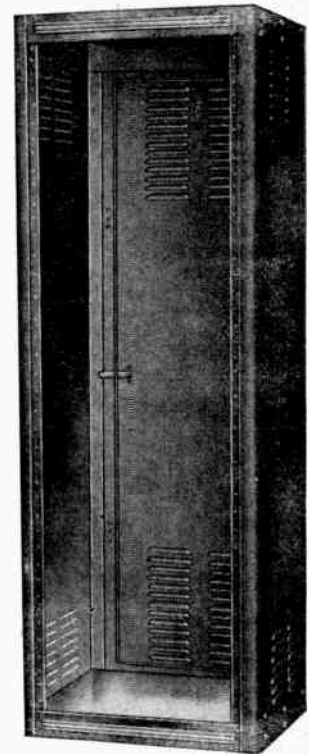
**CABINET:** Entire cabinet is constructed of 1/16" thick cold-rolled steel. These racks are shipped "knocked-down" with necessary bolts for easy assembly. Screws for mounting panels are supplied.

**PANEL MOUNTING:** Angle irons are 7/64" thick steel. Holes are accurately drilled and tapped 10-32 thread on universal centers for all types of panels.

**HARDWARE:** Doors are of new design same as our Type "C" commercial racks. "Series ER-215" racks are equipped with "automobile" type non-locking handles on rear doors. On "Series FD-215" racks, similar handles with key locks are used on both front and rear doors. Hinges are the "slip-joint" type so that doors may be easily removed. Front of rack is trimmed with chrome finished mouldings. Screws for mounting panels are supplied.

**FRONT DOOR RACKS:** On Series FD-215 racks, the front panel mounting angles are recessed 2" deep to allow clearance for dials, etc. The clear inside depth behind the panel is 13 1/2".

### WITH REAR DOOR ONLY



No. ER-215

## S P E C I F I C A T I O N S

Catalog No.	Doors	Overall Dimensions	Panel Space	Clear Inside Depth	Clear Inside Width (Rear)	Clear Inside Width (Front)	Shipping Wt. Lbs.	Net Price
ER-213	Rear only	42 x 22 x 16 1/2"	36 3/4 x 19"	15 1/4"	19"	17 5/8"	85	\$34.35
ER-215	Rear only	66 1/2 x 22 x 16 1/2"	61 1/4 x 19"	15 1/4"	19"	17 5/8"	110	50.85
ER-217	Rear only	82 1/4 x 22 x 16 1/2"	77 x 19"	15 1/4"	19"	17 5/8"	130	61.20
FD-215	Front & Rear	66 1/2 x 22 x 16 1/2"	61 1/4 x 19"	*13 1/2"	19"	19 1/8"	130	67.20
FD-217	Front & Rear	82 1/4 x 22 x 16 1/2"	77 x 19"	*13 1/2"	19"	19 1/8"	155	81.90

\* clearance behind panel.

**FINISH:** SLATE GREY RIPPLE enamel is standard. Black ripple enamel finish will be supplied without extra charge if so specified on your order.

**PANELS:** Panels 19" wide to fit these racks are listed on Pages K-626 and K-627.

**RACK SHELVES:** For Series ER-215 racks, use shelf No. ER-2112. For Series FD-215 racks, use shelf No. R-2215. Both shelves are listed on Page K-625.

**ROLLER TRUCK:** No. RT-411 will fit all racks listed on this page. Roller trucks are listed on Page K-625.

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• Long Island City 3, N. Y.



# TYPE "A" CHANNEL RELAY RACKS

## FOR 19" WIDE PANELS

### DELUXE TYPE



No. RR-197

OUR NEW DELUXE CHANNEL TYPE RELAY RACK extends the utility and applicability of the standard channel relay rack.

The panel space has been changed to 77"x19", to match a standard height used on enclosed cabinet racks.

The upright channels have been modified to an 8" overall depth, which when combined with a formed recess for the panels, greatly increases the rigidity of the rack. The edges of the panels are not exposed.

The rack is drilled and tapped for 10-32 screws at both front and back permitting the optional use of either panels, or dish type chassis mounted to the racks at both front and back. The full panel space of 77"x19" is available on the back, the same as the front.

The clear distance between panel mounting flanges (from front to back) is 6¾". It is practicable to use this 6" depth as an enclosure for dish type chassis listed on Page K-633. When such chassis are mounted at the back, the addition of standard or hinged type panels (see Page K-626) will make a rack enclosure with a clear depth of 6¾". The top cross-brace is provided with a grille for ventilation where needed.

The top brace and the vertical channel members are securely welded together. The base and rear braces are shipped knocked down, with all necessary bolts for assembly. Panel mounting screws are also supplied.

#### CATALOG No. RR-197:

Overall Dimensions: 80¾" high, 21½" wide, 20" deep  
 Available Panel Space: 77"x19" (at front and rear)  
 Clearance between Uprights: 17¾"  
 Clear Depth in Channel: 6¾" inside  
 Shipping Weight: 100 lbs. Net Price: \$38.50

FINISH: Standard finish is black ripple enamel. For grey ripple enamel, add 5%. PANELS: Panels to fit these racks are listed on Pages K-626 and K-627.

### STANDARD TYPE



No. RR-195

THESE RACKS have been a standard unit in the electronics industry for years. They are sturdily constructed from 7/64" pressed steel, and braced at the rear as illustrated. The two vertical members and the top cross-brace ARE SECURELY WELDED TOGETHER.

Panel mounting holes are accurately drilled on universal centers for either Type "A" or type "C" panels, tapped for 10-32 machine screws. An ample supply of panel mounting screws and finishing washers are supplied.

Upright channels are 3" deep with flanges 1½" wide. Clearance between uprights is 17¾". Base is 20¾" deep and extends both front and rear on the RR-195 rack; it is 18¾" deep on the RR-193 rack.

FINISH: BLACK RIPPLE ENAMEL.

Cat. No.	Overall Size	Panel Space	Shp. Wt. Lbs.	Net Price
RR-195	73¼"x20x20¾"	71¾"x19"	55	\$21.00
RR-193	38¼"x20x18¾"	36¾"x19"	45	18.00

## UTILITY CASES & CANS

### STEEL METER CASES

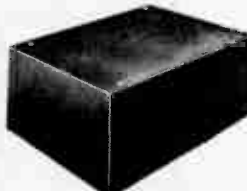
These meter cases may be obtained for 2" and 3" meters, in both single and triple units. They are substantially made of steel, with welded joints, and black ripple enamel finish. Top front corner is rounded.



Cat. No.	Meters	Meter Hole	Shp. Wt. Lbs.	Net Price
SM-12	Single 2"	2¼"	1	\$ .99
SM-32	Three 2"	2¾"	2	2.76
SM-13	Single 3"	2½"	1	.99
SM-33	Three 3"	2¾"	2	2.76

### STEEL UTILITY CASES

These cases have flat tops and bottoms, which are removable. Made from 20 gauge sheet steel, with flanged edges and spot-welded corners. Finished in black ripple enamel.



Cat. No.	Overall Size	Shp. Wt. Lbs.	Net Price
MC-442	4x 4 x 2"	1	\$ .84
MC-453	4x 5 x 3"	2	.93
MC-596	5x 9 x 6"	4	1.86
MC-654	6x 5 x 4"	3	1.20
MC-666	6x 6 x 6"	3	1.44
MC-8101	8x10 x10"	7	3.06
MC-8107	8x10 x 7"	6	2.64
MC-1128	11x12 x 8"	9	3.60
MC-1597	15x 9 x 7"	8	4.08

### STEEL UTILITY CANS

Can be used for monitors, shield cans, etc. Made of sheet steel with spot welded reinforced corners. Tops and bottoms removable with self-tapping screws. Black ripple enamel finish.



### STEEL UTILITY CANS

Cat. No.	Overall Size	Shp. Wt. Lbs.	Net Price
UC-565	5½x 6x 5½"	3	\$1.44
UC-596	5 x 9x 6"	5	1.86
UC-8107	8 x10x 7"	6	2.64
UC-8101	8 x10x10"	7	3.06
UC-1128	11 x12x 8"	9	3.60

## TABLE TYPE RELAY RACKS



No. TR-2520

THESE RACKS are intended for table mounting and are useful where a regular floor type heavy duty rack is not required.

The base is constructed of one piece, similar to a chassis. Mounting holes are accurately drilled on universal centers, tapped for 10-32 screws.

They are finished in black ripple enamel and shipped "knocked down" with all necessary screws.

Cat. No.	Overall Size	Panel Space	Shp. Wt. Lbs.	Net Price
TR-2520	24x21x12"	21x19"	17	\$7.35
TR-3220	31x21x12"	28x19"	20	9.00

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# CABINETS — SHELVES — ROLLER TRUCKS



## TYPE "A" DESK PANEL CABINET RACKS

For Standard 19" Rack Panels

In keeping with our other Deluxe racks, the vertical front corners are rounded and the top and bottom are trimmed with red-stripped chrome finished mouldings.

- Panels fit into a recess, so that the edges are not exposed.
- Panel mounting holes are accurately drilled on universal centers, for either type "A" or type "C" panels.
- Holes are tapped for 10-32 machine screws. They may be used with any chassis up to 13"x17" in size.
- All cabinets are rigidly constructed of 1/16" thick cold rolled sheet steel, with all joints electrically welded.
- Louvres provide ample ventilation through sides and back.
- Piano type hinges are used on the top doors.
- Panel mounting screws and washers are furnished.



No. DL-1713

(With door in top only) (not illustrated)

Catalog No.	Cabinet Size	Available Panel Space	Ship. Wt.	Net Price
DL-128	10 1/2" x 21 1/2" x 15" deep	8 3/4" x 19"	25 lbs.	\$12.90
DL-1210	12 1/4" x 21 1/2" x 15" deep	10 1/2" x 19"	26 lbs.	14.55
DL-1225	14" x 21 1/2" x 15" deep	12 1/4" x 19"	29 lbs.	15.69
DL-1413	15 3/4" x 21 1/2" x 15" deep	14" x 19"	30 lbs.	17.28

(With door in top and door on rear panel)

Catalog No.	Cabinet Size	Available Panel Space	Ship. Wt.	Net Price
DL-1713	19 1/4" x 21 1/2" x 15" deep	17 1/2" x 19"	35 lbs.	\$20.10
DL-2613	28" x 21 1/2" x 15" deep	26 1/4" x 19"	45 lbs.	23.40
DL-3513	36 3/4" x 21 1/2" x 15" deep	35" x 19"	53 lbs.	25.80

FINISH: BLACK RIPPLE ENAMEL is standard. Slate grey ripple enamel will be supplied without extra charge if so specified in your order.

PANELS: Type "C" panels to fit these racks are listed on Pages K-626 and K-627.

RACK SHELF: Rack Shelf No. R-2128 will fit these racks.

ROLLER TRUCK: Roller truck No. RT-410 will fit these racks.

## SHELVES FOR CABINET RACKS

These shelves are designed to fit into the various enclosed racks listed in this catalog. They are constructed to be mounted inside the rack with side bolt mounting. All shelves are 1" high, and finished in black ripple enamel. Shipping weight of all shelves is 10 lbs.



No. R-2015

Catalog No.	Will Fit Rack No.	Rack Page No.	Shelf Size	Net Price
ER-2112	ER-218, ER-215, ER-217	K-623	13" x 21 1/2"	\$3.30
R-2215	FD-215, FD-217	K-623	10 5/8" x 21 1/2"	3.30
ER-2212	ER-223, ER-225, ER-227	K-622	15" x 21 1/2"	3.30
R-2128	DL-1713, 2613, 3513	K-625	12" x 21 1/2"	2.67
R-2219	G-2218, G-2219	K-621	16" x 21 5/8"	4.71
R-2018	P, PG-3618, 6618, 8318	K-621	16" x 21 1/2"	4.89
R-2218	P, PG-6918, 7818, 8518	K-620	16" x 23 1/2"	4.41
R-2224	P, PG-6924, 7824, 8524	K-620	22" x 23 1/2"	5.34

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## ROLLER TRUCKS FOR RACKS

Standard Type

These trucks are especially designed for use on our Deluxe streamlined racks, and have rounded corners at the front with chrome trim. Overall size is about 2" wider than the racks for better distribution of weight. Castors are ball-bearing swivel-type with 2" rubber composition wheels. Finished in slate grey ripple enamel. Also available in grey hammertone or aluminum grey lacquer at an additional cost of 15%. Shipping weight is 22 lbs.



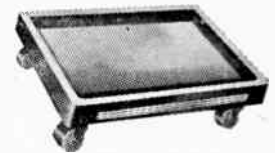
No. RT-412

Catalog No.	Will Fit Rack No.	Rack Page No.	Net Price
RT-410	DL-1713, 2613, 3513	K-625	\$ 9.60
RT-411	ER-213, ER, FD-215, 217	K-623	10.08
RT-412	ER-223, ER-225, ER-227 P, PG-3618, 6618, 8318, G-2218, 2219	K-622 K-621 K-621	11.04
RT-418	P, PG-6918, 7818, 8518 FD-223, 225, 227 PX, FX-4818, 6718, 7718, 8418	K-620 K-622 K-615	12.90
RT-420	PX, FX-4824, 6724, 8424	K-615	14.10
RT-424	P, PG-6924, 7824, 8524	K-620	14.10

## ROLLER TRUCKS FOR RACKS

HEAVY DUTY TYPE

Our heavy duty roller trucks are similar in size and design to the standard units, except that they have reinforced bottoms, and are equipped with heavy-duty swivel type casters, with 3" diameter wheels. They are recommended for use on all 24" deep racks, and on other racks where necessary.



No. HD-412

Standard finish is grey ripple enamel; black ripple is optional. Also available in grey hammertone or aluminum grey lacquer at an additional cost of 10%. Shipping weight is 35 lbs.

Catalog No.	Will Fit Rack No.	Rack Page No.	Net Price
HD-412	ER-223, ER-225, ER-227 P, PG-3618, 6618, 8318, G-2218, 2219	K-622 K-621 K-621	\$19.80
HD-418	FD-223, FD-225, FD-227 PX, FX-4818, 6718, 7718, 8418 P, PG-6918, 7818, 8518	K-622 K-615 K-620	21.60
HD-420	PX, FX-4824, 6724, 7724, 8424	K-615	22.95
HD-424	P, PG-6924, 7824, 8524	K-620	22.95
*HD-425	PR, FR-4818, 6718, 7718, 8418	K-617	23.00
*HD-426	PR, FR-4824, 6724, 7724, 8424	K-617	25.50
HD-427	PX, FX-4827, 6727, 7727, 8427	K-615	25.80
*HD-432	PR, FR-4827, 6727, 7727, 8427	K-617	28.00
HD-434	PX, FX-6733, 7733, 8433	K-615	32.00
*HD-438	PR, FR-6733, 7733, 8433	K-617	35.00

\*For racks with detachable side panels attached to racks.

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# TYPE "C" RACK PANELS 19"-24"-30"-WIDE

Unless otherwise indicated, all panels on this page are uniformly slotted to fit type "C" cabinet racks and all type "A" racks.

They will also fit any other rack equipment having multiple 1/4" - 1/2" spacings or what is commonly termed as "W.E. spacing." They may be obtained in

either black ripple enamel or slate grey ripple enamel. Panels can be furnished in grey hammertone or aluminum grey lacquer at extra charge.

Medium grey enamel to match Utility Desk Assemblies listed on Pages K-628 thru K-631 is also available for all panels listed on this page.

## 1/8" STEEL STANDARD BLANK PANELS 1/8" ALUMINUM

Standard flat panels made from 1/8" thick steel, either 19", 24", or 30" wide. Finished in black or slate grey ripple enamel. Other finishes available as mentioned in page heading, also primer coat only.



Standard flat panels made from 1/8" aluminum are listed below.

Panels 24" or 30" wide, made from 1/8" or 3/16" aluminum, are available on order.

### 19" WIDE PANELS — 1/8" STEEL

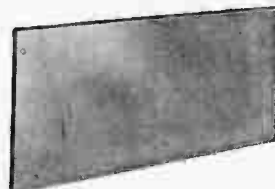
Cat. No. Black	Cat. No. Grey	Height	Ship. Wt. Lbs.	Net Price
6600	G-6600	1 3/4"	2	\$ .72
6601	G-6601	3 1/2"	3	.84
6602	G-6602	5 1/4"	4	1.08
6603	G-6603	7"	5	1.26
6604	G-6604	8 3/4"	7	1.50
6605	G-6605	10 1/2"	8	1.74
6606	G-6606	12 1/4"	9	2.07
6607	G-6607	14"	10	2.37
6608	G-6608	15 3/4"	12	2.64
6609	G-6609	17 1/2"	13	2.97
6610	G-6610	19 1/4"	14	3.30
6611	G-6611	21"	15	3.63

### 19" WIDE PANELS — 1/8" ALUMINUM

Cat. No. Black	Cat. No. Grey	Height	Ship. Wt. Lbs.	Net Price
6675	G-6675	1 3/4"	1	\$ .87
6676	G-6676	3 1/2"	1	1.20
6677	G-6677	5 1/4"	2	1.65
6678	G-6678	7"	2	2.07
6679	G-6679	8 3/4"	3	2.46
6680	G-6680	10 1/2"	3	3.09
6681	G-6681	12 1/4"	4	3.60
6682	G-6682	14"	4	4.14
6683	G-6683	15 3/4"	5	4.59
6684	G-6684	17 1/2"	5	5.10
6685	G-6685	19 1/4"	6	5.58
6686	G-6686	21"	7	6.06

## FORMED BLANK PANELS

These panels are made from 1/16" thick steel, with formed edges to make an overall thickness of 7/16". They are made 19" and 24" wide, with mounting holes on standard centers to fit relay racks. Finishes are black or grey ripple enamel. Other available finishes are mentioned in page heading, also primer coat only.



### 19" WIDE PANELS — 1/16" STEEL

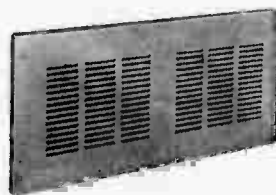
Cat. No. Black	Cat. No. Grey	Height	Ship. Wt. Lbs.	Net Price
P-601	G-601	3 1/2"	2	\$1.14
P-602	G-602	5 1/4"	2	1.32
P-603	G-603	7"	3	1.50
P-604	G-604	8 3/4"	4	1.83
P-605	G-605	10 1/2"	5	2.25
P-606	G-606	12 1/4"	6	2.61
P-607	G-607	14"	6	2.94
P-608	G-608	15 3/4"	7	3.39
P-609	G-609	17 1/2"	7	3.75
P-610	G-610	19 1/4"	8	4.11
P-611	G-611	21"	9	4.50

### 24" WIDE PANELS — 1/16" STEEL

Cat. No. Black	Cat. No. Grey	Height	Ship. Wt. Lbs.	Net Price
P-641	G-641	3 1/2"	2	\$1.59
P-642	G-642	5 1/4"	3	1.86
P-643	G-643	7"	4	2.10
P-644	G-644	8 3/4"	5	2.64
P-645	G-645	10 1/2"	6	3.21
P-646	G-646	12 1/4"	7	3.75
P-647	G-647	14"	8	4.20
P-648	G-648	15 3/4"	9	4.74
P-649	G-649	17 1/2"	9	5.28
P-650	G-650	19 1/4"	10	5.85
P-651	G-651	21"	10	6.39

## FORMED BLANK PANELS

### 19" WIDE PANELS — 1/16" STEEL



Formed panels same as above with louvers to match those used in Utility Desk Assemblies. Finished in black or grey ripple enamel. 24" wide panels are also available.

Cat. No. Black	Cat. No. Grey	Size	Ship. Wt. Lbs.	Net Price
PV-603	GV-603	7"	3	\$3.15
PV-604	GV-604	8 3/4"	4	3.54
PV-605	GV-605	10 1/2"	5	3.90
PV-606	GV-606	12 1/4"	6	4.41
PV-611	GV-611	21"	9	6.90

## SIDE HINGED BLANK PANELS 1/8" STEEL



These door panels are made from 1/8" steel, hinged at the sides, with a cowl type fastener to hold the door closed.

Finishes are black or slate grey ripple enamel; other finishes available are mentioned in page heading; also primer coat only. May be mounted on racks with hinges on right or left side.

*Cat. Nos.	Panel Size	Clear Opening (Width)	Ship. Wt. Lbs.	Net Price
HP, GP-350	3 1/2 x 10"	15 3/4"	3	\$2.85
HP, GP-525	5 1/4 x 19"	15 3/4"	4	2.97
HP, GP-700	7 x 19"	15 3/4"	5	3.24
HP, GP-875	8 3/4 x 19"	15 3/4"	7	3.48
HP, GP-1050	10 1/2 x 19"	15 3/4"	8	3.75
HP, GP-1225	12 1/4 x 19"	15 3/4"	9	4.02
HP, GP-1400	14 x 19"	15 3/4"	10	4.35
HP, GP-2100	21 x 19"	15 3/4"	15	6.90

\*FINISHES: HP denotes black ripple enamel. GP denotes slate grey ripple enamel.

### 24" WIDE PANELS — 1/8" STEEL

Cat. No. Black	Cat. No. Grey	Height	Ship. Wt. Lbs.	Net Price
6201	G-6201	3 1/2"	4	\$1.26
6202	G-6202	5 1/4"	6	1.56
6203	G-6203	7"	7	1.83
6204	G-6204	8 3/4"	9	2.22
6205	G-6205	10 1/2"	10	2.64
6206	G-6206	12 1/4"	12	2.94
6207	G-6207	14"	14	3.63
6208	G-6208	15 3/4"	15	4.14
6209	G-6209	17 1/2"	17	4.53
6210	G-6210	19 1/4"	18	5.04
6211	G-6211	21"	20	5.55

### 30" WIDE PANELS — 1/8" STEEL

Cat. No. Black	Cat. No. Grey	Height	Ship. Wt. Lbs.	Net Price
6301	G-6301	3 1/2"	4	\$1.71
6302	G-6302	5 1/4"	6	2.10
6303	G-6303	7"	8	2.49
6304	G-6304	8 3/4"	10	2.97
6305	G-6305	10 1/2"	12	3.63
6306	G-6306	12 1/4"	14	4.29
6307	G-6307	14"	16	4.89
6308	G-6308	15 3/4"	18	5.46
6309	G-6309	17 1/2"	20	6.12
6310	G-6310	19 1/4"	22	6.78
6311	G-6311	21"	24	7.44

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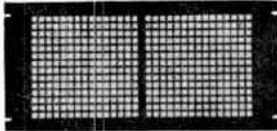
# TYPE "C" RACK PANELS — 19" WIDE



Unless otherwise indicated, these panels are made from 1/8" thick steel and are uniformly slotted to fit type "C" cabinet racks and all type "A" racks. They will also fit any other rack equipment having multiple 1 1/4" - 1/2" spacings or what is commonly termed as

"W.E. spacing." They may be obtained in either black ripple enamel or slate grey ripple enamel. Panels can be furnished in aluminum grey lacquer or grey hammertone enamel at extra charge.

## GRILLE PANELS 19" WIDE — 1/8" STEEL

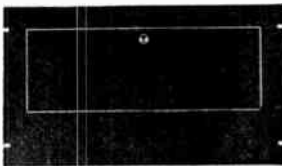


This modern type ventilating grille panel is stamped into the panel itself; it is not a pieced assembly.

Cat. No. Black	Cat. No. Grey	Panel Size	Grille Size	Shipping Wt. Lbs.	Net Price
P-661	G-661	5 1/4"	3 3/8" x 14 3/8"	4	\$2.79
P-662	G-662	7"	4 3/8" x 14 3/8"	5	3.06
P-663	G-663	8 3/8"	6 3/8" x 14 3/8"	6	3.66
P-664	G-664	8 3/8"	*3 3/8" x 14 3/8"	6	3.36
P-665	G-665	10 1/2"	8 3/8" x 14 3/8"	7	4.05
P-666	G-666	10 1/2"	*5 3/8" x 14 3/8"	7	3.78
P-667	G-667	12 1/4"	*7 3/8" x 14 3/8"	8	4.11

\* Allows 3 1/2" space at bottom for chassis mounting.

## SOLID DOOR PANELS 19" WIDE — 1/8" STEEL

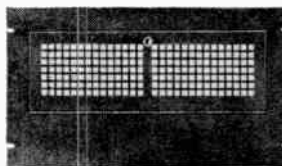


These panels have flush hinged doors with full length piano hinges; they are equipped with a chrome knob and concealed snap catch. All doors are located 1"

from top to allow space for chassis at bottom. Regular chassis brackets may be used if desired.

Cat. No. Black	Cat. No. Grey	Panel Size	Door Size	Shipping Wt. Lbs.	Net Price
P-670	G-670	8 3/8"	4 3/8" x 15"	7	\$ 4.41
P-671	G-671	10 1/2"	5 3/8" x 15"	8	4.71
P-672	G-672	12 1/4"	7 3/8" x 15"	9	5.19

## GRILLE DOOR PANELS 19" WIDE — 1/8" STEEL



These panels have flush hinged doors with modern type ventilating grille. Doors are equipped with piano hinges, chrome knob and concealed snap catch. All

doors start 1" from top to allow space for chassis at bottom. Regular chassis brackets may be used if desired.

Cat. No. Black	Cat. No. Grey	Panel Size	Door Size	Shipping Wt. Lbs.	Net Price
P-680	G-680	8 3/8"	4 3/8" x 15"	7	\$ 5.70
P-681	G-681	10 1/2"	5 3/8" x 15"	8	6.15
P-682	G-682	12 1/4"	7 3/8" x 15"	9	6.75

## RECESSED METER PANELS 1/8" STEEL



These panels are made so that the meters may be recessed from the front of the panel.

Meters are protected by a plate glass insert, allowing 3/4" clearance in back of panel. A blank bakelite sub-panel is provided. The clear sub-panel space is 4 1/8" x 15" on the 19" wide panel which is sufficient for 4-3" meters. On the 24" and 30" wide panel the clear sub-panel space is 5 3/4" x 20" and 5 3/4" x 26" respectively.

Cat. No. Black	Cat. No. Grey	Size	Shipping Wt. Lbs.	Net Price
P-690	G-690	5 3/4" x 19"	6	\$ 6.30
P-691	G-691	7" x 24"	7	11.25
P-692	G-692	7" x 30"	10	15.60

## STANDARD DESK PANELS



These standard tables are rigidly made of 1/16" thick furniture steel. The rounded front corners are of seamless construction and the

flanges of the shelf are folded in to provide smooth edges underneath. They are securely mounted to regular 1/8" steel panels, size 10 1/2" x 19". They may be obtained in two sizes and finishes as listed below. The tables are 22" wide to give full working space across the front of the racks when mounted in place. Shipping weight is 25 lbs.

Cat. No.	Width	Depth	Finish	Net Price
BT-2220	22"	20"	Black enamel	\$15.48
BT-2216	22"	16"	Black enamel	14.16
GT-2220	22"	20"	Grey enamel	16.80
GT-2216	22"	16"	Grey enamel	15.12

## TYPEWRITER DESK PANELS



These tables are similar in construction to standard desk type except that a recess 4 1/2" deep is provided for using a standard typewriter. They are

securely mounted on regular 1/8" steel panels, 10 1/2" x 19" and are 22" wide to give full working space across the front of the rack. Shipping weight is 30 lbs.

Cat. No.	Width	Depth	Finish	Net Price
BY-2220	22"	20"	Black enamel	\$22.50
GY-2220	22"	20"	Grey enamel	22.50

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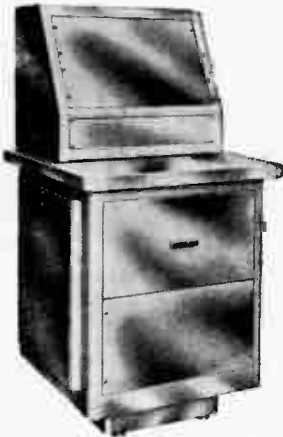
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# UTILITY DESK ASSEMBLIES

*Standardized Units Adaptable to Individual Requirements*

## General Description



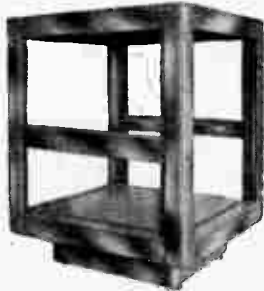
**SINGLE UNIT ASSEMBLY**

The combination of a control cabinet mounted on a table, desk or similar support has been in general use in the electronics industry for some time. Due to the various functions for which it may be employed, such equipment has assumed various forms, arrangements and sizes, requiring costly, custom-built construction to achieve their purpose.

While it is obvious that no particular fixed design can serve every demand, we have devised a group of **standardized units**, the combination of which is readily adaptable for control stations, testing apparatus, sound distribution systems, and similar applications.

The **line drawing on the opposite page** is a composite view of a complete equipment in which have been grouped various available components. Essentially, it consists of a desk cabinet or turret, a 71" long table top, and two pedestals. Other arrangements include a 51" long table top, a pedestal and end table support, and a smaller desk cabinet; where a single pedestal only is needed, a 25" wide table top and suitable desk cabinet is listed.

The sizes and specifications of the various units are catalogued on the following pages. There are several new features which warrant your consideration, **particularly the pedestal**. The pedestal is, in reality, a cabinet type relay rack. The panel mounting angles, or "strips" are adjustable, and can be located at the **front or back** for any standard **19" wide panels**, or located at any position from front to back for "mid-rail" panel mounting.



The above illustrates how brackets are mounted. They are used for mounting chassis, standard shelves, or drawers. With all sides open, easy access saves considerable time in assembly.

The pedestal doors may be mounted at the front or back of the pedestal, in addition to the panels. Where knobs, dials, etc. protrude from the front of the panel, clearance from the door is accomplished by recessing the panels to allow for the knobs, etc.

The left and right sides of the pedestal are also open, allowing complete access to the interior on all four sides. The left and right sides of the corner posts have holes drilled and tapped on "universal" centers for mounting standard relay rack panels; these holes may also be used for attaching mounting brackets CB-20 (see page K-631) and shelves CD-12 for supporting equipment on the interior of the pedestal. The standard pedestal doors may be used on these sides instead of rack panels.

No drilling or fitting is necessary for the assembly of pedestals, table tops, brackets, shelves, or panels. The desk cabinets have mounting holes on the bottom, but no holes have been provided in the table tops to accommodate them, to permit the desk cabinets to be located wherever desired.



**DOUBLE UNIT ASSEMBLY**



**TRIPLE UNIT ASSEMBLY**

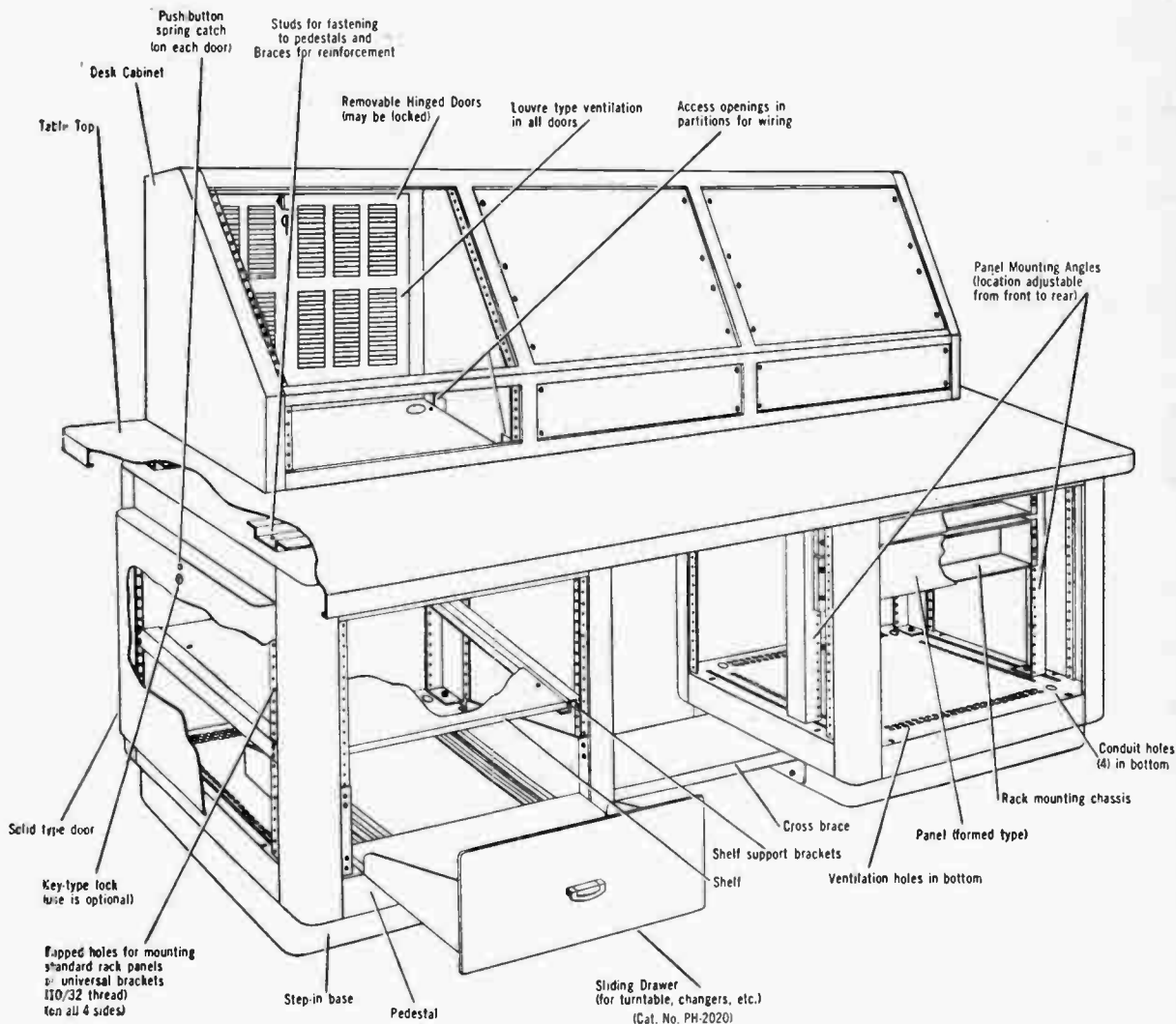
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# UTILITY DESK ASSEMBLIES



## DETAILS OF COMPLETE ASSEMBLY



**NOTE:** ON DOUBLE UNIT ASSEMBLIES (shown on opposite page) where it is desirable to have the end pedestal on the right side, the entire assembly is revolved 180°; the front and back of both pedestals are identical, and all panels, doors, drawers, etc., may be inserted as illustrated above.

**FINISHES AVAILABLE:** Unless otherwise specified, the standard finish for all items on Pages K-628 thru K-631 are medium grey enamel. Black wrinkle, slate grey wrinkle, grey hammertone, or prime coat only is available at same price. Samples of above finishes will be mailed upon request.

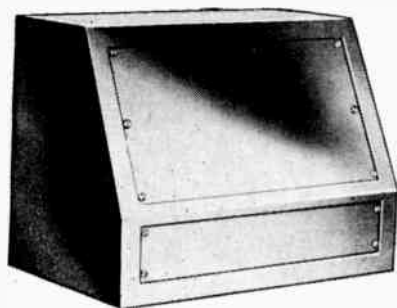
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# UTILITY DESK ASSEMBLY ACCESSORIES

## DESK PANEL CABINETS



These cabinets are available in single, double and triple units, as listed below. Double and triple assemblies are shown on Page K-628.

**DOORS:** Hinged door at back is removable; adequately louvered for ventilation.

**tion.** Equipped with combined "push-button" catch and lock. Individual doors on each section of multiple unit cabinets.

**MOUNTING:** Holes for securing cabinet to table top are drilled in the bottom. Two "knockout" holes 1 1/8" diameter, adjacent to the back, are also included. Felt bumpers are also supplied.

**PARTITIONS:** A solid partition separates each section in double and triple units. Partitions have access holes for wiring.

**PANELS:** Upper and lower panels are recessed for any panel up to 7/16" thick. The upper panel is 12 1/4" x 19" and mounted at an angle of 30°. The lower panel is 3 1/2" x 19". Mounting holes are standard rack panel spacings.

Catalog No.	Description	Height	Length	Depth	Sh. Wt. Lbs.	Net Price
CC-101	Single Unit	18 1/4"	21 1/8"	16"	40	\$50.00
CC-102	Double Unit	18 1/4"	42"	16"	75	75.00
CC-103	Triple Unit	18 1/4"	62 1/4"	16"	110	100.00

The above prices include formed panels as illustrated.

## TABLE TOPS



Table tops are made in three sizes, for use with single, double, or triple unit desk cabinets.

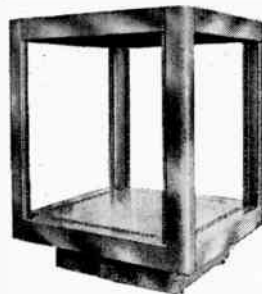
They are substantially constructed from 1/16" thick furniture steel, suitably braced on the underside, with all edges flanged in underneath to provide smooth surfaces. Screw studs are securely fastened in place, for insertion into matching holes in pedestals. Necessary lock-washers and nuts are included.

No holes have been drilled for desk cabinets, so that cabinets already in use or other control units may be mounted wherever desired.

Cat. No.	Description	Width	Length	Depth	Sh. Wt. Lbs.	Net Price
TX-301	Single Unit	30"	25"	1 1/2"	24	\$22.50
TX-302	Double Unit	30"	55"	1 1/2"	50	27.00
TX-303	Triple Unit	30"	71"	1 1/2"	63	33.00

The above table tops are available with lineoleum covering. Prices on request

## PEDESTAL UNIT



**PEDESTAL** (less doors and panels).

Overall size: 22" long x 24" deep x 26" high.

Panel space: 21" x 19" on all four sides.

Clearance between corner posts: 17 3/4".

Clearance inside (front to back): 23".

Clearance inside (left and right side): 21".

Overall height: 31" (with table top installed).

**MATERIAL:** All parts are made from 1/16" thick furniture steel, with a reinforced base. Entire pedestal is rigidly welded together into one integral unit.

**PANEL MOUNTING:** There is a panel space of 21" x 19" available at front and back. The panel mounting angles or "strips" have holes tapped 10/32 with spacings for standard racks panels listed on pages K-626 and K-627. These angles are fully adjustable and may be located at any position from front to back of the pedestal.

When the angles are moved to the interior of the pedestal for "mid-rail" mounting, the clearance between the corner posts at the front and back is increased to 19 1/8".

By recessing the angles to allow for knobs, dials, etc., the pedestal doors listed on page K-631 may be mounted in front of the panels.

**OPEN SIDES:** The left and right sides of the pedestal are also open, allowing complete access to the interior on all four sides. The left and right sides of the corner posts have holes drilled and tapped on "universal" centers for mounting standard relay rack panels; these holes may also be used for attaching mounting brackets CB-20 (see page K-631) and shelves CD-12 for supporting equipment on the interior of the pedestal. The standard pedestal doors may be used on these sides instead of rack panels.

**HOLES:** Holes are drilled in top to match screw studs in table tops. Ventilation holes are provided around edges of bottom as shown.

**BASE:** The base is 4" high, and is set inward for toe space; it is equipped with four steel "glider type" casters, which are adjustable for height and uneven floors.

Catalog No. PX-200 (Pedestal less doors and panels)  
PRICE \$52.00. Shipping Wt. 75 lbs.

STANDARD FINISH on all above units is MEDIUM GREY ENAMEL. For optional finishes, see page K-631.

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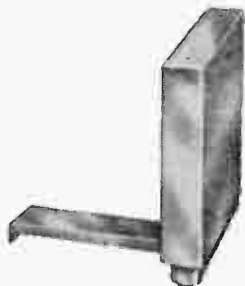
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# UTILITY DESK ASSEMBLY ACCESSORIES



## END PEDESTAL AND FLOOR BRACE



When a 55" table top is used with a single pedestal, we can supply an end pedestal and floor brace as shown. This size table is suitable for use with a double unit cabinet.

The end pedestal is 6" wide and 24" from front to back.

The floor brace is 25½" long. Both units are drilled with all necessary holes and are shipped with hardware for assembly.

Catalog No. PD-210 .....Net Price \$33.00

**FLOOR BRACE ONLY** — This is similar to floor brace illustrated above, and is required on TRIPLE UNIT ASSEMBLY.

Catalog No. PB-211 .....Net Price \$8.00

(Standard Floor Braces to fit other pedestal assemblies are also available.)

## SLIDING DRAWER



All of the sliding shelf units listed on Page K-619 are suitable for installation in the pedestals.

Our basic sliding shelf No. SD-200 (see page K-619) has been combined with a drawer front of the same size as a standard 10½" x 19" rack panel, to provide a phono drawer assembly suitable for mounting turntables, changers, etc., as illustrated above. It may be mounted at the top or bottom of the pedestal; it is attached to the panel mounting angle or "strip" with regular panel screws.

Where a base or platform for the turntable or changer is available, we suggest that it be purchased. Metal base pans suitable for general use are listed on page K-619.

Usable space on platform: 17¼" wide, 20¼" deep

Panel space required: 10½" x 19"

Usable height above platform: \*9¼"

Forward movement of platform: 17½"

Shipping Weight 35 lbs.

Catalog No. PH-200 .....Net Price \$27.60

\*When drawer is mounted on top of pedestal (8½" when mounted at bottom).

## PEDESTAL DOORS

Doors are "slip-in" type and held in position by studs and "push-button" spring catches. Locks and keys are provided. Doors are interchangeable; and available with or without louvered ventilation.



These doors may be used over standard rack panels, sliding shelves, or phono drawers, at both front and back of the pedestal. On the right and left hand sides of the pedestal either door or panel may be used (not both).

Cat. No. PD-201 — Plain (without louvres),  
Ship. Wt. 12 Lbs. ....Net Price \$11.80

Cat. No. PD-202 — Ventilated (with louvres),  
Ship. Wt. 12 Lbs. ....Net Price \$12.60

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## MOUNTING BRACKETS



These brackets are 19" Long, 2" High, 2¾" Deep, and are slotted for vertical adjustment and drilled for assembly with CD-12 shelf illustrated below.

Catalog No. CB-20 .....Net Price \$3.60 per pair

## SHELF



These shelves are drilled for assembly with CB-20 Brackets shown above. Overall size: 17½" Wide, 22" Deep, ¾" High.

Catalog No. CD-12 .....Net Price \$4.05

**FINISH ON ALL ITEMS ABOVE:**

Standard finish is medium grey enamel. Optional finishes are grey hammertone enamel, black or blue grey wrinkle, or primer coat only.

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# UTILITY DESK CABINETS    AMPLIFIER FOUNDATION CHASSIS

## DELUXE TYPE CABINETS

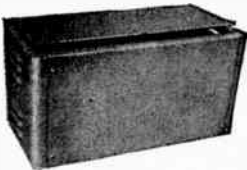


These cabinets make attractive housings for commercial and amateur use. The formed type door, with modern handle, is hinged at the back for full access to the interior. Chrome finished mouldings are mounted on the front at top and bottom. Cabinet has ventilating louvres on each side, and full width opening

at back for leads, etc. Standard finish is slate grey ripple enamel. Prices do not include chassis, which are listed on K-633.

Catalog No.	Overall Dimensions	Panel Size	For Chassis	Shp. Wt. Lbs.	Net Price
CA-300	9x12 $\frac{1}{2}$ x 8"	8 $\frac{1}{2}$ x10"	7x 9x2"	6	\$ 5.82
CA-301	9x16 $\frac{1}{2}$ x 8"	8 $\frac{1}{2}$ x14"	7x13x2"	7	6.60
CA-302	10x17 $\frac{1}{2}$ x11"	9 $\frac{1}{2}$ x15"	10x14x3"	8	10.35
CA-303	10x20 $\frac{1}{2}$ x 9"	9 $\frac{1}{2}$ x18"	8x17x3"	11	10.35
CA-304	13x20 $\frac{1}{2}$ x12"	12 $\frac{1}{2}$ x18"	10x17x3"	15	11.64

## ROUNDED CORNER TYPE CABINETS

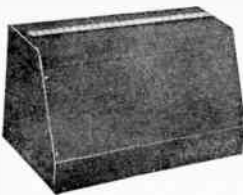


Standard type cabinets are similar in design to those listed above. They have flat type doors, hinged at back to permit full access to the interior. The vertical front corners are rounded; ventilating louvres are stamped in

both sides, and full width opening is provided at the back for leads. Standard finish is slate grey ripple enamel. Prices do not include chassis, which are listed on Page K-633.

Catalog No.	Overall Dimensions	Panel Size	For Chassis	Shp. Wt. Lbs.	Net Price
CA-200	8 $\frac{1}{2}$ x10 $\frac{1}{2}$ x 8"	8 $\frac{1}{2}$ x 8"	7x 7x2"	6	\$ 4.26
CA-201	8 $\frac{1}{2}$ x12 $\frac{1}{2}$ x 8"	8 $\frac{1}{2}$ x10"	7x 9x2"	7	4.56
CA-202	8 $\frac{1}{2}$ x16 $\frac{1}{2}$ x 8"	8 $\frac{1}{2}$ x14"	7x13x3"	8	5.49
CA-203	9 $\frac{1}{2}$ x17 $\frac{1}{2}$ x11"	9 $\frac{1}{2}$ x15"	10x14x3"	11	8.64
CA-204	12 $\frac{1}{2}$ x20 $\frac{1}{2}$ x12"	12 $\frac{1}{2}$ x18"	10x17x3"	15	10.26

## SLOPING FRONT CABINETS



May be readily adapted as instrument cases for use in studios, laboratories, etc.

- Top corner is rounded and trimmed with a chrome moulding, and with the slate grey ripple finish makes a very attractive case.
- A chassis may be mounted to a front panel and removed as a unit.

- Rear of case is ventilated, with an opening for connections.
- Prices do not include chassis, which are listed on Page K-633.

Catalog No.	Overall Dimensions	For Chassis	Shp. Wt. Lbs.	Net Price
SF-500	8x 8x 8"	7x 7x2"	6	\$4.17
SF-501	8x10x 8"	7x 9x2"	7	4.62
SF-502	8x14x 8"	7x13x3"	8	4.98
SF-503	9x18x 8"	7x17x3"	10	7.56
SF-504	12x18x12"	10x17x3"	14	9.45

## SLOPING FRONT TYPE

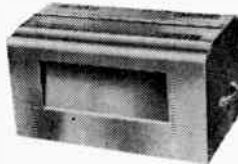


These new foundations follow the latest trend in amplifier design. The combination of sloping front panel and streamlined cover enables you to build up a job similar to that used on commercial deluxe type amplifiers. All parts are finished in slate grey ripple enamel, trimmed with red-stripped chrome finished mouldings and handles.

The front panel is removable and protrudes 3" from the face of the screen cover. Chassis are supplied complete WITH bottom plates.

Cat. No.	Chassis Size	Screen Cover	Shp. Wt. Lbs.	Net Price
F-10120	10x12x3"	6 $\frac{1}{2}$ " high	11	\$7.26
F-10170	10x17x3"	6 $\frac{1}{2}$ " high	13	8.19
F-13170	13x17x3"	6 $\frac{1}{2}$ " high	15	9.30

## DELUXE TYPE WITH RECESSED PANEL



These chassis will appeal to many who prefer a Deluxe Type unit with a recessed panel. The panel slopes slightly and is attached to the chassis with screws, so that it may be removed for drilling, etc. The screen cover may be raised without disturbing the panel. The cover is finished in slate grey ripple enamel, and is trimmed with a chrome finished moulding and handles at each end.

The chassis is finished in black ripple and is drilled for bottom plates, which are listed on K-633.

Cat. No.	Chassis Size	Depth of Cover	Panel Size	Shp. Wt. Lbs.	Net Price
FC-510	5x10x3"	6"	4x 7"	7	\$ 5.52
FC-615	6x14x3"	6"	4x10"	8	6.09
FC-717	7x17x3"	6"	4x13"	9	6.78
FC-1012	10x12x3"	6"	4x 9"	9	6.78
FC-1017	10x17x3"	6"	4x13"	10	7.65
FC-1317	13x17x3"	6"	4x13"	12	8.70

## ROUNDED CORNER TYPE



Rounded corners effectively streamline the screen covers of these chassis. Ventilation is obtained through rectangular screen openings. The moulding and handles, finished in chrome with red striping, gives the units a distinctive, modern design.

The screen cover is finished in slate grey ripple enamel to contrast with the black chassis. Chassis are drilled for bottom plates, which are listed on Page K-633.

Cat. No.	Chassis Size	Depth of Cover	Shp. Wt. Lbs.	Net Price
DF-510	5x10x3"	6"	7	\$ 4.44
DF-615	6x14x3"	6"	8	4.80
DF-717	7x17x3"	6"	9	5.70
DF-1012	10x12x3"	6"	9	5.70
DF-1017	10x17x3"	6"	10	6.45
DF-1317	13x17x3"	6"	12	7.71

## STANDARD TYPE



These units are similar in design to our other chassis, the screen covers having rounded corners. The grill type ventilation gives them a modern appearance. The chassis are stamped from one piece of cold rolled steel, with corners securely spot welded. The covers are finished in slate grey and the chassis in black ripple enamel. Chassis are drilled for bottom plates, which are listed on Page K-633.

Cat. No.	Chassis Size	Depth of Cover	Shp. Wt. Lbs.	Net Price
F-510	5x10x3"	6"	7	\$ 3.39
F-615	6x14x3"	6"	8	3.72
F-717	7x17x3"	6"	9	4.50
F-1012	10x12x3"	6"	9	4.50
F-1017	10x17x3"	6"	10	5.28
F-1317	13x17x3"	6"	12	6.30

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# BLANK STEEL CHASSIS BASES



## RACK MOUNTING CHASSIS

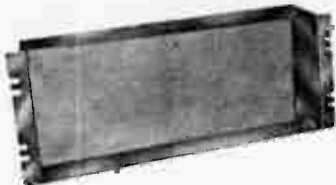


These chassis are suitable for installation in all Universal enclosed relay racks listed on Pages K-614 thru K-617 and any other racks which have provision for "mid-rail" mounting. They may also be used on Deluxe channel racks listed on Pg. K-624.

Material used is 1/16" aluminum, with corners welded for added rigidity. Etched finish on inside and outside. All chassis are 5 1/4" deep; overall width is 19"; chassis width inside is 16 7/8".

Catalog No.	Height	Shipping Wt. Lbs.	Net Price
AC-430	1 3/4"	2	\$ 2.37
AC-431	3 1/2"	3	2.67
AC-432	5 1/4"	3	3.06
AC-433	7"	4	3.36
AC-434	8 3/4"	5	3.69
AC-435	10 1/2"	5	4.05
AC-436	12 1/4"	6	4.47
AC-437	14"	7	4.95

## RACK MOUNTING CHASSIS



These chassis are fabricated from 1/16" thick aluminum with etched finish, or 1/16" thick steel, zinc plated. Overall length including mounting flanges is 18 3/4". They are designed to mount under 19" wide formed panels listed on Page K-626. The 4 1/4" height is for use with

5 1/4" high panels, 6-11/16" for 7" high panels, etc. Additional slots are provided in chassis side flanges to clear panel attachment screws. Although chassis are 18 3/4" overall width, they will fit on any relay rack.

ALUMINUM	Net Price	Chassis Dimensions	STEEL	Net Price
Cat. No.			Cat. No.	
AC-402	\$3.78	4-15/16"x17"x3"	SC-402	\$2.76
AC-403	4.32	6-11/16"x17"x3"	SC-403	3.12
AC-404	4.86	8-7/16"x17"x3"	SC-404	3.48
AC-405	5.37	10-3/16"x17"x3"	SC-405	3.84
AC-406	6.00	11-15/16"x17"x3"	SC-406	4.17

## CHASSIS MOUNTING BRACKETS



No. SB-78

These brackets are made for assembly with our standard or heavy duty type chassis listed on this page. Panels must be at least 7" high. Finished in black enamel.

Cat. No.	Dimensions	Shp. Wt. Lbs.	Net Price
SB-78	For 8" Base	2	\$ .87
SB-710	For 10" Base	2	1.11
SB-711	For 11" Base	2	1.20
SB-713	For 13" Base	3	1.38
SB-717	For 17" Base & Larger	4	2.10

## BOTTOM PLATES

Bottom plates have holes to match our standard or heavy duty type chassis listed on this page, and have pressed "bumpers" at the corners.

Cat. No.	Cat. No.	Size	Shp. Wt. Lbs.	Net Price
BP-4507	CP-4507	5x 7"	1	\$0.39
BP-4502	CP-4502	8x12"	1	.84
BP-4500	CP-4500	5 1/2 x 9 1/2"	1	.48
BP-4508	CP-4508	5x10"	1	.48
BP-4509	CP-4509	6x14"	1	.63
BP-4510	CP-4510	7x 7"	1	.57
BP-4511	CP-4511	7x 9"	1	.66
BP-4512	CP-4512	7x11"	1	.69
BP-4513	CP-4513	7x13"	2	.75
BP-4514	CP-4514	7x15"	2	.78
BP-4518	CP-4518	4x17"	2	.60
BP-4515	CP-4515	7x17"	2	.87
BP-4531	CP-4531	8x17"	2	.90
BP-4525	CP-4525	10x12"	2	.87
BP-4524	CP-4524	10x14"	2	.90
BP-4528	CP-4528	10x17"	2	1.08
BP-4527	CP-4527	10x23"	3	1.44
BP-4533	CP-4533	11x17"	2	1.05
BP-4516	CP-4516	12x17"	3	1.20
BP-4535	CP-4535	13x17"	3	1.26
BP-4540	CP-4540	17x17"	4	1.71

## STANDARD TYPE CHASSIS



Stamped from one piece of cold rolled steel, and have four solid sides with welded corners. Bottom edges are flanged in on four sides to provide additional reinforcement, and they are drilled for bottom plates. The chassis are made from #20 gauge steel, except those marked (\*) which are stamped from 1/8" steel exactly like our heavy-duty type.

Cat. No.	Cat. No.	Size	Shp. Wt. Lbs.	Net Price
B-4500	C-4500	5 1/2 x 9 1/2 x 1 1/2"	2	\$0.81
B-4507	C-4507	5x 7x2"	2	.90
B-4508	C-4508	5x10x3"	3	1.08
B-4509	C-4509	6x14x3"	4	1.35
B-4510	C-4510	7x 7x2"	2	.96
B-4511	C-4511	7x 9x2"	2	1.08
B-4512	C-4512	7x11x2"	3	1.17
B-4513	C-4513	7x13x2"	3	1.26
B-4514	C-4514	7x15x3"	4	1.53
B-4518	C-4518	4x17x3"	4	1.32
B-4515	C-4515	7x17x3"	4	1.65
B-4502	C-4502	8x12x3"	5	1.50
B-4531	C-4531	8x17x2"	4	1.53
B-4532	C-4532	8x17x3"	5	1.65
B-4525	C-4525	10x12x3"	4	1.56
B-4524	C-4524	10x14x3"	5	1.65
B-4528	C-4528	10x17x2"	5	1.65
B-4529	C-4529	10x17x4"	7	2.04
B-4526	C-4526	10x17x3"	7	1.77
B-4527	C-4527	10x23x3"	7	2.34
B-4533*	C-4533*	11x17x2"	7	2.40
B-4534*	C-4534*	11x17x3"	9	2.70
B-4516	C-4516	12x17x2"	5	1.92
B-4517	C-4517	12x17x3"	6	2.13
B-4530	C-4530	12x17x4"	6	2.55
B-4535*	C-4535*	13x17x2"	8	2.70
B-4536*	C-4536*	13x17x3"	9	3.15
B-4537*	C-4537*	13x17x4"	10	3.54
B-4540*	C-4540*	17x17x4"	13	4.05

## HEAVY DUTY TYPE CHASSIS

These heavy duty bases are similar to the standard type chassis bases listed above.

However, they are substantially constructed for "heavy duty" uses since they are formed from one piece of 1/16" sheet steel. Bottom plates and mounting screws are supplied with each of these chassis.

Ends are drilled to fit standard chassis mounting brackets listed at the left.

Cat. No.	Cat. No.	Dimensions	Shp. Wt. Lbs.	Net Price
15280	15208	8x17x2"	8	\$2.91
15281	15209	8x17x3"	9	3.18
15282	15218	11x17x2"	9	3.39
15210	15219	11x17x3"	11	3.69
15212	15214	13x17x2"	11	3.90
15213	15215	13x17x3"	12	4.35
15216	15217	13x17x4"	13	4.74
15283	15284	17x17x4"	15	5.70

ALL PRICES ARE F.O.B. LONG ISLAND CITY, NEW YORK

PAR-METAL PRODUCTS CORP.

Long Island City 3, N. Y.

# PREMIER PRECISION BUILT METAL HOUSINGS

## HEAVY DUTY TRANSMITTER RACKS

FOR 19", 24" AND 30" RACK PANELS — 18" AND 24" DEEP



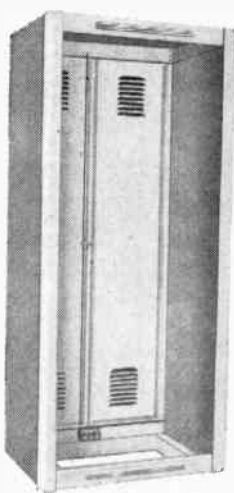
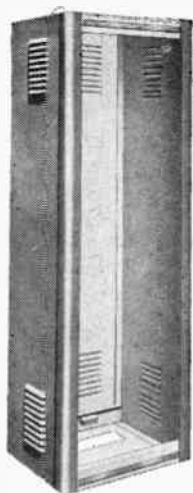
- Rigidly constructed of #16 gauge steel with a #12 gauge steel bottom and welded throughout.
- Panel mounting angles are  $\frac{7}{8}$ " thick and are tapped 12-24 on Universal spacings.
- Rear doors are hung on sturdy loose-jointed hinges and closed by a chrome handle.
- A rectangular cut-out is made in the bottom for leads, etc.
- Racks are supplied with or without louvres.
- Vertical rounded corner moldings are supplied on RM racks.
- Tops and bottoms are trimmed with red striped chrome moulding.
- FD racks have handles and locks.
- Panel mounting angles are adjustable to any distance from the front door by means of channel slides.
- A Duplex Receptacle and Outlet Box are Furnished in the Back Under the Door.
- Racks finished in either black or gray wrinkle, Gray or Brown Hammertone. Black wrinkle furnished if color is not specified.

RM MODEL

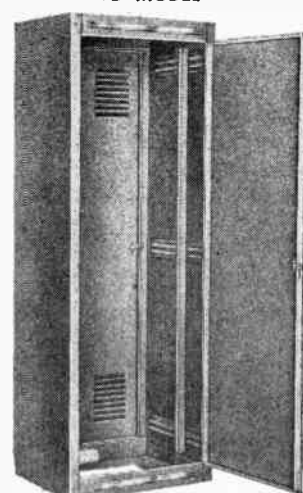
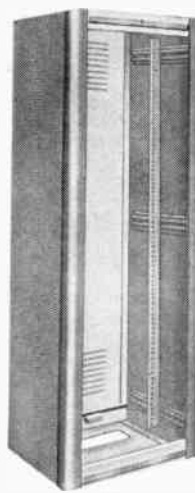
RM-7030 MODEL

RMA MODEL

FD MODEL



Rack supplied with double rear doors and with a 3-point locking device.



### 18" DEEP RACKS

Cat. No.	H x W	Panel Space	Shp. Wt. Lbs.	Net Price
RM-3619	42 $\frac{7}{8}$ x22"	36 $\frac{3}{4}$ x19"	100	\$ 66.15
RM-6119	67 $\frac{7}{8}$ x22"	61 $\frac{1}{4}$ x19"	150	86.01
RM-7618	76 $\frac{1}{8}$ x22"	70 x19"	170	105.84
RM-7719	83 $\frac{1}{8}$ x22"	77 x19"	190	109.20

### 24" DEEP RACKS

Cat. No.	H x W	Panel Space	Shp. Wt. Lbs.	Net Price
RM-6124	67 $\frac{7}{8}$ x23 $\frac{1}{2}$ "	61 $\frac{1}{4}$ x19"	175	\$122.40
RM-7019	76 $\frac{1}{8}$ x23 $\frac{1}{2}$ "	70 x19"	200	132.30
RM-7724	83 $\frac{1}{8}$ x23 $\frac{1}{2}$ "	77 x19"	225	148.86
RM-7030	76 $\frac{1}{8}$ x33"	70 x30"	240	191.85

### 18" DEEP RACKS WITH DOORS

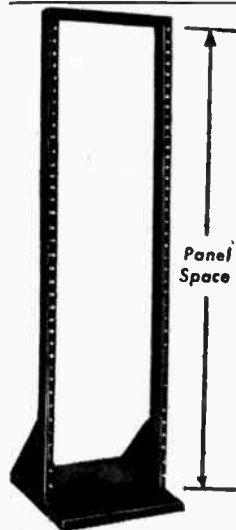
Cat. No.	H x W	Panel Space	Shp. Wt. Lbs.	Net Price
FD-3619	42 $\frac{7}{8}$ x22"	36 $\frac{3}{4}$ x19"	115	\$102.39
FD-6119	67 $\frac{7}{8}$ x22"	61 $\frac{1}{4}$ x19"	175	115.77
FD-7019	76 $\frac{1}{8}$ x22"	70 x19"	200	132.30
FD-7719	83 $\frac{1}{8}$ x22"	77 x19"	220	142.23

RMA RACKS are 24" deep and are constructed the same as RM racks except the panel mounting angles which are adjustable.

RMA-2742	48 $\frac{1}{8}$ x27"	42x24"	170	\$120.78
RMA-2761	67 $\frac{7}{8}$ x27"	61 $\frac{1}{4}$ x24"	210	137.58
RMA-2770	76 $\frac{1}{8}$ x27"	70x24"	240	148.59
RMA-2777	83 $\frac{1}{8}$ x27"	77x24"	270	165.39

### 24" DEEP RACKS WITH DOORS

FD-2742	48 $\frac{1}{8}$ x27"	42x24"	180	\$140.19
FD-2761	67 $\frac{7}{8}$ x27"	61 $\frac{1}{4}$ x24"	230	165.39
FD-2770	76 $\frac{1}{8}$ x27"	70x24"	260	176.22
FD-2777	83 $\frac{1}{8}$ x27"	77x24"	290	198.45



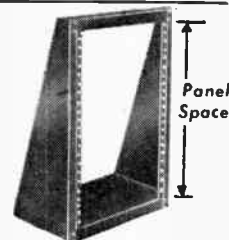
### CHANNEL RELAY RACKS

- Rigidly constructed of #12 gauge cold rolled sheet steel and finished in Black Wrinkle.
- Vertical members and top cross-brace are welded together.
- Panel mounting holes are tapped for 10/32 machine screws on Universal Spacings.
- Racks are shipped knocked down with all necessary bolts for easy assembly.

Cat. No.	H.	W.	D.	Panel Space	Shp. Wt. Lbs.	Net Price
RR-800	39 $\frac{1}{4}$ "	20"	18 $\frac{3}{8}$ "	36 $\frac{3}{4}$ " x 19"	40	\$19.20
RR-801	74 $\frac{1}{4}$ "	20"	20 $\frac{5}{8}$ "	71 $\frac{3}{4}$ " x 19"	55	22.86
RR-802	79 $\frac{1}{2}$ "	20"	20 $\frac{5}{8}$ "	77" x 19"	60	26.46

All prices F.O.B. N. Y. 59, N. Y.

### TABLE TYPE RELAY RACKS



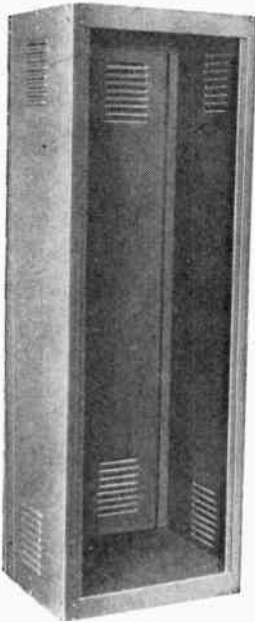
- Rigidly constructed of #16 gauge cold rolled sheet steel and finished in Black Wrinkle.
- Base constructed of one piece, similar to a chassis.
- Panel mounting holes are tapped for 10/32 machine screws on Universal Spacings.
- Racks are shipped knocked down with all necessary bolts for easy assembly.

Cat. No.	H.	W.	D.	Panel Space	Shp. Wt. Lbs.	Net Price
TR-2119	25"	21"	12"	21 x 19"	17	\$ 7.29
TR-2819	32"	21"	12"	28 x 19"	20	9.12

# PREMIER METAL PRODUCTS COMPANY

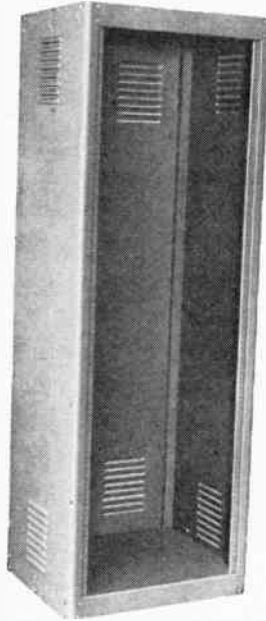
# PREMIER PRECISION BUILT METAL HOUSINGS

## ENCLOSED RELAY RACKS FOR STANDARD 19" RACK PANELS



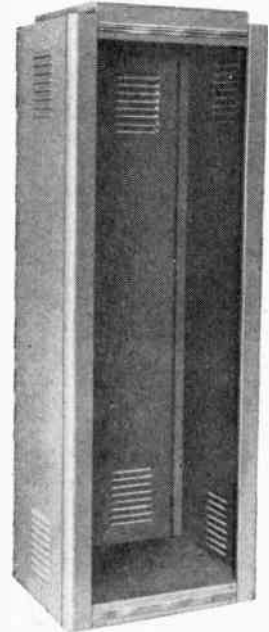
### STANDARD TYPE

- Catalog No. RS-3619
- Overall Dimensions: 41<sup>7</sup>/<sub>8</sub>x22x18"
- Panel Space: 36<sup>3</sup>/<sub>4</sub>x19"
- Shipping Weight: 80 Lbs.
- Net Price: \$36.09
- Catalog No. RS-6119
- Overall Dimensions: 66<sup>3</sup>/<sub>8</sub>x22x18"
- Panel Space: 61<sup>3</sup>/<sub>4</sub>x19"
- Shipping Weight: 120 Lbs.
- Net Price: \$53.76
- Catalog No. RS-7719
- Overall Dimensions: 82<sup>1</sup>/<sub>8</sub>x22x18"
- Panel Space: 77x19"
- Shipping Weight: 140 Lbs.
- Net Price: \$64.53



### ROUNDED TYPE

- Catalog No. R-3619
  - Overall Dimensions: 41<sup>7</sup>/<sub>8</sub>x22x18"
  - Panel Space: 36<sup>3</sup>/<sub>4</sub>x19" Shp. Wt.: 80 Lbs.
  - Net Price: \$36.09
  - Catalog No. R-4219
  - Overall Dimensions: 47<sup>1</sup>/<sub>8</sub>x22x18"
  - Panel Space: 42x19" Shp. Wt.: 90 Lbs.
  - Net Price: \$41.31
  - Catalog No. R-6119
  - Overall Dimensions: 66<sup>3</sup>/<sub>8</sub>x22x18"
  - Panel Space: 61<sup>1</sup>/<sub>4</sub>x19" Shp. Wt.: 120 Lbs.
  - Net Price: \$53.73
  - Catalog No. R-7719
  - Overall Dimensions: 82<sup>1</sup>/<sub>8</sub>x22x18"
  - Panel Space: 77x19" Shp. Wt.: 140 Lbs.
  - Net Price: \$64.53
- All prices F.O.B. N. Y. 59, N. Y.



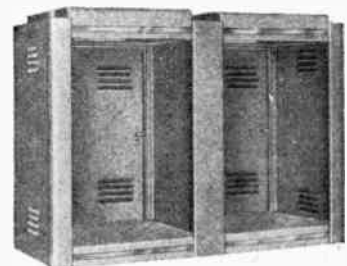
### DELUXE TYPE

- Catalog No. DR-3619
- Overall Dimensions: 43<sup>1</sup>/<sub>8</sub>x22x18"
- Panel Space: 36<sup>3</sup>/<sub>4</sub>x19"
- Shipping Weight: 85 Lbs.
- Net Price: \$51.30
- Catalog No. DR-6119
- Overall Dimensions: 67<sup>5</sup>/<sub>8</sub>x22x18"
- Panel Space: 61<sup>1</sup>/<sub>4</sub>x19"
- Shipping Weight: 135 Lbs.
- Net Price: \$62.85
- Catalog No. DR-7719
- Overall Dimensions: 83<sup>3</sup>/<sub>8</sub>x22x18"
- Panel Space: 77x19"
- Shipping Weight: 160 Lbs.
- Net Price: \$76.08

- Rigidly constructed of #16 gauge cold rolled sheet steel.
- The panel mounting angles are of #12 gauge steel and are tapped for 10/32 machine screws on Universal spacings.
- Panels fit into a recess so that the edges are not exposed.
- Racks are shipped knocked down with all necessary bolts for easy assembly.
- Rear doors are hung on sturdy loose-jointed hinges, and closed by a chrome handle.
- ROUNDED TYPE have front vertical rounded corners.
- STANDARD TYPE have square front vertical corners.
- DELUXE TYPE — The removable vertical corner mouldings are rounded and cover the mounting screws.
- DELUXE TYPE — Top and bottom are trimmed with red striped chrome finished moulding.
- Cabinets finished in either Black or Gray wrinkle, Gray or Brown Hammertone. If color is not specified, Black Wrinkle will be furnished.

### MULTIPLE RACK UNITS

These racks can be joined together to make multiple units by means of a solid center partition which is bolted to the top and bottom. Vertical trim mouldings are supplied on the DR models. When ordering multiple units specify number of units, such as double, triple, etc. Each multiple section comprises a top, bottom, rear door and center partition. Use the prefix MR for Models R and RS, such as MR-3619; and DMR for DR Models, such as DMR-3619.



One Double DR-3619 unit in assembly

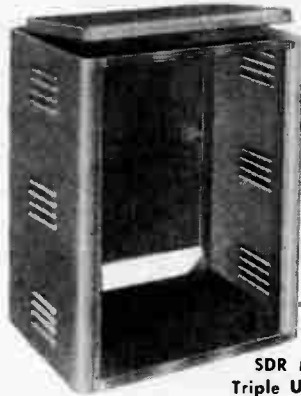
# PREMIER METAL PRODUCTS COMPANY

# PREMIER PRECISION BUILT METAL HOUSINGS

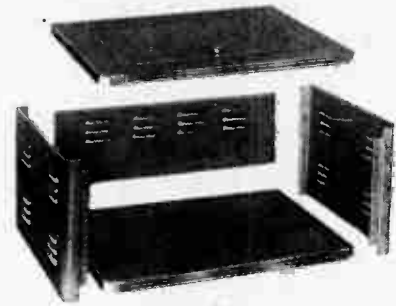
DESK CABINET RACKS FOR STANDARD 19" RACK PANELS  
IN STANDARD, SUPER DELUXE AND KNOCKED DOWN  
MODELS — BOTH 15 1/4" AND 18" DEEP



**DRK MODEL**  
Single Unit



**SDR MODEL**  
Triple Unit



**DCR MODEL**  
Double Unit

- Front vertical corners are rounded and the top and bottom are trimmed with red striped chrome finished moulding.
- Rigidly constructed of No. 16 Ga. cold rolled sheet steel.
- Panels fit into a recess so that the edges are not exposed.
- Panel mounting holes are tapped for 10/32 machine screws on Universal Spacings.
- Piano type hinges are used on the top doors, which are provided with snap catches.
- Top door on Models SDR and SDRK open to 90° and have a rounded front corner.
- Models SDRK and DRK are supplied knocked down with all necessary bolts for easy assembly. On these models the bolts are not visible from the outside and have the same appearance as the welded models.
- Cabinets finished in either Black or Gray Wrinkle, Gray or Brown Hammertone. Black wrinkle furnished if color is not specified.

## ALL CABINETS ARE 21 3/4" WIDE

15 1/4" Deep	Catalog No.	Net Price	Catalog No.	Net Price	Catalog No.	Net Price	Catalog No.	Net Price	Overall Height	Panel Space	Ship. Wt. Lbs.
SINGLE UNIT (with door on top only)	DCR-70	\$12.57	SDR-70	\$17.22	DRK-70	\$11.91	SDRK-70	\$16.56	8 3/4"	7"	22
	DCR-80	13.23	SDR-80	17.88	DRK-80	12.57	SDRK-80	17.22	10 1/2"	8 3/4"	24
	DCR-100	14.91	SDR-100	19.53	DRK-100	14.25	SDRK-100	18.90	12 1/4"	10 1/2"	26
	DCR-120	16.11	SDR-120	20.70	DRK-120	15.42	SDRK-120	20.04	14"	12 1/4"	28
	DCR-140	17.88	SDR-140	22.50	DRK-140	17.22	SDRK-140	21.84	15 3/4"	14"	32
DOUBLE UNIT*	DCR-170	21.18	SDR-170	25.80	DRK-170	20.52	SDRK-170	25.14	19 1/4"	17 1/2"	40
	DCR-190	22.20	SDR-190	26.85	DRK-190	21.54	SDRK-190	26.16	21"	19 1/4"	42
	DCR-210	23.01	SDR-210	27.63	DRK-210	22.35	SDRK-210	26.94	22 3/4"	21"	44
TRIPLE UNIT*	DCR-260	24.84	SDR-260	29.49	DRK-260	24.18	SDRK-260	28.80	28"	26 1/4"	45
	DCR-310	26.16	SDR-310	30.78	DRK-310	25.50	SDRK-310	30.12	33 1/4"	31 1/2"	50
QUAD UNIT*	DCR-350	27.48	SDR-350	32.10	DRK-350	26.82	SDRK-350	31.44	36 3/4"	35"	55

\* With door on top and rear.

18" Deep	Catalog No.	Net Price	Catalog No.	Net Price	Overall Height	Panel Space	Ship. Wt. Lbs.
SINGLE UNIT (with door on top only)	DCR-1880	\$16.08	SDR-1880	\$20.52	10 1/2"	8 3/4"	26
	DCR-18100	17.88	SDR-18100	22.50	12 1/4"	10 1/2"	29
	DCR-18120	19.26	SDR-18120	23.91	14"	12 1/4"	31
	DCR-18140	21.45	SDR-18140	26.10	15 3/4"	14"	35
DOUBLE UNIT*	DCR-18170	25.41	SDR-18170	30.06	19 1/4"	17 1/2"	44
	DCR-18190	26.64	SDR-18190	31.26	21"	19 1/4"	46
	DCR-18210	27.60	SDR-18210	32.25	22 3/4"	21"	48
TRIPLE UNIT*	DCR-18260	29.79	SDR-18260	34.41	28"	26 1/4"	49
	DCR-18310	31.38	SDR-18310	36.00	33 1/4"	31 1/2"	55
QUAD UNIT*	DCR-18350	33.00	SDR-18350	37.59	36 3/4"	35"	60

\* With door on top and rear.

All Prices F.O.B. N. Y. 59, N. Y.

## PREMIER METAL PRODUCTS COMPANY

The MASTER — 22nd Edition

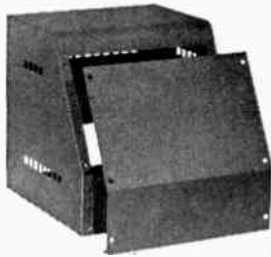
NEW YORK 59, N. Y.

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Page K-636

Net—All prices 10% higher West of Miss. River

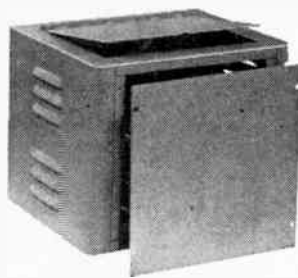
# PREMIER PRECISION BUILT METAL HOUSINGS



**SLOPING FRONT**

Cabinet has rounded top corners and a removable front panel. Back of cabinet is perforated and has opening for leads. Constructed of #20 gauge steel. Finished in Grey Wrinkle.

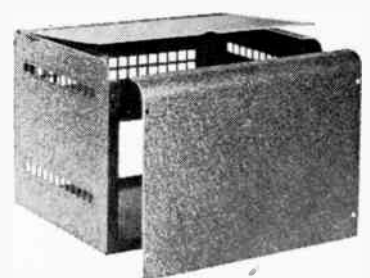
Catalog No.	H. W. D.	Use Chassis No.	Ship. Wt. Lbs.	Net Price
SFC-500	8 x 8 x 8"	CH-403	6	\$ 4.26
SFC-501	8 x 10 x 8"	CH-404	7	4.74
SFC-502	8 x 14 x 8"	CH-406	8	5.07
SFC-503	9 x 18 x 8"	CH-409	10	7.29
SFC-504	12 x 18 x 12"	CH-415	14	9.30



**HINGED TOP ROUNDED CORNER TYPE**

Cabinet has front vertical rounded corners and a removable front panel. Back of cabinet is louvred and has opening for leads. Constructed of #20 gauge steel. Finished in Grey Wrinkle.

Catalog No.	H. W. D.	Panel Size	Use Chassis No.	Ship. Wt. Lbs.	Net Price
HTC-200	8x10x 8"	8x 8"	CH-403	6	\$3.99
HTC-201	8x12x 8"	8x10"	CH-404	6 1/2	4.32
HTC-202	8x16x 8"	8x14"	CH-406	11	5.61
HTC-203	9x17x11"	9x15"	CH-413	6 1/2	8.70
HTC-204	12x20x12"	12x18"	CH-415	13 1/2	10.29
HTC-205	8x14x 8"	8x12"	CH-405	7 1/4	4.98

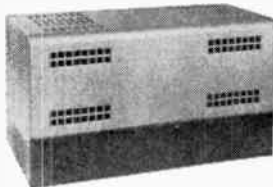


**HINGED TOP STANDARD TYPE**

Front Panel has a rounded corner on top and is removable. Top door has a piano hinge. Back of cabinet is perforated and has opening for leads. Constructed of #20 gauge steel. Finished in Black Wrinkle.

Catalog No.	H. W. D.	For C	Use Chassis No.	Ship. Wt. Lbs.	Net Price
HTC-100	7 1/4 x 10 1/2 x 6	5 1/2 x 9	CH-400	4	\$3.18
HTC-101	7 1/4 x 8 x 8	7 x 7	CH-403	4 1/2	3.18
HTC-102	7 1/4 x 10 x 8	7 x 9	CH-404	4 3/4	3.66
HTC-103	7 1/4 x 14 x 8	7 x 13	CH-406	5 3/4	4.17
HTC-104	9 x 15 x 10 3/4	10 x 14	CH-413	8 1/4	6.81
HTC-105	12 x 18 x 12	10 x 17	CH-415	12 1/4	7.95
HTC-106	7 1/4 x 12 x 8	7 x 11	CH-405	5 1/4	3.99

## AMPLIFIER FOUNDATIONS



**STANDARD TYPE**

### STANDARD TYPE

TOP COVER has perforations, rounded corners and is 6" high. Finished in Gray Wrinkle.

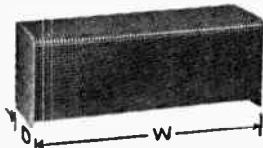
CHASSIS constructed of one piece with corners spot-welded. Finished in Black Wrinkle.

Cat. No.	Chassis Size	Ship. Wt. Lbs.	Net Price
AF-510	5" x 10" x 3"	9	\$4.17
AF-615	6" x 14" x 3"	10	4.83
AF-717	7" x 17" x 3"	11	5.49
AF-1012	10" x 12" x 3"	11	5.49
AF-1017	10" x 17" x 3"	13	6.48
AF-1317	13" x 17" x 3"	15	7.80

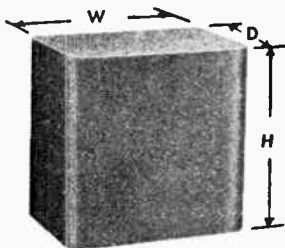
### PERFORATED TYPE COVERS

TOP COVER made of perforated steel and has rounded corners with solid ends spot-welded and is 6" high. Finished in Gray Wrinkle. Supplied without chassis.

Cat. No.	W.	D.	Use Chassis No.	Ship. Wt. Lbs.	Net Price
PC-510	10"	5"	ACH or CH-401	1 3/4	\$2.97
PC-615	14"	6"	ACH or CH-402	2 3/8	3.42
PC-717	17"	7"	ACH or CH-409	3	3.75
PC-1012	12"	10"	ACH or CH-412	3	3.81
PC-1017	17"	10"	ACH or CH-415	3 1/4	4.71



**PERFORATED TYPE COVERS**

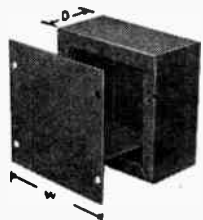


## ROUNDED CORNER UTILITY CASES

- Made of No. 20 gauge steel.
- Front vertical corners are rounded.
- Back of cabinet is completely open.
- Finished in Gray Wrinkle.

Cat. No.	Height	Width	Depth	Ship. Wt. Lbs.	Net Price
RC-343	4 1/2"	3 5/8"	3 1/8"	3/4	\$1.83
RC-543	4 1/2"	5 1/2"	3 1/2"	1 1/4	1.89
RC-563	6 1/2"	5 1/2"	3 1/2"	1 1/4	1.96
RC-743	4 1/2"	7 1/8"	3 1/8"	1	2.16

## STEEL UTILITY CASES WITH CHASSIS ATTACHED



Made of #20 gauge steel with a chassis spot welded to front panel. Front and rear panels are removable. Finished in black wrinkle.

Catalog No.	Height	Width	Depth	Chassis Size	Ship. Wt. Lbs.	Net Price
CA-1400	4"	4"	2"	1 x 2 7/8 x 1 7/8"	1	\$1.16
CA-1401	4"	5"	3"	1 x 3 7/8 x 2 7/8"	1 1/4	1.29
CA-1402	5"	4"	3"	1 1/4 x 2 7/8 x 2 7/8"	1 1/4	1.29
CA-1403	6"	5"	4"	1 3/4 x 3 7/8 x 3 7/8"	2	1.62
CA-1404	5"	6"	4"	1 1/4 x 4 7/8 x 3 7/8"	2	1.62
CA-1405	6"	6"	6"	1 3/4 x 4 7/8 x 5 7/8"	3	1.68

# PREMIER METAL PRODUCTS COMPANY

# PREMIER PRECISION BUILT METAL HOUSINGS



## RACK ACCESSORIES

### SLIDING DRAWER TO FIT STANDARD 19" ENCLOSED RELAY RACK CABINETS AND 18" DEEP DESK CABINET RACKS



Panel made of #12 gauge steel; chassis of #16 steel and has a 1" flange on top and bottom to accommodate plywood for the record changer. The chassis is mounted on ball-bearing suspension slides which can sustain 40 lbs. Drawer extends 11" from front of cabinet. Entire unit mounts on angle brackets which can be bolted on to the cabinet. Supplied knocked down with all necessary bolts for easy assembly. Locks in place by means of 2 latches. Finished in black or gray wrinkle, and Gray or Brown Hammertone. Black Wrinkle furnished if color is not specified.

Catalog No.	Will Fit Rack No.	Panel Size	Chassis Size			Ship. Wt. Lbs.	Net Price
			W.	D.	H.		
RD-10	R, RS, DCR-18 and SDR-18 Models	10 $\frac{3}{8}$ " x 18 $\frac{7}{8}$ "	17"	16 $\frac{1}{2}$ "	3"	15	\$14.91
RD-12	R, RS, DCR-18 and SDR-18 Models	12 $\frac{1}{8}$ " x 18 $\frac{7}{8}$ "	17"	16 $\frac{1}{2}$ "	4"	18	16.56
RD-10-14	DCR, SDR, DRK	10 $\frac{3}{8}$ " x 18 $\frac{7}{8}$ "	17"	14"	3"	14 $\frac{1}{2}$	14.79
RD-12-14	SDRK, R, RS, DCR-18, SDR-18 Models	12 $\frac{1}{8}$ " x 18 $\frac{7}{8}$ "	17"	14"	4"	17	16.41

### FRONT DOORS TO FIT STANDARD 19" DESK RACK CABINETS AND ENCLOSED RACKS

Constructed from one piece of #16 gauge steel. Two concealed piano hinges are provided with holes, punched to accommodate universal spacings and are made to fit on top of the panels. Supplied with cylinder lock and angle bracket to hold door in position on FD-300-306. All necessary bolts furnished for easy assembly. Finished in Black or Gray Wrinkle, Gray or Brown Hammertone. Black Wrinkle furnished if color is not specified. All doors are 20 $\frac{1}{2}$ " wide x 1 $\frac{1}{4}$ " deep.



Chrome handle supplied on FD-310-313 models.

FD-310-313 MODELS

Cat. No.	Will Fit Rack No.	Height	Ship. Wt.		Net Price
			Lbs.		
FD-300	DCR, DRK, SDR, SDRK-260	26 $\frac{1}{4}$ "	10		\$12.12
FD-301	DCR, DRK, SDR, SDRK-310	31 $\frac{1}{2}$ "	11		14.10
FD-302	DCR, DRK, SDR, SDRK-350	35"	12		15.72
FD-303	DCR, DRK, SDR, SDRK-120	12 $\frac{1}{4}$ "	6		9.12
FD-304	DCR, DRK, SDR, SDRK-140	14"	7		9.93
FD-305	DCR, DRK, SDR, SDRK-170	17 $\frac{1}{2}$ "	8		10.80
FD-306	DCR, DRK, SDR, SDRK-210	21"	9		11.61
FD-310	R or RS-3619	36 $\frac{7}{8}$ "	13		17.40
FD-311	R-4219	42 $\frac{1}{8}$ "	15		19.86
FD-312	R or RS-6119	61 $\frac{3}{8}$ "	20		23.16
FD-313	R or RS-7719	77 $\frac{1}{8}$ "	24		26.46



FD-300-306 MODELS

### DESK PANELS



- Made of No. 16 gauge steel and spot welded to a standard steel panel 10 $\frac{1}{2}$ " x 19".
- Front corners are rounded.
- Finished in Black or Gray Enamel, Gray or Brown Hammertone.
- SHIPPED KNOCKED DOWN WITH ALL NECESSARY HARDWARE FOR EASY ASSEMBLY.

Cat. No.	Width	Depth	Ship. Wt. Lbs.	Net Price
DP-1016	22"	16"	20	\$14.91
DP-1020	22"	20"	22	15.24

### RACK SHELF



Made of one piece of #16 Ga. Cold Rolled Steel, 1" high. Holes are punched on sides for mounting to rack. Finished in Black or Gray Wrinkle, Gray or Brown Hammertone. Black Wrinkle furnished if color is not specified.

Cat. No.	Will Fit Rack No.	Shelf Size	Ship. Wt. Lbs.	Net Price
RS-1106	All DCR Racks	12x21 $\frac{3}{8}$ "	7	\$2.82
RS-1107	R, RS, DR and RM Racks	15x21 $\frac{13}{16}$ "	7	3.48
RS-1108	FD Racks	13x21 $\frac{13}{16}$ "	7	3.15
RS-1109	24" deep RM Racks	22x23 $\frac{3}{8}$ "	7	5.64
RS-1110	RMA and FD-27 Series	22x26 $\frac{7}{8}$ "	8	6.60
RS-1111	MDK Series	10x21 $\frac{3}{8}$ "	6	2.70

### ROLLER TRUCKS FOR RACKS



Made from 1 piece of #16 Ga. Cold Rolled Steel. Supplied with 2" Dia. Composition Wheels and bolts for easy assembly. Finished in either Black or Gray Wrinkle, Gray or Brown Hammertone and has a red striped Chrome moulding.

Cat. No.	Will Fit Rack No.	Inside Dimensions	Ship. Wt. Lbs.	Net Price
RT-1100	All 15 $\frac{1}{4}$ " Racks	15 $\frac{3}{4}$ x22 $\frac{1}{4}$ "	22	\$ 9.93
RT-1101	R, RS, DR, RM and FD Racks	18 $\frac{3}{4}$ x22 $\frac{3}{4}$ "	22	12.57
RT-1102	RR-801 and RR-802	20 $\frac{1}{2}$ x21 $\frac{1}{2}$ "	22	13.89
RT-1105	24" deep RM Racks	24 $\frac{1}{2}$ x24 $\frac{1}{2}$ "	23	15.60
RT-1110	RMA-27 and FD-27 Series	27 $\frac{1}{2}$ x24 $\frac{1}{2}$ "	25	23.33

### CHASSIS SUPPORTS



Made of #12 gauge steel. Finished in black enamel. Sold in pairs only.

Cat. No.	Size	Ship. Wt. Lbs.	Net Price
CS-12	12 x 3 x 3	4	\$1.83
CS-14	14 $\frac{1}{2}$ x 3 x 3	5 $\frac{1}{4}$	1.99

# PREMIER METAL PRODUCTS COMPANY



# PREMIER PRECISION BUILT METAL HOUSINGS

BLANK RACK PANELS — 4 3/4" - 9 1/2" - 19" - 24" - 30" WIDTHS



STEEL PANELS MADE OF NO. 12 GAUGE STEEL

ALUMINUM PANELS MADE OF 1/8" THICK ALUMINUM

FINISHED IN EITHER BLACK OR GRAY WRINKLE, GRAY OR BROWN HAMMERTONE; EXCEPT 4 3/4" and 9 1/2" WHICH ARE FINISHED IN GRAY HAMMERTONE ONLY

If color is not specified, Black Wrinkle is furnished.

ALUMINUM							
Made of 1/8" Thick Aluminum and finished in Gray Hammertone only.							
4 3/4" Wide				9 1/2" Wide			
Cat. No.	Ship. Wt.	Height	Net Price	Cat. No.	Ship. Wt.	Height	Net Price
ARP-147	1/8	1 3/4"	\$0.48	ARP-195	1/4	1 3/4"	\$0.78
ARP-347	1/4	3 1/2"	.66	ARP-395	1/2	3 1/2"	1.08
ARP-547	3/8	5 1/4"	.99	ARP-595	3/4	5 1/4"	1.56
ARP-747	1/2	7"	1.20	ARP-795	1	7"	1.89
				ARP-895	1 1/4	8 3/4"	2.25
				ARP-1095	1 1/2	10 1/2"	2.85
				ARP-1295	1 3/4	12 1/4"	3.30

## 19" WIDE

Aluminum				Steel			
Cat. No.	Ship. Wt. Lbs.	Net Price	Height	Cat. No.	Ship. Wt. Lbs.	Net Price	Height
ARP-119	1/2	\$0.96	1 3/4"	RP-119	1	\$0.73	1
ARP-319	1	1.29	3 1/2"	RP-319	2	.84	2
ARP-519	1 1/2	1.77	5 1/4"	RP-519	3	1.03	3
ARP-719	2	2.13	7"	RP-719	4	1.20	4
ARP-819	2 1/2	2.55	8 3/4"	RP-819	5 1/4	1.47	5 1/4
ARP-1019	3	3.21	10 1/2"	RP-1019	6 1/4	1.77	6 1/4
ARP-1219	3 1/2	3.75	12 1/4"	RP-1219	7 1/4	2.10	7 1/4
ARP-1419	4	4.29	14"	RP-1419	8 1/4	2.43	8 1/4
ARP-1519	4	4.80	15 3/4"	RP-1519	9	2.73	9
ARP-1719	4 3/4	5.28	17 1/2"	RP-1719	10 1/2	3.00	10 1/2
ARP-1919	5	5.79	19 1/4"	RP-1919	12	3.33	12
ARP-2119	6	6.30	21"	RP-2119	12 1/2	3.66	12 1/2

## 24" WIDE

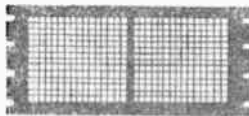
Aluminum				Steel			
Cat. No.	Ship. Wt. Lbs.	Net Price	Height	Cat. No.	Ship. Wt. Lbs.	Net Price	Height
ARP-324	1 1/4	\$ 1.98	3 1/2"	RP-324	2 1/4	\$1.26	2 1/4
ARP-524	2	2.94	5 1/4"	RP-524	3 1/2	1.56	3 1/2
ARP-724	2 1/2	3.54	7"	RP-724	4 1/2	1.80	4 1/2
ARP-824	3	4.23	8 3/4"	RP-824	6	2.22	6
ARP-1024	3 1/2	5.31	10 1/2"	RP-1024	7	2.67	7
ARP-1224	4	6.21	12 1/4"	RP-1224	8	3.15	8
ARP-1424	4 1/2	7.11	14"	RP-1424	9	3.63	9
ARP-1524	5	7.92	15 3/4"	RP-1524	10	4.11	10
ARP-1724	5 1/2	8.73	17 1/2"	RP-1724	11	4.50	11
ARP-1924	6	9.57	19 1/4"	RP-1924	12	4.98	12
ARP-2124	6 1/2	10.41	21"	RP-2124	13	5.49	13

## 30" WIDE

Aluminum				Steel			
Cat. No.	Ship. Wt. Lbs.	Net Price	Height	Cat. No.	Ship. Wt. Lbs.	Net Price	Height
ARP-330	1 1/2	\$ 2.64	3 1/2"	RP-330	3	\$1.68	3
ARP-530	2 1/4	3.90	5 1/4"	RP-530	4 1/2	2.07	4 1/2
ARP-730	3	4.71	7"	RP-730	6	2.40	6
ARP-830	3 3/4	5.61	8 3/4"	RP-830	8	2.94	8
ARP-1030	4 1/2	7.08	10 1/2"	RP-1030	9 1/4	3.54	9 1/4
ARP-1230	5	8.25	12 1/4"	RP-1230	10 1/4	4.20	10 1/4
ARP-1430	6	9.45	14"	RP-1430	12	4.83	12
ARP-1530	6 1/2	10.56	15 3/4"	RP-1530	13 1/2	5.46	13 1/2
ARP-1730	7	11.64	17 1/2"	RP-1730	15	6.00	15
ARP-1930	7 1/2	12.75	19 1/4"	RP-1930	18	6.63	18
ARP-2130	9	13.86	21"	RP-2130	19	7.32	19

## PANELS — 19" WIDE

Made of No. 12 Gauge Steel  
FINISHED IN EITHER BLACK OR GRAY WRINKLE, GRAY OR BROWN HAMMERTONE  
If color is not specified, Black Wrinkle is furnished



### GRILLE PANELS

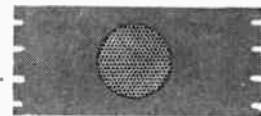
Cat. No.	Grill Size	Height	Ship. Wt. Lbs.	Net Price
GRP-601	3 7/8" x 13 3/8"	5 1/4"	2	\$2.94
GRP-602	3 7/8" x 13 3/8"	7"	2	3.15
GRP-603	5 7/8" x 13 3/8"	8 3/4"	2 1/2	3.81
GRP-604	5 7/8" x 13 3/8"	8 3/4"	2 1/2	3.51
GRP-605	7 7/8" x 13 3/8"	10 1/2"	2 1/2	4.17
GRP-606	5 7/8" x 13 3/8"	10 1/2"	2 1/2	3.81
GRP-607	7 7/8" x 13 3/8"	12 1/4"	3	4.32

\* Allows 3/16" space at bottom for chassis mounting.



### METER PANELS — 5 1/4"

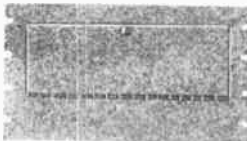
Cat. No.	No. of Holes	Meter Size	Hole Size	Ship. Wt. Lbs.	Net Price
MRP-900	3	2"	2 1/4"	7	\$1.47
MRP-901	5	2"	2 1/4"	7	1.99
MRP-902	3	3"	2 3/8"	7	1.47
MRP-903	5	3"	2 3/8"	7	1.99



### SPEAKER PANELS

A piece of perforated metal is spot-welded behind the opening.

Cat. No.	Height	Sprk. Size	Hole Size	Sh. Wt. Lbs.	Net Price
SRP-819	8 3/4"	6"	4 5/8"	6	\$2.73
SRP-1019	10 1/2"	8"	6 1/2"	8	3.48
SRP-1219	12 1/4"	10"	8 1/2"	9	4.17
SRP-1419	14"	12"	11"	10	4.80

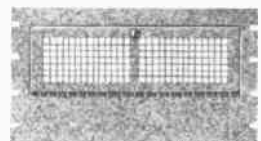


STANDARD TYPE

## DOOR PANELS

Panels have flush hinged doors with piano hinges, and are equipped with a door latch. All doors are located 1" from top to allow space for chassis at bottom.

STANDARD TYPE				GRILLE TYPE			
Cat. No.	Net Price	Height	Door Size	Ship. Wt. Lbs.	Cat. No.	Net Price	Height
DRP-700	\$4.65	8 3/4"	4 1/2" x 15 3/8"	9	GDRP-700	\$5.97	8 3/4"
DRP-701	4.98	10 1/2"	6" x 15 3/8"	10	GDRP-701	6.48	10 1/2"
DRP-702	5.49	12 1/4"	7 1/2" x 15 3/8"	12	GDRP-702	7.14	12 1/4"



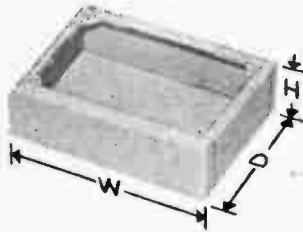
GRILLE TYPE

# PREMIER METAL PRODUCTS COMPANY

# PREMIER PRECISION BUILT METAL HOUSINGS

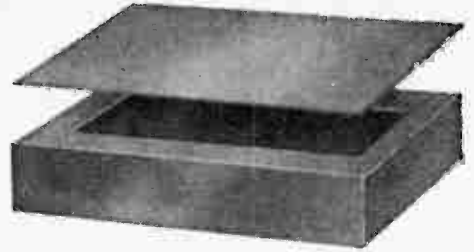
## CHASSIS

### STEEL and ALUMINUM BLANK



Chassis are of one piece construction with gussets spot-welded to the bottom flanges for additional strength. Corners have rounded effect and single inside thickness for mounting components. Bottom edges are flanged in on four sides and punched for bottom plates. Steel chassis are made of No. 20 gauge cold rolled steel, except those marked \* which are of No. 16 gauge. Steel chassis are finished in either Black Wrinkle or Zinc Plated. Zinc plated furnished if finish is not specified.

Aluminum chassis are made of No. 18 gauge (.040) aluminum, except those marked \* which are of No. 14 gauge (.064) and have an etched finish.



### REMOVABLE TOP

Made of #16 Ga. Cold Rolled Steel. Top and Bottom edges flanged in on four sides. Top plate is removable. Finished in either Black Wrinkle or Zinc Plated. Zinc plated furnished if finish is not specified.

#### ALUMINUM

Cat. No.	Sh. Lbs.	Wt. Lbs.	Net Price	D.	Size W.	H.
ACH-400	1/2	3/4	\$1.26	5 1/2"	9 1/2"	1 1/2"
ACH-401	1	1.45	1.45	5 1/2"	10 1/2"	3 1/2"
ACH-402	1	2.45	2.45	6"	14"	3"
ACH-403	1 1/2	1.26	1.26	7"	7"	2"
ACH-404	1 1/2	1.32	1.32	7"	9"	2 1/2"
ACH-405	1 1/2	1.45	1.45	7"	11"	2 1/2"
ACH-406	1 1/2	1.56	1.56	7"	13"	2 1/2"
ACH-407	1 1/2	2.75	2.75	7"	15"	3 1/2"
ACH-408	1 1/2	2.25	2.25	4"	17"	3 1/2"
ACH-409	1 1/2	2.71	2.71	7"	17"	3 1/2"
ACH-410	1 1/2	2.75	2.75	8"	17"	2 1/2"
ACH-411	1 1/2	2.88	2.88	8"	17"	3 1/2"
ACH-412	1 1/2	2.55	2.55	10"	12"	3 1/2"
ACH-413	1 1/2	3.24	3.24	10"	14"	3 1/2"
ACH-414	1 1/2	3.11	3.11	10"	17"	2 1/2"
ACH-415*	1 1/2	3.48	3.48	10"	17"	3 1/2"
ACH-416*	2	4.00	4.00	10"	17"	4 1/2"
ACH-417*	1 3/4	3.31	3.31	11"	17"	2 1/2"
ACH-418*	2	4.07	4.07	11"	17"	3 1/2"
ACH-419*	1 7/8	3.63	3.63	12"	17"	2 1/2"
ACH-421*	2 1/8	4.29	4.29	12"	17"	3 1/2"
ACH-421*	2 1/8	4.74	4.74	12"	17"	4 1/2"
ACH-422*	1 7/8	3.83	3.83	13"	17"	2 1/2"
ACH-423*	2 1/8	4.56	4.56	13"	17"	3 1/2"
ACH-424*	2 1/2	5.22	5.22	13"	17"	4 1/2"
ACH-425	1 5/8	1.56	1.56	7"	11"	3 1/2"
ACH-426	1 3/4	1.03	1.03	5"	7"	2 1/2"
ACH-427	1 1/4	2.77	2.77	8 1/2"	15"	3 1/2"
ACH-428	1 1/4	1.43	1.43	5"	7"	3 1/2"
ACH-429	1 3/4	1.72	1.72	5"	13"	3 1/2"
ACH-430	1 1/4	2.09	2.09	8"	12"	3 1/2"
ACH-431	1 1/4	1.23	1.23	4"	6 1/2"	2 1/2"
ACH-432	1 1/4	1.26	1.26	4"	6 1/2"	3 1/2"
ACH-433	1 1/4	1.74	1.74	7"	12"	3 1/2"
ACH-434	1	2.55	2.55	6"	17"	3 1/2"
ACH-435*	2 1/2	5.10	5.10	10"	23"	3"

\*Made from No. 14 gauge (.064) aluminum.

#### STEEL

Cat. No.	Sh. Lbs.	Wt. Lbs.	Net Price	Cat. No.	Sh. Lbs.	Wt. Lbs.	Net Price
CH-400	1	0.87	\$0.87	CH-417*	5 1/4	2.49	2.49
CH-401	1 1/2	1.20	1.20	CH-418*	6 1/4	2.73	2.73
CH-402	2 1/2	1.41	1.41	CH-419*	5	1.89	1.89
CH-403	1 1/4	1.02	1.02	CH-420*	7	2.28	2.28
CH-404	1 1/2	1.20	1.20	CH-421I	8 1/2	2.49	2.49
CH-405	1 7/8	1.23	1.23	CH-422*	6	2.73	2.73
CH-406	2	1.33	1.33	CH-423*	7	3.15	3.15
CH-407	2 3/4	1.59	1.59	CH-424*	10	3.60	3.60
CH-408	2 1/4	1.43	1.43	CH-425	2 1/4	1.33	1.33
CH-409	3 1/8	1.74	1.74	CH-426	1	.99	.99
CH-410	2 3/4	1.59	1.59	CH-427	3	1.83	1.83
CH-411	5 1/4	1.74	1.74	CH-428	1 1/4	1.01	1.01
CH-412	2 3/4	1.68	1.68	CH-429	2	1.49	1.49
CH-413	3 1/4	1.77	1.77	CH-430	2 1/2	1.59	1.59
CH-414	3 1/4	1.83	1.83	CH-431	1	.96	.96
CH-415*	6	1.83	1.83	CH-432	1	.99	.99
CH-416*	7 1/2	2.28	2.28	CH-433	2 1/2	1.39	1.39

\*Made from No. 16 gauge steel.

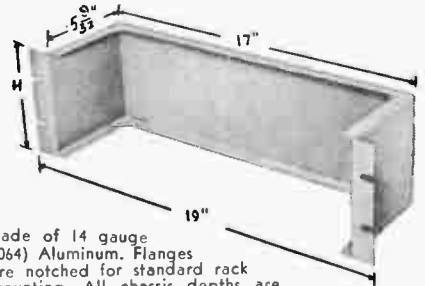
Cat. No.	Size	Sh. Lbs.	Net Price
RCH-415	10 x 17 x 3	5	\$3.65
RCH-416	10 x 17 x 4	5	4.05
RCH-423	13 x 17 x 3	9	3.81
RCH-424	13 x 17 x 4	10	4.71

### REPLACEMENT TOPS

Cat. No.	Size	Sh. Lbs.	Net Price
RTC-415	10 x 17	2	\$1.41
RTC-423	13 x 17	3	1.74

### ALUMINUM VERTICAL PANEL

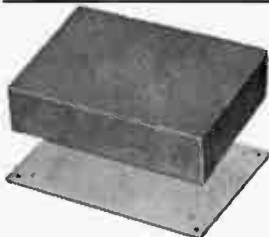
TO FIT 19" STANDARD RACKS



Made of 14 gauge (.064) Aluminum. Flanges are notched for standard rack mounting. All chassis depths are 5-9/32". Gussets are spot welded in each corner for greater strength. Etched finish.

Catalog No.	Height	Sh. Wt. Lbs.	Net Price
ACH-1200	1 3/4"	3/4	\$2.55
ACH-1201	3 1/2"	1 3/4	2.79
ACH-1202	5 1/4"	1 1/2	3.04
ACH-1203	7"	2	3.51
ACH-1204	8 3/4"	2 1/4	4.14
ACH-1205	10 1/2"	2 3/4	4.44
ACH-1206	12 1/4"	3	4.95
ACH-1207	14"	3 1/4	5.35

### HEAVY DUTY BLANK

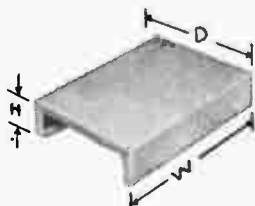


Construction same as Blank Chassis above. Bottom plates are supplied with each Heavy Duty Chassis. Made of No. 16 gauge steel and finished in either Black Wrinkle or Zinc Plated. Zinc plated furnished if finish is not specified.

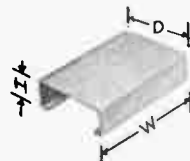
Cat. No.	Dimensions	Sh. Lbs.	Net Price	Cat. No.	Dimensions	Sh. Lbs.	Net Price
HC-910	8" x 17" x 2"	8	\$3.06	HC-914	13" x 17" x 2 1/2"	11	\$3.87
HC-911	8" x 17" x 3"	9	3.33	HC-915	13" x 17" x 3 1/2"	13	4.23
HC-912	11" x 17" x 2"	10	3.51	HC-916	13" x 17" x 4"	14	4.70
HC-913	11" x 17" x 3"	11	3.69	HC-917	17" x 17" x 4"	17	6.30

### STEEL OPEN END

Made of #20 gauge steel and zinc plated.



Cat. No.	D.	W.	H.	Sh. Lbs.	Net Price
CH-1300	7"	6"	2 1/2"	1	\$0.73
CH-1301	5"	7"	1 1/2"	3/4	.66
CH-1302	7"	7"	1 1/2"	1	1.06
CH-1303	7"	8"	2"	1	.93
CH-1304	5 1/2"	9"	1 1/2"	1	.79
CH-1305	7 1/2"	9"	1 1/2"	1	1.06
CH-1306	7 1/2"	10"	2 1/2"	1 1/4	1.01
CH-1307	7"	11"	1 1/2"	1 1/4	1.14
CH-1308	7"	13"	1 1/2"	1 1/2	1.33
CH-1309	10 3/4"	14"	2 1/2"	2 1/2	1.59
CH-1310	7 3/4"	15"	2"	2	1.52



### ALUMINUM OPEN END

Made of 18 ga. (.040) Aluminum. Etched Finish.

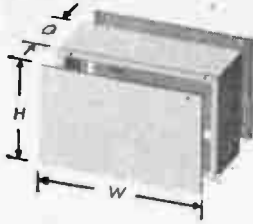
Catalog No.	Depth	Width	Height	Sh. Lbs.	Net Price
ACH-1350	2 5/8"	2 3/4"	1 1/4"	1/4	\$.37
ACH-1351	1 3/4"	3 1/8"	3/8"	1/4	.41
ACH-1352	3 1/4"	4 1/2"	2"	1/4	.44
ACH-1353	2 3/4"	4 1/2"	1 1/4"	1/4	.44
ACH-1354	3 3/4"	4 1/2"	1 1/2"	1/4	.44
ACH-1355	3"	6 1/8"	3/8"	1/4	.52
ACH-1356	5 3/4"	4 1/2"	1 1/2"	1/4	.55
ACH-1357	4"	3 1/8"	3/8"	1/4	.44
ACH-1358	4"	4 1/2"	1"	1/4	.48
ACH-1359	4"	5 1/8"	1"	1/4	.51
ACH-1360	4"	6 1/8"	1"	1/4	.55

# PREMIER METAL PRODUCTS COMPANY

# PREMIER PRECISION BUILT METAL HOUSINGS



## UTILITY CASES



## ALUMINUM

Constructed of #16 ga. (.051) aluminum with flanged edges, spotwelded corners and two removable flat covers. Natural Aluminum finish or Gray Hammertone.

Natural Aluminum		Size		Ship. Wt.		Gray Hammertone	
Cat. No.	Net Price	H.	W.	H.	W.	Cat. No.	Net Price
AC-442	\$1.26	4	4	2	1/2	PAC-442	\$1.39
AC-453	1.39	4	5	3	3/4	PAC-453	1.62
AC-564	1.65	5	6	4	1	PAC-564	2.02
AC-596	2.71	5	9	6	1 1/2	PAC-596	3.07
AC-666	1.89	6	6	6	1 1/2	PAC-666	2.11
AC-1276	3.73	12	7	6	2 1/4	PAC-1276	4.14
AC-1597	5.10	15	9	7	3 1/2	PAC-1597	5.65
		6	9	5	1 1/2	PAC-695	3.07

## STEEL

Constructed of #20 ga. sheet steel with flanged edges, spot-welded corners, and two removable flat covers. Finished in Black Wrinkle.

Catalog No.	H.	W.	D.	Ship. Wt. Lbs.	Net Price
C-442	4	4	2"	7/8	\$.84
C-453	4	5	3"	1 1/4	.98
C-564	5	6	4"	1 3/4	1.16
C-596	5	9	6"	3	1.83
C-666	6	6	6"	2 1/4	1.33
C-695	6	9	5"	3	1.83
C-754	7	5	4"	2	1.26
C-8101	10	10	8"	6	3.00
C-8107	8	10	7"	4 3/4	2.46
C-1128	11	12	8"	7 1/4	3.31
C-1576	15	7 3/4	6 1/2"	6	3.00
C-1597	15	9	7 1/2"	7	3.42
C-1276	12	7	6"	4 1/2	2.49

## CHASSIS MOUNTING BRACKETS

- Constructed of No. 16 gauge steel.
- Finished in Black enamel.
- Sold in pairs only.



### TRIANGULAR TYPE

Cat. No.	Height	Depth	Ship. Wt. Lbs.	Net Price
TCB-55	5"	5"	1	\$ .90
TCB-77	7"	7"	1	1.02
TCB-99	9"	9"	1 1/2	1.23



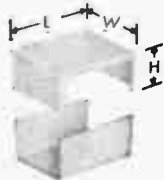
### STANDARD

### STANDARD TYPE

Cat. No.	H.	D.	Ship. Wt. Lbs.	Net Price
CB-78	6 1/2"	8"	1 1/2	\$ .87
CB-710	6 1/2"	10"	1 3/4	1.17
CB-711	6 1/2"	11"	2	1.26
CB-712	6 1/2"	12"	2 1/8	1.37
CB-713	6 1/2"	13"	2 1/4	1.47
CB-717	6 1/2"	17"	3	2.28
CB-810	8 1/2"	10"	2 3/8	1.74
CB-813	8 1/2"	13"	3	1.83

## ALUMINUM MINIATURE CASES

A two piece case made of #16 Ga. (.051) aluminum. Natural Aluminum Finish or Gray Hammertone.



Natural Aluminum		Size		Ship. Wt.		Gray Hammertone	
Cat. No.	Net Price	L	W	H	Lbs.	Cat. No.	Net Price
AMC-1000	\$.70	2 3/4	x2 1/8	x1 3/8	1/4	PMC-1000	\$.79
AMC-1001	.70	3 1/4	x2 1/8	x1 3/8	1/4	PMC-1001	.79
AMC-1002	.73	4	x2 1/8	x1 3/8	1/4	PMC-1002	.83
AMC-1003	.96	4	x2 1/4	x2 1/4	3/8	PMC-1003	1.06
AMC-1004	.99	5	x2 1/4	x2 1/4	3/8	PMC-1004	1.09
AMC-1005	1.17	5	x4	x3	1/2	PMC-1005	1.23
AMC-1006	1.09	5 1/4	x3	x2 1/8	1/2	PMC-1006	1.19
AMC-1007	1.39	6	x5	x4	1	PMC-1007	1.53
AMC-1008	1.56	7	x5	x3	3/4	PMC-1008	1.69
AMC-1009	2.31	8	x6	x3 1/2	1 1/8	PMC-1009	2.45
AMC-1010	2.88	10	x6	x3 1/2	1 1/2	PMC-1010	3.04
AMC-1011	3.24	12	x7	x4	1 3/4	PMC-1011	3.57
AMC-1012	3.84	17	x5	x4	2	PMC-1012	4.20
AMC-1013	1.17	10	x2	x1 3/8	1/2	PMC-1013	1.23
AMC-1014	1.53	12	x2 1/2	x2 1/4	1/4	PMC-1014	1.65
AMC-1015	.93	4	x2	x2 1/4	1/4	PMC-1015	1.20
AMC-1016	.96	4 1/4	x2 1/4	x1 1/2	1/4	PMC-1016	1.06

## WALL MOUNTING BRACKETS



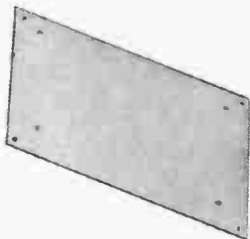
FOR MOUNTING DESK CABINET RACKS ON WALL — REMOVE REAR DOOR AND USE WALL MOUNTING BRACKETS.

Sold in pairs only. Finished in Gray Enamel.

Shipping Weight 2 1/2 lbs.

Catalog No. WB-19..... \$2.70 Net Price

## ALUMINUM AND STEEL BOTTOM PLATES



The bottom plates have holes to match the chassis and have 4 pressed dimples. Steel plates made of No. 20 gauge steel, finished in either Black Wrinkle or Zinc Plated. Aluminum plates made of No. 18 gauge (.040). Natural aluminum finish.

ALUMINUM				STEEL			
Cat. No.	Net Price	Size	Ship. Wt. Lbs.	Cat. No.	Net Price	Size	Ship. Wt. Lbs.
ABP-400	\$0.87	5 1/2" x 9 1/2"	1	BP-400	\$0.40	10" x 12"	2
ABP-401	.87	5" x 10"	1	BP-401	.43	10" x 14"	2
ABP-402	1.32	6" x 14"	1	BP-402	.60	10" x 17"	2
ABP-403	.90	7" x 7"	1	BP-403	.43	11" x 17"	2
ABP-404	.96	7" x 9"	1	BP-404	.47	12" x 17"	2
ABP-405	1.06	7" x 11"	1	BP-405	.57	13" x 17"	2
ABP-406	1.32	7" x 13"	1	BP-406	.63	5" x 7"	1
ABP-407	1.32	7" x 15"	2	BP-407	.70	5" x 13"	1
ABP-408	1.32	4" x 17"	2	BP-408	.57	8" x 12"	2
ABP-409	1.36	7" x 17"	2	BP-409	.73	4" x 6"	1
ABP-410	1.53	8" x 17"	2	BP-410	.73	7" x 12"	2
						8" x 17"	2
						10" x 23"	2

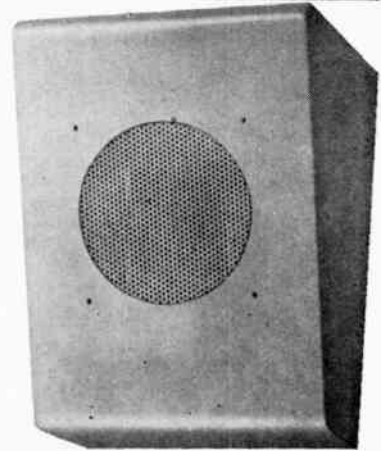
# PREMIER METAL PRODUCTS COMPANY

# PREMIER PRECISION BUILT METAL HOUSINGS



## METAL WALL SPEAKER BAFFLE

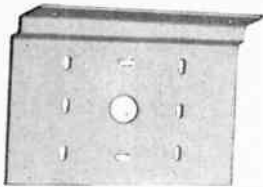
Sturdily constructed of #18 gauge cold rolled steel to eliminate splitting, warping, or cracking. Perforated grille is spot-welded behind speaker opening. Baffle interior has special undercoating to eliminate metallic sound. Supplied with mounting bracket for simple hanging on wall. Finished in brown hammertone or buff enamel.



Supplied with  
**MOUNTING BRACKET**  
for simple hanging  
on wall



Catalog No.	Height	Width	Depth	Speaker Size	Net Price
WSB-8	11 1/2"	9 1/2"	7"	8"	\$ 5.04
WSB-12	15 1/2"	13 1/2"	9 3/4"	12"	6.30



## WALL SPEAKER MOUNTING PLATE

For Use with WSB-8 and WSB-12 Wall Speaker Baffles

DESIGNED FOR SIMPLE MOUNTING OF SPEAKER BAFFLE TO STANDARD 2" x 4" AND 4" x 4" ELECTRICAL OUTLET BOXES

Bracket has two threaded holes for easy mounting to baffle. Made of No. 16 gauge cold rolled steel and finished in gray primer.

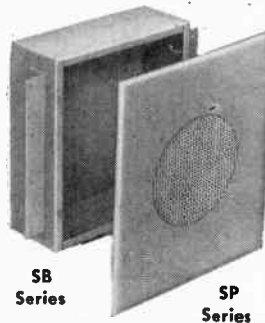
Catalog No. SMP-812..... .90 Net Price



## SPEAKER CABINETS

- Constructed of No. 18 gauge steel with perforated grille spot welded behind the opening.
- Front vertical corners are rounded.
- Supplied with handle.

- Removable back plate has key hole slots for hanging.
- Finished in Black Wrinkle.



## RECESSED SPEAKER BOXES

Designed with adjustable mounting brackets for easy installation in walls or acoustical tile ceilings. Speaker plate has beveled edges to give the same appearance as an acoustical tile, and is easily fastened to the speaker box by means of Tinnerman nuts. Box made of #20 gauge steel; plate of #16 gauge steel with perforated grille spot-welded behind the opening. Interior sprayed with special undercoating to eliminate metallic sound. Finished in gray primer or gray hammertone.

### SPEAKER BOX SIZE

Catalog No.	W	H	D	Ship. Wt. Lbs.	Net Price
SB-1010	10 x	10 x	4"	4	\$4.71
SB-1012	10 x	12 x	4"	5	4.98
SB-1417	14 x	17 x	7 1/2"	10	7.47

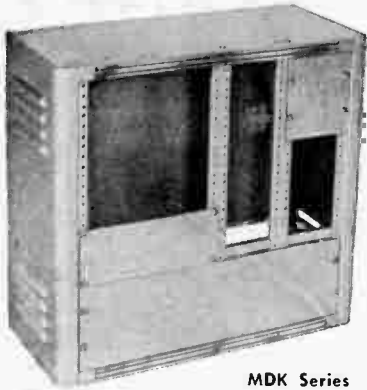
### SPEAKER PLATE SIZE

Catalog No.	W.	H.	Speaker Size	Ship. Wt. Lbs.	Net Price
SP-1212	12"	12"	8"	2 1/2	\$2.34
SP-1214	12"	14"	8"	3	2.49
SP-1619	16"	19"	12"	5 1/2	4.17

Cat. No.	H.	W.	D.	Hole Size	Speaker Size	Ship. Wt. Lbs.	Net Price
SC-1006	10"	10"	6"	4 5/8"	6"	7 3/8	\$3.81
SC-1227	12"	12"	7"	6 1/2"	8"	10	4.80
SC-1448	14"	14"	8"	8 1/2"	10"	13 1/2	6.15
SC-1668	16"	16"	8"	11"	12"	16	8.13

# PREMIER METAL PRODUCTS COMPANY

# PREMIER PRECISION BUILT METAL HOUSINGS



MDK Series

## MODU-RAK®

### 12" DEEP MINIATURE DESK RACKS

for modular construction of test equipment

FOR STANDARD 19", 9½" AND 4¾" RACK PANELS

- Front vertical corners are rounded and the top and bottom are trimmed with red striped chrome moulding.
- Rigidly constructed of No. 16 gauge cold rolled sheet steel.
- Panels fit into a recess so that the edges are not exposed.

#### 21¾" WIDE x 12" DEEP

	Catalog No.	Overall Height	Available Panel-Space	Ship. Wt. Lbs.	Net Price
WITH REMOVABLE REAR PANEL	MDK-70	8¾"	7 x 19"	20	\$10.53
	MDK-80	10½"	8¾ x 19"	21	11.19
	MDK-100	12½"	10½ x 19"	23	12.87
	MDK-120	14"	12½ x 19"	25	14.04
	MDK-140	15¾"	14 x 19"	29	15.84
WITH REAR DOOR	MDK-170	19¼"	17½ x 19"	36	19.20
	MDK-210	22¾"	21 x 19"	39	21.00
	MDK-260	28"	26¼ x 19"	40	22.95
	MDK-280	29¾"	28 x 19"	41	24.75

#### 12¼" WIDE x 12" DEEP

	Catalog No.	Overall Height	Available Panel-Space	Ship. Wt. Lbs.	Net Price
WITH REMOVABLE REAR PANEL	MDK-50-95	7"	5¼ x 9½"	14	9.75
	MDK-70-95	8¾"	7 x 9½"	15	10.20
	MDK-80-95	10½"	8¾ x 9½"	16	10.86
	MDK-100-95	12½"	10½ x 9½"	17	12.60
	MDK-120-95	14"	12½ x 9½"	18	13.68

- Panel mounting holes are tapped for 10-32 machine screws on Universal Spacings.

- 6 knock-out holes are provided on top and bottom of MDK-70 through MDK-280 series to accommodate angle brackets (Cat. No. AB-2).  
Two knock-out holes are provided on top and bottom of MDK-50-95 through MDK-120-95 series.

- Rear panel on Models MDK-70 through MDK-140 and MDK-70-95 through MDK-120-95 can be removed from back of cabinet for service.

- Rear doors have snap catches.

- Bolts are not visible from the outside and these units have the same appearance as the welded models.

- FINISHED IN GRAY HAMMERTONE

- SHIPPED KNOCKED-DOWN WITH ALL NECESSARY HARDWARE FOR EASY ASSEMBLY

## VERTICAL AND HORIZONTAL DIVIDERS and ANGLE BRACKETS for

subdividing

## MODU-RAK®

into modular units



### HORIZONTAL DIVIDERS

- Holes punched to accommodate vertical dividers (DV Series) which subdivide MODU-RAK into 9½" and 4¾" widths.
- Made of No. 16 gauge steel.
- Finished in gray hammertone.

Catalog No.	Dimensions	Net Price	Catalog No.	Dimensions	Net Price
DH-19	19" x 1½"	\$2.70	DH-95	9½" x 1½"	2.22



### VERTICAL DIVIDERS

- Two rows of 10-32 tapped holes punched on Universal spacings.
- Made of No. 16 gauge steel.
- Finished in gray hammertone.

Cat. No.	"A" Available Panel Mtg. Space	Net Price
DV-5	5¼"	\$.75
DV-7	7"	.99
DV-8	8¾"	1.23
DV-10	10½"	1.53
DV-12	12½"	1.62
DV-14	14"	1.77
DV-17	17½"	2.31
DV-21	21"	2.82
DV-26	26¼"	3.51
DV-28	28"	3.69

### ANGLE BRACKETS

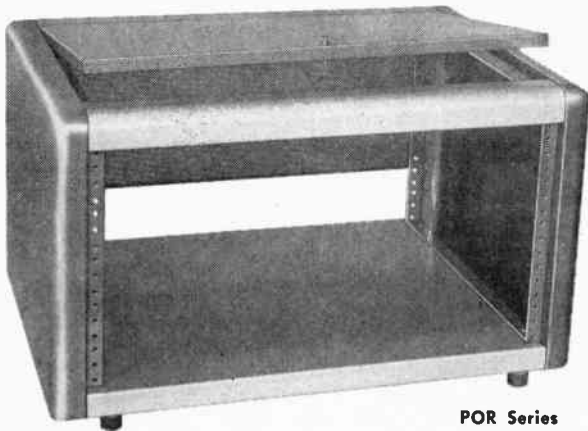


- Punched to accommodate vertical dividers.
- Made of No. 16 gauge steel.
- Finished in gray hammertone.

Cat. No.	Net Price	sold in
AB-2	\$.90 pr.	pairs only

# PREMIER METAL PRODUCTS COMPANY

# PREMIER PRECISION BUILT METAL HOUSINGS



POR Series

The  
**ARISTOCRAT** of  
**DESK CABINET RACKS**



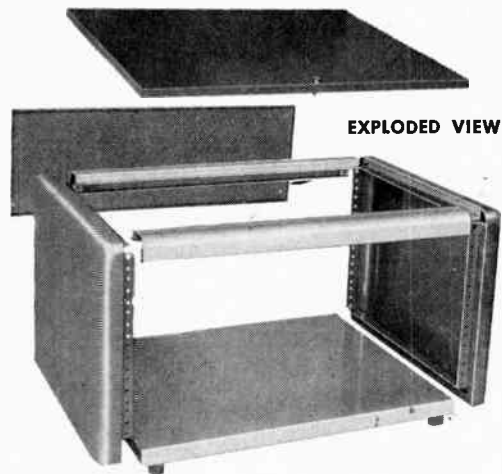
## PREM-O-RAK

AVAILABLE IN 20 DIFFERENT SIZES —  
FROM 7" to 35" PANEL SPACES.

BOTH 15¼" and 18" DEEP FOR STAND-  
ARD 19" PANELS.

SHIPPED KNOCKED-DOWN WITH ALL THE  
NECESSARY HARDWARE FOR  
EASY ASSEMBLY.

- All screws for assembling PREM-O-RAK are not visible from the outside.
- Both front and rear verticals are tapped for 10/32 machine screws on universal spacings so that panels may be mounted on both front and rear if desired.
- Both front and rear of top have attractive ball corners.
- Interlocking removable top made of perforated metal and held in place by only one captive screw.
- Interlocking removable rear panel made of perforated metal and held in place by two captive screws.
- Rigidly constructed of #16 gauge steel.
- Rear panel has 3½" opening on bottom for leads, etc.
- Panels fit into ½" recess.
- Base supplied with four rubber feet.
- Components may be mounted on base before assembly of rack into a complete unit.
- **HANDSOMELY FINISHED IN TWO-TONE GRAY OR BROWN HAMMERTONE.**  
Top cross braces and base are Gray Hammetone.  
Top and rear panel and side panels are Brown Hammetone.



EXPLODED VIEW

ALL CABINETS ARE 21¾" WIDE

### 15¼" DEEP

Catalog No.	Overall Height	Panel Space	Ship. Wt. Lbs.	Net Price
POR-7	9¾"	7"	22	\$24.00
POR-8	11½"	8¾"	24	25.20
POR-10	12½"	10½"	26	28.80
POR-12	14½"	12½"	28	31.20
POR-14	16½"	14"	32	34.80
POR-17	19½"	17½"	40	41.40
POR-21	23½"	21"	44	45.00
POR-26	28½"	26¼"	45	48.60
POR-31	33½"	31½"	50	51.00
POR-35	37½"	35"	55	54.00

Catalog No.	Overall Height	Panel Space	Ship. Wt. Lbs.	Net Price
POR-718	9¾"	7"	24	\$26.55
POR-818	11½"	8¾"	26	27.90
POR-1018	12½"	10½"	29	31.80
POR-1218	14½"	12½"	31	34.35
POR-1418	16½"	14"	35	38.40
POR-1718	19½"	17½"	44	45.60
POR-2118	23½"	21"	48	49.80
POR-2618	28½"	26¼"	49	53.55
POR-3118	33½"	31½"	55	56.85
POR-3518	37½"	35"	60	59.55

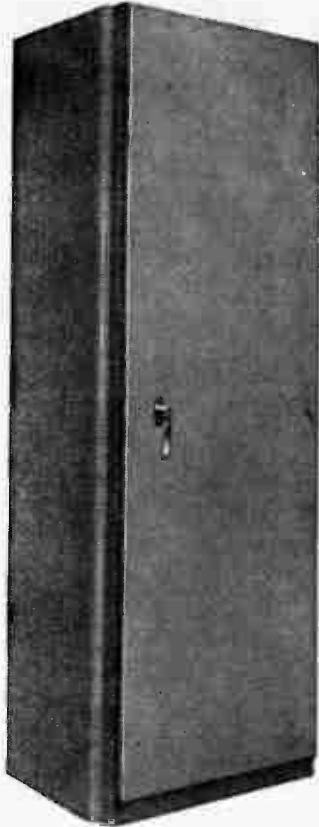
# PREMIER METAL PRODUCTS COMPANY

# PREMIER PRECISION BUILT METAL HOUSINGS

## HEAVY DUTY TRANSMITTER RACKS FOR 19" RACK PANELS • FOR MULTIPLE INSTALLATIONS

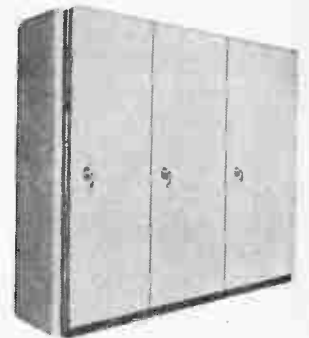
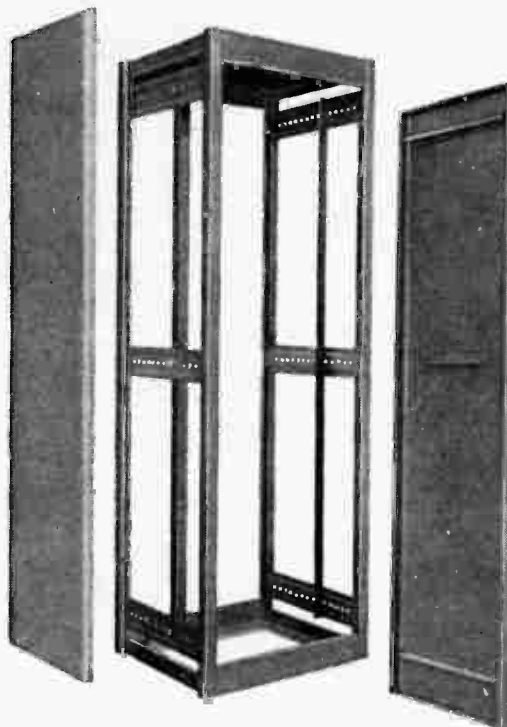


### 18" and 24" Deep



Model PR-77 with  
SP-77 panels attached

SHOWN WITHOUT  
FRONT AND REAR DOORS



3 UNITS IN ASSEMBLY

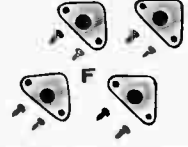
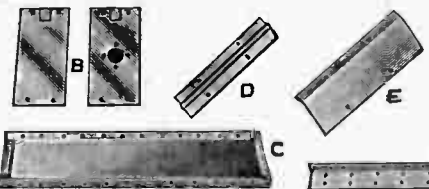
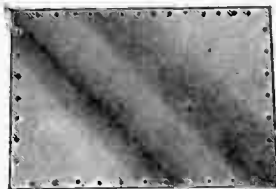
#### NOTES:

1. These units can be supplied as a frame only or as a frame and one door only.
2. Also available to fit standard 24" wide panels.

PRICES OF THE ABOVE  
UPON REQUEST

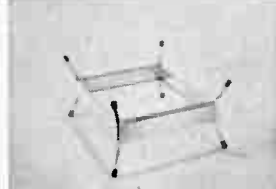
18" DEEP				ALL RACKS 22" WIDE				24" DEEP			
FRAMES AND DOORS		Catalog No.	Ship. Wt. Lbs.	Net Price	Height	Panel Space	Door Size	Catalog No.	Ship. Wt. Lbs.	Net Price	
Each unit consists of 1 frame and 2 doors.		PR-61	140	\$138.93	67 <sup>3</sup> / <sub>8</sub>	61 <sup>1</sup> / <sub>4</sub> x 19	65 <sup>1</sup> / <sub>2</sub> x 21 <sup>1</sup> / <sub>2</sub> x 1 <sup>3</sup> / <sub>16</sub>	PR-61-24	168	\$166.71	
		PR-70	150	158.76	76 <sup>1</sup> / <sub>8</sub>	70 x 19	74 <sup>1</sup> / <sub>4</sub> x 21 <sup>1</sup> / <sub>2</sub> x 1 <sup>3</sup> / <sub>16</sub>	PR-70-24	180	190.56	
		PR-77	165	165.39	83 <sup>1</sup> / <sub>8</sub>	77 x 19	81 <sup>1</sup> / <sub>4</sub> x 21 <sup>1</sup> / <sub>2</sub> x 1 <sup>3</sup> / <sub>16</sub>	PR-77-24	198	202.80	
SIDE PANELS		18" DEEP Catalog No.	Size	Ship. Wt. Lbs.	Net Price	24" DEEP Catalog No.	Size	Ship. Wt. Lbs.	Net Price		
(Sold individually—NOT as pair)		SP-61	67 <sup>1</sup> / <sub>4</sub> x 15 x 1 <sup>1</sup> / <sub>2</sub>	23	\$21.54 ea.	SP-61-24	67 <sup>1</sup> / <sub>4</sub> x 21 x 1 <sup>1</sup> / <sub>2</sub>	28	\$25.83 ea.		
		SP-70	76 x 15 x 1 <sup>1</sup> / <sub>2</sub>	26	23.16 ea.	SP-70-24	76 x 21 x 1 <sup>1</sup> / <sub>2</sub>	31	27.78 ea.		
		SP-77	83 x 15 x 1 <sup>1</sup> / <sub>2</sub>	28	24.90 ea.	SP-77-24	83 x 21 x 1 <sup>1</sup> / <sub>2</sub>	34	30.00 ea.		

# PREMIER METAL PRODUCTS COMPANY



# SeeZak

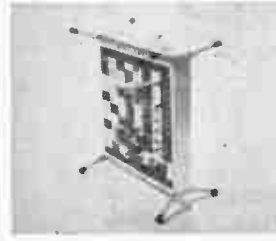
## BENCH RACK



Size 17" x 20", tapped holes per "universal" rack spacing  
**NET PRICE** ..... \$12.99

### COMPONENT PARTS

Name-No.	Pkg'd Price
ANGLE LEG AL-1	\$3.90/4
MOUNTING STRIP MS-17	\$5.10/pr.
SIDE RACK RAIL RR-317	\$2.40/pr.
END RACK RAIL RR-320	\$2.70/pr.
RUBBER TIPS RT-1	.75/8



Bench Racks accommodate all SeeZak parts and standard rack panels, facilitates work in any position, won't tip over.

### PEGBOARD, PGB-4

4" x 17", 1/16" phenolic, holes for "Presto" terminals punched on 1/4" centers.  
**NET PRICE** ..... \$2.10/ea.

### PRESTO TERMINALS T-100

Slotted, brass, silver plated, snap-in type, reusable.  
**NET PRICE** ..... \$4.50/100

### RIVSET 600

Plastic case with 3/32" and 1/2" riveting tools, 200 rivets, 100 #4 self-tapping screws.  
**NET PRICE** ..... \$1.90



## SEEZAK E-X-P-A-N-D-A-B-L-E CHASSIS

PANELS—16 Ga. Aluminum (Figure A)  
 105 common sizes and shapes from 1" x 1" to 17" x 17"

Lgth. In.	4" Wide		5" Wide		6" Wide		7" Wide	
	No.	Net	No.	Net	No.	Net	No.	Net
1	P-44	\$0.39						
5	P-45	.42	P-55	\$0.45				
6	P-46	.45	P-56	.48	P-66	\$0.57		
7	P-47	.48	P-57	.51	P-67	.60	P-77	\$0.72
8	P-48	.51	P-58	.54	P-68	.63	P-78	.75
9	P-49	.54	P-59	.60	P-69	.66	P-79	.78
10	P-410	.57	P-510	.63	P-610	.72	P-710	.81
11	P-411	.60	P-511	.69	P-611	.75	P-711	.84
12	P-412	.63	P-512	.72	P-612	.81	P-712	.87
13	P-413	.66	P-513	.75	P-613	.84	P-713	.93
14	P-414	.69	P-514	.81	P-614	.87	P-714	.99
15	P-415	.72	P-515	.84	P-615	.90	P-715	1.05
16	P-416	.75	P-516	.87	P-616	.93	P-716	1.11
17	P-417	.78	P-517	.93	P-617	.96	P-717	1.17

### PANELS—14 Ga. Aluminum

Lgth. In.	8" Wide		9" Wide		10" Wide		11" Wide	
	No.	Net	No.	Net	No.	Net	No.	Net
8	P-88	\$0.84						
9	P-89	.90	P-99	\$0.99				
10	P-810	.96	P-910	1.05	P-1010	\$1.20		
11	P-811	1.02	P-911	1.11	P-1011	1.29	P-1111	\$1.41
12	P-812	1.08	P-912	1.17	P-1012	1.35	P-1112	1.50
13	P-813	1.14	P-913	1.23	P-1013	1.44	P-1113	1.59
14	P-814	1.20	P-914	1.29	P-1014	1.50	P-1114	1.71
15	P-815	1.26	P-915	1.35	P-1015	1.56	P-1115	1.80
16	P-816	1.32	P-916	1.41	P-1016	1.62	P-1116	1.89
17	P-817	1.38	P-917	1.47	P-1017	1.68	P-1117	2.01

Lgth. In.	12" Wide		13" Wide		14" Wide		15" Wide	
	No.	Net	No.	Net	No.	Net	No.	Net
12	P-1212	\$1.62						
13	P-1213	1.74	P-1313	\$1.83				
14	P-1214	1.83	P-1314	2.01	P-1414	\$2.25		
15	P-1215	1.92	P-1315	2.13	P-1415	2.31	P-1515	\$2.49
16	P-1216	2.04	P-1316	2.25	P-1416	2.40	P-1516	2.55
17	P-1217	2.16	P-1317	2.37	P-1417	2.52	P-1517	2.67

Lgth. In.	16" Wide		17" Wide	
	No.	Net	No.	Net
16	P-1616	\$2.70		
17	P-1617	2.85	P-1717	\$2.97

### PROTOTYPE PANELS (Figure B)

No. PT-0	Blank panel, Net Each	\$0.30
No. PT-7	Pre-punched for 7-pin Miniature, Net Each	.35
No. PT-8	Pre-punched for Octal Sockets, Net Each	.35
No. PT-9	Pre-punched for 9-pin Miniature, Net Each	.35

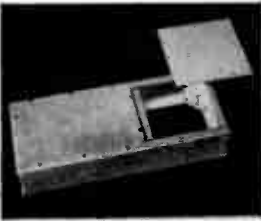
Lgth. In.	2" 18-Ga. Rails		3" 16-Ga. Rails		4" 16-Ga. Rails	
	No.	Net Pr.	No.	Net Pr.	No.	Net Pr.
1	R-24	\$0.39	R-34	\$0.48	R-44	\$0.63
5	R-25	.45	R-35	.54	R-45	.69
6	R-26	.48	R-36	.60	R-46	.78
7	R-27	.51	R-37	.66	R-47	.87
8	R-28	.57	R-38	.75	R-48	.96
9	R-29	.63	R-39	.81	R-49	1.05
10	R-210	.69	R-310	.90	R-410	1.11
11	R-211	.72	R-311	.96	R-411	1.20
12	R-212	.78	R-312	1.05	R-412	1.29
13	R-213	.81	R-313	1.11	R-413	1.35
14	R-214	.90	R-314	1.17	R-414	1.44
15	R-215	.93	R-315	1.23	R-415	1.53
16	R-216	.99	R-316	1.32	R-416	1.65
17	R-217	1.05	R-317	1.38	R-417	1.74

RAIL CONNECTORS (Figure D)		
To make "L", "U" and other combinations shaped chassis		
No. RC-2—2" high, 18-ga. aluminum, Net Each		\$0.12
No. RC-3—3" high, 16-ga. aluminum, Net Each		.15
No. RC-4—4" high, 16-ga. aluminum, Net Each		.18

SHIELD CUP (Figure E)		
Use with rail 1" shorter than side rails for internal shielding.		
No. SC-2—For 2" rails, 18-ga. aluminum, Net Each		\$0.12
No. SC-3—For 3" rails, 16-ga. aluminum, Net Each		.15
No. SC-4—For 4" rails, 16-ga. aluminum, Net Each		.21

RAIL FEET (Figure F)		
Set of 4 feet, 4 rubber bumpers, 8 screws, 16-ga. aluminum.		
No. RF-1—Set of four feet, Net per set		\$0.45

PANEL COUPLER (Figure G)		
18-ga. aluminum in standard 16" lengths. Cut to size.		
No. PC-16—16" length Panel Coupler, Net Each		\$0.39
Self Tapping Screws No. SS-4-40, Pkg. of 100		Net \$0.90



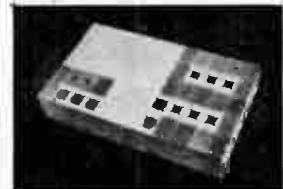
Wire flat on any surface with SeeZak's interlocking rails and removable panels. SeeZak Chassis will expand in all directions, any form, shape or size as needed.

ASK YOUR JOBBER FOR A COMPLETE CATALOG

# SeeZak

## CIRCUIT ASSEMBLER STARTER KIT

A special starter kit in a gray, plastic tray for orderly parts storage. Transparent top.  
**NET PRICE** ..... \$16.98

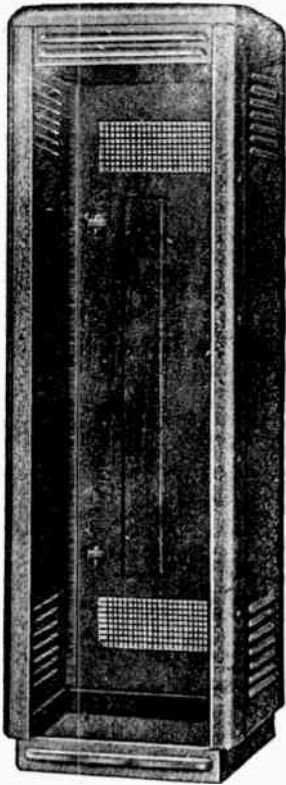


Circuit Assembler components are designed to coordinate with all SeeZak Chassis parts.

### COMPONENT PARTS

Name-No.	NET Pkg'd Price
BODY ANGLE BA-16	\$.39/ea.
COMPONENT TRAY CT-17	\$.345/ea.
END BRACKET EB-23	\$.180/pr.
LEAD-IN PLATE LP-10	\$.240/10
1" MOUNTING PLATE MP-8	\$.240/10
1/2" MOUNTING PLATE MP-12	\$.240/10
MINIATURE TUBE PLATE MTP-12	\$.240/10
3/8" MULTI-USE PLATE MUP-3	\$.240/10
1/2" MULTI-USE PLATE MUP-4	\$.240/10
OCTAL TUBE PLATE OTP-12	\$.240/10
POTENTIOMETER BRACKET PB-1	\$.150/6
RACK ADAPTER RA-2	\$.210/6
RUBBER FEET RF-4	\$.39/20
RACK MOUNTING SCREWS RMS-10-32	\$.30/20
SWITCH BRACKET SB-1	\$.150/6
TERMINAL BOARD TB-12	\$.240/10
VERTICAL TERMINAL BOARD VTB-65	\$.240/4
2" METER MOUNTING PLATE MMP-43	\$.54/ea.
3" METER MOUNTING PLATE MMP-44	\$.57/ea.





### De Luxe Transmitter Racks

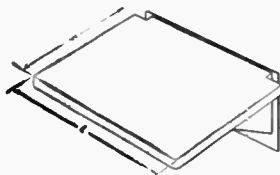
A rugged streamlined relay rack of the newest modern design. Ample ventilation provided. Double thick mounting supports assure sturdy rigidity. Drilled and tapped for all standard 19" panels. Rear door hung on sturdy hinges with two flush snap catches added. Welded gusset plates on the rack base, permit easy attachment of casters.

Made of 16 gauge steel. Shipped "KNOCKED DOWN" with all hardware for easy assembly. Furnished in neat Ultramarine Ripple Finish; Black Ripple Finish only on request.



Cat. No.	H	W	D	Panel Space	Interior Width	Interior Depth	Ship. Wt. Lbs.
3865	43 1/4"	22"	18"	36 3/4" x 19"	17 5/8"	16 3/4"	81
3866	67 3/4"	22"	18"	61 1/4" x 19"	17 5/8"	16 3/4"	118
3867	83 1/2"	22"	18"	77" x 19"	17 5/8"	16 3/4"	133

### Rack Shelf Assembly



A convenient utility shelf for addition to rack cabinets. Made of 16 gauge steel. Standard mounting panel, 10 1/2" x 19". Will not sag or tilt. Easily attached with hardware supplied. Finish in Ultramarine Ripple; Black Wrinkle finish supplied on request.

No.	W	L	Ship. Wt. Lbs.
3858	16" x 22"	14 1/2"	18 1/2
3859	20" x 22"	18 1/2"	18 1/2

### Rack Dolly



Especially designed to simplify the moving of heavy or large racks or cabinets of any type. Constructed of 16 gauge steel. Has sturdy heavy duty casters. Supplied in Black Wrinkle Finish.

Cat. No.	L	W	Ship. Wt. Lbs.
4086	22"	21"	8 5/8

### Casters

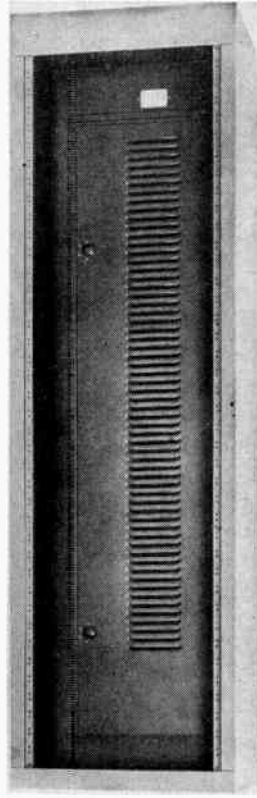
Heavy gauge steel frames; durable composition rollers (2" diam. x 1" w.) on ball bearing swivel that adds mobility to any cabinet, rack, etc. The mounting plate measuring 1 7/8" x 2 5/8" has 4 holes of 9/32" diam.; mounting hole centers 1" x 2 1/8". Overall height: 2 1/2". Rated load: 500 lbs.



Cat. No.	Ship. Wt. Lbs.
3209	1/2

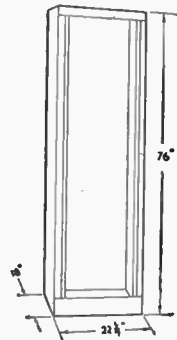
▲ To be discontinued from stock. Orders accepted in minimum quantities. Write us.

### Heavy Duty All-Welded Transmitter Rack ▲



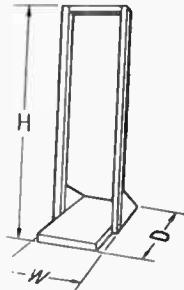
An all-welded 16 gauge steel rack, ruggedly constructed for supporting heavier instruments or apparatus. The double thickness mounting channels offer additional load-bearing strength. Smooth front trim hides mounting holes for neat finish. Rear door has two chrome-plated snap-locks; mounted on sturdy hinges; easily removed if desired; louvred practically entire length to provide maximum ventilation.

Combination 1", 2" or 3" knock-outs located on top, bottom, sides and rear base for conduit or wire connections. Switch opening in rear base. Panel space: 70". Shipped completely assembled, ready for use. No. 3868 Shipping Wt. 108 lbs.

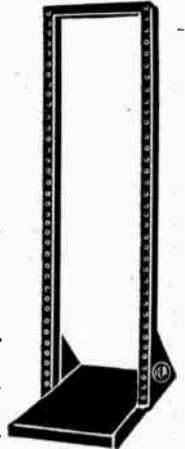


### Telephone Type Relay Racks

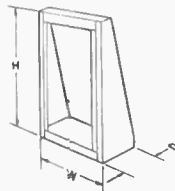
An unusually strong and sturdy rack made of 11 gauge steel. Designed for P. A. units, various types of transmitters and other commercial set-ups. Accommodates standard 19" rack panels of which ICA supplies a wide variety shown on other pages. Black Ripple Finish. Base depth: 22".



Cat. No.	H	W	D	Panel Space	Ship. Wt. Lbs.
3912	73 1/2"	20"	20 7/8"	71 3/4"	58
3913	38 1/4"	20"	18 3/4"	36 3/4"	46



### Table Mount Relay Racks



Sturdily constructed 16 gauge steel heavy duty table rack with one-piece base. Accurately drilled and tapped mounting holes universally spaced for all standard 19" wide panels. Finished in Black Ripple. Supplied "KNOCKED DOWN" with all necessary hardware.

Cat. No.	W	H	D	Panel Space	Ship. Wt. Lbs.
3910	21"	25"	12"	21" x 19"	18 1/2
3911	21"	32"	12"	28" x 19"	21

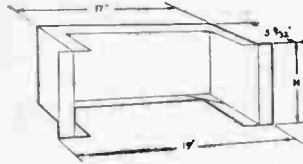


**insuline Corporation of America**  
OVER 3 DECADES OF QUALITY RADIO-TELEVISION PRODUCTS

## Panel Chassis



A new type of chassis with notched flanges to fit standard 19" racks. Made of .062 aluminum with etched finish.

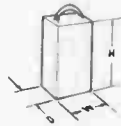


Cat. No.	H	Ship. Wt. Lbs.
29060	1 3/4"	5/8
29061	3 1/2"	1 1/8
29062	5 1/4"	1 3/8
29063	7"	1 7/8
29064	8 3/4"	2 1/8
29065	10 1/2"	2 3/8
29066	12 1/4"	2 7/8
29067	14"	3 1/8

## Portable Cabinets

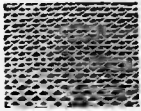


Ideal for housing oscillators, transceivers, test equipment, etc. Both front and back panels are removable. Supplied in 20 gauge steel — Black Ripple Finish with Leather handle; also in .050 aluminum — etched finish — with chrome plated steel handle.



ALUMINUM CAT. NO.	SHIP. WT.	SIZE			STEEL CAT. NO.	SHIP. WT.
		D	W	H		
29860	1	5	6	9		
29861	1	5	9	6		
29862	1 1/8	6	7	12		
29863	1 1/8	6	12	7		
		7	7 3/4	12	3850	5 3/4
		7	7 3/4	15	3851	7 3/8

## Aluminum Mesh Grille



For use on custom built radios, phonographs, etc., results in unmuffled reproduction of sound. Permanent non-fading, non-tarnishing, gold finish. Non-dust catching. May be easily cut to desired size.

Cat. No.	W	L	Net Wt. Lbs.
3947	12"	18"	1/2
3948	18"	24"	1
3949	24"	36"	2

Sold in lots of 6 each size.

## Standard Relay Rack Panels

Slotted to fit any standard 19" relay rack. Supplied in 1/8" thickness. Notched according to RTMA specifications. If Western Electric notching is desired, add "WE" to catalog numbers. Made of Steel (in Black Ripple or Ultramarine Finish) or Aluminum (in Black Ripple or Ultramarine Wrinkle; also in Gray Hammertone on request).

STEEL			ALUMINUM			
Black	Ultramarine	Net Wt. Lbs.	Black	Ultramarine	Net Wt. Lbs.	
*3600RS	*3612RS	1	1 3/4"	*8600RS	*8620RS	1/2
*3601RS	*3613RS	2 1/4	3 1/2"	*8601RS	*8621RS	7/8
*3602RS	*3614RS	3 1/4	5 1/4"	*8602RS	*8622RS	1 1/4
*3603RS	*3615RS	4 5/8	7"	*8603RS	*8623RS	1 3/8
*3604RS	*3616RS	5 7/8	8 3/4"	*8604RS	*8624RS	2 1/8
*3605RS	*3617RS	7	10 1/2"	*8605RS	*8625RS	2 1/4
*3606RS	*3618RS	7 5/8	12 1/4"	*8606RS	*8626RS	2 1/2
*3607RS	*3619RS	8 3/4	14"	*8607RS	*8627RS	3 3/8
*3608RS	*3620RS	10 1/4	15 3/4"	*8608RS	*8628RS	3 3/4
*3609RS	*3621RS	12 1/8	17 1/2"	*8609RS	*8629RS	4 1/8
*3610RS	*3622RS	14 1/4	19 1/4"	*8610RS	*8630RS	4 5/8
*3611RS	*3623RS	14 3/4	21"	*8611RS	*8631RS	5 1/8

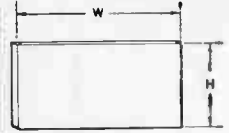
\* RTMA and "WE" notching specifications are identical.

### SPECIAL SIZES OF RACK PANELS AVAILABLE ON ORDER

insuline Corporation of America is geared to supply rack panels in various sizes, thicknesses and finishes. Materials include Steel, Aluminum or Masonite in any thickness from 1/8" to 1/4". Any finish according to specifications.

▲ To be discontinued from stock. Orders accepted in minimum quantities. Write us.

## Masonite Relay Rack Panels ▲



Made of Tempered Masonite — easily drilled and worked. Finished in Black Ripple or Ultramarine. RTMA notching. If Western Electric notching is desired, add "WE" to catalog No.

Black Ripple Cat. No.	Ultramarine Cat. No.	H	W	Net Wt. Lbs.
*3662RS	*3570RS	1 3/4"	19"	1/4
*3663RS	*3571RS	3 1/2"	19"	1/2
*3664RS	*3572RS	5 1/4"	19"	3/4
*3665RS	*3573RS	7"	19"	7/8
*3666RS	*3574RS	8 3/4"	19"	1 1/8
*3667RS	*3575RS	10 1/2"	19"	1 5/8
*3668RS	*3576RS	12 1/4"	19"	1 7/8
*3669RS	*3577RS	14"	19"	2 1/8
*3670RS	*3578RS	15 3/4"	19"	2 1/4
*3671RS	*3579RS	17 1/2"	19"	2 3/8
*3672RS	*3580RS	19 1/4"	19"	3
*3673RS	*3581RS	21"	19"	3 1/4

\* RTMA and "WE" notching specifications are identical.

## Meter Panels ▲



Notched to RTMA specifications ("WE" notching identical). Will fit all standard racks. Finished in Baked Black or Ultramarine Ripple. Size 5 1/4" x 19". Black will be shipped unless Ultramarine is specified.

STEEL PANELS					MASONITE PANELS				
Cat. No.	No. Holes	Meter Size	Hole	Net Wt. Lbs.	Cat. No.	No. Holes	Meter Size	Hole	Net Wt. Lbs.
3651	5	2"	2-3/16"	2 5/8	3641	3	2"	2-3/16"	5/8
3652	3	2"	2-3/16"	3	3642	4	2"	2-3/16"	5/8
3653	5	3"	2-13/16"	2 1/2	3643	3	3"	2-13/16"	5/8
3654	3	3"	2-13/16"	2 3/8	3644	4	3"	2-13/16"	5/8

## Steel Panels ▲



Designed for a wide range of application. Made of 16 gauge steel. Finished in Black Ripple Finish.

Cat. No.	W	L	Ship. Wt. Lbs.	Cat. No.	W	L	Ship. Wt. Lbs.
3175	7"	10"	1 3/8	3184	8"	14"	2
3176	7"	12"	1 1/2	3186	8"	18"	2 5/8
3177	7"	14"	1 7/8	3191	10"	14"	2 1/2
3178	7"	18"	2 3/8	3192	10"	18"	3 3/8
3183	8"	12"	1 5/8	3194	10"	24"	4 3/4

## Bakelite Radio Panels



Smooth Finish. Made of XX bakelite. For panels and general use where low moisture absorption, good electrical properties and fine surface finish are required. Tensile strength 8,000 lbs. per square inch.

1/8" THICKNESS			
Cat No.	Ship. Wt. Lbs.	L	W
835	7/8	18"	7"
836	1	21"	7"
837	1	24"	7"



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## Full Size Bakelite Sheets Black Glossy Finish

Cat. No.	W	L	Thickness	Approx. Wt.
852	38"	49"	1/16"	6 lbs.
853	38"	49"	3/32"	9 lbs.
854	38"	49"	1/8"	12 lbs.
857	38"	49"	3/16"	18 lbs.
858	38"	49"	1/4"	24 lbs.

Other sizes, thickness or grades available on request.

## Aluminum Panels ▲



Where aluminum panels and sheets are required for special use, ICA offers an excellent range of sizes for every application. Made of .064 high grade aluminum in a bright natural finish.

Cat. No.	W	L	Ship. Wt. Lbs.	Cat. No.	W	L	Ship. Wt. Lbs.
1194	7"	10"	1/4	1200	7"	24"	1
1195	7"	12"	3/8	3157	10"	12"	3/4
1196	7"	14"	3/8	3158	10"	18"	1 1/8
1198	7"	18"	1/2	3159	10"	24"	1 1/2
1199	7"	21"	3/4				

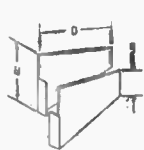
## Masonite Panels ▲



Made of tempered masonite of 3/16" thickness. Finished in Black Ripple.

Cat. No.	W	L	Ship. Wt. Lbs.	Cat. No.	W	L	Ship. Wt. Lbs.
810	7"	10"	1/2	815	8"	12"	3/4
811	7"	12"	3/8	816	8"	14"	1
812	7"	14"	3/4	817	8"	16"	1 1/8
813	7"	18"	1	818	8"	18"	1 1/4
814	7"	21"	1 1/4				

## Chassis Mounting Brackets

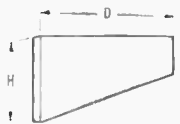


Heavy gauge steel brackets to provide support for chassis and panels; designed to permit chassis mounting flush against panel. Supplied in pairs with Black Ripple Finish.



Cat. No.	Front H	D	Back H	Net Wt. Lbs.
4092	6 1/2"	8"	4"	1 1/2
4077	6 1/2"	10"	3"	1 7/8
4093	6 1/2"	11"	4"	2
4079	8 1/2"	10"	4"	2 1/8
4081	6 1/2"	12"	3"	2
4094	6 1/2"	13"	4"	2 1/2
4083	8 1/2"	13"	4"	3

## Chassis Mounting Brackets



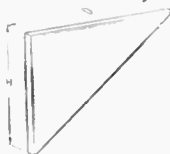
Designed to fit 17" relay rack chassis. Panels must be at least 7" high. Supplied in pairs with Black Ripple Finish.

Cat. No.	H	D	Net Wt. Lbs.
3955 — For 8" Base	6 1/4"	8"	1 1/4
3958 — For 10" Base	6 1/4"	10"	1 7/8
3956 — For 11" Base	6 1/4"	11"	2 1/4
3957 — For 13" Base	6 1/4"	13"	1 7/8

## Relay Rack Brackets



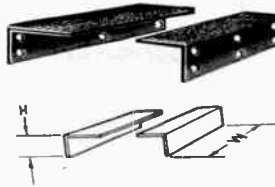
These sturdy brackets are ideal for reinforcing racks as well as for mounting of panels, shelves or chassis. Supplied in pairs with Black Ripple Finish.



Cat. No.	H	D	Net Wt. Lbs.
3950 — 5" Base Brackets	6 1/4"	5"	1/2
3951 — 8" Base Brackets	6 1/4"	8"	1
3952 — 11" Base Brackets	6 1/4"	11"	1 1/4

▲ To be discontinued from stock. Orders accepted in minimum quantities. Write us.

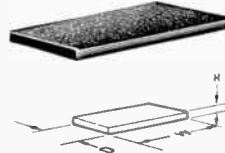
## Chassis Bracing Angles



For supporting chassis bearing heavy loads. Angles provide necessary support, thus freeing panel from weight load. Made of 1/8" steel: supplied in pairs with Black Ripple Finish.

Cat. No.	W	H	Net Wt. Lbs.
3856	14"	3"	5 1/2
3857	12"	3"	5

## Steel Rack Shelves

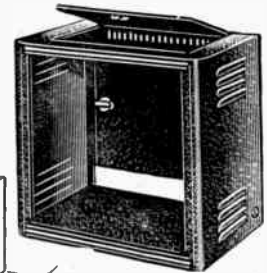


Where unusually heavy units (power supplies, etc.) must be added to the cabinet, these heavy gauge steel shelves, used with ICA bracing angles, provide the needed support. Black Ripple Finish.

Cat. No.	W	H	D	Net Wt. Lbs.
3854	19"	1"	15"	12
3855	19"	1"	12"	9 1/2

## De Luxe Cabinet Racks

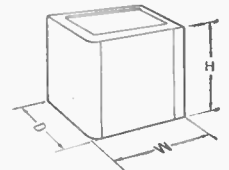
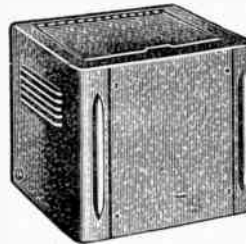
16 gauge steel, welded cabinets of stream-lined design for a variety of uses. Chrome trim, hinged doors, and flush-fitting snap locks. Rear base opening and louvers provide excellent ventilation. Recessed panel mounting holes, drilled and tapped 10/32, on universal mounting centers. Completely assembled ready for use. Finished in Black or Ultramarine Ripple Enamel. Black will be supplied unless Ultramarine is specified. Accommodates RTMA W.E., or Amateur panels.



Cat No.	H	W	D	Panel Space	Ship. Wt. (lbs.)
*3880	10 1/2"	21 3/4"	15 1/4"	8 3/4" x 19"	27 1/8
*3885	12 1/4"	21 3/4"	15 1/4"	10 1/2" x 19"	28
*3881	14"	21 3/4"	15 1/4"	12 1/4" x 19"	29 5/8
*3886	15 3/4"	21 3/4"	15 1/4"	14" x 19"	30
†3882	19 1/4"	21 3/4"	15 1/4"	17 1/2" x 19"	36 1/2
†3883	28"	21 3/4"	15 1/4"	26 3/4" x 19"	42
†3884	36 3/4"	21 3/4"	15 1/4"	35" x 19"	52

\*Door on top. †Doors on top and rear.

## De Luxe Hinged Steel Cabinets ▲



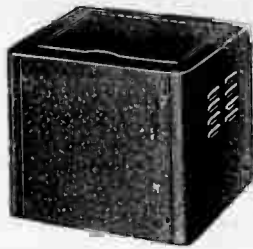
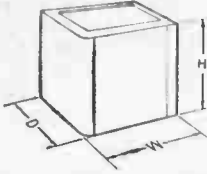
Beautifully designed ultra-modern streamlined cabinet. Chrome plated "Air-Gate" ventilators on sides. Top panel door hangs on full sized piano type hinge for easy accessibility. Back panels (with necessary openings leads, etc.) have modern grille type ventilators. Base has 4 sturdy non-marring bosses. Finished in Ultramarine Ripple Enamel. 20 gauge steel.

Cat. No.	H	W	D	Panel Size	Ship. Wt. Lbs.	Uses ICA Chassis No.
3850	8"	10"	8"	8" x 8"	6	4024
3861	8"	12"	8"	8" x 10"	6 3/4	4004
3862	8"	14"	8"	8" x 12"	7 3/4	4005
3863	12"	20"	12"	12" x 18"	17	4033



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## Standard Hinged Steel Cabinets

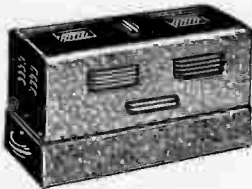


Designed in the same style and appearance as the De Luxe cabinets shown except that the Chrome Trim is eliminated and ventilating louvres are die-punched into metal.

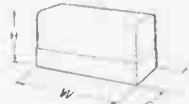
NOTE: This series is similar to 3860 series above with minor changes indicated.

Cat. No.	H	W	D	Panel Size	Ship. Wt. Lbs.
3925	8"	10"	8"	8" x 8"	6
3926	8"	12"	8"	8" x 10"	6¾
3927	8"	14"	8"	8" x 12"	7¾
3928	12"	20"	12"	12" x 18"	17

## De Luxe Amplifier Foundation Chassis



Beautifully styled chrome moulding and easy-carrying handles add smartness to utility of this unit. Chassis supplied with bottom plate mounting holes. Chassis height: 3". Constructed of 20 gauge steel; Ultramarine Ripple Enamel finish.



Cat. No.	D	W	H	Ship. Wt. Lbs.
3971	5½"	10"	9"	5½
3972	8"	12"	9"	6¾
3973	7"	17"	9"	9¾
3974	10"	14"	9"	11½
3975	10"	17"	9"	12

## Standard Amplifier Foundation Chassis

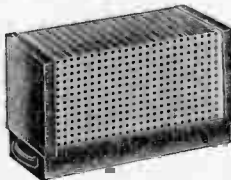
Same design and appearance as the DeLuxe chassis shown above with the exception that the chrome trim and handles are eliminated and ventilating louvres are die-punched into the metal.



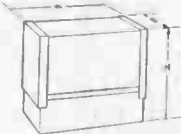
NOTE: This series is similar to 3971 series above with minor changes indicated.

Cat. No.	D	W	H	Ship. Wt. Lbs.
3980	5½"	10"	9"	5½
3981	8"	12"	9"	6¾
3982	7"	17"	9"	9¾
3983	10"	14"	9"	10¾
3984	10"	17"	9"	11¾

## Perforated Amplifier Foundation Chassis



Features a perforated metal cover providing maximum ventilation. Includes sturdy handles. Height of chassis: 3". Made of 20 gauge steel; Ultramarine Ripple Enamel.



Cat. No.	D	W	H	Ship. Wt. Lbs.
3965	5½"	10"	9"	5
3966	8"	12"	9"	5¾
3967	7"	17"	9"	6½
3968	10"	14"	9"	6½
3969	10"	17"	9"	7½

## De Luxe Sloping Chassis Amplifier Units ▲

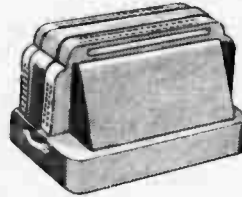


Offers the latest trend in cabinet and amplifier design. The sloping chassis provides ample space for mounting instruments. Ultramarine Ripple Finish. Slope size: 4"; Chassis height: 3½". Made of 20 gauge steel.

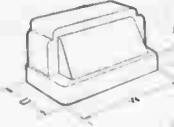
Cat. No.	Chassis Bottom			Chassis Top		Ship. Wt. Lbs.
	D	W	H	D	W	
3964	13"	17"	9½"	10"	17"	11¾

Sloping panel cabinets made to requirements. Quotations on request.

## "Super" Streamlined Sloping-Front Amplifier Chassis



Combines a sloping front panel with streamlined top cover. Removable front panel extends 3" from face of the screen top. Ultramarine Ripple finish with chrome trim and front rounded corners. Supplied with bottom plates. Constructed of 20 gauge steel.



Cat. No.	D	W	H	Top Cover	Ship. Wt. Lbs.
3930	10"	12"	3"	6½" High	9
3931	10"	17"	3"	6½" High	11
3932	13"	17"	3"	6½" High	14½

## De Luxe Sloping Panel Cabinets

Deluxe all-purpose 20 gauge steel cabinets. Front panel already mounted. The front panel is removable so that the chassis can be attached to it and used as one unit. Finished in Ultramarine Ripple Enamel.



Cat. No.	H	W	D	Ship. Wt. Lbs.
3990	8"	8"	8"	5
3991	8"	10"	8"	6¼
3992	8"	14"	8"	6¾
3993	12"	18"	12"	13½

## Sloping Panel Cabinets

Smartly designed and finished in neat Ultramarine Ripple, these cabinets are rugged and compact. Made of 20 gauge steel.



Cat. No.	W	H	D	Net Wt. Lbs.
3905	4¼"	4½"	4¼"	7/8
3906	7-¾"	4½"	4¼"	1¼

## Sloping Front Chassis ▲

Streamlined modern design chassis base featuring sloping front for instrument mounting. Constructed of 20 gauge steel; Black Ripple Enamel finish. Size of slope: 4".



Cat. No.	Top of Base		Bottom of Base		Height	Net Wt. Lbs.
	D	W	D	W		
3320	7"	17"	10"	17"	3½"	3
3321	10"	14"	13"	14"	3½"	3
3322	10"	17"	13"	17"	3½"	4½

Sloping panel cabinets made to requirements. Quotations on request.

▲ To be discontinued from stock. Orders accepted in minimum quantities. Write us.

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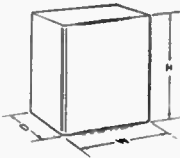
The MASTER — 22nd Edition

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## De Luxe Speaker Cabinets ▲



A speaker cabinet of outstanding beauty with streamlined design. Modern steel grille; Ultramarine Ripple Finish. Supplied with well ventilated back covers. Constructed of 20 gauge steel.

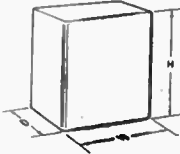


Cat. No.	H	W	D	Hole Size	Speaker Size	Ship. Wt.
3935	10"	10"	6"	4 3/4"	6"	5
3936	12"	12"	7"	6 1/2"	8"	7 1/2
3937	14"	14"	8"	9"	10"	11
3938	16"	16"	8"	11"	12"	12

## Standard Speaker Cabinets



Similar to the De Luxe cabinet above, this unit has the same utility features minus trim. Includes black steel handle. Finished in Black Ripple Enamel.

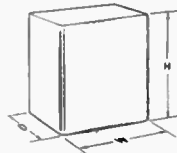


Cat. No.	H	W	D	Hole Size	Speaker Size	Ship. Wt.
3942	10"	10"	6"	4 3/4"	6"	5
3943	12"	12"	7"	6 1/2"	8"	7 1/2
3944	14"	14"	8"	9"	10"	11
3945	16"	16"	8"	11"	12"	12

## Composite Speaker Cabinet



A neatly designed composite unit to house either a 4" or 5" speaker. Ultramarine Ripple finished 20 gauge steel with embossed grille. Removable back plate has "key ways" for easy hanging.



Cat. No.	W	D	H	Ship. Wt. Lbs.
3988	7"	4"	7"	3

## Midget Speaker Cases

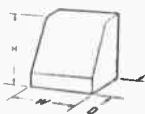


For the smaller type speakers. Finished in Ultramarine Ripple with attractively embossed grille. Speaker mounts on special removable internal chassis, punched for proper speaker opening. This unit fastens to side of cabinet with no visible screws to mar cabinet front. Facilitates ease of assembly. 20 gauge steel.



Cat. No.	Description	D	W	H	Hole Dia.	Net Wt. Lbs.
3986	For 2" speakers	4 1/4"	4 3/8"	4 1/2"	2 3/8"	1
3987	For 3" speakers	4 1/4"	4 3/8"	4 1/2"	2 1/8"	7/8

## De Luxe Meter Cases



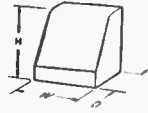
A sturdily made steel meter case for wide application of meter housing requirements. Finished in Ultramarine Ripple Enamel. Available for 2" and 3" meters. Model No. 3999 is equipped with stand-off insulators. 20 gauge steel.



Cat. No.	D	W	H	Meter Hole	Net Wt. Lbs.
3995	4 1/4"	4 1/4"	4 1/2"	2 3/8"	1
3996	4 1/4"	4 1/4"	4 1/2"	2 1/8"	7/8

▲ To be discontinued from stock. Orders accepted in minimum quantities. Write us.

## Streamlined Meter Cases ▲

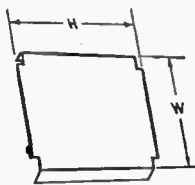


Modern streamlined steel cases. Finished in Ultramarine Ripple Enamel and trimmed with chrome band. 20 gauge steel.



Cat. No.	D	W	H	Meter Hole	Net Wt. Lbs.
3997	4 1/4"	4 1/4"	4 1/2"	2 3/8"	1
3998	4 1/4"	4 1/4"	4 1/2"	2 1/8"	7/8

## Cabinet Rear Covers

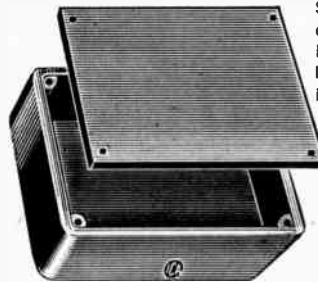


Rear cabinet covers designed specifically for the ICA cases indicated. Made of 20 gauge steel in Ultramarine Winkle Finish.

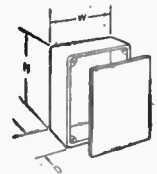
Cat. No.	H	W	Net Wt. Lbs.
*4155	4 1/2"	4 3/4"	1/8
**4156	4 1/2"	7 1/2"	1/4

\* For ICA Cabinets Nos. 3905, 3995, 3996, 3986, 3987.  
\*\* For ICA Cabinet No. 3906.

## Bakelite Instrument Cases



Solid molded bakelite one-piece case for a variety of electronic housings. Complete with 1/8" bakelite panel, drilled for mounting.

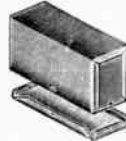


Cat. No.	H	W	D	Ship. Wt. Lbs.
*8201	6 1/4"	3 3/4"	2"	1/2
**8202	6 3/4"	5 1/4"	2 3/8"	1

\* Four corner holes for panel mounting.

\*\* Tapped corner holes and brass inserts with 4-36 threading for flush panel mounting.

## Control . . . Switch Case ▲

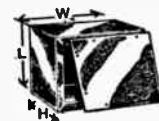


Strongly welded steel case; removable cover. Suitable for control or switch box; enclosing small assemblies, etc. Includes cover screws. Gray Hammertone Finish. 20 gauge steel.

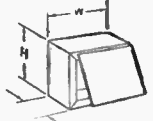


Cat. No.	W	H	D	Ship. Wt. Lbs.
3797	5 1/4"	3 1/4"	2 1/8"	3/4

## Aluminum . . . Steel Cabinets



Popular utility cabinets now available in Aluminum, Gray Hammertone and Natural Finish. Removable front and back covers may be fastened to cabinet with self-tapping screws provided. Also supplied in steel with Black Ripple Finish. Aluminum is .050 thick; Steel, 20 gauge.

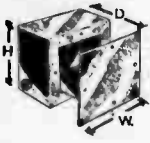


Aluminum Natural	Aluminum		Ship. Wt. Lbs.	W	H	D	Steel Black Ripple	Ship. Wt. Lbs.
	Gray Hammertone	Ship. Wt. Lbs.						
29840	29810	1/2	4"	4"	2"	3810	1	
29841	29811	5/8	4"	5"	3"	3811	1 1/4	
29842	29812	3/4	4"	6"	5"	3812	1 3/4	
29843	29800	1 1/4	6"	6"	6"	3800	2 1/2	
29844	29801	1 1/2	9"	6"	5"	3801	3 1/2	
			10"	7"	8"	3802	5	
			10"	10"	8"	3803	6	
			12"	8"	11"	3804	7 1/4	

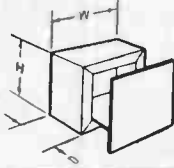


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OVER 3 DECADES OF QUALITY RADIO-TELEVISION PRODUCTS

### Utility Cabinets with built-in-chassis



A multi-use small cabinet. The chassis is welded to front panel, making it a time-saving, convenient unit. Front and rear panels easily removable. Of 20 gauge steel in Black Ripple Finish.

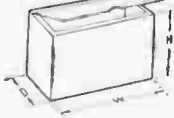


Cat. No.	Cabinet Size			Chassis Size			Ship. Wt. Lbs.
	W	D	H	W	O	H	
3816	4"	2"	4"	2 7/8"	1 7/8"	1"	1
3817	4"	3"	5"	2 7/8"	2 7/8"	1"	1 3/8
3818	5"	3"	4"	3 3/8"	2 7/8"	1 1/4"	1 3/8
3819	4"	5"	6"	2 7/8"	4 7/8"	1 3/4"	2 3/8
3821	6"	5"	4"	4 7/8"	4 7/8"	1 1/4"	2 1/4
3823	6"	6"	6"	4 7/8"	5 7/8"	1 3/4"	3 1/8



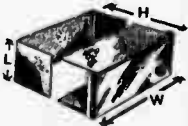
### Hinged Cover Cabinets

A convenient rugged steel cabinet with plano hinged lids so arranged that bottom, front or back panel may be removed for circuit wiring changing without disturbing the rest of the cabinet. Supplied "KNOCKED-DOWN" for easy handling; quickly assembled. Finished in Black Ripple Enamel. Constructed of 20 gauge steel.



Cat. No.	W	D	H	Ship. Wt. Lbs.
3825	9"	5"	6"	3 1/4
3826	10"	8"	7"	5
3828	12"	8"	7"	5 1/2
3829	12"	11"	8"	7 1/8
3830	14"	8"	7"	6 1/8
3831	18"	12"	9"	12 1/4

### Channel-Lock Aluminum Boxes

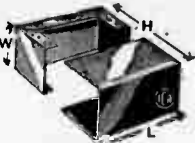


Latest two-piece box with special "channel-lock" feature for snug and firm fit. Makes all mounting space easily accessible. Easily assembled. Made of .050 aluminum in Black Wrinkle, Gray Hammertone and Natural Aluminum Finish.



Natural Aluminum Cat. No.	Black Wrinkle Cat. No.	Gray Hammertone Cat. No.	W	L	H	Ship. Wt. Lbs.
29200	29300	29400	4"	2 1/8"	1 5/8"	1/4
29205	29305	29405	5"	2 1/4"	2 1/4"	3/8
29210	29310	29410	5 1/4"	3"	2 1/8"	3/8
29215	29315	29415	3"	4"	5"	1/2
29220	29320	29420	6"	4"	5"	3/4
29225	29325	29425	10"	4"	2 1/2"	3/4

### "Flexi-Mount" Aluminum Cases



A two-piece case designed for maximum accessibility. Has wide application. Made of .050 aluminum — finished in Gray Hammertone or Natural Aluminum.

Gray Hammertone Cat. No.	Natural Cat. No.	W	L	H	Ship. Wt. Lbs.
29435	29335	2 1/8"	2 3/4"	1 5/8"	1/8
29436	29336	2 1/8"	3 1/4"	1 5/8"	1/4
29437	29337	2 1/8"	4"	1 5/8"	1/4
29438	29338	2 1/4"	4"	2 1/4"	1/4
29439	29339	2 1/4"	5"	2 1/4"	3/8
29441	29341	3"	5 1/4"	2 1/8"	3/8
29440	29340	4"	5"	3"	1/2
29442	29342	5"	6"	4"	3/4
29443	29343	5"	7"	3"	7/8
29447	29347	5"	17"	4"	2
29444	29344	6"	8"	3 1/2"	1
29445	29345	6"	10"	3 1/2"	1 1/4
29446	29346	7"	12"	4"	1 3/4

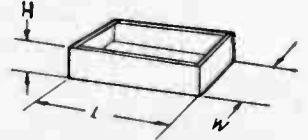
### Slip Cover Aluminum Boxes



Slide cover permits easy accessibility to mounted parts; offers shielding and dust-proof protection. .050 aluminum in Natural Finish or Gray Hammertone.

Gray Hammertone Cat. No.	Natural Cat. No.	W	L	H	Ship. Wt. Lbs.
29130	29100	3 1/8"	13"	2 5/8"	1
29135	29105	5 1/8"	13"	2 5/8"	1 1/4
29140	29110	3"	17"	2 5/8"	1 1/8

### Steel and Aluminum Chassis Bases



Listed below is the widest possible range of chassis bases to fit every requirement. Each steel base is solidly constructed of a single piece of rugged steel sheeting. Supplied with bottom plate mounting holes. The aluminum chassis bases are of similar construction. Made of .051 first grade aluminum.

Steel-Zinc Plated Finish Cat. No.	Steel-Black Ripple Finish Cat. No.	Gauge	Net Wt. Lbs.	W	L	H	Aluminum Cat. No.	Net Wt. Lbs.
				4	6	2	29043	3/8
				4	6	3	29044	1/2
				4	17	3	29027	1 1/8
				4 1/2	8	1 1/2	*29000	1/4
		20	3/4	5	7	2	29030	1/2
				5	7	3	29047	1/2
				5	9 1/2	1 1/2	*29001	3/8
		20	1 1/8	5	9 1/2	2	29033	5/8
		20	1 1/2	5	9 1/2	3	29002	3/4
		20	1 3/8	5	10	3	29048	7/8
		20	1 3/4	5	13	3	29003	1
		20	1 3/4	5 1/2	10	3	29004	7/8
				6	17	3	29050	1 3/8
1518	4043	16	2	6	14	3	29034	1 1/8
		20	1 1/8	7	7	2	29005	5/8
1569	4004	20	1 1/4	7	9	2	29006	3/4
		20	2	7	11	2	29007	1
		20	2 1/4	7	12	3	29008	1 1/2
		20	2 1/8	7	13	2	29009	1 1/8
		20	2 5/8	7	15	3	29010	1 3/8
1528		20	3 1/4	7	17	3	29011	1 1/2
1567		20	2 1/2	8	12	3	29012	1 1/4
		20	2 3/4	8	17	2	29013	1 1/2
		20	3 1/2	8	17	3	29014	1 5/8
		20	3 3/8	8 1/2	15	3	29037	1 3/8
1520		20	3	10	12	3	29015	1 1/4
		20	3 3/4	10	14	3	29016	1 5/8
		20	3 1/4	10	17	2	29039	1 1/2
		20	4	10	17	3	29017	1 3/4
		18	5	10	17	3		
		18	5 3/4	10	17	4	29025	2 1/8
1522		18	5 3/4	10	23	3	29018	2 1/4
		18	4 1/2	11	17	2	29019	1 5/8
1519		18	5 1/8	11	17	3	29020	2
		18	4 1/2	12	17	2	29021	1 3/4
		18	5 1/4	12	17	3	29022	2 1/8
		18	5 1/4	12	17	3	29023	1 7/8
1524	4029	18	6	13	17	3	29024	2 1/4
		18	7 3/4	13	17	4	29026	2 1/2

\* Open ends.

### Miniature Open End Aluminum Chassis

Designed for many uses where space limitation is a factor. Made of .051 aluminum with base flange for attaching bottom plate or fastening down of chassis.



Cat. No.	W	L	H	Net Wt. Lbs.
29076	1 3/4"	3 1/8"	1"	1/8
29075	2 5/8"	2 3/4"	1 1/4"	1/8
29078	2 3/4"	4 1/8"	1 1/2"	1/8
29080	3"	6 1/8"	1 1/4"	1/4
29077	3 1/4"	4 1/2"	2"	1/4
29079	3 3/4"	4 1/2"	1 1/2"	1/4
29082	4"	3 3/8"	1"	1/8
29083	4"	4 1/8"	1"	1/4
29084	4"	5 1/8"	1"	1/4
29085	4"	6 1/8"	1"	1/4
29000	4 1/2"	8"	1 1/2"	1/4
29001	5"	9 1/2"	1 1/2"	3/8
29081	5 3/4"	4 7/8"	1 1/2"	1/4

SINCE 1921



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OVER 3 DECADES OF QUALITY RADIO-TELEVISION PRODUCTS

The MASTER — 22nd Edition

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## Open End Steel Chassis ▲



Made of 16 gauge steel-zinc plated finish. Permits easier wiring of the smaller assemblies.

Cat. No.	W	L	H	Net Wt. Lbs.
1560	4½"	8"	1½"	⅝
1547	5"	7"	1½"	½
1546	7"	6"	2"	¾
1556	7"	8"	2"	¾

\* Steel-Black Ripple Finish



## Chassis Bottom Plates

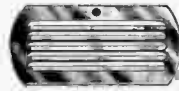


A complete line of bottom plates, available in 20 gauge steel (in Black Ripple or Zinc Plated Finish) and .050 aluminum. Suitable for all Insuline chassis bases and amplifier units.

Aluminum			
W	L	Cat. No.	Lbs. Net Wt.
5"	7"	8729	⅛
5"	9½"		
5"	10"	8730	¼
5"	13"	8702	¼
5½"	10"	8725	¼
7"	7"	8723	¼
7"	9"	8703	¼
7"	11"	8704	¼
7"	12"	8705	½
7"	13"	8706	¾
7"	15"	8707	½
7"	17"	8708	⅝
8"	12"	8712	½
8"	17"	8713	⅝
8½"	15"	8721	½
10"	12"	8715	½
10"	14"	8716	½
10"	17"	8717	¾
10"	23"	8718	1
11"	17"	8727	¾
12"	17"	8719	1⅛
13"	17"	8720	1¼
13"	14"		

▲ To be discontinued from stock. Orders accepted in minimum quantities. Write us.

## Chrome Ventilating Louvres



Adds the attractive touch to any receiver, amplifier, transmitter, etc. A polished chrome finished steel "Air-Gate," consisting of 5 ventilating louvres. Over-all size: 5½" long — 3" wide. Distance between mounting hole centers: 47⁄8". Diameter of holes: ⅝". Length of louvres: 4¼". Air space between louvre plates: ⅛".

Cat. No. 3525

Ship. Wt. Lbs. ¼

## Chrome Trim Moulding ▲



Beautiful chrome trim mouldings to dress up any cabinet, chassis, receiver, speaker cabinet, transmitter, etc. All moulding furnished with mounting tracks or clips.

Cat. No.	Description	Ship. Wt. Lbs.
3510	Chrome Moulding, with single Stripe. Size: ½" wide by 4" long.	⅛
3513	Chrome Moulding, with double Stripe. Size: ¾" wide by 8" long.	⅛
3514	Chrome Moulding, with double Stripe. Size: ¾" wide by 12" long.	⅛
3505	Bullet Shape all Chrome Moulding. Size ¼" wide by 6" long.	⅛

## Chrome Handles



A neatly styled adornment for any cabinet, amplifier chassis, transmitter, etc. Furnished with mounting screws. Has gleaming chrome finish.

Cat. No.	Description	Ship. Wt. Lbs.
3500	Chrome 4" l., 1⅛" w. Mounting centers: 2¾" apart	⅛
3501	Chrome 6¼" l., ⅝" w. Mounting centers: 4⅜" apart	¼

## Handle . . . Lock Set ▲

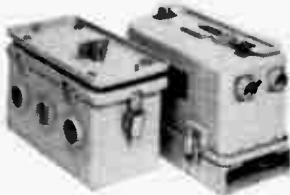


A complete, attractive handle and lock set that will dress up a variety of cabinets. Streamlined handle of zinc with nickel-plated finish; spring snap lock of durable steel for long service. Includes screws and nuts. This is the standard handle and lock set used on all Insuline cabinets.

Cat. No. 3532

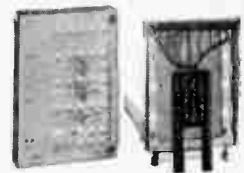
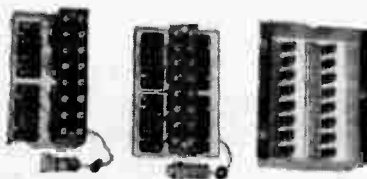
Ship. Wt. Lbs. ¾

# METAL GOODS TO YOUR SPECIFICATIONS



In addition to its wide range of stock metal items herein listed, Insuline's vast facilities are available for the manufacture of an extensive variety of products to particular specifications. Production capabilities include Screw Machine Work, Stamping, Drilling, Assembling, Engraving, Screening, Machining, Finishing. Supplying some of the country's leading industrial organizations, Insuline is also available for sub-contract orders (industrial or military) including assemblies, sub-assemblies, completely wired junction boxes, shock mounts, wiring or any similar type of production.

Detailed brochure describing Insuline's special manufacturing facilities, supplied on request.





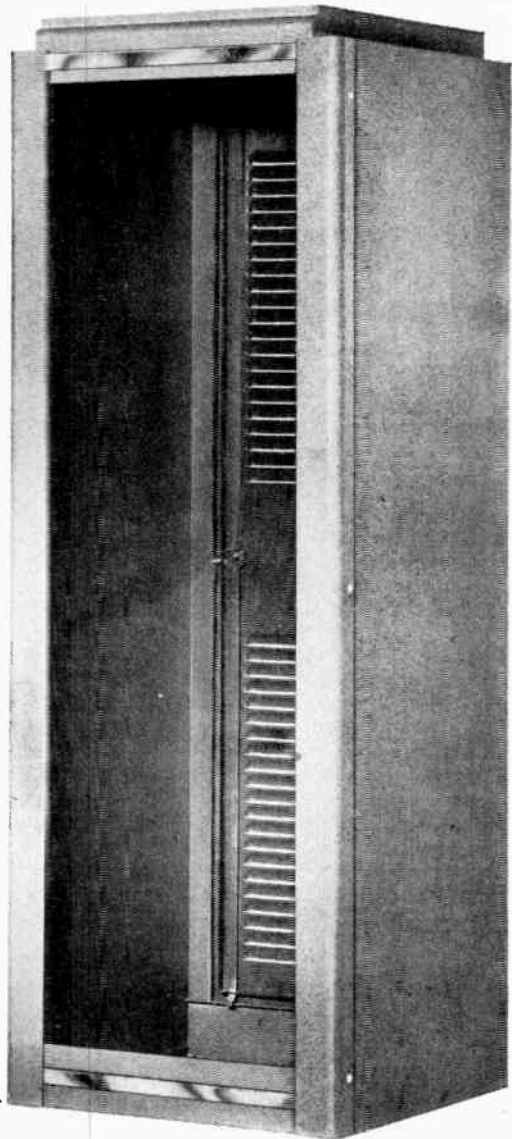
# ALL-WELDED DELUXE CABINET RACKS

## DELUXE "D" SERIES

### AN ALL-WELDED UNIT FOR 19" RACK PANELS

#### SPECIFICATIONS:

- A. Rack is constructed throughout from 16 gauge high-quality steel and is completely welded together.
- B. Panel mounting angles constructed of 1½ x 1½ x 3/16" angle iron.
- C. Mounting holes are tapped 10/32 thread.
- D. Mounting holes are at 1¼"-½" spacings. (WESTERN ELECTRIC SPACING.)
- E. Double row of louvres in rear door provide ventilation.
- F. Door is hung on loose-pin hinges; it may be easily removed.
- G. Door is securely locked by means of an "automotive" type highly-polished handle and linkage rods.
- H. Highly polished metal trim is on front of rack at top and bottom.
- I. Panel mounting screws are concealed by detachable corner vertical trim.
- J. Finished in black or grey wrinkle enamel and silver grey hammertone.
- K. When it is desired to "gang" two or more of these cabinets together, order connecting trim, using the prefix "AD" plus the last two numbers of the catalog number of the cabinet.



#### RACKS — 18½" DEEP

Catalog Number	Overall Dimensions	Panel Space	Clear Inside Width (Front)	Clear Inside width (Rear)	Clear Inside Depth	Approx. Shipping Weight	Dealer Cost
D 1869	69¾ x 23¾ x 18½	61¼ x 19	17¾	19%	16¾	155 lbs.	\$ 99.25
D 1878	78¾ x 23¾ x 18½	70 x 19	17¾	19%	16¾	167 lbs.	108.20
D 1885	85¾ x 23¾ x 18½	77 x 19	17¾	19%	16¾	180 lbs.	122.85

#### RACKS — 24" DEEP

D 2469	69¾ x 23¾ x 24	61¼ x 19	17¾	19%	22¼	176 lbs.	\$116.55
D 2478	78¾ x 23¾ x 24	70 x 19	17¾	19%	22¼	192 lbs.	126.00
D 2485	85¾ x 23¾ x 24	77 x 19	17¾	19%	22¼	205 lbs.	141.75

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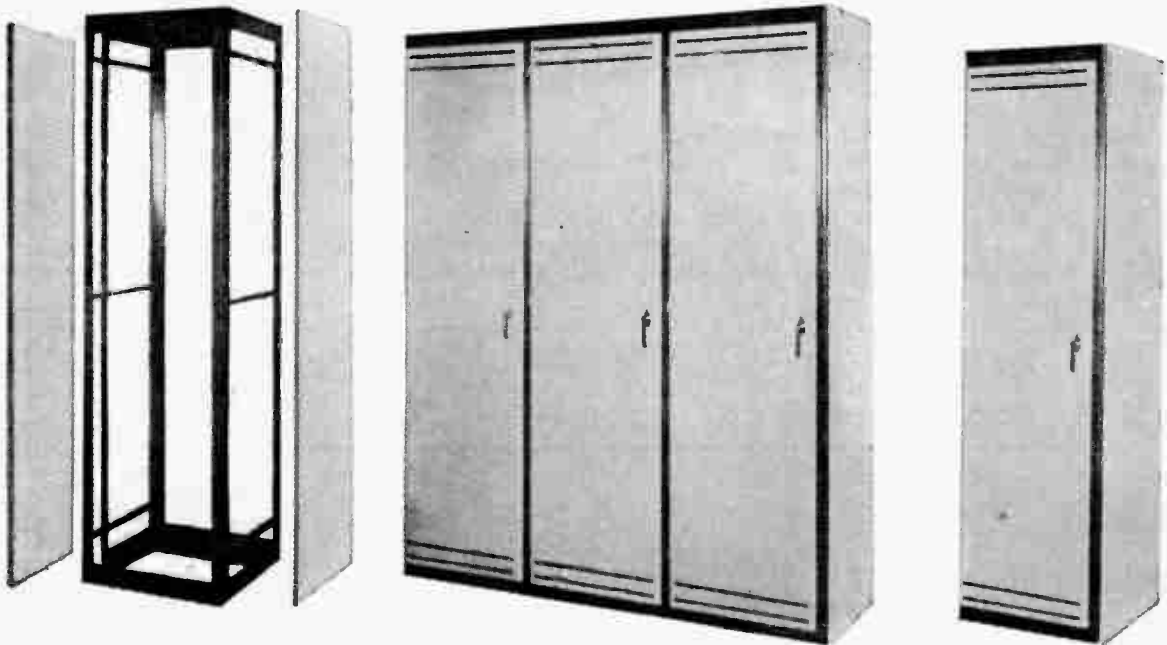




# MULTIPLE RACK INSTALLATIONS

**ALL-WELDED FRAME—FOR 19" MODELS**  
**REMOVABLE SIDES—ADJUSTABLE MOUNTING ANGLES**

## 18" DEEP AND 24" DEEP



**SPECIFICATIONS:**

- A. Sides are removable for MULTIPLE RACK installations of two or more units.
- B. This series consists of one frame and rear door, or one frame, rear and front door.
- C. Removable sides sold separately, in pairs only.
- D. Fabricated of high-quality, heavy gauge steel and electrically welded together.
- E. Panel mounting angles are 3/16" structural steel with mounting holes tapped 10-32 thread on 1/4"-1/2" spacing.
- F. Panel mounting angles are adjustable from front to back.
- G. Highly-polished trim on doors.
- H. "Automotive" type, highly-polished handles on doors.
- I. Doors hung on loose-pin hinges, easily removable.
- J. Bottom has cut-out for cables, leads, etc.
- K. Louvres in doors, sides and cabinet top can be added at no additional cost.
- L. A rectangular or round opening can be put into cabinet top at no additional cost.
- M. Available in primer coat, two-tone grey enamel (frame in dark grey; doors and ends in silver-grey hammertone), black or grey wrinkle.

**18" DEEP RACK**

REAR DOOR ONLY					FRONT AND REAR DOOR				
Cat. No.	Height	Panel Space	Approx. Shp. Wt.	Dealer Cost	Cat. No.	Height	Panel Space	Approx. Shp. Wt.	Dealer Cost
RW861	67 3/8"	61 1/4"	123	\$117.40	FW618	67 3/8"	61 1/4"	143	\$138.93
RW870	75 1/8"	70"	129	135.59	FW708	76 1/8"	70"	152	158.76
RW877	83 1/8"	77"	143	140.48	FW778	83 1/8"	77"	168	165.39

**24" DEEP RACK**

REAR DOOR ONLY					FRONT AND REAR DOOR				
Cat. No.	Height	Panel Space	Approx. Shp. Wt.	Dealer Cost	Cat. No.	Height	Panel Space	Approx. Shp. Wt.	Dealer Cost
RW461	67 3/8"	61 1/4"	144	\$140.88	FW614	67 3/8"	61 1/4"	169	\$166.71
RW470	76 1/8"	70"	153	162.78	FW704	76 1/8"	70"	183	190.56
RW477	83 1/8"	77"	169	172.80	FW774	83 1/8"	77"	202	202.80

**18" DEEP REMOVABLE SIDES**

Catalog No.	Approx. Shp. Wt. Pairs	Dealer Cost
RS 1861	45 lbs.	\$43.08 pr.
RS 1870	50 lbs.	46.32 pr.
RS 1877	55 lbs.	49.80 pr.

**24" DEEP REMOVABLE SIDES**

Catalog No.	Approx. Shp. Wt. Pairs	Dealer Cost
RS 2461	56 lbs.	\$51.66 pr.
RS 2470	64 lbs.	55.56 pr.
RS 2477	70 lbs.	60.00 pr.

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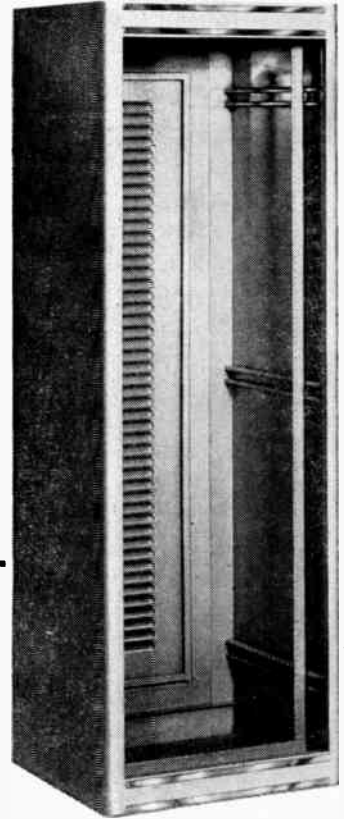
# ALL-WELDED CABINET RACKS

ADJUSTABLE MOUNTING ANGLES

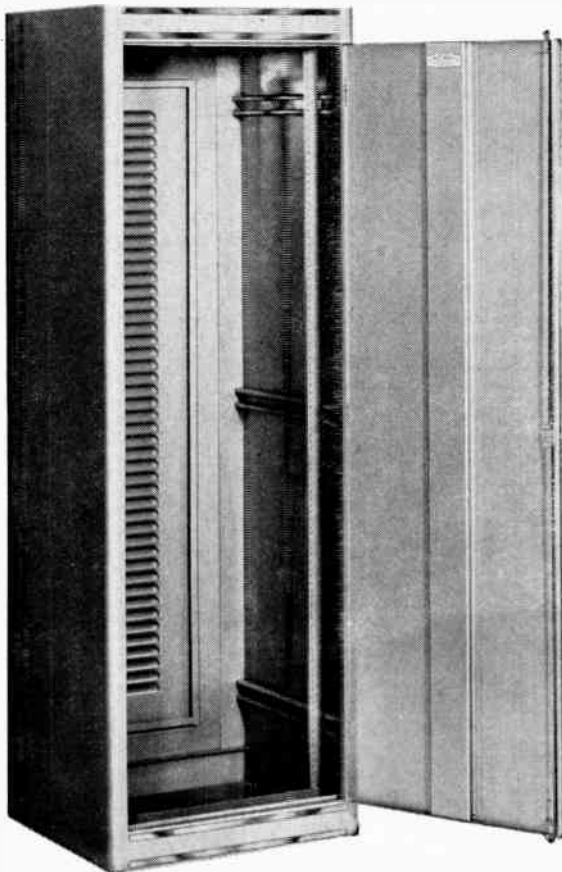
## AN ALL-WELDED DELUXE CABINET RACK WITH ADJUSTABLE MOUNTING ANGLES.

**DESCRIPTION:**

- A. Fabricated of 16 ga. high quality steel.
- B. Panel mounting angles are 1/8 steel.
- C. Mounting holes are tapped 10/32.
- D. Western Electric spacing.
- E. Louvres in rear door.
- F. Rear door has two flush-type latches.
- G. Door hung on loose-pin hinge; it is easily removable.
- H. Front corners are rounded.
- I. Highly-polished trim on front of cabinet at top and bottom.
- J. Available in grey and black wrinkle or silver grey hammertone.
- K. PANEL MOUNTING ANGLES ARE ADJUSTABLE FROM FRONT TO BACK.



Cat. No.	Overall Dim.	Panel Space	Approx. Ship. Wt. Lbs.	Dealer Cost
G 6119	67 3/8" x 22" x 18"	61 1/4" x 19"	165	\$ 87.80
G 7019	76 1/8" x 22" x 18"	70" x 19"	185	98.80
G 7719	83 1/8" x 22" x 18"	77" x 19"	195	109.75



## AN ALL-WELDED DELUXE CABINET RACK WITH FRONT DOOR AND ADJUSTABLE MOUNTING ANGLES

**DESCRIPTION:**

- A. Fabricated of 16 ga. high quality steel.
- B. Panel mounting angles are 1/8 steel.
- C. Mounting holes are tapped 10/32.
- D. Western Electric spacing.
- E. Louvres in rear door.
- F. Rear door has two flush-type latches.
- G. Front door has high-polish handle with three point catch.
- H. Doors hung on loose-pin hinges; they are easily removable.
- I. Front corners are rounded.
- J. Highly-polished trim on front of cabinet at top and bottom.
- K. Available in grey and black wrinkle or silver grey hammertone.
- L. PANEL MOUNTING ANGLES ARE ADJUSTABLE FROM FRONT TO BACK.

CAT. NO.	Overall Dim.	Panel Space	Approx. Ship. Wt. Lbs.	Dealer Cost
DF1961	67 3/8" x 22" x 18"	51 1/4" x 19"	185	\$109.75
DF1970	76 1/8" x 22" x 18"	70" x 19"	200	125.75
DF1977	83 1/8" x 22" x 18"	77" x 19"	210	136.75

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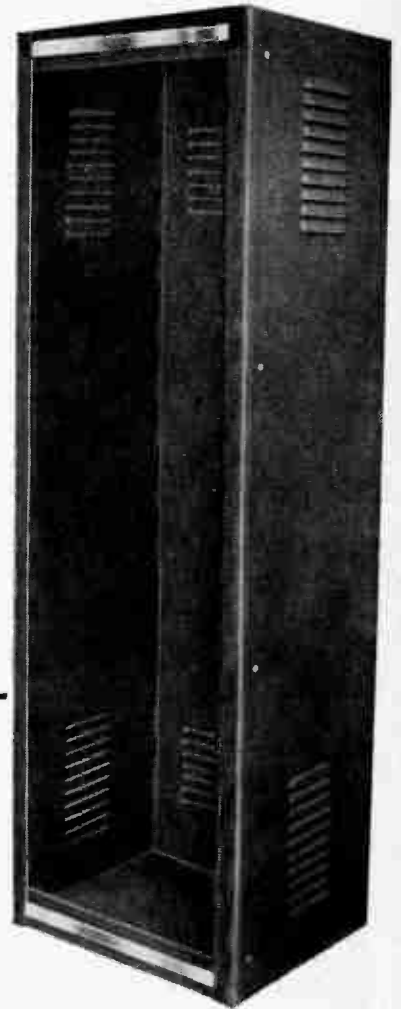


# ALL-WELDED CABINET RACKS

## STANDARD "SL" SERIES FOR 19" RACK PANELS

### SPECIFICATIONS:

- A. Rack constructed throughout from 16 gauge high-quality steel and is completely welded together.
- B. Panel mounting angles constructed of 1½ x 1½ x ½" angle iron.
- C. Mounting holes are tapped 10/32 thread.
- D. Mounting holes at 1¼"-½" spacings. (WESTERN ELECTRIC SPACING.)
- E. Louvres in rear door provide ample ventilation.
- F. Door hung on loose-pin hinges; it may be easily removed.
- G. Door is securely closed by two flush-type catches.
- H. Highly polished metal trim on front of rack at top and bottom.
- I. Panel mounting screws concealed by vertical trim.
- J. Louvres at side provide additional ventilation.
- K. Finished in black or grey wrinkle enamel and silver grey hammertone.



## STANDARD "S" SERIES FOR 19" RACK PANELS

### SPECIFICATIONS:

- A. ALL SPECIFICATIONS AND DIMENSIONS OF "SL" SERIES APPLY, EXCEPT FOR FOLLOWING:
  - (1) LOUVRES AT SIDE ARE OMITTED to facilitate use of racks in rows or "gangs."
  - (2) When it is desirable to set up these cabinets in rows or "gangs," we can supply a connecting trim for a small additional charge. Order connecting trim, using prefix "AS" plus the last two numbers of the catalog number of the cabinet.
  - (3) Catalog Numbers are prefaced with "S" instead of "SL."

Catalog Number	Overall Dimensions	Panel Space	Clear Inside Width (Front)	Clear Inside Width (Rear)	Clear Inside Depth	Approx. Shipping Weight	Dealer Cost "S" and "SL"
SL 1E42	42¾ x 21½ x 18	36¾ x 19	17¾	17¼	16½	107 lbs.	\$ 63.00
SL 1E67	67¾ x 21½ x 18	61¼ x 19	17¾	17¼	16½	145 lbs.	81.55
SL 1883	83½ x 21½ x 18	77 x 19	17¾	17¼	16½	177 lbs.	103.50

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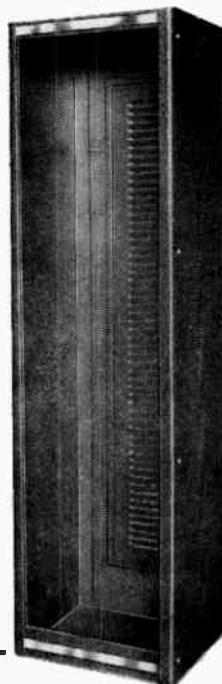


# CABINET RACKS — RELAY RACKS

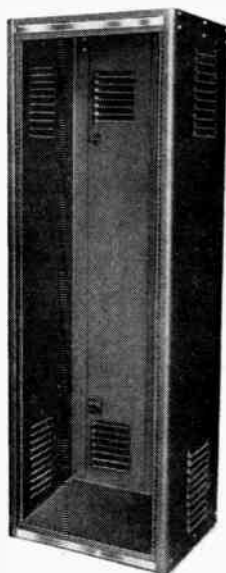
## BANNER "B" SERIES FOR 19" RACK PANELS

### SPECIFICATIONS:

- A. Rack constructed throughout from 16 gauge high-quality steel and is completely welded together.
- B. Panel mounting angles constructed of 1½ x 1½ x 3/16 angle iron.
- C. Mounting holes are tapped 10/32 thread.
- D. Mounting holes at 1¼"-½" spacings. (WESTERN ELECTRIC SPACING.)
- E. Louvres in rear doors provide ample ventilation.
- F. Rear corners re-inforced for heavier equipment.
- G. Door hung on loose pin hinges; it may be easily removed.
- H. Door is securely closed by two flush-type latches.
- I. Highly-polished trim on front of rack at top and bottom.
- J. Panel mounting screws concealed by vertical trim.
- K. Finished in black or grey wrinkle enamel and silver grey hammertone.
- L. When it is desirable to set up racks in rows or "gangs," order connecting trim, using the prefix "AB" plus the last two numbers of the catalog number of the cabinet.



Catalog Number	Overall Dimensions	Panel Space	Clear Inside Width (Front)	Clear Inside Width (Rear)	Clear Inside Depth	Approx. Shipping Weight	Dealer Cost
B 1876	76½ x 21½ x 18	70 x 19	17½	17¼	16½	178 lbs.	\$110.25



## MODEL "W" SERIES

### SPECIFICATIONS:

- A. Rack constructed of 16 gauge high-quality steel.
- B. Front corners are rounded.
- C. Panel mounting angles constructed of 2 x 1½ x ⅛" steel.
- D. Mounting holes are tapped 10/32 thread.
- E. Mounting holes are spaced on UNIVERSAL CENTERS.
- F. Louvres in rear door and sides provide ample ventilation.
- G. Door is hung on loose pin hinges; it may be easily removed.
- H. Door is securely closed by catch.
- I. Highly-polished trim on front of rack at top and bottom.
- J. RACK IS SHIPPED "KNOCKED-DOWN"; all necessary bolts supplied for assembly.
- K. Finished in black or grey wrinkle and silver grey hammertone.
- L. There are four brackets spot welded to the bottom of the cabinet. Our casters (catalog No. RC100) can be attached to these brackets. This offers instant mobility, if required.



Catalog Number	Overall Dimensions	Panel Space	Clear Inside Width (Front)	Clear Inside Width (Rear)	Clear Inside Depth	Approx. Shipping Weight	Dealer Cost
W 1036	42 x 22 x 17¼	36¾ x 19	17¾	17¼	15¾	88 lbs.	\$40.25
W 1042	47¼ x 22 x 17¼	42 x 19	17¾	17¼	15¾	95 lbs.	45.50
W 1061	66½ x 22 x 17¼	61¼ x 19	17¾	17¼	15¾	122 lbs.	57.00
W 1077	82¼ x 22 x 17¼	77 x 19	17¾	17¼	15¾	148 lbs.	68.25

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# EXPAND-A-RACK SERIES

## DESCRIPTION:

- A. When it is necessary to join two or more racks together, WYCO METAL PRODUCTS offers the "EXPAND-A-RACK" series.
- B. Figure "A" shows two Expand - A - Racks joined together.
- C. Figure "B" illustrates the method of expanding your present rack space. In place of purchasing an additional rack, a unit, consisting of the following items, would be bought: (a) the door; (b) the top; (c) the bottom; (d) an Expand-A-Rack joining unit. The right or left side of your existing relay cabinet rack is dis-assembled and replaced with an Expand-A-Rack joining unit. Following this step, the top and bottom are assembled. The cabinet side removed from the original rack is then fastened onto the second rack. Upon hanging the additional

door, two complete racks are now joined together.

- D. Wyco's Expand-A-Rack series may be purchased by one of two methods. One method consists of buying one complete rack (the "W" series) plus one Expand-A-Rack unit. If you already have one of our basic "W" series cabinets, then order an Expand-A-Rack unit.
- E. Supports are electronically welded to the bottom to receive our casters (#RC-100).
- F. There is an ample amount of compound knockouts in the Expand-A-Rack joining unit center partition. This allows cables and leads to be taken from one cabinet to the other.
- G. Available in Grey or Black Wrinkle and Silver Grey Hammertone.

Cat. No.	Used to Expand-A-Rack With	Approx. Ship Wt. Lbs.	Dealer Cost	Cat. No.	Forms 2 Racks Same Size As	Approx. Ship Wt. Lbs.	Dealer Cost
E-400	W-1036	74	\$39.50	E-405	W-1036	162	\$ 79.75
E-401	W-1042	78	43.68	E-406	W-1042	173	89.18
E-402	W-1061	99	54.33	E-407	W-1061	221	111.33
E-403	W-1077	126	66.55	E-408	W-1077	274	134.95

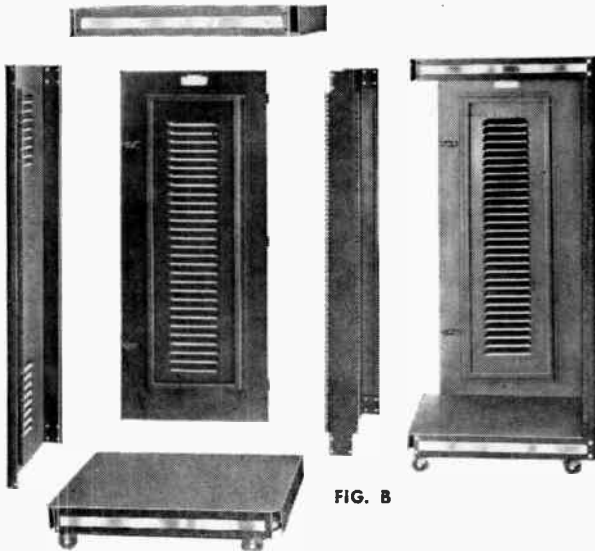


FIG. B



FIG. A

## CASTERS

### DESCRIPTION:

- A. Can be used with our "W" series and Expand-A-Rack series.
- B. Load capacity of a set of four is 520 lbs.
- C. The swivel bearing wheels are made of a hard fibrous compound.

CATALOG NO. RC-100 APPROX. SHIP. WT. EACH 8 oz. DEALER COST \$1.10 ea.



**Wyco Metal Products** • NORTH HOLLYWOOD, CALIFORNIA

# CABINET RACKS — RELAY RACKS



## MODEL "C" SERIES

### SPECIFICATIONS:

- A. Constructed of heavy gauge high-quality steel and is completely welded together.
- B. Front vertical corners rounded.
- C. Mounting holes tapped 10/32 thread.
- D. Mounting holes spaced on UNIVERSAL CENTERS.
- E. Louvres in side provide ample ventilation.
- F. Highly-polished trim at top and bottom of front.
- G. Top door has piano hinge and flush-type latch.
- H. Finished in black or grey wrinkle and silver grey hamertone.
- I. Embossed feet on bottom minimize marring of table tops.

### DOOR IN TOP ONLY

Catalog Number	Dimensions	Panel Space	Approx. Shipping Weight	Dealer Cost
C719	8 3/4 x 22 x 15 Deep	7 x 19	25 lbs.	\$13.67
C819	10 1/2 x 22 x 15 Deep	8 3/4 x 19	27 lbs.	14.90
C1019	12 1/4 x 22 x 15 Deep	10 1/2 x 19	28 lbs.	17.00
C1219	14 x 22 x 15 Deep	12 1/4 x 19	30 lbs.	17.97
C1419	15 3/4 x 22 x 15 Deep	14 x 19	32 lbs.	19.58

### DOOR IN TOP AND REAR

Catalog Number	Dimensions	Panel Space	Approx. Shipping Weight	Dealer Cost
C1719	19 1/4 x 22 x 15 Deep	17 1/2 x 19	36 lbs.	\$23.33
C2119	22 3/4 x 22 x 15 Deep	21 x 19	40 lbs.	25.00
C2619	28 x 22 x 15 Deep	26 1/4 x 19	43 lbs.	26.83
C3119	33 1/4 x 22 x 15 Deep	31 1/2 x 19	47 lbs.	28.50
C3519	36 3/4 x 22 x 15 Deep	35 x 19	50 lbs.	30.00



## "RC" SERIES

### SPECIFICATIONS:

- A. Rack constructed of 1/8" high-quality steel.
- B. Mounting holes are tapped 10/32 thread.
- C. Mounting holes are spaced on UNIVERSAL CENTERS.
- D. Base is 20" x 20".
- E. Finished in black wrinkle only.
- F. SHIPPED "KNOCKED-DOWN"; all necessary bolts supplied for assembly.

Catalog Number	Panel Space	Approx. Shipping Weight	Dealer Cost
RC36	36 3/4 x 19	28 lbs.	\$21.34
RC71	71 3/4 x 19	41 lbs.	22.41

## "RT" SERIES

### SPECIFICATIONS:

- A. Rack constructed of heavy gauge high-quality steel.
- B. Mounting holes are tapped 10/32 thread.
- C. Mounting holes are spaced on UNIVERSAL CENTERS.
- D. Finished in black wrinkle only.
- E. SHIPPED "KNOCKED-DOWN"; all necessary bolts supplied for assembly.



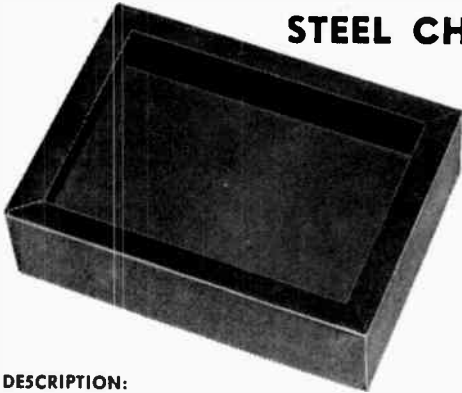
Catalog Number	Panel Space	Height	Width	Depth	Approx. Shipping Weight	Dealer Cost
RT21	21 x 19	25"	21"	12"	16 lbs.	\$ 8.25
RT28	28 x 19	32"	21"	12"	18 lbs.	10.20

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# CHASSIS

## STEEL CHASSIS

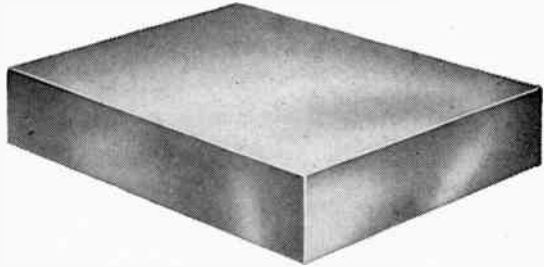


### DESCRIPTION:

- Fabricated from one piece of steel.
- All corners electronically spot welded.
- Flanges on bottom formed and punched to allow bottom plate to be attached, if desired.
- Finished in Black Wrinkle or Zinc plated.
- Asterisk indicates holes punched to receive chassis mounting brackets.

Black Wrinkle Cat. No.	Zinc Plated Cat. No.	Depth	Width	Ht.	Approx. Ship. Ga.	Wt. - Lbs.	Dealer Cost Black	Dealer Cost Zinc
BC-940	CP-1300	5"	7"	2"	22	1	\$ .95	\$1.17
BC-941	CP-1301	5"	9 1/2"	2 1/2"	22	1 1/4	1.22	1.48
BC-942	CP-1302	5"	9 1/2"	1 1/2"	22	1 1/4	1.07	1.50
BC-943	CP-1303	5"	10"	3"	22	1	1.14	1.60
BC-944	CP-1304	6"	14"	3"	20	1 3/4	1.57	1.84
BC-945	CP-1305	7"	7"	2"	22	1 1/2	1.07	1.34
BC-946	CP-1306	7"	9"	2"	22	1 1/2	1.25	1.42
BC-947	CP-1307	7"	11"	2"	20	1 1/2	1.30	1.50
BC-948	CP-1308	7"	12"	3"	20	1 3/4	1.40	1.84
BC-949	CP-1309	7"	13"	2"	20	2	1.36	1.75
BC-950	CP-1310	5"	13 1/2"	2 1/2"	20	1 3/4	1.58	1.90
BC-951	CP-1311	7"	15"	3 1/2"	20	2	1.79	2.15
BC-952	CP-1312	8 1/2"	15"	3"	20	2 1/2	2.00	2.42
BC-953	CP-1313	4"	17"	3"	20	2 1/4	1.60	1.92
BC-954	CP-1314	7"	17"	2 1/2"	20	2 1/2	1.72	2.12
BC-955	CP-1315	7"	17"	3"	20	1 3/4	1.97	2.30
BC-956	CP-1316	8"	10"	2 1/2"	20	2	1.54	1.80
BC-957	CP-1317	8"	12"	2 1/2"	20	2 1/2	1.57	2.00
BC-958	CP-1318	8"	12"	3"	20	1 3/4	1.65	2.08
BC-959	CP-1319	8"	17"	2"	20	2 1/2	1.52	2.08
BC-960	CP-1320	8"	17"	3"	20	3 1/4	1.84	2.34
BC-961	CP-1321	10"	12"	3"	20	3	1.69	2.00
BC-962	CP-1322	10"	14"	3"	20	4	1.81	2.17
BC-963*	CP-1323	10"	17"	2"	20	3 1/4	1.78	2.14
BC-964*	CP-1324	10"	17"	3"	20	4	1.82	2.34
BC-965*	CP-1325	10"	17"	3"	18	5	2.26	2.72
BC-966	CP-1326	10"	23"	3"	18	5 1/2	2.55	3.06
BC-967*	CP-1327	11"	17"	2"	18	4 1/2	2.10	2.50
BC-968*	CP-1328	11"	17"	3"	18	4 1/2	2.46	3.12
BC-969*	CP-1329	12"	17"	2"	18	4 1/2	2.16	2.60
BC-970*	CP-1330	12"	17"	3"	18	5 1/4	2.58	3.16
BC-971*	CP-1331	13"	17"	2"	18	5	2.58	3.32
BC-972*	CP-1332	13"	17"	3"	18	5 1/2	3.04	3.63
BC-973*	CP-1333	10"	17"	4"	18	6 1/2	2.56	3.08
BC-974*	CP-1334	13"	17"	4"	18	7 1/2	3.50	4.20
BC-975	CP-1335	10"	17"	5"	18	7 1/2	4.00	4.80
BC-976	CP-1336	13"	17"	5"	18	8	4.40	5.30

## ALUMINUM CHASSIS



### DESCRIPTION:

- Fabricated of one piece of aluminum.
- All corners are electronically spotwelded.
- Flanges on bottom formed and punched to allow bottom plate to be attached, if desired.
- Etched aluminum finish.
- Gauges indicated are aluminum gauges.

Cat. No.	Depth	Width	Ht.	Gauge	Approx. Shipping Wt. - Lbs.	Dealer Cost
CA-2001	4"	6"	3"	18	1/2	\$1.17
CA-2002	4"	6"	2"	18	1/2	1.10
CA-2003	4"	17"	3"	16	1 1/4	2.33
CA-2004	5"	7"	2"	18	1/2	1.10
CA-2005	5"	7"	3"	16	3/4	1.25
CA-2006	5"	9 1/2"	2"	18	1/2	1.15
CA-2007	5"	9 1/2"	3"	18	3/4	1.47
CA-2008	5"	10"	3"	18	3/4	1.63
CA-2009	5"	13"	3"	18	3/4	1.65
CA-2010	6"	17"	3"	16	1 1/4	2.56
CA-2011	7"	7"	2"	18	1/2	1.22
CA-2012	7"	9"	2"	18	1/2	1.46
CA-2013	7"	11"	2"	18	3/4	1.58
CA-2014	7"	12"	3"	18	1	1.75
CA-2015	7"	13"	2"	18	3/4	1.67
CA-2016	7"	15"	3"	16	1 1/2	2.34
CA-2017	7"	17"	3"	16	1 3/4	2.75
CA-2018	8"	12"	3"	16	1 1/2	2.09
CA-2019	8"	17"	2"	16	1 1/2	2.34
CA-2020	8"	17"	3"	16	1 3/4	2.56
CA-2021	10"	12"	3"	16	1 1/2	2.42
CA-2022	10"	14"	3"	16	1 3/4	2.84
CA-2023	10"	17"	2"	16	1 1/4	2.68
CA-2024	10"	17"	3"	16	2	3.00
CA-2025	11"	17"	2"	14	2 1/4	3.31
CA-2026	11"	17"	3"	14	2 3/4	3.97
CA-2027	12"	17"	3"	14	2 3/4	4.08
CA-2028	13"	17"	2"	14	2 1/2	3.34
CA-2029	13"	17"	3"	14	2 3/4	4.15
CA-2030	10"	17"	4"	14	3 1/2	4.34
CA-2031	13"	17"	4"	14	3 3/4	4.59

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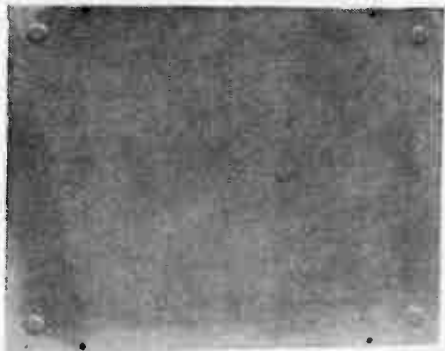


# CHASSIS BOTTOM PLATES — CHASSIS

## CHASSIS BOTTOM PLATES STEEL AND ALUMINUM

### DESCRIPTION:

- A. Protects component parts and wiring from dust.
- B. Four embossed feet protect table top or other surfaces from being marred.
- C. Catalog numbers R6000 to R6022 are Black Wrinkle steel.
- D. Catalog numbers R6023 to R6045 are Zinc plated steel.
- E. Catalog numbers R6046 to R6055 are Aluminum etched finish.



Black Wrinkle Cat No.	Zinc Plated Cat. No.	Aluminum Etched Cat. No.	W.	L.	Steel Ship. Wt.	Alum. Ship. Wt.	Dealer Cost		
							Blk.	Zinc	Alum.
R-6000	R-6023	R-6046	5"	7"	1/2	1/8	\$.50	\$.69	\$.74
R-6001	R-6024	R-6047	5"	9 1/2"	3/4	1/4	.56	.68	.75
R-6002	R-6025	R-6048	5"	10"	3/4	1/4	.53	.62	.75
R-6003	R-6026	R-6049	7"	7"	1	1/3	.92	.80	.77
R-6004	R-6027	R-6050	7"	9"	1	1/3	.83	.80	.80
R-6005	R-6028	R-6051	7"	11"	1	1/3	.87	1.07	.90
R-6006	R-6029	R-6052	7"	12"	1 1/4	1/2	.80	.95	.97
R-6007	R-6030	R-6053	7"	13"	1 1/4	1/2	.92	1.20	1.14
R-6008	R-6031		5"	13 1/2"	1		.76	1.00	—
R-6009	R-6032		7"	15"	1 1/4		.89	1.12	—
R-6010	R-6033		8 1/2"	15"	1 1/2		.90	1.19	—
R-6011	R-6034		4"	17"	1 1/2		.84	1.18	—
R-6012	R-6035		6"	17"	1 1/2		.90	1.22	—
R-6013	R-6036		8"	10"	1 1/4		.92	1.05	—
R-6014	R-6037		8"	12"	1 1/2		1.06	1.34	—
R-6015	R-6038		8"	17"	1 3/4		1.67	1.37	—
R-6016	R-6039		10"	12"	1 1/2		.95	1.40	—
R-6017	R-6040		10"	14"	1 1/2		1.25	1.33	—
R-6018	R-6041	R-6054	10"	17"	1 3/4	3/4	1.20	1.44	1.52
R-6019	R-6042		11"	17"	1 1/2		1.20	1.44	—
R-6020	R-6043		12"	17"	2		1.27	1.67	—
R-6021	R-6044	R-6055	13"	17"	2 1/2	3/4	1.47	2.00	2.07
R-6022	R-6045		10"	23"	2 1/4		1.82	1.98	—

## HEAVY DUTY CHASSIS

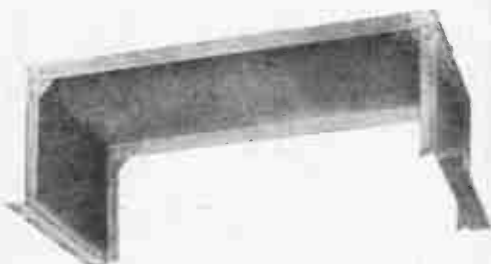


### DESCRIPTION:

- A. Made of 16 gauge cold rolled steel.
- B. Bottom plate included at no additional charge.
- C. Available in Black Wrinkle finish or Electro Zinc Plate.

Black Wrinkle Cat. No.	Zinc Plated Cat. No.	Depth	Width	Height	Approx. Shipping Wt. - Lbs.	Dealer Cost	
						Black Wrinkle	Zinc Plated
C-620	C-627	8"	17"	2"	6	\$3.51	\$3.50
C-621	C-628	8"	17"	3"	7 1/2	4.00	4.60
C-622	C-629	11"	17"	2"	8 1/2	3.64	3.99
C-623	C-630	11"	17"	3"	9	4.04	5.17
C-624	C-631	13"	17"	2"	9 1/2	4.33	5.50
C-625	C-632	13"	17"	3"	10	4.75	5.83
C-626	C-633	13"	17"	4"	11	5.08	6.65

## PANEL CHASSIS



### DESCRIPTION:

- A. Fabricated of .062 aluminum.
- B. Etched finish.
- C. Flange notched for mounting to rack mounting angles.

Catalog No.	Width	Height	Depth	Approx. Shipping Wt. - Lbs.	Dealer Cost
PC-506	19"	3 1/2"	5-9/32"	1 1/4	2.35
PC-507	19"	5 1/4"	5-9/32"	1 1/2	2.62
PC-508	19"	7"	5-9/32"	2	3.00
PC-509	19"	8 3/4"	5-9/32"	2 1/4	3.41
PC-510	19"	10 1/2"	5-9/32"	2 3/4	3.84
PC-511	19"	12 1/4"	5-9/32"	3	4.20
PC-512	19"	14"	5-9/32"	3 1/4	4.52

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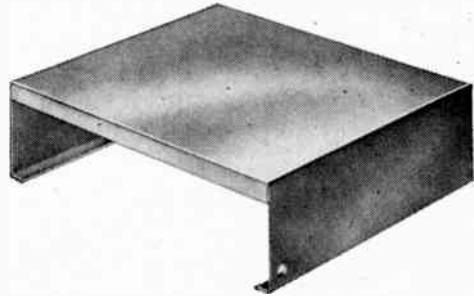


## OPEN END CHASSIS

**DESCRIPTION:**

- A. Can be utilized on all types of small built-up units such as record amplifier, code oscillator, etc.
- B. Electro-Zinc plated.

Catalog Number	Depth	Width	Height	Approx. Shipping Wt. - Lbs.	Dealer Cost
E-570	7"	6"	2"	1	\$ .92
E-571	5"	7"	1½"	¾	.87
E-572	7"	7"	1½"	¾	1.10
E-573	7"	8"	2"	1	1.04
E-574	5½"	9"	1½"	¾	1.00
E-575	7½"	9"	1½"	1	1.25
E-576	7"	10"	2"	1¼	1.25
E-577	7"	11"	1½"	1¼	1.17
E-578	7"	13"	1½"	1½	1.42
E-579	10¾"	14"	2"	2½	1.65
E-580	7¾"	15"	2"	2	1.58

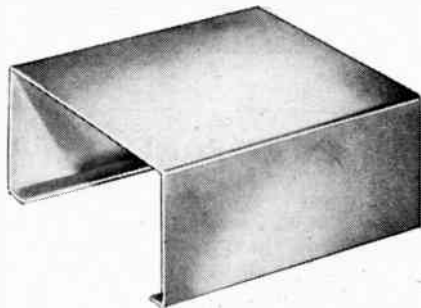


## MINIATURE ALUMINUM CHASSIS

**DESCRIPTION:**

- A. Ideal for miniature tube applications, sub-assemblies, small receivers, narrow band FM adapters.
- B. Has ¼" flanges on bottom.
- C. Etched aluminum finish.

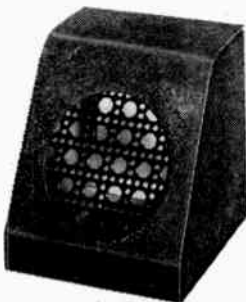
Catalog No.	Depth	Width	Height	Approx. Shipping Wt. - Lbs.	Dealer Cost
MA-700	2⅝"	2¾"	1¼"	¼	\$.35
MA-701	1¾"	3¼"	1"	¼	.38
MA-702	3¼"	4½"	2"	¼	.45
MA-703	2¾"	4⅛"	1"	¼	.41
MA-704	3¾"	4⅛"	1½"	¼	.41
MA-705	3"	6⅛"	1¼"	¼	.50
MA-706	5¾"	4⅞"	1½"	¼	.54
MA-707	4"	3⅛"	1"	½	.41
MA-708	4"	4⅛"	1"	½	.50
MA-709	4"	5⅛"	1"	½	.50
MA-710	4"	6⅛"	1"	½	.54



## MINIATURE SPEAKER CASE

**DESCRIPTION:**

- A. Houses midjet 2" or 3" speaker.
- B. Silver Grey Hammertone Finish.



Catalog Number	Hole Diameter	Fits Speaker Size	Approx. Ship. Wt. Lbs.	Dealer Cost
MS-80	2-1/4"	2"	¾	\$1.58
MS-81	2-13/16"	3"	¾	1.58



# SLOPING PANEL SUPPORT

## STANDARD RELAY RACK PANELS

### DESCRIPTION:

- A. 1/8" STEEL or ALUMINUM.
- B. 19" wide.
- C. Western Electric notching.
- D. Available in black or grey wrinkle, silver grey hammertone and unpainted finish.



STEEL				ALUMINUM							
Cat. No.	Height	Wt. Lbs.	Dealer Cost	Cat. No.	Height	Wt. Lbs.	Dealer Cost	Cat. No.	Height	Wt. Lbs.	Dealer Cost
SP-210	1 3/4"	1 1/4	\$ .76	SP-216	12 1/4"	8 1/4	\$2.13	AP-320	1 3/4"	1/4	\$ .99
SP-211	3 1/2"	2 1/4	.86	SP-217	14"	9 1/2	2.50	AP-321	3 1/2"	3/4	1.30
SP-212	5 1/4"	3 3/4	1.13	SP-218	15 3/4"	10 3/4	2.76	AP-322	5 1/4"	1	1.75
SP-213	7"	4 1/2	1.27	SP-219	17 1/2"	11 3/4	3.10	AP-323	7"	1 3/4	2.16
SP-214	8 3/4"	6	1.58	SP-220	19 1/4"	13	3.46	AP-324	8 3/4"	2	2.58
SP-215	10 1/2"	7	1.84	SP-221	21"	14 1/4	3.81	AP-325	10 1/2"	2 1/2	3.20
								AP-326	12 1/4"	2 3/4	\$3.75
								AP-327	14"	3	4.33
								AP-328	15 3/4"	3 1/2	4.83
								AP-329	17 1/2"	4	5.33
								AP-330	19 1/4"	4 1/4	5.83
								AP-331	21"	5	6.33



## METAL DOOR RACK PANELS

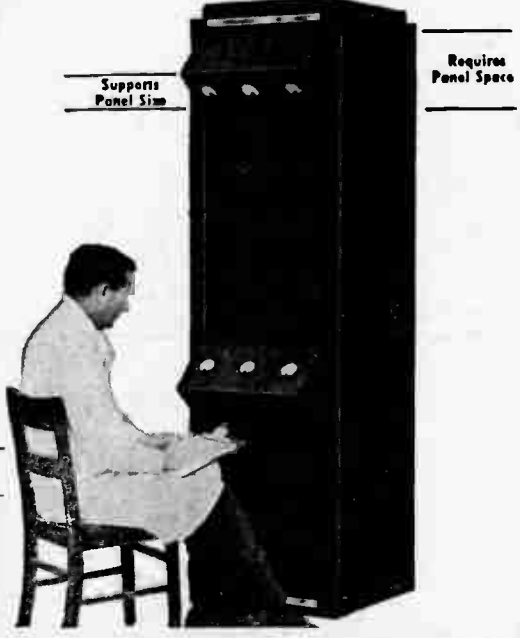
- ### DESCRIPTION:
- A. Used when accessibility to component parts on chassis is necessary.
  - B. Made of 1/8" steel.
  - C. Available in black or grey wrinkle and silver grey hammertone.
  - D. 19" wide.

Cat. No.	Height	Door Opening	Wt. Lbs.	Dealer Cost
RP-310	10 1/2"	15 3/8" x 6"	7 1/4	\$5.42
RP-311	12 1/4"	15 3/8" x 7 1/2"	8 1/4	6.67

## SLOPING PANEL SUPPORT

In answer to many requests from engineers within the industry, WYCO METAL PRODUCTS presents the all-new SLOPING PANEL SUPPORT. The SLOPING PANEL SUPPORT allows for mounting of the standard 19" panel in sloping position. This enables the engineer or equipment user to more easily view the rack mounted instrument panel. From this illustration, it is easy to see that the SLOPING PANEL SUPPORT offers a variety of positions in which a standard 19" panel may be supported in sloping position. The SLOPING PANEL SUPPORT is fabricated of heavy gauge steel and is finished in Black and Grey Wrinkle or Silver Grey Hammertone.

**IMPORTANT!** When ordering SLOPING PANEL SUPPORTS FOR CABINET RACKS THAT HAVE FRONT CORNER VERTICAL TRIM, use catalog prefix "B". In all other cases use catalog prefix "G."

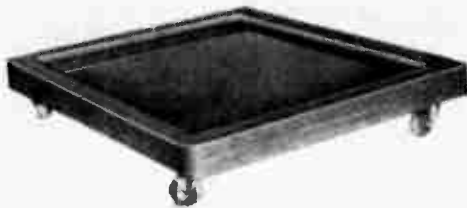


Prefix "B" Cat. No.	Prefix "G" Cat. No.	Supports Panel Size	Requires Panel Space	Prefix "B" Ship. Wt.	Prefix "G" Ship. Wt.	Dealer Cost "B"	Dealer Cost "G"
B-335	G-350	5 1/4" x 19"	7"	4	2	\$6.50	\$3.60
B-336	G-351	7" x 19"	10 1/2"	6	4	7.50	4.20
B-337	G-352	8 3/4" x 19"	12 1/4"	6 1/2	4 1/2	8.10	4.67
B-338	G-353	10 1/2" x 19"	15 3/4"	9	6 1/2	9.42	5.90
B-339	G-354	12 1/4" x 19"	17 1/2"	10	7	10.32	6.80
B-340	G-355	14" x 19"	21"	12	9	11.52	7.97

# Wyco Metal Products • NORTH HOLLYWOOD, CALIFORNIA

# ROLLER TRUCKS — DESK PANELS CHASSIS MOUNTING BRACKETS

## ROLLER TRUCKS



### SPECIFICATIONS:

- A. Roller Truck constructed from heavy gauge high-quality steel.
- B. Casters have 2" rubber wheels and are ball-bearing swivel type.
- C. Finished in black or grey wrinkle.

Catalog No.	Constr. for Rack Series	Description of Rack	Inside Clearance	Approx. Ship. Weight	Dealer Cost
T 18	SL	Page J-125	21 1/2 x 18 1/2	16 lbs.	\$14.66
	S	Page J-125			
	B	Page J-126			
T 19	D (18 1/2" Deep)	Page J-123	23 7/8 x 18 3/4	18 lbs.	15.58
	W	Page J-126			
T 24	D (24" Deep)	Page J-123	23 7/8 x 24 1/4	22 lbs.	16.86

## DESK PANELS

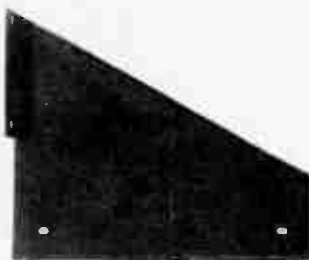


### SPECIFICATIONS:

- A. Table is constructed of heavy gauge high-quality steel and measures 21" x 16".
- B. Panel, constructed of 1/8" steel, is 10 1/2" x 19".
- C. Front corners of table are rounded.
- D. SHIPPED "KNOCKED-DOWN"; all necessary bolts supplied for easy assembly.
- E. Finished in black or grey enamel and silver grey hammertone.

Catalog Number	Width	Depth	Approx. Shipping Weight	Dealer Cost
DP 16	21"	16"	14 lbs.	\$15.71

## CHASSIS MOUNTING BRACKETS

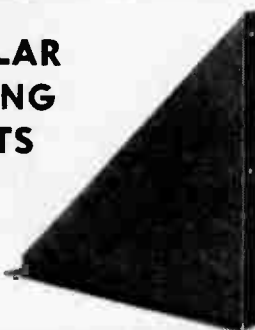


### DESCRIPTION:

- A. Used to insure proper support of chassis.
- B. Made of heavy gauge steel.
- C. Cut away at bottom to provide clearance so that chassis can mount flush against panel.
- D. Finished in black enamel only.
- E. Cat. # CB-565 and CB-566 designed for 4" chassis height.
- F. Sold in pairs only.

Cat. No.	H.	D.	Wt. Lbs.	Dealer Cost	Cat. No.	H.	D.	Wt. Lbs.	Dealer Cost
CB-560	6 1/2"	8"	1 1/4	\$ .97 pr.	CB-564	6 1/2"	13"	2 1/2	\$1.50
CB-561	6 1/2"	10"	1 3/4	1.20 pr.	CB-565	8 1/2"	10"	2 1/4	1.75
CB-562	6 1/2"	11"	2	1.33 pr.	CB-566	8 1/2"	13"	3	1.87
CB-563	6 1/2"	12"	2	1.57 pr.					

## TRIANGULAR MOUNTING BRACKETS



### DESCRIPTION:

- A. When large weights are involved in panel and chassis assemblies, triangular mounting brackets are used as supports.
- B. Fabricated of heavy gauge steel; finished in Black enamel only.
- C. Sold only in pairs.

Catalog No.	Size	Approx. Shipping Wt. - Lbs.	Dealer Cost
TB-410	5" x 5"	1	\$ .92 pr.
TB-411	7" x 7"	1	1.07 pr.
TB-412	9" x 9"	1 1/2	1.27 pr.

**Wyco Metal Products** • NORTH HOLLYWOOD, CALIFORNIA



# Supporting Angles—Amplifier Foundations Sloping Front Cabinets — Rack Shelves

## CHASSIS SUPPORTING ANGLES

### DESCRIPTION:

- A. Used when heavy weights are encountered in chassis construction.
- B. Distributes weight on sides of rack to relieve panel.
- C. Made of 1/8" steel.
- D. Finished in black enamel only.
- E. Sold in pairs only.



Cat. No.	Length	Wt. Lbs.	Dealer Cost
A143	14 1/2"	4	\$2.00 pr.
A144	12"	3	1.92 pr.

## RACK SHELVES

### DESCRIPTION:

- A. Used to mount heavy power supplies, modulator units, etc.
- B. Supported by chassis supporting angles which are described on this page.
- C. Made of heavy gauge steel.
- D. Finished in black enamel only.

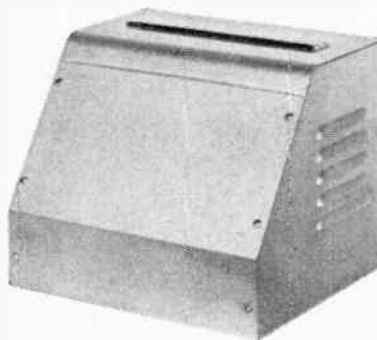


Cat. No.	Size	Wt. Lbs.	Dealer Cost
S195	19" x 15"	6 1/2	\$3.10
S196	19" x 12"	5 1/2	2.35

## SLOPING FRONT CABINET

### DESCRIPTION:

- A. Top corner rounded.
- B. Attractive high-polish moulding at top.
- C. Front panel is removable.
- D. Chassis may be mounted to front panel and removed as unit.
- E. Louvres at both sides; vented at rear.
- F. Available in silver grey hammertone only.



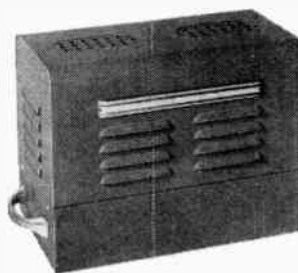
Cat. No.	Height	Width	Depth	Dealer Cost
K810	8"	8"	8"	\$4.66
K811	8"	10"	8"	6.41
K812	8"	14"	8"	7.75
K813	12"	18"	12"	10.41

NOTE: If desired, an attractive handle can be used with above "K" series cabinet. Holes to mount moulding are spaced for handle, also. Catalog # for handle is HK70. Dealer Cost: \$.92

## STREAMLINED AMPLIFIER FOUNDATIONS

### DESCRIPTION:

- A. Consists of standard chassis and streamlined removable top cover.
- B. Includes attractive stainless steel trim and handles.
- C. Available in Silver Grey Hammertone only.

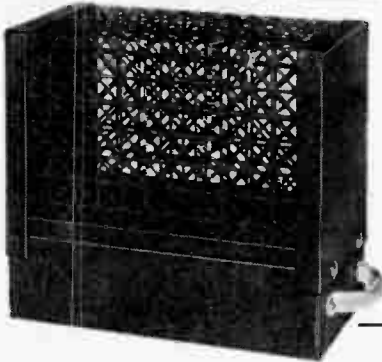


Catalog No.	Width	Depth	Approx. Shipping Wt. - Lbs.	Dealer Cost
SA-670	10-1/16"	5"	4 3/4	\$6.08
SA-671	12-1/16"	7"	5	7.17
SA-672	17-1/16"	7"	8	7.58
SA-673	17-1/16"	10"	9	8.25

# Wyco Metal Products • NORTH HOLLYWOOD, CALIFORNIA

# AMPLIFIER FOUNDATIONS UTILITY CABINETS

## AMPLIFIER FOUNDATIONS



**DESCRIPTION:**

- A. Consists of standard chassis and perforated metal cover.
- B. Includes handles.
- C. Available in Black Wrinkle only.

Cat. No.	Height	Width	Depth	Height Chassis	Approx. Shipping Wt. - Lbs.	Dealer Cost
AF-680	8-5/16"	9 3/8"	5 1/8"	2 1/2"	3	\$5.50
AF-681	8-5/16"	13 3/8"	5 1/8"	2 1/2"	4 3/4	5.75
AF-682	8-5/16"	17 1/8"	7 1/8"	2 1/2"	6	6.50
AF-683	8-13/16"	17 1/8"	10 1/8"	3"	8	8.94
AF-684	8-13/16"	12 1/8"	10 1/8"	3"	7	6.75

## MINIATURE AMPLIFIER FOUNDATION

**DESCRIPTION:**

- A. Chassis size 5" x 7" x 2".
- B. Perforated metal cover.
- C. Includes handle.
- D. Black Wrinkle finish only.

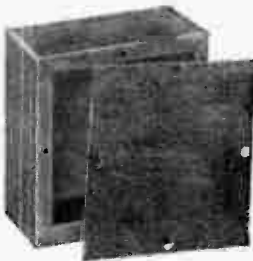


Catalog No.	Approx. Shipping Weight - Lbs.	Dealer Cost
MA-1000	2	\$4.00

## METAL UTILITY CABINETS

**DESCRIPTION:**

- A. Cabinet has two removable covers.
- B. Prefix MU designates steel finished in Silver Grey Hammer-tone only.
- C. Prefix LU designates aluminum in an etched finish.
- D. Used for amplifiers, monitors, input stages, meters, transceivers, etc.

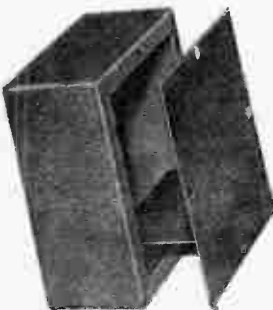


Steel Cat. No.	Alum. Cat. No.	Depth	Width	Ht.	Steel Approx. Ship. Wt. Lbs.	Alum. Approx. Ship. Wt. Lbs.	Dealer Cost Steel	Dealer Cost Alum.
MU-750	LU-760	2"	4"	4"	3/4	1/4	\$1.04	\$1.29
MU-751	LU-761	3"	5"	4"	1	1/4	1.14	1.37
MU-752	LU-762	4"	5"	6"	1 1/4	1/2	1.38	1.67
MU-753	LU-763	6"	6"	6"	2 1/2	3/4	1.87	1.90
MU-754	LU-764	5"	6"	9"	3	1	2.08	2.35
MU-755	—	7"	8"	10"	5	—	3.00	—
MU-756	—	6"	7"	12"	4	—	2.94	—
MU-757	—	8"	10"	10"	5 1/2	—	3.60	—
MU-758	—	8"	11"	12"	6	—	4.13	—
MU-759	—	7"	9"	15"	7 1/2	—	4.31	—

## MINIATURE UTILITY CABINETS

**DESCRIPTION:**

- A. Front and rear panels are removable.
- B. Chassis attached to front panel.
- C. Fabricated in steel; Silver Grey Hammertone only



Cat. No.	Ht.	Width	Depth	Chassis Size	Approx. Shipping Wt. - Lbs.	Dealer Cost
A-780	4"	4"	2"	1" x 3 1/8" x 1 7/8"	3/4	\$1.34
A-781	4"	5"	3"	1" x 4 1/8" x 2 7/8"	1	1.48
A-782	5"	4"	3"	1 1/4" x 3 1/8" x 2 7/8"	1	1.62
A-783	6"	5"	4"	1 3/4" x 4 1/8" x 3 7/8"	1 3/4	1.70
A-784	5"	6"	4"	1 1/4" x 5 1/8" x 3 7/8"	1 3/4	1.92
A-785	6"	6"	6"	1 3/4" x 4 7/8" x 5 7/8"	2 3/4	2.17

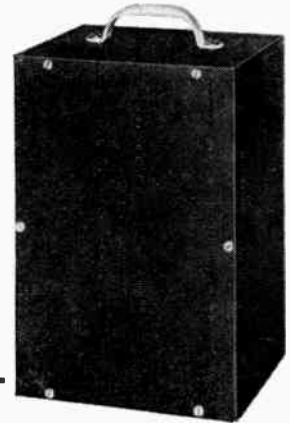


# BOXES and CASES

## DESCRIPTION: CARRYING CASE

- A. Front and rear panels are removable.
- B. Includes handle.
- C. Prefix "D" designates steel finished in Grey Hammertone.
- D. Prefix "DA" designates aluminum etched finish.

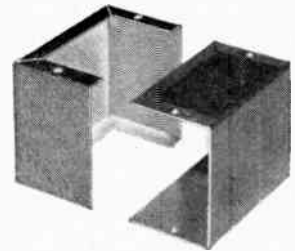
Steel Cat. No.	Alum. Cat. No.	Depth	Width	Height	Steel Approx. Ship. Wt.	Alum. Approx. Ship. Wt.	Dealer Cost Steel	Cost Alum.
D-850	DA-857	5"	6"	9"	3 1/4	1 1/8	\$2.66	\$3.17
D-851	DA-858	5"	9"	6"	3 1/4	1 1/8	2.66	3.17
D-852	DA-859	6"	7"	12"	4	1 1/8	3.77	4.50
D-853	DA-860	6"	12"	7"	4	1 1/8	3.75	4.50
D-854	—	7"	7 3/4"	15"	5	—	4.17	—
D-855	—	8"	10"	10"	5	—	4.34	—
D-856	—	7"	15"	9"	5	—	5.25	—



## DESCRIPTION: MINITBOXES

- A. Fabricated of aluminum.
- B. Design assures necessary shielding.
- C. Available in etched finish or Silver Grey Hammertone.

Silver Grey Cat. No.	Etched Cat. No.	Length	Width	Height	Approx. Shipping Wt. - Lbs.	Dealer Cost Grey	Etched
E-900	E-918	2 3/4"	2 1/8"	1 5/8"	1/4	\$ .82	\$ .60
E-901	E-919	3 1/4"	2 1/8"	1 5/8"	1/4	.87	.60
E-902	E-920	4"	2 1/8"	1 5/8"	1/4	.90	.63
E-903	E-921	4"	2 1/4"	2 1/4"	1/4	.98	.82
E-904	E-922	5"	2 1/4"	2 1/4"	1/4	1.18	.88
E-905	E-923	5"	4"	3"	1/2	1.27	.97
E-906	E-924	5 1/4"	3"	2 1/8"	1/4	1.12	.95
E-907	E-925	6"	5"	4"	3/4	1.82	1.20
E-908	E-926	7"	5"	3"	3/4	1.85	1.32
E-909	E-927	8"	6"	3 1/2"	1	2.23	1.98
E-910	E-928	10"	6"	3 1/2"	1 1/4	2.74	2.17
E-911	E-929	12"	7"	4"	1 3/4	3.23	2.77
E-912	E-930	17"	5"	4"	2 1/4	3.80	3.21
E-913	E-931	10"	2"	1 3/8"	1/2	1.38	1.25
E-914	E-932	12"	2 1/2"	2 1/4"	3/4	1.59	1.22
E-915	E-933	4"	2"	2 3/4"	1/4	1.13	.82
E-916	E-934	4 1/4"	2 1/4"	1 1/2"	1/4	1.17	.85
E-917	E-935	3 1/4"	2 1/8"	1 1/8"	1/4	1.02	.65



## DESCRIPTION: EASY BOXES

- A. Design allows a number of small components to be easily wired or serviced.
- B. Fabricated of 22 gauge steel.
- C. Black wrinkle finish only.

Catalog No.	Height	Width	Depth	Approx. Shipping Wt. - Lbs.	Dealer Cost
H-105	2 1/4"	4 1/4"	1 1/2"	1/2	\$1.02
H-106	2"	4"	2 3/4"	1/2	1.07

## DESCRIPTION: METER CASES

- A. Sloping front with top corner rounded.
- B. Prefix "MC" designates steel Grey Hammertone finish.
- C. Prefix "AC" designates aluminum etched finish.

Catalog No.	Hole Diameter	Approx. Ship. Wt. - Lbs.	Dealer Cost
MC-73	2-1/4"	1	\$1.00
MC-74	2-13/16"	1	1.00
AC-86	2-1/4"	1/3	1.29
AC-87	2-13/16"	1/3	1.29

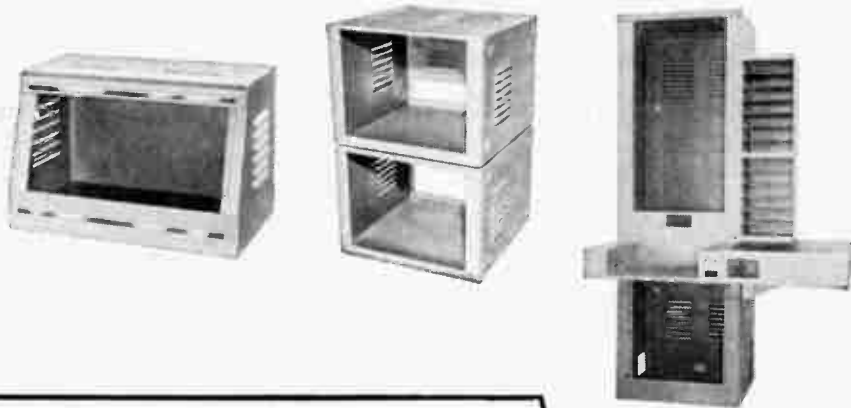


**Wyco Metal Products** • NORTH HOLLYWOOD, CALIFORNIA

# W **for Profitable Production**

## Wyco Contract Manufacturing Facilities

METAL ENCLOSURES • CHASSIS • PANELS



Experience and facilities acquired in manufacturing a standard line of metal cabinets for electronic equipment and contract work can serve you to advantage. The typical products shown represent a wide range of practical experience in the manufacturing of specially designed cabinets, chassis and panels.

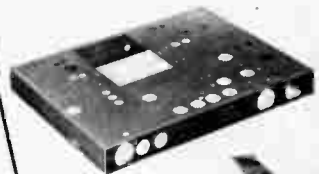
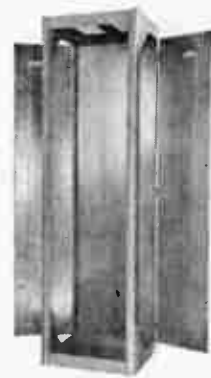
In every category, from top management down, Wyco's work force is trained in low cost manufacturing. A capable design staff will work with your engineers in product development and also works continually on product and process improvement for lower costs.

Plant facilities—the Wyco plant, 25,000 square feet of manufacturing space is located in the center of Southern California's industrial area. Situated as it is in the West Coast's industrial heart, the plant is within 500 miles of a score of manufacturing centers, permitting overnight delivery.

### *Manufacturing "Know-How" Assures High Quality Products*

Quite often it is possible to modify one of our standard units. This can eliminate the necessity of special dies, consequently reducing costs. A high degree of quality is guaranteed, due to our excellent facilities, expert workmanship, years of experience and manufacturing "know-how". Our staff is always at your service for consultation and advice.

*Specialists in Quantity Contract Manufacturing*



For a quotation, send details and prints of your parts. Wyco metal products will gladly discuss **PERSONALLY** your metal fabricating problems.

## Wyco Metal Products

NORTH HOLLYWOOD, CALIFORNIA

# LMB<sup>®</sup> Box Chassis

The Engineered Precision Line with Interlocking and Flangelocking Construction

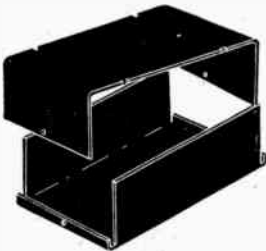
## "SAL-MET" NON-CORROSIVE FLUX

SOLDERS COPPER TO ALUMINUM ALUMINUM TO ALUMINUM, ETC.

No special preparation on material to be soldered. Use conventional solder, applied with quick heating, regular soldering iron, torch or pot. Used by aircraft, government agencies and leading industrials.

Aluminum used in all LMB products is aircraft quality specifications type 3003-H 14.

### Interlocking



### Flangelocking



### Sidelock



### Endlock

Here is the answer to box chassis needs, for the laboratory, manufacturer, experimenter, or builder. The following L. M. B. Boxes are available from stock in either interlocking (screw fastened) or snap latch. All screw fastenings are drilled and tapped. Self tapping screws are not used. Available colors include natural aluminum, gray or brown hammetone, and black crackle. When ordering specify style and color.

All prices quoted are dealer net. Manufacturers Special Discounts on Application.

### INTERLOCKING (SCREW-FASTENED)

Model	Size	Price	Model	Size	Price
M00	2 1/4" x 1 1/2" x 1 3/8"	.53	138	6 1/4" x 3 1/2" x 2 1/8"	1.23
00Z	2 3/8" x 2 1/8" x 1 3/4"	.59	139	5 1/2" x 3" x 1 1/4"	.93
000	3 1/4" x 2 1/8" x 1 3/8"	.63	*140	3" x 4" x 5"	1.20
00	4" x 2 1/8" x 1 3/8"	.66	140	3" x 4" x 5"	1.50
100	2 3/4" x 2 1/8" x 2 3/8"	.83	*141	6" x 4" x 3"	1.33
101	4 1/4" x 2 1/4" x 1 1/4"	.81	141	6" x 4" x 3"	1.68
102	4" x 2" x 2 3/4"	.95	*142	6" x 4" x 5"	1.55
107	4" x 2 1/4" x 2 1/4"	.89	142	6" x 4" x 5"	1.95
108	5" x 2 1/4" x 2 1/4"	.96	143	4" x 4" x 2"	1.23
135	3 3/4" x 3" x 2 1/8"	.90	144	10" x 4" x 2 1/2"	2.02
136	5 1/4" x 3" x 2 1/8"	1.01	145	7" x 5" x 3"	1.95
650	6 1/2" x 2 1/8" x 1 3/8"	.98	146	8" x 6" x 4 1/2"	2.76
137	8" x 3" x 2 3/4"	1.50	15	12" x 2" x 1 3/4"	1.50
850	8 1/2" x 2 1/8" x 1 3/8"	1.26			

### SNAP LATCH

No.	L	W	H	Price	No.	L	W	H	Price
SL-M00	2 1/4" x 1 1/2" x 1 3/8"	.53	SL-135	3 3/4" x 3" x 2 1/8"	.90				
SL-00Z	2 3/8" x 2 1/8" x 1 3/4"	.59	SL-136	5 1/4" x 3" x 2 1/8"	1.01				
SL-000	3 1/4" x 2 1/8" x 1 3/8"	.63	SL-137	8" x 3" x 2 3/4"	1.50				
SL-00	4" x 2 1/8" x 1 3/8"	.66	SL-138	6 1/4" x 3 1/2" x 2 1/8"	1.23				
SL-100	2 3/4" x 2 1/8" x 2 3/8"	.83	SL-139	5 1/2" x 3" x 1 1/4"	.93				
SL-101	4 1/4" x 2 1/4" x 1 1/4"	.81	SL-143	4" x 4" x 2"	1.23				
SL-102	4" x 2" x 2 3/4"	.95	SL-144	10" x 4" x 2 1/2"	2.02				
SL-107	4" x 2 1/4" x 2 1/4"	.89	SL-145	7" x 5" x 3"	1.95				
SL-108	5" x 2 1/4" x 2 1/4"	.96	SL-15	12" x 2" x 1 3/4"	1.50				

### SIDELOCK and ENDLOCK CONSTRUCTION

L. M. B. aluminum Box chassis with sidelock and endlock construction are dust proof, semi-water, and rain proof. Sturdy construction and 100% shielded. The following models are available in plain aluminum, or finished in black, gray, or brown. Endlock or sidelock construction:

Model	Size	Price	Model	Size	Price
221	2 3/4" x 3 1/8" x 1 3/8"	1.05	753	7" x 5" x 3"	2.39
321	3 1/4" x 2 1/8" x 1 3/8"	1.05	754	7" x 5" x 4"	2.58
421	4" x 2 1/8" x 1 3/8"	1.05	858	8" x 5" x 8"	4.44
422	4" x 2 1/4" x 2 1/4"	1.20	863	8" x 6" x 3 1/2"	2.67
424	4" x 2" x 4"	1.85	865	8" x 6" x 5"	3.33
435	4" x 3" x 5"	2.02	868	8" x 6" x 8"	4.92
444	4" x 4" x 4"	1.75	888	8" x 8" x 8"	5.50
531	5 1/4" x 3" x 1 1/2"	1.20	1063	10" x 6" x 3 1/2"	3.33
532	5 1/4" x 3" x 2 1/8"	1.37	1085	10" x 8" x 5"	4.13
534	5 3/8" x 3" x 4"	1.91	1221	12" x 2" x 1 3/4"	1.74
543	5" x 4" x 3"	1.74	1274	12" x 7" x 4"	4.34
546	5" x 4" x 6"	2.56	1754	17" x 5" x 4"	4.92
645	6" x 4" x 5"	2.43	7108	7" x 10" x 8"	5.73
654	6" x 5" x 4"	2.34	10108	10" x 10" x 8"	6.75
666	6" x 6" x 6"	3.16			
668	6" x 6" x 8"	4.32			
686	6" x 8" x 6"	3.99			
695	6" x 9" x 5"	3.59			

### SHIELDED CHASSIS

No.	L	W	H	Ea.	No.	L	W	H	Ea.
No. 20 Plain	7 1/2"	7"	2"	\$1.56	No. 21 Anodized	13"	10"	3"	\$5.43
No. 20 Anodized	7 1/2"	7"	2"	1.92	No. 22 Plain	17"	10"	3"	4.73
No. 21 Plain	13"	10"	3"	4.05	No. 22 Anodized	17"	10"	3"	6.23

PRICES SUBJECT TO CHANGE



Shielded Chassis

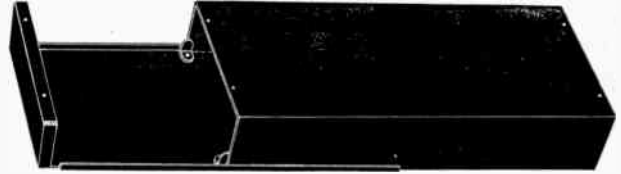


## L M B® Box Chassis (Continued)

### SLIDE COVER (or dust cover) BOXES

Designed by BROADCAST ENGINEERS

These boxes lend themselves readily to Broadcast Application, Television Strips, Mobile Equipment, Terminal Block Boxes, Public Address Construction, Custom Built Equipment, Amateur Experimentation, and many other uses. They are also adaptable to telephone type of construction. Steel Plated or Aluminum Natural or Painted Finish.



L W H Ea.				L W H Ea.				L W H Ea.						
No. 17—Natural Aluminum	13"	x 4 1/8"	x 2 3/4"	\$3.18	No. 18—Natural Aluminum	13"	x 5 1/4"	x 2 3/4"	\$3.51	No. 19—Natural Aluminum	17"	x 3 1/8"	x 2 3/4"	\$3.36
No. 17—Gray, Black, Brown	13"	x 4 1/8"	x 2 3/4"	3.95	No. 18—Gray, Black, Brown	13"	x 5 1/4"	x 2 3/4"	4.36	No. 19—Gray, Black, Brown	17"	x 3 1/8"	x 2 3/4"	4.20

Each	DEALER NET		Each	DEALER NET			
	Plain	Gray, Black, Brown		Plain	Gray, Black, Brown		
T-F 770	2 3/4 x 2 1/8 x 1 1/8	\$ .63	.75	T-F 780	5 1/4 x 3 x 2 1/8	.83	\$1.04
T-F 771	2 3/4 x 2 1/8 x 2 3/4	.68	.88	T-F 781	6 x 5 x 4	1.34	1.71
T-F 772	3 1/4 x 2 1/8 x 1 1/8	.66	.78	T-F 782	7 x 5 x 3	1.28	1.73
T-F 773	3 1/2 x 2 1/8 x 1 1/8	.66	.78	T-F 783	8 x 6 x 3 1/2	1.53	2.10
T-F 774	4 x 2 1/8 x 1 1/8	.68	.88	T-F 784	10 x 6 x 3 1/2	1.79	2.37
T-F 775	4 x 2 1/4 x 2 1/4	.71	.90	T-F 785	10 x 2 x 1 1/8	1.01	1.46
T-F 776	4 x 2 x 2 3/4	.74	.93	T-F 786	12 x 2 1/2 x 2 1/4	1.26	1.56
T-F 777	4 1/4 x 2 1/4 x 1 1/2	.74	.93	T-F 787	12 x 7 x 4	2.33	3.21
T-F 778	5 x 2 1/4 x 2 1/4	.75	.96	T-F 788	17 x 5 x 4	2.45	3.22
T-F 779	5 x 4 x 3	.93	1.23				

Each	PRICES		Each	PRICES			
	Plain	Gray, Black, Brown		Plain	Gray, Black, Brown		
J-870	2 3/4 x 2 1/8 x 1 1/8	\$ .67	.79	J-880	5 1/4 x 3 x 2 1/8	\$ .91	\$1.12
J-871	2 3/4 x 2 1/8 x 2 3/4	.73	.93	J-881	6 x 5 x 4	1.51	1.88
J-872	3 1/4 x 2 1/8 x 1 1/8	.70	.82	J-882	7 x 5 x 3	1.45	1.80
J-873	3 1/2 x 2 1/8 x 1 1/8	.71	.83	J-883	8 x 6 x 3 1/2	1.70	2.27
J-874	4 x 2 1/8 x 1 1/8	.73	.93	J-884	10 x 6 x 3 1/2	2.07	2.65
J-875	4 x 2 1/4 x 2 1/4	.77	.96	J-885	10 x 2 x 1 1/8	1.11	1.66
J-876	4 x 2 x 2 3/4	.80	.99	J-886	12 x 2 1/2 x 2 1/4	1.41	1.71
J-877	4 1/4 x 2 1/4 x 1 1/2	.80	.99	J-887	12 x 7 x 4	2.77	3.65
J-878	5 x 2 1/4 x 2 1/4	.82	1.03	J-888	17 x 5 x 4	2.92	3.69
J-879	5 x 4 x 3	1.04	1.34				

Each	ALUM. GAUGE		Each	ALUM. GAUGE					
	Plain	Gray, Black, or Brown		Plain	Gray, Black, or Brown				
U-C 970	4x 4x2	.040	\$1.46	\$1.70	U-C 976	10x 8x7	.051	\$4.32	\$5.00
U-C 971	5x 4x3	.040	1.58	1.85	U-C 977	12x 7x6	.051	4.20	4.95
U-C 972	6x 5x4	.040	2.03	2.35	U-C 978	10x10x8	.051	5.51	6.40
U-C 973	6x 6x6	.040	2.38	2.82	U-C 979	12x11x8	.051	6.59	7.49
U-C 974	7x 5x3	.040	2.78	3.25	U-C 980	15x 9x7	.051	6.68	7.58
U-C 975	9x 6x5	.051	3.15	3.63					

SIZES				SIZES				SIZES			
No.	L	W	H	No.	L	W	H	No.	L	W	H
M-01	1 1/2"	x 1"	x 1/2"	09	2 5/8"	x 1 1/4"	x 3/8"	016	2"	x 1 1/2"	x 3/4"
02	1 1/2"	x 1"	x 3/8"	10	1 3/4"	x 1 1/4"	x 7/8"	017	2"	x 1 3/4"	x 1"
03	1 1/2"	x 1 1/2"	x 3/8"	11	2"	x 1 1/4"	x 3/4"	018	2"	x 2"	x 1 1/4"
04	1 1/2"	x 1 1/2"	x 3/4"	12	2"	x 1 1/2"	x 1"	019	2 1/2"	x 1 3/4"	x 3/8"
05	1 1/2"	x 1 1/2"	x 3/4"	13	1 3/4"	x 1 1/4"	x 1"	020	1 1/2"	x 1 1/2"	x 1 1/4"
06	1 1/2"	x 1 1/4"	x 3/4"	14	1 1/2"	x 1 1/2"	x 3/4"	021	2 1/2"	x 1 3/4"	x 3/4"
07	1 3/4"	x 1"	x 3/4"	15	2"	x 1 3/4"	x 1/2"	022	3"	x 1 3/4"	x 1/2"
08	2 1/4"	x 1"	x 3/8"								

Plain	Plated	PRICES		Plain
		Without Mounting Ears 100 to 999 ea.	With Mounting Ears 100 to 999 ea.	
.45	.60	.38	.53	15

### TITE-FIT BOX CHASSIS



### JIFFY BOX CHASSIS



Just push together to close and the Catches snap into place—just a slight pressure of the fingers to open.

### UTILITY BOXES

Give approximately 25% more usable space for building.



### MINIATURE BOX CHASSIS

Precision made in steel only, cadmium plated. Made with or without mounting ears. Covers solder in when used in assembly.



### PRINTED CIRCUIT CHASSIS

Printed circuit chassis are made with a shallow base with a cap cover on the bottom so that it can be removed to work on the assembly without removing the printed circuit from the chassis. All printed circuit chassis are of plain aluminum.



### STANDARD SIZES

Model No.	L	W	D	Mounting Lip	
PC 325	3 x 2	x 1/2		3/16"	ea. .51
PC 635	6 x 3	x 1/2		3/16"	ea. .60
PC 645	6 x 4	x 1/2		3/16"	ea. .71
PC 855	8 x 5	x 1/2		3/16"	ea. .83
PC 10875	10 x 8	x 3/4		3/16"	ea. 1.28
PC 12975	12 x 9	x 3/4		3/16"	ea. 1.50

Model No. D 7131 Size 7 x 13 x 1 Mounting Lip 1/2" for use in building with the Danco model No. 14 printed amplifier circuit...ea. \$1.09

Model No. D 541 Size 5 x 4 x 1 Mounting Lip 1/2" for use in building with the Danco models No. 21, 31, 41 printed preamplifier circuit ...ea. \$ .59

PRICES SUBJECT TO CHANGE

# CALIFORNIA Chassis COMPANY

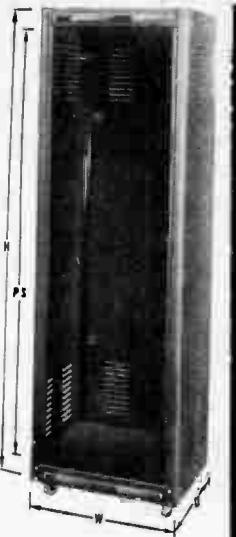
## CABINET RACKS

These racks are made entirely of 16 gauge steel except for the heavy steel panel supports. They have universal spacing, the holes being tapped for 10/32" screws. Panels fit into a recess so that the edges do not show. Mounting plate on bottom of rack permits casters to be fastened directly to base for easy mobility. Casters are not included in price of rack but may be ordered separately. No. TC-10.

All standard 19" panels RETMA, Western Electric or Amateur will fit these racks. Double rows of louvers side and rear give ample ventilation.

Finish is black wrinkle, gray wrinkle or silver hammetone. Black will be furnished unless specified otherwise.

CAT. NO.	PANEL SPACE	HEIGHT	WIDTH	DEPTH	SHIPP INSIDE CLEAR.	WEIG LBS
CR-36	36 3/4	42	22	17	15 1/2	90
CR-42	42	47 1/4	22	17	15 1/2	96
CR-61	61 1/4	66 1/2	22	17	15 1/2	120
CR-77	77	82 1/4	22	17	15 1/2	145
CRD-36	36 3/4	42	22	24	22 1/2	99
CRD-42	42	47 1/4	22	24	22 1/2	105
CRD-61	61 1/4	66 1/2	22	24	22 1/2	133
CRD-77	77	82 1/4	22	24	22 1/2	160



## DOOR SERIES

This open rack is made of 16 gauge steel. It is useful where the larger, heavier floor model is not necessary.

Mounting holes are on universal centers tapped 10/32".

Cat. No.	Panel Space	Overall Height	Overall Width	Depth	Shppg. Wt.
DOR-21	21 x 19	25	21	12	18
DOR-28	28 x 19	32	21	12	19



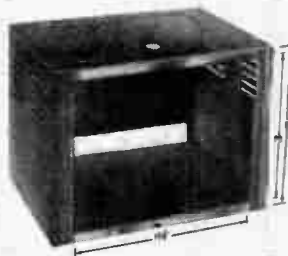
## DESK CABINET RACKS

This solid welded, rounded front, deluxe desk cabinet has a professional look as well as being a sturdy utility unit. Embossed feet are on all sizes to reduce marring.

Cabinets have universal punching, accommodating W. E.; RETMA; or Amateur notched panels. Unit is made from 16 ga. steel, has a 2" opening on bottom rear for ventilation in addition to side louvers.

The five smaller models have solid welded backs. The five larger models have a removable hinged rear door. All models clear 14 1/2" inside depth — Outside width is 21 1/2". Black wrinkle is standard. If gray wrinkle or gray hammetone is desired please specify. No additional charge.

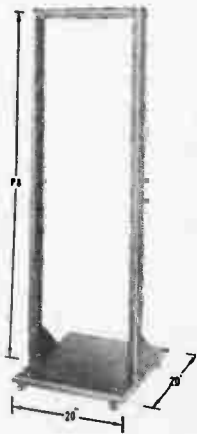
CATALOG NO.	PANEL SPACE	HEIGHT	SHPPG. WT.
DCR-7	7	8 1/2	25
DCR-8	8 3/4	10 1/2	27
DCR-10	10 1/2	12 3/4	29
DCR-12	12 3/4	14 3/4	31
DCR-14	14	15 3/4	33
DCR-17	17 1/2	19 3/4	37
DCR-21	21	22 3/4	39
DCR-26	26 1/4	28 3/4	47
DCR-31	31 1/2	33 3/4	51
DCR-35	35	36 3/4	58



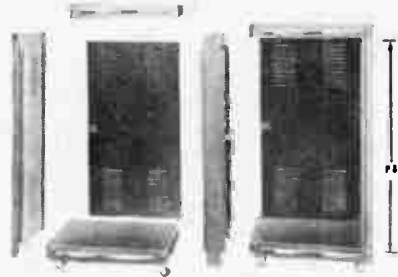
## OR SERIES

These open racks are constructed so the uppermost panel mounts at the top of the 1/8" steel upright. There is no loss of space at the top. Rack uprights are punched with universal spacing and tapped 10/32". Two brackets of 1/8" steel bind the uprights and a chassis like base into one solid unit.

CATALOG NO.	PANEL SPACE	OVERALL HEIGHT	SHPPG. WT.
OR-31	31 1/2	32 3/4	27
OR-36	36 3/4	38	28
OR-42	42	43 3/4	30
OR-61	61 1/4	62 1/2	37
OR-66	66 1/2	67 3/4	39
OR-71	71 3/4	73	41
OR-77	77	78 1/4	42



## MULTI RACK SERIES



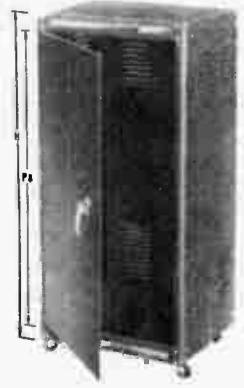
With this unit and a standard rack of the same size one can make a multiple rack or a series of connected racks. Each unit consists of a door, top, bottom, and a multi-rack connecting unit. This must have the same panel space as the unit it is to be used with. All hardware except casters is furnished. Colors are black wrinkle, gray wrinkle or gray hammetone.

CATALOG NO.	PANEL SPACE	FITS SHPG. RACK WT.
MR-36	36 3/4	CR-36 75
MR-42	42	CR-42 80
MR-61	61 1/4	CR-61 100
MR-77	77	CR-77 118

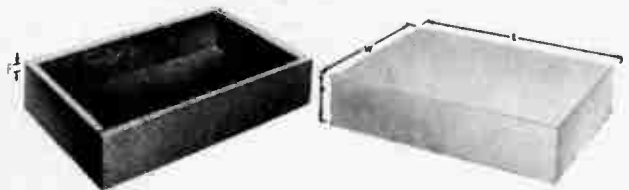
## FRONT DOOR RACKS

This deluxe rack series has, in addition to the rear door, a front door which completely encloses the panels. Rack strips may be moved towards the rear of the rack to allow space for meters, switches, etc. Rack strips are punched with universal spacing, and tapped 10/32". Casters, TC-10, fit to base of rack, but are not included in price. Finish is black wrinkle (B), Gray wrinkle (G), or gray hammetone (GH). Black wrinkle shipped if no color is specified.

CATALOG NO.	HEIGHT	PANEL SPACE	SHPG. WT.
FDR-36	42	36 3/4	102
FDR-42	47 1/4	42	118
FDR-61	66 1/2	61 1/4	152



## STANDARD ALUMINUM CHASSIS



All chassis are stamped and formed from one piece of material (except 6" depth). All four corners welded and sides flanged to accommodate bottom plates.

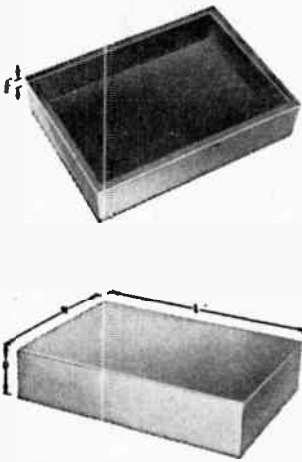
Aluminum No.	W	L	D	Gauge	App. Wt.	Aluminum No.	W	L	D	Gauge	App. Wt.
A-134	2 1/2	x 4 1/2	x 1	18	1/4	A-115	10	x 14	x 3	18	1 1/4
A-135	3 1/2	x 4 1/2	x 1	18	1/4	A-130	7	x 15	x 3	18	1 1/4
A-136	3 1/2	x 5 1/2	x 1	18	1/4	A-125	9	x 15	x 3	18	1 1/2
A-137	4	x 6	x 1 1/2	18	1/4	A-118	4	x 17	x 3	18	1
A-149	4	x 6	x 3	18	1/4	A-145	6	x 17	x 3	18	1 1/4
A-138	4	x 5	x 2	18	3/8	A-144	7	x 17	x 3	18	1
A-121	5 1/2	x 5 1/2	x 1	18	1/4	A-152	7	x 17	x 3	18	1 1/2
A-101	5	x 7	x 2	18	3/8	A-109	8	x 17	x 2	18	1 1/2
A-150	5	x 7	x 3	18	3/8	A-116	8	x 17	x 3	16	1 1/2
A-147	4	x 8	x 2	18	3/8	A-140	10	x 17	x 2	16	2 1/4
A-119	4 1/2	x 8	x 1 1/2	18	3/8	A-110	10	x 17	x 3	16	2 1/2
A-122	5	x 9	x 1 1/2	18	3/8	A-153	10	x 17	x 4	16	3
A-102	5	x 9 1/2	x 2 1/2	18	3/8	A-141	10	x 17	x 5	14	3 1/4
A-120	6	x 8	x 2	18	3/8	A-146	11	x 17	x 2	16	1 1/2
A-103	5	x 10	x 3	18	1/2	A-128	11	x 17	x 3	14	2 1/2
A-104	7	x 7	x 2	18	1/2	A-127	12	x 17	x 2	14	2 1/4
A-105	7	x 9	x 2	18	3/4	A-123	12	x 17	x 3	14	2 1/2
A-113	7	x 11	x 2	18	3/4	A-126	13	x 17	x 2	14	2 1/4
A-106	8	x 10	x 2 1/2	18	1	A-111	13	x 17	x 3	14	2 3/4
A-106	6	x 14	x 3	18	1	A-112	13	x 17	x 4	14	3 1/4
A-114	7	x 13	x 2	18	3/4	A-142	13	x 17	x 5	14	3 1/2
A-139	5	x 13	x 3	18	3/4	A-133	14	x 17	x 3	14	3 1/4
A-107	8	x 12	x 2 1/2	18	1	A-131	15	x 17	x 4	14	3 3/4
A-117	7	x 12	x 3	18	1	A-148	15	x 17	x 6	14	4
A-124	8	x 12	x 3	18	1	A-132	10	x 23	x 3	16	2 1/2
A-124	10	x 12	x 3	18	1 1/4	A-143	17	x 17	x 4	14	4 1/4
A-129	12	x 12	x 3	18	1 1/2						

Special chassis made regardless of quantity using a set up charge of \$3.60 plus cost of next larger chassis. Unless specified, all aluminum chassis are etched finish. Painted chassis are available at additional 10% cost.

CALIFORNIA CHASSIS CO. — Lynwood, California

**STANDARD STEEL CHASSIS**

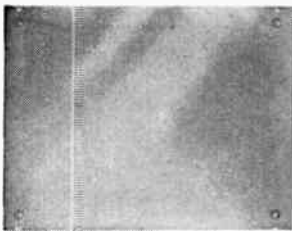
All chassis are stamped and formed from one piece of material (except 6" depth). All four corners welded and sides flanged to accommodate bottom plates.



Zinc Plated	Black Steel	W	L	D	Gauge	Approx. Wt.	Zinc Plated	Black Steel	W	L	D	Gauge	Approx. Wt.
C-134	W-134	2 1/2 x	4 1/2 x 1		22	1/4	C-115	W-115	10	x 14	x 3	20	3 1/2
C-135	W-135	3 1/2 x	4 1/2 x 1		22	1/4	C-130	W-130	7	x 15	x 3	20	3
C-136	W-136	3 1/2 x	5 1/2 x 1		22	3/8	C-125	W-125	9	x 15	x 3	20	3 1/2
C-137	W-137	4	x 6	x 1 1/2	22	1/2	C-118	W-118	4	x 17	x 3	20	2 1/4
C-149	W-149	4	x 6	x 3	22	1/2	C-145	W-145	6	x 17	x 3	20	3
C-138	W-138	4	x 5	x 2	22	1/2	C-144	W-144	7	x 17	x 2	20	2 3/4
C-121	W-121	5 1/2 x	5 1/2 x 1		22	1/2	C-152	W-152	7	x 17	x 3	20	2 3/4
C-101	W-101	5	x 7	x 2	22	1	C-109	W-109	8	x 17	x 2	20	3
C-150	W-150	5	x 7	x 3	22	1	C-116	W-116	8	x 17	x 3	20	3 3/4
C-147	W-147	4	x 8	x 2	22	1	C-140	W-140	10	x 17	x 2	18	4 1/2
C-119	W-119	4 1/2 x	8	x 1 1/2	22	3/4	C-110	W-110	10	x 17	x 3	18	5 1/4
C-122	W-122	5	x 9	x 1 1/2	22	1	C-153	W-153	10	x 17	x 4	18	5
C-102	W-102	5	x 9 1/2 x 2 1/2		22	1 1/4	C-141	W-141	10	x 17	x 5	18	6 3/4
C-120	W-120	6	x 8	x 2	22	1 1/4	C-146	W-146	11	x 17	x 2	18	4 1/2
C-103	W-103	5	x 10	x 3	22	1 1/4	C-128	W-128	11	x 17	x 3	18	5 1/2
C-104	W-104	7	x 7	x 2	22	1 1/4	C-127	W-127	12	x 17	x 2	18	5 1/4
C-105	W-105	7	x 9	x 2	22	1 1/2	C-123	W-123	12	x 17	x 3	18	6
C-113	W-113	7	x 11	x 2	20	2	C-126	W-126	13	x 17	x 2	18	5 1/2
C-106	W-106	8	x 10	x 2 1/2	20	2	C-111	W-111	13	x 17	x 3	18	6 1/4
C-151	W-151	6	x 14	x 3	20	3	C-112	W-112	13	x 17	x 4	18	6 3/4
C-114	W-114	7	x 13	x 2	20	2 1/4	C-142	W-142	13	x 17	x 5	18	8
C-139	W-139	5	x 13	x 3	20	2 1/4	C-133	W-133	14	x 17	x 3	18	6 1/8
C-107	W-107	8	x 12	x 2 1/2	20	2 1/4	C-131	W-131	15	x 17	x 4	18	7 1/4
C-117	W-117	7	x 12	x 3	20	2 1/4	C-148	W-148	15	x 17	x 6	18	9
C-124	W-124	8	x 12	x 3	20	2 3/4	C-132	W-132	10	x 23	x 3	18	4 1/2
C-108	W-108	10	x 12	x 3	20	3	C-143	W-143	17	x 17	x 4	18	8 3/4
C-129	W-129	12	x 12	x 3	20	3 1/2							

Special chassis made regardless of quantity using a set up charge of \$3.60 plus cost of next larger chassis.

**CHASSIS BOTTOM PLATES**



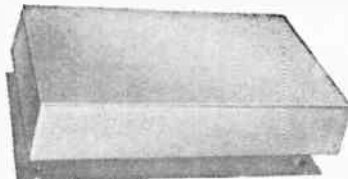
CATALOG NO.	SIZE	ALUM. WEIGHT	STEEL WEIGHT
BP-105	7 x 9	1/4 lb.	3/4 lb.
BP-113	7 x 11	1/2 lb.	1 lb.
BP-106	8 x 10	1/4 lb.	3/4 lb.
BP-139	5 x 13	1/4 lb.	1/2 lb.
BP-114	7 x 13	1/2 lb.	1 lb.
BP-107	8 x 12	3/4 lb.	1 1/4 lb.
BP-117	7 x 12	1/2 lb.	1 lb.
BP-108	10 x 12	3/4 lb.	1 1/2 lb.
BP-129	12 x 12	3/4 lb.	1 1/2 lb.
BP-115	10 x 14	3/4 lb.	2 lb.
BP-130	7 x 15	1/2 lb.	1 lb.
BP-125	9 x 15	3/4 lb.	1 1/2 lb.
BP-118	4 x 17	1/2 lb.	1 lb.
BP-145	6 x 17	1/2 lb.	1 lb.
BP-144	7 x 17	1/2 lb.	1 lb.
BP-109	8 x 17	1/2 lb.	1 1/4 lb.
BP-110	10 x 17	3/4 lb.	2 1/2 lb.
BP-128	11 x 17	1 lb.	2 lb.
BP-123	12 x 17	1 1/4 lb.	3 lb.
BP-111	13 x 17	1 1/2 lb.	3 1/4 lb.
BP-133	14 x 17	1 1/2 lb.	3 1/2 lb.
BP-131	15 x 17	1 1/2 lb.	3 1/2 lb.
BP-143	17 x 17	2 lb.	5 lb.
BP-132	10 x 23	1 1/2 lb.	3 1/4 lb.

Steel bottom plates may be supplied in either zinc plate or black enamel — aluminum is caustic etched.

Actual size of BP is 1/8" under chassis size which is shown. This allows 1/8" of set back when attached to bottom of chassis.

**HEAVY DUTY CHASSIS 16 GAUGE STEEL**

HD-109	6 3/4 #	8x17x2
HD-116	7 1/2	8x17x3
HD-110	8 1/2	10x17x3
HD-146	8	11x17x2
HD-128	10	11x17x3
HD-126	9 1/2	13x17x2
HD-111	11 1/2	13x17x3
HD-112	12	13x17x4



Bottom Plates Included

**CAT. NO. HEIGHT WEIGHT**

CAT. NO.	HEIGHT	WEIGHT
PC-110	1 3/4	2 #
PC-111	3 1/2	2 3/4
PC-112	5 1/4	4
PC-113	7	4 1/2
PC-114	8 3/4	5 3/4
PC-115	10 1/2	6 3/4
PC-116	12 1/4	7 1/2
PC-117	14	8 1/2

Larger Sizes On Request  
These are constructed so the sharp rib corner is cut to a 45° angle protecting the user's wrist. 16 gauge zinc steel is standard. 14 gauge etched aluminum sent on request at no additional cost.

Cat. No.	Weight	Dimensions
RT-1	5 1/4 #	10x17x3
RT-2	7	13x17x3
RT-3	6 1/2	10x17x4
RT-4	9	13x17x4

Experimenters and the radio amateur when designing, will find it economical to use this type chassis, as the tops and bottoms may be easily replaced or discarded. Steel-Electro Zinc Only.

**TOPS ONLY**

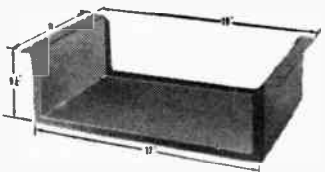
Cat. No.	Weight	Dimensions
T-1	3 #	10x17
T-2	4	13x17

Made From 16 Gauge Steel — Electro Zinc Finish

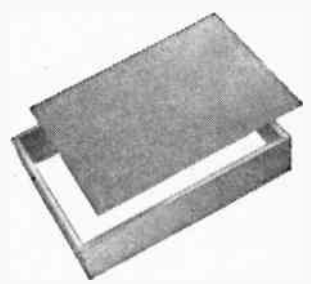
Cat. No.	Weight	W	L	D
EC-1	1 #	7	x 6x2	
EC-2	3/4	5	x 7x1 1/2	
EC-3	1	5 1/2 x	9x1 1/2	
EC-4	1 1/4	7 1/2 x	9x1 1/2	
EC-5	1 1/2	7	x 13x1 1/2	
EC-6	2 1/4	7 3/4 x	15x2	
EC-7	1	7	x 8x2	
EC-8	1 1/4	7	x 10x2	

These chassis are ideal for any type of unit which is built-up, such as a record changer. Steel — Electro Zinc Only

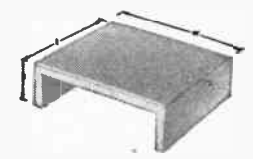
**PANEL CHASSIS**



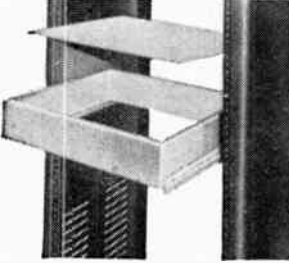
**REMOVABLE TOP CHASSIS**



**OPEN END CHASSIS**



**SLIDING DRAWER CHASSIS**



The drawer chassis is used where there is a need to pull out the chassis without disconnecting it from the rack. Chassis rolls in and out on ball bearings in a formed channel. When assembled it forms a rigid unit which will fit any 19" rack. Brackets are 1/8" Aluminum. Chassis and top plate are 14 gauge aluminum. Finish, except for slide rail assembly, is gray hammertone.

Cat. No. Chassis Size Brk. H. Wt.  
SD-399 16 3/4 x 14 x 3 6 1/2" 6 1/2 #

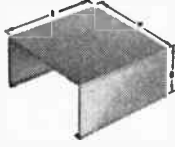
**PLATFORM CHASSIS**



These steel platforms are useful as variable level chassis simply by fastening to any side of a carrying case, utility box, etc. They may also be used as shields. Black enamel finish.

CD-260	4 3/4	5 1/2	CAB-4	1 #
CD-261	4 3/4	4 1/2	CAB-5	3/4
CD-262	5 3/4	5 1/2	CAB-7	1

& CC-282

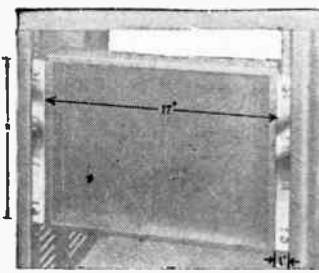


**MINIATURE ALUMINUM CHASSIS**

These are small open end chassis for use where space is limited.

Catalog No.	Width	Length	Depth	Shpg. Wt.
MA-210	2 5/8	2 3/4	1 1/4	1/4 #
MA-211	1 3/4	3 1/8	1	1/4
MA-212	3 1/4	4 1/2	2	1/4
MA-213	2 3/4	4 1/8	1	1/4
MA-214	3 3/4	4 1/8	1 1/2	1/4
MA-215	3	6 1/8	1 1/4	1/4

**CHASSIS FLANGES**



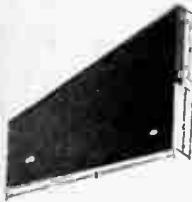
These 1" chassis flanges will convert any 17" chassis to a 19" panel rack chassis. Made of 16 gauge Zinc plated steel.

Catalog No.	Height	Shpg. Wt.
CF-12	5 1/4	1/2 #
CF-13	7	1/2
CF-14	8 3/4	1
CF-15	10 1/2	1
CF-16	12 1/4	1
CF-17	14	1

# CALIFORNIA Chassis COMPANY

## CHASSIS MOUNTING BRACKETS

To assure the proper support for a chassis a sturdy mounting bracket is used. Flange is  $\frac{5}{8}$ " inside dimension. Elongated hole  $\frac{3}{16}$ " x  $\frac{1}{2}$ " is centered in flange. "X" shows the distance between flange holes. Finished in Zinc plated "C" or Wrinkle "W" may be had at additional cost of 15%.



Enamel	Height	x	Depth	Clearance	Wt.
E-58B	6½	2½	8	3½	1¼
E-57B	6½	2½	9	3½	1½
E-48B	6½	2½	10	3½	1¾
E-59B	6½	2½	11	3½	1¾
E-49B	6½	2½	12	3½	1¾
E-60B	6½	2½	13	3½	2
E-50B	8½	3½	10	4½	2½
E-51B	8½	3½	13	4½	3
E-52B	12	7	15	4½	4½
E-53B	14	8	17	5½	5¾

## TRIANGULAR MOUNTING BRACKETS

Cat. No.	Height	Dimensions
MB-55	½	5x5
MB-77	1½	7x7
MB-99	1¾	9x9

Steel — Black Enamel Only

## CHASSIS SUPPORT ANGLES

These angles when bolted to the sides of a cabinet will support a heavy chassis unit. They are made of  $\frac{1}{8}$ " thick steel and are finished in black enamel only.

Cat. No.	Length	Width	Shpg. Lbs.	Wt.
CA-12	12	3	3	3
CA-14	14½	3	4	4

## ROLLER TRUCKS

These trucks are of 14 gauge steel. They measure inside  $20\frac{1}{4}$  x  $24\frac{1}{8}$ . They are for use with the older type racks or any that do not have built-in caster mounts. Each truck is complete with four two inch casters and all mounting hardware. Finish Black Wrinkle. Catalog No. RCT-1, 17½ lbs.

## RELAY RACK PANELS

Regular panels are made from  $\frac{1}{8}$ " steel or aluminum material. Aluminum is 1100 H 14. Notching is either Western Electric (WE) or Amateur (A). Finish Black or Gray Wrinkle or Silver Gray Hammertone. Aluminum is standard and will be sent unless steel is specified. Panels in any material will be furnished 24" wide instead of 19" wide at twice the cost.

Notching		Height	Width	Wt. Alum.	Wt. Steel
Western Electric	Amateur				
PW-10	PA-10	1¾	19	½	1¼
PW-11	PA-11	3½	19	¾	2¼
PW-12	PA-12	5¼	19	1¼	4
PW-13	PA-13	7	19	1½	4¾
PW-14	PA-14	8¾	19	2	6
PW-15	PA-15	10½	19	2½	6¾
PW-16	PA-16	12¼	19	3	8¾
PW-17	PA-17	14	19	3½	9¾
PW-18	PA-18	15¾	19	4	10¾
PW-19	PA-19	17½	19	4½	12
PW-20	PA-20	19¼	19	5	13
PW-21	PA-21	21	19	5½	15¾
PW-22	PA-22	24½	19	6	18½
PW-23	PA-23	26¼	19	7	20¼

## HARD ALUMINUM PANELS

Cat. No.	Height	Width	Wt.
PWHA-10	1¾	19	½
PWHA-11	3½	19	¾
PWHA-12	5¼	19	1¼
PWHA-13	7	19	1½
PWHA-14	8¾	19	2½
PWHA-15	10½	19	2½
PWHA-16	12¼	19	3
PWHA-17	14	19	3½
PWHA-18	15¾	19	4
PWHA-19	17½	19	4½
PWHA-20	19¼	19	5
PWHA-21	21	19	5½
PWHA-22	24½	19	6
PWHA-23	26¼	19	7

## METER PANELS

All panels are  $5\frac{1}{4}$ " x  $19$ " x  $\frac{1}{8}$ " steel or aluminum, black or grey wrinkle — designed to handle either 2" or 3" meters. All units Western Electric notch.

### ALUMINUM

Cat. No.	Wt.	No. Holes	Dia.
MPS-52	1¼	5	2¾
MPS-52	1¼	5	2¾
MPS-33	1¼	3	2¾
MPS-53	1	5	2¾

### STEEL

Cat. No.	Wt.	No. Holes	Dia.
MPS-32	3	3	2¾
MPS-52	2¾	3	2¾
MPS-33	3½	3	2¾
MPS-53	3	5	2¾

Small holes are for 2" meters, larger holes are for 3" meters.

These  $\frac{1}{8}$ " panels are recommended for high quality work. They are 2024T3 aluminum. Notching is Western Electric, but Amateur on request at no added cost. We also carry a complete line of  $\frac{3}{16}$ " or .188 panels. These are all 2024T3.

## SIDE HINGED PANELS

Cat. No.	Height	Wt.
SH-12	5¼	4¼
SH-13	7	5½
SH-14	8¾	6¾
SH-15	10½	7¼
SH-16	12¼	8¾



## FRONT HINGED DOOR PANEL

This door gives access to the chassis top. It is free moving and has a substantial catch. Made of  $\frac{1}{8}$ " steel. Please specify finish.

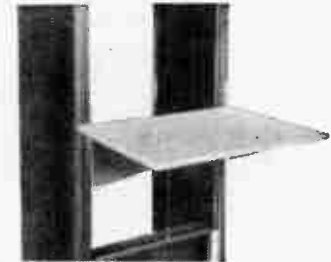
Cat. No.	Height	Door
FH-430	10½	6 x 15¾
FH-432	12¼	7½ x 15¾



## EXTERIOR RACK SHELVES

The exterior shelf replaces a panel when a shelf is needed. Unit is composed of a 16 gauge steel shelf with seam welded front corners and two supporting  $\frac{1}{8}$ " steel brackets. All hardware included.

Cat. No.	Shelf Size	Wt.
ER-416	16x22	12
ER-420	20x22	15



## INTERIOR RACK SHELVES

These 16 gauge steel shelves may be supported in the rack by chassis support angles CA-12 or CA-14. They are used to form a strong shelf for modulator units, power supplies etc. Finish black enamel.

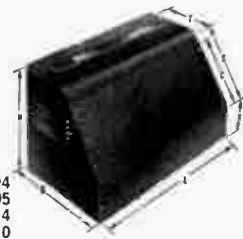
Cat. No.	Size	Shpg. Wt.
RS-512	12x19	5½
RS-515	15x19	6½



## SLOPING FRONT CABINETS

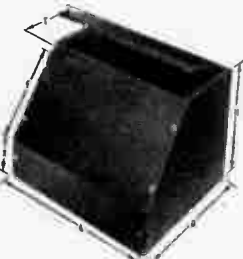
These deluxe all purpose steel cabinets are designed for wide use in the electronic field. Front and top corners are rounded, sides have stainless steel ventilators. Embossed feet to prevent scratching. Gray wrinkle finish.

Catalog No.	D	H	L	T	X	S	C	Use This Chassis
SFC-42	8	8	8	4¼	2¾	6	5¼	C-104
SFC-44	8	8	10	4¼	2¾	6	5¼	C-105
SFC-46	8	8	14	4¼	2¾	6	5¼	C-114
SFC-48	12	12	18	6	3½	10¾	9½	C-110



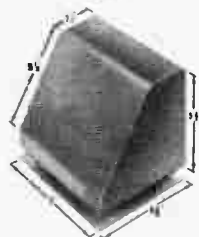
## HINGED TOP SLOPING CABINET

This cabinet provides for a complete opening of top and front. Bottom has embossed feet. Rear has opening for connectors. Black wrinkle or Gray hammertone finishes.



## ENCLOSED METER CABINET

Enclosed Meter Cabinet bottom is open. Bottom plate with embossed feet and four sheet metal screws included. Gray wrinkle unless other color specified. Available in black wrinkle, silver gray hammertone at no additional cost. Steel or Aluminum.



Catalog No. EMC-2

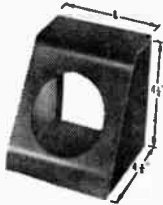
CALIFORNIA CHASSIS CO. — Lynwood, California

# CALIFORNIA Chassis COMPANY

## METER CABINETS

Meter Size	Aluminum Cat. No.	Wt. Lbs.
2" 4"	MC-2	1/2 SMC-2 1 1/2
3" 4"	MC-3	1/2 SMC-3 1 1/2
No Holes 4"	MC-4	1/2 SMC-4 1 1/2
2" 4"	MC-6*	1/2 SMC-6* 1 1/2
3" 4"	MC-7*	1/2 SMC-7* 1 1/2
No Holes 7 1/2"	MC-8	3/4 SMC-8 2 1/4
3" 6"	HAC-MC-7*	3/4 SMC-8 2 1/4

\* Indicates it has two 1/2" holes on 3/4" centers at top of cabinet for insulators. 2" meter hole is 2 3/8". 3" meter hole is 2 3/4".



## MINIATURE SPEAKER CABINETS

These small meter cabinets are like the MC series except the meter hole is covered by an expanded metal shield. Furnished in steel only. Black wrinkle standard.

Catalog No.	Length	Meter Size	Wt. Lbs.
MS-261	4"	2"	3/4
MS-262	4"	3"	3/4



## WALL SPEAKER CASES

These all metal cases have keyslotted holes on the rear for easy mounting. They are also provided with embossed feet on one side. Finish is gray hammerstone for ease of cleaning.

Catalog No.	Speaker Size	Hole Size	H	L	D	Wt.
WS-304	4	3 1/2	7 1/2	6 1/2	4 1/4	1 3/4
WS-305	5	4	1 1/2	6 1/2	4 1/4	1 3/4
WS-306	6	4 3/4	9 1/2	8	5 5/8	3
WS-308	8	6 1/2	11 1/2	9 1/2	7	4
WS-310	10	8 1/2	13 1/2	11 1/2	8 1/4	5
WS-312	12	10 1/2	15 1/2	13 1/2	9 3/4	6



## STREAMLINED MINIATURE CABINETS

This miniature steel cabinet has a radiused face. The base has four embossed feet. There rear is open except for a 1/4" flange down two sides. This gives rigidity as well as a place to attach a back cover. Gray wrinkle standard.

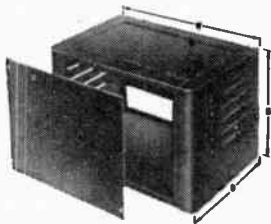
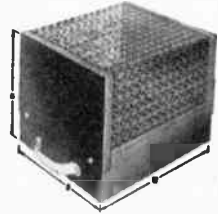
Catalog No.	H	W	D	Wt.
SM-271	4 1/2	5 1/2	3 1/2	1 #
SM-272	6 1/2	5 1/2	3 1/2	1 1/2



## DELUXE AMPLIFIER FOUNDATION

This foundation is used where the chassis must be covered and appearance is important. Material is steel, finish is black wrinkle. Gray hammerstone at no extra cost. Use suffix B or GH.

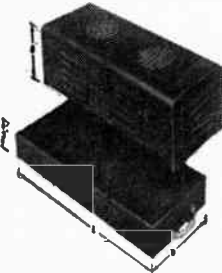
Cat. No.	Length	Depth	Wt.
DA-420	10	5	4 1/2
DA-421	12	7	5
DA-422	17	7	8
DA-423	17	10	9



## STREAMLINED INSTRUMENT CABINET

Miniature aluminum chassis MA series are usually used with this cabinet. Black wrinkle is standard.

Catalog No.	Panel Space	Height	Width	Depth	Wt.
SC-31	8x8	8	10 1/2	8 1/4	5 3/4
SC-32	8x10	8	12 1/2	8 1/4	6
SC-33	8x12	8	14 1/2	8 1/4	6 1/2
SC-34	8x14	8	16 1/2	8 1/4	7
SC-35	8x16	8	18 1/2	8 1/4	7 3/4
SC-36	12x18	12	20 1/2	12	15



## AMPLIFIER FOUNDATIONS

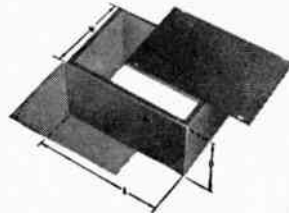
These consist of a chassis and perforated metal cover. They have ample ventilation. Handles are included in each package. Black wrinkle standard.

Catalog No.	Height	Width	Depth	Chassis Height	Shpg. Wt.
AF-240*	6	7 3/8	5 1/8	2	2
AF-241	8 3/8	9 5/8	5 1/8	2 1/2	3
AF-242	8 3/8	13 3/8	5 1/8	2 1/2	4 3/8
AF-243	8 3/8	17 1/8	7 1/8	2 1/2	6
AF-244	8 3/8	17 1/8	10 1/8	3	8

\* Has one handle only — at top.

## METAL UTILITY CABINETS

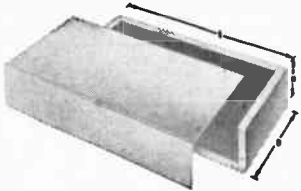
Catalog No.	Wt.	Stl.	D	W	L	Alm.
CAB-1	3/4	2"	4"	4"	4"	3 3/8
CAB-2	1	3"	5"	4"	3 1/2	3
CAB-3	1 1/2	4"	5"	6"	3 1/2	3 1/2
CAB-4	2 1/2	6"	6"	6"	1	1
CAB-5	3 1/4	5"	6"	9"	1 1/4	1 1/4
CAB-6	4 3/4	7"	8"	10"	2	2
CAB-7	5	6"	7"	12"	2	2
CAB-8	6	8"	10"	10"	2 1/2	2 1/2
CAB-9	7	8"	11"	12"	2 3/4	2 3/4
CAB-10	7	7"	9"	15"	2 3/4	2 3/4



This model allows complete accessibility to the interior of the unit. All work may be completed before cover is installed.

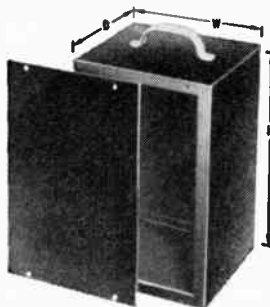
Cat. No.	D	L	H	Covers Only
HA-10	3x4	x1 1/2		HAC-10
HA-11	4x5	x2		HAC-11
HA-12	4x8	x2		HAC-12
HA-13	5x9 1/2	x2 1/2		HAC-13
HA-14	6x12	x2 1/2		HAC-14
HA-15	7x15	x2 1/2		HAC-15

## UTILITY BOX — REMOVABLE COVER



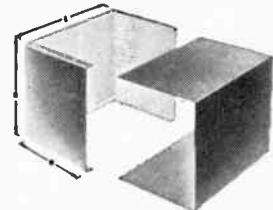
## UTILITY CABINET WITH PLATFORM CHASSIS INCLUDED

Catalog No.	Wt.	Cabinet Size HWD	Chassis Size
HA-201	1	4x4x2	3 1/8x1 7/8
HA-202	1 1/2	4x5x3	4 1/8x2 7/8
HA-203	1 1/2	5x4x3	3 1/8x2 7/8
HA-204	2 1/4	6x5x4	4 1/8x3 7/8
HA-205	2 1/4	5x6x4	5 1/8x3 7/8
HA-206	3	6x6x6	4 7/8x5 7/8



## MINIATURE CABINETS

Aluminum Gray Hammerstone Cat. No.	Etched Aluminum Cat. No.	L	H	W
M-51	M-81	2 3/4	2 1/8	1 5/8
M-52	M-82	2 3/4	2 1/8	2 3/8
M-53	M-83	3 1/4	2 1/8	1 1/8
M-54	M-84	3 1/4	2 1/8	1 5/8
M-55	M-85	4	2 1/8	1 5/8
M-56	M-86	4	2 1/4	2 1/4
M-57	M-87	4	x2	x2 3/4
M-58	M-88	4 1/4	x2 1/4	x1 1/2
M-59	M-89	5	x2 1/4	x2 1/4
M-60	M-90	5	x4	x3
M-61	M-91	5 1/4	x3	x2 1/8
M-62	M-92	6	x5	x4
M-63	M-93	7	x5	x3
M-64	M-94	8	x6	x3 1/2
M-65	M-95	10	x2	x1 5/8
M-66	M-96	10	x6	x3 1/2
M-67	M-97	12	x2 1/2	x2 1/4
M-68	M-98	12	x7	x4
M-69	M-99	17	x5	x4



## CARRY CASE

This utility case has a handle at the top, embossed feet on the bottom and both sides removable. Finish is black wrinkle, gray hammerstone or unpainted at no extra cost.

Catalog No.	Steel	Alum.	D	W	H	SHP. Wt.
CC-281	CCA-291	5	6	9	3 1/2	1 1/8
CC-282	CCA-292	5	9	6	3 1/2	1 1/8
CC-283	CCA-293	6	7	12	4	1 1/2
CC-284	CCA-294	6	12	7	4	1 1/2
CC-285		7	7 3/4	15	5	
CC-286		8	10	10	5	
CC-287		7	15	9	5	

## CHROME VENTILATING LIUVERS

These are made of stainless steel with a high polish finish. They fit our sloping face cabinets but can be adopted to any unit. They fit behind a 2x4 3/8 rectangular hole and mount on 4-27/32 centers. Sold pair with screws.

Catalog No. TRM-40



CALIFORNIA CHASSIS CO. — Lynwood, California

# Vari-Flex® CHASSIS and POWER SUPPLIES

**For Design and Research Circuitry**

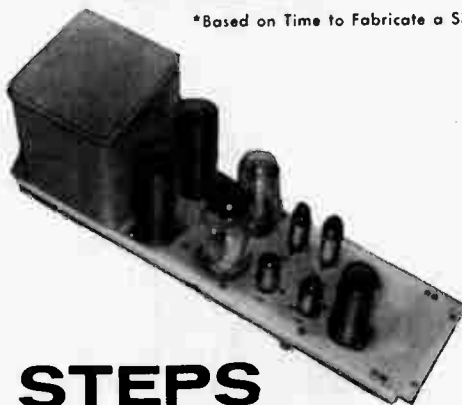
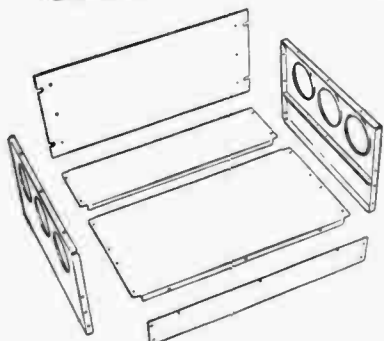
**Easy to change when requirements change**

- Combines ready-to-assemble chassis with high quality regulated power supplies — Saves time — Construction starts where it should with the circuits proper.
- Instantly demountable construction for circuit salvage or substitution.

**SAVE VITAL TIME**

**Basic Chassis and Power Supply ready for your circuitry in 15 Minutes instead of 12 Hours\* and reusable indefinitely!!**

\*Based on Time to Fabricate a Similar Unit From Standard Components



**MATERIALS ALL HARDWARE INCLUDED**

FP: Aluminum  
 CP1 & CP2: Aluminum or steel  
 SP1 & SP2: 18 Gauge mild steel  
 BP: 20 Gauge mild steel  
 OTHER PARTS: Cadmium plated steel not less than .0005. Bright Lusteron Finish to double life of cadmium plating.

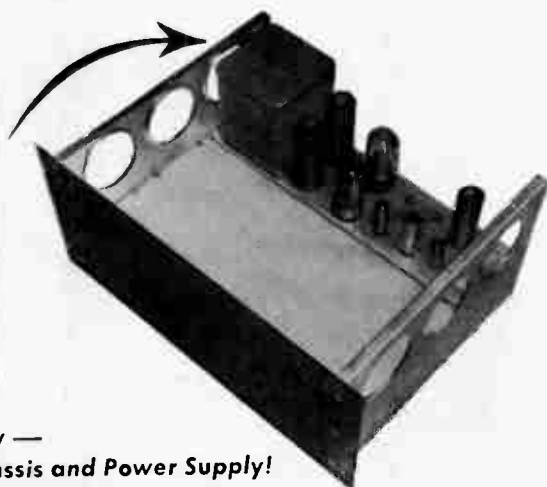
## 2 QUICK STEPS

- 1** Assemble Breadboard Chassis From Standard Vari-Flex Panels
- 2** Choose required Standard Vari-Flex Power Supply From This Group

SPECIFICATIONS AND LIST PRICES FOR POWER SUPPLIES			
MODEL and PRICE	REGULATION (UPPER LIMITS)	VOLTAGE RANGE	NOMINAL CURRENT MA
H105+ \$96.00	0.2%	150-350	100
H106* \$159.00	0.03%	200-350	250
H107+ \$167.00	0.03% ca 1% 0.03%	150-350 -150 -105	100 20 2
H108* \$211.00	0.02%	150-300 and -150 or +150 and +300-450	150 150 150 Total

†6.3 volts @ 5 amp. Fil.      \*6.3 volts @ 6 amp. Fil.

**Then — demount YOUR experimental circuitry only — and re-use basic Vari-Flex Chassis and Power Supply!**



COMPLETE CHASSIS LIST PRICES			
Unit Price	Unit Price	Unit Price	Unit Price
9 in.	13½ in.	9" with Shields	13½" with Shields
<b>\$15.95</b>	<b>\$19.55</b>	<b>\$23.57</b>	<b>\$28.05</b>

LIST PRICES FOR INDIVIDUAL CHASSIS PARTS			
FP	\$2.50	CP-1 steel	\$1.98
BP	1.75	CP-1 alum.	2.70
SP-1	8.90	CP-2 steel	2.75
SP-2	10.50	CP-2 alum.	3.55
CP-3 steel	\$2.36	TPS-1	4.60
CP-3 alum.	3.13	TPS-2	\$5.25
		BPS-1	3.02
		BPS-2	3.34







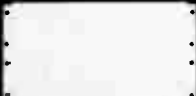




**Hamner Electronics Co., Inc.**

PRINCETON, NEW JERSEY

West Coast Office: Redwood City, California

# Vari-Flex® CHASSIS and POWER SUPPLIES

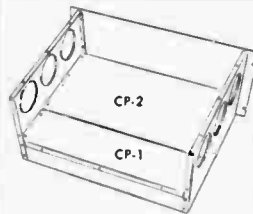
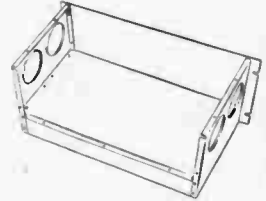
## STANDARD VARI-FLEX PANELS

PANEL	TITLE	CODE	SIZE
	FRONT PANEL	FP	8¾" x 19"
	SIDE PANEL	SP-1	8½" x 9"
	SIDE PANEL	SP-2	8½" x 13½"
	CHASSIS PLATE	CP-1	4½" x 17"
	CHASSIS PLATE	CP-2	9" x 17"
	CHASSIS PLATE	CP-3	6¾" x 17"
	BACK PANEL	BP	3" x 17"
	TOP SHIELD	TPS-1 TPS-2	Use with SP-1 Use with SP-2
	BOTTOM SHIELD	BPS-1 BPS-2	Use with SP-1 Use with SP-2

## A FEW OF THE MANY POSSIBLE COMBINATIONS

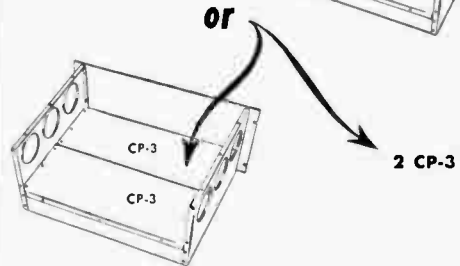
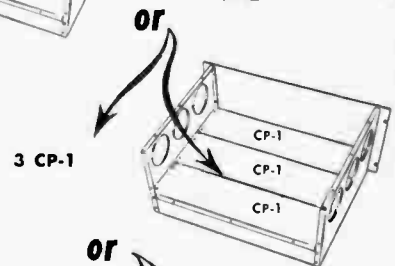
### 9" Vari-Flex Chassis Assembly — using

1 FP 1 CP-2  
1 BP or  
2 SP-1 2 CP-1

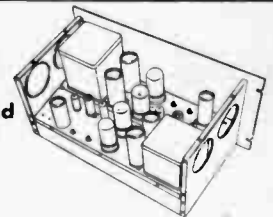


### 13½" Vari-Flex Chassis Assembly — using

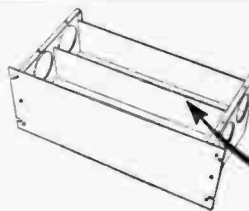
1 FP 1 CP-1  
1 BP 1 CP-2  
2 SP-2



### 9" Vari-Flex Chassis Mounting Two Low Voltage Regulated Power Supply Strips H-105 and H-106



### 9" Vari-Flex Chassis Assembly — using Additional BP as internal shield



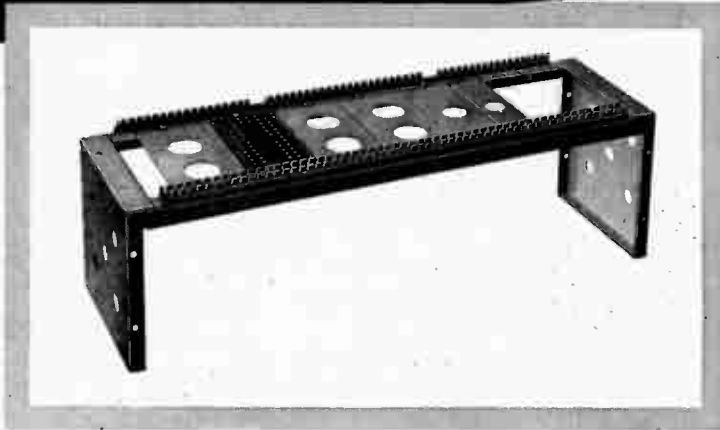
**Hamner Electronics Co., Inc.**

PRINCETON, NEW JERSEY

West Coast Office: Redwood City, California

# SPEED-CHASSIS

SPECIFIC PRODUCTS



### CHASSIS:

Chassis only 5" wide, 5/4" deep, 16 7/8" long; 20 ga. steel heavily cad. plated: 4 insulated tie-point strips, 1 grounded. Ea. C-100 \$ 4.95

Chassis Kit plus assortment of plates. Ea. Kit..... CK-200 9.95

Chassis Super-Kit: One chassis kit CK-200 plus rack panel and dust cover. Ea. Kit..... CK-300 18.95

### INDIVIDUAL PLATES FOR:

Single, 7-pin miniature, 1 1/8" wide, ea.....	P-175	\$ .20
Double, 7-pin miniature, 1 1/8" wide, ea.....	P-17D	.25
Single, 7-pin Vector turret lug, 1 1/8" wide, ea... P-17ST		.35
Double, 7-pin Vector turret lug, 1 1/8" wide, ea... P-17DT		.40
Triple, 7-pin Vector turret lug, 1 1/8" wide, ea... P-17TT		.45
Single, 9-pin miniature, 1 3/8" wide, ea.....	P-19S	.23
Double, 9-pin miniature, 1 3/8" wide, ea.....	P-19D	.28
Single, 9-pin Vector turret lug, 1 3/8" wide, ea... P-19ST		.35
Double, 9-pin Vector turret lug, 1 3/8" wide, ea... P-19DT		.40
Triple, 9-pin Vector turret lug, 1 3/8" wide, ea... P-19TT		.45
Single, actal, 1 1/2" centers, 2 1/8" wide, ea.....	P-28AS	.26
Double of preceding item, ea.....	P-28AD	.31
Single, actal, 1 5/8" centers, 2 1/8" wide, ea.....	P-28BS	.26
Double of preceding item, ea.....	P-28BD	.31
Valume control, ea.....	P-11V	.35
Universal transformer (2 req'd), 1 1/8" wide, pr... P-11T		.55
Blank, 1 1/8" wide, ea.....	P-11B	.15
Blank, 1 3/8" wide, ea.....	P-21B	.15
Blank, 2 1/8" wide, ea.....	P-31B	.15
(All plates heavily cad. plated 20 ga. steel)		
11 farklet lugs, ea. side, bakelite, 2 1/8" wide, ea..	BP-31LA	.95

### PANELS:

5 1/4" x 19", .024 steel with formed edges, drilled to match tapped holes in rack brackets, gray prime coat finish, ea..... PA-150 1.85

### RACK BRACKETS:

For mounting chassis in st'd rack (2 req'd), pr.... RB-200 1.20

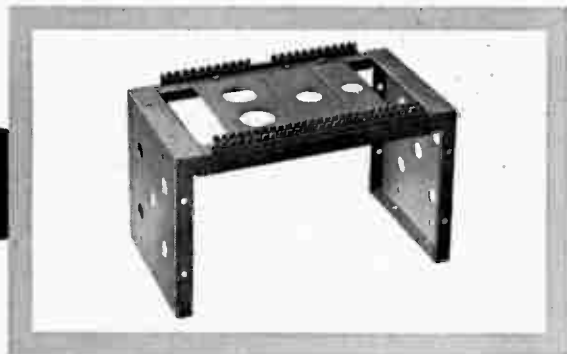
Same as above except for mounting two chassis together. Pr..... RB-400 1.75

### DUST COVERS:

Gray hammertone finish, with suitable bracket for mounting over chassis, ea..... DC-10 6.25

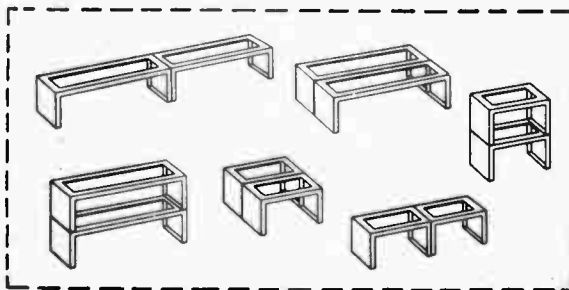
### POWER SUPPLIES:

Power supply, D.C., adjustable from 75 v. to 275 v. @ 50 ma., adequately filtered; mounting plate to fit C-100 chassis, 4" wide; power supply; filter 6.3 3A, ea..... APS-275A 39.95



half-size

# SPEED-CHASSIS



### CHASSIS:

Chassis only, 5" wide, 5 1/4" deep, 8 7/8" long; 20 ga. cad. pl. steel, 4 insulated tie-point strips, 1 grounded, ea..... C-50 \$4.95

Prices and designations for individual plates, panels, rack brackets, dust covers and power supplies are the same as shown for the full-size Speed-Chassis.

Stacking and placing arrangements are extremely varied; either unit or units in combination may be placed side-to-side, end-to-end, or one on top another on bench or on a panel to serve practically every need. Mounting holes for these arrangements are already punched. Both Chassis are preassembled; controls may be mounted on either end. A few examples of the many possible arrangements are illustrated.

All prices and specifications subject to change. All prices net F.O.B. Los Angeles





**SWITCHES**

**SUB-MINIATURE ROTARY SWITCHES**



The PS series ceramic sub-miniature rotary switches are of highest quality, "packaging" the most complex circuit switching in the smallest space for present day military and commercial electronic equipment.

Grade L-5A steatite insulation per Mil-5-

3786. All metal parts except clips and contacts meet 25 hour salt-spray tests. 1 1/8" diam. 1/4" long bushing—shaft 1/8" diam. x 1 1/4" long from mtg. surface. 30° indexing with fixed stop. Rated at 0.5 amps at 6 V.D.C.; 100 milliamp at 110 V.A.C.

Total Poles	No. of Positions	Poles per Section	No. of Sections	Cat. No. Shorting	Cat. No. Non-Shorting	List Price
1	11	1	1	PS-100	PS-101	\$ 8.00
2	11	1	2	PS-102	PS-103	10.00
2	5	2	1	PS-104	PS-105	8.00
3	11	1	3	PS-106	PS-107	12.00
3	3	3	1	PS-108	PS-109	8.00
4	5	2	2	PS-110	PS-111	10.00
4	2	4	1	PS-112	PS-113	8.00
6	5	2	3	PS-114	PS-115	12.00
6	3	3	2	PS-116	PS-117	10.00
8	2	4	2	PS-118	PS-119	10.00
9	3	3	3	PS-120	PS-121	12.00
12	2	4	3	PS-122	PS-123	12.00

**SEPARATE SUB-MINIATURE STEATITE SECTIONS**

Use with index assemblies P-501 thru P-511 listed below for fixed stop indexing, and switching not supplied in the above completed PC series switches.

No. Poles	No. Positions	Catalog No. Shorting	Catalog No. Non-Shorting
1	2-11	PS-20	PS-21
2	2-5	PS-22	PS-23
3	2-3	PS-24	PS-25
4	2	PS-26	PS-27

List Price \$4.50

**SEPARATE SUB-MINIATURE INDEX ASSEMBLIES**

All index assemblies listed below are designed for a maximum 3 sections and contain the following: (1) index and shaft assembly, (1) KC-6 pointer knob, (2) 3/32" spacers, (2) 1/16" spacers (6) 1/8" spacers, (2) 3/16" spacers, (2) 1 1/8" tie bolts, nuts, lockwashers, washers, and (16) plastic spacer washers.

No. Positions	Catalog No.	No. Positions	Catalog No.
2	P-501	7	P-506
3	P-502	8	P-507
4	P-503	9	P-508
5	P-504	10	P-509
6	P-505	11	P-510
		continuous rotation	P-511

List Price \$4.50

**MINIATURE PHENOLIC ROTARY SWITCHES**

**PA-1000 SWITCHES PHENOLIC INSULATION**

A complete line superior to the 1400 Series in switching, and equal to the PA-2000 Series in physical size. Index assemblies and hardware are identical to PA-2000 Series accessories. High-strength, high-resin, laminated phenolic insulation per MIL-P-3115. One-piece shaft construction permits accurate indexing. Adjustable stop permits selection of positions or continuous rotation (11 active positions, 1 off-position). All metal parts, except clips and contacts, are treated to pass 25 hour salt-spray test. Rating 150 milliamperes at 110 volts AC. 2 amperes at 15 volts DC. Excellent r.f. characteristics. Shaft 1 1/8" from bushing.



**MINIATURE SWITCHES WITH 30° INDEXING**

Total Number Poles	Total Positions	Poles Per Section	Number Sections	Cat. No. Shorting	Cat. No. Non-Shorting	List Price
1	2-11	1	1	PA-1000	PA-1001	\$2.50
2	2-5	2	1	PA-1002	PA-1003	2.50
2	2-11	1	2	PA-1004	PA-1005	3.60
3	2-3	3	1	PA-1006	PA-1007	2.50
3	2-11	1	3	PA-1008	PA-1009	4.50
4	2	4	1	PA-1010	PA-1011	2.50
4	2-5	2	2	PA-1012	PA-1013	3.60
4	2-11	1	4	PA-1014	PA-1015	5.30
5	2-11	1	5	PA-1016	PA-1017	6.20
6	2-3	3	2	PA-1018	PA-1019	3.60
6	2-5	2	3	PA-1020	PA-1021	4.50
6	2-11	1	6	PA-1022	PA-1023	7.00
8	2	4	2	PA-1024	PA-1025	3.60
8	2-5	2	4	PA-1026	PA-1027	5.30
10	2-5	2	5	PA-1030	PA-1031	6.20
12	2	4	3	PA-1028	PA-1029	4.50
12	2-5	2	6	PA-1032	PA-1033	7.00

**SPECIAL CIRCUITS**

1 2-10 1 1 PA-1034 ..... \$2.50  
(Nine active contacts, all shorted to common contact in full CCW position, and progressively opened and dropped with CW rotation).

1 2-10 1 1 PA-1040 ..... 2.50  
(Nine active contacts, all open in full CCW position and progressively picked up and shorted to common contact with CW rotation).

**60° INDEXING SWITCHES  
(1 1/2" SPACING BETWEEN SECTIONS)**

1	2-6	1	1	PA-1035	.....	2.90
2	2-6	1	2	PA-1037	.....	3.60

**SEPARATE MINIATURE PHENOLIC SECTIONS**

Use with index assemblies No. PA-300, PA-301, PA-302, (except as noted) for assembly of special switches to meet your requirements.

Poles	Positions	Indexing	Cat. No. Shorting	Cat. No. Non-Shorting	List Price
1	2-11	30°	PA-30	PA-31	\$1.20
2	2-5	30°	PA-32	PA-33	1.20
3	2-3	30°	PA-34	PA-35	1.20
4	2	30°	PA-36	PA-37	1.20
1	2-5	30°	PA-38	PA-39	1.20

(All unused contacts one side rotor contact connected and shorted out)

1 2-11 30° PA-40 PA-41 \$1.20

(All unused contacts connected and shorted out).

1 2-10 30° PA-43 ..... 1.20

(Nine active contacts, all shorted to common contact in full CCW position, and progressively opened and dropped with CW rotation).

1 2-10 30° PA-49 ..... 1.20

(Nine active contacts, all open in full CCW position, and progressively picked up and shorted to common contact with CW rotation).

1 2-6 60° ..... PA-45 1.20

(Use with 60° Index Assemblies PA-304 or PA-305).

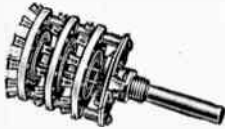
## SWITCHES (Cont'd)

### MINIATURE CERAMIC ROTARY SWITCHES

#### PA-2000 SWITCHES

#### STEATITE INSULATION

The assemblies are identical to those of the PB-1000. New Small Size!  $1\frac{3}{16}$ " diam. gives saving of  $\frac{3}{16}$ " over standard switches. One piece shaft construction for accurate indexing; adjustable stop allows selection of positions or continuous rotation; meet 25 hour salt spray tests. Available as complete switches or separate assemblies. Same ratings as the larger 2500 series switches plus excellent r.f. characteristics. Shaft  $1\frac{7}{8}$ " from bushing.



### MINIATURE SWITCHES WITH 30° INDEXING

Total Number Poles	Total Positions	Poles Per Section	Number Sections	Cat. No. Shorting	Cat. No. Non-Shorting	List Price
1	2-12	1	1	PA-2000	PA-2001	\$3.30
2	2-6	2	1	PA-2002	PA-2003	3.30
2	2-12	1	2	PA-2004	PA-2005	4.70
3	2-5	3	1	PA-2006	PA-2007	3.30
3	2-12	1	3	PA-2008	PA-2009	6.00
4	2-6	2	2	PA-2010	PA-2011	4.70
4	2-12	1	4	PA-2012	PA-2013	7.20
5	2-3	5	1	PA-2014	PA-2015	3.30
5	2-12	1	5	PA-2016	PA-2017	8.60
6	2	6	1	PA-2018	PA-2019	3.30
6	2-5	3	2	PA-2020	PA-2021	4.70
6	2-6	2	3	PA-2022	PA-2023	6.00
6	2-12	1	6	PA-2024	PA-2025	10.00
8	2-6	2	4	PA-2026	PA-2027	7.20
9	2-5	3	3	PA-2028	PA-2029	6.00
10	2-3	5	2	PA-2030	PA-2031	4.70
10	2-6	2	5	PA-2032	PA-2033	8.60
12	2	6	2	PA-2034	PA-2035	4.70
12	2-6	2	6	PA-2036	PA-2037	10.00
15	2-3	5	3	PA-2038	PA-2039	6.50
18	2	6	3	PA-2040	PA-2041	6.50

### SPECIAL CIRCUITS

1	2-10	1	1	PA-2052	.....	3.00
<i>(Nine active contacts, all shorted to common contact in full CCW position, and progressively opened and dropped with CW rotation).</i>						
1	2-10	1	1	PA-2042	.....	3.00
<i>(Nine active contacts, all open in full CCW position, and progressively picked up and shorted to common contact with CW rotation).</i>						
2	2-12	1	2	PA-2048	PA-2049	6.50
<i>(Coin silver clips and contacts)</i>						
2	4	1	2	PA-2050	.....	3.90
<i>(For Switching dual lines)</i>						

### MINIATURE SWITCHES WITH 60° INDEXING

1	2-6	1	1	.....	PA-2043	3.00
2	2-6	1	2	.....	PA-2045	4.20

*( $1\frac{1}{2}$ " spacing between sections)*

### SEPARATE INDEX ASSEMBLIES

Indexing	Rear Shaft Length	Suggested No. Sections	Catalog Number	List Price
30°	2"	1 to 3	PA-300	\$1.90
30°	4"	4 to 6	PA-301	2.50
30°	6"	7 to 9	PA-302	3.30
60°	2"	1 to 3	PA-304	2.00
60°	4"	4 to 6	PA-305	2.60

Same for PA-2000 and PA-1000 Series.

### SEPARATE STEATITE SECTIONS

Use with Index Assemblies No. PA-300, PA-301, PA-302 (except as noted) for assembly of special switches to meet your requirements.

No. Poles	No. Positions	Indexing	Catalog No. Shorting	Catalog No. Non-Shorting	List Price
1	2-12	30°	PA-0	PA-1	\$1.65
2	2-6	30°	PA-2	PA-3	1.65
3	2-5	30°	PA-4	PA-5	1.65
5	2-3	30°	PA-6	PA-7	1.65
6	2	30°	PA-8	PA-9	1.65
1	2-5	30°	PA-10	PA-19	1.65

*(Unused contacts one side of common connected and shorted out).*

1	2-11	30°	PA-11	PA-18	1.65
---	------	-----	-------	-------	------

*(All unused contacts connected and shorted out.)*

1	2-10	30°	PA-12	.....	1.65
---	------	-----	-------	-------	------

*(Nine active contacts, all open in full CCW position and progressively picked up and shorted to common contact with CW rotation).*

1	2-10	30°	PA-13	.....	1.65
---	------	-----	-------	-------	------

*(Nine active contacts, all shorted to common contact in full CCW position, and progressively opened and dropped with CW rotation).*

1	2-6	60°	.....	PA-17	1.65
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*(Use with 60° index assemblies PA-304 or PA 305).*

### COIN SILVER CLIPS AND CONTACTS

1	2-12	30°	PA-16	*PA-21	\$1.65
2	2-5	30°	PA-14	*PA-23	1.65
4	2	30°	PA-15	*PA-24	1.65

### ROTARY SELECTOR SWITCHES 1400 SERIES PHENOLIC INSULATION



Series 1400 offers compact design and quality construction. Laminated phenolic insulation. Mounting Bushings  $\frac{3}{8}$ " x 32 thd. x  $\frac{3}{8}$ " long. Shafts  $1\frac{7}{8}$ " from end of bushing. Positive 30° index with adjustable stop. Rating and applications same as 2500 series.

### 1400 SERIES PHENOLIC SWITCHES

Total No. Poles	No. Positions	Poles Per Section	No. Sections	Cat. No. Shorting	Cat. No. Non-Shorting	List Price
1	2-6	1	1	1400	1401	\$2.90
1	2-11	1	1	1402	1403	2.90
2	2-5	2	1	1404	1405	2.90
2	2-6	1	2	1410	1411	3.60
2	2-11	1	2	1412	1413	3.60
3	2-3	3	1	1406	1407	2.90
3	2-6	1	3	1420	1421	4.50
3	2-11	1	3	1422	1423	4.50
4	2	4	1	1408	1409	2.90
4	2-5	2	2	1414	1415	3.60
4	2-6	1	4	1426	1427	5.30
4	2-11	1	4	1428	1429	5.30
6	2-3	3	2	1416	1417	3.60
6	2-5	2	3	1424	1425	4.50
8	2	4	2	1418	1419	3.60
8	2-5	2	4	1430	1431	5.30

### SEPARATE PHENOLIC SECTIONS

**STANDARD SECTIONS** — .064" rotor slot for use with P-121, P-122, P-123 Indexes.

**DELUXE SECTIONS** — .187" rotor slot for use with P-270, P-271, P-272 Indexes. This is strongest, most reliable construction.

*(Continued on next page)*



**SWITCHES (Cont'd)**

(Continued from previous page)

No. Poles	No. Positions	Standard Shorting	Deluxe Shorting	Standard Non-Shorting	Deluxe Non-Shorting	List Price
1	2-6	A	AD	H	HD	\$1.20
1	2-11	B	BD	J	JD	1.20
2	2-5	C	CD	K	KD	1.20
3	2-3	D	DD	L	LD	1.20
4	2	E	ED	M	MD	1.20
4	2-3	EE	EED	..	BBD	1.65
1	2-5	F	FD	..	AAD	1.20
(Unused contacts one side of common connected and shorted out.)						
1	2-10	G	GD	..	CCD	1.20
(All unused contacts connected and shorted out.)						
1	2-10	PI	PID	..	..	1.20

Nine active contacts, all open in full CCW position, and progressively picked up and shorted to common contact with CW rotation.)

Combine for resistance decade } N ND .. .... 1.20  
                                  } P PD .. .... 1.20  
Capacitance decade } Q QD .. .... 1.20

**SEPARATE INDEX ASSEMBLIES — same as 2500 series**

**CAT. NO. 1443:** "23 CLIPPER" Single Section Single Pole, 23 active positions; Shorting contacts; 15° positive indexing requiring only 1" overall behind panel. Continuous rotation provides 23 active positions, 1 "off" position; and eliminates the necessity of recycling back through all other positions to reach No. 1.  
List Price \$2.75

**CAT. NO. 1444:** Same as 1443 except 2 sections, 2 poles.  
List Price \$4.00

**CAT. NO. 1448:** 6 Pole, 3 Position, Non-Shorting Contacts, Spring Return Index, both sides to center. This switch will replace any unit from 2 pole, 2 position to 6 pole, 3 position. Requires only 1" overall depth behind panel. Ideal for PA and intercom applications.  
List Price \$2.75

**CAT. NO. 1449:** 6 Pole, 3 Position, Non-Shorting Contacts, Spring Return Index one side to center, Positive Index, opposite side to center. Otherwise same as 1448 above.  
List Price \$2.75

**CAT. NO. 1450:** "ECONO-SWITCH" — 4 Pole, 2 Position, Non-Shorting, Positive leaf-type spring index. Staked spacer to front plate construction requires only 3/8" depth behind the panel. Can be used as SPST and up to 4 pole, 2 position.  
List Price \$1.40

**CAT. NO. 1451:** "PERMA-SWITCH" 4 Pole, 2 Position, Non-Shorting Contacts, Spring Return Index. Has the same long life coil spring index as 1448 and 1449. Designed particularly for long, hard use in industrial test equipment and simple "press to talk" intercom systems.  
List Price \$2.00

**SECTIONS ONLY FOR 1443 — 1444**

**CAT. NO. W:** For replacement on old type 1443 switches having standard flat shaft and .064" wide rotor slot. List Price.....\$1.65

**CAT. NO. WD:** For replacement in above 1443 and 1444 switches having deluxe shaft and .187" wide rotor slot (DD type).  
List Price.....\$1.65



**DUAL SPEAKER SWITCH MOUNTING KIT**

Kit No. PK-300 — Contains complete assembly for switching between dual speakers such as auto rear seat and front seat speakers including etched dial-mounting plate and complete installation instructions.

- Contents:
- 1 Cat. No. 1484 Dual speaker switch
  - 1 Cat. No. P-216 Mounting bracket and dial
  - 1 Cat. No. P-401 Split knurl knob, black.
  - 2 Self tapping sheet metal mounting screws

**KIT NO. PK-300**.....List Price \$1.50

**ROTARY SELECTOR SWITCHES  
2500 SERIES — STEATITE INSULATION**



The 2500 ceramic insulation series are primarily used for band change and general tap switch application where miniaturization is not a necessity. Grade L5 Steatite insulation. Rated 2 amps at 15 V.D.C., 150 milliamps at 110 V.A.C. Bushing 3/8" — 32 thd., 3/8" long, shaft 1 7/8" long from end of bushing. 30° indexing-adjustable stop. See "Ham Switches" for 60° and 90° indexing. Indexes and hardware interchangeable with 1400 phenolic series.

Total No. Poles	No. Positions	Poles Per Section	No. Sections	Cat. No. Shorting	Cat. No. Non-Shorting	List Price
1	2-6	1	1	2500	2501	\$3.30
1	2-11	1	1	2502	2503	3.30
2	2-5	2	1	2504	2505	3.30
2	2-6	1	2	2510	2511	4.70
2	2-11	1	2	2512	2513	4.70
3	2-3	3	1	2506	2507	3.30
3	2-6	1	3	2520	2521	6.00
3	2-11	1	3	2522	2523	6.00
4	2-5	2	2	2514	2515	4.70
6	2-3	3	2	2516	2517	4.70
6	2-5	2	3	2524	2525	6.00

**SEPARATE CERAMIC SECTIONS**

**STANDARD SECTIONS** — .064" rotor slot for use with P-121, P-122, P-123 Indexes.

**DELUXE SECTIONS** — .187" rotor slot for use with P-270, P-271, P-272 Indexes. This is strongest, most reliable construction.

No. Poles	No. Positions	Standard Shorting	Deluxe Shorting	Standard Non-Shorting	Deluxe Non-Shorting	List Price
1	2-6	T	TD	X	XD	\$1.65
1	2-11	U	UD	Y	YD	1.65
2	2-5	R	RD	RR	RRD	1.65
3	2-3	S	SD	SS	SSD	1.65
4	2	V	VD	Z	ZD	1.65
1	2-10	GG	GGD	..	FFD	1.65

(All unused contacts connected and shorted out)

1 2-10 PIS PISD .. .... 1.65  
(Nine active contacts, all open in full CCW position, and progressively picked up and shorted to common contact with CW rotation.)

- Combine for .. { NSD .. .... 1.65  
resistance decade .. { PSD .. .... 1.65  
Capacitance decade .. { QSD .. .... 1.65

**SEPARATE INDEX ASSEMBLIES**

**STANDARD** — 2 piece shaft, 0.64" thick flat shaft through sections, for use with "standard" 2500 series steatite or 1400 series phenolic sections. Individually cartoned. 30° positive index.

Catalog Number	Rear Shaft	Suggested No. Sections	List Price
P-121	2"	1 to 3	\$1.90
P-122	4 1/4"	3 to 4	2.50
P-123	7"	5 to 8	3.30

(One 1435W index; one P-120 pointer knob; and sufficient hardware to assemble complete switches are included in each index assembly.)

**DELUXE** — 1 piece shaft, .187" thick flat shaft (DD type) through sections, for use with Deluxe 2500 series steatite or 1400 series phenolic sections (with .187" rotor slot). Individually cartoned. 30° positive index. This is strongest, most reliable construction.

Pole	Shaft	Sections	Price
P-270	2"	1 to 3	1.90
P-271	4"	3 to 5	2.50
P-272	8"	5 to 10	3.30

(One index, one P-120 pointer knob; and sufficient hardware to complete switch ore included in each index assembly.)



## SWITCHES (Cont'd)

### HAM SWITCHES

Heavy duty deluxe ceramic construction needed for "Ham" application is available in both 60° and 90° indexing for 6, 5, and 4 band application with an adjustable stop. Size and hardware same as 2500 series. Breakdown voltage, 2000 volts, AC-RMS. Rating 150 milliamp at 150 V.A.C.; 4 milliamp at 1500 V.A.C.; 2 amps at 15 V.D.C. For use with tubes operating at voltages up to 1 KV and inputs up to 150 watts.



#### 60° HAM TYPE SWITCHES

Total No. Poles	No. Positions	Poles per Section	No. Sections	Catalog No.	List Price
1	2 to 6	1	1	2550	\$3.00
2	2 to 6	1	2	2551	4.25
3	2 to 6	1	3	2552	5.50
4	2 to 6	1	4	2553	6.75
5	2 to 6	1	5	2554	8.00

#### 60° SEPARATE SECTION

1 pole 2-6 position Non-Shorting Deluxe Cat. No. ZZD \$1.65

#### 60° SEPARATE INDEX ASSEMBLIES

Ham Type — 60° indexing. Two piece shaft construction, phenolic rear, metal front. Use with "ZZD" Ham Type sections.

(One index, knob; and sufficient hardware to complete switch are included in each index assembly.)

Catalog No.	Rear Shaft	Suggested No. Sections	List Price
P-273	2"	1 to 2	\$1.90
P-274	4 1/4"	3 to 4	2.40
P-275	7"	5 to 8	3.00

#### 90° HAM TYPE SWITCHES

Total No. Poles	No. Positions	Poles per Section	No. Sections	Catalog No.	List Price
1	2 to 4	1	1	2542	\$3.00
2	2 to 4	1	2	2543	4.25
3	2 to 4	1	3	2544	5.50
4	2 to 4	1	4	2545	6.75
5	2 to 4	1	5	2546	8.00

#### 90° SEPARATE SECTIONS

1 pole, 2 to 4 position, Non-shorting, Standard, Cat. No. XX.  
1 pole, 2 to 4 position, Non-shorting, Deluxe, Cat. No. XXD.

#### 90° SEPARATE INDEX ASSEMBLIES

Ham Type—90° indexing. Two piece metal shaft construction. Use with "XX" Ham Type sections. For intermediate voltage operation. (One Index, knob; and sufficient hardware to assemble complete switches are included in each index assembly.)

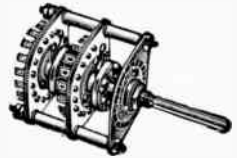
Catalog No.	Rear Shaft	Suggested No. Sections	List Price
P-170	2"	1 to 2	\$1.90
P-171	4 1/4"	3 to 4	2.40
P-172	7"	5 to 8	3.00

Use with "XXD" Deluxe Ham type section. For high voltage operation. Switches using this index will pass 2000 volts AC breakdown to ground test.

P-278	2"	1 to 2	1.90
P-279	4 1/4"	3 to 4	2.40
P-280	7"	5 to 8	3.00

### HEAVY DUTY ROTARY POWER SWITCHES STEATITE—7 1/2 Amps at 115 Volts A.C.

An accurate, long-life unit for transmitter, power supply, and specialized application. Has positive, non-stall 20° indexing, double wiping solid silver contacts. Mounting bushing 3/8"—32 thd.; 3/8" long; 2 1/4" diam. with adjustable stop and dial plate.



Total Poles	Number Positions	Number Sections	Cat. No. Shorting	Cat. No. Non-Shorting	List Price
1	2-17	1	JV-9000	JV-9001	\$16.00
2	2-8	1	JV-9032	JV-9033	16.00
2	2-17	2	JV-9004	JV-9005	26.50
3	2-5	1	JV-9002	JV-9003	16.00
3	2-17	3	JV-9008	JV-9009	37.00
4	2-8	2	JV-9034	JV-9035	26.50
4	2-17	4	JV-9012	JV-9013	47.50
5	2-17	5	JV-9016	JV-9017	58.00
6	2-5	2	JV-9006	JV-9007	26.50
6	2-8	3	JV-9036	JV-9037	57.00
6	2-17	6	JV-9020	JV-9021	68.50
8	2-8	4	JV-9038	JV-9039	47.50
9	2-5	3	JV-9010	JV-9011	37.00
12	2-5	4	JV-9014	JV-9015	47.50
15	2-5	5	JV-9018	JV-9019	58.00

#### SEPARATE SECTIONS FOR JV-9000 SERIES

1	2-17	...	KV-8	KVN-8	10.50
2	2-8	...	KV-10	KVN-10	10.50
3	2-5	...	KV-9	KVN-9	10.50

#### SEPARATE MULTIPLE FINGER SECTION

Poles	Positions	Cat. No. Shorting	Cat. No. Non-Shorting	List Price
1	2-18	KV-18	KVN-18	\$11.50

(Rotor has 17 fingers, making contact with 17 contacts on stator leaving one contact open). By cutting off unwanted fingers, this section can be adapted for many special circuits. For example, can be adapted to a one off, nine progressively shorting positions, pick up and hold each progressive position.)

#### INDEX ASSEMBLY FOR JV-9000 SERIES

Includes shaft, tie rods, spacers, nuts and lockwashers, adjustable stop pin, 2" black bar knob, and dial plate.

CAT. NO. KV-7.....List Price \$7.00

#### DIAL PLATES — 2 3/4" DIAMETER — 20° MARKINGS

P-230	Marked 1 to 5	List Price
P-232	Marked 1 to 8	Package, 5 of 1
P-231	Marked 1 to 17	\$1.75

#### \*PK-400 ANTENNA SWITCH KIT

The Centralab PK-400 Switch Kit primarily designed for UHF-VHF antenna switching. This ceramic section rotary switch is rated at 2 amps 150 V.D.C. or 150 milliamperes at 110 V.A.C. (make-break resistive load).

#### CONTAINS:

- 1 PA-2050 rotary ceramic switch, with 3/8" split knurl shaft.
- 1 P-218 etched mounting bracket-dial plate.
- 1 P-401 split knurl knob, black with chrome center.
- 2 self-tapping wood screws.



**SWITCHES (cont'd)**

**LEVER ACTION SWITCHES**



Space saving lever action phenolic switches can be mounted singly or in groups for intercoms, PA systems, test instruments and industrial applications. All metal parts except clips and contacts cadmium plated. Rated 2 amps at 15 V.D.C.; 150 milliamperes at 110 V.A.C. Mtg-

two 6-32 thrd. mtg. holes on 1 5/8" centers. 30° indexing. Furnished with mtg. screws and knob.

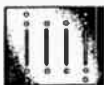
Number Poles	Number Positions	Type Indexing	Cat. No. Shorting	Cat. No. Non-Shorting	List Price
2	3	Positive	1452	1454	\$1.75
2	3	Spring Return	1453	1455	1.75
2	3	Positive Spring Return	1466	1467	1.75
4	2	Spring Return	1456	1457	2.00
4	2	Positive	1459	1458	2.00
2	3	Positive	2815	....	1.75

(Special model-railroad reversing or turnout and signal switch)

1 3 Positive .... 1475 1.75

(Primarily a replacement part for the ganged switches found in tube testers and other testing equipment.)

**MOUNTING PLATES FOR LEVER SWITCHES**



**TYPE A**—Made of .035" die cut steel, black crackle finish. Eliminate alignment problems, provide 3/4" spacing between switches. Available for 1 to 5 switch mounting. Height of all plates is 2 5/8".



**TYPE B**—Specially furnished for mounting lever switches in electrical outlet boxes. Chrome plated wall plates will fit all standard boxes with mounting holes 3 5/16" between centers. Ideal for P.A. or Intercom installations.

**MOUNTING PLATE — TYPE A**

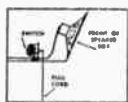
No. Switches	Length	Cat. No.	List Price
1	3/4"	P-1755	\$0.50
2	1 1/2"	P-1756	.50
3	2 1/4"	P-1757	.55
4	3"	P-1758	.70
5	3 3/4"	P-1759	.85

**WALL PLATE — TYPE B**

No. Switches	Cat. No.	List Price
2	P-221	\$0.85
1	P-222	.70

Size: 2 3/4" x 4 1/2" overall.  
3/4" spacing between switches.

**INTERCOM SYSTEM "TALK-BACK" SWITCH KIT  
ELIMINATES expensive conduit extensions**



**KIT No. PK-500**—Switch is mounted inside wall-mounted speaker-housing in multiple PA systems with "talk-back" feature. Cord extends below speaker—just pull to talk back. Replaces conduit wiring and outlet box mounting of switch. Only three holes required for mounting. Includes switch and bracket, cord, and mounting screws. List Price \$2.70

and mounting screws. List Price \$2.70

**TV ANTENNA ATTENUATOR PCH-4 SWITCH**

Eliminates "tearing" of image due to high power through use of "H" pads. Proper attenuation also eliminates "ghosting" by reducing signal strength—reduces the weaker signal in a single channel. Useful in matching impedance between antennas and receivers.

Unit has six switching positions: 1 — Regular antenna. 2 — a 10 db signal loss inserted between the antenna and receiver. 3 — a 20 db loss. 4 — a 30 db loss. 5 — a 40 db loss. 6 — a 50 db loss — disconnects antenna for areas of immediate proximity to high power transmitter.

CAT. NO. PCH-4.....List Price \$10.00



**SMALL GENERAL PURPOSE SWITCHES**

Rating 2 amperes at 15 volts DC. 150 milliamperes at 110-volts AC. Resistive load.

**TYPE 1460** — Single pole, 2 position, shorting contacts, positive index. Can be used as SPST or SPDT. For phono-radio, tone or sensitivity control. List Price \$0.85

**TYPE 1461** — Single pole, 3 position, shorting contacts, positive index. Useful in miniature band change, step type tone or sensitivity control, and P.A. channel selector switch. List Price \$1.50

**TYPE 1462** — Double pole, 2 position, shorting contacts, positive index. Useful as SPST, SPDT, DPST, DPDT — for meter reversing, P.A. channel, or switching both lines on phono-radio. List Price \$1.50

**TYPE 1463** — Single pole, 2 position, non-shorting contacts, spring return index. Useful for meter reversing or momentary intercom talk switch. Non-shorting. List Price \$1.50

**TYPE 1464** — Double pole, 2 position, non-shorting contacts, spring return index. Used as meter switch and momentary line or remote speaker return in intercoms. List Price \$1.50

**TYPE 1465** — Single pole, 4 position, shorting, positive index, with SPST AC line switch attached. The selector switch has 3 active positions and "off." The line switch operates between "off" and first active selector position. Line switch is Underwriters' approved for 3 amperes at 125 volts, 1 ampere at 250 volts A.C. Type 1465 is a replacement for "on-off" step tone control switches used in many AM and FM receivers. Shaft is 2 1/2" long from end of 1/4" bushing. List Price \$2.50

**TYPE 1472** — 2 pole, 3 position, non-shorting contacts, positive index. An economical change switch for AM, FM, phone selector to amplifier in custom installations. List Price \$1.50

**TYPE 1473** — Same as 1472 except shorting contacts List Price \$1.50

**TYPE 1483** — Single pole, 3 position, shorting contacts, positive index. Far use with dual or auxiliary rear seat auto radio speakers. Permits operation of either speaker separately or both simultaneously. List Price \$0.90

**TYPE 1484** — Single pole, 3 position remote speaker switch. Same as Cat. No. 1483 except with 1/4" bushing and 3/16" split knurl shaft. 3/16" White split knurl pointer knob, Cat. No. P-197, is furnished. List Price \$0.90

**SEPARATE H-PADS FOR TV ATTENUATOR**

"H" Pads are a combination of 5 resistors on a steatite ceramic plate — Centralab's Packaged Electronic Circuits. Solder lug terminals, phenolic coated and triple wax impregnated. Each unit clearly marked.

Packaged individually, 5 packages per carton.

Atten.	Catalog Number	Atten.	Catalog Number	List Price
10 db	PCH-10	30 db	PCH-30	\$1.50
20 db	PCH-20	40 db	PCH-40	1.50

CAT. NO. PCH-100 — set of 4. 1 of each value of above "H" Pads (in clear plastic box).....List Price \$6.00

List Price \$6.00

## SWITCH KITS

These Centralab Switch Kits afford a convenient, readily available source of stock sections, indexes, and hardware for assembling any standard or practically any special switching arrangement desired. Both the PA-410 and PA-420 Kits are packed in an attractive, strong steel cabinet designed to fit any standard steel shelving—or two or more cabinets can be placed together to form a single unit. Cabinet size: 17" wide, 11<sup>15</sup>/<sub>16</sub>" deep, and 12<sup>3</sup>/<sub>4</sub>" high. Crated shipping weight of each kit is 52 lbs. approx. The PA-410 and PA-420 Centralab Switch Kits are similar to the 414D and 419D Switch Kits except that all parts are PA-Series Miniature Switch Type.



**KIT NO. PA-420**

**MINIATURE CERAMIC SWITCH PARTS  
SECTIONS — 30° INDEXING — List Price \$258.95**

Quantity	Cat. No.	Quantity	Cat. No.	Poles per Section	No. Positions
8	PA-0	10	PA-1	1	2-12
8	PA-2	10	PA-3	2	2-6
3	PA-6	6	PA-7	5	2-3
3	PA-8	6	PA-9	6	2
4	PA-4	8	PA-5	3	2-5
3	PA-10	3	PA-19	1	2-5

(All unused contacts one side of common connected and shorted out.)

(All unused contacts connected and shorted out.)

(One off position — 9 progressively shorting positions, pick up and hold each progressive position with clockwise rotation.)

(One off position — 9 progressively shorting positions, each position progressively dropped and opened with clockwise rotation.)

**SECTIONS — 60° INDEXING**

4	PA-17	1	2-6
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**INDEX ASSEMBLIES**

(Individually cartoned — All hardware and shaft included.)

**30° INDEXING**

Quantity	Catalog No.	Description	Shaft Length
15	PA-300	For 1 to 3 sections	2"
8	PA-301	For 4 to 6 sections	4"
4	PA-302	For 7 to 9 sections	6"

**60° INDEXING**

2	PA-304	For 1 to 3 sections	2"
2	PA-305	For 4 to 6 sections	4"

**HARDWARE**

Ceramic Spacers			Screws (Tie-rods)		
Quantity	Cat. No.	Length	Quantity	Cat. No.	Length
1 doz.	P-325	1/8"	1 doz.	P-362	1"
1 doz.	P-326	3/16"	1 doz.	P-370	2"
1 doz.	P-328	1/4"	1 doz.	P-382	4"
1 doz.	P-329	9/32"	1 doz.	P-386	6"
1 doz.	P-330	5/16"			
1 doz.	P-332	3/8"		Dial Plates	
1 doz.	P-334	7/16"	5	P-178	1-3
1 doz.	P-336	1/2"	5	P-115	1-5
1 doz.	P-338	9/16"	5	P-116	1-6
1 doz.	P-340	5/8"	5	P-117	1-10
1 doz.	P-342	11/16"	5	P-118	1-11
1 doz.	P-344	3/4"	5	P-112	1-12
1 doz.	P-346	13/16"	5	P-402	1-5 60°
1 doz.	P-348	7/8"	10	P-320	Intersection shield
1 doz.	P-350	15/16"			
1 doz.	P-352	1"	2 doz.	P-394	Fibre washers
1 doz.	P-354	1 1/2"			

**KIT NO. PA-410**

**MINIATURE PHENOLIC SWITCH PARTS**

**SECTIONS — 30° INDEXING — List Price \$221.00**

Quantity	Cat. No.	Quantity	Cat. No.	Poles per Section	No. Positions
8	PA-30	10	PA-31	1	2-11
8	PA-32	10	PA-33	2	2-5
4	PA-34	6	PA-35	3	2-3
4	PA-36	6	PA-37	4	2
6	PA-38	8	PA-39	1	2-5

(All unused contacts one side of common connected and shorted out.)

(All unused contacts connected and shorted out.)

(One off position — 9 progressively shorting positions pick up and hold each progressive position with clockwise rotation.)

(One off position — 9 progressively shorting positions, each position progressively dropped and opened with clockwise rotation.)

**SECTIONS — 60° INDEXING**

4	PA-45	1	2-6
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**INDEX ASSEMBLIES**

(Individually cartoned — All hardware and shaft included.)

**30° INDEXING**

Quantity	Catalog No.	Description	Shaft Length
15	PA-300	For 1 to 3 Sections	2"
8	PA-301	For 4 to 6 sections	4"
4	PA-302	For 7 to 9 sections	6"

**60° INDEXING**

2	PA-304	For 1 to 3 sections	2"
2	PA-305	For 4 to 6 sections	4"

**HARDWARE**

Ceramic Spacers			Screws (Tie-rods)		
Quantity	Cat. No.	Length	Quantity	Cat. No.	Length
1 doz.	P-325	1/8"	1 doz.	P-362	1"
1 doz.	P-326	3/16"	1 doz.	P-370	2"
1 doz.	P-328	1/4"	1 doz.	P-382	4"
1 doz.	P-329	9/32"	1 doz.	P-386	6"
1 doz.	P-330	5/16"			
1 doz.	P-332	3/8"		Dial Plates	
1 doz.	P-334	7/16"	5	P-178	1-3
1 doz.	P-336	1/2"	5	P-115	1-5
1 doz.	P-338	9/16"	5	P-116	1-6
1 doz.	P-340	5/8"	5	P-117	1-10
1 doz.	P-342	11/16"	5	P-118	1-11
1 doz.	P-344	3/4"	5	P-112	1-12
1 doz.	P-346	13/16"	5	P-402	1-5 60°
1 doz.	P-348	7/8"	10	P-320	Intersection shield
1 doz.	P-350	15/16"			
1 doz.	P-352	1"	2 doz.	P-394	Fibre washers
1 doz.	P-354	1 1/2"			



**SWITCHES (cont'd)**

These Centralab Switch Kits afford a convenient, readily available source of stock sections, indexes, and hardware for assembling any standard or practically any special switching arrangement desired. Both the 414D and 419D Kits are packed in an attractive, strong steel cabinet designed to fit any standard steel shelving—or two or more cabinets can be placed together to form a separate unit. Cabinet size: 17" wide, 11<sup>1</sup>/<sub>16</sub>" deep, and 12<sup>3</sup>/<sub>4</sub>" high. Crated shipping weight of each kit is 52 lbs. The 414D and 419D Centralab Switch Kits contain the "Deluxe" or "DD" Index and Section construction.

**KIT NO. 414D — List Price \$251.70  
STANDARD PHENOLIC DELUXE PARTS**

**SECTIONS — 30° INDEXING**

Quantity	Cat. No. Shorting	Quantity	Cat. No. Non-Short.	Poles per Section	No. Positions
4	AD	8	HD	1	2-6
10	BD	12	JD	1	2-11
10	CD	12	KD	2	2-5
8	DD	8	LD	3	2-3
4	ED	8	MD	4	2
4	EED	2	BBD	4	2-3
3	FD	2	AAD	1	2-5
<i>(Unused contacts on side of common connected and shorted out.)</i>					
8	GD	2	CCD	1	2-10
<i>(All unused contacts connected and shorted out.)</i>					
2	P1D	..	....	1	2-10
<i>(One off, nine progressively shorting positions, pick up and hold each progressive position with clockwise rotation.)</i>					
2	ND	} Combine for resistance decade switch.			
2	PD				
2	QD				

**INDEX ASSEMBLIES — 30° INDEXING**

*(Individually cartoned — All hardware and shaft included.)*

Quantity	Catalog No.	Description	Shaft Length
15	P-270	For 1 or 2 sections	2"
8	P-271	For 3 or 4 sections	4"
8	P-272	For 5 to 10 sections	8"

**HARDWARE**

Metal Spacers			Screws (Tie-rods)		
Quantity	Cat. No.	Length	Quantity	Cat. No.	Length
1 doz.	P-124	1/4"	1 doz.	P-136	1"
1 doz.	P-125	3/8"	1 doz.	P-140	3"
1 doz.	P-126	1/2"	1 doz.	P-142	4"
1 doz.	P-127	3/4"	1 doz.	P-143	5"
1 doz.	P-128	1"	1 doz.	P-145	7"
1 doz.	P-150	1/8"	Dial Plates		
1 doz.	P-151	3/8"	Quantity	Cat. No.	Positions
1 doz.	P-152	1/8"	5	P-115	1-5
1 doz.	P-153	1 1/4"	5	P-116	1-6
1 doz.	P-154	1 1/2"	5	P-117	1-10
1 doz.	P-155	2"	5	P-118	1-11

**MISCELLANEOUS**

Quantity	Catalog No.	Description
10	P-200	Intersection shield
5	P-210	Mounting bracket — 1 1/4"
5	P-212	Mounting bracket — 2 1/4"
5	P-214	Mounting bracket — 3 1/4"
2 doz.	P-147	Tie rod nuts
2 doz.	P-148	Tie rod lockwashers
5 doz.	P-177	Fibre washers



**KIT NO. 419D**

**2500 SERIES STANDARD CERAMIC DELUXE PARTS  
SECTIONS — 30° INDEXING — List Price \$251.55**

Quantity	Cat. No. Shorting	Quantity	Cat. No. Non-Short.	Poles per Section	No. Positions
4	TD	6	XD	1	2-6
6	UD	10	YD	1	2-11
6	RD	10	RRD	2	2-5
4	SD	6	SSD	3	2-3
4	VD	6	ZD	4	2
4	GGD	2	FFD	1	2-10
<i>(All unused contacts connected and shorted out.)</i>					
3	P1SD	..	..	1	2-10
<i>(One off, nine progressively shorting positions, pick up and hold each progressive position with clockwise rotation.)</i>					
2	NSD	} Combine for resistance decade switch.			
2	PSD				
2	QSD				

**SECTIONS — 60° INDEXING**

10	ZZD	1	2-6
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**INDEX ASSEMBLIES**

*(Individually cartoned — All hardware and shaft included.)*

**30° INDEXING**

Quantity	Catalog No.	Description	Shaft Length
10	P-270	For 1 or 2 sections	2"
7	P-271	For 3 or 4 sections	4"
6	P-272	For 5 to 10 sections	8"

**60° INDEXING**

2	P-273	For 1 or 2 sections	2"
1	P-274	For 3 or 4 sections	4 1/2"
1	P-275	For 5 to 8 sections	7"

**HARDWARE**

Steatite Spacers			Screws (Tie-rods)		
Quantity	Cat. No.	Length	Quantity	Cat. No.	Length
1 doz.	P-181	1/8"	1 doz.	P-136	1"
1 doz.	P-182	3/8"	1 doz.	P-140	3"
1 doz.	P-183	1/4"	1 doz.	P-142	4"
1 doz.	P-184	1 1/2"	1 doz.	P-143	5"
1 doz.	P-185	2"	1 doz.	P-145	7"
1 doz.	P-186	3"	Dial Plates		
1 doz.	P-187	1/4"	Quantity	Cat. No.	Positions
1 doz.	P-188	3/8"	5	P-115	1-5
1 doz.	P-189	1/2"	5	P-116	1-6
1 doz.	P-190	5/8"	5	P-117	1-10
1 doz.	P-191	3/4"	5	P-118	1-11
1 doz.	P-192	1"	5	P-402 (60°)	1-5
			5	P-404 (60°)	(10-15-20 40-80)

**MISCELLANEOUS**

Quantity	Catalog No.	Description
10	P-200	Intersection shield
5	P-210	Mounting bracket — 1 1/4"
5	P-212	Mounting bracket — 2 1/4"
5	P-214	Mounting bracket — 3 1/4"
2 doz.	P-147	Tie rod nuts
2 doz.	P-148	Tie rod lockwashers
5 doz.	P-177	Fibre washers

# ADC



## PLUGS

Rugged, high quality plugs, engineered to give you years of trouble-free service. Careful selection of materials and outstanding dependability have made ADC plugs a standard in the broadcast-audio fields. Plugs test 500 V. RMS.

**TYPE PJ-5** Equivalent PL-55, WE-47. Fits 1/4" phone jacks. Black phenolic sleeve. Solder connection. Two conductor. List \$1.30.

**TYPE PJ-1** Equivalent WE-241. Heavy duty die cast frame. Black phenolic shell notched for polarity identification. Plug prongs on 5/8" centers. Three conductor. List \$4.60.

**TYPE PJ-3** Equivalent WE-310. Designed for use with 1/4" tip, ring and sleeve jacks. Molded insulation, red shell. Three conductor. List \$4.00.

**TYPE PJ-6** Equivalent WE-213. Design for applications requiring two separate 3 conductor circuits. Popularly used with operator's intercom/monitor headsets. Black shell notched for polarity identification. Plug prongs on 11/16" centers. List \$16.30.



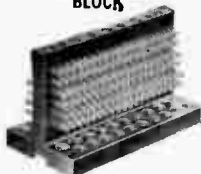
## PATCH CORDS

Consists of patch cord and two PJ-1 double plugs or cord and two PJ-5 or two PJ-3 single plugs. High quality tinned copper two conductor wire. Heavy braided cover reinforced for 6" at each end.

Cord with PJ-3 Length	Cord with PJ-5 List	Replacement Cords List	
		Plugs	List
2-foot PJ-82	\$14.50	PJ-62	\$3.50
4-foot PJ-84	15.50	PJ-64	4.00
6-foot PJ-86	16.50	PJ-66	4.70

Length	Cord with PJ-1 Plugs		Cord with PJ-5 Plugs		Replacement Cords List	
	Plugs	List	Plugs	List	Only	List
6-inch	PJ-10½	\$11.80	PJ-50½	\$5.80	PJ-20½	\$1.85
1-foot	PJ-11	12.10	PJ-51	6.05	PJ-21	2.50
2-foot	PJ-12	12.35	PJ-52	6.38	PJ-22	2.75
3-foot	PJ-13	12.65	PJ-53	6.83	PJ-23	2.90
4-foot	PJ-14	13.10	PJ-54	7.38	PJ-24	3.00
5-foot	PJ-15	13.45	PJ-55	7.93	PJ-25	3.15
6-foot	PJ-16	14.05	PJ-56	8.75	PJ-26	4.13
10-foot	PJ-10	14.88	PJ-50	9.68	PJ-20	5.25

## TERMINAL BLOCK



Type	No. Rows	No. Terminals	List
PJ-101	1	20	\$9.00
PJ-102	2	40	10.88
PJ-103	3	60	13.50
PJ-104	4	80	16.00
PJ-105	5	100	18.38
PJ-106	6	120	20.88

Molded of durable black phenolic plastic material. Terminals are .040" plated brass. Rows of terminals are graduated in length for ease of wiring, and are identified by numbering along the top row. Base dimensions 3" x 6 1/16".

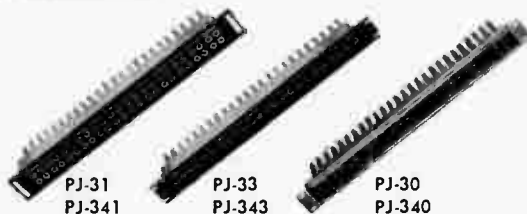


## JACKS

A dependable line of quality jacks. Frame and face plate are of one piece construction with a unique welding arrangement providing maximum strength and accuracy. Springs are nickel silver — contacts are coin silver. Frames plated and chromate treated to withstand moisture and 50-hour salt spray tests. Tinned connecting lugs. Interchangeable with any telephone jack using a 1/4" plug. Spring arrangements available as follows:

FIG.	FIG.	TYPE	FIG.	LIST
FIG. 1	FIG. 2	PJ-116	1	\$1.70
FIG. 3	FIG. 4	PJ-318	2	1.15
FIG. 5	FIG. 6	PJ-125	3	1.70
FIG. 7	FIG. 8	PJ-123	4	1.05
FIG. 9		PJ-238	5	1.20
		PJ-117	6	1.60
		PJ-203	7	1.38
		PJ-115	8	1.48
		PJ-339	9	1.60

For use with plugs PJ-1, PJ-5, except PJ-238 and PJ-339 use with PJ-3 and PJ-6.



## JACK PANELS

3 top quality jack panels for use in television and broadcast stations, theatres, recording studios, industrial paging systems or any other application requiring efficient switching and distribution of audio signals. Panels are molded of solid bakelite, reinforced with steel to provide maximum rigidity and strength. Jacks are spaced to permit use of any standard double plug with 5/8" spacing. Designation strips furnished with each panel — all panels will fit standard 19" relay rack.

Double panel. Holds 48 jacks — requires 2 1/8" panel space.

TYPE	DESCRIPTION	LIST
PJ-31	Double panel, less jacks	\$15.75
PJ-341	Double panel, with PJ-318 jacks	71.25

Single panel. Holds 24 jacks — requires 1 3/4" panel space.

TYPE	DESCRIPTION	LIST
PJ-33	Single panel, less jacks	\$14.20
PJ-343	Single panel, with PJ-318 jacks	41.88

Double panel. Holds 52 jacks — requires 1 3/4" panel space. Double designation strip. All jacks mounted on 5/8" centers.

TYPE	DESCRIPTION	LIST
PJ-30	Double panel, less jacks	\$21.50
PJ-340	Double panel with PJ-318 jacks	82.50

## AUDIO DEVELOPMENT COMPANY

MINNEAPOLIS, MINNESOTA

- Transformers
- Filters
- Reactors
- Chokes
- Plugs & Jacks
- Jack Panels



**Multi-Section Rotary Switches**

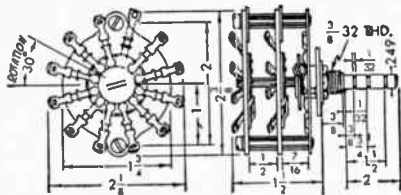


High grade, phenolic-insulated, rotary switches for radio and electronic equipment in circuits not exceeding 500 volts DC. These switches have self-wiping, silver-plated, copper alloy contacts which assure long, useful life. All models feature an adjustable stop. A 2 1/2" mounting area is required. Mounting depth is dependent on number of sections. Switches have 1/4" round shafts, 2" long, and 3/8"-32 bushings. Each switch supplied with pointer knob and mounting hardware. All switches have 1/2" spacing between sections, except the 3 and 4 section which have 1" spacing.

Shorting Type Catalog Number	Non-Shorting Type Cat. No.	No. of Circuits per Section or Gang	Total No. of Circuits per Switch	No. of Positions	List Price
1211L	1311L	1	1	2 to 11	\$1.95
1215L*	1315L*	2	2	2 to 5	1.95
1213L*	1313L*	3	3	2 to 3	2.20
1212L*	1312L*	4	4	2 to 2	2.20
1221L	1321L	1	2	2 to 11	2.75
1225L*	1325L*	2	4	2 to 5	2.75
1223L*	1323L*	3	6	2 to 3	2.80
1222L*	1322L*	4	8	2 to 2	3.05
1231L	1331L	1	3	2 to 11	3.60
1235L*	1335L*	2	6	2 to 5	3.85
1241L	1341L	1	4	2 to 11	4.70
1245L*	1345L*	2	8	2 to 5	4.95
1251L	1351L	1	5	2 to 11	5.40
1256L	1356L	2	10	2 to 6	6.05
1261L	1361L	1	6	2 to 11	6.40
1266L	1366L	2	12	2 to 6	7.40

\* These switches are provided with an "Off" position which is in addition to the greatest number of positions listed. The "Off" position precedes the other positions.

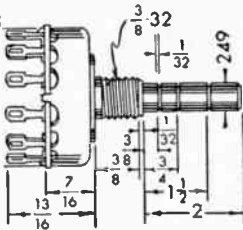
Typical Dimensions of 1200L, 1300L Rotary Switch



**Single-Section Rotary Switches**



Small, compact, phenolic-insulated switches equipped with 3/8"-32 bushings, and easy-to-cut grooved shafts, 1/4" diameter x 2" long. The 1 1/4" base styles have 30° indexing. The 1 1/8" base styles have 20° indexing and are equipped with adjustable stops.



Shorting Type Catalog Number	Non-Shorting Type Cat. No.	Number of Circuits	Number of Positions	Diameter of Base	List Price
3115J	3215J	1	5	1 1/4	\$1.40
31112J	32112J	1	12	1 1/4	1.40
3122J	3222J	2	2	1 1/4	1.40
3123J	3223J	2	3	1 1/4	1.40
3126J	3226J	2	6	1 1/4	1.40
3134J	3234J	3	4	1 1/4	1.45
3142J	3242J	4	2	1 1/4	1.45
3143J	3243J	4	3	1 1/4	1.45
31117J	32117J	1	2 to 17	1 1/8	2.15
3129J	3229J	2	2 to 9	1 1/8	2.15
3136J	3236J	3	2 to 6	1 1/8	2.30
3163J	3263J	6	2 to 3	1 1/8	2.30

**Ceramic Section Selector Switches**



High grade, ceramic-insulated, rotary switches for use in transmitters, test and high frequency radio equipment. Supplied with silicone treated, ceramic sections and double, self-wiping, silver-plated, copper alloy contacts. All models have adjustable stops. A 2" mounting area is required. Two-section models have 1/2" spacing; 3-section models have 1" spacing. Equipped with 1/4" round shafts, 2" long, and 3/8"-32 bushings. Pointer knob and mounting hardware included.

Catalog Number	Number of Gangs or Sections	Number of Circuits per Gang or Section	Number of Positions	List Price
172C	1	1	2 to 11	\$2.75
173C*	1	2	2 to 5	2.75
174C*	1	3	2 to 3	2.75
176C	2	1	2 to 11	4.20
177C*	2	2	2 to 5	4.20
178C*	2	3	2 to 3	4.20
180C	3	1	2 to 11	5.50
181C*	3	2	2 to 5	5.50

\* These switches are provided with an "Off" position which is in addition to the greatest number of positions listed. The "Off" position precedes the other positions.

**Lever Action Switches**



Bat-handle design. For circuit selection in intercommunication, PA and similar equipment. 2" mounting depth behind panel required for all models. Switches of the 5000 Series have No. 8 by 1/4" elongated mounting holes with 2 1/4" mounting centers. Switches of the 6000 and 7000 Series have No. 6 mounting holes with 1 3/8" mounting centers. Provided with knob and hardware.

**Positive Indexing**

Shorting Type Catalog No.	Non-Shorting Type Catalog No.	Number of Poles or Circuits	Number of Positions or Contacts	List Price
5124	5224	2	4	\$1.90
6142	6242	4	2	1.65
6143	6243	4	3	1.65

**24-Position Tap Switch**



For test equipment. Switches have 1 circuit and 24 positions. Phenolic insulation. Furnished with 3/8"-32 brass bushing and 1/4" x 2" notched shaft. Dial plate 394, knob and mounting hardware supplied.

Catalog No. 13124L List Price \$3.95

**Circuit-Opening Switch**



For meter and circuit switching in test equipment and small transmitters. Switches have 4 sections and 2 to 12 positions with adjustable stop. Phenolic-insulated for 500 volt DC operation. Mounting depth behind panel is 2 1/2". Supplied with 1/4" x 2" notched shaft and 3/8"-32 brass bushing. Pointer knob, dial plate 382, and mounting hardware included.

Catalog No. 1400L List Price \$6.50

# JACKS, PLUGS AND EXTENSION JACKS

P. R. MALLORY & CO., INC. - INDIANAPOLIS

P. R. MALLORY & CO., INC.  
**MALLORY**

## Jacks



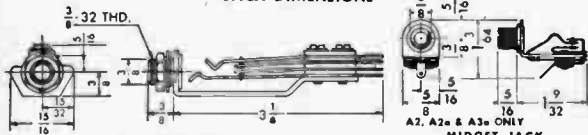
Metal parts on all jacks have protective plating. Fine contact surfaces provide excellent electrical conductivity. Suitable mounting hardware supplied with all jacks. LA Jacks are economy (see listing this page).

Jacks similar to the SC Series

Long Frame Cat. No.	List Price	Junior Jacks Cat. No.	List Price	Infant and Midget Jacks Cat. No.	List Price
1	\$0.75	701	\$0.75	A-1	\$0.65
2	.95	702	.85	A-2	.80
2A	.95	702A	.95	A-2A	.95
2B	.95	702B	.95		
3	1.00	703	1.00		
		703A	1.00	A-3A	1.10
3B	1.00	703B	1.00		
		703C	1.00		
		704	1.15		
		704A	1.15	LA-1	\$0.45
4B	1.25	704B	1.15	LA-2	.50
				LA-2A	.55
5	1.50	705	1.25	These Jacks equivalent electrically to A-1, A-2 and A-2A listed above	
6	1.75				

GJ-1 Airplane Grounding Jack—Similar to A-1 Jack except for insulation. List Price \$0.50

### JACK DIMENSIONS



LONG FRAME

JUNIOR

INFANT JACK

Cat. No.	Type
XP1	(Open Circuit)
XP2B	(Three-Circuit Microphone)
XP3B	(Single Circuit, Make before Break)

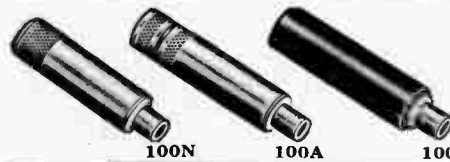


## SC Jacks and LA Jacks



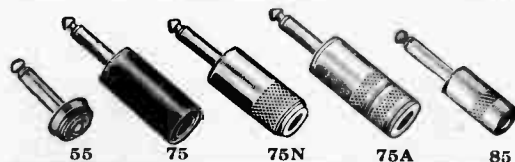
Both SC Type Jacks have standard brass  $\frac{3}{8}$ "-32 bushings. Mounting depth behind panel  $1\frac{1}{4}$ ". LA Jacks are similar in basic design and size, but have commercial construction. Use with No. 75, 75N, 75A or 85 phone plugs.

Cat. No.	Description	List Price
SC-1A Phone Jack	Commercial equivalent of military jack No. JJ-034. Same spring arrangement as No. 1 long-frame jack. Designed to receive the following plugs: Mallory No. 75, Western Electric Nos. 47A and 47B, Signal Corps Nos. PL-47, PL-48, PL-55, PL-148, PL-155, PL-125 and JAN plugs PJ-055, PJ-155, PJ-634, PJ-636, PJ-047.	\$0.60
SCA-2B	Commercial equivalent of military jack No. JJ-033. Same spring arrangement as No. 2B Long frame jack. Designed to receive the following plugs: Western Electric No. 109 and Signal Corps Nos. PL-68, PL-168, and JAN plugs PJ-068, PJ-168, and PJ-309.	.70
LA-1	Open Circuit	.45
LA-2	Circuit closing	.50
LA-2A	Two circuits	.55



## Extension Jacks

Cat. No.	Description	List Price
100	Two-Way Extension Jack (Fiber Shell) for No. 75 Phone Plug. Overall length $3\frac{1}{4}$ ".	\$1.40
100N	Two-Way Extension Jack (Shielded One-Piece Nickel Shell) for No. 75N Phone Plug. Overall length $3\frac{1}{4}$ ".	1.80
100A	Two-Way Extension Jack (Shielded Two-Piece Nickel Shell) for No. 75A Phone Plug (with Built-in Cable Clamp). Overall length $3\frac{1}{4}$ ".	2.50



## Plugs

Cat. No.	Description	List Price
55	Adapts standard microphone connector for use with conventional Jack.	\$0.50
75	Two-Way Phone Plug with Tie-Cord Anchor (Phenolic Shell)	.75
75N	Two-Way Phone Plug with Tie-Cord Anchor (Shielded One-Piece Nickel Shell)	1.10
75A	Two-Way Phone Plug with Tie-Cord Anchor (Shielded Two-Piece Nickel Shell) (with Built-in Cable Clamp)	1.75
76	Three-Way Microphone Plug (Phenolic Shell)	1.10
76A	Three-Way Microphone Plug (Shielded Two-Piece Nickel Shell) (with Built-in Cable Clamp)	1.95
85	Two way miniature phone plug, shielded.	.60

"X" Type Jacks Plain bushing type for telephone switchboard service. Furnished with 1 mounting nut and washer.

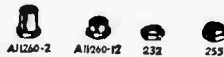
Cat. No.	Type	List Price
XP1	Open Circuit	\$1.05
XP2B	3-Circuit Microphone	1.25
XP3B	Single Circuit—Make before Break	1.50

**Knobs**



Catalog No.	Description	List Price
364	1 1/16" Dia. Similar to 368, but with pointer at base. Black	\$0.15
365-1	2 1/4" Bar Type Knob, Black	.25
366-1	1 1/4" Bar Type Knob, Black	.20
366-R-1	1 1/4" Bar Type Knob, Red	.20
367-1	1 1/2" Dia. Round Knob, Black	.25
368-1	1 1/8" Dia. Round Knob, Black	.20

**Mounting Nuts For Switches and Controls**



Catalog Number	Description	Thread	Dimension	List Price
232	Flat Hex Mounting Nut	3/8-32	1/2 x 3/32	\$0.35*
255	Hex Mounting Nut	3/8-32	1/2 x 7/64 x 7/64 shoulder nut	.20
A-11260-2	Hex Mounting Nut	3/8-32	1/2 x 7/64 x 1 1/32 shoulder nut	.30
A-11260-12	Hex Mounting Nut	3/8-32	1/2 x 7/64 x 7/32 shoulder nut	.25

\* Per 10 pieces.

**Washers—For Switches and Controls**



Catalog Number	Description and Dimensions	List Price
203	Extruded Washer—Fiber—3/4" O.D. x 3/8" I.D. x 1/16"; Extruded 1/2" x 1/32". For Set See No. 212 Flat Washer	\$0.30*
212	Flat Washer—3/4" O.D. x 3/8" I.D. x 1/32"; Phenolic	.20*
225	Metal Washer—Nickel Finish—3/8" O.D. x 3/8" I.D. .040 Brass	.20*
226	Metal Washer—Nickel Finish—3/8" O.D. x 7/16" I.D. .040 Brass	.20*
227	Lock Washer—Cadmium Plated Steel—1 1/16" O.D. x 2 5/64" I.D.	.20*

\* Per 10 pieces.

**Soldering Iron Tips**



No. 311—Replacement tip for soldering irons that are turned on for short periods only. Heats quicker than No. 312, but is not as long wearing. Made of a special Mallory copper alloy long in use as a welding tip material. Nickel plated to resist corrosion. Size—3/8" diameter, 4" length. Plunger style with "screw driver" point.

List Price \$0.85

**Dial Plates**

For Mallory Circuit Selector, Tap and All-Wave Switches.

List Price \$0.20 each (all types)

Neat-appearing Dial plates with easy-to-read aluminum figures clearly etched on solid black background. Dimensions are 1 3/16" in diameter with 7/16" hole, with figures 7/64" high. .020" aluminum stock.



For all types 3100J, 3200J Switches, with 1 1/16" base. 20 degree spacing between numerals.	For all Switch types 1200L, 1300L and 1/4" base 3100J, 3200J. 30 degree spacing between numerals.	Marking
Catalog Number	Catalog Number	
453	372	1 to 2
454	373	1 to 3
455	374	1 to 4
456	375	1 to 5
457	376	1 to 6
458	377	1 to 7
459	378	1 to 8
460	379	1 to 9
461	380	1 to 10
462	381	1 to 11
463	382	1 to 12
464		1 to 13
465		1 to 14
466		1 to 15
467		1 to 16
468		1 to 17
472		1 to 18
473		Off 1 to 2
474	383	Off 1 to 3
475	384	Off 1 to 4
476	385	Off 1 to 5
477	386	Off 1 to 6
478	387	Off 1 to 7
479	388	Off 1 to 8
480	389	Off 1 to 9
481	390	Off 1 to 10
482		Off 1 to 11
483		Off 1 to 12
484		Off 1 to 13
485		Off 1 to 14
486		Off 1 to 15
		Off 1 to 16
	*394 Special	1 to 24
	†487 Special	1 to 5
	‡488 Special	1 to 4

\* 15° Spacing Between Numerals † 90° Spacing Between Numerals ‡ 60° Spacing Between Numerals

No. 312—Replacement tip for soldering irons that are used continuously for long periods of time. Made of a special Mallory copper alloy of great hardness and high electrical conductivity. Nickel plated to resist corrosion. Size—3/8" diameter, 4" length. Plunger style, with "screw driver" point. List Price \$0.95

**Mallory Midgetrol**

Single Section



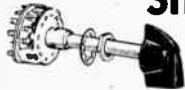
Dual Section



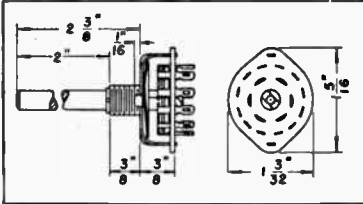
For complete listing and description see Page 1, Mallory Resistors and Controls Section.



## SINGLE SECTION ROTARY SWITCHES



3612-01 to 3612-10

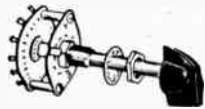


These single section rotary switches were designed to keep pace with the demand for smaller components. They are the smallest switches available to handle multi-circuit switching and are ruggedly built with heavy silver plated contacts, high grade phenolic insulators, best spring brass and steel. These switches are ideal for radio-phonos, wave band, tone control, meter and antennae switching applications, as well as many other uses in electronic equipments. All switches are supplied with one knob, mounting nut and lock washer.

Order by Part Number from Table Below

Erie No. Shorting Type	Erie No. Non-Shorting Type	No. of Circuits Per Switch	No. of Positions	Erie No. Shorting Type	Erie No. Non-Shorting Type	No. of Circuits Per Switch	No. of Positions
3612-01	3612-02	1	12	3612-07	3612-08	3	4
3612-03	3612-04	2	6	3612-09	3612-10	2	3
3612-05	3612-06	1	5				

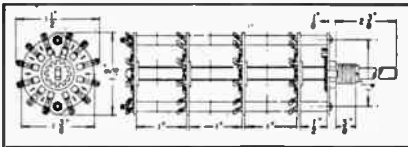
## MULTI-SECTION ROTARY SWITCHES



3612-11, 12, 15, 19



3612-18

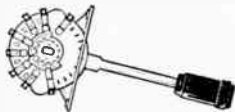


The flat rivet "Wedgelock" which fastens the contact to the stator is a unique feature of these switches. The small cross sectional area permits the use of sturdily designed contacts without sacrificing over-all stator size. The outstanding feature of this flat rivet is a contact assembly that will not loosen or rotate due to soldering heat. A free floating rotor assembly results in this rugged construction as the rotor blades do not support the assembly and only required rotor blades are used. One, two and four section switches in both shorting and non-shorting types are stocked to meet applications such as meter switching, test equipment and various electronic instruments. All switches are supplied with one knob, mounting nut and lock washer.

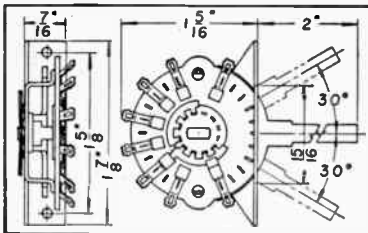
Order by Part Number from Table Below

Erie No. Shorting Type	Erie No. Non-Shorting Type	No. of Circuits Per Section	No. of Sections Per Switch	Total No. of Circuits Per Switch	Number of Positions
3612-11	3612-12	1	1	1	11
3612-13	3612-14	1	2	2	11
.....	3612-15	2	1	2	5
.....	3612-16	3	2	6	3
.....	3612-17	2	2	4	4
.....	3612-18	1	4	4	11
.....	3612-19	3	1	3	3

## LEVER ACTION SWITCHES



3612-20, 21, 22



Erie Lever Action Switches employ the same type stator and construction as the Multi-Section Switches assuring a high quality assembly for inter-communication and test equipment applications. Smooth, positive action and indexing, high quality phenolic insulation, heavy silver-plated contacts and best spring brass are features which make the switch ideal for replacement or new uses. Each switch is supplied with mounting screws and knob. Packaged individually in a durable sealed plastic bag in the familiar Erie display box for maximum protection against corrosion.

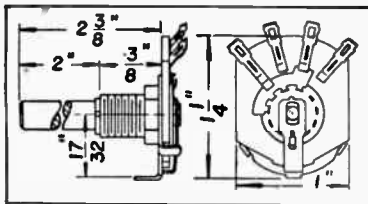
Order by Part Number from Table Below

Erie No. Shorting Type	Erie No. Non-Shorting Type	Type Indexing	Number of Circuits	Number of Positions
3612-20	3612-21	Positive	2	3
....	3612-22	Positive	4	2

## GENERAL PURPOSE SWITCHES



3612-23, 24, 25



Extreme care was taken in the design of these very small compact switches to insure a very rugged and accurate construction. Again, the flat rivet is used to firmly secure the contacts against rotation in a very strong phenolic insulator. The stator assembly is attached directly to the detent plate insuring positive indexing. Heavy silver-plated contacts provide dependable and efficient operation. They may be used for simple circuit switching and wherever space is at a premium. Each switch is supplied with one knob, mounting nut and lock washer. Packaged in individual durable sealed plastic bags and the familiar Erie display box.

Order by Part Number from Table Below

Erie No. Shorting Type	Type Indexing	Number of Circuits	Number of Positions
3612-23	Positive	1	3
• 3612-24	Positive	1	3
3612-25	Positive	2	3

\*For Two Speaker operation.

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RHEOSTATS  
RESISTORS  
SWITCHES  
CHOKES

## POWER TAP SWITCHES NON-SHORTING TYPE



Each switch is a non-shorting, single pole, rotary, multi-position unit, but switches can be ordered assembled 2 or 3 in tandem (2 maximum, for Model 111) to form multiple assemblies. All ceramic insulation, large, solid silver-to-silver contacts, and "slow-break" action especially designed for alternating current use establish new standards of dependability and performance. Switch shafts are electrically "dead"—insulated by strong ceramic hubs. Contacts and mechanism are entirely enclosed and protected (except for the Model 111).

### MODEL 111 TAP SWITCH

Alternating Current Rating 10 Amps. 150 Volts — Diameter 1 1/4" — Shaft Diameter 1/4" — Standard Mounting: For 1/4" panel maximum, by means of 3/8"-32 threaded bushing and hex. nut.

Depth Behind Panel		Single Unit		2 in Tandem	
		1 1/8"		2 3/4"	
No. of Taps	Total Rotation	Stock Number	Net *Price	Stock Number	Net *Price
11	300°	111-11	\$3.09	111-11-T2	\$11.85
10	270°	111-10	3.00	111-10-T2	11.58
9	240°	111-9	3.00	111-9-T2	11.58
8	210°	111-8	2.88	111-8-T2	11.16
7	180°	111-7	2.88	111-7-T2	11.16
6	150°	111-6	2.76	111-6-T2	10.71
5	120°	111-5	2.76	111-5-T2	10.71
4	90°	111-4	2.70	111-4-T2	10.50
3	60°	111-3	2.70	111-3-T2	10.50
2	30°	111-2	2.70	111-2-T2	10.50
Recommended Knobs		Stock No. 5150 or 4516		Stock No. 4509 or 4510	

\*Without Knob.

### MODEL 212 TAP SWITCH

Alternating Current Rating 15 Amps. 150 Volts — Diameter 2 1/4" — Shaft Diameter 1/4" — Standard Mounting: For 1/4" panel maximum, by means of 3/8"-32 threaded bushing and hex. nut. Tandem Mounting: For 1/4" panel maximum, three No. 10-32 flat-head machine screws 3/8" long.

Depth Behind Panel		Single Unit		2 in Tandem		3 in Tandem	
		1 3/4"		4 3/16"		6 3/16"	
No. of Taps	Total Rotation	Stock No.	Net *Price	Stock No.	Net *Price	Stock No.	Net *Price
12	330°	212-12	\$ 7.74	212-12-T2	\$20.79	212-12-T3	\$30.90
11	300°	212-11	7.74	212-11-T2	20.79	212-11-T3	30.90
10	270°	212-10	7.47	212-10-T2	20.31	212-10-T3	30.12
9	240°	212-9	7.47	212-9-T2	20.31	212-9-T3	30.12
8	210°	212-8	7.23	212-8-T2	19.80	212-8-T3	29.34
7	180°	212-7	7.23	212-7-T2	19.80	212-7-T3	29.34
6	150°	212-6	6.96	212-6-T2	19.26	212-6-T3	28.56
5	120°	212-5	6.96	212-5-T2	19.26	212-5-T3	28.56
4	90°	212-4	6.69	212-4-T2	18.72	212-4-T3	27.81
3	60°	212-3	6.69	212-3-T2	18.72	212-3-T3	27.81
2	30°	212-2	6.69	212-2-T2	18.72	212-2-T3	27.81
Recommended Knobs		Stock No. 5150 or 4516		Stock No. 4509 or 4510		Stock No. 4509 or 4510	

\*Without Knob.

### MODEL 312 TAP SWITCH

Alternating Current Rating 25 Amps. 300 Volts, 150 V. A.C. between taps — Diameter 3 3/8" — Shaft Diameter 1/4" — Standard Mounting: For 1/4" panel maximum, three No. 10-32 flat-head machine screws 3/8" long.

Depth Behind Panel		Single Unit		2 in Tandem		3 in Tandem	
		2 1/4"		4 5/8"		7"	
No. of Taps	Total Rotation	Stock No.	Net *Price	Stock No.	Net *Price	Stock No.	Net *Price
12	330°	312-12	\$10.80	312-12-T2	\$28.14	312-12-T3	\$42.60
11	300°	312-11	10.80	312-11-T2	28.14	312-11-T3	42.60
10	270°	312-10	10.56	312-10-T2	27.60	312-10-T3	41.70
9	240°	312-9	10.56	312-9-T2	27.60	312-9-T3	41.70
8	210°	312-8	10.32	312-8-T2	27.06	312-8-T3	40.98
7	180°	312-7	10.32	312-7-T2	27.06	312-7-T3	40.98
6	150°	312-6	10.02	312-6-T2	26.55	312-6-T3	40.14
5	120°	312-5	10.02	312-5-T2	26.55	312-5-T3	40.14
4	90°	312-4	9.78	312-4-T2	26.04	312-4-T3	39.42
3	60°	312-3	9.78	312-3-T2	26.04	312-3-T3	39.42
2	30°	312-2	9.78	312-2-T2	26.04	312-2-T3	39.42
Recommended Knobs		Stock No. 4509 or 4510		Stock No. 4511 or 4512		Stock No. 4511 or 4512	

\*Without Knob.

### MODEL 412 TAP SWITCH

Alternating Current Rating 50 Amps. 300 Volts, 150 V. A.C. between taps — Diameter 4 3/16" — Shaft Diameter 1/4" — Standard Mounting: For 1/4" panel maximum three No. 10-32 flat-head machine screws 3/8" long.

Depth Behind Panel		Single Unit		2 in Tandem		3 in Tandem	
		2 1/4"		5 1/2"		7 3/4"	
No. of Taps	Total Rotation	Stock No.	Net *Price	Stock No.	Net *Price	Stock No.	Net *Price
12	330°	412-12	\$14.40	412-12-T2	\$35.31	412-12-T3	\$53.34
11	300°	412-11	14.40	412-11-T2	35.31	412-11-T3	53.34
10	270°	412-10	13.80	412-10-T2	34.08	412-10-T3	51.48
9	240°	412-9	13.80	412-9-T2	34.08	412-9-T3	51.48
8	210°	412-8	13.53	412-8-T2	33.57	412-8-T3	50.70
7	180°	412-7	13.53	412-7-T2	33.57	412-7-T3	50.70
6	150°	412-6	12.90	412-6-T2	32.34	412-6-T3	48.78
5	120°	412-5	12.90	412-5-T2	32.34	412-5-T3	48.78
4	90°	412-4	12.60	412-4-T2	31.68	412-4-T3	47.88
3	60°	412-3	12.60	412-3-T2	31.68	412-3-T3	47.88
2	30°	412-2	12.60	412-2-T2	31.68	412-2-T3	47.88
Recommended Knobs		Stock No. 4511 or 4512		Stock No. 4511 or 4512		Stock No. 4511 or 4512	

\*Without Knob.

### MODEL 608 TAP SWITCH

Alternating Current Rating 100 Amps. 300 Volts — Diameter 6" — Shaft Diameter 3/8" — Standard Mounting: For 1" panel maximum, three flat-head machine screws 1/4" x 20 x 1 1/4".

Depth Behind Panel		Single Unit		2 in Tandem		3 in Tandem	
		3 1/16"		6 13/16"		10 5/16"	
No. of Taps	Total Rotation	Stock No.	Net *Price	Stock No.	Net *Price	Stock No.	Net *Price
8	280°	608-8	\$30.90	608-8-T2	\$71.88	608-8-T3	\$105.69
7	240°	608-7	30.90	608-7-T2	71.88	608-7-T3	105.69
6	200°	608-6	29.85	608-6-T2	69.84	608-6-T3	102.60
5	160°	608-5	29.85	608-5-T2	69.84	608-5-T3	102.60
4	120°	608-4	28.83	608-4-T2	67.74	608-4-T3	99.51
3	80°	608-3	28.83	608-3-T2	67.74	608-3-T3	99.51
2	40°	608-2	28.83	608-2-T2	67.74	608-2-T3	99.51
Recommended Knobs		Stock No. 4508 or 4515 or 4517		Stock No. 4508 or 4515 or 4517		Stock No. 4515	

\*Without Knob.

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RHEOSTATS  
RESISTORS  
SWITCHES  
CHOKES

## OHMITE "AMRECON®"

## ALL-PURPOSE RELAYS



### MODEL DO RELAY

AC or DC OPERATION

Ideal for mobile equipment applications where severe shock and vibration is encountered. Coil drain: 3-watts DC, 6 watts 60 cycle AC. Contact ratings: 10 amps. at 115 v. AC; 32 volt DC non-inductive load. Insulation tested at 1500 v. AC. Size, (4 pole) 2 1/4 x 2 1/8 x 1 1/8"; (3 pole) 2 1/4 x 1 5/8 x 1 1/8".

Stock No.	Type	Coil Data		Net Price	Stock No.	Type	Coil Data		Net Price
		V.A.C.	Amps.				V.D.C.	Amps.	
DOX-50T	3PDT	6	2.10	\$8.65	DOX-145T	3PDT	6	.487	\$7.47
DOX-183T	4PDT	6	2.10	9.85	DOX-186T	4PDT	6	.487	8.65
DOX-49T	3PDT	12	1.13	8.65	DOX-51T	3PDT	12	.231	7.47
DOX-184T	4PDT	12	1.13	9.85	DOX-102T	4PDT	12	.231	8.65
DOX-181T	3PDT	24	.57	8.65	DOX-141T	3PDT	24	.105	7.47
DOX-185T	4PDT	24	.57	9.85	DOX-137T	4PDT	24	.105	8.65
DOX-226T	1DPST*	115	.110	8.60	DOX-93T	3PDT	110	.022	7.47
DOX-227T	13PST	115	.110	7.84	DOX-187T	4PDT	110	.022	8.65
DOX-46T	3PDT	115	.110	8.65	DOX-182T	3PDT	220	.014	8.15
DOX-228T	14PST	115	.110	8.80	DOX-188T	4PDT	220	.014	9.33
DOX-53T	4PDT	115	.110	9.85					
DOX-61T	3PDT	230	.060	8.65					
DOX-130T	4PDT	230	.060	9.85					

\* Normally open  
† AC Voltage is 60 cycle  
‡ Double Break Contacts



### MODEL DOSY RELAY FOR PLATE CIRCUIT OPERATION

The high operating sensitivity makes the DOSY relay adaptable to a wide range of electronic control circuits, such as plate circuit controls, etc. Other industrial applications may be as an overload or underload control where the relay would be used in a DC circuit in which it is desirable to obtain a signal indication when the control current increases above a predetermined maximum or drops below a predetermined minimum.

The insulation is of high grade, molded phenolic material. At 115 v. AC or 32 v. DC, non-inductive load, Model DOSY relay has a contact rating of 15 amperes.

There are two DPDT types, one having 10,000 ohms coil resistance (maximum pull-in current of 8 ma. DC); the other having 5,000 ohms coil resistance.

Stock No.	Type	Coil Data		Net Price
		D.C. Ohms	Max. Pull-in Current	
DOSYX-67T	DPDT	10,000	8 MA	\$6.09
DOSYX-68T	DPDT	5,000	11 MA	6.09
DOSYX-69T	SPDT	10,000	5 MA	5.62
DOSYX-70T	SPDT	5,000	7 MA	5.62

### ADDITIONAL RELAYS AVAILABLE

In addition to the listings of the Ohmite Amrecon® relays shown on this page, Ohmite has seven additional standard types of relays available. These can be promptly made to order. Therefore, if none of the relays shown on this page exactly suits your needs, we suggest you write to us and allow Ohmite engineers to make a recommendation designed to meet your requirements. All Ohmite Amrecon® relays — both standard and made-to-order — are exceptionally high quality, rugged relays designed to give the maximum in precision performance, dependability, and long life. Metal parts are plated where necessary for corrosion resistance. Springs are made of nickel-silver or phosphor-bronze and the contacts are fine silver. Special contact materials can be supplied when desired.



### MODEL DOS RELAY

AC or DC OPERATION

Quality, general-purpose relays originally designed to meet rigorous aircraft specs. Extremely compact yet rugged. Coil drain: 2.5 watts DC, 3 watts at 60 cycles AC. Contact ratings: DP, 15 amps. at 115 v. AC or 32v. DC non-inductive load; SP, 25 amps. Molded phenolic insulation; tested at 1500 v. AC. 1 7/8 x 1 5/8 x 1 1/8".

Stock No.	Type	Coil Data		Net Price	Stock No.	Type	Coil Data		Net Price
		V.A.C.	Amps.				V.D.C.	Amps.	
DOSX-220T	1SPST*	6	.650	\$4.84	DOSX-158T	DPDT	6	.550	\$4.96
DOSX-230T	1DPST	6	.650	4.94	DOSX-66T	DPDT	12	.210	4.96
DOSX-30T	DPDT	6	.650	5.46	DOSX-9T	DPDT	24	.105	4.96
DOSX-16T	DPDT	12	.380	5.46	DOSX-237T	13PST*	110	.022	4.39
DOSX-231T	1SPST*	24	.166	4.84	DOSX-238T	1DPST	110	.022	4.96
DOSX-232T	1DPST	24	.166	4.94	DOSX-59T	DPDT	110	.022	4.96
DOSX-162T	DPDT	24	.166	5.46	DOSX-177T	DPDT	220	.013	5.54
DOSX-235T	1SPST*	115	.043	4.84					
DOSX-7T	DPDT	115	.043	5.46					
DOSX-235T	1SPST*	230	.030	4.84					
DOSX-236T	1DPST	230	.030	4.94					
DOSX-12T	DPDT	230	.030	5.46					

† Normally open  
‡ AC Voltage is 60 cycle  
\* Double Break Contacts



### MODEL CRU RELAY

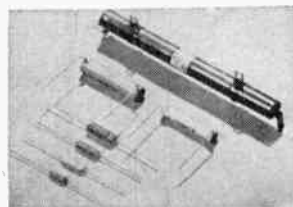
AC or DC OPERATION

Precision-engineered, general-application relays. Used in recorders, vending machines, etc. Features small size and extremely rugged construction. Designed for long life performance. Has nickel-silver springs and pure silver contacts. Coil drain: 2.75 watts DC, 5.6 watts 60 cycle AC. Contact ratings: 5 amps. at 115 v. AC; 32 v. DC non-inductive load. Insulation tested at 750 v. AC between all insulated metal parts and between insulated metal parts and ground. 2 7/8 x 2 x 1 3/8".

Stock No.	Type	Coil Data		Net Price	Stock No.	Type	Coil Data		Net Price
		V.A.C.	Amps.				V.D.C.	Amps.	
CRUX-192T	SPDT	6	1.20	\$3.02	CRUX-198T	SPDT	6	.40	\$2.82
CRUX-193T	DPDT	6	1.20	3.55	CRUX-199T	DPDT	6	.40	3.35
CRUX-171T	4PDT	6	1.20	4.62	CRUX-133T	4PDT	6	.40	4.34
CRUX-194T	SPDT	24	.38	3.02	CRUX-200T	SPDT	24	.10	2.82
CRUX-195T	DPDT	24	.38	3.55	CRUX-201T	DPDT	24	.10	3.33
CRUX-196T	4PDT	24	.38	4.62	CRUX-165T	4PDT	24	.10	4.34
CRUX-197T	SPDT	115	.075	3.02	CRUX-202T	SPDT	110	.022	3.66
CRUX-175T	DPDT	115	.075	3.55	CRUX-145T	DPDT	110	.022	4.17
CRUX-163T	4PDT	115	.075	4.62	CRUX-137T	4PDT	110	.022	5.18

† AC Voltage is 60 cycle

### OHMITE R.F. PLATE CHOKES



This series of seven Ohmite single layer wound solenoid radio frequency plate chokes covers the entire frequency range of 3 to 520 megacycles. The four highest frequency chokes are wound on low power factor plastic cores while the other three units are wound on steatite tubes. The single layer winding is designed to avoid adverse harmonic effects within the recommended operating range and also prevents breakdown from high r.f. potentials.

Stock Number	Operating Range Megacycles	Micro-henries	Core Dimensions	Net Price
Z-7	3 to 20 Mc.	84.0	6" x 3/8"	\$1.23
Z-14	7 to 35 Mc.	44.0	2" x 1/8"	.54
Z-28	20 to 60 Mc.	21.0	1 1/2" x 3/8"	.48
Z-50	35 to 110 Mc.	7.0	1 1/2" x 3/8"	.30
Z-144	80 to 200 Mc.	1.8	1 1/2" x 3/8"	.30
Z-235	160 to 350 Mc.	0.84	1 1/2" x 3/8"	.30
Z-460	320 to 520 Mc.	0.20	1 1/2" x 3/8"	.30

Non-magnetic Brackets Furnished with Z-7. The Z-14 and Z-28 are rated at 600 ma. All others 1000 ma.

# BE RIGHT WITH OHMITE

RHEOSTATS  
RESISTORS  
SWITCHES  
CHOKES

## LITTLE DEVIL® RESISTOR ASSORTMENTS FOR SERVICE USE



Serviceman's assortments of 150 Ohmite "Little Devil," 1/2-watt, or 125, 1-watt or 2-watt insulated composition resistors, in the 40 values (10 ohms to 10 megohms) most frequently used by servicemen. The assortment is offered at the price of the resistors alone—the cabinet is furnished without extra cost! Cabinet is only 9" long, 4 3/4" high, and 5 1/4" deep.

Assortment	Stock No.	Quantity of Resistors	Wattages	Net Price
SE SERVICE				
±10% tolerance (40 resistance values)	CAB-10	150	1/2 watt	\$15.00
	CAB-2	125	1 watt	18.75
	CAB-3	125	2 watt	25.00

## NEW OHM'S LAW CALCULATOR

Redesigned! This new, improved version of the famous Ohmite Ohm's Law Calculator — popular the world over with servicemen, engineers and students — now has scales for solving parallel resistance problems, AND a standard slide rule. More useful than ever! With one setting of the slide the calculator gives the answer to any Ohm's Law problem—reading directly in ohms, volts, amperes, and watts. Three of the new scales on the back provide a quick, one-setting means of solving parallel resistance problems. The slide rule scales will multiply, divide, find squares, and square roots.



Ohm's Law Calculator (Cardboard) ..... Net Price \$0.25  
Ohm's Law Calculator (Plastic) ..... Net Price 1.50

## LITTLE DEVIL COLOR CODER



Here is a handy little device that makes it easy to determine the resistance and tolerance values of RETMA color coded composition resistors. Just turn the color wheels until the color corresponds to the color band on the resistor and read the resistance value directly in ohms in the windows.

Little Devil Color Coder ..... Net Price \$ .10

## OHMITE FUSE RESISTOR



FR-7.5  
Net Price \$0.39

Designed for replacement in all television receivers, the FR-7.5 Fuse Resistor is provided with 1 1/2" tinned lead wires for easy installation directly in the TV circuit. May also be soldered to the plug-in terminal strip which is provided. 7.5 ohms.

## OHMITE "LITTLE DEVIL"® RESISTORS



Ohmite "LITTLE DEVILS" are full 1/2 watt, 1 watt and 2 watt insulated composition resistors and can be used at their full wattage ratings at 70° C. (158° F.) ambient temperature. They meet requirements of specification MIL-R-11A.

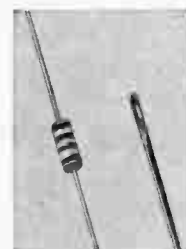
"LITTLE DEVILS" are available from stock with ±5% or ±10% tolerance. The standard RETMA values, 10 ohms to 22 megohms can be furnished. In the 1 watt size, ±10% tolerance values as low as 2.7 ohms are available from stock.

Stocked in	Ohms	Ohms	Ohms	Ohms	Megs.
<b>RETMA Values</b>	*2.7	110	2,400	51,000	1.1
<b>±5% or ±10%</b>	*3.3	120	2,700	56,000	1.2
	*3.9	130	3,000	62,000	1.3
	*4.7	150	3,300	68,000	1.5
<b>Tolerance</b>	*5.6	160	3,600	75,000	1.6
	*6.8	180	3,900	82,000	1.8
	*8.2	200	4,300	91,000	2.0
	10	220	4,700	MEGS	2.2
(Figures in bold type are ±10% RETMA values. All values except (*) available in ±5% tolerance.)	11	240	5,100	0.1	2.4
	12	270	5,600	0.11	2.7
	13	300	6,200	0.12	3.0
	15	330	6,800	0.13	3.3
	16	360	7,500	0.15	3.6
	18	390	8,200	0.16	3.9
	20	430	9,100	0.18	4.3
	22	470	10,000	0.20	4.7
	24	510	11,000	0.22	5.1
	27	560	12,000	0.24	5.6
	30	620	13,000	0.27	6.2
	33	680	15,000	0.30	6.8
	36	750	16,000	0.33	7.5
	39	820	18,000	0.36	8.2
	43	910	20,000	0.39	9.1
	47	1,000	22,000	0.43	10.0
	51	1,100	24,000	0.47	11.0
	56	1,200	27,000	0.51	12.0
	62	1,300	30,000	0.56	13.0
	68	1,500	33,000	0.62	15.0
	75	1,600	36,000	0.68	16.0
	82	1,800	39,000	0.75	18.0
	91	2,000	43,000	0.82	20.0
	100	2,200	47,000	0.91	22.0
				1.0	

\*1 Watt Size Only. ±10% tolerance.

\*Net Price ..... 30c

## SUBMINIATURE "LITTLE DEVIL"® 1/10 WATT COMPOSITION RESISTORS



Little Devil with Ordinary Needle

These tiny resistors were designed especially for applications where small size is paramount — such as in miniature transistor circuit apparatus. Ohmite subminiature "LITTLE DEVILS" are available in ±10% RETMA resistance values from 100 ohms to 1.0 megohm. Table above shows ±10% values in bold face type. The new 1/10 watt "LITTLE DEVILS" are only 0.140" long by 0.067" diameter. The one inch lead wires are molded solidly into the resistance material which insures a mechanically strong construction and produces a permanent, reliable electrical contact. Each resistor is RETMA Color Coded to show resistance value and tolerance. Specifications: Maximum Continuous Rated Voltage — 150 RMS or DC; Maximum Continuous Rated Wattage at 70° C. Ambient — 0.1 Watt; Insulation Strength — 200 Volts DC.

Net Price ..... \$0.20

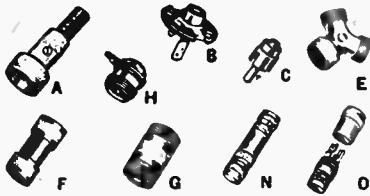
For more complete information on OHMITE PRODUCTS, ask for Ohmite Stock Catalog.

# SWITCHCRAFT INC.

CHICAGO 22, ILLINOIS

- "MICROPHONE CONNECTORS"
- "ADAPTERS"
- "MINI-MIX"
- "CABLE ASSEMBLIES"
- "AUDIO JUMPER CABLES"

## "MICROPHONE CONNECTORS"



Series 2500, standard size Microphone Connector, designed for use with single conductor microphone cable; panel receptacle mounts in .385" hole, Series 3500, phono connector, used for phono connections.

Series 5500, "Mini-Con," a miniature MIC connector, approx. 1/2 the size of series 2500. Accepts cable up to 3/16" dia; panel receptacle. 5501MP mounts in 3/16" dia. hole, in panels up to 3/4" thick; 5501MF mounts in 3/8" dial hole with locknut on front of panel.

### "MICROPHONE CONNECTORS"—Series 2501

Part No.	U.S.A. List	Fig.	DESCRIPTION
2501F	\$0.60	A	1-contact, female, coupling ring.
2501M	\$0.45		1-contact, male.
2501MP	\$0.35	H	Panel Connector, male
2501MPC	\$0.45		Panel Connector, closed ckt. male.
44	\$0.50		Plug Adapter.
25Y	\$1.65	E	Two male to one female.
2501FT	\$0.80	F	Double female, for connecting 2 cables with male Connectors.
2501MT	\$0.70	G	Double male, for connecting 2 cables with female Connectors.
2501FL	\$2.25	N	Straight Conn., 2-screw term., female, 2-pc. handle/built in cable clamp.
2501FS	\$1.65	O	Straight Conn.: same 2501FL, except no cable clamp.

### "PHONO CONNECTORS"

3501F	\$0.15	B	Phono Jack—2 conductor.
3501M	\$0.10	C	Phono Plug—2 conductor.
3501MC	\$0.15		Phono Plug—2 conductor cable clamp type).
3501FC	\$0.32		Phono Extension Jax.

### "MINI-CON" CONNECTORS—Series 5501

5501F	\$0.60		1-contact, female, coupling ring.
5501M	\$0.45		1-contact, male.
5501MF	\$0.45		Panel Conn., male, mounts front side panel.
5501MP	\$0.35		Panel Conn., male, mounts back side.

### "CABLE ASSEMBLIES"



Twenty five foot lengths, 2- and 3-conductor plastic covered cable (Polyvinyl), shielded and multi-conductor types, terminated with popular Switchcraft "Littel-Plugs", "Extension Jax" and "Connectors".

Part No.	U.S.A. List	DESCRIPTION
8282	\$ 6.95	2-cond. cable; No. 280 "Littel-Plug" to No. 128 "Ext. Jax".
8286	\$ 7.80	2-cond. shielded cable; No. 280 "Littel-Plug" to No. 128 "Ext. Jax".
8259	\$ 7.80	2-cond. shielded cable; No. 2501M connector to No. 2501F connector.
8293	\$11.50	3-cond. cable; No. 297 "Littel-Plug" to No. 1238 "Extension Jax".
8266	\$ 3.75	1-ft. long, 2-cond. shield. cable; No. 280 "Littel-Plug" to No. 128 "Extension Jax". Used with No. 310 "Mini-Mix" where panel Jack is recessed.

## "ADAPTERS"



Various "Adapters" provide convenient interchange of equipment between various connector devices. Sturdy construction; brass nickel plated housing supports respective connecting devices.

Part No.	U.S.A. List	DESCRIPTION
331	\$14.70	Adapter Kit contains 332, 334, 336, 338, 342, 344, 346, 348 and two 44.
332	\$ 1.75	Phone Jack Input to Female Mic. Conn. Output.
334	\$ 1.45	Phone Jack Conn. Input to Female Mic. Conn. Output.
336	\$ 1.45	Phone Jack Input to Phono Plug Conn. Output.
338	\$ 1.45	Male Mic. Conn. Input to Phono Plug Conn. Output.
342	\$ 2.60	Dual-Pur. Bndg. Post/Ban. Jack Input to Phone Plug Output.
344	\$ 1.45	Phono Jack Conn. Input to Phone Plug Output
346	\$ 2.15	Tip Jack Input to Phone Plug Output.
348	\$ 1.40	Phono Jack Input to Phono Jack Output.
44	\$ 0.50	Male Mic. Input to Phone Plug Output.

### "SPECIAL ADAPTERS"

328 | \$ 3.95 | To connect Ceramic Phono Cart. to audio amp. designed for mag. cart. Phono Jack Input (3501F) and Phono Plug Output (3501M).

343 | \$ 1.95 | "Phono Adapters"—similar No. 250 "Littel Plug" with female phono jack in end of handle. Int. resistor ckt. to adapt crystal Phono or pickup from terminals of radio or T.V. set to input to Tape rec. Use as adapter with Mag. Phono, open plug and twist together opposite leads of resistor.

349 | \$ 1.10 | Phono Plug Coupler—(Our 3501M) at each end.

## "AUDIO JUMPER CABLES"

Jumper cables ideal for use with Sound equipment, Tape recorders, High-Fidelity installations, etc. Chrome grey single conductor shielded plastic cable terminated individually in transparent plastic bags.



Our "Littel-Plug" No. 250, one end, to our "Extension Jax" No. 88, other end.  
Part No. 8110 72" U.S.A. List Price \$3.00



Our "Extension Jax" No. 88, one end, to our "Phono Plug" No. 3501M with handle, other end.  
Part No. 8111 72" U.S.A. List Price \$2.50



Our "Littel-Plug" No. 250, one end, to our "Phono Plug" No. 3501M with handle, other end.  
Part No. 8112 72" U.S.A. List Price \$2.50



Our "Littel-Plug" No. 250, one end, to "Phono Jack" No. 3501FC, other end.  
Part No. 8113 72" U.S.A. List Price \$2.65



Our "Littel-Plug" No. 250, one end, to Spade Lugs at other end.  
Part No. 8114 72" U.S.A. List Price \$2.25



Our "Littel-Plug" No. 250, one end, with stripped and tinned leads at other end.  
Part No. 8115 72" U.S.A. List Price \$2.00

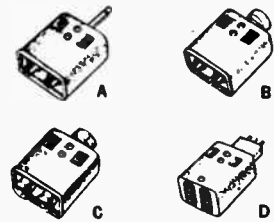


Our "Littel-Plug" No. 250, one end, with Insulated Alligator Clips at other end.  
Part No. 8116 72" U.S.A. List Price \$2.75



Our Male "Phono Plug" No. 3501M with handle, one end, with spade lugs at other end.  
Part No. 8117 72" U.S.A. List Price \$1.85

## "MINI-MIX"



An unusually small 2-input Audio Mixer. Separate Volume Control directly in line with each input. Knobs recessed inside housing. Average size 2 3/4" x 1 1/8" x 1 1/8". Ideal for tape recorders to "mix" two different sound sources.

Part No.	U.S.A. List	Fig. No.	DESCRIPTION
310	\$7.95	A	2-cond. Phone Jack inputs with 2-cond. Plug output. (For equipment where Jack is recessed, use 8266 Cable Assembly Adapter).
315	\$7.95	B	2-cond. Phone Jack inputs with Microphone connector output.
320	\$7.95	C	Microphone Connector inputs and output mating with standard mic. connectors.
325	\$9.95	O	For use with recorders using Jones type connectors. Fits Early Webeor Recorders.
326	\$9.95	A	3-cond. Jack Inputs with long 2-cond. Plug Output. For Webeor Recorders Series 2020, 2110, and 2130.



Our Male "Phono Plug" No. 3501M with handle, one end, with stripped and tinned leads at other end.

Part No.	Length	U.S.A. List	Part No.	Length	U.S.A. List
8118	36"	\$1.10	8119	72"	\$1.35



Our Male "Phono Plug" No. 3501M with handle, at each end.

Part No.	Length	U.S.A. List	Part No.	Length	U.S.A. List
8120	18"	\$1.15	8123	72"	\$1.65
8121	36"	\$1.30	8124	120"	\$2.20
8122	48"	\$1.45			



Our Male "Phono Plug" No. 3501M with handle, one end, with Female "Phono Jack", our No. 3501FC, other end.

Part No.	Length	U.S.A. List	Part No.	Length	U.S.A. List
8125	18"	\$1.45	8128	72"	\$1.90
8126	36"	\$1.60	8129	120"	\$2.20
8127	48"	\$1.70			



Our Female Microphone Connectors No. 2501F at each end. Connector so designed that it can be converted to male type by screwing back coupling ring.

Part No.	Length	U.S.A. List	Part No.	Length	U.S.A. List
8130	36"	\$2.25	8132	144"	\$3.85
8131	72"	\$2.75			



# SWITCHCRAFT

CHICAGO 22, ILLINOIS

"MULTI-SWITCHES"  
"PLUGS"  
"MICROPHONE CONTROL ADAPTER"  
"JACK PANELS"

## "MULTI-SWITCHES"



A multiple push button Switch (A), featuring choice of switching functions; 2 to 12 stations (for complete details write). Frame can be set up by user for interlock action, non-locking action, and accumulative or all-lock. Choose number of stations needed, order switching for each station as separate items, for mounting to frame by the user.

locking action, and accumulative or all-lock. Choose number of stations needed, order switching for each station as separate items, for mounting to frame by the user.

FRAME ASSEMBLY FOR "MULTI-SWITCHES"					
Frame Part No.	7400	7600	7800	71000	71200
No. of Stations	4	6	8	10	12
U.S.A. List Price	\$12.00	\$16.00	\$20.00	\$24.00	\$28.00

Switch Stacks, for "Multi-Switches", series 70 have five silver contacts; series 70P have welded cross bar Palladium contacts; either type rated at 3 amps., A.C. non-inductive load, 300 Watts maximum.

SERIES 70		SERIES 70P		Schematic Circuit
Part No.	U.S.A. List Price	Part No.	U.S.A. List Price	
71	\$0.50	71P	\$0.60	
72	\$0.50	72P	\$0.60	
73	\$0.60	73P	\$0.80	
73D	\$0.70	73DP	\$0.90	
76	\$0.95	76P	\$1.15	

Lock-out Bars, for "Multi-Switches". For interlock function when it is desired that only one station can be depressed at one time. Assembly is added to back of frame assembly.

Part No.	No. of Stations	U.S.A. List Price
K04	4	\$3.25
K06	6	\$3.50
K08	8	\$3.75
K10	10	\$4.25
K12	12	\$4.75

## "FLAT PLUGS"



A unique design, removable cover for easy access to either screw or solder terminals; 2- and 3-cond. types. Ideal for equipment where conventional long handle may interfere.

Part No.	U.S.A. List Price	DESCRIPTION
220	\$0.90	2-cond. Screw term.
227	\$0.85	2-cond. Solder term.
230	\$1.30	3-cond. Screw term.
237	\$1.25	3-cond. Screw term.

## "TINI-PLUGS"



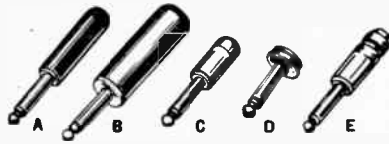
"Tini-Plugs"—A miniature 2-conductor Phone Plug for the "Tini-Jax"; about 1/2 the size of Switchcraft "Littel Plug"; similar construction. Accepts cable up to 3/16" diameter. Cable clamp terminals for soldering also screw terminal with no clamp.

Part No.	U.S.A. List Price	DESCRIPTION
740	\$8.75	Screw Term.
750	\$8.70	Clamp Term.
770	\$1.05	Screw Term.
780	\$1.60	Clamp Term.

"Extension Jax" for "Tini-Plug" Part No. 122

U.S.A. List \$1.20

## "PHONE PLUGS"



The "Littel-Plug" (A), radically new, fitting standard Jacks; solder lug type features clamp terminal serving as a cable clamp and terminal—perfect for metal braid cable. Screw type terminals—no clamp. Tenite or Metal handles are 1 1/8" L., 1/2" dia. Exterior metal parts bright nickel Pl.

No.'s S-250 and S-280 have a .206 dia. sleeve; mates with S-11 and S-128 Jacks. No.'s 180 and 288 have wide insulator between sleeve and tip—makes it possible to use a 2-conductor Plug in a 3-conductor Jack. The Standard Plugs (B), conventional design, available both black Bakelite or metal handles 2 1/8" L. x 1/8" O.D., except No. 90 and No. 160 have metal handles 1" long. Exterior metal parts bright nickel Pl. No. 170 (E) is similar to No. 70, except 2 piece handle with built-in cable clamp; No. 190 (A) similar to No. 90 except same handle as No. 170. No. 475 same as No. 170 but MIL construction for type PJ-636.

The "Lug Plug" (C), low-cost two conductor, solder lug term. Exterior metal parts bright Nickel Pl. Red or Black Tenite Handles are 1 3/4" L., 1/2" O.D. No. 380 has metal handle 1" L., bright Nickel Pl.

Plug Adapter (D) used with 2501F Connector for use with standard Jacks.

For special adapters see separate listing.

Part No.	U.S.A. List	Plug Type	Type Handle	Description
40	\$0.75	Standard	Black	2-cond.*
44	\$0.50	Adapter		2-cond.
60	\$1.05	Standard	Black	3-cond.†
70	\$1.20	Standard	Metal	2-cond.*
90	\$1.30	Standard	Metal	3-cond.†
160	\$0.90	Standard	Metal	2-cond.*
170	\$1.85	Standard	Metal-2-pc	2-cond.*
180	\$1.05	Standard	Metal	2-cond.*
190	\$1.50	Standard	Metal	3-cond.†
190-A	\$1.95	Standard	Metal	3-cond.†
240	\$0.75	Littel-Plug	Black	2-cond.*
245	\$0.75	Littel-Plug	Red	2-cond.*
250	\$0.70	Littel-Plug	Black	2-cond.†
S-250	\$0.75	Littel-Plug	Black	2-cond.†
255	\$0.70	Littel-Plug	Red	2-cond.†
260	\$1.20	Littel-Plug	Black	3-cond.*
267	\$1.05	Littel-Plug	Black	3-cond.†
269	\$1.05	Littel-Plug	Red	3-cond.†
270	\$1.05	Littel-Plug	Metal	2-cond.*
280	\$1.00	Littel-Plug	Metal	2-cond.†
S-280	\$1.00	Littel-Plug	Metal	2-cond.
R-280	\$1.25	Littel-Plug	Metal	2-cond.† (Short sleeve for Revere Recorders, mates with No. 126 "Extension Jax")
288	\$1.05	Littel-Plug	Metal	2-cond.†
290	\$1.40	Littel-Plug	Metal	3-cond.*
297	\$1.30	Littel-Plug	Metal	3-cond.†
350	\$0.55	Lug-Plug	Black	2-cond.†
355	\$0.55	Lug-Plug	Red	2-cond.†
380	\$0.70	Lug-Plug	Metal	2-cond.†
475	\$1.95	Standard	Metal	3-cond.*

\*Screw Terminals. †Clamp-Lug Terminals. ‡Solder-Lug Terminals.

## MICROPHONE CONTROL "ADAPTER"



Designed for high impedance circuits to reduce or increase relative volume. For example, microphone applications (using the single conductor shielded cable).

Part No.	U.S.A. List Price	DESCRIPTION
320	\$6.95	Female microphone connector (off center) one end to male connector.

## "LITTEL-PLUG" AND "EXTENSION JAX" (NME TYPES)



Designed to meet exacting requirements of Industry and the Armed Services. Molded construction provides complete continuity of insulation in plugs. Jack per MIL-J-641A; Plugs per MIL-P-642A.

Part No.	U.S.A. List	DESCRIPTION
410	\$0.80	2-cond.—Solder Cup—Type PJ-291 (Old S.C. No. PL-291) Mates with No. 810 (JJ-048) Jack.
*430	\$1.40	2-cond.—Screw Term. Cable opening 1/4"—Black handle—Type PJ-054B (Old S.C. No. PL-54).
*435	\$1.40	Same as No. 430, except Red Handle—Type PJ-054R (Old S.C. No. PL-354).
440	\$1.40	2-cond.—Screw Term. Black Handle—Type PJ-055B. (Old S.C. No. PL-55).
445	\$1.40	2-cond.—Screw Term. Red Handle—Type PJ-055R.
*450	\$1.40	Same as No. 430, except—Type PJ-540B—Cable Opening 1/4" (1 1/2" deep). (Old S.C. No. PL-540) Black Handle.
*455	\$1.40	Same as No. 450, except—Type PJ-540R, Red Handle.
470	\$2.00	2-cond.—Screw Term. Shielded Handle—Type PJ-055M (Old S.C. No. PL-125).
475	\$1.95	Shielded Handle. MIL Type PJ-636. Similar No. 70, except 2-pc handle, built-in Cable Clamp. Handle 1 3/8" long.
480	\$3.60	3-cond.—Screw Term. Black Handle—Type PJ-068 (Old PL-68).
810	\$0.80	2-cond.—Solder Lug—Type JJ-048 (Old S.C. No. JK-48), mates with No. 410 (PJ-291) Plug.
820	\$2.00	2-cond.—Screw Term. Black Handle—Type JJ-026 (Old S.C. No. JK-26).
P-1074-1	\$0.85 for Pkg. of 25	Strain Relief Clamp, Nickel Plate Brass.

\*Mates with No. 820 (JJ-026) "Extension Jax".

## "JACK PANELS"



Black phenolic strip, reinforced with steel, supports Switchcraft "T-JAX" and "MT-JAX" (see separate listing). Slotted mounting brackets for standard 19" relay racks. Series 1200, single row for 24 Jacks; strip 1 1/4" wide. Series 2400, double row for 48 Jacks; 2 1/4" wide. Series 2600, double row for 52 Jacks; 1 3/4" wide. Write for engineering details.

ets for standard 19" relay racks. Series 1200, single row for 24 Jacks; strip 1 1/4" wide. Series 2400, double row for 48 Jacks; 2 1/4" wide. Series 2600, double row for 52 Jacks; 1 3/4" wide. Write for engineering details.

Part No.	U.S.A. List	DESCRIPTION
1200	\$18.00	Single Row Panel, less Jacks.
1232A	\$45.00	Single Row, 12 pr. closed ckt. T-332A "T-Jax".
1332A	\$55.00	Single Row, 12 pr. closed ckt. MT-332A "MT-Jax".
2400	\$20.00	Double Row Panel, less Jacks. 2 1/4" wide (holds 48 Jacks).
2432A	\$75.00	Double Row, 24 pr. closed ckt. T-332A "T-Jax", 2 1/4" wide.
2532A	\$95.00	Double Row, 24 pr. closed ckt. MT-332A "MT-Jax", 2 1/4" wide.
2600	\$25.00	Double Row Panel, less Jacks. 1 3/4" wide (holds 52 Jacks).
2632A	\$85.00	Double Row with 52 No. T-332A "T-Jax", 1 3/4" wide.
2732A	\$110.00	Double Row with 52 No. MT-332A "MT-Jax", 1 3/4" wide.

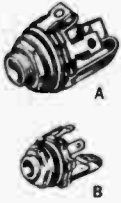
# SWITCHCRAFT INC.

CHICAGO 22, ILLINOIS

## JACKS

"EXTENSION JAX"  
"SHIELDED JAX"  
"JACK COVERS"

### "LITTEL-JAX AND "TINI-JAX"



The "Littel-Jax" (A) features notched insulating washers mechanically interlocking springs and lugs; "V" bend in tip spring firmly "holds" mating plug; minimum space requirements, economical. Mount in single  $\frac{3}{8}$ " hole, panels up to  $\frac{3}{8}$ " thick, except L-11 and L-12A in panels up to  $\frac{1}{4}$ " thick.

No. C-11 (JJ-034) and C-12A (JJ-089) mate with No. 440 (PJ-055B) Plug; C-12B (JJ-033), S-12B and S-13B mate with No. 480

(JAN PJ-068 or W.E. No. 309) Plug. No. C-11 and C-12B have locating pins (non-turn devices). No. S-11 similar to No. 11 except .210" I.D. sleeve to mate with S-250 and S-280 Plugs. C-11 (JJ-034), C-12B (JJ-033) and C-12A (JJ-089) per JAN-J-641. All others mate with standard  $\frac{1}{4}$ " dia. plugs such as our No. 40, 250, etc. The "Tini-Jax" (B) a miniature 2-conductor Jack, approximately  $\frac{1}{2}$  the size of the "Littel-Jax"; otherwise similar in construction. Mounts in  $\frac{1}{8}$ " dia. hole; panels up to  $\frac{1}{8}$ " thick. Mate with "Tini-Plugs" No. 750, etc. 43A has a unique spring design that requires a pear shaped tip, such as our No. 750.

"LITTEL-JAX"		"TINI-JAX"		Schematic No.
Part No.	U.S.A. List Price	Part No.	U.S.A. List Price	
11	\$0.40	41	\$0.40	I
C-11	\$0.60			
L-11	\$0.50			
S-11	\$0.45			
12A	\$0.45	42A	\$0.45	
C-12A	\$0.75			III
L-12A	\$0.55			
13	\$0.90			
13A	\$0.85	43A	\$0.70	V
13E	\$0.90			IX
Three Conductor Types				
12B	\$0.55			IV
C-12B	\$0.70			
S-12B	\$0.65			
13B	\$0.75			
S-13B	\$0.95			
				VII

### "EXTENSION JAX"

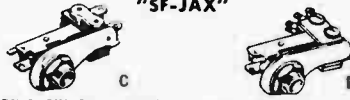


Features a clamp type terminal providing a cable anchor. Spring tempered nickel silver springs, designed to properly "hold" mating plug. Exterior metal parts N.P. Terminals mechanically interlock. High

grade insulation. Available in 2 and 3-conductor types, solder lug or screw type terminals. Bakelite or Brightly Nickel Plated Brass handles. Mates with any standard plug. S-128 mates with S-250 plug.

Part No.	U.S.A. List	Handle	Description
80	\$1.15	Black	2-cond. Screw Term.
88	\$1.00	Black	2-cond. Lug. Term.
120	\$1.55	Shielded	2-cond. Screw Term.
126	\$1.80	Shielded	2-cond. for R-280 Plug
128	\$1.40	Shielded	2-cond. Lug. Term.
830	\$1.55	Black	3-cond. Screw Term.
838	\$1.40	Black	3-cond. Lug. Term.
1230	\$1.95	Shielded	3-cond. Screw Term.
1238	\$1.80	Shielded	3-cond. Lug. Term.
S-128	\$1.50	Shielded	2-cond. Spec. Lug. Ter.

### "SF-JAX"



"SF-JAX", Series 20 (C) requires a minimum of panel depth, mounts in single  $\frac{3}{8}$ " dia. hole, panels up to  $\frac{3}{8}$ " thick. Series 50 (D) similar to Series 20, except solder lug location necessitates more depth but requires less panel space. Mounts in panels up to  $\frac{1}{4}$ " thick.

Series C-20 and C-50, MIL types with Military Insulation and finishes, otherwise similar to commercial Series 20 and 50; both will mount in panels up to  $\frac{1}{4}$ " thick.

Series 20 & C-20		Series 50 & C-50		MIL	Schematic No.
Part No.	U.S.A. List	Part No.	U.S.A. List	Type No.	
21	\$0.65	51	\$0.65		I
		C-51	\$1.20	JJ-096	
22	\$0.80	52	\$0.80		II
22A	\$0.80	52A	\$0.80		
		C-52A	\$1.30	JJ-097	III
22B	\$0.80	52B	\$0.80		
		C-52B	\$1.30	JJ-103	IV
23	\$0.95	53	\$0.95		
C-23	\$1.35			JJ-099	V
23A	\$0.95	53A	\$0.95		
C-23A	\$1.35			JJ-098	VI
		C-53A	\$1.55	JJ-082	
23B	\$0.95	53B	\$0.95		VII
23C	\$0.95	53C	\$0.95		
23E	\$0.95	53E	\$0.95		VIII
C-23E	\$1.35			JJ-102	
24	\$1.10	54	\$1.10		X
24A	\$1.10	54A	\$1.10		
		C-54A	\$1.60	JJ-093	XI
24B	\$1.10	54B	\$1.10		
		C-54B	\$1.60	JJ-101	XII
25	\$1.30	55	\$1.30		
		C-55B	\$1.85	JJ-095	XV
26	\$1.40	56	\$1.40		

### "LF-JAX" AND "M-JAX"



Long Frame Jacks, the "LF-JAX", (E) Series 30, requires minimum panel space, 3" deep.

"M-JAX" (F) a heavy frame, often referred to as Navy Jack, 2 $\frac{1}{2}$ " deep. Both types mount in single  $\frac{3}{8}$ " hole, in panels up to  $\frac{1}{4}$ " thick.

"LF-JAX"		"M-JAX"		MIL	Schematic No.
Part No.	U.S.A. List	Part No.	U.S.A. List	Type No.	
31	\$0.75	M-441	\$1.50		I
32	\$0.95				
32A	\$0.95	M-442A	\$1.70	JJ-107	III
32B	\$0.95				
33	\$1.05				V
33A	\$1.05	M-443A	\$1.95	JJ-105	
33B	\$1.05	M-443B	\$2.10	JJ-106	VII
33C	\$1.05				
33E	\$1.05				IX
34	\$1.20				
34A	\$1.20				XI
34B	\$1.20	M-444	\$2.30	JJ-083	
		M-444B	\$2.20	JJ-082	XII
35	\$1.45	M-445	\$2.75	JJ-104	
36	\$1.70	M-446	\$3.50	JJ-079	XIV
		M-446A	\$3.90	JJ-081	

\*Bushing .2085", to mate with plugs PJ-068 and PJ-309.

### "T-JAX" AND "MT-JAX"



The "T-JAX" and "MT-JAX" are a long frame, switchboard type. The "T-JAX", commercial quality, for low cost communication equipment where economy is all important.

The "MT-JAX" is recommended for high quality communication and Military equipment, featuring welded crossbar Palladium contacts. Frame design also available with mounting ear rotated 90° from position shown in figure "G"; add prefix "C" to part number. All types listed mate with  $\frac{1}{4}$ " dia. plug sleeves unless otherwise indicated.

"T-JAX"		"MT-JAX"		MIL	Schematic No.
Part No.	U.S.A. List	Part No.	U.S.A. List	Type No.	
T-331	\$1.05	MT-331	\$1.50	JJ-086	I
		MT-332	\$1.70		
T-332A	\$1.20	MT-332A	\$1.70	JJ-024	III
T-332B	\$1.20	MT-332B	\$1.70	JJ-022	
		MT-332C	\$1.95	JJ-016	XVIII
		MT-333	\$1.95	JJ-084	
		MT-333B	\$1.95		VII
		MT-333E	\$1.95		
T-334A	\$1.50	MT-334A	\$2.00		XI
T-334B	\$1.60	MT-334B	\$2.00	JJ-042	
T-334C	\$1.50	MT-334C	\$2.00	JJ-072	XVII
		MT-334E	\$2.00	JJ-085	
		MT-334F	\$2.00	JJ-035	XIX
		MT-335	\$2.25		
		MT-336	\$2.25	JJ-074	XX
		MT-336A	\$2.75	JJ-075	
		MT-336B	\$2.75	JJ-077	XXI
		MT-336C	\$2.75	JJ-073	
		MT-336E	\$2.75		XXIII
		MT-337	\$2.75	JJ-087	
		*MT-342B	\$1.95		IV
		*MT-344B	\$2.25		

\*Bushing .2085" to mate with PJ-068 and PJ-309.

### "SHIELDED JAX"



"Shielded Jax" (H) regular "Littel-Jax" (see separate listing) assembled into shield, ideal for high impedance circuits.

Part No.	U.S.A. List Price	DESCRIPTION
CN-11	\$0.80	Open ckt. (see No. 11)
CN-12A	\$0.85	Close ckt. (see No. 12A)
CN-12B	\$0.95	(see No. 12B)
CN-13B	\$1.15	(see No. 13B)

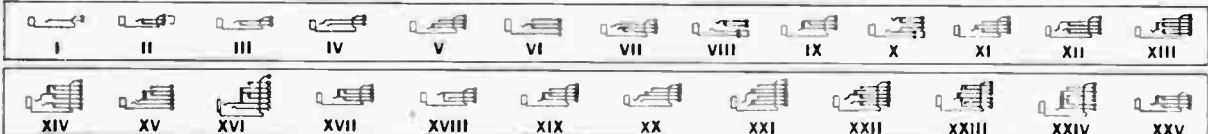
### "JACK COVERS"

500 Series Cover used with conventional  $\frac{3}{4}$ "-32 threaded bushing type Phone Jacks. Spring loaded cover immediately snaps over Jack opening when plug is removed, providing a moisture seal.

600 Series Cover, similar to above, is used with certain type Tip Jacks. Fit Tip Jacks with  $\frac{1}{4}$ " mounting; height of Tip Jack head  $\frac{1}{8}$ " to  $\frac{3}{16}$ ".

Also can be used as covers for "Tini-Jax"

Part No.	U.S.A. List Price	Description
510	\$1.05	Olive Drab
515	\$1.05	Black
520	\$1.05	Navy Grey
610	\$0.75	Olive Drab
615	\$0.75	Black
620	\$0.75	Navy Grey



The above are strictly electrical schematics and do not necessarily indicate relative solder lug positions.

# SWITCHCRAFT

CHICAGO 22, ILLINOIS

## SWITCHES

### "BUTTON SWITCHES"



An unusually small, completely enclosed switch. Series 903 and 913 (A), behind panel mounting, requires single  $\frac{1}{8}$ " dia. hole, panels up to  $\frac{1}{4}$ ". Series 923 and 933 (B) front of panel mounting, requires  $\frac{1}{4}$ " dia. hole, panels up to  $\frac{1}{2}$ " thick. Rated 250 mils, non-inductive load. A.C. 30 watts max.

Part No. Red Button	Part No. Blk. Button	U.S.A. List Price	Schematic Circuit
903	913	\$1.50	
903D	913D	\$1.50	
923	933	\$1.75	
923D	933D	\$1.75	

### "LITTEL" AND "TINI" SWITCHES



The "Littell Switch" (C) available in 3 circuits, red or black 1 pc. Plastic P.B., non-locking only. Integral contacts; recommended for low current circuits only; same switches with suffix letter "S" in part number rated at 3 amps, 300 watts A.C. non inductive load. Mounts  $\frac{3}{8}$ " dia. hole in panels up to  $\frac{1}{4}$ ".



The "Tini-Switch" (D) similar in construction but approx.  $\frac{1}{2}$  the size of "Littell-Switch". Available integral contacts only. Mounts  $\frac{1}{4}$ " dia. hole in panels up to  $\frac{1}{8}$ " thick. \*Silver Cont.

Part No. Red Button	Part No. Blk. Button	U.S.A. List Price	Schematic Circuit
101	201	\$0.90	I
*101-S	201-S	\$1.05	
102	202	\$0.90	
*102-S	202-S	\$1.05	II
103	203	\$1.00	
*103-S	203-S	\$1.20	III

### "TINI-SWITCHES"

951	961	\$0.90	I
952	962	\$0.90	II
953	963	\$1.00	III

### "FF" AND "NF" SWITCHES



"FF-Switch" (E), Series 1000, 1-pc. black plastic push button; all common circuits. Mounts in single  $\frac{3}{8}$ " dia. hole, panels up to  $\frac{1}{4}$ " thick. Fine silver contacts rated at 3 amp, 300 Watts max. A.C. non-inductive load. Frame  $\frac{1}{2}$ " wide;  $1\frac{1}{4}$ " lg. o/a.



"NF-Switch" (F) series 4000, same features and rating as "FF-Switch" but smaller. Frame  $\frac{1}{2}$ " wide;  $1\frac{3}{8}$ " long o/a. mounts in panels up to  $\frac{1}{2}$ " thick.

FF-Switch Part No.	NF-Switch Part No.	U.S.A. List Price	Schematic Circuit
1001	4001	\$1.05	I
1002	4002	\$1.05	II
1003	4003	\$1.20	III
1004	4004	\$1.30	IV
1005	4005	\$1.30	V
1006	4006	\$1.55	VI
1009	4009	\$2.10	VII

### "LEV-R-SWITCHES"



"Lev-R-Switches" (G), unusually-small lever action switch, available in numerable circuits. Ideal for test equipment, inter-com. systems, model r.r. switch panels, etc. Mount in  $\frac{1}{2}$ " dia. hole, panels up to  $\frac{1}{4}$ " thick for series 3000, and panels up to  $\frac{1}{4}$ " for series 13000. Contacts fine silver, rated at 3 amps., 300 watts max. non-inductive A.C. load. Made with welded cross bar Palladium contacts on special order. 2 and 3 position; locking or non-locking functions. Add prefix "L" for locking type."

#### TWO POSITION TYPE

Series 3000		Series 13000		Schematic CKT.
Non-Locking	U.S.A. List	Non-Locking	U.S.A. List	
3001	\$1.95	13001	\$2.10	XI
3002	\$1.95	13002	\$2.10	XII
3003	\$2.25	13003	\$2.40	XIII
3003D	\$2.40	13003D	\$2.50	XIV
3004	\$2.50	13004	\$2.65	XV
3005	\$2.50	13005	\$2.65	XVI
3006	\$2.75	13006	\$2.75	XVII
3006D	\$2.90	13006D	\$2.90	XVIII
3009	\$3.40	13009	\$3.75	XIX

#### THREE POSITION TYPE

3033	\$2.50	13033	\$2.65	XX
3034	\$2.60	13034	\$2.75	VIII
3035	\$2.60	13035	\$2.75	IX
3036	\$2.90	13036	\$3.10	X
3036D	\$3.10	13036D	\$3.25	XXI
3037	\$2.95	13037	\$3.10	XXII
30312	\$3.75	130312	\$4.00	XXIII
30313	\$3.75	130313	\$4.00	XXIV

#### INTER-COMM. SWITCHES

3033T	\$2.50	13033T	\$2.65	XX
3037T	\$2.95	13037T	\$3.10	XXII

### "RS-SWITCH"



The "RS-SWITCH" (H), locking and non-locking, 2- or 3-position, all common circuits. Mounts in single  $\frac{3}{8}$ " dia. hole, panels up to  $\frac{1}{4}$ " thick. Fine silver contacts rated 3 amperes, 120 volts A.C. (non-inductive).

Add suffix "L" to part number for locking type.

Part No. Non-Locking	U.S.A. List Price	Schematic CKT.
2001	\$1.25	XI
2002	\$1.25	XII
2003	\$1.50	XIII
2004	\$1.50	XV
2005	\$1.50	XVI
2006	\$1.95	XVII

#### THREE POSITION TYPES

2034	\$1.50	VIII
2035	\$1.50	IX
2036	\$1.95	X

### "T-SWITCHES"



Long frame switches, Series 11000 (J), locking and non-locking push button design commonly used on Jack Panels, same mounting as "MT-JAX".  $\frac{1}{2}$ " dia. mounting hole  $\frac{3}{8}$ " center distance to push button. Requires  $2\frac{1}{8}$ " depth behind panel. Welded cross bar Palladium contacts rated 3 amps. A.C. 300 Watts max. non-inductive load.

Series 11200 (K), similar to above but turn type operation, locking and non-locking.

Add suffix "L" to part number for locking type.

"PUSH BUTTONS" SERIES 11000		"TURN-BUTTONS" SERIES 11200		U.S.A. List	Contact Assembly
Part No. Non-Locking	Part No. Non-Locking	Part No. Non-Locking	Part No. Non-Locking		
11001	11201	11001	11201	\$3.50	1-A
11002	11202	11002	11202	\$3.50	1-B
11003	11203	11003	11203	\$4.00	1-C
11003D	11203D	11003D	11203D	\$4.00	1-D
11004	11204	11004	11204	\$4.50	2-A
11005	11205	11005	11205	\$4.50	2-B
11006	11206	11006	11206	\$5.00	2-C
11006D	11206D	11006D	11206D	\$5.00	2-D
11008	11208	11008	11208	\$5.60	4-A
11009	11209	11009	11209	\$6.00	3-C
11012	11212	11012	11212	\$6.80	4-C

This table refers to Basic Contact Forms under the heading "Contact Assembly".

#### BASIC CONTACT FORMS



### "TELEVER SWITCH"



Series 6000, "Telever Switch" (L), rugged telephone type;  $3\frac{1}{2}$ " depth behind panel. Welded cross bar Palladium contacts rated at 3 amps., 300 Watts max. non-inductive A.C. load. Insulated black knob; chrome plated brass actuator. Standard mounting centers  $1\frac{1}{2}$ " x  $1\frac{1}{16}$ "; usually mounted by four No. 3-48 screws (not furnished); can be assembled to escutcheon plate.

Series 16000, "Telever Switch" (M), same design as Series 6000, except features a single hole mounting; requires  $1\frac{1}{2}$ " hole in panels up to  $\frac{1}{4}$ " thick. Unique feature, "non-locking" type can easily be converted to "locking" by removing "stop plate".

Add suffix "L" to part number for locking type.

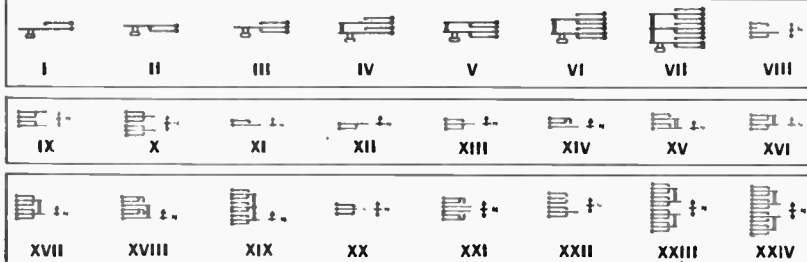
6000 SERIES		16000 SERIES		Contact Assembly
Part No. Non-Locking List	U.S.A. List	Part No. Non-Locking List	U.S.A. List	

#### TWO POSITION TYPE

6006	\$ 5.00	16006	\$ 5.00	2-C
6006D	\$ 5.60	16006D	\$ 5.60	2-D
6008	\$ 5.60	16008	\$ 5.60	4-A
6009	\$ 6.00	16009	\$ 6.00	3-C
60012	\$ 6.80	160012	\$ 6.80	4-C
60012D	\$ 7.50	160012D	\$ 7.50	4-D
60024	\$10.00	160024	\$10.00	8-C

#### THREE POSITION TYPE

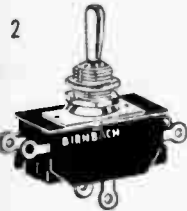
				Pos. 1	Pos. 2
6036	\$ 5.00	16036	\$ 5.00	1-C	1-C
6036D	\$ 5.60	16036D	\$ 5.60	1-D	1-D
6038	\$ 5.60	16038	\$ 5.60	2-A	2-A
60312	\$ 6.80	160312	\$ 6.80	2-C	2-C
60312D	\$ 7.50	160312D	\$ 7.50	2-D	2-D
60316	\$ 8.80	160316	\$ 8.80	4-A	4-A
60324	\$10.00	160324	\$10.00	4-C	4-C
530	\$ 0.60	Escutcheon plate with 4 mounting screws. For series 6000 only.			





**1 PUSH BUTTON SWITCH MOMENTARY CONTACT**  
Solder lugs, slow make and break. Has  $\frac{1}{8}$ " slotted sleeve,  $\frac{3}{16}$ " diam. Complete with hex and knurled nuts. Nickel plated. UL approved. Rated 1 A. — 125 V. Less insulating button.

Cat. No.	Description	Shank Length	Std. Pkg.
6224	Two Circuits	2 1/2"	25
6230	SPST (Nor. Cl., Push to Break)	2 1/2"	25
6231	DPST (Nor. Op., Push to Make)	2 1/2"	25
6232	Button Only, Red or Black	2 1/2"	20
6185	SPDT (Nor. Off-Push to Make)	2 1/2"	25
6180	SPST Refrigerator Sw. (Nor.-On)	2 1/2"	25



**2 BAKELITE MOLDED "CENTER-OFF" SWITCHES**  
Molded bakelite case. Three position center-off. Solder terminals. Rated at 3 A., 2 V.; 6 A., 125 V. UL approved.

Cat. No.	Description	Shank Length	Std. Pkg.
6261	SPDT	2 1/2"	25
6263	DPDT	2 1/2"	25



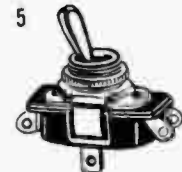
**3 BAKELITE MOLDED MOMENTARY CONTACT SWITCHES**  
Same as above except momentary. SPST Normally Off. 3 A., 250 V. UL approved. Rated 6 A., 125 V.

Cat. No.	Description	Shank Length	Std. Pkg.
6240	SPDT	2 1/2"	25
6241	SPST	2 1/2"	25
6242	DPDT	2 1/2"	25



**4 MOMENTARY PUSH BUTTON SWITCHES**  
Molded momentary, solder lugs. Rated 1 A., 125 V. With  $\frac{1}{8}$ " shank, normally OFF — push to make. Nickel plated. UL approved.

Cat. No.	Description	Std. Pkg.
6233	SPST	25
6234	SPDT	25
6235	DPST	25
6236	DPDT	25



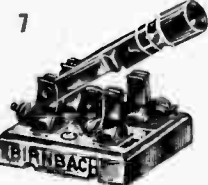
**5 DPDT CENTER OFF SWITCHES**  
Rated 1 A., 125 V., center OFF. Lug terminal with bat handle.  $\frac{3}{16}$ " diam. shaft, nickel plated.

Cat. No.	Description	Std. Pkg.
6243	DPDT	25



**6 SMALL APPLIANCE SWITCHES**  
Rated high — 3 A. at 250 V., 6 A. at 125 V.  $\frac{3}{16}$ " shank; brass nickel plated with solder lugs, complete with hex nut and ring. One-hole mounting. UL approved.

Cat. No.	Description	Std. Pkg.
6244	SPST	25
6244A	Bat Handle, SPST	25



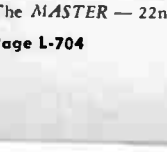
**7 BIRNBACH KNIFE SWITCHES**  
Made of special nickel plated spring brass on a rucked base. Screw terminals located conveniently for easy connections in circuit. Two mounting holes.

Cat. No.	Descrip.	Base	Std. Pkg.
6100	SPST	Por.	25
6102	SPDT	Bake.	20
6103	DPST	Por.	10
6104	DPDT	Bake.	10
6105	DPDT	Por.	10



**8 MOLDED BAKELITE SWITCHES**  
Bat handle, back connected, silver plated, lug contacts, slotted sleeve. 15/32" shank. 3 A., 250V., 6 A., 125 V.

Cat. No.	Description	Std. Pkg.
6280	SPST	25
6281	SPDT	25
6282	DPST	25
6283	DPDT	25



**9 SLIDE LEVER SWITCHES**  
Used on phonographs, test instruments, auto light, radio, etc. UL approved. 5 A., 125 V.

Cat. No.	Description	Std. Pkg.
6245	SPST	25
6246	SPDT	25
6247	DPST	25
6248	DPDT	25

**10 BALL HANDLE TOGGLE SWITCHES**

UL approved. Ball handle switches nickel plated; laminated type, ring and mounting nuts.

Cat. No.	Descrip.	Shank Length	Current Rating 125 V	Current Rating 250 V	Std. Pkg.
6200	SPST	2 1/2"	3 amps.	1 amp.	25
6201	SPST	2 1/2"	3 amps.	1 amp.	25
6202	SPDT	2 1/2"	3 amps.	1 amp.	25
6203	SPDT	2 1/2"	3 amps.	1 amp.	25
6204	DPST	2 1/2"	3 amps.	1 amp.	25
6205	DPST	2 1/2"	3 amps.	1 amp.	25
6206	DPDT	2 1/2"	3 amps.	1 amp.	25
6207	DPDT	2 1/2"	3 amps.	1 amp.	25

**NAME PLATE**  
6208 — On Off — Fits  $\frac{3}{16}$ " Sleeves ... 100  
6208A — Hi-Low — Fits  $\frac{3}{16}$ " Sleeves ... 100

**11 BAT HANDLE TOGGLE SWITCHES**

UL approved. Laminated type. Nickel plated finish; supplied with rim band mounting nuts.  $\frac{3}{16}$ " shank.

Cat. No.	Descrip.	Current Rating 125 V	Current Rating 250 V	Std. Pkg.
6220	SPST	3 amps.	1 amp.	25
6221	SPDT	3 amps.	1 amp.	25
6222	DPST	3 amps.	1 amp.	25
6223	DPDT	3 amps.	1 amp.	25

**12 MOLDED BAT HANDLE TOGGLE SWITCHES MEETS JOINT ARMY-NAVY SPEC. JAN-S-23 SUPERCEDED BY MIL-S-3950**

Bat handle, back connected, silver plated contacts. Slotted sleeve. Maintained contact.  $\frac{3}{16}$ " shank.

Cat. No.	A.W.S. No. & Descrip.	Current Rating 125 V	Current Rating 250 V	Std. Pkg.
6250	ST-12-A SPST	6 amps.	3 amps.	25
6251	ST-12-D SPDT	6 amps.	3 amps.	25
6252	ST-22-K DPST	6 amps.	3 amps.	25
6253	ST-22-N DPDT	6 amps.	3 amps.	25

**CONFORMING TO JOINT ARMY-NAVY SPEC. JAN-S-23 SUPERCEDED BY MIL-S-3950 AIRCRAFT SWITCH SPECIFICATIONS MIL-S-6745 (AN-S-23)**

6270	ST-42-A SPST	15 amps.	6 amps.	25
6271	ST-42-D SPDT	15 amps.	6 amps.	25
6272	ST-52-K DPST	25 amps.	9 amps.	25
6273	ST-52-N DPDT	25 amps.	9 amps.	25
6249	ST-42-E SPDT	15 amps.	6 amps.	25
6274	(On-Off-On) DPDT	25 amps.	9 amps.	25
	(On-Off-On)			

**13 POWER SWITCHES HEAVY DUTY MOMENTARY SWITCHES**

Contact push button, normally off, molded bakelite, screw terminals;  $\frac{1}{8}$ " slotted sleeves. Rated at 12 A., 125 V.; 6 A., 250 V. 1 H.P. at 250 V. Adaptable as a safety switch for hi frequency, transmitters, racks, transformers. UL approved.

Cat. No.	Description	Std. Pkg.
6226	DPST Momentary	25

**14 HEAVY DUTY SWITCHES**

DPST Maintained Contact. Bat handle molded bakelite,  $\frac{3}{16}$ " slotted sleeve, screw terminals. Rated at 12 A., 125 V.; 6 A., 250 V. 1 H.P. 250 V. UL approved.

Cat. No.	Description	Std. Pkg.
6225	DPST Power Switch	25

**15 HEAVY DUTY POWER SWITCHES**

Recommended where heavy currents are carried. Molded bakelite. Rated at 10 A., 125 V.; 5 A., 250 V. Neutral off in center. UL approved. Mounting sleeve diam.  $\frac{1}{2}$ " x  $\frac{3}{4}$ " long.

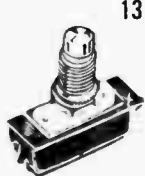
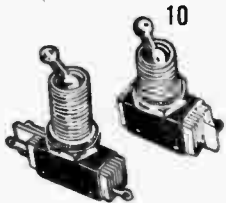
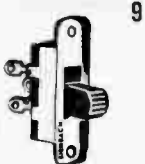
Cat. No.	Description	Std. Pkg.
6227	DPDT 2 1/4" x 1 1/4" x 3/4" H.P. 250 V.	25
6228	DPDT 2 1/4" x 1 1/4" x 3/4" H.P. 115-220 V.A.C.	25
6229	DPDT 2 1/4" x 1 1/4" x 3/4" H.P. 115-230 V.A.C.	10

**16 ROTARY SWITCHES**

UL approved. Complete with mounting nut. Nickel plated.

Cat. No.	Descrip.	Shank Length	Shaft Shank	Cur. Rat. 125 V	Cur. Rat. 250 V
6210	SPST	1 1/2"	1/8"	3	3
6211	SPST	1 1/2"	1/8"	3	3
6212	SPDT	1 1/2"	1/8"	3	1
6213	SPDT	1 1/2"	1/8"	3	1
6214	DPST	1 1/2"	1/8"	3	1
6215	DPST	1 1/2"	1/8"	3	1
6216	DPDT	1 1/2"	1/8"	3	1
6217	DPDT	1 1/2"	1/8"	3	1

Standard Pack: 25



## SINGLE HOLE • FLUSH MOUNTING TOGGLE SWITCHES

MEDIUM DUTY TYPES DESIGNED FOR GOV'T SPECS. SUCH AS JAN-S-23 AND DDAX SERIES  
Variations in construction under development for pending MIL-S-3950, Series MS25098 and MS25100.



Single Pole • Double Pole  
Single Throw • Double Throw  
Side Connected • Rear Connected  
Series ST12, ST13, ST18, ST17  
Series ST22, ST23, ST26, ST27

**6 AMP. — MEDIUM DUTY**  
This page covers 24 models of toggle switches nominally rated at 6 amp. at 125 VAC, 3 amp. at 250 VAC. Sixteen models have threaded bushings  $\frac{29}{64}$ " in length; eight  $\frac{1}{4}$ " in length.

### STAND UP UNDER TOUGH ENVIRONMENTAL TESTS

Like J-B-T Switches in the rotary, lever-action, and heavy-duty toggle switch fields, this new series has quality as its first objective. J-B-T controls quality by doing its own designing, actual manufacturing and in-plant testing of production samples.

**Sound Electrical Characteristics . . .** Stationary contacts are brass, heavily silver plated; wiping contacts are phosphor bronze, heavily silver plated. Tested to meet 50% overload for brief periods. Contact resistance well under 0.01 ohm requirement of military specifications. High dielectric exceeds 1000 volts r.m.s., 60 cycles at sea level.

**Cold and Heat . . .** Specialized aircraft lubricant facilitates mechanical and electrical operation at both low and high temperatures (-67°F to 185°F).

**High Humidity . . .** Materials, plating, construction and lubricant enable switch to withstand tropical climates.

**Salt . . .** Meets 100 hour Salt-Spray Test QQ-M-151a which is twice the required minimum.

**Vibration and Shock . . .** No momentary make or break nor mechanical damage during stringent shake tests and 75 G's drop test.


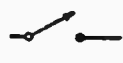

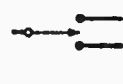

**Combination . . .** Can be used under any or all of these adverse conditions.

**Exceptionally Rugged . . .** Dull nickel plate external finish . . . terminals withstand 5 pound pull . . . operating cycles far in excess of the minimum specified as acceptable . . . stainless steel springs.

### SINGLE POLE

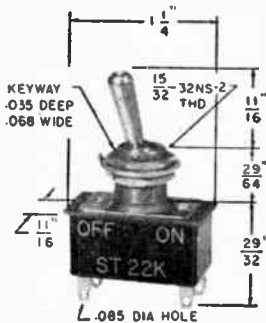
### CIRCUIT ARRANGEMENT

### DOUBLE POLE

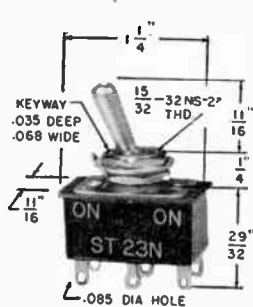
CIRCUIT DIAGRAM	TYPE	MODEL NUMBER				 KEYWAY			MODEL NUMBER				TYPE	CIRCUIT DIAGRAM
		REAR CON		SIDE CON					REAR CON		SIDE CON			
		Bush-ing Lgth.	Bush-ing Lgth.	Bush-ing Lgth.	Bush-ing Lgth.	Bush-ing Lgth.	Bush-ing Lgth.	Bush-ing Lgth.	Bush-ing Lgth.	Bush-ing Lgth.	Bush-ing Lgth.			
	SPST	ST12A	ST13A	ST16A	ST17A	on	none	off	ST22K	ST23K	ST26K	ST27K	DPST	
	SPST	ST12B	—	ST16B	—	on	none	off*	ST22L	—	ST26L	—	DPST	
	SPST	ST12C	—	ST16C	—	off	none	on*	ST22M	—	ST26M	—	DPST	
	SPDT	ST12D	ST13D	ST16D	ST17D	on	none	on	ST22N	ST23N	ST26N	ST27N	DPDT	

\*Momentary Position

For Electrical Characteristics, Current Values and Full Information, Ask for Bulletin TS-5B.



ST12 A thru D  
ST22 K thru N



ST17A, ST17D  
ST27K, ST27N



ST16 A thru D  
ST26 K thru N



ST13A, ST13D  
ST23K, ST23N

# Instrument Quality



# Components



Single Pole • Double Pole  
Single Throw • Double Throw  
Screw Terminal • Solder Lug  
Series ST40, ST42  
Series ST50, ST52

**20 AMP. — HEAVY DUTY**  
This page covers 32 models of toggle switches nominally rated at 20 amp. at 125 VAC, and 10 amp., 250 VAC, and other higher and lower ratings where specified in JAN-S-23 or other pertinent specifications.

## SINGLE HOLE • FLUSH MOUNTING TOGGLE SWITCHES HEAVY-DUTY TYPES DESIGNED FOR GOV'T SPECS. SUCH AS JAN-S-23 AND DDAX SERIES

Variations in construction are made for aircraft type MIL-S-6745 (AN-S-20a) series AN3021, AN3027, and other types under development for pending MIL-S-3950.

### REGULARLY TESTED TO MEET ADVERSE OPERATING CONDITIONS

**Overload** . . . Tested to make and break at 50% overload for brief periods. To assure performance of these switches with their comparatively heavy current ratings, J-B-T features ample size **solid coin silver contacts and rocker arms** instead of clad or brazed construction. Contact resistance is under 0.005 ohms. High dielectric exceeds 1000 volts r.m.s. at 60 cycles at sea level.

**Cold and Heat** . . . Specialized aircraft lubricant facilitates mechanical and electrical operation at both low and high temperatures (-67°F to 185°F).

**Vibration and Shock** . . . No momentary make or break or mechanical damage during stringent shake tests and 75 G's drop test.

**High Humidity** . . . Materials, dull finish on outside metal parts (as required by Armed Services specifications) and lubricant enable switches to withstand tropical climates.

**Salt** . . . Meet 100 hour Salt-Spray Test QQ-M-151a which is twice the required minimum of JAN-S-23.

**Rugged Service** . . . Generously proportioned and substantially built for extra life. For instance, both screw-type terminals and solder lugs easily withstand a 30 pound pull test. Operating cycles far in excess of minimum specified as acceptable. Springs are stainless steel. Quality standards are maintained by in-plant testing of production samples to meet adverse operating conditions.

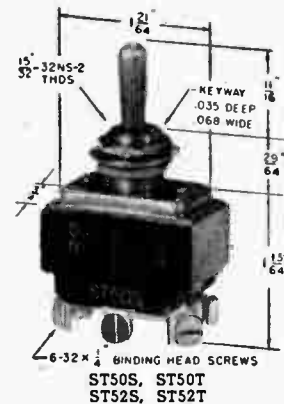
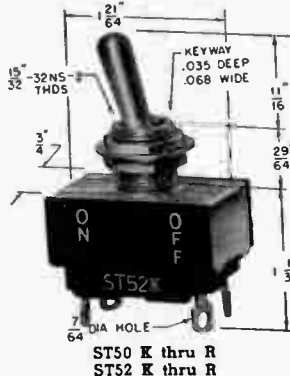
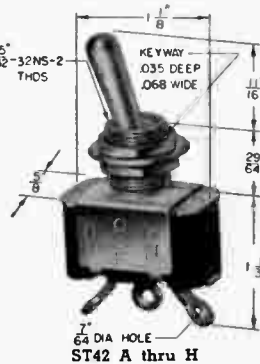
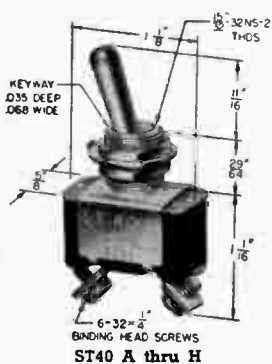
### SINGLE POLE

### CIRCUIT ARRANGEMENT

### DOUBLE POLE

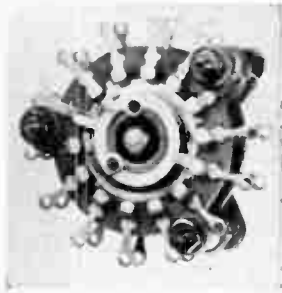
TYPE	CIRCUIT DIAGRAM	MODEL NUMBER		A	B	C	MODEL NUMBER		CIRCUIT DIAGRAM	TYPE
		SCREW TERMINAL	SOLDER LUG				SCREW TERMINAL	SOLDER LUG		
SPST		ST40A	ST42A	on	none	off	ST50K	ST52K		DPST
SPST		ST40B	ST42B	on	none	off*	ST50L	ST52L		DPST
SPST		ST40C	ST42C	off	none	on*	ST50M	ST52M		DPST
SPDT		ST40D	ST42D	on	none	on	ST50N	ST52N		DPDT
SPDT		ST40E	ST42E	on	off	on	ST50P	ST52P		DPDT
SPDT		ST40F	ST42F	on	none	on*	ST50R	ST52R		DPDT
SPDT		ST40G	ST42G	on*	off	on*	ST50S	ST52S		DPDT
SPDT		ST40H	ST42H	on	off	on*	ST50T	ST52T		DPDT

For Electrical Characteristics, Current Values and Full Information. Ask for Bulletin TS-4B.



## INSTRUMENT AND TESTER SWITCHES (LAMINATED)

### Rotary Selector — Single and Multi-Gang — Non-Shorting and Shorting



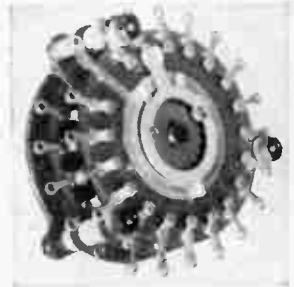
SS-14-2

J-B-T Instrument-type Rotary Selector Switches are used widely in quality test equipment, portable instruments, inspection setups and avionics where trouble-free, dependable performance is of major importance. Available in two basic types—14 and 20 position—the design gives extra contacts in minimum space. One to six decks.

**FEATURES:**

**Reliability**—Rigid, 3-post deck suspension, instead of the usual 2; all current carrying parts are brass or phosphor bronze, silver flashed and then heavily plated with fine silver to meet 100 hour salt spray test; ball bearing action, beryllium-copper balanced spring (SS-14); leaf-type (SS-20), and sharp detent assure positive indexing. Springs of both switches are generally replaceable without disturbing soldered connections. Laminated plastic decks and rotors selected for maximum mechanical and dielectric strength. Insulation resistance above 50,000 megohms.

**Exceptional Compactness**—14-position switch takes 13 circuits and "off" in 2" circle; 20-position switch handles 19 circuits and "off" in 2-23/32" circle. Each deck above first adds only 5/16".



SS-20-2

**Low Contact Loss**—Double-grip collector arms, and large-area contacts, silver to silver, result in an average contact resistance of .007 ohms or less during the useful life of the switch.

**Ample Dielectric**—AC or DC; normal carrying capacity (not make-and-break), 1 amp.; maximum momentary capacity (not make-and-break), 5 amp.; maximum voltage between contacts 1,500 volts R.M.S.; between decks and ground, 2000 volts R.M.S.

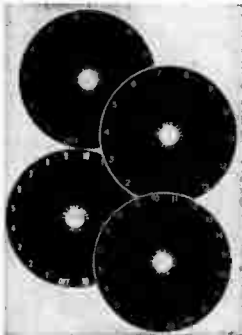
**Military Variations**—The following can be supplied on special order at extra cost: (a) laminated plastic, Type PBE-P per Spec. MIL-P-3115B; (b) vacuum impregnation of rotors, decks, spacers, and ceramic spacers with approved fungicides; (c) hot tin dip on contact surfaces to be soldered; (d) 14 to 20 live positions, no off, (add suffix F, as SS-14-2F); (e) common position in non-standard location.

**BASIC 14-POSITION:** 1 1/4" Bar knob supplied only on individually packed units—not on bulk orders unless specified. Collector arm placed directly opposite to flat of shaft, unless otherwise specified. Contact lugs and common lugs positioned as shown below, 13 contacts per deck. **One to six decks;** for each additional deck (or gang) add 5/16" to depth. **Continuous rotation type** supplied unless otherwise specified. **Adjustable Stop** normally is supplied on standard cataloged switches. **Fixed Stops** can be supplied on quantity orders at moderate cost. **Panel locator** positioned as shown unless otherwise specified on bulk orders.

**BASIC 20-POSITION:** 2" Bar knob supplied only on individually packed units—not on bulk orders unless specified. Collector arm placed directly opposite to flat on shaft, unless otherwise specified. Contact lugs and common lugs positioned as shown, 19 contacts per deck, continuous rotation types. **One to six decks;** for each additional deck, add 5/16" to depth. **Continuous rotation type** supplied unless otherwise specified. **Panel locator** positioned as shown unless otherwise specified on bulk orders.

**SWITCH KIT (Laminated Phenolic)**

Most of the 14 and 20 position laminated switches, plus special variations as needed, can be assembled quickly from the kit shown on an adjoining page. Designers, service engineers, laboratories, and industrial maintenance departments will especially appreciate the convenience, flexibility, and time saved.



**ETCHED DIAL PLATES**

For SS-14 or MS-14 Series; and for SS-20 or MS-20 Series. Dull black finish -- with raised bright metal numerals. 2 3/4" diameter.

- EP-13 of thru 13 ..... \$0.23
- EP-14 1 thru 14 ..... .23
- EP-19 of thru 19 ..... .23
- EP-20 1 thru 20 ..... .23

**Non-Shorting**—Break before make. **Shorting**—Make before break.

**LAMINATED SWITCHES, SS-14 TYPE**

(14 positions; angular indexing 25° 43')

Model	Positions Per Circuit	Circuits Per Deck	Decks or Gangs	Shorting, Non-Shorting	Boxed, Including Knob
SS-14-1	14	1	1	N-S	\$1.90
SS-14-1A*	5†	2	1	N-S	2.05
SS-14-1S*	14	1	1	S	1.95
SS-14-1CS‡*	14	1	1	CS	2.35
SS-14-2	14	1	2	N-S	2.35
SS-14-2A*	5†	2	2	N-S	2.65
SS-14-2S*	14	1	2	S	2.45
SS-14-2CS‡*	14	1	2	CS	3.25
SS-14-3	14	4	3	N-S	2.80
SS-14-3S*	14	1	3	S	2.95
SS-14-4	14	1	4	N-S	3.65
SS-14-6	14	1	6	N-S	5.30

\*Standard items, but not regularly stocked; check with your electronic parts distributor.

†Denotes correction in former catalogs; 5 positions include 4 "live" and 1 "off".

‡Complete shorting — all contacts shorted except one in use.

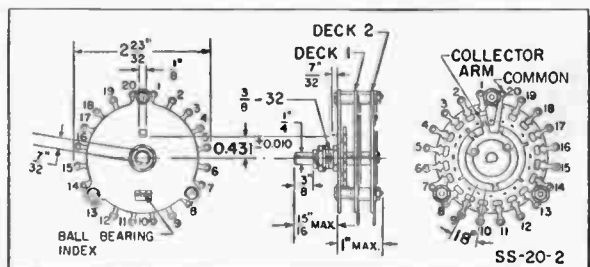
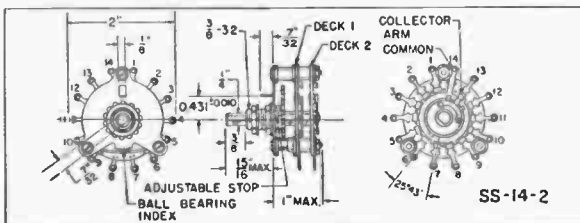
**LAMINATED SWITCHES, SS-20 TYPE**

(20-positions; angular indexing, 18°)

SS-20-1	20	1	1	N-S	\$2.45
SS-20-1A*	6‡	2	1	N-S	2.60
SS-20-1S*	20	1	1	S	2.50
SS-20-2	20	1	2	N-S	3.05
SS-20-2S*	20	1	2	S	3.15
SS-20-3	20	1	3	N-S	4.00
SS-20-4	20	1	4	N-S	4.95
SS-20-6	20	1	6	N-S	6.95

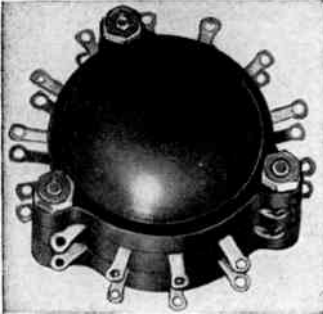
\*Standard items, but not regularly stocked; check with your electronic parts distributor.

‡Denotes correction in former catalogs; 6 positions include 5 "live" and 1 "off".



## UNIQUE—MOLDED ROTARY SELECTOR SWITCHES

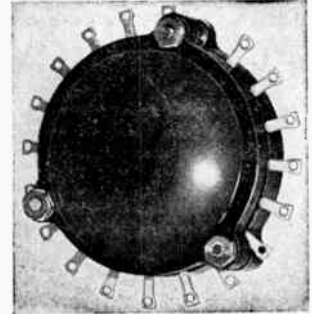
Fully Enclosed—Single and Multi-Gang—Shorting and Non-Shorting



MS-14-2

- All moving contacts enclosed—minimizes dirt and corrosion—also 3-post deck suspension, double grip collector arms, and rectangular drive shaft for precision indexing.
- Interchangeable, electrically and mechanically, with SS-14 and SS-20 laminated switches widely used by industry and Armed Services.

**FEATURES:** For description of rigid 3-post construction; heavy fine silver plating to meet 100-hour salt-spray test; exceptional compactness; .007 ohm average contact resistance; insulation resistance above 50,000 megohms; current-carrying capacity and voltage breakdown; see adjoining page on SS-14 and SS-20 laminated switches. Besides fully enclosing all the moving contact parts, the molded



MS-20-1

switches differ from the laminated construction in the design of the detent mechanism, but both types provide the positive indexing which quickly identifies the superior quality of J-B-T switches. Test results are available on request covering certain procedures of MIL-E-5272A on insulation resistance; high and low temperature and temperature shock; humidity; altitude; salt spray; vibration; fungus resistance; rain, sand and dust; explosion; shock; and endurance values. (Ratings for MS-20-6DTS Types differ somewhat)

**BASIC 14-POSITION MOLDED (MS-14):** 13 circuits and "off" per deck in 2 3/8" circle for compactness. Molded end cover regularly supplied. 1 1/4" Bar knob included with individually boxed units—not on bulk orders unless specified. Collector arm placed directly opposite to flat of shaft, so that knob pointer points to live contact. Common or "off" contact lug is bent down for ready identification. Internal construction: double-grip collector arms hold contact lug on upper and lower surfaces; collector ring is self-wiping. One to ten decks add 1/8" per deck (or gang) to depth; for eleven decks and over, add 1/2" to depth for double indexing mechanism; add 1/4" to depth for adjustable stop mechanism. Continuous rotation type supplied unless adjustable stop (type MAS) is ordered or, on quantity orders, pre-set fixed stops are specified. Panel locator is available at extra cost on quantity orders when specified; on MS-14-4 and MS-14-6, extra hex nut and longer screw can be supplied for inverting supporting screw nearest common, thus converting into panel locator.

**BASIC 20-POSITION MOLDED (MS-20):** 19 circuits and "off" per deck in 2 3/8" circle for compactness. Molded end cover regularly supplied. 2" Bar knob included with individually boxed units—not on bulk orders unless specified. Collector arm placed directly opposite to flat of shaft, so that knob pointer points to live contact. Common or "off" contact lug is bent down for ready identification. Internal construction: double-grip collector arms and self-wiping collector ring are standard construction. One to seven decks; add 1/8" per deck (or gang) to depth. Continuous rotation type supplied; on quantity orders, pre-set fixed stops are available. Panel locator available at extra cost on quantity orders when specified; on MS-20-4 and MS-20-6, extra hex nut and longer screw can be supplied for inverting supporting screw nearest common, thus converting into panel locator.

**NEW BONDED RUGGEDIZED TYPES**—Both MS-14 and MS-20 rotary switches may be ordered with bonded construction as MS-14B and MS-20B types using cured lamination for ruggedization, shock-proofing and further enclosure. Add 35c per deck to catalog price. Thus, 2 deck switch is MS-14B-2 at \$3.25.

### MOLDED SWITCHES, MS-14 TYPE

(14 positions; angular indexing 25° 43')  
Continuous rotation, no stops

Non-Shorting—Break before make. Shorting—Make before break.

Model	Positions Per Circuit	Decks or Gangs	Shorting or Non-Shorting	Depth Behind Panel	Boxed Including Knob
MS-14-1	14	1	N-S	1 1/8"	\$2.00
MS-14-1S*	14	1	S	1 1/8"	2.05
MS-14-2	14	1	N-S	1 1/8"	2.55
MS-14-2S*	14	1	S	1 1/8"	2.65
MS-14-3	14	1	N-S	1 1/8"	3.10
MS-14-4	14	1	N-S	1 3/4"	4.05
MS-14-6	14	1	N-S	2 3/8"	5.90

For more than 6 decks, request prices

### MOLDED SWITCHES, MS-20 TYPE

(20 positions; angular indexing 18°)

Continuous rotation, no stops (except 6DT Types)

Non-Shorting—Break before make. Shorting—Make before break

Model	Positions Per Circuit	Decks or Gangs	Shorting or Non-Shorting	Depth Behind Panel	Boxed Including Knob
MS-20-1	20	1	N-S	1 1/8"	\$2.55
MS-20-1-6DT	2	6	N-S	1 1/8"	3.25
MS-20-1S*	20	1	S	1 1/8"	2.60
MS-20-2	20	1	N-S	1 1/8"	3.25
MS-20-2-6DT	2	6	N-S	1 1/8"	4.70
MS-20-2S*	20	1	S	1 1/8"	3.35
MS-20-3	20	1	N-S	1 1/8"	4.30
MS-20-4	20	1	N-S	1 3/4"	5.35
MS-20-6	20	1	N-S	2 3/8"	7.55

For more than 6 decks, request prices

### ADJUSTABLE STOP MOLDED SWITCHES, MAS-14 TYPE

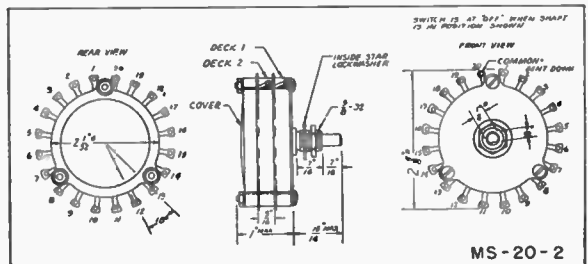
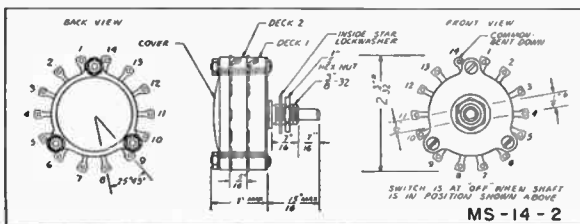
(14 positions; angular indexing 25° 43')

**IMPORTANT:** Enclosed adjustable stop mechanism increases switch length 1/8" behind panel; decreases effective bushing length by 1/8"; and shortens shaft extending from bushing by 1/8". Rings RI-23 and RI-24 are supplied.

Non-Shorting—Break before make. Shorting—Make before break.

Model	Positions Per Circuit	Decks or Gangs	Shorting or Non-Shorting	Depth Behind Panel	Boxed Including Knob
MAS-14-1	14	1	N-S	1 1/8"	\$2.60
MAS-14-1S*	14	1	S	1 1/8"	2.70
MAS-14-2	14	1	N-S	1 1/8"	3.20
MAS-14-2S*	14	1	S	1 1/8"	3.30
MAS-14-3	14	1	N-S	1 1/8"	3.85
MAS-14-4	14	1	N-S	1 3/4"	4.80
MAS-14-6	14	1	N-S	2 1/2"	6.75

For more than 6 decks, request prices

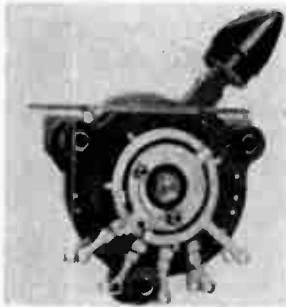


\* Standard items, but not regularly stocked; check with your electronic parts distributor.



## LEVER ACTION SWITCHES, KITS AND SPECIAL SWITCHES

3- and 4-Position Lever Switches — New 5-Position — Unique 6-Pole Double-throw per Deck



**SS-14-1L4F-2**  
Two-Deck Lever-Action Switch

**POSITIVE TYPE, 3- and 4-Positions. (Single-deck.)** Specified where quality is a consideration, these lever switches offer many of the design features of the J-B-T SS-14 instrument-type rotary switches. The single-deck models (not illustrated) come in the conventional three-positions and in a newer four-position. Present uses include tube checkers, inspection apparatus, communication systems, hobby equipment, consoles, and sound devices. The four-position types, interchangeable except in slot length with the standard three-position, provide the extra circuit which is often needed. Dimensions are shown on the

drawing below. Variations in mounting hole sizes, lever length, and tapped mounting holes can be supplied on long runs involving set-up charges. Switches are normally individually boxed with mounting hardware and KN-17 black pointed knob as illustrated. Spacing between single decks: recommended  $\frac{3}{4}$ ", minimum  $\frac{3}{8}$ ". Also see list of available mounting plates.

**Spring Return Type.** Single deck 3-position switches also may be ordered with spring return. Lever returns to position 11, giving momentary action at positions 9 and 10 (Model Suffix—R).

**Two-Deck Lever Action Switches.** These use the same strong parts, 3-pole suspension and double-grip collector arms as the one-deck type, but are specified where quality is the prime requirement. Spacing is  $\frac{3}{4}$ " between decks, the same distance as TV twinlead wires. Non-shortening (break before make) positive action, individually boxed including KN-17 knob and hardware. Recommended spacing between decks  $\frac{11}{8}$ "; minimum spacing  $\frac{11}{8}$ ".

Model	Pos. per Circuit	Ckts. per Deck	Short. or Non	Stand.* Contact Pos.	Boxed Incl. Knob
SS-14-1L3	3, no "off"	1	1	NS	A \$0.95
SS-14-1L3A	3, no "off"	2	1	NS	B 1.10
SS-14-1L3S	3, no "off"	1	1	S	A 1.00
SS-14-1L3-R Sp. Ret.	3, no "off"	1	1	NS	A 1.10
SS-14-1L3S-R Sp. Ret.	3, no "off"	1	1	S	A 1.15
SS-14-1L3-2	3, no "off"	1	2	NS	A 1.60
SS-14-1L4	3 & "off"	1	1	NS	C 1.05
SS-14-1L4F	4, no "off"	1	1	NS	D 1.05
SS-14-1L4F-2	4, no "off"	1	2	NS	D 1.80
SS-14-1L4S	3 & "off"	1	1	S	C 1.10

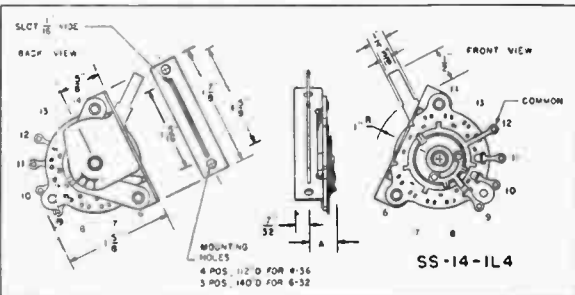
\*A—common at 12 contacts at 9, 10, 11; B—common at 9, 10, contacts at 6, 7, 8, 12, 13, 14; C—common and off at 12, contacts at 9, 10, 11; D—common at 12, contacts at 8, 9, 10, 11.

### MOUNTING PLATES



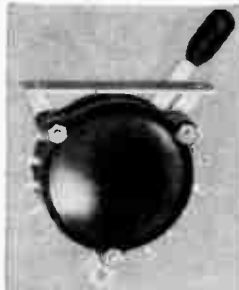
These .035" stamped steel plates in black crackle finish simplify alignment of standard 3-position 1-deck switch models having symbol 1L3. Separation is  $\frac{3}{4}$ " between switches; all plates are  $2\frac{5}{8}$ " high.

- PL-36,  $\frac{3}{4}$ " long, for one switch ..... \$0.30
- PL-37,  $1\frac{1}{2}$ " long, for two switches ..... .40
- PL-38, 3" long, for four switches (illustrated)..... .45



Dimensions A= $13/32$ " on 1-deck Switches;  $23/32$ " on 2-deck. Non-shortening type with standard level length is shown.

**MS-20-1L5A-1**  
5-Position Lever Switch



MS-20-1L5A-1, 5-position, 2 circuit (1-deck) ..... \$2.95

**MODEL MS-20-1L5A-1.** For the first time designers and servicemen have available 5 live positions, two circuits per deck in a fully enclosed, lustrous black molded construction. Adapted from the MS-20 series of instrument-quality switches shown on a preceding page and having similar electrical characteristics, this positive action lever switch made an instant hit for sound systems. Now that it is released for general use, control, inspection, test and experimental circuits can be simplified by its use. Shipped individually boxed with hardware and threaded black molded knob. Sketch for mounting will be supplied upon request for SK-64.

### KNOBBS FOR LEVERS

Spare knobs, push-on type, are:



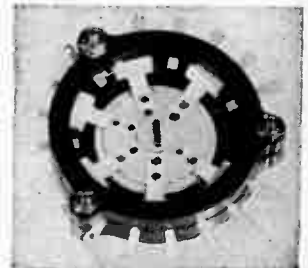
**KN-17**, black, modern pointed design, metal insert, shown at left, now regularly supplied ..... \$0.08

**KN-18**, walnut, same as KN-19 ..... .06

**KN-19**, black, round, flat-type, shown at right; no insert needed..... .06

### 6-POLE DOUBLE-THROW PER DECK—1 or 2 DECKS

**6-Pole Switches.** Double-throw switching, 6 circuits per deck, becomes easy with this unique rotary-type molded switch. It is fully enclosed and similar in appearance to the molded MS-20 switches described on another page. The illustration at the right shows internal construction with back protective cover cut away. Circuit arrangement is designated on the metal front of the switch. Quality features include .007 ohm average contact resistance; heavy, fine-silver plating for 100-hour salt spray test; double-grip collector arms. Now available in non-shortening (break before make) and shorting (make before break).  $2\frac{5}{8}$ " maximum diameter, one deck,  $\frac{1}{4}$ " behind panel; two deck,  $1\frac{1}{8}$ " behind panel. DTS Shorting Types are rated 1500 volts R.M.S. between contacts and ground, 1000 volts R.M.S. between contacts.



- MS-20-1-6DT, 6-pole, double-throw (1 deck), non-shortening..... \$3.25
- MS-20-1-6DTS, 6-pole, double throw (1 deck), shorting..... 3.35
- MS-20-2-6DT, 6-pole, double throw (2 decks), non-shortening... 4.70
- MS-20-2-6DTS, 6-pole, double throw (2 decks), shorting..... 4.90

### SWITCH KIT — 14- and 20-Positions

**MODEL K-1.** The instrument-quality, laminated phenolic switches described previously as SS-14 and SS-20 rotary types now are available in kit form for quick assembly. This arrangement is especially helpful to engineers, experimenters, hams, and electronic maintenance departments, for special assemblies or emergency requirements. The sturdy, 4-drawer, steel cabinet with 48 compartments contains 15 SS-14 index assemblies; 11 SS-20 index assemblies; 50 14-position decks, including non-shortening (break before make), shorting (make before break); A-type (2 circuits); CS-type (complete shorting); F-type (14 live positions); and 33 20-position decks including non-shortening, shorting; A-type (2 circuits); and F-type (20 live positions). Also a simple tool for pushing rotors on shafts and replacement parts list for ordering refills through distributors.

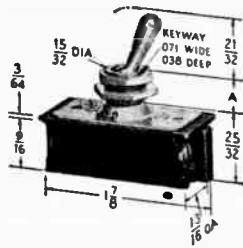


- Switch Kit
- Model K-1 ..... \$92.00

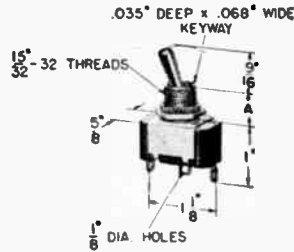
# CUTLER-HAMMER SWITCHES ...

These Cutler-Hammer switches are of the one-hole mounted type, designed for convenient installation on panels, housings and other flat surfaces of machines and appliances. Experienced Cutler-Hammer engineers working closely with the electronics and appliance manufacturers — have developed these devices to meet the requirements of every type of apparatus and every class of service.

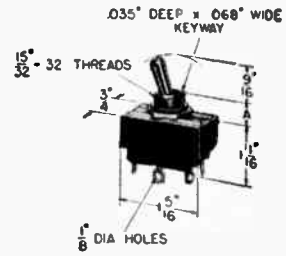
## One Hole Mounting — Commercial Applications



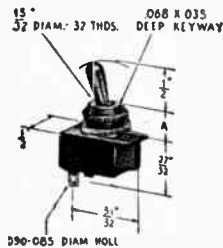
Cat. No. 7320 (D.P. S.T.)  
Standard Duty



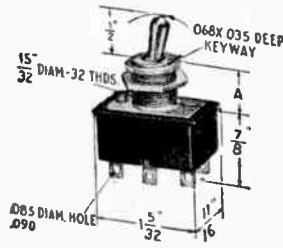
Cat. No. 7503 (S.P. D.T.) Standard Duty  
Cat. No. 7581 (S.P. D.T.) Light Duty



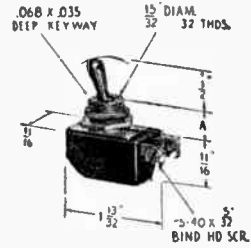
Cat. No. 7563 (D.P. D.T.)  
Standard Duty



Cat. No. 8280 (S.P. S.T.)  
Light Duty



Cat. No. 8363 (D.P. D.T.)  
Light Duty



Cat. No. 8396 (S.P. S.T.)  
Light Duty

### ONE HOLE MOUNTING A-C RATINGS

RATING	1 Pole		2 Pole		3 Pole		4 Pole		Term. Type
	125 V	D. T. W/O OFF	S. T.	D. T. W/O OFF	S. T.	D. T. W/O OFF	S. T.	D. T. W/O OFF	
250 V									L
	3 Amp.	8098	7140*						S
		8098	7141						S
3 Amp.	6 Amp.	7580	7581*	7590	7591*				S, L & Sp
		7583‡	7582	7593‡	7592				S, L & Sp
			7585‡		7595‡				S, L & Sp
			7586*‡		7596*‡				S, L & Sp
10 Amp.	15 Amp.	7500	7502*	7560	7562*	7610	7612*		S
		7501	7503*	7561	7563*	7611	7613*		L & Sp
			7504		7564		7614		S
		7505		7565		7615		L & Sp	
						7616‡	7617*‡		S & Sp
							7618‡		S & Sp
10 Amp.		7506‡	7508*‡	7566‡	7568*‡				S, L & Sp
		7507‡	7510‡		7570‡				S, L & Sp
						7690	7692*		S
						7691	7693*		L
		7533		7522		7696‡	7694		S
			7520		7697‡	7695		L	
			7521					W	
20 Amp.			7543			8320			S

Standard bushing lengths 11/32" and 15/32"  
L=Solder Lug, W=Wire Leads, S=Screw terminals, Sp=Spode terminals  
\* Center Off  
‡ Momentary contact

### ONE HOLE MOUNTING AC-DC RATINGS

RATING	1 Pole		2 Pole		Term. Type	
	125 V	D. T. W/O OFF (3-Way)	S. T.	D. T. W/O OFF		
250 V					L	
1 Amp.	3 Amp.	8282			L	
		8292			W	
		8297			S	
3 Amp.	6 Amp.	8280	8360	8363	L	
		8290	8361	8364	W	
		8295	8362	8365	S	
3 Amp.	6 Amp.	8381	8370	8373	L	
		8384			Sp	
		8391	8371	8374	W	
		8396	8372	8375	S	
4 Amp.	8 Amp.	7740			L	
		7741			W	
		7742			S	
		7743			Sp	
5 Amp.	10 Amp.		8680		S	
6 Amp.	12 Amp.	7321		7320	S	
		7322‡			S	
10 Amp.	15 Amp.	7361		7360	8690	S
20 Amp.		7403		7402		S

Standard bushing lengths 1/4", 11/32", and 15/32"  
‡ Parallel Contacts  
L=Solder Lug, W=Wire Leads  
S=Screw Terminals, Sp=Spode Terminals



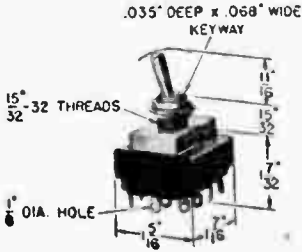
**CUTLER-HAMMER, Inc.**  
Milwaukee 1, Wis.



# ... for Electronics, Radio, Small Motors

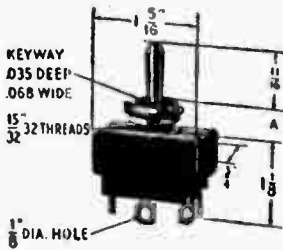
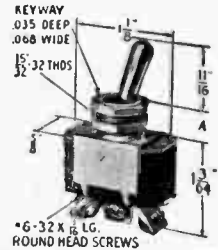
These switches are designed to meet the exacting requirements of communication and power apparatus for all branches of the government. The single pole and double pole switches meet the requirements of JAN-S-23 and the four pole switches are designed to meet the same rigid requirements. Standard bushing length — 15/32".

## One Hole Mounting Aircraft Type Applications



Cat. No. 7663  
(4 Pole D.T. — with Solder Lug)

Cat. No. 8800  
(S.P., D.T. — with Screw Terminal)



Cat. No. 8821  
(D.P., D.T. — Solder Terminal)

SINGLE POLE							FOUR POLE		
Single Pole		Ter-min-al	Single Pole		Ter-min-al	Lever Position	Four Pole	Ter-min-al	Lever Position
ST No.	Cat. No.		ST No.	Cat. No.			Cat. No.		
40A	8801K13	S	42A	8803K6	L	On None Off	7660K8	S	On None Off
40B	8813K12	S	42B	8819K5	L	On None Off★	7661K6	L	On None Off
40C	8811K12	S	42C	8817K5	L	Off None On★	7662K5	S	On Off On
40D	8810K12	S	42D	8816K5	L	On None On	7663K5	L	On Off On
40E	8800K13	S	42E	8802K6	L	On Off On	7664K3	S	On None On
40F	8804K12	S	42F	8805K5	L	On None On★	7665K4	L	On None On
40G	8812K13	S	42G	8818K5	L	On★Off On★	7666K6	S	Off None On★
40H	8809K13	S	42H	8815K6	L	On Off On★	7667K6	L	Off None On★
							7668K4	S	On None Off★
							7669K4	L	On None Off★
							7670K4	S	On Off On★
							7671K4	L	On Off On★
							7672K4	S	On★Off On★
							7673K4	L	On★Off On★
							7674K4	S	On None On★
							7675K4	L	On None On★
DOUBLE POLE									
Double Pole		Ter-min-al	Double Pole		Ter-min-al	Lever Position			
ST No.	Cat. No.		ST No.	Cat. No.					
50K	8822K8	S	52K	8823K5	L	On None Off			
50L	8828K5	S	52L	8829K5	L	On None Off★			
50M	8826K5	S	52M	8827K5	L	Off None On★			
50N	8824K8	S	52N	8825K5	L	On None On			
50P	8820K10	S	52P	8821K5	L	On Off On			
50R	8830K5	S	52R	8831K5	L	On None On★			
50S	8834K4	S	52S	8835K3	L	On★Off On★			
50T	8832K4	S	52T	8833K3	L	On Off On★			

★Momentary contact

S — Screw terminal

L — Solder lug

The switches shown on these pages constitute only a partial listing of standard type Cutler-Hammer switches available. Additional data on other standard and special types may be obtained from your Cutler-Hammer electrical distributor or your nearest Cutler-Hammer sales office.

### What you should know about Cutler-Hammer

Cutler-Hammer has long held the respect of the aircraft industry because this company has been part of the aircraft industry for 35 years. Today, as for the decades past, Cutler-Hammer engineers are working closely with the aircraft industry's leaders . . . thinking ahead, planning, designing and building for the future. Here is the record:

**1920** Cutler-Hammer designed and manufactured the first line of switches ever created specifically for use in aircraft.

**1938** Cutler-Hammer designed and manufactured the first d-c power relays ever created specifically for use in aircraft.

**1943** Cutler-Hammer designed and manufactured the first a-c power relays ever created specifically for use in air-craft.

**1949** Cutler-Hammer started development of the first environment-free power relays for use in aircraft.

**1953** Cutler-Hammer submitted samples and certified test reports on the first hermetically sealed power relay to WADC and Bu. Aer. Cutler-Hammer configuration was adopted as industry standard by ASG.

**1955** Cutler-Hammer designed and manufactured the first one hole mounting Lever Lock aircraft switches.



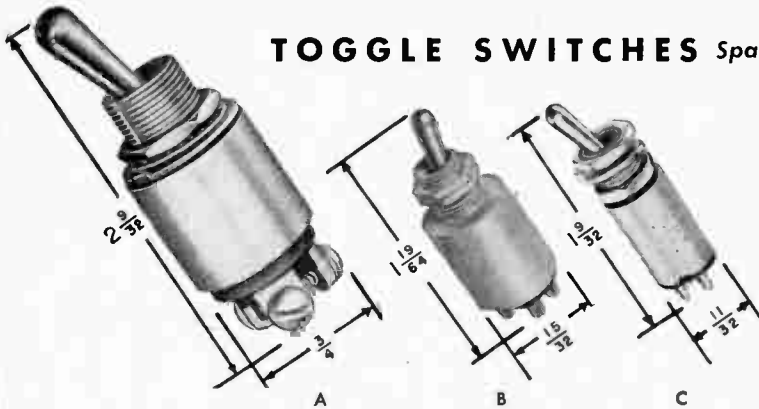
**CUTLER-HAMMER, Inc.**  
Milwaukee 1, Wis.



# HETHERINGTON

## AIRCRAFT TYPE SWITCHES AND INDICATOR LIGHTS

### TOGGLE SWITCHES *Space-Saving, Cylindrical Types*



Exceptionally rugged, cam-roller Hetherington Toggle Switches positively cannot be teased off contact. Cylindrical anodized aluminum cases reduce size by 25% over conventional rectangular switches. Firmly anchored terminals separated by heavy insulation barrier. All are 2-position, snap-action.

FIG.	TYPE	CIRCUIT	RATINGS (Resistive Loads)		MTG. HOLE DIA.	SPECIAL FEATURES
			28v. dc.	115v. ac.		
A	T1003	SPDT	20 amps.	10 amps.	15/32"	Designed to MIL-S-6745 specs.
B	T2104	2-circuit	10 amps.	5 amps.	1/4"	Designed to JAN-S-23, Amend. 3.
C	T3103	SPDT	5 amps.	2½ amps.	1/4"	Anodized aluminum case

### PUSHBUTTON SWITCHES *Snap-Action, Momentary Contact*

The exclusive Hetherington snap-action mechanism reduces arcing and contact wear . . . provides far greater current capacity than the small sizes of these switches would indicate. Mechanism enclosed in dust- and moisture-resistant anodized aluminum housings (phenolic in B2001 & B2002). 1-piece terminals and contacts firmly anchored to bases. Many types meet JAN and MIL Specs for aviation and military requirements.

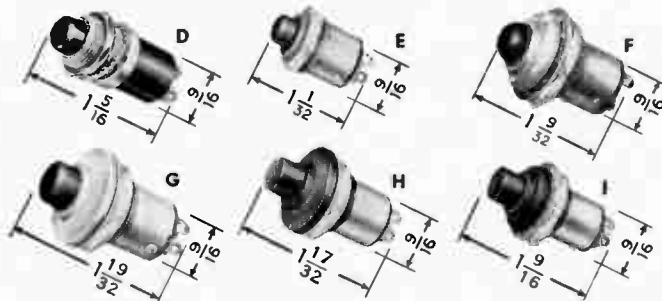


FIG.	TYPE	CIRCUIT	RATINGS (Resistive Loads)		MTG. HOLE DIA.	SPECIAL FEATURES
			28v. dc.	115v. ac.		
D	B2001	SPST (N.O.)	—	8 amps.*	1/2"	Phenolic body
	B2002	SPST (N.C.)				
E	C1006	SPST (N.O.)	17 amps.	15 amps.*	1/2"	Anodized aluminum cases
	C2006	2-circuit				
F	C100U4	SPST (N.O.)	17 amps.	15 amps.*	5/8"	Anodized aluminum cases & mounting flanges
G	C200P3	2-circuit	10 amps.	—	5/8"	Corresponds to MS25089-3C (MIL-S-6743). Blk. flange.
H	W103PB6	2-circuit	10 amps.	—	5/8"	Corresponds to MS25089-3D (MIL-S-6743). Blk. flange.
I	W103UB6	2-circuit	10 amps.	—	5/8"	

\*Inspected by Underwriters' Laboratories, Inc.

# HETHERINGTON

AIRCRAFT TYPE SWITCHES AND INDICATOR LIGHTS

## INDICATOR LIGHTS

Exceptionally tiny, lightweight Hetherington Indicators withstand severe shock and vibration. Many types fully moistureproof. Wide-angle types "pipe" light evenly thru long plastic lenses. In "Press-to-Test" types, bulb is "tested" by depressing lens to make contact thru separate circuit.

Red lenses supplied. Green, amber, and white also available. Use AN3140 midjet flange base bulbs — 6, 14, or 28 volts. 28 volt bulb supplied. Special 115 volt neon bulb and clear lens furnished on L7100.

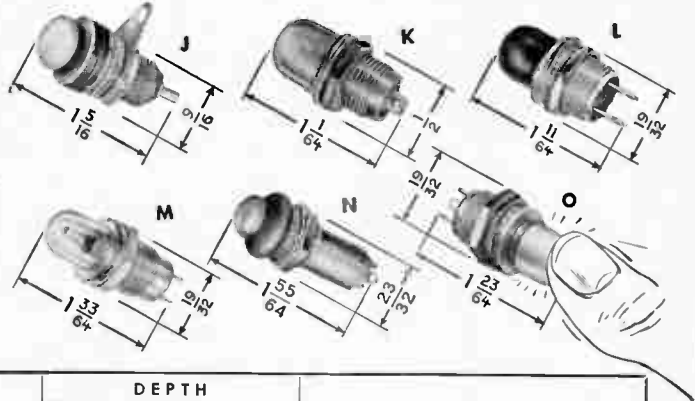
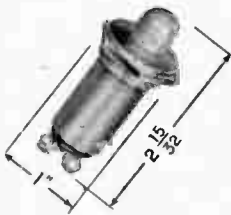


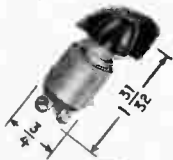
FIG.	TYPE	CIRCUIT	MTG. HOLE	DEPTH		SPECIAL FEATURES
				LENS TO PANEL	FLANGE TO TERMINAL	
J	L1000R	Case ground	1 3/32"	1 1/64"	1 1/64"	Fully moistureproof. Has insulating spacers and lug for un-grounded panels.
K	L6000R	Case ground	1 3/32"	2 3/64"	3/16"	Subminiature, Wide angle lens.
L	L6600R	2-terminal	1 5/32"	2 3/64"	2 3/32"	Miniature, Wide angle lens.
M	L7100	2-terminal neon	1/2"	1 7/32"	6/64"	Clear, wide angle lens. Requires external 200K series resistor for 115V operation.
N	L3000R	Press-to-test	1/2"	3 5/64"	1 3/16"	Pressing lens cap makes contact thru separate circuit. Un-grounded case. Moisture-proof.
O	L3200R	Press-to-test	1/2"	1 7/32"	5/64"	Miniature version of L3000R (above). Wide angle lens.

## SPECIAL SWITCHES



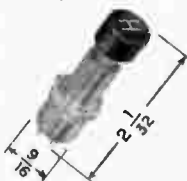
**PUSH "ON" — PUSH "OFF"**  
Maintained Contact

**Type J100** — Used as reading light switch by leading airlines. Anodized alum. Screw terminals. 20 amps @ 28v dc; 10 amps @ 115v ac. Mounts in 7/8" hole.



**2-Position, Snap-Action**  
ROTARY

**Type R1003** — Same construction and ratings as J100, but SPDT. Knob not supplied. Mounts in 15/32" hole.



**NON-SNAP**  
PUSHBUTTON

**Type B5023** — For keyboards of calculators, etc. Smooth. 1/2-lb. oper. press. 1/4" travel. 2-circuit, momentary contact. 3 amps @ 30v dc. Black button furnished. Mounts in 1/2" hole.

## SWITCLITES®

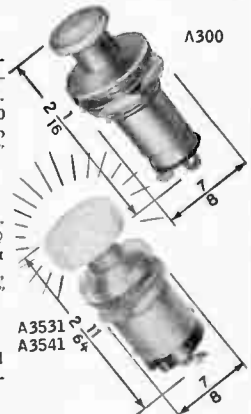
Switches with Built-in Lights

Unique design combines switch and light in 1 unit — saves space, wiring, installation time. Simplifies operation of complicated panels. Push-button lenses unscrew for bulb replacement. Use 6, 14, or 28 volt AN3140 bulbs. 28v bulb supplied. Lenses and mtg. flanges can be lettered. Anodized aluminum cases.

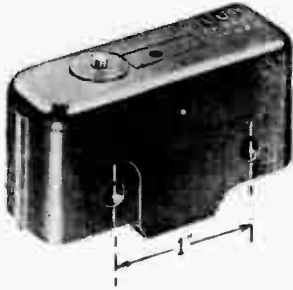
**Type A300** — The original aircraft hostess call light. Push on — Pull off, SPST switch with aux. momentary contact on "push." 10 amps @ 28v dc. White lens. Lamp grounded to case. Mounts in 3/8" hole.

**Type A3531** — Momentary contact, SPST (N.O.) switch. 10 amps @ 28v dc. Independent lamp circuit with 2 separate terminals. 7/8" dia., flat-top white lens. Mounts in 3/8" hole.

**Type A3541** — Same as Type A3531 but with Push on — Pull off, maintained contact action.

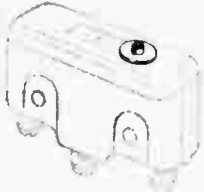


# LICON® Precision Switches



## TYPE 10 Precision Basic Switch

Features extremely sensitive operation plus long life and high electrical rating. Over 10,000,000 actuations by test. Movement differential of .001 on standard types. 15 amp; 125,250,460 V.A.C. Meets all government specs. ½ amp; 125 V.D.C. Und. Lab. App. Switches with .010" and .020" contact gaps (i.e. 10-121, and 10-122) have 15 amp. ratings. Those having .040" and .070" gap are rated 20 amps. Gap is shown by last number of catalog listing. Standard 1" mounting centers. Bold face listings are standard.



### PIN PLUNGER 10-122

Movement differential ..... .002 in. max.  
Operating force ..... 10 ± 3 oz.  
Overtravel ..... .005 in. min.  
Weight ..... 1 oz.

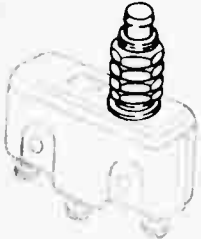
10-121, 10-122, 10-124, 10-127



### PIN PLUNGER 10-222

Movement differential ..... .002 in. max.  
Operating force ..... 10 ± 3 oz.  
Overtravel ..... 1/16 in. min.  
Weight ..... 1.1 oz.

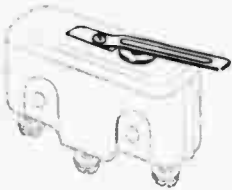
10-221, 10-222, 10-224, 10-227



### PANEL MOUNT 10-322

Movement differential ..... .002 in. max.  
Operating force ..... 10 ± 3 oz.  
Overtravel ..... 7/32 in. min.  
Weight ..... 1.6 oz.

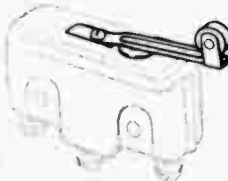
10-321, 10-322, 10-324, 10-327



### LEAF SPRING 10-422

Movement differential ..... .050 in. max.  
Operating force ..... 6 oz. max.  
Overtravel ..... 1/16 in.  
Weight ..... 1 oz.

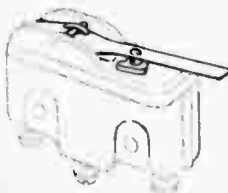
10-421, 10-422, 10-424, 10-427



### ROLLER LEAF SPRING 10-522

Movement differential ..... .050 in. max.  
Operating force ..... 6 oz. max.  
Overtravel ..... 1/16 in.  
Weight ..... 1¼ oz.

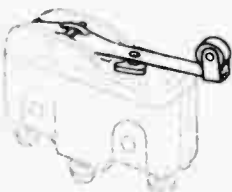
10-521, 10-522, 10-524, 10-527



### RIGID LEVER 10-622

Movement differential ..... .093 in. max.  
Operating force ..... 3½ oz. max.  
Overtravel ..... 5/32 in. min.  
Weight ..... 1.25 oz.

10-621, 10-622, 10-624, 10-627



### ROLLER LEVER 10-722

Movement differential ..... .093 in. max.  
Operating force ..... 3½ oz. max.  
Overtravel ..... 5/32 in. min.  
Weight ..... 1.4 oz.

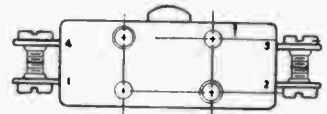
10-721, 10-722, 10-724, 10-727



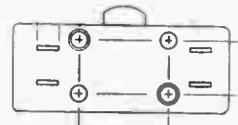
## TYPE 11 Precision Basic Switch

Type 11 combines small size, long life, high rating and double break in one reliable package. Government approved. Rated 10 amps., 30 V.D.C., Und. Lab. App. 125 or 250 V.A.C. Tested for over 20,000,000 cycles life. Reset switches available in all terminal styles.

- 11-204 Screw Terminal
- 11-104 Solder Terminal
- 11-214 Reset Switch



- 11-304 Side Solder Terminal
- 11-314 Reset Switch



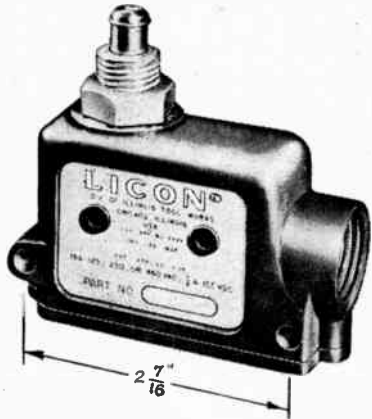
## SUB-MINIATURE TYPE 16

For applications requiring the most compact switch—only ¼" thick—long dependable life. Rated 10 amps. 250 V.A.C. Meets government specifications.

16-104 SOLDER TERMINAL

LICON® SWITCHES ARE PRODUCTS OF ILLINOIS TOOL WORKS • CHICAGO 39, ILLINOIS

# LICON® Precision Switches



TYPE 30

## ENCLOSED LIMIT SWITCHES

- **VERSATILE** — 3 Actuators } Provides 16 types  
3 Housings
- **EFFECTIVE** — Oil tight sealing without boot seals

The Type 30 Licon Limit Switch is used for industrial control, limit and safety applications. The aluminum die cast housing provides a rugged enclosure for the switch, adequate wiring room, and a 1/2"-14 internal tap conduit hub. Superior mounting means and a variety of actuators are available. Switch actuation is sensitive. 15 amp. — 125,250,460 V.A.C., 1/2 amp. — 115 V.D.C., Und. Lab. App. Tested mechanical life over 10,000,000 cycles. 6 types below interchangeable with all 16 competitive types.

### SEALED SWITCHES

Oil, Water and Dust Tight

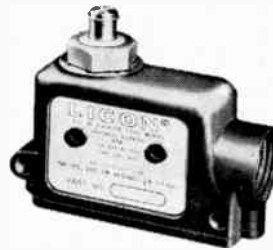


**30-200  
SEALED PLUNGER SWITCH**

.002 Movement differential  
1/4" Overtravel

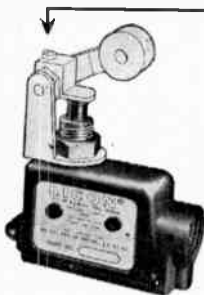
### UNSEALED SWITCHES

For General Purpose Use



**30-100  
OVERTRAVEL  
PLUNGER SWITCH**

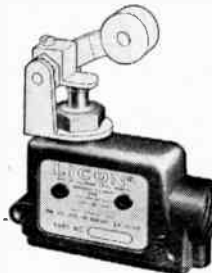
.002 Movement differential  
1/4" Overtravel



**MICROMETER  
SCREW ADJUSTMENT**

**30-400  
SEALED  
ROLLER ARM SWITCH**

For Cam operation  
Adjustable arm



**30-300  
ROLLER ARM SWITCH**

For Cam operation  
Adjustable arm



**30-600  
SEALED  
PALM BUTTON SWITCH**

For hand operation  
Ideal start, stop,  
safety switch

Alternate bottom  
mounting plate  
Supplied with all  
actuator styles



**30-500  
ROLLER PLUNGER SWITCH**

Plunger roller adjustable  
for actuation  
from any direction

#### ACTUATORS

**70-101 LEVER ACTUATOR:** Used to convert 30-200, Sealed Plunger Limit Switch to 30-400 Sealed Roller Arm.; 30-100 Plunger Switch to 30-300 Roller Arm Switch.

**70-102 PALM BUTTON ACTUATOR:** Used to convert 30-200 Sealed Plunger Switch to 30-600 Sealed Palm Button Switch. Also attaches to 30-100.

#### Switchpak CONTROL COMPONENTS

Handy plastic kit contains three complete switches, two accessory actuators and optional base mounting plates. Perfect for on-the-job maintenance. Have the right switch at the right time—get Switchpak containing . . .

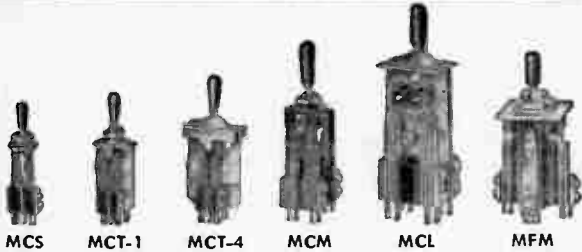
Sealed Plunger Switch • Overtravel Plunger Switch • Roller Plunger Switch • Palm Button Actuator • Lever Actuator and three optional base mounting plates

PRICE: \$24.40



LICON® SWITCHES ARE PRODUCTS OF ILLINOIS TOOL WORKS • CHICAGO 39, ILLINOIS

## A complete line of LEVER SWITCHES by GENERAL CONTROL COMPANY



Type	Amps.*	RATINGS		
		High	Wide	Long**
MCS	1	7/8"	3/4"	2-1/16"
MCT-1	1	1 1/4"	3/4"	2-5/16"
MCT-4	1	1 1/2"	3/4"	2-17/32"
MCM	5	1 1/4"	1 1/4"	2-25/32"
MCL	10	1 3/4"	1 3/4"	3-15/16"
MFM	5	1 3/4"	1 3/4"	3"

\*125 volts, 60 cycles, non-inductive.  
\*\*From back panel to end of terminals.

Write for data sheet CLRM

**MCS** Light-weight, miniature switch. Two contact sections. Single-hole mounting. Especially suited for Instruments and communications systems.

**MCT** Small switch for multiple-circuit control. Four contact sections. Frames available for either single-hole or four-hole screw type mounting.

**MCM** Widely used switch with multiple-position, ball-bearing detents. Four contact sections. Contact assemblies easily removed for wiring. Single-hole mounting.

**MCL** Heavy-duty switch for constant use in electrical control. Rugged cam. Four contact sections; easily removed contact assembly. Four-hole mounting.

**MFM** Versatile five-position switch with four contact sections—one neutral and four switch positions. Single-hole mounting.

LEVER OPERATION							
Symbol	Three-Position	Two-Position	Half Throw	Two-Position	Full Throw	Full Throw	Full Throw
Lock (Stays put)	Non-lock Spring return						
Designation	MCS S1	*S2 S3	*S4	*S5			
	MCT T1	*T2 T3	*T4	*T5			
	MCM M1	*M2 M3	*M4	*M5	M6	*M7	
	MCL L1	*L2 L3	*L4	*L5			

\*Lock and non-lock positions may be reversed. To reverse designate as R51, R52, R53, etc.

SPECIAL MCM LEVERS	
	(A) waterproof lever \$3.50 EACH, LBT
	(B) rotary lever \$2.75 EACH, LBT
	(C) right angle lever \$2.00 EACH, LBT

MFM			
Description	Lock	Non-lock	Lock-Position
SYMBOL			
OPERATION			
Operation No.	18	17	110, 111, 112

### CONTACTS

FRAME TYPES AND PRICES
------------------------

Contact Forms	A	B	C	D	E	F	G	H	O		
CIRCUIT									No Contacts		
MCS	\$1.35	MCS	0.40	0.40	0.50	0.60	0.70	0.50	—	0.50	—
MCT-4	\$1.60	MCT-4	0.40	0.40	0.50	0.60	0.70	0.50	—	0.50	—
MCT-1	\$2.00	MCT-1	0.40	0.40	0.50	0.60	0.70	0.50	—	0.50	—
MCM	\$3.00	MCM	.60	.60	.75	.95	1.20	.75	.75	.75	—
MCL	\$4.00	MCL	.95	.95	1.05	1.30	2.00	1.05	1.05	1.05	—
MFM	\$13.75	MFM	.60	.60	.75	.95	1.20	.75	.75	.75	—

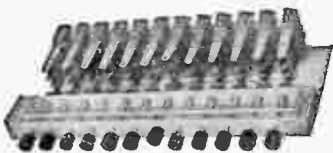
To obtain list price—  
add  
contact prices  
to frame price.

NOTE: Add 20% to MCS and MCT contact prices for contacts of palladium-silver alloy.

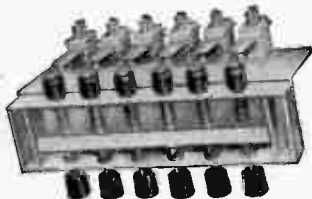
## PUSH-BUTTON SWITCHES by GENERAL CONTROL COMPANY

A complete heavy duty push button switch with either 1 amp. or 5 amp. ratings at 110/60 AC. Furnished in two or twelve positions. A right-angle MPB is also available where back-of-panel depth is limited, incorporating all of the operating features of the standard MPB. 1 amp. switches are available

with palladium silver contacts. It is possible to obtain the standard MPB switch stacked and/or intercoupled, providing all of the features of a single switch. Other variations of the standard MPB switch are also obtainable. Contact the factory with your requirements.



STANDARD MPB SWITCH



RIGHT-ANGLE MPB SWITCH

### STANDARD and RIGHT-ANGLE FRAME PRICES

FRAME TYPES	MPB-2	MPB-3	MPB-4	MPB-5	MPB-6	MPB-7	MPB-8	MPB-9	MPB-10	MPB-11	MPB-12	
CONTACT POSITIONS	2	3	4	5	6	7	8	9	10	11	12	
* Accumulative Lock	B-13	See note	6.70	8.65	10.60	12.55	14.50	16.45	18.40	20.35	22.30	24.25
No Two Interlock	B-14	5.50	5.95	7.40	8.85	10.30	11.75	13.20	14.65	16.10	17.55	19.60
Lock Release	B-15	5.00	5.20	6.40	7.60	8.80	10.00	11.20	12.40	13.60	14.80	16.60
Non-Lock	B-16	5.00	5.20	6.40	7.60	8.80	10.00	11.20	12.40	13.60	14.80	16.60

\*Reset button requires one position in addition to standard contact positions. Reset button is on right-hand side unless otherwise specified.  
\*Reset button normally actuates no contacts but can be used to actuate momentary contacts if required.

### CONTACTS

CONTACT FORMS	A	B	C	D	E	H	D
Circuit							No Contacts
PRICE	*5 Amps. .60	.60	.75	.95	1.20	.75	—
	*1 Amp. .40	.40	.50	.60	.70	.50	—

\*Ratings at 125 volts A-C, N.L.

### PUSH BUTTON OPERATION

OPERATION	ACCUMULATIVE LOCK	NO TWO INTERLOCK	LOCK RELEASE	NON-LOCK
Description	Buttons pushed in remain locked in position until released by pushing reset button.	Only one button can be pushed in at one time, and releases any other button.	Any button pushed in releases any previously pushed in button.	Has no locking action; returns to normal position on release of finger pressure.
Designation	B-13	B-14	B-15	B-16

### ORDERING INFORMATION

- When ordering, specify:   
 1 Frame Type Standard MPB-6 Price: \$8.80   
 2 Push Button Operation B-15   
 3 Contacts C1, C2, C3, etc A-A-A-B-B-C +.60 +.60 +.60 +.60 +.60 +.75   
 4 Contact Rating 5-amperes   
 5 Panel Thickness 1/8" panel   
 = \$12.55

NOTICE: All prices and specifications subject to change without prior notice. General Control Company, Boston 34, Mass.



## "Footrol" FOOT SWITCHES by GENERAL CONTROL COMPANY



**TYPE MA** A new light weight foot switch with an actuating treadle built into its top to permit operation with unusually light foot pressure. A long-life SPDT "du-op" Limit Switch forms the internal switch action. Especially recommended for fast operation where minimum fatigue is important. Access to the internal "du-op" switch terminals is greatly facilitated by simply removing the front end of the casting.



**TYPE MC** Especially adapted for unusual applications and hard use. Easily operated for foot, knee, hand, or elbow. Non-slip-tread top may be operated at any point of its surface.



**TYPE MI** An ideal treadle-type foot switch, especially convenient for many applications. Inclined, non-slip tread, has an adjustable throw and includes a heel rest. Two operating pressures: 5 lbs. and 10 lbs. Mounting ears are provided on each side. A BX connector is mounted in the base, and terminal access is by a removable base plate.



Since 1934, General Control Company has been a foremost manufacturer of Foot Switches. These are products of the highest quality; built for rugged industrial applications. The great number of GENERAL CONTROL foot switches now in everyday use throughout the world provides substantial evidence of their acceptance for all types of applications.

Write for data sheet FSRM

TYPES			CONTACT TYPES	CONTACT OPERATION
<b>MA-3</b> \$4.60	<b>MC-13</b> \$6.50	<b>*MI-23</b> \$9.80		Double throw Spring return ( ONE NORMALLY OPEN, ONE NORMALLY CLOSED )
		<b>MI-25</b> \$11.25		First press transfers switch contacts Second press restores switch contacts ( ONE NORMALLY OPEN, ONE NORMALLY CLOSED )
		<b>MI-26</b> \$13.65		1st half-throw closes 1st switch 2nd half-throw closes 2nd switch Spring Return
		<b>MI-27</b> \$15.00		Double pole Double throw ( TWO NORMALLY OPEN, TWO NORMALLY CLOSED ) Spring return

\*Add \$2.50 to price shown, for foot switch with heavy duty 20-ampere rating.

Standard Foot Switches are available with mounting holes to accommodate special connectors used on shielded cable.

## Precise LIMIT SWITCHES by GENERAL CONTROL COMPANY

PRECISE MACHINE CONTROL depends upon PRECISE LIMIT SWITCHING

### BASIC du . op SWITCH



CUT-AWAY VIEW

The type DU-S "du . op" is a precise action limit switch. The centrally-located plunger acts directly on the wide phosphor-bronze blade to insure instantaneous contact at each point of repetitive plunger travel. Delays of pre-travel blade action are eliminated — an important factor at high switching speeds.



DU-S... Standard Type

#### ACTUATORS



DU-O... Heavy-Duty Plunger



DU-L... 3 Position Leaf Actuator



DU-B... Ball Actuator



DU-E... Stainless Steel Plunger

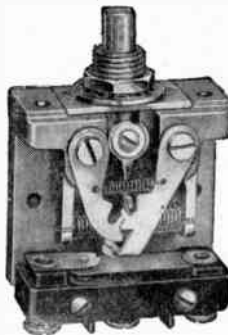
TYPES AND PRICES	STANDARD CONTACT ARRANGEMENT	CONTACT OPERATION SPDT-S/R	ACTUATING FORCE	CONTACT GAP	ACTUATOR TRAVEL TO CLOSE CONTACT	OVER-TRAVEL
DU-S \$1.90		Single Pole Double Throw Spring Return	2-6 oz.	.020"	.020"	.015"
DU-O \$2.10	SPDT	SPDT-S/R	2-6 oz.	.020"	.020"	.015"
DU-L \$3.80	SPDT	SPDT-S/R	1) 1-1 1/2 oz. 2) 1-4 oz. 3) 1-7 oz.	.020"	1) .250" 2) .375" 3) .625"	1) .210" 2) .167" 3) .125"
DU-B \$3.65	SPDT	SPDT-S/R	2-6 oz.	.020"	.020"	.062"
DU-E \$3.50	SPDT	SPDT-S/R	2-6 oz.	.020"	.020"	.075"

LIGHTER OR HEAVIER ACTUATING FORCE SWITCHES ARE AVAILABLE.

RATINGS—10 amperes 125 volts a-c; non-inductive; 5 amperes 230 volts a-c; non-inductive

### A-C-O

LIMIT SWITCH



←COVER REMOVED

ENCLOSED SWITCH →



The A-C-O is a new development in off-on Limit Switches . . . an innovation for use on machine tools, and other Limit Switch applications. Operation is such that the first press transfers the contacts; the second press restores them. Contacts are maintained at the completion of each plunger stroke.

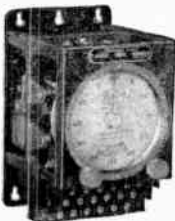
BASIC TYPE AND PRICE	STANDARD CONTACT ARRANGEMENT	MAINTAINED CONTACT OPERATION	STANDARD ACTUATING FORCE	CONTACT GAP	PLUNGER TRAVEL TO CLOSE CONTACT	OVER-TRAVEL
ACO \$10.00 WITH COVER		First press transfers contact; Second press restores contact	3-4 lbs.	.020"	.218"	.113"

RATINGS—10-20 amperes 125 volts a-c; non-inductive; 10 amperes 230 volts a-c; non-inductive

Write for data sheet ADRM

## "Promatic" CONTROLS by GENERAL CONTROL COMPANY

### SYNCHRONOUS-MOTOR TIMERS



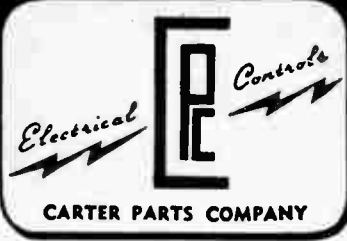
The Series II, Type SY, Synchronous-motor Timers has time ranges from 1 second up to 24 hours, available to match the Type ET Timer. Redesignated to incorporate the latest production and quality improvements. A new patented O-Ring clutch eliminates gears and costly maintenance problems. Time period easily adjusted and continuously indicated on large dial. Prices from \$55.00 each, list.

### ELECTRONIC TIMERS

Type ET, Electronic Timers with ranges from .060 seconds to 60 seconds, are available in a variety of frame types, terminal arrangements, and mountings. The enclosed type or chassis model have back plates punched with universal mounting holes. Double pole, double throw auxiliary load contacts are rated at 10 amps., 125 volts a-c, n.i. Prices from \$35.00 each, list.



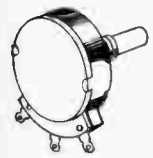
Write for data sheets SERM



# Carter

## PARTS COMPANY

SKOKIE, ILL.  
FORMERLY CARTER RADIO DIVISION OF UTAH RADIO PRODUCTS



### HI WATT 3 1/2 WATT WIRE WOUND

This is an extremely rugged control designed for applications where standard commercial quality controls are not suitable. Special materials enable it to withstand long periods of overload without deterioration. It can be supplied in single, dual, and triple ganged units.

**Specifications:** Conservatively rated at 3 1/2 watts, insulated contact arm, wire wound, linear taper. 300° mechanical rotation, 290° electrical rotation, tested for breakdown at 1,500 volts RMS. This control will operate at rated watts over an ambient range of -55° C. to +52° C.

**Materials:** Resistance element wound with Advance or Nichrome wire depending on overall resistance required) on Paper Base Phenolic strip. Main body of control is molded high grade heat resistant phenolic, with aluminum shaft with brass bushing. Contact arm is high grade nickel-silver. Terminals are brass, hot tin dipped.

**Dimensions:** 1 1/2" diam. (1 1/8" over terminals), x 1 1/2" deep. Lower cost commercial quality controls are also available in following stock resistances with a 3" long flatted universal shaft.

Stock Number	Resistance Ohms	Stock Number	Resistance Ohms
H1-1	1	H1-300	300
H1-2	2	H1-400	400
H1-3	3	H1-500	500
H1-5	5	H1-750	750
H1-10	10	H1-1000	1000
H1-20	20	H1-1500	1500
H1-25	25	H1-2000	2000
H1-30	30	H1-3000	3000
H1-40	40	H1-4000	4000
H1-50	50	H1-5000	5000
H1-75	75	H1-7500	7500
H1-100	100	H1-10000	10000
H1-150	150		
H1-200	200		



### THRIFTY IMP 2 WATT WIRE WOUND

This is a low cost, yet sturdily constructed, control. It can be supplied with either grounded contact arm, or insulated contact arm.

**Specifications:** Rated at 2 watts, wire wound, linear taper, open construction, 300° mechanical rotation, 280° electrical rotation, tested for breakdown at 500 volts RMS.

**Materials:** Resistance element wound on braided Fiberglas cord. Resistance element nests in groove between two heavy fiber body pieces. Aluminum bushing, aluminum shaft, phosphor bronze contact arm, tin coated solder terminals.

**Dimensions:** 1 1/4" dia. (1 1/8" diam. over terminals) x 1 1/8" deep. Stock version has 3/8" x 3/8" bushing with flatted shaft extending 1/2" beyond end of bushing.

Stock Number			Stock Number		
Insulated Arm	Grounded Arm	Resist. Ohms	Insulated Arm	Grounded Arm	Resist. Ohms
R511-2	R510-2	2	R511-100	R510-100	100
R511-3	R510-3	3	R511-150	R510-150	150
R511-5	R510-5	5	R511-200	R510-200	200
R511-6	R510-6	6	R511-250	R510-250	250
R511-8	R510-8	8	R511-300	R510-300	300
R511-10	R510-10	10	R511-400	R510-400	400
R511-15	R510-15	15	R511-500	R510-500	500
R511-20	R510-20	20	R511-750	R510-750	750
R511-30	R510-30	30	R511-1000	R510-1000	1000
R511-50	R510-50	50	R511-1500	R510-1500	1500
R511-75	R510-75	75	R511-2000	R510-2000	2000

### CARTER "T" & "L" PAD WIREWOUND ATTENUATORS



(V2) 4-WATT "L" PADS ENCLOSED SINGLE TYPE. BODY: 1 1/8" diameter, 1 1/2" deep. BUSHING: 3/8" diameter, 3/8" long. SHAFT: 1/4" diameter, 1 1/2" long, from bushing. Mount in single 3/8" hole.

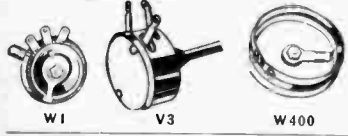
(W300) 10-WATT "T" PADS OPEN FRAME TYPE. BODY: 2 1/2" diameter, 1 1/2" deep. BUSHING: 1/2" diameter, 3/8" long. SHAFT: 1/4" diameter, 1 1/2" long, from bushing.

(V7) 8-WATT "L" PADS ENCLOSED DUAL TYPE. BODY: 1 1/8" diameter, 1 1/2" deep. BUSHING: 3/8" diameter, 3/8" long. SHAFT: 1/4" diameter, 1 1/2" long, from bushing.

(W201) 15-WATT "L" PADS OPEN FRAME TYPE.

STOCK NO.	IMPEDANCE
V2/W300/V7/W201-8	8 Ohms
V2/W300/V7/W201-16	16 Ohms
V2/W300/V7/W201-50	50 Ohms
V2/W300/V7/W201-200	200 Ohms
V2/W300/V7/W201-500	500 Ohms
V2/W300/V7/W201-1000	1000 Ohms

### VARIABLE RESISTORS — Wire Wound Type



**Standard Specifications**  
The shaft and housing are constructed of steel, cadmium plated. Bushing and hex. nuts are brass, but can be supplied nickel-plated. Terminals are made of steel, silver-plated over copper plate. Insulating material as described for individual types. Low temperature—coefficient wire used on all units except where physical size of wire will not permit.

Stock Number	Resist. Ohms	Stock Number	Resist. Ohms
W1-1/2	1 1/2	W1-40	40
W1-1	1	W1-50	50
W1-2	2	W1-75	75
W1-3	3	W1-100	100
W1-6	6	W1-200	200
W1-10	10	W1-400	400
W1-15	15	W1-500	500
W1-20	20	W1-1000	1000
W1-25	25	W1-1500	1500
W1-30	30		

Type W1 — 3 WATT RATING

Stock No.	Value in Ohms	Stock No.	Value in Ohms	Stock No.	Resist. Ohms	Stock No.	Resist. Ohms
V3-10	10	V3-800	800	W400-100	100	W400-1M	1000
V3-20	20	V3-1M	1000	W400-150	150	W400-2M	2000
V3-30	30	V3-2M	2000	W400-200	200	W400-3M	3000
V3-50	50	V3-3M	3000	W400-250	250	W400-5M	5000
V3-100	100	V3-4M	4000	W400-300	300	W400-7500	7500
V3-200	200	V3-5M	5000	W400-400	400	W400-10M	10000
V3-300	300	V3-6M	6000	W400-500	500	W400-20M	20000
V3-400	400	V3-10M	10000	W400-800	800	W400-50M	50000
V3-500	500	V3-15M	15000				
V3-600	600						

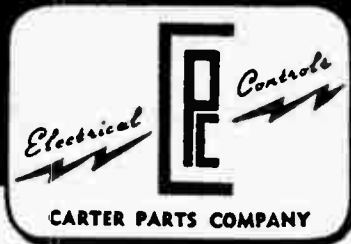
Type V3—4 WATT RATING

Type W400—15 WATT RATING

### TYPE AD ADJUSTABLE WIREWOUND RESISTORS

The Carter Type AD Resistor is an inexpensive and compact adjustable resistor capable of dissipating one watt. The arm is slotted for ease of adjustment. Its sturdy construction permits mounting either by its terminals or through the large eyelets.

Stock No.	Resist. in Ohms	Stock No.	Resist. in Ohms
AD-10	10	AD-200	200
AD-20	20	AD-250	250
AD-25	25	AD-400	400
AD-40	40	AD-500	500
AD-50	50	AD-750	750
AD-75	75	AD-1000	1000
AD-100	100	AD-2000	2000



# Carter

**PARTS COMPANY**

SKOKIE, ILL.

FORMERLY CARTER RADIO DIVISION OF UTAH RADIO PRODUCTS

## CARTER "Imp" PHONE PLUGS



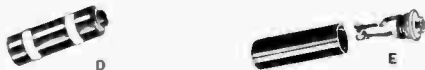
Fit standard 2-conductor jacks  $\frac{1}{4}$ " diameter. New types now stocked for wide range of uses. For headphones, microphones, speakers, musical instruments, medical and test equipment, many others.

Molded handles. Metal Shield handles are bright nickel plated with internal 2-layer, high quality tubular insulators, preventing short circuits in handle.

(A) "imp" Phone Plug—Trend to miniaturization is reflected in the new "imp" phone plug. All features same as standard plug but  $\frac{1}{2}$ " diameter handle.

(B and C) Carter Two Conductor Phone Plugs—Old standby original Carter "imp" two conductor phone plug. General purpose type. Screw type terminals designed to take phone tips singularly or in pairs, spade lugs. Screws are binding head terminal type. Handles  $\frac{3}{8}$ " diameter,  $2\frac{1}{4}$ " long. Type B uses molded black phenolic handle. Type C has nickel plated handle.

Part No.	Type	Handle	Circuit	Terminal
P1	A	Black	2 Conductor	Clamp type
P2	A	Red	2 Conductor	Clamp type
P3	A	Metal	2 Conductor	Clamp type
P4	A	Black	2 Conductor	Screw type
P5	A	Red	2 Conductor	Screw type
P6	A	Metal	2 Conductor	Screw type
P10	A	Black	3 Conductor	Clamp type
P11	A	Red	3 Conductor	Clamp type
P12	A	Metal	3 Conductor	Clamp type
P23	similar to C	Short Metal	2 Conductor	Screw type
P24	B	Black	2 Conductor	Screw type
P25	B	Red	2 Conductor	Screw type
P26	C	Metal	2 Conductor	Screw type



(D and E) Two-Conductor Portable Jacks—Used on end of extension cord. Fits 2-conductor plugs. Screw terminals take one pair phone tips, terminals or wires. Shield handles have tubular insulator to prevent short circuits. Ideal for use in connecting audio and recording equipment.

Part Number	Type	Handle
J80	E	Black
J81	E	Red
J82	D	Metal

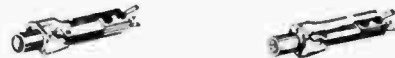
## LONG AND SHORT FRAME JACKS

**LONG JACKS** . . . The original long jacks were adapted from the telephone switchboard jacks. Long rugged, phosphor-bronze springs parallel to the plug axis give precise action. These jacks take minimum panel mounting space, less than the short jacks. Supplied with nickel-plated Palnut.

**SHORT JACKS** . . . Carter short jacks are small and compact, but do a full-sized job. Depth behind the panel is cut down by placing the tempered nickel-silver springs parallel to the panel. High quality sheet phenolic and tubular ebonite insulators are used throughout—no paper or fibre used in Carter Jacks. Supplied with nickel-plated Palnut.

Short and long jacks mount in single  $\frac{3}{8}$ " hole in panels up to  $\frac{1}{8}$ " thick. Fit of the plug in the jack is not affected by the thickness of the panel. Fit all standard plugs in two and three conductor types. Cadmium plated steel frame. All contacts between springs are fine silver, giving minimum contact resistance.

## CARTER TELEPHONE JACKS



### SPECIFICATIONS

**CONTACTS:** Palladium is standard silver-zinc, coin silver, fine silver and others can also be supplied in production quantities.

**BUSHING:** Plain brass is standard. Available with nickel-plate when specified.

**SPRINGS:** Finest grade nickel silver with soldering terminals hot tinned for easy soldering.

**INSULATION:** Spacers made of high grade laminated phenolic.

**FRAME:** Frame and face plate cadmium plated steel. Frame and face plate are electrically welded to form one integral unit. This provides outstanding strength and superior ability to "stand the gaff." Where paramount quality and ruggedness is desired this telephone jack is recommended.

Carter "imp" Telephone Jacks can be supplied in many circuit combinations to suit your requirements. They are ideal for use in telephone, broadcast studio and audio equipment.



## CARTER IMP JACKS



These are the smallest jacks available for use with standard phone plugs. They come in a wide variety of circuits, as shown below. Mount in a single  $\frac{3}{8}$ " diam. hole, panels up to  $\frac{1}{8}$ " thick. More detailed catalog information available on request.

### "Imp" SHORT JACKS



**J-1 Open Circuit "imp" Short Jack**—Has tip and sleeve circuits only.

**J-2 Closed Circuit "imp" Short Jack**—Similar to J-1 with an additional spring making contact with tip spring until plug is inserted.

**J-3 Microphone "imp" Short Jack**—A new 3-conductor jack having tip, ring and sleeve circuits. Fits standard 3-circuit  $\frac{1}{4}$ " dia. microphone plugs.

### CARTER "Imp" JACKS

Schematic	Part No.	Description
	11	2 conductor—open circuit
	12	2 conductor—closed circuit.
	13	3 conductor—open circuit
	14	3 conductor—closed circuit on tip spring
	15	3 conductor—closed circuit on ring spring
	18	2 conductor—break-make circuit
	19	2 conductor—separate break circuit
	110	2 conductor—separate make circuit

## CARTER HEADSET CONNECTORS

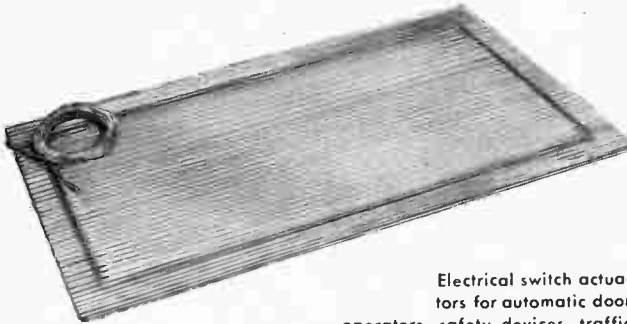
These miniature connectors are built to government specifications for aircraft headset use. Small, lightweight, ideal for any low voltage audio or signal circuit. Positive "snap" fit. All current carrying parts nickel plated.

PJ-292 Plug— $1\frac{1}{8}$ " long x  $\frac{3}{4}$ " wide x  $\frac{3}{8}$ " deep. Solder terminals.

JJ-055 Jack— $1\frac{1}{8}$ " long x  $\frac{3}{4}$ " wide x  $\frac{3}{8}$ " deep. Solder terminals.

# RECORA<sup>®</sup> Extended Area ELECTRICAL FLOOR SWITCHES

## RECORA<sup>®</sup> LAMINATED



Electrical switch actuators for automatic door operators, safety devices, traffic control and numerous other inter-plant operations. Actuated by 5 lbs. pressure or greater. Designed for low voltage operation. Power capacity 100 watts.

*Switchmat<sup>®</sup>*

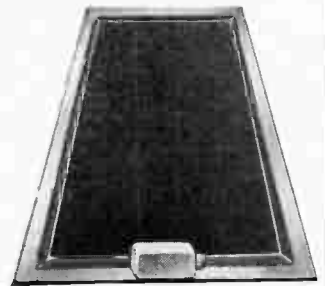
- Model 18304 (Bare floor type)  
18" x 30" corrugated vinyl plastic mat,  $\frac{3}{16}$ " thick, Weight 10 $\frac{1}{4}$  lbs.
  - Model RSE-18 Edging Kit\* (Designed for Model 18304)  
Hardened bevelled aluminum molding of measured and mitered lengths to enclose mat on all edges. Weight 2 $\frac{1}{2}$  lbs.
  - Model 18303 (Under carpet type)  
18" x 30" smooth vinyl plastic mat,  $\frac{1}{4}$ " thick. Weight 9 $\frac{3}{4}$  lbs.
  - Model 14234 (Bare floor type)  
14" x 23" corrugated vinyl plastic mat,  $\frac{3}{16}$ " thick. Weight 6 lbs.
  - RSE-14 Edging Kit\* (Designed for Model 14234)  
Hardened bevelled aluminum molding of measured and mitered lengths to enclose mat on all edges. Weight 2 lbs.
  - Model 14233 (Under carpet type)  
14" x 23" smooth vinyl plastic mat,  $\frac{1}{4}$ " thick. Weight 5 $\frac{3}{4}$  lbs.
- \* Edging kits optional. NOTE: Switchmats available in sizes 8" x 10" up to 36" x 144"

## RECORA<sup>®</sup> MOLDED

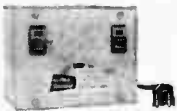
Extra durable, molded to a heavy sheet of steel and completely waterproof. Smooth top construction. Can be mounted directly to roads, walks, car wash lanes, plant entrances and on public highways to actuate automatic doors, counting devices, traffic signals, etc. Designed for low voltage operation. Power capacity 100 watts.

*Switchmat<sup>®</sup>*

- Model 24-M7  
Single pole, single throw electrical switch. Smooth brown plastic top. 7" wide x 24" long,  $\frac{1}{4}$ " thick. Weight 13 lbs.
  - Model 72-M7  
Same as Model 24-M7, except 3 $\frac{1}{2}$ " wide x 72" long,  $\frac{1}{4}$ " thick. Weight 25 lbs.
- Other sizes and types available from  $\frac{1}{4}$  square inch up to 14 square feet.



## RECORA<sup>®</sup> CONTROLS

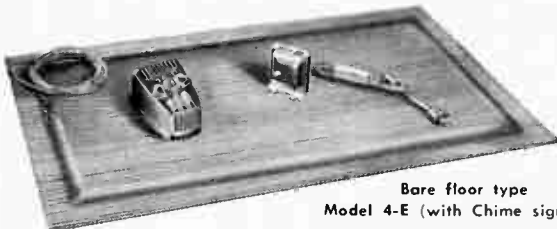


For use with above switches to permit actuation of electrical devices drawing up to 1000 watts. Provide 6 volt supply for switch circuit. Operate on 110 volt 60 cycle AC.

Other controls designed for special applications at low cost.

### Model CB-1R

Size 3" x 4" x 5". Double outlet 110 volt sockets to provide normally off and normally on operation. Weight 2 lbs.



\* Trademark

*Announcemat<sup>®</sup>*

Signal and alarm systems. Operated by an 18" x 30" vinyl plastic mat switch. Baxed complete with 18" x 30" mat, transformer with 6 ft. cord and plug, 25 ft. low voltage cable, and with chime, bell or buzzer.

- | Bare floor type  | Under carpet type  |
|--|--|
| Model 4-E (with Chime signal) Weight 12 $\frac{1}{2}$ lbs. | Model 3-E (with Chime signal) Weight 10 $\frac{1}{2}$ lbs. |
| Model 4-L (with Bell signal) Weight 12 lbs.                | Model 3-L (with Bell signal) Weight 10 lbs.                |
| Model 4-R (with Buzzer signal) Weight 12 lbs.              | Model 3-R (with Buzzer signal) Weight 10 lbs.              |

Manufactured and guaranteed by

**THE RECORA CO., INC.**  
SUMMIT, ILLINOIS



La Grange, Illinois

## GRAYHILL Snap Action Switch

### SERIES 2000



Grayhill Snap Action, Momentary contact, SPST Rated 10 amps. 115 volts AC, resistive. A distinct click at moment of actuation — highly desirable for test equipment. Molded phenolic housing and button. Mounting bushing  $\frac{1}{32}$ " — 32 thread. Two hex nuts for mounting. Solder terminals. Rated life approx. 50,000 operations. Recommended for manual operation only.

No. 2201—Normally open (Red Button).....Net Ea. \$1.85  
 No. 2202—Normally closed (Black Button).....Net Ea. \$1.85

## GRAYHILL Silent Action Switch

### SERIES 4000



Grayhill non-snap, momentary contact, SPST switch. Rated 1/2 amp. 115 volts AC, resistive load, with life expectancy of approximately 800,000 operations (at 1 amp. approx. 100,000 operations). Molded phenolic housing and button. Mounting bushing  $\frac{1}{32}$ " — 32 thread. Hex nut for mounting. Solder terminals. Recommended for manual operation only.

No. 4001—Normally open (Red Button).....Net Ea. \$0.70  
 No. 4002—Normally closed (Black Button).....Net Ea. \$0.70

## GRAYHILL Button Guard



For Series 2000 and 4000 Grayhill Switches. Provides protective recess for buttons guarding against danger of accidental actuation. Threads onto  $\frac{1}{32}$ " — 32 mounting bushing. Can be used instead of a mounting nut or in conjunction with a nut. Brass, cadmium plated.

No. 10C1015.....Net Ea. \$0.25

## GRAYHILL Binding Posts



For 3/8" mounting hole. No. 29-1R Red, No. 29-1B Black. Both functional and ornamental. Minimum mounting space...nickel plated metal parts...phenolic to MIL-P-14...non-turn "D" washers...integral solder stud...flush crosshole. Compact design (1/2" diameter) permits mounting on 3/4" centers. 2 hex nuts for solder-lug connection plus integral solder stud. For use on panels up to  $\frac{3}{16}$ " thick.

No. 29-1R (Red) No. 29-1B (Black).....Net Ea. \$0.40

## GRAYHILL Dual Mounting Base



Molded phenolic base for dual mounting of Grayhill No. 29-1 Binding Posts. Sold separate for "Do-it-yourself" assembly. Available in red and black for use in conjunction with 3/8" diameter mounting units only.

No. 29B11-1 (Black) No. 29B11-2 (Red).....Net Ea. \$0.10

## GRAYHILL Miniature Silent Action Switch

### SERIES 23-1



Grayhill Non-snap, momentary contact, single pole, single throw push button switch. Rated 1/4 amp. 115 volts AC, resistive load, with life expectancy of approximately 500,000 operations. Molded phenolic housing and button. Solder terminals. Mounting bushing  $\frac{1}{16}$ " — 32 thread. Hex mounting nut. Overall length  $1\frac{3}{4}$ ". Max dia. 1/2".

No. 23-1—Normally open (Red Button).....Net Ea. \$0.85

## GRAYHILL Midget Silent Action Switch

### SERIES 30-1



Grayhill Sub-miniature, non-snap, momentary contact, single pole, single throw, push button switch. Rated .10 amp. 115 volts AC, resistive load, with approximate life of 300,000 operations. Mounting bushing  $1/4$ " — 32 thread, overall height  $6\frac{3}{4}$ ", max. dia.  $3/8$ ". Molded phenolic housing and button. Solder terminals.

No. 30-1—Normally open (Red Button).....Net Ea. \$0.95

## GRAYHILL Binding Posts



For 1/2" mounting hole. No. 29-3R Red, No. 29-3B Black. This style for 1/2" mounting holes, permits use in existing equipment and new applications where wider mounting centers are desired. Both functional and ornamental. Nickel plated metal parts...phenolic to MIL-P-14...washers are non-turn "D" style...integral solder studs...flush crosshole. Choice of red or black. 2 hex nuts for solder lug connections plus integral solder stud for panels up to  $\frac{3}{16}$ " thick.

No. 29-3R (Red) No. 29-3B (Black).....Net Ea. \$0.40  
 Available in six additional colors.....Net Ea. \$0.45

## GRAYHILL Series 31 Test Jacks For Printed Circuits



For use on printed circuits as a test point to feed AF, RF and Pulse signals, check and feed DC voltages, monitor signals during test, alignment, etc. For standard .081" to .0825" phone tip plugs. Rivets to board like an eyelet. Rivet diameter is .114". Jack is  $1/4$ " high.

No. 31-1—For 1/16" board.....Net Ea. \$0.25  
 No. 31-2—For 3/32" board.....Net Ea. \$0.25  
 No. 31-3—For 1/8" board.....Net Ea. \$0.25

## PLASTIC SLEEVES for GRAYHILL TEST JACKS



Snap-on plastic insulators lock in place over Grayhill Test Jacks. Available in 8 colors for color coding. Overall dimensions .245" dia. x .290" high. CAUTION: Once snapped over the retainer ring, sleeves lock in place and cannot be removed. Colors available:

No. 31B-1—Black  
 No. 31B-2—Red  
 No. 31B-3—Green  
 No. 31B-4—Gray  
 No. 31B-5—Brown  
 No. 31B-6—Blue  
 No. 31B-7—Yellow  
 No. 31B-8—White

Any Color.....Net Ea. \$0.05



La Grange, Illinois

### GRAYHILL Series 2 Test Clips

The basic clip is available in the various types of mounting as illustrated. Extremely useful in bread-board work to hold wire leads. Also ideal for laying out a harness. (Clips are placed at the lead ends on pegboard; pegs are then used to form the necessary pattern.) Mount on panel of test equipment to permit rapid lead connections — no need for manual opening and closing of jaws or clamps. Tension may be improved by merely tightening the hex adjacent to the bow.



### GRAYHILL Coil Forms (Pat. No. 2653992)



Molded of mica-filled phenolic (MIL-P-14, Type MFE) for low loss at high frequencies, low moisture absorption, high dielectric strength and resistance to fungus growth. Tinned copper wire leads. Grayhill patented anchor posts.

No. 48XX1010.....Net Ea. \$0.20

### GRAYHILL No. 2-2—Plug-In Adapter



Designed for testing resistors, capacitors and similar pig-tail type components on standard test equipment. Banana plugs spaced at 3/4" centers. Molded phenolic board MIL-P-14, Type CFG. Nickel plated clips and plugs.

No. 2-2.....Net Ea. \$1.40

### GRAYHILL Series 16—Insulated Test Clips



Fully insulated to permit two or more to be laid side by side without shorting. Molded phenolic finger grips. Silver overlay contacts with .0015 ohms resistance. Permit easy access to tight places.

No. 16-B (Black).....Net Ea. \$0.85  
No. 16-R (Red).....Net Ea. \$0.85

Part Number	Body Length	Body Diameter	Lead Wire Dia.
48XX1010-1	.500"	.125"	.025"
48XX1010-2	.625"	.187"	.032"
48XX1010-3	.750"	.187"	.032"
48XX1010-4	.500"	.250"	.040"
48XX1010-5	.750"	.250"	.040"
48XX1010-6	1.000"	.250"	.040"
48XX1010-7	.500"	.156"	.032"

### GRAYHILL Stand Off Insulators



Bodies are molded of mica-filled phenolic (MIL-P-14, Type MFE) for low loss at high frequencies, high dielectric strength, low moisture absorption and fungus resistance. Brass solder terminals, silver plated. Length, front of panel, 1 1/4"—diameter 5/16".

No. 18-1—(Female—No. 4-40 Thread).....Net Ea. \$0.35

No. 18-2—(Male—No. 4-40 Thread).....Net Ea. \$0.40

### GRAYHILL Diode Holder



Gives tight snap fit within the spring tension clip. Loop terminal and spring clip are formed from one piece of phosphor bronze wire, gold plated for easy soldering and corrosion resistance. Molded phenolic base (MIL-P-14, Type CFG) has projection that fits in corresponding hole in base to prevent turning. Overall length 1 1/4", width 3/8", height 3/8", center to center of clips .635".

No. 17-1.....Net Ea. \$0.35

### GRAYHILL Mating Insulating Washers



To insulate jacks with 3/8" dia. bushing from mounting panel. Washer for rear of panel has indexing hole fitting non-turn tab of jack. Front washer fits under hex mounting nut. Shoulder dimensioned for 1/4" minimum panel thickness.

No. 21B78 (1 set of washers).....Per Set \$0.12  
For Natural Mica-filled Phenolic .....Specify (—1)  
For Black Electrical Grade .....Specify (—2)

### GRAYHILL Molded Insulating Washers



No. 21B1001 thru 1005 and No. 21B1021.....Net Ea. \$0.05

No. 21B1006.....Net Ea. \$0.06

For Natural Mica-filled Phenolic .....Specify (—1)  
For Black Electrical Grade.....Specify (—2)

Specify (—1) or (—2) After Number	Screw Size	Overall Dia.	Shoulder Dia.	Male Dia.	Overall Height	Base Height	Shoulder Height
21B1001	No. 6	.500"	.375"	.145"	.094"	.063"	.031"
21B1002	No. 8	.500"	.375"	.171"	.094"	.063"	.031"
21B1003	No. 10	.500"	.375"	.198"	.094"	.063"	.031"
21B1004	1/4"	.500"	.375"	.258"	.094"	.063"	.031"
21B1005	5/16"	.500"	.375"	.319"	.094"	.063"	.031"
21B1006	3/8"	.625"	.500"	.384"	.094"	.063"	.031"
21B1021	No. 6	.375"	.250"	.145"	.094"	.063"	.031"



La Grange, Illinois

### GRAYHILL Miniature Tap Switch

#### Series 5000—Single Deck



Quality tap switch designed for panel space conservation. Rated 1 amp., 115 volts AC, resistive load — will carry 5 amps. as a selector switch only. Available non-shorting (break before make) or shorting (make before break). 2 to 10 positions. 10 position switches rotate continuously either direction. 9 positions, or less, have stop that allows rotation only through desired positions. Contact positions on 36° indexing. Mounting bushing 3/8" — 32 thread with hex nut. Max. dia. 1 1/2" — length (back of panel) 1 1/2".

#### Series 24—Single Deck



Same as Series 5000 except for POSITIVE DETENT ACTION and better "feel" for precision requirements, unusual in miniature switches. Also, terminals soldered to contacts. Suitable for both commercial and military equipment. Length (back of panel) .562".

### SERIES 5000 SINGLE DECK SWITCH

To Designate "Shorting" An "S" Follows Switch Number

Number of Positions Per Deck

	2	3	4	5	6	7	8	9	10
5-001-2	5-001-3	5-001-4	5-001-5	5-001-6	5-001-7	5-001-8	5-001-9	5-001-10	
<b>\$1.30</b>	<b>1.35</b>	<b>1.40</b>	<b>1.45</b>	<b>1.50</b>	<b>1.55</b>	<b>1.60</b>	<b>1.65</b>	<b>1.70</b>	

### SERIES 24 SINGLE DECK SWITCH

	2	3	4	5	6	7	8	9	10
24001-2	24001-3	24001-4	24001-5	24001-6	24001-7	24001-8	24001-9	24001-10	
<b>\$2.90</b>	<b>3.00</b>	<b>3.10</b>	<b>3.25</b>	<b>3.35</b>	<b>3.45</b>	<b>3.55</b>	<b>3.65</b>	<b>3.80</b>	

When Ordering Series 5000 or Series 24 Specify Positions and Shorting or Non-Shorting Type.

### GRAYHILL Miniature Tap Switch

#### Grayhill Series 5000—Multi-Deck



A quality built tap switch designed to conserve panel space. Rated at 1 amp. 115 volts AC, resistive — will carry 5 amps. as a selector switch only. Available non-shorting (break before make) or shorting (make before break). 2 to 10 positions per deck, with 2 to 6 deck switches available from stock. 7 to 10 deck switches available on special order. 10 position switches rotate continuously either direction — 9 positions or less have stop that allows rotation only through desired positions. Contact positions on 36° indexing. Studs on 5 to 10 deck positions extend 1/4" at rear to allow double end mounting necessary to eliminate twisting action. Mounting bushing 3/8" — 32 thread with hex mounting nut. Maximum dia. 1 1/2". Overall length shown in chart.

### SERIES 5000 MULTI-DECK SWITCH

To Designate "Shorting" An "S" Follows Switch Number

Number of Positions Per Deck

Overall Length (back of panel)	Number of Positions Per Deck									
	2	3	4	5	6	7	8	9	10	
2 1 1/4"	5-002-2 <b>\$3.00</b>	5-002-3 <b>3.10</b>	5-002-4 <b>3.20</b>	5-002-5 <b>3.30</b>	5-002-6 <b>3.40</b>	5-002-7 <b>3.50</b>	5-002-8 <b>3.60</b>	5-002-9 <b>3.70</b>	5-002-10 <b>3.80</b>	
3 1 1/2"	5-003-2 <b>\$3.65</b>	5-003-3 <b>3.80</b>	5-003-4 <b>3.95</b>	5-003-5 <b>4.10</b>	5-003-6 <b>4.25</b>	5-003-7 <b>4.40</b>	5-003-8 <b>4.55</b>	5-003-9 <b>4.70</b>	5-003-10 <b>4.85</b>	
4 2 1/8"	5-004-2 <b>\$4.30</b>	5-004-3 <b>4.50</b>	5-004-4 <b>4.70</b>	5-004-5 <b>4.90</b>	5-004-6 <b>5.10</b>	5-004-7 <b>5.30</b>	5-004-8 <b>5.50</b>	5-004-9 <b>5.70</b>	5-004-10 <b>5.90</b>	
5 2 1/2"	5-005-2 <b>\$4.95</b>	5-005-3 <b>5.20</b>	5-005-4 <b>5.45</b>	5-005-5 <b>5.70</b>	5-005-6 <b>5.95</b>	5-005-7 <b>6.20</b>	5-005-8 <b>6.45</b>	5-005-9 <b>6.70</b>	5-005-10 <b>6.95</b>	
6 2 7/8"	5-006-2 <b>\$5.70</b>	5-006-3 <b>6.00</b>	5-006-4 <b>6.30</b>	5-006-5 <b>6.60</b>	5-006-6 <b>6.90</b>	5-006-7 <b>7.20</b>	5-006-8 <b>7.50</b>	5-006-9 <b>7.80</b>	5-006-10 <b>8.10</b>	

NUMBER OF DECKS

### GRAYHILL Miniature Tap Switch

#### Grayhill Series 24—Multi-Deck



Similar to Series 5000 except for POSITIVE DETENT ACTION and better "feel" for precision requirements, unusual in miniature switches. Also, terminals soldered to contacts. Suitable for both commercial and military equipment. For net prices and overall length see chart. When ordering No. 24 Series switches, specify number of decks, positions and shorting or non-shorting type.

7 to 10 deck switches available on special order.

### SERIES 24 MULTI-DECK SWITCH

To Designate "Shorting" An "S" Follows Switch Number

Number of Positions Per Deck

Overall Dimen. (back of panel)	Number of Positions Per Deck									
	2	3	4	5	6	7	8	9	10	
2 1.391"	24002-2 <b>\$4.30</b>	24002-3 <b>4.40</b>	24002-4 <b>4.50</b>	24002-5 <b>4.60</b>	24002-6 <b>4.75</b>	24002-7 <b>4.85</b>	24002-8 <b>4.95</b>	24002-9 <b>5.05</b>	24002-10 <b>5.15</b>	
3 1.766"	24003-2 <b>\$5.00</b>	24003-3 <b>5.15</b>	24003-4 <b>5.30</b>	24003-5 <b>5.45</b>	24003-6 <b>5.65</b>	24003-7 <b>5.80</b>	24003-8 <b>5.95</b>	24003-9 <b>6.15</b>	24003-10 <b>6.30</b>	
4 2.141"	24004-2 <b>\$5.70</b>	24004-3 <b>5.90</b>	24004-4 <b>6.10</b>	24004-5 <b>6.30</b>	24004-6 <b>6.55</b>	24004-7 <b>6.80</b>	24004-8 <b>7.05</b>	24004-9 <b>7.30</b>	24004-10 <b>7.55</b>	
5 2.516"	24005-2 <b>\$6.40</b>	24005-3 <b>6.65</b>	24005-4 <b>6.90</b>	24005-5 <b>7.15</b>	24005-6 <b>7.45</b>	24005-7 <b>7.75</b>	24005-8 <b>8.05</b>	24005-9 <b>8.35</b>	24005-10 <b>8.65</b>	
6 2.891"	24006-2 <b>\$7.15</b>	24006-3 <b>7.45</b>	24006-4 <b>7.75</b>	24006-5 <b>8.05</b>	24006-6 <b>8.40</b>	24006-7 <b>8.75</b>	24006-8 <b>9.10</b>	24006-9 <b>9.45</b>	24006-10 <b>9.80</b>	

NUMBER OF DECKS

### GRAYHILL Spring Return Rotary Switch



Same as Series 24, except, this switch gives momentary contact on either side of center position only. Available up to 3 decks in either shorting or non-shorting type. Add "S" to catalog number for shorting type.

No. 24101—1 Deck.....Net Ea. \$4.25  
No. 24102—2 Decks.....Net Ea. \$5.00  
No. 24103—3 Decks.....Net Ea. \$5.85

### GRAYHILL Non-Turn Washer



For Series 5000 and 24 Tap Switches. Slips over bushing and is keyed to it. Right angle tab locks into pre-drilled hole in panel.

No. 12C1087.....Net Ea. \$0.03

# LINEMASTER

AMERICA'S FOOT SWITCH LEADER

## LINEMASTER HERCULES HEAVY DUTY FOOTSWITCH



**LINE**

- Rugged
- Cast Iron Enclosure
- Safety-Guarded

- 2 Contact Types
- 4 Classes • 40 Models

Finish:  
Machine Grey Enamel  
Wt.: 7 lbs. 2 oz.—11 lbs. 10 oz.  
Size: 8-7/16" x 4-5/16" x 4-1/2"

Interior steel parts are cadmium plated or otherwise treated to resist corrosion. All terminals face up for easy wiring upon unfastening cover guard. Casing has 1/2 inch threaded hole for conduit pipe. Pedal position trip point is minutely adjustable. Two and three stage switches have distinct "FEEL" between stages. Special circuit combinations can be supplied in addition to those listed below.

Class—Voltage Rating	Contact Type	Single Stage			2-Stage		3-Stage	
		SP DT	DP DT	TP DT	SP DT	SP-DT		
General Purpose 125-480 V. AC-20 amps	Maintained	561-D	562-D	563-D	564-D	565-D		
	Momentary	521-S	522-S	523-S	524-S	525-S		
Water Tight NEMA Type 4 125-480 V. AC 20 amps	Maintained	571-DW	572-DW	573-DW	574-DW	575-DW		
	Momentary	531-SW	532-SW	533-SW	534-SW	535-SW		
Explosion-Proof Class 1, Group D NEMA Type 7 125-480 V. AC-20 amps	Maintained	581-DX	582-DX	583-DX	584-DX	585-DX		
	Momentary	541-SX	542-SX	543-SX	544-SX	545-SX		
High DC Rated 125 V. DC 10 amps.	Maintained	591-DDC	592-DDC	593-DDC	594-DDC	595-DDC		
	Momentary	551-SDC	552-SDC	553-SDC	554-SDC	555-SDC		

Tip-Toe Control for Tip-Top Production!

## LINEMASTER, Jr. FOOT SWITCH

Lightweight, sensitive... ideal for women workers! Needs only a touch of the toe, while heel remains comfortably on the floor.



#121-S  
& #122-S

Aluminum housing, black crackle finish. Weight 1 lb. 5 1/2" long, 3 1/4" wide, 1 1/4" high. Rated at 15 amps., 115 volts A.C.; 15 amps., 250 volts A.C. Can be wired to operate as single pole, normally open; single pole, normally closed; or single pole double throw. Momentary Contact only. #122-S—Rated at 20 amps., 115-250 volts A.C.

The LINEMASTER

## CLIPPER SWITCH



in two models:

1. **Momentary contact**  
(press to start—release to stop)
2. **Maintained contact**  
(press to start—press to release)

Rugged Momentary Contact Clipper has proved invaluable to product engineers and machine operators. Maintained Contact Clipper is now available for heavy duty applications. Molded nylon actuating cams; rugged cast iron housings, sponge rubber skid pads. Size: 4 1/2" x 3 1/2" x 1 1/2". Weight: 2 1/2 lbs.

#632-S—AC Rating: 20-A, 125-250V, Momentary Contact, Single Pole, Double Throw.

#634-S—AC Rating: 10-A, 125-250V, Momentary Contact, Double Pole, Double Throw.

#632-D—AC Rating: 20-A, 125-250V, Maintained Contact, Single Pole, Double Throw.

#634-D—AC Rating: 10-A, 125-250V, Maintained Contact, Double Pole, Double Throw.

## The LINEMASTER EXECUTIVE

Two Switches in  
One "On-Center"  
Mechanical Interlock!

This handsome switch is fool-proof and easy-to-operate! Selective circuits and guaranteed interlock eliminates possibility of accidentally tripping both circuits simultaneously while low, wide casing saves excessive leg movement—foot pivots easily from one side to the other. Easy to wire—remove only one screw and switch is ready. Either interior (or both) may be wired as normally open or normally closed—single pole—double throw. Heavy steel housing, baked homertone grey finish. Wt., 14 oz., 4 3/8" long, 4" wide, 1 1/4" high. Each interior rated at 15 amps of 125-250 volts A.C.



#B-2-S

## The LINEMASTER DUPLEX FOOT TREADLE SWITCH

Actually 2 switches in  
one compact housing!

LINEMASTER'S new DUPLEX FOOT TREADLE SWITCH is especially well adapted for sound and transmission equipment; relays, solenoids and magnetic switches. The DUPLEX provides either forward-and-reverse or start-and-stop action with slight heel or toe pressure, and allows two circuits to be selectively operated from one neutral position. Available in two spring weights, to allow for operation from either sitting or standing positions.\*

Cost aluminum housing, black crackle finish. Weight, 1 3/4 lbs.; length, 8 1/2"; width, 3 1/2"; height, 2". Rated at 15 amps, 125 volts-250 volts A.C.; 15 amps., 220 volts A.C. Either switch, or both, may be wired as single pole, normally open, single pole, normally closed; single pole, double throw.

\*Specify #475-S—heavy spring—for standing operation.

#476-S—Light spring—for seated position.



#475-S  
& #476-S

"When awkward jobs hold you up—a LINEMASTER FOOT SWITCH is your third hand!"



# LINEMASTER

PRECISION-BUILT • DEPENDABLE • RUGGED • ECONOMICAL • OVER 1000 APPLICATIONS

## LINEMASTER "SENIOR" 4000 SERIES



10 Maintained and Momentary Contact Models

A sturdy industrial-type switch that operates with light pressure from foot or knee, leaving both hands free for work. Economical and built to give years of trouble-free service — fully enclosed and hooded for protection against dirt and chips, with additional heavy spring and cast stop under cover strain-

ing, to relieve pressure and cast on spring inside switch proper.

Heavy-duty cast iron housing; black crackle enamel finish. 7" long, 4" wide, 3/4" high. Weight, 5 1/4 lbs.

MAINTAINED CONTACT MODELS: Press to start—press to stop.  
MOMENTARY CONTACT MODELS: Press to start—release to stop.

ELECTRICAL CHARACTERISTICS					MAINTAINED CONTACT	MOMENTARY CONTACT
Description	Amperes AC	DC	Volts	Horse-power Ph.	Cat. No.	Cat. No.
D-P	20	20	125	1 1		
S-T	20	20	250	1 1	4141-D	4141-S
D-P	10	10	125	1/2 1		
D-T	5	5	250	1/2 1	4142-D	4142-S
S-P	15	15	125	1/2 1		
D-T	10	10	250	1/2 1	4143-D	4143-S
D-P	15		115	1 1		
S-T	15		230	2 1	4151-D	4151-S
	5		575	2 1		
Three Pole	15		115-230	2 3		
	5		575	2 3	4351-D	4351-S

Safety guard available for all above models.

## The LINEMASTER COMPACT

Amazingly versatile—amazingly low-priced!

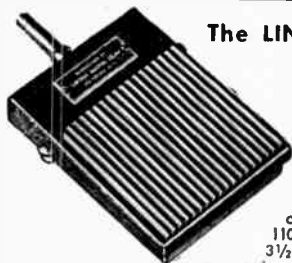
Small, lightweight — and instantly responsive to the slightest pressure of foot, finger, knee or elbow! Substantially built to insure long life, with an actuating mechanism superior to any other on the market today.



Available in a wide variety of wiring plans. Strong steel housing, black crackle finish. 2 3/4" long, 2 1/2" wide, 1/8" high. Weight, 6 1/2 ozs. Momentary contact only.

Cat. No.	DESCRIPTION	RATING
491-S	Single Pole, Double Throw A.C. only	10A at 115V 10A at 230V
492-S	Single Pole, Double Throw A.C. only	20A at 115V 20A at 230V
493-S	Single Pole, Single Throw A.C. only, double break	10A at 115V 5A at 230V
494-S	2 interiors so arranged as to simulate D-P-D-T	10A at 115V 5A at 230V
495-S	Single Pole, Double Throw A.C.	15A at 125V 15A at 250V 15A at 460V
496-S	Foto with cord & light, Single Pole, Double Throw A.C.	20A at 115V 20A at 230V

Twin Compacts Available: Two 491-S Switches Mounted On A Twin Base. Cat. No. 491-S Twin



## The LINEMASTER TREADLITE

Trim, small, lightweight, instantaneous!

MODEL T-51-S — Accurate control in a modern, minute, treadle switch! Single pole, double throw, momentary contact interior, that can be wired open or closed. Rubber base pad and rubber-ribbed treadle, formed steel casing with black crackle finish. Interior rated at 5 amps., 110 volts and 250 volts A.C. Weight 7 ozs.; 3 1/2" long, 2 3/4" wide, 1" high. (Supplied on order, wired with 6' cord and series plugs.)

MODEL T-52-S — ONE treadle activates TWO switching operations! A partial downward stroke opens or closes one circuit, added pressure actuates the second circuit. Both interiors, as well as exterior, meet specifications for single-switching Model T-51-S.



## LINEMASTER "NAUTILUS" FOOTSWITCH

waterproof • dustproof  
oilproof • rustproof

A truly great development by Linemaster. The Nautilus is waterproof, dustproof, oilproof, rustproof. Rugged Aluminum casting for long life. Piston type actuator sealed with "O" ring. Electrical interior "well" sealed with "O" ring.

Size: 8" x 4" x 2 1/4" Wt.: 2 lbs., 8 1/2 ozs.

Cat. No. WP541-S 20 Amp. 125-250 VAC SPDT momentary  
Cat. No. WP541-D 12 Amp. 125 VAC SPDT maintained

## The LINEMASTER LEKTRO-LOK SWITCH

Small, sensitive, automatically safe. Particularly ideal for transmission equipment!



#L-2-S

Mechanical Interlock allows only one circuit to function at a time—and you can depend on it! LEKTRO-LOK operates on the feather-totter system, with selective circuits. Pressure on one side actuates one circuit, release of pressure automatically returns switch to normal "off" position. Pressure on the other side is required before second switch is actuated, independent of first. Yet LEKTRO-LOK requires only a single cord—eliminates costly harness assemblies! Rugged stamped metal housing, black crackle finish. Weight, 10 ozs. 5" long, 2 3/4" wide, 1 1/4" high. Single pole, double throw. Rating (A.C. only) 15 amps at 125 volts, 15 amps. at 250 volts.

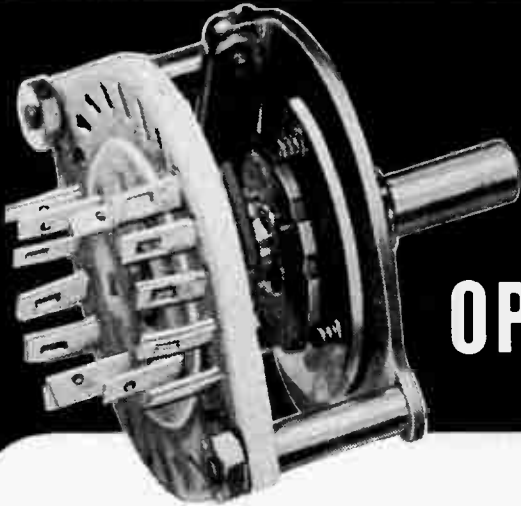
LEKTRO-LOK is available, and can be supplied to your specifications, in many electrical combinations, such as:

Single pole, single throw, A.C. only.....	10 A at 115V
Double break.....	5 A at 230V
Interiors so arranged as to simulate.....	10 A at 115V
Double pole, double throw.....	5 A at 230V

# LINEMASTER SWITCH CORPORATION

WOODSTOCK, CONNECTICUT

**SWITCHES • ATTENUATORS • POTENTIOMETERS**



*Still "On Tap"*  
*after 1,000,000*  
**OPERATING CYCLES!**

**That's why the SYSTEM ANALYZER CORP.  
 Chose Tech Laboratories Tap Switches  
 for \$200,000 Electronic "Brain"**

**TYPE 2C TAP SWITCH  
 SPECIFICATIONS**

Contact resistance: 3-4 milliohms  
 Contact material: Silver plated brass  
 Contact design: Laminated wiper arm, self-cleaning, shoring or non-shorting  
 No. of contacts: 2 to 24 single pole, 2 to 11 double pole, 2 to 7 triple pole, 2 to 5 four pole; shoring or non-shorting  
 Spacing: 15° or 20° shoring or non-shorting  
 No. of poles per deck: 1 to 4  
 No. of decks: According to requirements  
 Current carrying cap.: 3 amp.  
 Max. operating voltage: 120 V., a.c.  
 Mounting: Single hole, 3/8" -32 bushing  
 Size: 1 3/4" dia.  
 Detent: Ball and spring  
 Weight: Approx. 1 oz. per deck

**PRICE LIST TYPES 2A† & 2C\***

No. of Decks	No. of Poles/Deck	No. of Pos. Shorting	Type No. for 2C	2A	2C
1	1	24	C1S24	\$4.50	\$6.75
1	2	12	C2S12	4.75	7.12
1	3	6	C3S6	5.00	7.50
1	4	5	C4S5	5.25	7.87
2	1	24	C1S24-2	7.00	10.50
2	2	12	C2S12-2	7.50	11.25
2	3	6	C3S6-2	8.00	12.00
2	4	5	C4S5-2	8.50	12.75
3	1	24	C1S24-3	9.50	14.25
3	2	12	C2S12-3	10.25	15.37
3	3	6	C3S6-3	11.00	16.50
3	4	5	C4S5-3	11.75	17.62
4	1	24	C1S24-4	12.00	18.00
4	2	12	C2S12-4	13.00	19.50
5	1	24	C1S24-5	14.50	21.75
5	2	12	C2S12-5	15.75	23.62
6	1	24	C1S24-6	17.00	25.50
6	2	12	C2S11-6	18.50	27.75

\* Ceramic insulation

† Phenolic Insulation

**WE MAKE A GREAT MANY KINDS OF  
 ATTENUATORS & ROTARY SWITCHES**

3 to 4 weeks delivery on orders up to 6 units.

**TECH LABORATORIES INC.**

DEPT. B PALISADES PARK, N. J.,

**WRITE FOR NEW BULLETINS**

on Switches • Decade Resistors  
 Potentiometers  
 and Power Supplies for Mobile Equipment

# SPLICING BLOCKS. PRECISION "T" PAD AND VERTICAL ATTENUATORS

## "T" PAD ATTENUATORS

These attenuators feature silver contacts, improved die cast detent housing and detent gear which will stand up for more than a half million revolutions. Also special wiper springs of stainless silver to keep contacts clean, eliminating necessity of periodic maintenance and greatly improving the noise level. In addition, the rotor hub is pinned to the shaft, preventing tampering, keeping wiper springs in perfect adjustment.

ALSO AVAILABLE: Ladder Attenuators, Potentiometers; Type 600 Midget Attenuators.

### SPECIFICATIONS, Type 700 "T" Pad Attenuators

Accuracy:  $\pm 0.2$  db

Circuit: "T" or "Bridged T"

Frequency Response: Flat to 20 kc

Impedance: All impedances from 30/30 to 20,000/20,000

Insertion Loss: Minimum permissible, i.e., 0 for unit ratio of impedance.

Noise Level: 130 db below 0 level, or better.

Insulation: All insulating parts impregnated, minimum insulation resistance to ground, 660 megohms.

Shaft:  $\frac{1}{4}$ " Tobin bronze, of suitable length for  $\frac{3}{8}$ " maximum panel thickness.

Dials: Furnished to order only.

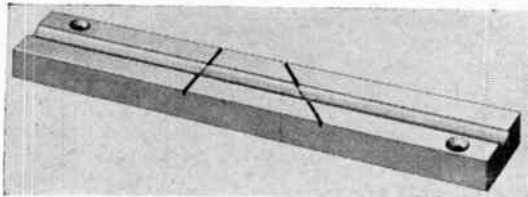
Mounting: 2 No. 8-32 screws,  $1\frac{1}{2}$ " apart on horizontal centerline.

Dimensions:  $2\frac{3}{8}$ " dia., max. depth behind panel,  $2\frac{3}{4}$ ".

Weight: Net 13 ounces.

Approx. Sh. Wt.: 16 ounces.

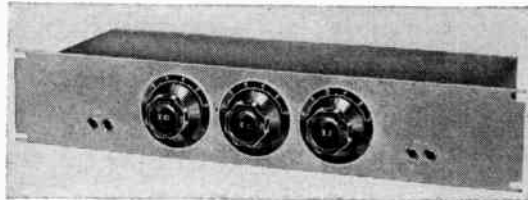
## EDITALL TAPE SPLICING BLOCK



A new exclusively designed tape splicing block that can be used in conjunction with any tape recorder using standard tape. Splices can be easily and quickly made with a minimum of time and effort. Made of lifetime Duraluminum with no clips or mechanical parts to go out of order. Can be used as a separate unit or mounted as part of the tape recorder itself. Approximate overall dimensions— $6\frac{1}{2}$ " long x 1" wide x  $\frac{3}{8}$ " high. Furnished with drilled and countersunk holes for easy mounting.

## TYPE 850 PRECISION ATTENUATOR

With the increased demand for precision in laboratory measurement of volume levels, transmission losses, gains of amplifiers, etc., the older methods and standards have become obsolete. The present units are a complete redesign of our older precision attenuators and will serve as laboratory standards. These precision units are now furnished with jack terminals and are completely shielded. They are flat for all frequencies in the audio range and reasonably flat to 200 kc. up to 70 db. They are furnished with either rack or box mounting in gray finish.



### SPECIFICATIONS:

Mounting: Type 850-AT and 850-AH, standard rack panels,  $3\frac{3}{8}$ " x 19" x  $\frac{1}{8}$ ". Type 850-B furnished with dust cover.

Switches: Multiple leaf, silver alloy blades with silver contacts. Ball type detent.

Terminals: Telephone type jacks are used for input and output connections. Solder terminals are provided on rear panels for permanent connections. Insertion of plugs into twin-jacks lifts rear terminal connections.

Type of Resistors: All resistors are non-inductively wound. Negligible phase angle.

Accuracy of Resistors: All windings are adjusted to within 0.1% of the calculated value except on very low resistance values which are adjusted to within 0.25%.

Frequency Characteristics: For "T" configuration, the frequency error is negligible up to 80 db. loss, below 50 kilocycles. Balanced "H" configuration should be used where measurements above 50 kilocycles are necessary.

### NEW TYPE 850 PRECISION ATTENUATORS

Type	Mounting	Circuit	Range	Db/Step	Size Rack Panel
850-AT	Rack	"T"	111 db.	0.1	$3\frac{1}{2}$ "x19" Std.
850-AH	Rack	Bal. "H"	111 db.	0.1	$3\frac{1}{2}$ "x19" Std.
850-BT	Box	"T"	93 db.	0.1	$9\frac{1}{2}$ "x4"x4 $\frac{3}{4}$ "
850-BH	Box	Bal. "H"	93 db.	0.1	$9\frac{1}{2}$ "x4"x4 $\frac{3}{4}$ "
850-CT	Box	"T"	111 db.	0.1	$12\frac{3}{4}$ "x4"x4 $\frac{3}{4}$ "
850-CH	Box	Bal. "H"	111 db.	0.1	$12\frac{3}{4}$ "x4"x4 $\frac{3}{4}$ "

# TECH LABORATORIES INC.

DEPT. B

PALISADES PARK • NEW JERSEY

# TRIMM

## PLUGS • PATCH CORDS • JACK PANELS

### STANDARD PHONE PLUGS



The standard radio phone plug, widely used on P. A., etc. equipment. Designed to fit all standard jacks and available in both two and three conductor types. The "511" series, the two conductor plugs, are provided with binding head screws in terminal, handles of molded bakelite or metal when shielded plugs are required. The "513" series are three conductor types. The "515" adapter couples Amphenol type mike plug to standard phone jack.

No. 511 —Black plastic shell	\$ .72
No. 511-1—Red plastic shell	.72
No. 511-2—Shielded, single piece shell	1.22
No. 511-3—Shielded, two piece shell	1.87
No. 511-4—Shielded, stubby shell	1.03
No. 511-5—Two circuit, shielded, stubby shell. Has long tip to sleeve insulator which leaves "ring" spring open when inserted in three circuit jack	1.12
No. 513 —Three circuit, black plastic shell	1.12
No. 513-1—Three circuit, red plastic shell	1.12
No. 513-2—Three circuit, shielded, single piece shell	1.62
No. 513-3—Shielded, two piece shell	2.27
No. 513-4—Three circuit, shielded, stubby shell	1.43
No. 515 —Adapter	.57

### "514" MIN-A-PLUG



Developed especially for shielded microphone cable. Wing type terminal clamps directly onto cord shield. Center conductor solders to lug. Also widely used for ordinary cords.

No. 514 —Black plastic shell	\$ .72
No. 514-1—Red plastic shell	.72
No. 514-2—Shielded, single piece shell	1.13
No. 514-3—Shielded, stubby shell	.97

### "512" FLAT TYPE PLUG

Compact, non-protruding design. Ideal for group hearing aid systems, centralized radio systems, etc. Body molded of phenolic plastic. All exposed edges rounded. Provision for stay cord anchorage. Fits standard jacks.



No. 512 —Black	\$ .90
No. 512-1—Red	.90

### "518" PLUG — "562" JACK



Two circuit miniature disconnect plug and jack series. Ideal for small size cordage. Plugs have two grooved, parallel pins which engage with multi-leafed contact springs in jack.

No. 518 and 562 have acetate half shells cemented together. No. 518-7 and 562-7 have molded bakelite shells held together with screws.	
No. 518 —Plug	\$ .72
No. 518-7—Plug	.80
No. 562 —Jack	.80
No. 562-7—Jack	1.00

### "525" CONNECTORS

The "525" series provides means of attaching headset cords, or any two wires, to single contact mike plugs (Amphenol 75-MC series of plugs). Main body of connector is similar to handle of "511" series plug. Connector held to receptacle by threaded retaining ring.

No. 525—Connector	\$ .82
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### "501" PLUG



Widely used for high quality communication equipment, and commonly known as PL-55 type. Features a one piece tip-rod construction molded as an insert within plug body using blue diallyl phthalate molding compound. Parts cannot shift due to interlocking of plastic material with body and rod.

No. 501 —Black plastic shell	\$1.25
No. 501-1—Red plastic shell	1.25
No. 501-2—Shielded shell	1.65
No. 501-8—Two conductor, black plastic shell, short sleeve (PJ-054)	1.75
No. 501-10—Black plastic shell (PJ-055B)	1.32

### "509" PLUG

Tip, ring, and sleeve three circuit plug used on microphone circuits and usually identified as type PL-68. Looks essentially like No. 501 type illustrated above.

No. 509—Black plastic shell	\$4.15
No. 509-10—Black plastic shell (PJ-068)	4.22

### PATCH CORDS and PLUGS



Widely used by majority of radio stations. "840" series cord assembly uses TRIMM No. 506 twin plug and high quality shielded black colored, nylon braided cord. Plug self-aligning. Number following "840" represents length.

No. 506 —Plug	\$ 4.65
No. 840-1-PP—Cord Assembly	12.00
No. 840-2-PP—Cord Assembly	12.50
No. 840-3-PP—Cord Assembly	13.00

No. "841" series patch cords use a single triple circuit plug No. 517. Two program circuits connect to tip and ring, shield of cord going to sleeve of plug.

No. 517 —Plug	\$ 4.15
No. 841-1-PP—Cord Assembly	11.28
No. 841-2-PP—Cord Assembly	11.55
No. 841-3-PP—Cord Assembly	11.99

In addition to the lengths of both types of patch cords listed, lengths of 4, 5, 6 and 10 ft. are available as well as in the following colors: slate grey, white, red, and green. Also replacement cords carrying code No. 840-1 etc. and No. 841-1 etc. are available. See TRIMM Bulletin R-33 for complete listing.

### OTHER TYPES OF PATCH CORDS

In addition to the two types listed there are a number of special types produced both for audio and video work.

No. 842 SERIES Uses TRIMM No. 500 two circuit type plugs. Assemblies correspond with W. E. type 2P1B, 2P2A etc.

No. 846 SERIES Similar applications to "842" series but uses cordage jacketed with rubber-like material and TRIMM No. 501 plugs.

### JACK PANELS and ACCESSORIES

TRIMM "96" series. Most widely used, and intended for use with standard twin type patch cords. Mounts on standard 19" racks. Constructed of bakelite panel, reinforced with steel. Designation strip, TRIMM No. 96-30, included on panel. Spacing of jacks prevents cross connection of adjacent circuits with double plug. Uses "90" series jacks (Normally No. 90-02, see description of jacks).



No. 96-01—Single row, 12 pair jacks, 1 3/4" wide	\$45.00
No. 96-02—Double row, 24 pair jacks, 2 1/8" wide	78.50
No. 96-03—Double row, 24 pair jacks, 3 1/2" wide	91.00

### SPECIAL JACK PANELS

In addition to the types listed a large variety of other types are in production. These include panels with different jacks; panels with a steel mat around the panel; panels with special jack spacing; panels with 24, 25 or 26 jacks per row spaced 5/8" c. to c. etc. Finally, facilities for the manufacture of custom-built panels involving special arrangements of jacks, special engraving etc. are available. Your inquiry will receive individual attention.

### DESIGNATION STRIPS

Several types are available.

No. 96-30—Standard type has individual windows for each pair of jacks	\$4.00
No. 96-35—Alternate type, has one long window	4.00

### STANDARD TELEPHONE TYPE PLUGS

Below are listed the more common of the many different types produced by TRIMM and being mechanically and electrically interchangeable with types widely used in telephone service.

TRIMM No.	EQUIVALENT W.E. No.	DESCRIPTION	
500	347	Standard two circuit	\$2.50
504	327	Twin, four circuit	4.70
505	289B	Twin, four circuit	4.70
508	309	Tip, ring, and sleeve, 0.206 diameter	4.40
516	310	Tip, ring, and sleeve, 0.250 diameter	4.40

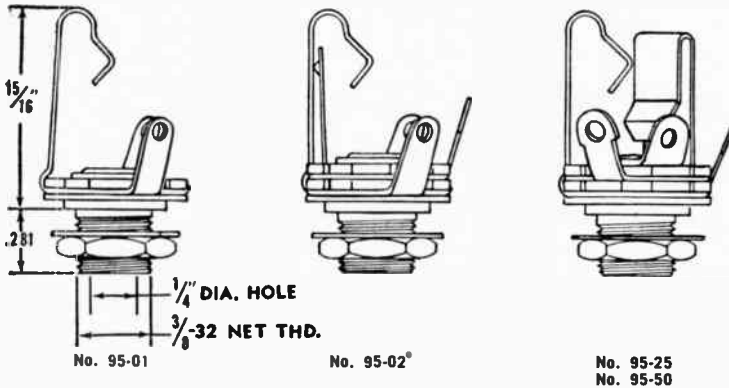
# — TRIMM —

## PLUGS • PATCH CORDS • JACK PANELS

### "95" SERIES JACKS

Widely used on P. A. amplifiers, tape recorders, short wave radios, servicemen test instruments, etc. Used where space behind panel is limited. Jack is panel mounted by means of threaded bushing upon which contact springs

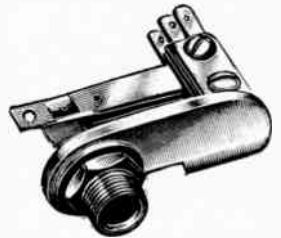
are directly assembled although adequately insulated from it. Bushing fits through  $\frac{3}{8}$ " diameter hole. Spring contact of nickel silver, held in place by notched interlocking insulators. Drawing gives basic dimensions and arrangements.



No. 95-01—Open circuit, two conductor .....	\$ .47
No. 95-02—Closed circuit, two conductor .....	.56
No. 95-25—Open circuit, three conductor (for 0.250" diameter plugs) .....	.66
No. 95-50—Open circuit, three conductor (for 0.206" diameter plugs) .....	.80

### "93" SERIES JACK

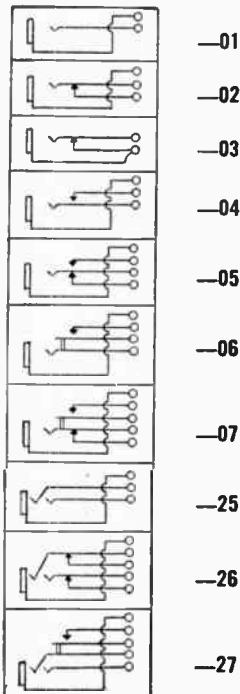
A short frame jack with springs mounted parallel to panel. Used particularly where depth behind panel is limited, on such applications as intercom systems, P. A. amplifiers, etc. Mounting is by means of threaded bushing  $\frac{3}{8}$ " diameter, rigidly attached to a steel frame. May be mounted on panels up to  $\frac{3}{16}$ " thick. Contact springs of nickel silver, terminals hot tinned. See diagrams below for circuits.



No. 93-01 .....	\$ .60
No. 93-02 .....	.75
No. 93-25 .....	.75
No. 93-26 .....	1.00

In addition a number of other circuits can be produced on order. Your inquiry will be given immediate attention.

All TRIMM jacks have a standardized coding consisting of the jack series number plus a dash number indicating spring arrangement, a few of which are shown below.



### "91" SERIES JACK

A long frame jack having a threaded mounting bushing and which can be attached to panel by this alone, or by a mounting screw as is done on the "90" series jacks. May be mounted on panels up to about  $\frac{1}{4}$ " thick, having  $\frac{3}{8}$ " hole. Depth behind panel  $3\frac{1}{8}$ ".

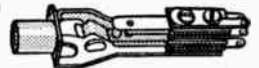
Frame is of very heavy gauge steel, zinc plated with dichromate finish. Springs of nickel silver. See diagrams below for circuits. Most circuits listed for "90" series can be supplied in "91" series. Those listed are the more commonly produced.

No. 91-01 .....	\$ .70
No. 91-02 .....	.90
No. 91-25 .....	.95
No. 91-26 .....	1.20



### "90" SERIES JACKS

Extensively used in jack panels and other high quality communication equipment. Commonly known as the telephone type jack. Bushing fits  $29/64$ " diameter hole.



Available in two modifications of the frame referred to as the "A" and "C" frame. These differ only in the orientation of the mounting plate with respect to the plane of the springs. Unless specified otherwise the "A" frame is supplied.

Frame of steel, heavily zinc plated with dichromate finish. Bushing of brass, natural finish standard (nickel plated or other finishes available on production orders). Springs of nickel silver, terminal ends hot tinned for ease in soldering. Contacts are of palladium-silver alloy. The circuits listed below represent those most commonly produced, but about forty circuits are available. Write for specific information.

No. 90-01 .....	\$1.15
No. 90-02 .....	1.25
No. 90-03 .....	1.25
No. 90-04 .....	1.25
No. 90-05 .....	1.40
No. 90-06 .....	1.40
No. 90-07 .....	1.80
No. 90-25 .....	1.30
No. 90-26 .....	1.80
No. 90-27 .....	1.90

# SPEMCO H & H SWITCHES

## BALL LEVER TOGGLE SWITCHES

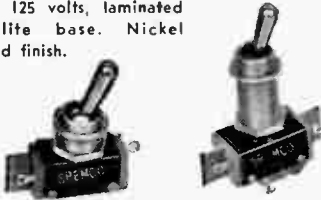
Underwriters' approved, 3 amp. 125 volts. Laminated bakelite base. Nickel plated finish.



No.	Description	Sleeve	List Price
1120	SPST	1"	\$1.00 ea.
1122	SPDT	1"	1.30 ea.
1124	DPST	1"	1.80 ea.
1126	DPDT	1"	2.10 ea.
1121	SPST	1"	1.30 ea.
1123	SPDT	1"	1.50 ea.
1125	DPST	1"	2.10 ea.
1127	DPDT	1"	2.30 ea.

## BAT LEVER TOGGLE SWITCHES

Underwriters' approved, 3 amp. 125 volts, laminated bakelite base. Nickel plated finish.



No.	Description	Sleeve	List Price
1135	SPST	1"	\$1.00 ea.
1136	SPDT	1"	1.30 ea.
1137	DPST	1"	1.80 ea.
1138	DPDT	1"	2.10 ea.
1121-B	SPST	1"	1.30 ea.
1123-B	SPDT	1"	1.50 ea.
1125-B	DPST	1"	2.10 ea.
1127-B	DPDT	1"	2.30 ea.

## BALL LEVER TOGGLE SWITCH



Underwriters' approved 3A 250V, 6A 125V, molded bakelite base. Nickel plated finished. WITH 6" WIRE LEADS size of case, 7/8" long, 1/2" wide, 9/16" high.

No.	Description	Sleeve	List Price
1154	SPST	3/8"	\$1.35 ea.

## MOLDED BAKELITE SWITCH, BAT LEVER

Underwriters' approved, 6 amp. 125 volts, 3 amp. 250 volts. Back connected, slotted sleeve.



No.	Description	Sleeve	List Price
1142	SPST	1"	\$1.35 ea.
1143	SPDT	1"	1.60 ea.
1144	DPST	2.00 ea.	
1145	DPDT	2.30 ea.	

## UTILITY SWITCHES—Toggle Type For AC Uses



Underwriters' approved, 10 amp. 250 volts AC, 15 amp. 125 volts AC, 3/4 H.P. 115V-230V AC.

No.	Description	Sleeve	List Price
1185	SPST	1"	\$1.20 ea.
1186	SPDT	1"	1.45 ea.
1188	DPST	1"	1.90 ea.
1194	DPDT	1"	2.25 ea.

## PUSH BUTTON DOUBLE ACTION SWITCH

Underwriters' approved, 6 amp. 125 volts. Press lever to make contact, nickel plated finish or snap-on plastic button, in red or black.



No.	Description	Sleeve	List Price
1156	SP	1"	\$1.45 ea.
1156-A	Red Dia	1"	1.80 ea.
1156-B	Black	1"	1.80 ea.

## MOMENTARY BAT LEVER TOGGLE SWITCHES

Underwriters' approved, 3 amp. 125 volts, laminated bakelite base. Nickel plated finished.



No.	Description	Sleeve	List Price
1166	SPST	1"	\$1.75 ea.
1167	SPDT	1"	1.90 ea.
1155	DPST	1"	2.35 ea.
1150	DPDT	1"	2.65 ea.



Underwriters' approved, 10 amp. 250 volts AC, 15 amp. 125 volts AC, 3/4 H.P. 115V-230V AC.

No.	Description	Sleeve	List Price
1196	SPST	15/32"	\$1.50 ea.
1197	DPST	15/32"	2.50 ea.

## NEUTRAL CENTER MOMENTARY BOTH ENDS



Underwriters' approved, 10 amp. 250 volts AC, 15 amp. 125 volts AC, 3/4 H.P. 115V-230V AC.

No.	Description	Sleeve	List Price
1193	DPDT	1"	\$2.75 ea.
1195	SPDT	1"	1.75 ea.

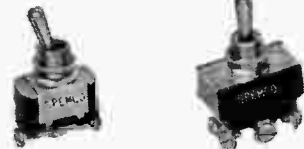
## BAT LEVER TOGGLE SWITCH Neutral Center

Underwriters' approved, 6 amp. 125 volts, either AC or DC. A 3 position switch, on-off-on. Black bakelite case.



No.	Description	Sleeve	List Price
1175	SPDT	1"	\$2.45 ea.
1176	DPDT	1"	2.90 ea.

## NEUTRAL CENTER



Underwriters' approved, 10 amp. 250 volts AC, 15 amp. 125 volts AC, 3/4 H.P. 115V-230V AC.

No.	Description	Sleeve	List Price
1187	SPDT	1"	\$1.45 ea.
1189	DPDT	1"	2.25 ea.

## MIDGET MOMENTARY PUSH BUTTON SWITCHES

Underwriters' approved, 3 amp. 125 volts, AC. Molded bakelite base, nickel plated finish.



No.	Description	Sleeve	List Price
1141	SP Normally Closed	1"	\$0.85 ea.
1141-A	SP Normally Open	1"	0.85 ea.

Underwriters' approved, 3 Amp. 125V, AC, Nickel plated finish, Molded bakelite base, Single Pole, slow make and slow break with bakelite snap-On button in red or black.



No.	Description	Sleeve	List Price
1157-A	Open Red	1"	\$1.50 ea.
1157-B	Open Black	1"	1.50 ea.
1157-C	Closed Red	1"	1.50 ea.
1157-D	Closed Black	1"	1.50 ea.

Two circuit slow make and slow break, momentary switch. One circuit normally on, the other off, with snap-on plastic button, in red or black. (Pushing the button reverses the contact.) 1 Amp. 125 Volts AC.



No.	Description	Sleeve	List Price
1158-A	Red	1"	\$1.80 ea.
1158-B	Black	1"	1.80 ea.

## HARDWARE



No.	Description	List Price
1132	On and Off Plate	\$0.06 ea.
1132-H	Hex Nut	0.04 ea.
1132-K	Knurled Nut	0.04 ea.

**SPECIALTIES MANUFACTURING CO. • Detroit 38, Michigan**

# SPEMCO H & H SWITCHES

## INTERMEDIATE MOMENTARY PUSH SWITCH NORMALLY OFF

Underwriters' approved, 6 amp. 125 volts, 3 amp. 250 volts. Back connected, slotted sleeve.



No.	Description	Sleeve	List Price
1146	SPST	1/2"	\$2.30 ea.
1147	SPDT	1/2"	2.60 ea.
1148	DPST	1/2"	3.00 ea.
1149	DPDT	1/2"	3.25 ea.

## POWER SWITCHES



Underwriters' approved, 10 amp. 125 volts. Size of case 1 1/8" long, 3/2" wide, 1 1/8" high.

No.	Description	Sleeve	List Price
1133	SPST	11/32"	\$1.75 ea.
1133-B	Bakelite lever		1.10 ea.



Underwriters' approved, 12 amp. 125 volts. Size of case, 1 3/4" long, 3/4" wide, 3/8" high.

No.	Description	Sleeve	List Price
1159	DPST	1/2"	\$2.00 ea.



Underwriters' approved, 12 amp. 125 volts. Size of case, 1 3/4" long, 3/4" wide, 3/8" high.

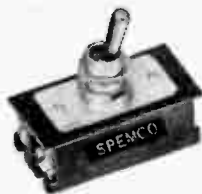
No.	Description	Sleeve	List Price
1159-B	DPST	1/2"	\$2.00 ea.



Underwriters' approved, 15 amp. 125 volts. Size of case, 2" long, 1" wide, 3/8" high.

No.	Description	Sleeve	List Price
1134	DPST	1/2"	\$3.35 ea.

## POWER SWITCHES



Underwriters' approved, 15 amp. 125 volts. Size of case, 2" long, 1" wide, 3/8" high.

No.	Description	Sleeve	List Price
1134-B	DPST	1/2"	\$3.35 ea.



Fully enclosed tumbler switch, 20 amp. 250 volts, 1/2 horsepower, 250 volts. Size of case, 2 1/4" long, 1 1/4" wide, 1 1/2" high.

No.	Description	Sleeve	List Price
1170S	DPST	1/2"	\$4.85 ea.



Fully enclosed tumbler switch, 20 amp. 250 volts, 1/2 horsepower, 250 volts. Size of case, 2 1/4" long, 1 1/4" wide, 1 1/2" high.

No.	Description	Sleeve	List Price
1170	DPST	1/2"	\$4.85 ea.

## MOMENTARY PUSH BUTTON SWITCH, NORMALLY OFF



Rated at 12 amp. 125 volts, 1 horsepower, 250 volt AC. Size of case, 1 3/4" long, 3/4" wide, 25/32" high.

No.	Description	Sleeve	List Price
1160	DPST	1/2"	\$2.90 ea.

## ROTARY CANOPY SWITCH With Fixed Plastic Handle



U.L. approved. 3 amp. 125 volts, 1 amp. 250 volts.

No.	Stem	Wire Lead	List Price
1179	7/8"	8"	\$0.65 ea.

## ROTARY SWITCHES



Underwriters' approved, 3 amp. 125 volts. Nickel plated finish. Laminated bakelite base.

No.	Description	Shaft	Sleeve	List Price
1128	SPST	1/4"	1/4"	\$1.35 ea.
1129	SPDT	1/4"	1/4"	1.65 ea.
1130	DPST	1/4"	1/4"	2.10 ea.
1131	DPDT	1/4"	1/4"	2.30 ea.

## ROTO-LOCK SWITCH

Underwriters' approved, 3 amp. 250 volts.



No.	Description	Sleeve	List Price
1128-K	SPST (with key)	15/32"	\$2.00 ea.
(above key removable in off position only)			
1128-KA	Key only for above		.35 ea.
1128-KE	SPST (with key)	15/32"	2.00 ea.
(above key removable in either position)			
1128-KEA	Key only for above		.35 ea.

## ROTO-LOCK SWITCH

Underwriters' approved.

20 amp. 120 volts, 240 volts AC.

1 H.P. 120 volts AC  
2 H.P. 240 volts AC



(with key) (above key removable in off position only)

No.	Description	Sleeve	List Price
1130-K	DPST	1/2"	\$4.40 ea.
1130-KA	Key Only for Above		.45 ea.

## FEED THROUGH CORD SWITCH



Underwriters' approved, black bakelite case sliding lever, 10 amp. 125 volts, 5 amp. 250 volts. 3/8" cord hole.

No.	Description	Sleeve	List Price
1163	SP		\$1.90 ea.

## PORTABLE TOOL HANDLE SWITCHES

Approved by Underwriters' at 10 amp. 250 volts, 15 amp. 125 volts, 1/2 H.P. 110V-220V AC, 2 1/4" long, 7/8" wide, 15/16" high.



No.	Description	List Price
1172	DP	\$4.10 ea.

**SPECIALTIES MANUFACTURING CO. • Detroit 38, Michigan**

# SPEMCO H & H SWITCHES

## EXTRA HEAVY DUTY SWITCH NEUTRAL CENTER



Used in heavy current circuits, such as transmitters, power amplifiers, motors, etc. Contacts have fast "break" which reduces the tendency to arc. Rated at 10 amp. 125 volts. Size of case 2" long, 1 1/4" wide, 1" high.

No.	Description	Sleeve	List Price
1161	DPDT	11/32"	\$7.00 ea.
*1161-A	DPDT	11/32"	7.00 ea.

(\*Straight thru, no off-center)



Size of Case: 2 1/2" long, 1 1/2" wide, 1 1/2" high, 3 3/4" counting centers. 10 amp., 250 volts; 20 amp., 125 volts; 5 amp., 600 volts. 1/2 H.P., 250 volts DC. 2 H.P., 230 volts DC.

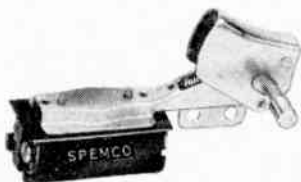
No.	Description	List Price
1161-B	DPDT	\$11.00 ea.



Size of Case: 2 1/8" long, 2" wide, 1 1/8" high. Rated 10 amp. 125 volts, 1/2 horsepower, 115-230 volt AC.

No.	Description	Sleeve	List Price
1177	3PDT	1 1/2"	\$11.00 ea.
1178	4PDT	1 3/4"	14.00 ea.

## PORTABLE TOOL HANDLE SWITCHES



Tool handle switch, fully enclosed, normally OFF with locking latches. Rated and approved by the Underwriters' for 6 amp. 250 volts, 12 amp. 125 volts, 1 H.P. 250 volts, 1 3/4" long, 3 1/2" wide, 5/8" high.

No.	Description	List Price
1168	DPST	\$3.35 ea.



This switch is arranged with momentary contacts, normally OFF. Approved by the Underwriters' at 10 amp. 250 volts, 15 amp. 125 volts, 2 7/8" long, 3 3/4" wide, 1 1/2" high.

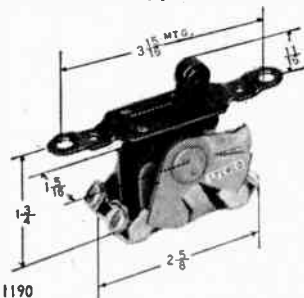
No.	Description	List Price
1173	DP Trigger Lever	\$4.25 ea.

## HEAVY DUTY SWITCHES

### Toggle Type

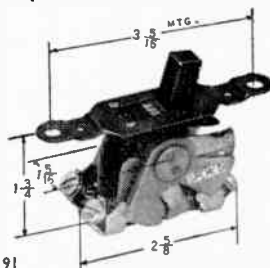
Underwriters' approved, 30 amp. 250 volts, 2 H.P., 115V-230V AC only; 1 H.P., 46V AC only. For use on Food Machines, Grinders, Sanders, Machine Tools, Gasoline Pumps, etc.

### Roller Type Lever



1190

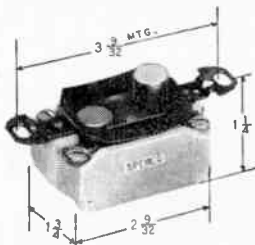
### Square Bakelite Lever



1191

No.	Description	*Net Price
1190	DPST	\$2.85 ea.
1191	DPST	2.85 ea.

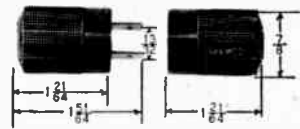
## METAL PUSH BUTTON TYPE NORMALLY OPEN



Underwriters' approved, 20 amp. 250 volts, 2 H.P., 230V AC, 2 H.P., 250V DC. For use on Floor Sander, as a foot switch, etc.

No.	Description	NET PRICE
1192	DPST	\$2.85 ea.

## CORD CONNECTORS



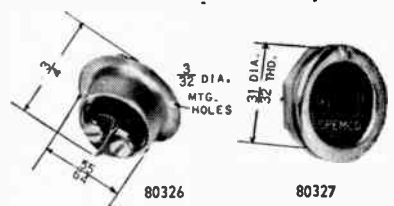
Brown Bakelite Cord Connector Complete, 7/8" O.D. x 2 1/2" long, 10 amps, 250 volts. End opening for wire size up to 3/8" O.D.

No.	Description	List Price
1162	Complete	\$2.65 ea.
1162-F	Female Part	1.50 ea.
1162-M	Male Part	1.50 ea.

## RECEPTACLES

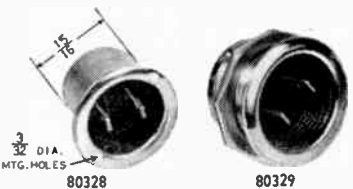
Underwriters' approved, 10 amp. 250 volts AC.

### Short Female Flush Receptacle



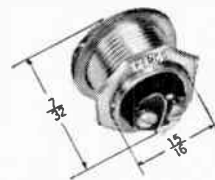
No.	Description	List Price
80326	2 Screw Mounting	\$1.80 ea.
80327	Lock Nut Mounting	2.65 ea.

### Recessed Male Receptacle



No.	Description	List Price
80328	2 Screw Mounting	\$2.10 ea.
80329	Lock Nut Mounting	2.65 ea.

### Recessed Female Receptacle

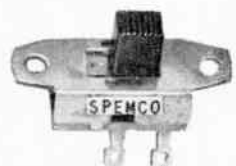


No.	Description	List Price
80331	Lock Nut Mounting	\$2.65 ea.

All aforementioned switches are manufactured by H. & H. for S.M.C.

## SLIDE SWITCHES

Housings are made of steel and are cadmium plated. 1 1/2" long, 35/64" wide and 1/8" mounting centers.



No.	Description	List Price
1180	SPST .75A-125V AC-DC	\$0.31 ea.
1181	SPDT .75A-125V AC-DC	0.37 ea.
1182	DPST .50A-125V AC-DC	0.44 ea.
1183	DPDT .50A-125V AC-DC	0.55 ea.

# SPECIALTIES MANUFACTURING CO.

DETROIT 38, MICHIGAN



# CIRCLE F MFG. CO. · ELECTRONICS DIV.



No. 1898-X2P  
**TOGGLE CANOPY SWITCH**  
 Screw Terminal Type  
 with Bat or Standard Handle  
 3/16" Dia Nipple—Mounts in 1/2" Hole  
 3A.-125V [F]  
 6A.-125V.—3A.-250V.

CAT. NO.	NIPPLE LENGTH	TYPE HANDLE	STD. PKG.	CARTON	PKG. WGT.
1888-LP	1/2"	Std.	500	25	24
1888-XP	3/8"	Std.	500	25	22
1888-X2P	3/16"	Bat	500	25	22



No. 1887-LP  
**TOGGLE CANOPY SWITCH**  
 Solder Lug Type  
 with Bat or Standard Handle  
 3/16" Dia Nipple—Mounts in 1/2" Hole  
 3A.-125V [F]  
 6A.-125V.—3A.-250V.

CAT. NO.	NIPPLE LENGTH	TYPE HANDLE	STD. PKG.	CARTON	PKG. WGT.
1887-LP	1/2"	Std.	500	25	21
1887-XP	3/8"	Std.	500	25	19
1887-X2P	3/16"	Bat	500	25	19



No. 1886-XP  
**TOGGLE CANOPY SWITCH**  
 Wire Lead Type  
 with Bat or Standard Handle  
 3/16" Dia Nipple—Mounts in 1/2" Hole  
 3A.-125V [F]  
 6A.-125V.—3A.-250V.

CAT. NO.	NIPPLE LENGTH	TYPE HANDLE	STD. PKG.	CARTON	PKG. WGT.
1886-LP	1/2"	Std.	500	25	26
1886-XP	3/8"	Std.	500	25	24
1886-X2P	3/16"	Bat	500	25	24

Also available with wire clamp as shown on No. 1886-LN



No. 1886-LN  
**TOGGLE CANOPY SWITCH**  
 U. S. Navy Approved Type  
 Navy Dwg No. 9-S-5293 Alt. 11  
 Navy Stock No. A17-S-27001  
 3/16" Diameter—1/2" Long Nipple  
 3A.-125V [F]  
 6A.-125V.—3A.-250V.

CAT. NO.	STD. PKG.	CARTON	PKG. WGT.
1886-LN	500	25	26



No. 1903  
**MOMENTARY CONTACTS SWITCH**  
 Push Type  
 Normally "On"  
 3/16" Dia. Nipple—Mounts in 1/8" Hole  
 1 Ampere—125 Volts  
 3A.-120V. A-C

CAT. NO.	STD. PKG.	CARTON	PKG. WGT.
1903	500	25	20
1903-A	500	25	21
1903-B	500	25	20
1903-AB	500	25	20



No. 1904  
**MOMENTARY CONTACTS SWITCH**  
 Push Type  
 Normally "Off"  
 3/16" Dia Nipple—Mounts in 1/8" Hole  
 1 Ampere—125 Volts  
 3A.-120V. A-C

CAT. NO.	STD. PKG.	CARTON	PKG. WGT.
1904	500	25	20
1904-A	500	25	21
1904-B	500	25	20
1904-AB	500	25	20



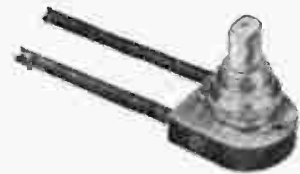
No. 1825  
**ROTARY CANOPY SWITCH**  
 Black or Brown Bakelite  
 1A.-125V [F]  
 3A.-125V.—1A.-250V.

CAT. NO.	STD. PKG.	CARTON	PKG. WGT.
1820	500	25	13
1825	500	25	14
1829	500	25	15



No. 1889  
**ROTARY CANOPY SWITCH**  
 Straight Bakelite Knob  
 1A.-125V [F]  
 3A.-125V.—1A.-250V.

CAT. NO.	STD. PKG.	CARTON	PKG. WGT.
1889	500	25	19



No. 1885  
**PUSH CANOPY SWITCH**  
 with Metal Button  
 1A.-125V [F]  
 3A.-125V.—1A.-250V.

CAT. NO.	STD. PKG.	CARTON	PKG. WGT.
1884	500	25	20
1885	500	25	19

NOTE: Also available with plastic button. Add suffix letter "B".



No. 1891  
**ROTARY CANOPY SWITCH**  
 Tapered Bakelite Knob  
 Supplied in Black, Brown, or White  
 1A.-125V [F]  
 3A.-125V.—1A.-250V.

CAT. NO.	STD. PKG.	CARTON	PKG. WGT.
1891	500	25	19
1894	500	25	20



No. 1885-P  
**PUSH CANOPY SWITCH**  
 with Metal Button and Solder Lugs  
 1A.-125V [F]  
 3A.-125V.—1A.-250V.

CAT. NO.	STD. PKG.	CARTON	PKG. WGT.
1885-P	500	100	13

NOTE: Also available with plastic button. Add suffix letter "B".



No. 1890  
**ROTARY CANOPY SWITCH**  
 Brass Knob  
 1A.-125V [F]  
 3A.-125V.—1A.-250V.

CAT. NO.	STD. PKG.	CARTON	PKG. WGT.
1890	500	25	20
1893	500	25	21

## ELECTRONICS DIVISION CIRCLE F MFG. CO. TRENTON 4, NEW JERSEY



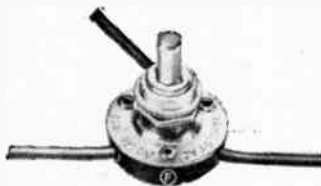
# CIRCLE F MFG. CO. · ELECTRONICS DIV.



**TWO CIRCUIT ROTARY CANOPY SWITCH**  
T Rated

1A.-250V.—3A.-125V. [E]

CAT. NO.	STD. PKG.	CARTON	PKG. WGT.
1873 $\frac{1}{8}$ " Nipple	500	25	24
1876 $\frac{1}{8}$ " Nipple	500	25	25



**TWO SPEED PUSH BUTTON FAN SWITCH**  
Operates OFF, 1 ON, 2 ON  
 $\frac{3}{8}$ " Dia. Nipple Mounts in  $\frac{1}{8}$ " Hole  
Standard Finishes are Brass and Nickel  
3 Amp.—125 Volts

CAT. NO.	STD. PKG.	CARTON	PKG. WGT.
9316 $\frac{3}{8}$ " Nipple	500	Bulk	23



**SINGLE CIRCUIT ROTARY CANOPY SWITCH**  
T Rated

3A.-250V.—6A.-125V. [E]

CAT. NO.	STD. PKG.	CARTON	PKG. WGT.
2190 $\frac{1}{8}$ " Nipple	250	25	13
2193 $\frac{3}{8}$ " Nipple	250	25	14



**ROTARY TWO SPEED FAN SWITCH**  
Straight Recessed Bakelite Knob  
Operates Off, 1 On, 2 On  
1 Ampere—125 Volts

CAT. NO.	STD. PKG.	CARTON	PKG. WGT.
9313 $\frac{1}{8}$ " Nipple	500	25	23



No. 2230

**APPLIANCE SWITCH**

15A.-125V. A.C. Only  
10A.-250V. A.C. Only  
 $\frac{3}{4}$  H.P.—120 Volts A.C.  
 $1\frac{1}{2}$  H.P.—240 Volts A.C.  
C.S.A. Approval No. 1893

CAT. NO.	DESCRIPTION	STD. PKG.	CARTON	PKG. WGT.
2226	Grey	1000	Bulk	41
2227	Brown	1000	Bulk	41
2228	Black	1000	Bulk	41
2229	Ivory	1000	Bulk	41
2230	White	1000	Bulk	41

Also available with "ON-OFF" reading for horizontal mounting. Add suffix letter "H" to specify.

**All Bakelite Bodies—Spring Steel Brackets**  
Will fit any material .025-.095 in thickness.  
Flange faces available in two sizes. Narrow flange is  $1\frac{1}{16}$ " wide. Wide flange is  $1\frac{1}{8}$ " wide. All items shown are available with male connectors to fit female connections of the Ark-Less type. To denote add prefix "M".

These all Bakelite units are finely constructed of the best materials. Truly a quality product. Note: Binding screws are No. 6-32

Insert prefix "S" for small face. Add suffix letter "L" for leads. Standard 6". Any length or specification on request. Leads are completely enclosed in terminals. No black wax is used.

With leads, all items are packed 500 per standard package.



No. 340

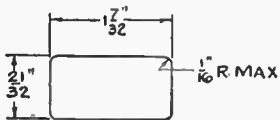
**CONVENIENCE OUTLET**

15A.-125V.—10A.-250V.

C.S.A. Approval No. 1293

CAT. NO.	DESCRIPTION	STD. PKG.	CARTON	PKG. WGT.
336	Grey	1000	Bulk	44
337	Brown	1000	Bulk	44
338	Black	1000	Bulk	44
339	Ivory	1000	Bulk	44
340	White	1000	Bulk	44

**PIERCING DIMENSIONS FOR SNAP-IN DEVICES**



.025-.095 thick  
For Material



No. 340-T

**CONVENIENCE OUTLET**  
"TIMED" or "AUTO"

Change suffix "T" to "A" for "AUTO". Add suffix "V" for vertical reading. Standard is horizontal as shown. Any lettering available to your specifications on request.

15A.-125V.—10A.-250V.  
C.S.A. Approval No. 1293

CAT. NO.	DESCRIPTION	STD. PKG.	CARTON	PKG. WGT.
336-T	Grey	1000	Bulk	44
337-T	Brown	1000	Bulk	44
338-T	Black	1000	Bulk	44
339-T	Ivory	1000	Bulk	44
340-T	White	1000	Bulk	44



No. 490

**PILOT LIGHT**

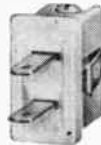
$1\frac{1}{2}$  Watt—125V — 100,000 Ohms

Standard with red lens — add prefix letter "C" for clear lens, or "G" for green. Lens is locked in; will not pop out.

Available with  $1\frac{1}{6}$  Watt rating at 250V. To designate, add suffix "-6" to catalog number.

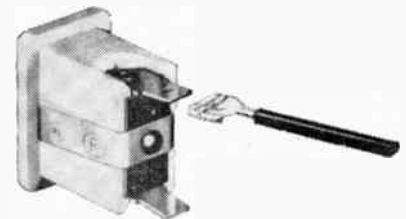
C.S.A. Approval No. 1293

CAT. NO.	DESCRIPTION	STD. PKG.	CARTON	PKG. WGT.
486	Grey	1000	Bulk	39
487	Brown	1000	Bulk	39
488	Black	1000	Bulk	39
489	Ivory	1000	Bulk	39
490	White	1000	Bulk	39



**MALE LOAD PLUG**  
15A.-125V.—10A.-250V.  
C.S.A. Approval No. 12311

CAT. NO.	DESCRIPTION	STD. PKG.	CARTON	PKG. WGT.
341	Brown	1000	Bulk	50
342	Black	1000	Bulk	50
343	Ivory	1000	Bulk	50
344	White	1000	Bulk	50
346	Grey	1000	Bulk	50



No. M-340 (Rear)  
Illustrating Male Terminals and Female Connector



No. TEC 233

**BAKELITE FEED-THRU SWITCH**  
Single Pole

5A.-250V.—10A.-125V.  
12A.-120V. A-C

CAT. NO.	STD. PKG.	CARTON	PKG. WGT.
TEC 233	500	20	35



## ELECTRONICS DIVISION CIRCLE F MFG. CO. TRENTON 4, NEW JERSEY

# CIRCLE F MFG. CO. · ELECTRONICS DIV.



No. K-10-A

**APPLIANCE SWITCHES**  
**Light Duty — One Hole Mounting**  
**Slow Make and Break**  
 Designed Primarily for Use on A.C.

C.S.A. Approval No. 1883

Dimensions:

2 1/4" long x 1 1/4" wide, 1/4" from top of cover to bottom of lugs  
 Handle is 1/2" long with 1/4" nipple Nipple diameter 1/8" — mounts in 1/2" hole

Ratings:

1/2 Amp — 125V D-C  
 3 Amp — 125V A-C  
 6 Amp — 24V D-C

STANDARD WITH INDICATOR PLATE

Cat. No. Screw Terminals	Cat. No. Solder Lugs	Nipple Length	Nipple Style	Circuit or Pole	Operating Sequence	Std. Pkg.	Cart.	Pkg. Wt. Lbs.	Pkg. Wt. Lugs
K-10-A	K-12-A	1 1/2"	Keyway	S.P.S.T.	ON-OFF	250	25	8	7
F-10-A	F-12-A	1 1/2"	Flat*	S.P.S.T.	ON-OFF	250	25	8	7
P-10-A	P-12-A	1 1/2"	Plain Round*	S.P.S.T.	ON-OFF	250	25	8	7

\*Not in Stock Available on Special Order Only



No. S-20-E

"OFF" Position in Center — Silver Plated Contacts



No. L-12-E

Dimensions:

1 1/4" long x 1/2" wide, 1/4" from top of cover to bottom of lugs  
 Handle is 1/2" long with 1/4" nipple and 1/4" long with 1/4" nipple Nipple diameter 1/8" — mounts in 1/2" hole

Ratings:

10 Amp — 24V D-C  
 3 Amp — 125V A-C

Cat. No. Screw Terminals	Cat. No. Solder Lugs	Nipple Length	Nipple Style	Circuit or Pole	Operating Sequence	Std. Pkg.	Cart.	Pkg. Wt. Lbs.	Pkg. Wt. Lugs
L-20-E	L-22-E	1 1/2"	Keyway	S.P.D.T.	ON-OFF-ON	250	25	13	12
S-20-E	S-22-E	1 1/2"	Keyway	S.P.D.T.	ON-OFF-ON	250	25	12	11



No. L-42-E

**APPLIANCE SWITCHES**  
**Single Pole — Medium Duty — One Hole Mounting**  
**Slow Make and Break**  
**Solid "Fine" Silver Contacts**  
 Designed Primarily for Use on A.C.

Dimensions:

1 1/2" long x 1/2" wide, 1" high from top of cover to bottom of lugs  
 Handle is 1/2" long with 1/4" nipple and 1/2" long with 1/4" nipple

Ratings:

10 Amp — 250 A-C  
 15 Amp — 125V A-C  
 1/2 HP — 120/240V A-C

C.S.A. Approval No. 1883

Cat. No. Screw Terminals	Cat. No. Solder Lugs	Nipple Length	Nipple Style	Circuit or Pole	Operating Sequence	Std. Pkg.	Cart.	Pkg. Wt. Lbs.	Pkg. Wt. Lugs
L-42-A	L-42-A	1 1/2"	Keyway	S.P.S.T.	ON-OFF	250	25	11	10
L-42-B	L-42-B	1 1/2"	Keyway	S.P.S.T.	ON-MOMENTARY OFF	250	25	12	10
L-42-C	L-42-C	1 1/2"	Keyway	S.P.S.T.	OFF-MOMENTARY ON	250	25	12	10
L-42-D	L-42-D	1 1/2"	Keyway	S.P.D.T.	ON-ON	250	25	12	10
L-42-E	L-42-E	1 1/2"	Keyway	S.P.D.T.	ON-OFF-ON	250	25	13	11
L-42-F	L-42-F	1 1/2"	Keyway	S.P.D.T.	ON-MOMENTARY ON	250	25	12	10
L-42-G	L-42-G	1 1/2"	Keyway	S.P.D.T.	MOMENTARY ON-OFF MOM. ON	250	25	13	11
L-42-H	L-42-H	1 1/2"	Keyway	S.P.D.T.	ON-OFF-MOMENTARY ON	250	25	13	11

H" Nipple length available Change first letter to "S", as "S-40-A"  
 For flat sided Nipple style add prefix letter "F" after first letter, as "LF-40-A"  
 For plain round Nipple style add prefix letter "P" after first letter, as "LP-40-A"



No. L-50-N

**APPLIANCE SWITCHES**  
**Double Pole — Medium Duty**  
**One Hole Mounting — Slow Make and Break**  
**Solid "Fine" Silver Contacts**  
 Designed Primarily for Use on A.C.

Dimensions:

1 1/4" long x 1/2" wide, 1 1/4" from top of cover to bottom of lugs on Momentary's 1 1/4" on others  
 Handle is 1/2" long with 1/4" nipple and 1/2" long with 1/4" nipple



No. L-50-S



No. L-52-P

Ratings:

10 Amp — 250 A-C  
 15 Amp — 125V A-C  
 1/2 HP — 120/240V A-C

C.S.A. Approval No. 1883

Cat. No. Screw Terminals	Cat. No. Solder Lugs	Nipple Length	Nipple Style	Circuit or Pole	Operating Sequence	Std. Pkg.	Cart.	Pkg. Wt. Lbs.	Pkg. Wt. Lugs
L-50-K	L-52-K	1 1/2"	Keyway	D.P.S.T.	ON-OFF	250	25	16	14
L-50-L	L-52-L	1 1/2"	Keyway	D.P.S.T.	ON-MOMENTARY OFF	250	25	16	14
L-50-M	L-52-M	1 1/2"	Keyway	D.P.S.T.	OFF-MOMENTARY ON	250	25	18	16
L-50-N	L-52-N	1 1/2"	Keyway	D.P.D.T.	ON-ON	250	25	18	16
L-50-P	L-52-P	1 1/2"	Keyway	D.P.D.T.	ON-OFF-ON	250	25	16	16
L-50-B	L-52-B	1 1/2"	Keyway	D.P.D.T.	ON-MOMENTARY ON	250	25	18	16
L-50-S	L-52-S	1 1/2"	Keyway	D.P.D.T.	MOMENTARY ON-OFF MOM. ON	250	25	18	16
L-50-T	L-52-T	1 1/2"	Keyway	D.P.D.T.	ON-OFF-MOMENTARY ON	250	25	18	16
L-50-SP	L-52-SP	1 1/2"	Keyway	D.P.D.T.	ON (SERIES)-OFF ON (PARALLEL)	250	25	18	16
L-50-X	L-52-X	1 1/2"	Keyway	D.P.D.T.	OFF-ON; 1 & 2 ON	250	25	18	16

1 1/2" Nipple length available Change first letter to "S", as "S-50-K"  
 For flat sided Nipple style add prefix letter "F" after first letter, as "LF-50-K"  
 For plain round Nipple style add prefix letter "P" after first letter, as "LP-50-K"

## OUTLETS

C.S.A. Approval No. 9998



No. 138

### BAKELITE CONVENIENCE OUTLET

10 Amperes—250 Volts  
 15 Amperes—125 Volts

CAT. NO.	STD. PKG.	CARTON	PKG. WGT.
138 Black	500	25	28
140 White	500	25	28

### BAKELITE CONVENIENCE OUTLET

With 6" Leads No. 14 Specify A.F., C.F., or T.F.F. Wire  
 10 Amperes—250 Volts  
 15 Amperes—125 Volts



No. 138-L

CAT. NO.	STD. PKG.	CARTON	PKG. WGT.
138-L Black	500	Bulk	33
140-L White	500	Bulk	33

### BAKELITE CONVENIENCE OUTLET

With 6" Leads No. 14 Specify A.F., C.F., or T.F.F. Wire  
 10 Amperes—250 Volts  
 15 Amperes—125 Volts



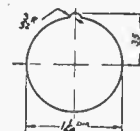
No. 238-L

STD. PKG.	CARTON	PKG. WGT.	CAT. NO.
500	Bulk	31	7097 1/4" Nipple

PIERCING DIMENSIONS  
 For Rectangular Outlets



PIERCING DIMENSIONS  
 For Round Outlets



# ELECTRONICS DIVISION

# CIRCLE F MFG. CO.

TRENTON 4,  
 NEW JERSEY





# ADVANCE RELAYS

## GH RELAYS — low cost general purpose types

These new Elgin GH midjet relays are engineered for high efficiency and low cost. A tremendous variety of applications permits countless uses. The small size of these midjets allows their installation in equipment where space is a problem.

### GHA SERIES (5-Amp Open Relay)

**Contact Rating:**  
5 Amps resistive, 2 Amps inductive at 115 Volts AC or 26.5 Volts DC.

**Contact Material:**  
Fine Silver

**Contact Arrangement:**  
1C, 2C, 3C only

**Maximum Size:**

Height	Length	Width
1.1	1.732	.937

Contact Terminals can be used as solder lugs, or for printed circuitry.



AC Relays		6-12-24-115 VAC	220 VAC
Type	Contacts*	List	List
GHA 1C	SPDT	4.80	5.50
GHA 2C	DPDT	5.80	6.80
GHA 3C	3 PDT	6.45	7.35
DC Relays		6-12-24 VDC	110 VDC
Type	Contacts*	List	List
GHA-1C	SPDT	4.75	6.20
GHA 2C	DPDT	5.30	7.05
GHA 3C	3PDT	5.95	7.60

### GHB SERIES (10 Amp Open Relay)

**Contact Rating:**  
10 Amps resistive, 5 Amps inductive at 115 Volts AC or 26.5 Volts DC.

**Contact Material:**  
Fine Silver and Silver-Cadmium Oxide

**Contact Arrangement:**  
1C, 2C and 3C only.

**Maximum Size:**

Height	Length	Width
1.1"	1.732"	.937"

Contact Terminals can be used as solder lugs or for Printed Circuitry.



AC RELAYS		6-24-115 VAC
Type	Contacts*	List
GHB 1C	SPDT	5.15
GHB 2C	DPDT	6.25
GHB 3C	3PDT	6.95
DC RELAYS		6-12-24 VDC
Type	Contacts*	List
GHB 1C	SPDT	5.15
GHB 2C	DPDT	5.70
GHB 3C	3PDT	6.45

### GHP SERIES (5-Amp Relay)

### GHE SERIES (5-Amp Plate Circuit Relay)

Enclosed in a clear polystyrene dustite enclosure with 8-pin octal for GHP1C and 2C, 11-pin for 3C versions.

**Contact Rating:**  
5 Amps resistive, 2 Amps inductive at 115 Volts AC or 26.5 Volts DC.

**Contact Material:** Fine Silver.

**Contact Arrangement:** 1C, 2C and 3C only.

**Size of Enclosure:**

Overall length  $2\frac{1}{8}'' \times 1\frac{1}{2}'' \times 1\frac{1}{2}''$   
Length above chassis  $2\frac{1}{8}''$

(Continued next column)



Dustite Plastic Enclosure

(Continued from preceding column)

AC RELAYS		6-12-24-115 VAC	220 VAC
Type	Contacts*	List	List
GHP 1C	SPDT	8.50	9.40
GHP 2C	DPDT	9.40	10.70
GHP 3C	3 PDT	11.65	13.00
DC RELAYS		6-12-24 VDC	110 VDC
Type	Contacts*	List	List
GHP 1C	SPDT	8.40	9.40
GHP 2C	DPDT	9.30	10.30
GHP 3C	3PDT	11.60	12.55
PLATE CIRCUIT RELAYS		List	
Type	Contacts*	2500D	5000D
GHE 1C	SPDT	9.15	9.30
GHE 2C	DPDT	9.80	9.95
GHE 3C	3PDT	12.05	12.35

## POWER CONTROL TYPES

### PC SERIES (1, 2, 3 & 4 pole)

These are compact and positive-acting relays for either AC or DC. They are used in air conditioning and lighting systems, small motor starting, transformers, garage door openers—wherever dependable circuit switching is necessary.

Rugged components give long life to these relays. High gram pressure is maintained by a heavy spring tension, permitting operation in any position.



**Dimensions:**

H.  $1\frac{1}{8}''$  W.  $1\frac{1}{8}''$

L.  $2\frac{3}{8}''$  — 1 & 2 pole.

H.  $1\frac{1}{8}''$  W.  $2\frac{3}{8}''$

L.  $3\frac{1}{8}''$  — 3 & 4 pole.

**Mounting Data:**

2 tapped holes 6-32

NC-2; 2" centers.

AC 60 CYCLE RELAYS—Available in		6-12-24-115 VAC	220 VAC
Type	Contacts*	List	List
PC 1C	SPDT	5.85	6.95
PC 2C	DPDT	8.00	9.10
PC 3C	3PDT	11.25	12.35
PC 4C	4PDT	14.80	15.90
DC RELAYS—Available in		6-12-24 VDC	110 VDC
Type	Contacts*	List	List
PC 1C	SPDT	5.65	*
PC 2C	DPDT	7.80	9.45
PC 3C	3PDT	11.00	*
PC 4C	4PDT	14.50	*

\* Available as special

### PJ SERIES (general purpose)

This has a higher current rating than the similar-appearing PG Series. The additional rating is achieved by including a jumper between blades, which effects a single-pole design. Such construction, providing double-make double-break heavy-duty contacts, raises the relay current rating without affecting the physical size, vibration or shock characteristics.



**Dimensions:**

H.  $1\frac{1}{8}''$  W.  $1\frac{1}{8}''$  L.  $1\frac{1}{2}''$

**Mounting Data:**

4 tapped holes 6-32 NC-2;  
 $\frac{1}{2}'' \times 1\frac{3}{8}''$  centers.

Type	Coil Resistance	Contacts*	List
PJ/1C/6VD	16 ohms	SPDT 30 amps	10.35
PJ/1C/115VA	400 ohms	SPDT 30 amps	10.75

\*Contacts: rated at 115 VAC or 26.5 VDC resistive loads.

ELECTRONICS DIVISION, ELGIN NATIONAL WATCH COMPANY, Burbank, California • Elgin, Illinois

# ADVANCE RELAYS

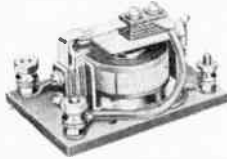


## POWER TRANSFER TYPES

### PH SERIES (keying relays)

Extremely large contacts for high-current make and break. This unit is used as a keying relay in CW radio transmission.

Heavy-gauge component parts insure positive action under severe operating conditions. The use of silver-cadmium oxide contacts has been proved best to avoid pitting and welding at high-current, non-inductive or inductive loads.



**Dimensions:**  
H. 1 1/8" W. 2 1/4" L. 3 1/4"  
**Mounting Data:**  
2 holes .169 dia. clearance for 8-32 NC-2 screws. 1 1/2" centers.

Type	Coil Resistance	Contacts*	List
PH/1A/6VD	16 ohms	SPST-NO 20 amps	8.75
PH/1A/115VA	400 ohms	SPST-NO 20 amps	10.30
PH/1C/6VD	16 ohms	SPDT-NO 20 amps	9.30
PH/1C/115VA	400 ohms	SPDT 20 amps	11.05

### PV SERIES (very heavy-duty)

This series of very heavy-duty power-transfer relays is excellent for motor starting, lighting circuits and numerous applications where heavy double-make contacts are needed.

The "T" blade is equipped with two 5/16" silver-cadmium oxide contacts, with ample contact gap. These contacts minimize pitting and burning under heavy non-inductive or inductive loads.

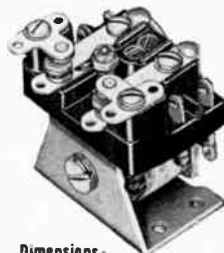


**Dimensions:**  
H. 1 3/8" W. 2 1/4" L. 3 1/4"  
**Mounting Data:**  
2 holes .169 dia. clearance for 8-32 NC-2 screws. 1 1/2" centers.

Type	Coil Resistance	Contacts*	List
PV/1A/6VD	16 ohms	SPST-NO 30 amps	11.60
PV/1A/115VA	450 ohms	SPST-NO 30 amps	14.00
PV/1C/6VD	16 ohms	SPDT-NO 3 amps	12.65
PV/1C/115VA	450 ohms	SPDT 30 amps	15.10

### PG SERIES (general purpose)

Efficient coil structure provides the high magnetic strength necessary for high-pressure contacts on short blades, and excellent wiping action. You'll find these to be excellent double-pole relays for general industrial power-control circuits. Vibration and shock are withstood easily by these relays due to the special armature and frame design. PG types can be built to meet Army-Navy specifications.



**Dimensions:**  
H. 1 7/8" W. 1 5/8" L. 1 1/2"  
**Mounting Data:**  
4 tapped holes 6-32 NC-2; 1/2" x 1 3/8" centers.

Type	Coil Resistance	Contacts*	List
PG/2C/6VA	1.4 ohms	DPDT 15 amps	11.65
PG/2C/24VA	25 ohms	DPDT 15 amps	11.65
PG/2C/115VA	400 ohms	DPDT 15 amps	11.65
PG/2C/220VA	1600 ohms	DPDT 15 amps	12.65
PG/2C/6VD	16 ohms	DPDT 15 amps	10.15
PG/2C/12VD	63 ohms	DPDT 15 amps	10.15
PG/2C/24VD	400 ohms	DPDT 15 amps	10.15

\*Contacts: rated at 115 VAC or 26.5 VDC resistive loads.

## ANTENNA TYPES

### AM SERIES (midget antenna type)

These space-saving "transmit-receive" antenna relays are ideally suited for hundreds of different low-power RF applications. These units fill the need for 300-ohm circuit switching in mobile, marine, aircraft, television, communication and fixed-station service.

Conically-shaped silver contacts assure low resistance paths for either "receive" or "transmit" positions.



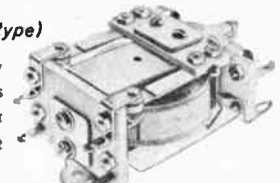
**Dimensions:**  
H. 1 1/8" W. 1 1/8" L. 1 1/8"  
**Mounting Data:**  
Relay supplied with single 6-32 NC-2 mounting stud with hex nut.

Type	Coil Resistance	Contacts*	List
AM/2C/6VA	4 ohms	DPDT 2 amps	7.70
AM/2C/115VA	1600 ohms	DPDT 2 amps	7.70
AM/2C/6VD	25 ohms	DPDT 2 amps	6.90
AM/2C/12VD	100 ohms	DPDT 2 amps	6.90

### AH SERIES (small antenna type)

A changeover relay designed specifically for RF operation. The small size of this relay makes it ideal for use in compact sets where the load does not exceed 1/2 KW.

Low-loss handling of RF energy is assured by the Steatite insulation used throughout, and by adequate spacing between contacts. Units are fast and positive in action, and will operate in any position.



**Dimensions:**  
H. 1 1/8" W. 1 3/8" L. 2 3/8"  
**Mounting Data:**  
2 tapped holes; 6-32 NC-2; 2" centers.

Type	Coil Resistance	Contacts*	List
AH/2C/6VA	1.6 ohms	DPDT 10 amps	14.50
AH/2C/115VA	450 ohms	DPDT 10 amps	14.50
AH/2C/6VD	16 ohms	DPDT 10 amps	14.00
AH/2C/12VD	4 ohms	DPDT 10 amps	14.00
AH/2C1C/115VA	450 ohms	DPDT + SPDT (aux) 10 amps	16.30

### AT SERIES (antenna type)

For heavy-duty RF transmitter antenna changeover applications. Primarily designed for fixed-station usage, with a conservative 1-kilowatt RF rating. These relays are insulated with ceramic Steatite. Excellent wiping action of the contacts assures flow of the most minute currents for receiving positions. The efficiency of these relays is very high. Available with auxiliary single-pole, normally open contacts.



**Dimensions:**  
H. 1 1/8" W. 2 1/8" L. 3 3/8"  
**Mounting Data:**  
4 holes .157 dia.; clearance for 6-32 screws.

Type	Coil Resistance	Contacts*	List
AT/2C/115VA	450 ohms	DPDT 10 amps	15.15

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# ADVANCE RELAYS

## COAXIAL TYPES



### CB SERIES (coaxial type)

These relays are unsurpassed for meeting the problems of coaxial cable switching. Designed for performance on 52-ohm coaxial lines. Low standing-wave ratios permit usage on frequencies up to 300 megacycles. The units operate equally well in any position.

Dimensions: H. 1 $\frac{1}{8}$ " W. 3 $\frac{1}{8}$ " L. 3 $\frac{3}{8}$ "

Mounting Data: 2 tapped holes 6-32 NC-2; 1 $\frac{1}{8}$ " centers.

Type	Coil Resistance	Contacts*	List
CB/1C/6VD	18 ohms	SPDT 5 amps	18.00
CB/1C/12VD	70 ohms	SPDT 5 amps	18.00
CB/1C/24VD	280 ohms	SPDT 5 amps	18.00
CB/1C/115VA	280 ohms	SPDT 5 amps	20.25
CB/1C2C/6VD	18 ohms	SPDT (int) DPDT (aux) 5 amps	23.15
CB/1C2C/12VD	70 ohms	SPDT (int) DPDT (aux) 5 amps	23.15
CB/1C2C/24VD	280 ohms	SPDT (int) DPDT (aux) 5 amps	23.15
CB/1C2C/115VA	280 ohms	SPDT (int) DPDT (aux) 5 amps	24.75



### CE SERIES (small coaxial type)

The CE Series is designed for coaxial line switching in small space. Standing-wave ratio is extremely low, for efficient transfer of RF energy. Excellent for use in mobile, aircraft, marine, experimental and fixed-station communications equipment.

Dimensions:

H. 1 $\frac{1}{8}$ " W. 2 $\frac{1}{8}$ " L. 2 $\frac{1}{8}$ "

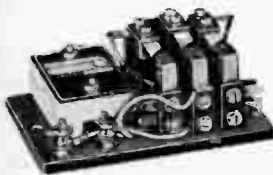
Mounting Data:

2 tapped holes 6-32 NC-2; .750" centers.

The CE type is designed for performance on 52-ohm coaxial lines, and may also be used on lines with other impedances.

Type	Coil Resistance	Contacts*	List
CE/1C/6VD	20 ohms	SPDT 2 amps	21.50
CE/1C/12VD	80 ohms	SPDT 2 amps	21.50
CE/1C/115VA	750 ohms	SPDT 2 amps	22.00
CE/1C2C/6VD	20 ohms	SPDT (int) DPDT (aux) 2 amps	27.50
CE/1C2C/12VD	80 ohms	SPDT (int) DPDT (aux) 2 amps	27.50
CE/1C2C/115VA	750 ohms	SPDT (int) DPDT (aux) 2 amps	29.00

## TIME DELAY TYPES



### DB & DM SERIES

With their adjustable time-delay range, these relays are excellent for use in preheating tube-filaments, for specialized lighting circuits, photographic controls, protection applications, etc.

The DB Series provides a time-delay before break. The DM Series provides a delay before make. Both series utilize bimetal thermal units which can be adjusted for delays from 5 to 60 seconds. Cooling of the thermal units for proper re-cycling requires 8 to 10 times the delay period.

Dimensions:

H. 1 $\frac{1}{2}$ " W. 2 $\frac{3}{4}$ " L. 3 $\frac{1}{4}$ "

Mounting Data:

2 holes .152 dia.; 3 $\frac{1}{8}$ " centers.

Type	Coil Resistance	Contacts*	List
DB/2C/115VA	450 ohms	DPDT 15 amps	19.20
DM/2C/115VA	450 ohms	DPDT 15 amps	24.80
DM/1C/115VA	450 ohms	SPDT 15 amps	17.65
DM/2C/220VA	1600 ohms	DPDT 15 amps	26.00

\*Contacts: rated at 115 VAC or 26.5 VDC resistive loads.

## THERMAL DELAY TYPES

### DT SERIES



These are efficient, low-cost units used in conjunction with various relays for delayed making or breaking of controlled circuits. They are applicable wherever a time delay of 5 to 60 seconds is needed.

Units are adjustable within a range of 8 to 20 cycles per minute.

Operating on the bi-metal thermal principle, these types are housed in unglazed porcelain, and are obtainable with either normally-open or normally-closed contacts.

Dimensions:

H. 1 $\frac{1}{8}$ " W. 1 $\frac{1}{8}$ " L. 1 $\frac{3}{8}$ "

Mounting Data:

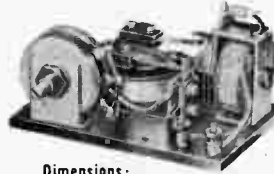
2 holes .154 dia. for 6-32 NC-2 screws; 1 $\frac{1}{8}$ " centers.

Type	Coil Voltage	Contacts*	List
DT/1A/115VA	115VAC	SPST-NO 2 amps	3.15
DT/1B/115VA	115VAC	SPST-NC 2 amps	3.15

## OVERLOAD TYPES

### OE & OF SERIES

(electrical reset)



Especially applicable to radio transmitters and other D.C. uses. Set the potentiometer to provide the desired current limit — any overload will actuate the relay, opening the circuit. The circuit remains open until electrically reset by reset mechanism. Manual reset also available.

Dimensions:

H. 2 $\frac{3}{8}$ " W. 3 $\frac{1}{2}$ " L. 4 $\frac{1}{4}$ "

Mounting Data:

2 holes  $\frac{3}{16}$ " dia. clearance for 6-32 screws.

Type	Adj. Range in MA	Coil Voltage	Contacts*	List
OE/2B Elec. Reset	250-500	24-28VDC	DPST-NC 15 amps	19.15
OF/2B Elec. Reset	500-1000	24-28VDC	DPST-NC 15 amps	19.35

## SOLENOID CONTACTOR TYPES

### ES SERIES



For heavy-duty DC contactor applications. Unit is widely used in aircraft for controlling actuating motors, landing lights, dynamotors, etc.

The unit employs an unusually powerful solenoid with spring loading, to insure positive high-pressure contact and release.

Dimensions:

H. 2 $\frac{1}{2}$ " W. 1 $\frac{3}{8}$ " L. 2 $\frac{3}{4}$ "

Mounting Data:

2 holes .218 dia; 1 $\frac{1}{4}$ " centers.

Type	Coil Resistance	Contacts*	List
ES/1A/12VD	28 ohms	SPST-NO 50 amps	15.60
ES/1A/24VD	112 ohms	SPST-NO 50 amps	15.60

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# ADVANCE RELAYS

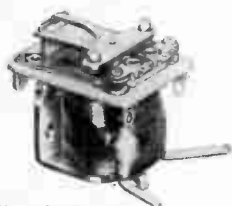


## MINIATURE TYPES

### MK SERIES ("Tiny-Mite")

Ultra-small and feather-light, these direct current devices require less than 1/2 cubic inch mounting space!

All switching is entirely above ground. Insulation material is silicone glass. Beryllium copper armature hinges assure stable performance under vibration and shock.



**Dimensions:**  
H. 3/64" W. 1/4" L. 3/64"

**Mounting Data:**  
Relay supplied with single 2-56 NC-2 machine screw.

Type	Coil Resistance	Contacts*	List
MK/1C/6VD	50 ohms	SPDT 1 amp	6.65
MK/1C/12VD	200 ohms	SPDT 1 amp	6.65
MK/1C/24VD	800 ohms	SPDT 1 amp	6.65
MK/2C/6VD	30 ohms	SPDT 1 amp	8.35
MK/2C/12VD	120 ohms	SPDT 1 amp	8.35
MK/2C/24VD	500 ohms	SPDT 1 amp	8.35
MK/2C/5000D	5000 ohms	SPDT 1 amp	9.75

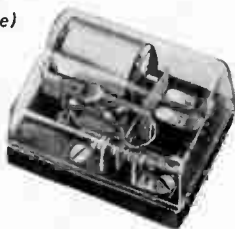
## SENSITIVE TYPES

### SV SERIES (very sensitive type)

For use in any DC circuit restricted to a few thousandths of a watt power consumption.

Transparent, molded plastic cover guards against dust or dirt reaching the contacts or other working parts.

Adjustments are quickly made with the vernier screws which vary relay sensitivity from the 5-milliwatt factory setting. Both the two stationary contacts and the spring tension can be accurately and permanently set—yet easily changed!



**Dimensions:**  
H. 1 1/2" W. 2" L. 2 3/8"

**Mounting Data:**  
2 holes .52 dia.

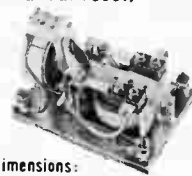
Type	Coil Resistance	Coil Current	Contacts*	List
SV/1C/.005	.005 ohms	1 amp	SPDT 1 amp	13.75
SV/1C/1000D	1000 ohms	2.25 MA	SPDT 1 amp	13.75
SV/1C/1600D	1600 ohms	1.8 MA	SPDT 1 amp	13.75
SV/1C/2200D	2200 ohms	1.5 MA	SPDT 1 amp	13.75
SV/1C/3500D	3500 ohms	1.2 MA	SPDT 1 amp	14.15
SV/1C/5500D	5500 ohms	.95 MA	SPDT 1 amp	14.40
SV/1C/8700D	8700 ohms	.75 MA	SPDT 1 amp	15.30
SV/1C/10000D	10000 ohms	.70 MA	SPDT 1 amp	15.75
SV/1C/14000D	14000 ohms	.6 MA	SPDT 1 amp	16.15
SV/1C/20000D	20000 ohms	.5 MA	SPDT 1 amp	17.50
SV/1C/30000D	30000 ohms	.4 MA	SPDT 1 amp	18.50
SV/1C/40000D	40000 ohms	.35 MA	SPDT 1 amp	22.00

## LATCHING TYPES

### LE & LH SERIES (electrical & manual reset)

The LE and LH Series relays are employed in industrial and power control applications where it is desirable to eliminate continuous use of current consumption by the duty coil.

The latching mechanism in these relays is positive, and assures consistent performance. The units are assembled on a heavy bakelite base.



**Dimensions:**  
H. 2 3/4" W. 2 1/2" L. 3 3/4"

**Mounting Data:**  
2 holes .152 dia.; clearance for 6-32 NC-2 screws; 2" centers.

Type	Coil Resistance	Contacts*	List
LE/2C/6VA	63 ohms	DPDT 15 amps	18.75
LE/2C/115VA	160 ohms	DPDT 15 amps	18.75
LE/2C/24VD	100 ohms	DPDT 15 amps	17.90
LH/2C/115VA	160 ohms	DPDT 15 amps	17.75

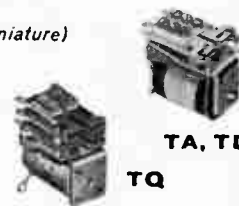
## TELEPHONE TYPES

### TA, TD & TQ SERIES (miniature)

Power consumption in the two TA telephone relays listed below is minimized through the use of bifurcated blades, short armature travel, and highly efficient magnetic structure. Contacts are platinum-silver alloy.

The TQ relay occupies only .94 cu. in. of space. The conventional hinge pin is replaced by a beryllium copper retaining spring, hence no hinge pin to wear out.

The TD series uses the TA series frame and coil, but has single 5-amp contacts.



**Dimensions:**  
TA, TD—H. 1 1/2" W. 1 1/4" L. 1 3/8"  
TQ—H. 1 5/8" W. 3/4" L. 1 1/2"

**Mounting Data:**  
TA, TD—2 tapped holes; S-32 NC-2  
TQ—4 tapped holes; 3-48 NC-2; 3/8" centers.

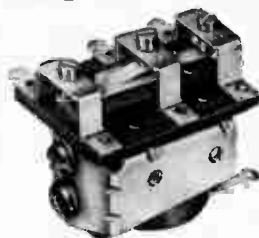
Type	Coil Resistance	Contacts*	List
TA/2C/115VA	900 ohms	DPDT 2 amps	7.35
TA/4C/115VA	900 ohms	SPDT 2 amps	10.95
TQ/2C/24VD	600 ohms	DPDT 3 amps	5.90
TQ/4C/24VD	300 ohms	4PDT 3 amps	8.90
TD/2C/115VA	900 ohms	DPDT 5 amps	7.75
TD/4C/115VA	900 ohms	4PDT 5 amps	12.20
TD/2C/24VD	630 ohms	DPDT 5 amps	7.75
TD/4C/24VD	300 ohms	4PDT 5 amps	12.20

## SENSITIVE TYPES

### SO SERIES (miniature)

Here is a sensitive relay small enough for use in the tiniest spaces, and weighing only 1 1/2 ounces. Yet it's adjustable by fine screw contacts to a close differential between pick-up and drop-out. A balanced armature on the relay provides extremely sensitive operation.

Factory adjusted at 50 Milliwatts.



Type	Coil Resistance	Coil Voltage	Contacts*	List
SO/1C/1000D	1000 ohms	6VDC	SPDT 1.5 amps	7.65
SO/1C/4000D	4000 ohms	12VDC	SPDT 1.5 amps	8.00
SO/1C/6500D	6500 ohms	16VDC	SPDT 1.5 amps	8.40
SO/1C/10000D	10000 ohms	20VDC	SPDT 1.5 amps	8.85

\*Contacts: rated at 115 VAC or 26.5 VDC resistive loads.



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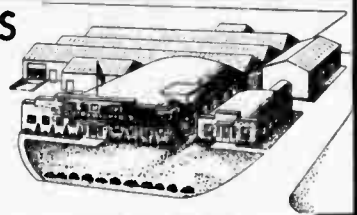


# Potter & Brumfield RELAYS

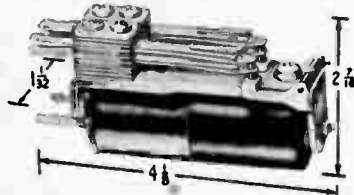
*the country's largest manufacturer of electric RELAYS*

Potter & Brumfield relays excel in quality and reliability.

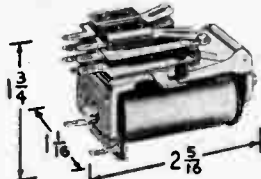
Now, with three manufacturing plants, P&B makes the most complete line of relays available anywhere. For top performance at the lowest possible price . . . always specify P&B relays!



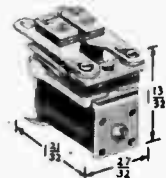
**TELEPHONE TYPE RELAYS**



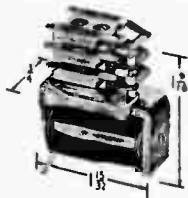
**BS SERIES** Long coil telephone type. Large size provides high sensitivity and simplifies maintenance. Suited for computer and automatic test equipment applications requiring large numbers of poles. Tinned solder type terminals for rear of panel wiring. Mounting: Two No. 8-32 tapped holes on  $\frac{3}{16}$ " centers. Contacts: Twin palladium. Weight: App 9 oz.



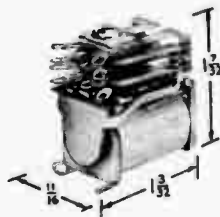
**LS SERIES** Short springs and light weight armature provides fast action without sacrificing reliability and long life. Stainless steel hinge bearing designed to give 100 million operations. Mounting: Four No. 6-32 holes on  $\frac{3}{16}$ " x  $\frac{3}{16}$ " centers. Twin palladium contacts.



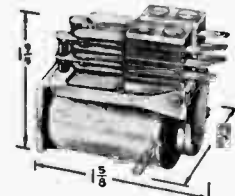
**MB SERIES** Miniature DC contactor. Designed for very high current applications. Contact arms heavy brass with large silver contacts, solder terminals. Mounting: Four No. 3-48 holes on  $\frac{3}{16}$ " x  $\frac{3}{16}$ " centers. Weight: 2 oz.



**MC SERIES** Built with ceramic contact spacers to minimize losses at high frequencies. Intercontact capacitance 1.5 mmfd. D. C. types withstand 10 G vibration up to 300 C.P.S. and 25G shock. Mounting: Four No. 3-48 holes on  $\frac{3}{16}$ " x  $\frac{3}{16}$ " centers. Weight: 2 oz. All Standard Models have palladium contacts.



**MG SERIES** Sub-miniature telephone type relay for aircraft, computer and other applications requiring good shock and/or vibration characteristics. Mounting: Four tapped No. 3-48 holes on  $\frac{3}{16}$ " x  $\frac{3}{16}$ " centers.



**MH SERIES MINIATURE TYPE** Extremely fast acting and long life. Ideal for applications where space and weight are factors. DC models withstand 10G vibration 10-55 cycles. Open AC models for intermittent duty only. Sealed AC models operate with a built-in rectifier. Mounting: MH11L model has No. 6-32 threaded stud 11/32 long plus locating boss. All other open models have four No. 3-48 holes on  $\frac{3}{16}$ " x  $\frac{3}{16}$ " centers. Contacts: Fine silver. Weight: Open model 2 oz. Sealed model 4 oz.

AC RELAYS					DC RELAYS					DC RELAYS						
Type	Coil Volts or Current	Contact Arrangement	Contact Rate in Amps.	Net	Type	Coil Volts or Current	Coil Resistance or Ohms	Contact Arrangement	Contact Rate in Amps.	Net	Type	Coil Volts or Current	Coil Resistance or Ohms	Contact Arrangement	Contact Rate in Amps.	Net
BS17A	115 V	4PDT	4	\$12.35	BS17D	6 V	40	4PDT	4	\$11.10	MG11D	6 V	23	DPDT	2	\$4.95
BS23A	115 V	6PDT	4	15.40	BS17D	12 V	200	4PDT	4	11.10	MG11D	12 V	90	DPDT	2	4.95
MC5A†	6 V	SPDT	1	4.50	BS17D	24 V	750	4PDT	4	11.10	MG11D	24 V	360	DPDT	2	4.95
MC5A†	115 V	SPDT	1	4.50	BS17L*	110 V	10,000	4PDT	4	12.30	MG11D	110 V	7,560	DPDT	2	5.40
MC11A†	6 V	DPDT	1	6.25	BS23D	6 V	40	6PDT	4	13.75	MG17D	6 V	23	4PDT	2	6.60
MC11A†	115 V	DPDT	1	6.25	BS23D	12 V	125	6PDT	4	13.75	MG17D	12 V	90	4PDT	2	6.60
MH17A†	6 V	4PDT	5	6.75	BS23D	24 V	500	6PDT	4	13.75	MG17D	24 V	365	4PDT	2	6.60
MH17A†	24 V	4PDT	5	6.75	BS23L*	110 V	10,000	6PDT	4	14.90	MG17D	110 V	7,560	4PDT	2	7.05
MH17A†	115 V	4PDT	5	6.75	LS17D	6 V	20	4PDT	4	9.50	MG17DP	6 V	23	4PDT	2	11.00
MH17AMR‡	24 V	4PDT	5	25.00	LS17D	12 V	100	4PDT	4	9.50	MG17DP	12 V	90	4PDT	2	11.00
MH17AMR‡	115 V	4PDT	5	19.00	LS17D	24 V	300	4PDT	4	9.50	MG17DP	24 V	365	4PDT	2	11.00
					LS17D	110 V	8,000	4PDT	4	10.50	MG17DP	110 V	7,560	4PDT	2	11.60
					LS23D	6 V	20	6PDT	4	12.10	MH11L†	4.5 MA	10,000	DPDT	5	5.75
					LS23D	12 V	100	6PDT	4	12.10	MH11L‡	4.5 MA	10,000	DPDT	5	9.70
					LS23D	24 V	300	6PDT	4	12.10	MH17D	6 V	23	4PDT	5	5.75
					LS23D	110 V	8,000	6PDT	4	13.10	MH17D	12 V	96	4PDT	5	5.75
					MB3D	6 V	13.3	SPST-NO-DB	60	5.00	MH17D	24 V	365	4PDT	5	5.75
					MB3D	12 V	62.3	SPST-NO-DB	60	5.10	MH17DM‡	6 V	23	4PDT	5	11.60
					MB3D	24 V	245	SPST-NO-DB	60	5.10	MH17DM‡	12 V	96	4PDT	5	11.60
					MB3D	110 V	5,000	SPST-NO-DB	60	5.50	MH17DM‡	24 V	365	4PDT	5	11.60
					MC5D	6 V	23	SPDT	1	4.00	MH23D	6 V	13.3	6PDT	5	7.25
					MC5D	12 V	96	SPDT	1	4.00	MH23D	12 V	62.3	6PDT	5	7.25
					MC5D	24 V	365	SPDT	1	4.00	MH23D	24 V	245	6PDT	5	7.25
					MC11D	6 V	23	DPDT	1	5.75	MH23D	110 V	5,000	6PDT	5	7.75
					MC11D	12 V	96	DPDT	1	5.75	MH23DD‡	6 V	13.3	6PDT	5	15.50
					MC11D	24 V	365	DPDT	1	5.75	MH23DD‡	12 V	62.3	6PDT	5	15.50
					MC11D	110 V	6,200	DPDT	1	6.25	MH23DD‡	24 V	245	6PDT	5	15.50
											MH23DD‡	110 V	5,000	6PDT	5	16.10

\*Min. pull in 5.5 MA for 4 pole and 7.6 for 6 pole. Commonly used as plate circuit relays.  
†For intermittent duty only.  
‡Sealed.

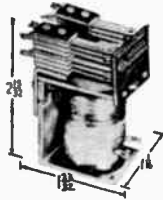
FOR ORDERING INSTRUCTIONS,  
SEE PAGE L-745



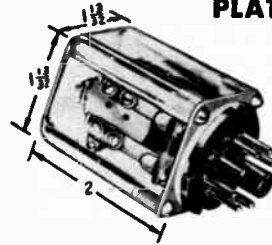


# RELAYS all types - all sizes - for all applications

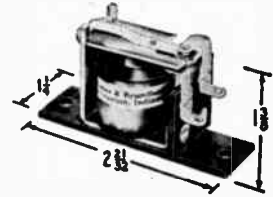
## PLATE CIRCUIT AND SENSITIVE RELAYS



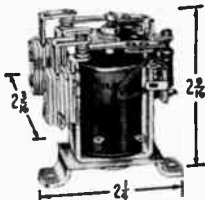
**GB SERIES** (See GA series for similar voltage actuated relays.) Sensitivity 115 milliwatts for single pole and 275 milliwatts for 4 pole. Medium cost, high quality relay with silver contacts. Pull-in is not adjustable. Mounting: No. 8-32 tapped core and locating half-punch. Weight: Approx. 5 oz.



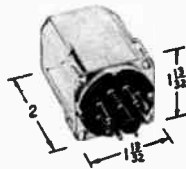
**KCP SERIES** Low cost plate circuit relay enclosed in polystyrene case. 1/8" silver contacts. Sensitivity 125 mw single pole; 250 mw double pole; 375 mw three pole. Mounting: Standard octal plug in type. Eight pin for KCP 5 and KCP 11. Eleven pin for KCP 14. Weight: Approx. 3 oz.



**LB SERIES** Designed for top performance, long life at an unusually low cost. Each coil is wound with a given coil resistance and factory adjusted to operate on minimum current requirements. Mounting: Two 3/16" holes on 2 1/2" centers. Weight: Approx. 2 ozs. Silver contacts.

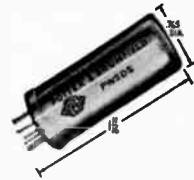


**LM SERIES** (See KL for similar voltage actuated relays.) Sensitivity 100 milliwatts for single pole and 200 milliwatts for double pole. Medium cost, high quality relay with silver contacts. Pull-in adjustable by tail spring adjusting screw. Mounting: Two No. 6-32 tapped holes on diagonal 3/8" x 5/8" centers. Weight: Approx. 5 oz. DC Coils only.

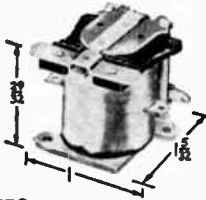


**"p" — CASE A** clear polystyrene case for mounting rectifiers, capacitors, resistors or a combination of these. Available with octal-type plug with 8 or 11 pins complete with 4 screws.

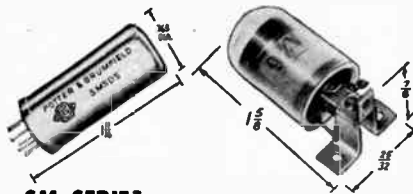
35DO70 Case (8 pin plug) NET \$ .50  
35DO72 Case (11 pin plug) NET \$ .65



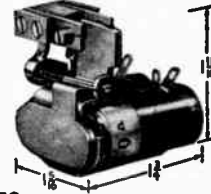
**PW SERIES** (In both voltage and current actuated models.) (Sensitivity 40 mw for current actuated models. 175 milliwatts for voltage actuated models.) Precision, light weight, hermetically sealed relay for aircraft and missile applications. Will withstand 10G vibration to 500 cps. Mounting: Standard 7-pin miniature tube base. Wt.: Approx. 1 oz.



**RS SERIES** (In both voltage and current actuated models (60 mw. sensitivity). Low-cost, small, light weight, sensitive relay for radio-sonde, light dimmer and model applications. Withstands 10G vibration 5-55 cycles and 25G shock. Mounting: Two No. 4-40 tapped holes on diagonal 3/8" x 5/8" centers. Weight: Approx. 1 1/2 oz. Bar palladium contacts.



**SM SERIES** (In both voltage and current actuated models.) (Sensitivity 75 mw for current actuated models.) Medium cost, light weight, dust covered (right) or hermetically sealed (left) relay for light contact load applications such as computers, model airplanes and similar applications. Extremely long mechanical life because of reed armature. Mounting: (Sealed) Standard 7-pin miniature tube socket; (Dust cover) Two 3/16" holes on 1/2" ctrs. Wt.: App. 1 oz. Silver-rhodium contacts.



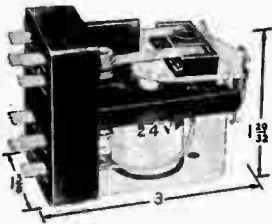
**SS SERIES** Ultra Sensitive precision relay. (10 mw. sensitivity.) Dual series coils with balanced armature on needle-point bearings for all low energy circuits such as instruments and bridge balancing. May also be used as a differential relay by connecting the two coils in separate circuits. Mounting: Two No. 6-32 tapped holes on 3/8" centers. Weight: Approx. 3 1/2 ozs. Silver contacts.

DC RELAYS					DC RELAYS					DC RELAYS							
Type	Coil Volts or Current	Coil Resist-ance Ohms	Contact Arrange-ments	Contact Rate in Amps.	Net	Type	Coil Volts or Current	Coil Resist-ance Ohms	Contact Arrange-ments	Contact Rate in Amps.	Net	Type	Coil Volts or Current	Coil Resist-ance Ohms	Contact Arrange-ment	Contact Rate in Amps.	Net
GB5D	6.8 MA	2,500	SPDT	5	\$3.30	KCP14	8.7 MA	5,000	3PDT	2	\$7.50	RS5D	6 V	335	SPDT	2	\$2.50
GB5D	4.8 MA	5,000	SPDT	5	3.45	KCP14	6.1 MA	10,000	3PDT	2	7.90	RS5D	12 V	1,350	SPDT	2	2.60
GB5D	3.4 MA	10,000	SPDT	5	3.90	LB5	9 MA	2,500	SPDT	5	2.35	RS5D	5 MA	2,500	SPDT	2	2.70
GB11D	7 MA	2,500	DPDT	5	4.60	LB5	6.3 MA	5,000	SPDT	5	2.55	RS5D	3.5 MA	5,000	SPDT	2	3.00
GB11D	5 MA	5,000	DPDT	5	4.70	LB5	4.5 MA	10,000	SPDT	5	2.70	RS5D	2.5 MA	10,000	SPDT	2	3.45
GB11D	3.53 MA	10,000	DPDT	5	5.25	LM5	6.3 MA	2,500	SPDT	5	3.50	SM5D	6 V	80	SPDT	.25	5.10
GB17D	10 MA	2,500	4PDT	5	5.50	LM5	4.5 MA	5,000	SPDT	5	3.70	SM5D	12 V	360	SPDT	.25	5.10
GB17D	7.4 MA	5,000	4PDT	5	5.65	LM5	3.2 MA	10,000	SPDT	5	4.00	SM5D	24 V	900	SPDT	.25	5.10
GB17D	5.25 MA	10,000	4PDT	5	6.10	LM11	9 MA	2,500	DPDT	5	5.05	SM5DS	6 V	80	SPDT	.25	6.25
KCP5	7.2 MA	2,500	SPDT	2	5.60	LM11	6.3 MA	5,000	DPDT	5	5.25	SM5DS	12 V	360	SPDT	.25	6.25
KCP5	5 MA	5,000	SPDT	2	5.70	LM11	4.5 MA	10,000	DPDT	5	5.75	SM5DS	24 V	900	SPDT	.25	6.25
KCP5	3.6 MA	10,000	SPDT	2	6.15	PW5DS	6 V	202	SPDT	2	11.25	SM5L	3.9 MA	5,000	SPDT	.25	5.40
KCP11	10 MA	2,500	DPDT	2	6.00	PW5DS	12 V	810	SPDT	2	11.25	SM5L	2.7 MA	10,000	SPDT	.25	5.95
KCP11	7.2 MA	5,000	DPDT	2	6.10	PW5DS	24 V	3,240	SPDT	2	11.25	SM5LS	3.8 MA	5,000	SPDT	.25	6.55
KCP11	5 MA	10,000	DPDT	2	6.50	PW5LS	2.8 MA	5,000	SPDT	2	11.60	SM5LS	2.7 MA	10,000	SPDT	.25	7.00
KCP14	12.3 MA	2,500	3PDT	2	7.40	PW5LS	2.0 MA	10,000	SPDT	2	12.00	SS5D	1 MA	10,000	SPDT	2	12.00



# Potter & Brumfield RELAYS

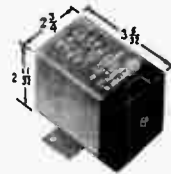
## POWER TYPE RELAYS



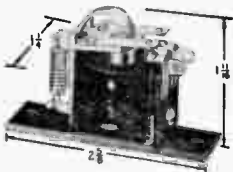
**AB SERIES** For appliance and general purpose operations where rugged construction, long life and quiet operation are required. Meets U/L specifications. Mounting: Two No. 8-32 tapped holes, on 1 1/4" centers. Silver contacts.



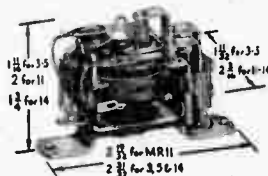
**ABC SERIES** Medium duty power relay with dust cover. For small motor, industrial control and similar applications. All equipped with terminals to fit clip on connectors and may also be applied in printed circuit technique using dip soldering. Snap on and screw connectors packed with each relay. Designed to meet U/L requirements. Mounting: One No. 8-32" stud 3/8" long. Wt: 7 oz. Silver contacts.



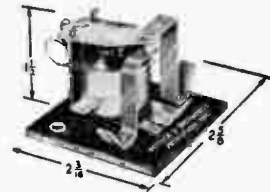
**AG SERIES** Shock proof relay enclosed in dust proof cover. Excellent for Machine Tool and product automation controls. Screw terminals molded in phenolic base. Meets U/L requirements. Mounting: Welded bracket with two 3/8" dia. holes on 2 3/8" x 5/8" diagonal centers. Weight: 9 1/2 oz. Silver contacts.



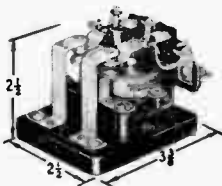
**CA SERIES** Low cost, high capacity power relay. Small over-all dimensions. Solder terminals. Mounting: Two 1/8" dia. holes on 2 3/8" centers. Weight: 3 oz. Fine silver contacts.



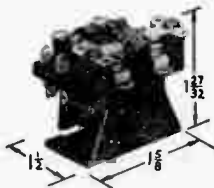
**MR SERIES** A medium duty power relay that can handle small motors, transmitters, and general purpose applications. Mounting: Two holes 3/8" dia. on 2 3/8" centers for 1 and 3 pole and 2 1/4" centers for 2 pole. Weight: 4 oz. Silver contacts.



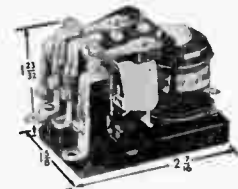
**MW SERIES** Low cost medium duty relay, long life design. Clip on solder or screw terminals. Mounting: Two holes clear No. 6 screw on 1 3/8" centers. Weight: 3 oz. Silver contacts.



**PR SERIES** Heavy duty relay for industrial control applications requiring long life and fast action. Heavy duty screw type terminals. All AC models carry U/L label. Mounting: Two holes 3/8" dia. on 1 3/8" centers. Weight: 11 oz. max. Silver contacts.



**PS SERIES** Extremely compact long life power relay. Ideal for mobile communication, appliances and similar applications. Solder type terminals. Mounting: Four No. 6-32 tapped holes on 1/2" x 1 1/8" centers. Weight: 4 oz. Silver contacts.



**SP SERIES** Medium duty shock proof relays with balanced armature. Frequently used in industrial equipment, control circuits, transmitter keying circuits or any application requiring fast, positive operation with high resistance to shock and vibration. Mounting: Two No. 6-32 tapped holes on 1 1/8" centers. Weight: 4 oz. Silver contacts.

Type	AC RELAYS			Contact Arrangements	Amps.
	6, 12 24, 115 Volts Net	230 Volts Net			
AB11A	\$4.95†	\$5.35		DPDT	10
ABC11A	6.00	6.40		DPDT	10
AG11A	8.25*			DPDT	5
CA3A	2.75†			SPST-NO-DB	10
MR2A	2.85‡			SPST-NC	8
MR3A	3.30†			SPST-NO-DB	8
MR5A	3.00	3.40		SPDT	8
MR11A	4.20	4.50		DPDT	8
MR14A	5.05	5.45		3PDT	8
MW5A	3.05†	3.50		SPDT	5
PR1AY	3.85‡			SPST-NO	15
PR3AY	3.95	4.35		SPDT-NO-DB	20
PR5AY	4.15	4.55		SPDT	15
PR7AY	4.65	5.05		DPST	15
PR11AY	6.15	6.55		DPDT	15
PS11A	7.60†	8.00		DPDT	10
SP11A	6.20			DPDT	5

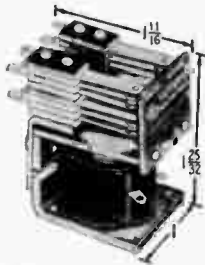


\*12 V and 115 V only.  
†6 V, 24 V and 115 V only.  
‡24 V only.  
§12 V and 24 V only.

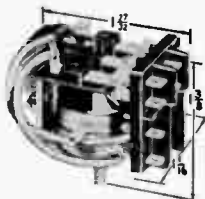
Type	DC RELAYS			Contact Arrangements	Amps.
	6, 12 24 Volts Net	110 Volts Net			
AB11D	\$4.95	\$5.45		DPDT	10
ABC11D	6.00	6.50		DPDT	10
AG11D	8.25‡			DPDT	5
CA3D	2.50§			SPST-NO-DB	10
MR3D	3.05			SPST-NC	8
MR5D	2.75	3.25		SPDT	8
MR11D	4.00	4.50		DPDT	8
MR14D	4.70	5.20		3PDT	8
MW5D	3.00	3.55		SPDT	5
PR3D	3.95	4.55		SPDT-NO-DB	20
PR5D	4.15	4.75		SPDT	15
PR7D	4.65	5.25		DPST	15
PR11D	6.15	6.75		DPDT	15
PS11D	6.55	6.95		DPDT	10
SP11D	5.95	6.45		DPDT	5



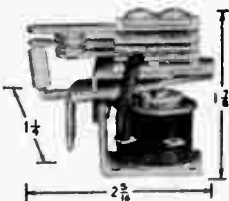
# RELAYS all types - all sizes - for all applications



**GA SERIES** Multiple leaf, all purpose relays permitting a wide range of contact combinations. Dimensions:  $1\frac{1}{8}$ " W. x  $1\frac{3}{4}$ " L. x  $1\frac{3}{4}$ " H. max. Mounting: No. 8-32 tapped core with locating boss. Weight:  $3\frac{1}{2}$  oz.



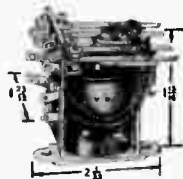
**KA SERIES** A small, low cost, highly efficient general purpose relay for handling light power loads such as small motors, solenoids and other relays, and general automation work. Insulated to meet U/L requirements. Mounting: One No. 6-32 stud and locating tab.



**MP SERIES** Snap action relay. Small size, heavy duty, low price, SPDT relay. Mounting: Four No. 6-32 tapped holes.  $\frac{3}{8}$ " x  $\frac{3}{8}$ " on center. Silver contacts.



**GP-100** A complete kit of GP Series coils and switches consisting of the following: AC coils: Two 6 V., Two 12 V., Four 24 V., Six 115 V., Two 230 V. DC coils: Two 6 V., Two 12 V., Two 24 V., Four 110 V. Also Two 2,500 and Four 10,000 ohm coils; Eighteen DPDT switch assemblies; Fourteen 4PDT switch assemblies. The complete kit is ideal for experimenters, school and industrial laboratories. NET \$127.30

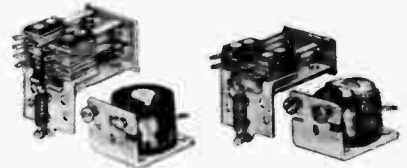


**KL SERIES** Multiple contact relays. Varied contact combinations and high dielectric phenolic insulation affords extreme versatility and utility. Mountings: All models - Two No. 6-32 tapped holes on  $1\frac{1}{4}$ " centers. Weight: 5 oz.

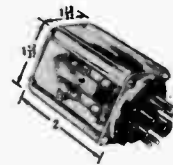


**COIL BOBBIN KIT — 75A047**  
Twenty-four assorted molded phenolic bobbins. Three each of 8 different sizes; core diameters from  $\frac{5}{8}$ " to  $\frac{3}{4}$ ". For industrialists, experimenters and amateurs. NET \$2.50.

## GENERAL PURPOSE RELAYS



**GP SERIES** Separate AC and DC coils to match with 2PDT or 4PDT switches. AC coils (GPA) available in 6, 12, 24, 115 and 230 volts. DC coils (GPD) available in 6, 12, 24 and 110 volts; current coils: 2,500 and 10,000 ohms.



**KRP SERIES** Versatile, multi-contact arrangements. Enclosed in polystyrene dust cover. Standard octal-type plug 8 pin for KRP5 and KRP11, 11 pin for KRP14. Weight: 3 oz.



**"PR" COVER** A sheet steel base with aluminum cover all finished in gray hammer-tone baked enamel with 4 knockouts for  $\frac{1}{2}$ " conduit. Mounting: Three No. 10 holes on  $1\frac{1}{2}$ " x  $4\frac{1}{8}$ " ctrs. Type 35D013 NET \$9.50.

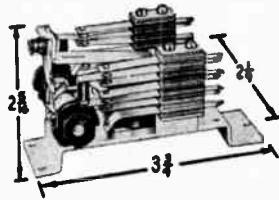
AC RELAYS					DC RELAYS				
Type	6, 12, 24, 115 Volts Net	230 Volts Net	Contact Arrangement	Amps.	Type	6, 12, 24 Volts Net	110 Volts Net	Contact Arrangement	Amps.
GA11A	\$3.15†	.....	DPDT	5	GA11D	\$3.15	\$3.60	DPDT	5
GA14A	3.75†	.....	3PDT	5	GA14D	3.75	.....	3PDT	5
GA17A	4.50	\$4.90	4PDT	5	GA17D	4.50	4.95	4PDT	5
GPA	1.55	2.00	None	.....	GPD	1.45	2,500 ohms	.....	.....
KA5A	2.95	3.35	SPDT	5		2.00	10,000 ohms	.....	.....
KA11A	3.55	3.95	DPDT	5	GPD	2.00	3.00	.....	.....
KA14A	3.95	4.35	3PDT	5	GP11	1.60	.....	DPDT	5
KL5A	3.60‡	.....	SPDT	5	GP17	2.80	.....	4PDT	5
KL11A	4.45	.....	DPDT	5	KA5D	2.90	3.50	SPDT	5
KL14A	5.00†	.....	3PDT	5	KA11D	3.25	3.85	DPDT	5
KL17A	5.90	.....	4PDT	5	KA14D	3.65	4.25	3PDT	5
KRP5A	5.20†	.....	SPDT	5	KL5D	3.40	.....	SPDT	5
KRP11A	5.75	.....	DPDT	5	KL11D	4.30	4.90	DPDT	5
KRP14A	7.15	.....	3PDT	5	KL14D	4.80	5.40	3PDT	5
MP5A	5.70	5.95	SPDT	15	KL17D	5.60	6.20	4PDT	5
					KRP5D	5.15	5.75	SPDT	5
					KRP11D	5.70	6.30	DPDT	5
					KRP14D	7.10	7.70	3PDT	5
					MP5D	5.70	6.50	SPDT	15

†6 V, 24 V and 115 V only.  
‡6 V and 115 V only.

# RELAYS all types - all sizes - for all applications

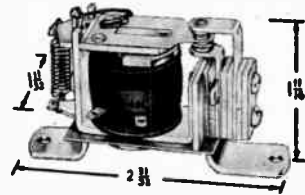


**AF SERIES 400 CYCLE RELAY** Used in governmental or industrial laboratories and aircraft applications using 400 cycle AC coil power. Mounting: Two No. 6-32 tapped holes on  $\frac{1}{8}$ " centers. Fine silver contacts.

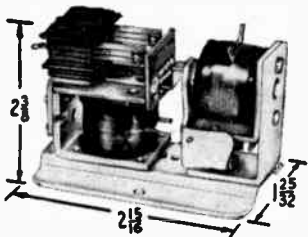


**AP SERIES RACHET, IMPULSE** A reliable compact unit for applications requiring on-off or reversing action for successive operations of the control lead. Positive ratchet operation at all speeds on impulses as short as 20 ms. Intermittent operation only. Mounting: Three  $\frac{3}{8}$ " holes on  $3\frac{3}{4}$ " x  $\frac{7}{8}$ " triangular centers. Weight 7 oz. Fine silver contacts.

## SPECIAL PURPOSE RELAYS



**FR SERIES PHOTO FLASH RELAYS** A special variation of the MR5. Relay contacts and insulation handle photo flash surge currents without sticking or pitting. Intermittent duty coils for high repetitive accuracy. Mounting: Two holes  $\frac{3}{8}$ " dia. on  $2\frac{1}{2}$ " centers. Weight:  $3\frac{1}{2}$  oz.

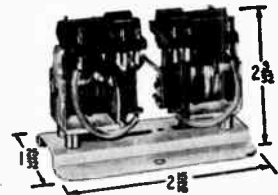


**GC SERIES OVERLOAD RELAY** Equipped with a 6 V 60 cycle AC reset coil and a 50 ma DC trip coil for overload protection of expensive tubes, instruments or other apparatus. An externally mounted rheostat (not furnished) may be employed to adjust remotely the trip current over the range 100-1000 ma. Complete instructions packed with each relay. Weight:  $6\frac{1}{2}$  oz.

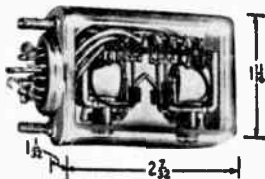
**NEW!**  
**"PIC & BUILD"**  
**RELAY KIT**

Separate Coils and Switches  
For Do-It-Yourself Assembly

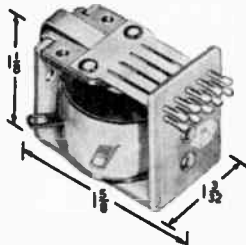
FOR DETAILS  
SEE PAGE L-743



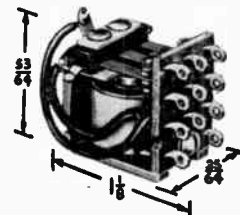
**KB SERIES LATCHING RELAY** Both release and trip coils must be for the same voltage. One coil operates relay to set latch and other coil releases it. Ideal for memory work and overload applications. Operates on momentary impulse to either coil. Mounting: Two  $\frac{3}{8}$ " holes on  $1\frac{1}{2}$ " centers. Weight: 6 oz. Silver contacts rated 5 amps. "C" suffix indicates silver cadmium contacts on moveables rated 10 amps.



**KE SERIES** Sub-miniature latching relay with mechanical latch and electric release. Operates on momentary impulse to either coil. For intermittent duty only. Mounting: Three No. 6-32 studs. Silver contacts.



**KF SERIES** An unusual design with many contact combinations up to 5PDT with a common movable arm. Mounting: Locating tab and core hole tapped No. 6-32. Palladium contacts against silver.



**KM SERIES** Sub-miniature, 3-pole relay for multiple switching. For use where size and weight are critical factors. Solder lug terminals. Mounting: No. 2-56 tapped core and locating boss. Weight: Approx.  $\frac{1}{8}$  oz.

AC RELAYS					DC RELAYS				
Type	400 Cycles 115 Volts Net	Contact Arrange- ments	Amps.		Type	6, 12, 24 Volts Net	110 Volts Net	Contact Arrange- ments	Amps.
AP11A	\$7.95	DPDT	5		AP11D	\$7.90	\$8.50	DPDT	5
					AP17D	9.50	10.10	4PDT	5
					FR5D	3.60†	.....	SPDT	8
					KB17D	9.00	10.20	4PDT	5
					KB17DG	9.20	10.40	4PDT	10
					KB23D	10.90	12.10	6PDT	5
					KB23DG	11.20	12.40	6PDT	10
					KE17D	9.00	.....	4PDT	2
					KE17DM	19.50	.....	4PDT	2
					KE23D	11.50	.....	6PDT	2
					KE23DM	25.00	.....	6PDT	2
					KF20D	2.75	3.35	5PDT	2
					KM5D	3.20	.....	SPDT	2
					KM11D	3.50	.....	DPDT	2
					KM14D	4.05	.....	3PDT	2

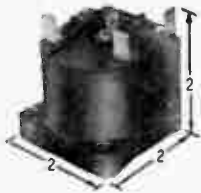
FOR  
ORDERING INSTRUCTIONS,  
SEE PAGE L-745

\* 6 V only.  
† 2 V only.  
‡ 6 V and 115 V only.  
§ 6 V, 24 V and 115 V only.

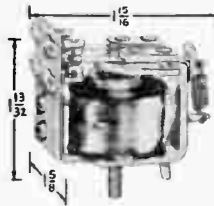


# Potter & Brumfield RELAYS

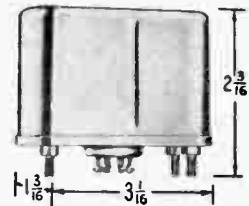
## SPECIAL PURPOSE RELAYS



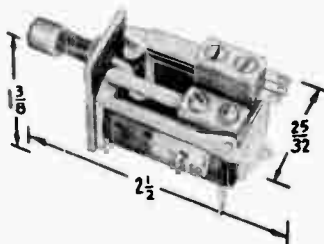
**DS SERIES** Voltage controlled motor starting relay for 115 volt or 230 volt service. Operates on back EMF of running winding. Available only with a molded phenolic dust proof cover. Mounting: Two holes 0.156" dia. on 1.562" centers. Snap-on terminals. Silver cadmium oxide contacts.



**KT SERIES ANTENNA SWITCHING RELAY** Glass base insulation for minimum RF loss to switch 300 ohm line. Mounting: One No. 6-32 stud. Weight: 1½ oz. Fine silver contact.



**LK SERIES** Hermetically sealed latching relay. Fitted with glass insulated solder terminal header. Mechanical latch, electric release. Mounting: Three No. 8-32 studs on 2¼" x ¼" centers. Weight: 6½ oz.



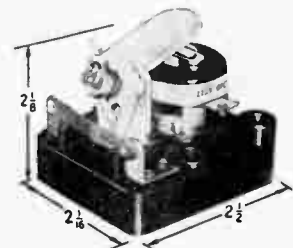
**MA SERIES** Mechanical latch on electrical impulse to coil, mechanical reset midget telephone type relay. Available with multiple contacts and DC coils. Mounting: Two No. 4-40 tapped holes on ¾ x ¾" centers. Silver contacts.

**NOW!**

**3 P&B**

**PLANTS**

Princeton	Indiana
Franklin	Kentucky
Laconia	New Hampshire



**MS SERIES MOTOR STARTING RELAYS** For starting capacitor start, induction-run motors. Operates on back EMF of running winding. Armature gap can be altered to change pull-in. Meets all U/L requirements. Mounting: Two ⅜" dia. holes on 1½" ctrs. Weight: 5 oz. max.

AC RELAYS					DC RELAYS				
Type	6, 12, 24, 115 Volts Net	230 Volts Net	Contact Arrangements	Amps.	Type	6, 12, 24 Volts Net	110 Volts Net	Contact Arrangements	Amps.
DS2AQ	\$4.00‡	\$4.40	SPST-NC	1½ HP	KT11D	\$3.35†	.....	DPDT	5
KT11A	3.35*	.....	DPDT	5	LK17DH	18.50§	.....	4PDT	5
LK17AH	19.00‡	.....	4PDT	5	MA17D	7.75	8.25	4PDT	5
MS2AY	3.25‡	3.65	SPST-NC	¾ HP					
MS4AY	3.75‡	4.15	SPST-NC-DB	3 HP					

\* 6 V and 115 V only.  
 † 6 V and 12 V only.  
 ‡ 115 V only.  
 § 24 V only.

### ORDERING INSTRUCTIONS

*File-O-Matic Sec. 23*

**NOTE:** Relays shown in this bulletin are standard relays in stock and ready for immediate shipment. From them a type can be chosen to meet the needs of most Electrical or Electronic applications.

All relay contacts are rated at 115 volt-60 cycle, non inductive load.

**When ordering specify relay type and coil voltage or resistance.**

**Example:** PR5AY, 115 Volts AC, 60 cycles or LB5, 2500 ohms resistance.

To operate 110V DC relays on 220V DC use a 5 watt wire-wound resistor of a value approximately the relay coil resistance in series with the relay coil.

**CONTACT LEGEND:** S-Single; D-Double; P-Pole; T-Throw; N-Normally; O-Open; C-Closed; B-Break; M-Make.

Prices and Specifications subject to change without notice. For latest prices refer to United Pricing Service.

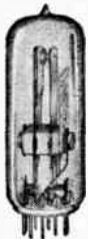
**SOLD AND STOCKED BY  
YOUR JOBBER**



## AMPERITE THERMOSTATIC DELAY RELAYS



STANDARD



MINIATURE

Amperite Thermostatic Delay Relays are actuated by a heater . . . can therefore be used on A.C., D.C., or pulsating current. Being hermetically sealed, Amperite Relays are not affected by altitude, moisture, or other atmospheric conditions.

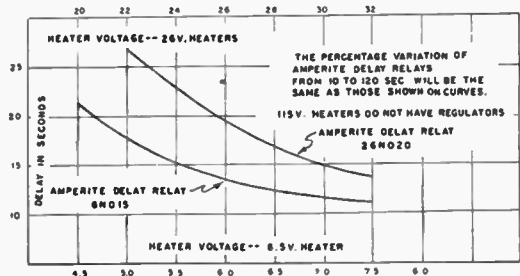
**CIRCUITS:** At the present time only SPST is available — normally open or normally closed.

**HEATER VOLTAGES:** Relays are available with heater voltages from 2.5 to 115 V. For short delays 2 to 10 seconds) a low voltage heater, preferably 6.3 V. is recommended. **STANDARD HEATER VOLTAGES:** 6.3, 26 (for 22-30 V.), 115 V. Other voltages available are 2.5, 5.0, 12.0 and 50 V. For 220 V., use a 115 V. relay with a dropping resistor of 6500 Ohms—5W.

### EFFECT OF HEATER VOLTAGE VARIATION ON DELAY

**FIGURE 1 —** Effect of change in heater voltage on delay in seconds. Only low voltage heaters (2.5 to 26 V.) incorporate heater voltage regulations as shown in this diagram.

For 22 to 30 V. supply: We recommend Amperite Delay Relays with 26 V. heaters for airplanes and similar power supplies. These heaters are regulated for battery variation of 22 to 30 V. as shown in this diagram.



**STANDARD HEATER VOLTAGES:** Amperite Delay Relays with low voltage heaters such as 2.5, 5.0, 6.3, 12 and 26 V. are designed with automatic voltage regulation of the heater to compensate for line voltage variation. The effect of the supply voltage variation on a typical relay is shown in Fig. 1. Without regulation, the delay would vary as the square of the supply voltage variation. 115 V. heaters CANNOT be supplied with heater voltage regulation.

**HEATER WATTAGE:** The wattage consumed by the heater is approx. 2 W. Flashers approx 1.5 W. All Heaters may be operated continuously. Life, 5000 hours minimum.

### CONTACT RATING

	Delay	Contract Rating Non-Inductive	Voltage Breakdown	
			DC Contact-to-Contact	Heater-to-Contact
STANDARD RELAYS	2 to 10 Sec.	115V — 3a AC	250V	500V
	15 to 180 Sec.	115V — 3a AC 220V — 1a AC	1000V 1000V	1500V 1500V
MINIATURE RELAYS	2 to 10 Sec.	115V — 2a AC	250V	500V
	15 to 180 Sec.	115V — 2a AC 220V — 1a AC	1000V 1000V	1500V 1500V

**FLASHERS** have contact rating of 115V — ½a AC, non-inductive.

**AMBIENT TEMPERATURES:** Relays are compensated for temperatures of  $-55^{\circ}$  to  $+70^{\circ}$ C. Tolerances given are  $20^{\circ}$ C. Ambient temperature tolerances depend on type. Low voltage heaters 26V or less have much better ambient compensation than high voltage heaters.

**LIFE** of any individual relay will depend on the service the contacts are subjected to. With a 115 V. — 2A A.C. non inductive load the contacts will withstand at least 250,000 operations. The heater can be operated continuously. Heaters will not be damaged by a 50% overload in voltage for short durations (1 hour approximately).

**DELAYS AVAILABLE:** From 2 to 180 seconds. Relays can be used in series to obtain longer delays. The delay of any individual relay can be increased up to 30% by using a resistor in series with the heater. Relays with short delays such as 2 to 3 seconds can be increased 100%.

**FLASHERS:** Normally closed relays are supplied as flashers. They are available from 30 to 90 flashes per minute, and are furnished in 6, 26, and 115V heaters, as standard types.

**INDUCTIVE A.C. LOADS:** When breaking on inductive A.C. load, use a condenser of .01 to .1 mfd. across contacts.

THERMOSTATIC

# AMPERITE

DELAY RELAYS

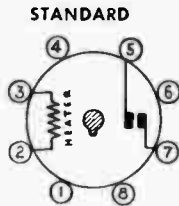
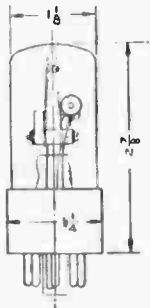
GLASS ENCLOSED • HERMETICALLY SEALED • A.C., D.C., OR PULSATING CURRENT



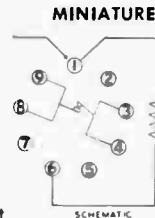
**BREAKING D.C. CURRENT:** When Relay contacts open D.C. Current above 50 volts, a condenser with a resistor in series with the condenser must be connected across the contacts. The following condenser values are approximate.

	50 V. D.C.	115 V. D.C.	230 V. D.C.
0 to .5 Amps.	None	.1 MF	.25 MF
.5 to 1.5 Amps.	"	.25 "	.25 "
1.5 to 3 Amps.	.25 MF	1 "	.5 "

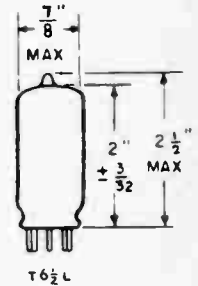
**BASE WIRING:**



**Standard Radio Octal:**  
Prangs 2-3-heater;  
Prangs 5-7-contacts.



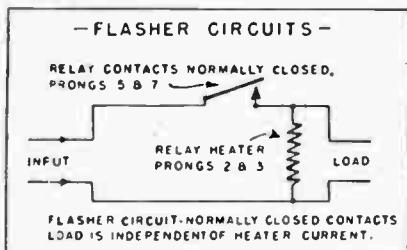
**9-Pin Miniature:**  
Prangs 1-6 heater;  
Prangs 3-4, 1 contact;  
Prangs 8-9, 2nd contact



**STANDARD AND MINIATURE TYPES OF AMPERITE DELAY RELAYS AND FLASHERS....List \$4.00 ea.**

**MINIATURE TYPES:** Designated by letter T. (e.g. 6N05T) Types shown in Bald Type are the more popular types, and are more readily available. Miniature type relays available in 2-120 Seconds Delay, EXCEPT those with a 6.3V Heater which are available in 2-180 Seconds. All Standard Type are available in 2-180 Seconds Delay.

Delay-Seconds	Tolerance-Seconds at 20°C	NORMALLY OPEN CONTACTS						NORMALLY CLOSED CONTACTS					
		HEATER VOLTAGES						HEATER VOLTAGES					
		2.5 V.	5.0 V.	6.3 V.	12 V.	26 V. (22-30)	115 V.	2.5 V.	5.0 V.	6.3 V.	12 V.	26 V. (22-30)	115 V.
2	± 1	2N02	5N02	6N02	12N02	26N02	115N02	2C2	5C2	6C2	12C2	26C2	115C2
3	± 1	2N03	5N03	6N03	12N03	26N03	115N03	2C3	5C3	6C3	12C3	26C3	115C3
5	± 2	2N05	5N05	6N05	12N05	26N05	115N05	2C5	5C5	6C5	12C5	26C5	115C5
8	± 3	2N08	5N08	6N08	12N08	26N08	115N08	2C8	5C8	6C8	12C8	26C8	115C8
10	± 3	2N010	5N010	6N010	12N010	26N010	115N010	2C10	5C10	6C10	12C10	26C10	115C10
15	± 3	2N015	5N015	6N015	12N015	26N015	115N015	2C15	5C15	6C15	12C15	26C15	115C15
20	± 4	2N020	5N020	6N020	12N020	26N020	115N020	2C20	5C20	6C20	12C20	26C20	115C20
30	± 8	2N030	5N030	6N030	12N030	26N030	115N030	2C30	5C30	6C30	12C30	26C30	115C30
45	± 10	2N045	5N045	6N045	12N045	26N045	115N045	2C45	5C45	6C45	12C45	26C45	115C45
60	± 12	2N060	5N060	6N060	12N060	26N060	115N060	2C60	5C60	6C60	12C60	26C60	115C60
75	± 15	2N075	5N075	6N075	12N075	26N075	115N075	2C75	5C75	6C75	12C75	26C75	115C75
90	± 15	2N090	5N090	6N090	12N090	26N090	115N090	2C90	5C90	6C90	12C90	26C90	115C90
120	± 30	2N0120	5N0120	6N0120	12N0120	26N0120	115N0120	2C120	5C120	6C120	12C120	26C120	115C120
150	± 30	2N0150	5N0150	6N0150	12N0150	26N0150	115N0150	2C150	5C150	6C150	12C150	26C150	115C150
180	± 40	2N0180	5N0180	6N0180	12N0180	26N0180	115N0180	2C180	5C180	6C180	12C180	26C180	115C180



Normally closed flashers are standard, and are indicated by the letter "F." The number following letter "F" denotes flashes per minute. For example a 6F30 flasher, has 6.3V heater, normally closed 30 FPM with a ± 10 flashes per minute tolerance. A 6F30T, would be the same type but in 9-pin miniature. Flashers are available from 30 to 90 Flashes per minute with tolerances as shown in the chart below:

Tolerance FPM - 20°C	Standard Flashers Available		
± 10	6F30	26F30	115F30
± 12	6F45	26F45	115F45
± 15	6F60	26F60	115F60
± 15	6F75	26F75	115F75
± 20	6F90	26F90	115F90

Flashers operate approximately 1/3 on, 2/3 off. The percentage time on can be increased by reducing the voltage of the heater.

**FLASHERS** have contact rating of 115V - 1/2a AC, non-inductive.



# PHOTOELECTRIC RELAYS AND ACCESSORIES



## CR7505-K100G3 Relay

The CR7505-K100G3 photoelectric relay and accessories provide a complete line of inexpensive, but thoroughly reliable, apparatus for general-purpose indoor applications which include counting, diverting, controlling, signaling, limiting, and

protecting. Underwriters' Laboratories listed. The CR7505-K100G3 includes phototube and thyatron, has a contact rating of 10 amp a-c, may be used to start f-hp motors directly, and can operate all motor starters up to and including NEMA Size 4.



## CR7505-K201, -K202 Relays

These photoelectric relays will perform the same type of functions as the -K100 with greater speed and sensitivity. These relays operate on either light increase or decrease, depending on connections. The relays will operate from light flashes on interruption of 1/15 second between impulses, with not less than 1/15 second between flashes. The d-c phototube circuit permits remote location of phototube with no loss in sensitivity.

## Accessories for Use with -K100G3



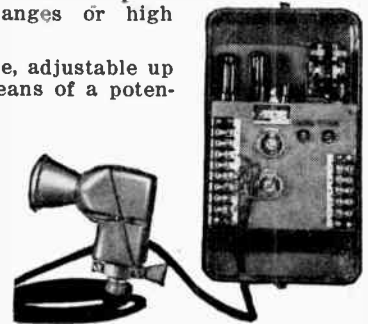
Model No. 9T53Y8025 light-source transformer, rated 115 volts, 50/60 cycles, primary; 4.8 volts secondary; lens-barrel assembly CR7505-B207G1, 3 in. in diameter, for mounting directly on relay; two light sources, -C201G1 with 1½-in. lens and -C203G1 with 3-in. lens; two phototube holders with six feet of special phototube cable and a plug for connecting to tube socket in the relay, -P211G1 with 1½-in. lens, and the -P212G1 with 3-in. lens. With 1½-in. lens, maximum operating distance is 12 ft; with 3-in. lens, maximum operating distance is 30 ft.

Sensitivity of -K100G3 may be increased five times by use of -B207G1 lens-barrel assembly.

## CR7505-N210, -N211, -N212 Relays

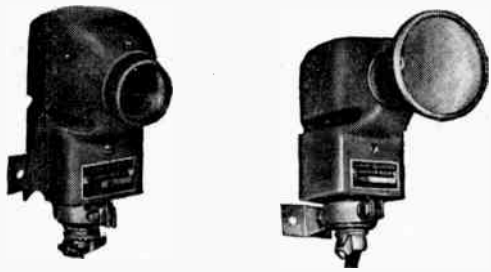
These three relays are similar in circuit design and are especially adapted for photoelectric applications where a device must respond to rapid light changes or high operating rates.

A time-delay feature, adjustable up to ½ second by means of a potentiometer dial, is provided to delay the dropout of the magnetic delay in cases where the relay would be energized for such a short time that the period would not be sufficient to perform the external control operation desired.



The relays will respond to light changes as small as ½ foot-candle, providing there is sufficient light on the phototube.

Separate phototube holders are required for these units.



Maximum Distance between Light Source and Phototube, Feet	Maximum Operating Rate per Min	Type of Relay Contacts	Minimum Light Level to Operate Relay, Foot-candles*	Nominal Voltage	Line Frequency	Self-contained Phototube	Enclosure, NEMA Type	Minimum Required Duration Light Change (Seconds)	Volt-amperes Required (Excluding Light Source)	Nomenclature, CR 7505-
30	150	DPDT	40 fc	115	50/60	Yes†	I	0.2	10	K100
70	450	DPDT	2 fc	115/230	50/60	Yes†	III/V	0.07	10	K201
70	450	DPDT	2 fc	115/230	50/60	Yes†	IV or VII	0.07	10	K202
210	600	DPDT	1 fc	115/230	50/60	No	III/V	0.001‡	60	N210
210	600	DPDT	1 fc	115/230	25/50/60	No	IV or VII	0.001‡	60	N211
210	600	DPDT	1 fc	115/230	25	No	III/V	0.001‡	60	N212

\*Light level measured in foot-candles at the phototube lens with a standard light meter, with entire lens illuminated. †May use separate phototube holder. ‡Relay will respond 0.015 sec after light change. Internal timing circuit permits operation on pulses as short as 0.001 sec and may be adjusted to keep relay energized up to 0.5 sec.

NEMA ENCLOSURE TYPES: I—Protection only, III—Weather-resistant, IV—Watertight, V—Dust-tight, VII—Explosion-proof.





# ELECTRONIC TIMERS AND DEVICES

## Photoelectric Accessories for Use with -K201 and -N210 Series

The light sources are of die-cast aluminum construction. The -C201G1 light source has a 1 1/2-in. lens, focusable from 2 feet to infinity. The -C202G2 has a double lens for short focus, for a concentrated spot approximately 1/4 in. in diameter at a distance of 2 1/2 - 4 in. in front of the lens. The -C203G1 light source has a 3-in. lens, with high-intensity beam for long-distance operation. The -C201G2, -C202G2, and -C203G2 are identical in operation with the G1 group, but have rubber gaskets between the front and back covers which makes them weather resistant and dust-tight in accordance with NEMA Standards.

4.8 volts is required for all the above light sources and the following transformers are recommended:

**Light-source transformers.** The 9T58Y8047 is enclosed in a conduit box with knockouts for conduit connections. It is rated 115/230 volts, 50/60 cycles. The 9T53Y8036 is of open-type construction, but has same rating as 9T58Y8047. The 9T53Y8058 for 25/50/60 cycles is of weather-resistant construction; except for size and type of construction, rating is identical with 9T58Y8047.

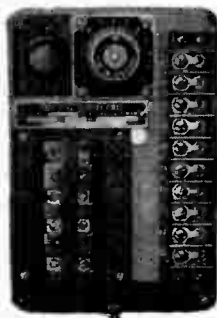


The -C208 light source is explosion-proof and can be made watertight by applying a rubber gasket which is furnished. It has a 3-in. lens and a self-contained step-down transformer for 115/230-volt operation.

The phototube holders are similar in construction to the light sources. The -P202G2 has a 1 1/2-in. lens and the -P203G2 has a 3-in. lens. Both come with a 9-ft phototube cable with spade terminals.

## CR7504-A142 Electronic Timer

The -A142 timer is for timing applications of short time duration (-A142G1, 0.06 to 1.2 sec; -A142G2, 0.6 to 12 sec; and -A142G3, 6 to 20 sec) where long life, low maintenance, and high repetitive accuracy is required.



The -A142 has double-pole, double-throw contacts; can be used to start f-hp motors directly. Time-range dials read directly in seconds.

Two different types of operation available: immediate-start for timing operations or delayed-start for providing a time delay. Power supply, 115/230 volts, 50/60 cycles; power consumption, 15 watts.

## CR7511-A126 Resistance-sensitive Relay



This relay is used to obtain a reliable contact from the touch of two conductors through which only small currents flow. It will operate motors, lights, contactors, and solenoids whenever there is sufficient change in the resistance of a circuit, including liquid-level-control applications. In this way, large amounts of power can be controlled

from a low-current high-resistance input.

It has 10-amp a-c contact rating, two single-pole, double-throw, contacts for controlling two independent circuits. Enclosure is weather-resistant and dust-tight.

## CR7505-R201G1 Smoke-density Indicator



This control and associated equipment can be used to indicate smoke density, gas density, or the density of any fluid where density is directly related to the light transmission through the fluid. It can be used to warn furnace operators of excessive smoke conditions, to turn on blowers or relevant equipment at any smoke-density level,

and when used with a suitable recorder, a continuous permanent record of smoke density is always available.

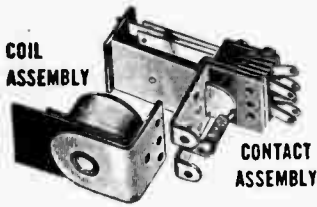
The indicator has a semi-dust-tight enclosure (NEMA Type 1A) and an industrial-type relay, 45 amp make-break and 10 amp carry, at 115 or 230 volts, a-c. Simple calibration adjustments are made with four locking-type knobs on the panel, while indicating lights and a smoke-density instrument are on the front cover of a panel.

For complete information, consult your nearest G-E Apparatus Sales Office or Distributor, or write direct to Section 640-476, General Electric Company, Schenectady 5, New York.



# GUARDIAN Industrial Controls

— Available Now from your Distributor —



COIL ASSEMBLY

CONTACT ASSEMBLY

## SERIES 200 INTERCHANGEABLE

Coil and contact assemblies for building your own relays. Many possible combinations are available, covering most electrical and electronic applications. Select the two basic parts, a coil assembly and a contact switch assembly, from the listing below. The coil assembly consists of the coil and the field piece; the contact assembly consists of



MIDGET CONTACT ASSEMBLY. Dotted lines show size of STANDARD unit.

switch blades, armature, return spring and mounting bracket. Use contact switch parts to add poles. All contacts rated at 60 cycles A.C., non-inductive. Shipping weight, 4 oz., each unit. Standard contact assembly is 2<sup>7</sup>/<sub>8</sub>" long, 1<sup>3</sup>/<sub>4</sub>" high, 1" wide. Midget assembly is 1<sup>5</sup>/<sub>8</sub>" long.

### CONTACT SWITCH ASSEMBLIES

Type	Net Price ea.
Type 200-1—Standard, SPDT, 8 Amps.	\$1.33
Type 200-2—Standard, DPDT, 8 Amps.	1.81
Type 200-4—Standard, DPDT, 12.5 Amps.	2.10
Type 200-5—Standard, 4PDT, 8 Amps.	3.28
Type 200-M1—Midget, SPDT, 8 Amps.	1.24
Type 200-M2—Midget, DPDT, 8 Amps.	1.63
Type 200-M3—Midget, 4PDT, 8 Amps.	2.70

### A.C. COILS

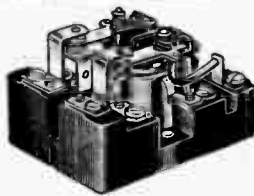
	Net Price ea.
6 Volts	\$1.63
12 Volts	1.63
24 Volts	1.63
115 Volts	2.04
230 Volts	2.69

### D.C. COILS

	Net Price ea.
6 Volts	\$1.63
12 Volts	1.63
24 Volts	1.63
32 Volts	1.63
110 Volts	2.04
5000 for current type operation	2.10

Type 200-3. Contact switch parts for adding poles to types 200-1 and 200-2. Net ea. \$1.34  
 Type 200-M3. Midget contact switch parts for adding poles to types 200-M1 and 200-M2. Net ea. \$1.34

### POWER RELAY



New 25 Ampere A.C. Relay has DPDT contacts and a variety of completely interchangeable coil assemblies. By removing two easily accessible screws, coil can be replaced by another, from 6 V. to 230 V., A.C. Unit has screw terminals;

contacts rated 25 amps., cont. duty at 230 V., A.C. with 75% power factor. Operating power requirement, 9.5 VA. Coil drain, approx. .080 amps. Applications: motor starting, heater loads, heavy duty controls. Size, 3<sup>1</sup>/<sub>2</sub>" x 2<sup>1</sup>/<sub>2</sub>" x 2<sup>3</sup>/<sub>16</sub>". Shpg. wt., 11.5 oz.

2200-U—6 V., 24 V., 115 V.	Net ea. \$6.00
2200-U—230 V.	Net ea. 6.25
Replacement Coils	
6V., 24 V., 115 V.	Net ea. 2.05
230 V.	Net ea. 2.20

### KEYING RELAY

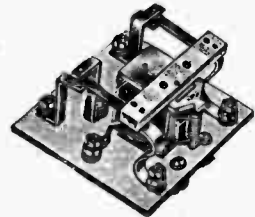


Low voltage relay controlling high voltage transmission. Unit will follow key or bug at highest WPM rate obtainable. High speed of response, plus strong magnet and return spring, gives clean "make" and "break," producing best CW note. Applications—Control of transmitters using filament center tap keying of any stage having up to 2000 volts on plate, primary keying or control of power supplies up to and including 1000 watts and grid controlled rectifier keying of 3000 volts power supplies. Contact points can handle 2500 watts or 20 amperes at 115 volts or 230 volts, 60 cycles, non-inductive AC Size, 3" l. x 1-15/16" h. x 1<sup>1</sup>/<sub>2</sub>" w. Shpg. wt., 4 oz.

K-320 6 volts, 60 cycles A.C. Net ea. \$3.74

### ANTENNA RELAY

The A-300 Relay is designed for low loss antenna change-over operation. The straight line positioning of screw terminals and contact springs maintains equal spacing through the relay from transmission line to transmitter. This reduces impedance mismatch to a minimum. Silver contacts, low loss Mycalex insulation; Mycalex base, contact bar. Will withstand 3000 volts to ground. Coil operates on 110 volt, 60 cycles A.C. Consumes 7 V.A. Applications: Radio—used in circuits of any transmitter having up to 1 KW input power; Industrial—widely used for high frequency heat treating and short wave therapy control. Size, 3" l. x 2-1/16" h. x 3" w. Shpg. wt., 7 oz. A-300 Net ea. \$7.57



### TIME DELAY



Thermostatically controlled unit. Time delay adjustable between 10 and 60 seconds on operating cycle. Contact capacity, 1250 on 115 volts, 60 cycles, non-inductive A.C. Can also be used in A.C. primary, inductive power up to 1 KW. Single pole, single throw. Power requirements, approximately 12.5 VA. during thermostat operation, 6 VA. after closing. Applications: Radio—in transmitter circuits to prevent damage of rectifiers and tube filaments by application of plate current before filaments are sufficiently heated; Industrial—any control problem requiring the changing of circuits after a predetermined interval. Unit enclosed in metal box, size 5<sup>1</sup>/<sub>4</sub>" l. x 2<sup>1</sup>/<sub>2</sub>" h. x 3" w. Shpg. wt., 8 oz.

T-210 Net ea. \$10.73

### Engineer's CONTACT SWITCH KIT

Indispensable to those who design, build, repair or test electrical controls. Contains large assortment of switch blades, contacts, separators, adapters, fish papers, bushings, etc. All standard high-quality Guardian parts.

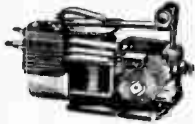
Engineer's Switch Kit Net ea. \$9.95



# GUARDIAN Highest Quality RELAYS • SOLENOIDS • STEPPERS



## RATCHET RELAYS



Remote control locking relays, momentary impulse type. Coil circuit requires energization only long enough to close armature; contacts lock automatically. Each impulse reverses position of contacts. Heavy  $\frac{1}{4}$ " silver contacts

carry 1500 watts, non-inductive; 1000 watts, inductive. High test bakelite insulation. All ratings at 60 cycles A.C., non-inductive. Applications: Break-in control; phone to CW switching. Any circuit control where locking and on-off circuits are required. Size (SPST)  $3\frac{1}{4}$ " l. x  $1\frac{1}{8}$ " h. x  $2\text{-}3/16$ " w. Shpg. wt., 8 oz.

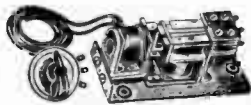
RC-100-AR	4PST	115 volt	Net ea. \$5.96
RC-100-BR	SPDT & DPST	115 volt	Net ea. 6.21
RC-100-GR	DPDT	115 volt	Net ea. 5.83

## MIDGET STEPPER

Mechanical lock of this Electrical Reset Stepper keeps the reset magnet open allowing the ratchet to reset freely on a slight electrical pulse of 10 ms. The stepping magnet releases the lock mechanism on the first step and the unit is ready for re-cycle. Disc has 24 points, 21 active. Rated up to 10 steps per second. Contacts "make" and "break" at 1 amp., 115 volts, 60 cycles A.C., non-inductive. Size,  $3\frac{1}{4}$ " l. x  $2\text{-}3/16$ " h. x  $3\frac{1}{4}$ " w. Shpg. wt., 13 oz.

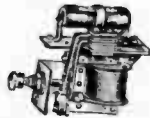


MS-115	Net ea. \$12.18
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X-300-ER

## OVERLOAD RELAYS



X-100

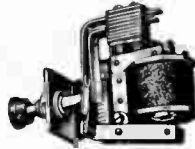
X-300-ER gives positive protection against current surges or continuous overloads when coil is used in series with high voltage plate supply leads. Relay contacts open to break primary circuit of high voltage power supply and remain open until reset. This model operates on any current value from 250 to 750 ma. Auxiliary contacts for pilot light indicate "overload" or "clear" position. Reset relay can be operated from any position. Applications—excellent for industrial panel installation for remote protection of machines and replacing fuses. Size,  $4\frac{3}{4}$ " l. x 1" h. x  $1\text{-}15/16$ " w. Shpg. wt., 12 oz.

X-300-ER	Net ea. \$7.69
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X-100 relay replaces expensive, time-wasting fuses, provides flexible control of current flow. Large, fine silver contacts rated for 1500 watts on 115 volts, 60 cycles, non-inductive A.C. and in A.C. primary circuits of any inductive power supply up to 1 KW. Coil is adjustable to operate on any current flow from 250 to 650 mils. Applications: Overload protection in circuits with varying current demand, such as oscillators, amplifiers, induction welders and electronic computers. Size, 4" l. x  $3\frac{1}{2}$ " h. x  $2\frac{1}{2}$ " w. Shpg. wt., 12 oz.

X-100	Net ea. \$11.85
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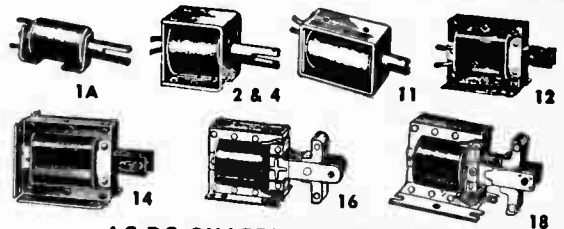
## OVERLOAD RELAYS



These rugged units provide accurate, fixed circuit protection. Oversized silver contacts can take severe overloads without damage. Rated for 1500 watts on 115 volts, 60 cycles, A.C., non-inductive or 1 KW in A.C. primary circuits.

L-250 is set to act at 250 ma. overload current; L-500 at 500 ma. overload. Applications: Radio—fixed overload protection against surges and overloads (where current values are constant, this removes possibility of accidental misadjustment); Industrial—wherever completely mechanical reset that has to be reset at point of operation is desired. Size,  $3\frac{3}{4}$ " l. x  $1\frac{1}{4}$ " h. x  $2\frac{1}{2}$ " w. Shpg. wt., 11 oz.

L-250	Net ea. \$8.92
L-500	Net ea. 8.92



## AC-DC GUARDIAN SOLENOIDS

Available in both intermittent and continuous duty types. Intermittent types should not be energized for more than 5 consecutive minutes, or be permitted to rise more than 85° C. above 24° C. ambient rating without giving sufficient time to cool between operation cycles. Continuous duty types are designed so they will not rise more than 85° C. above the 24° C. ambient temperature rating when operated at rated load. Plunger has slotted end with  $\frac{1}{8}$ " diameter hole for coupling. In chart, (I) indicates intermittent duty type, (C) indicates continuous duty type.

Type	Volts	Duty	Ohms	Amps.	Adj. Stroke (Inches)	Max. Lift (Ozs.) $\frac{1}{8}$ " Stroke	NET
Type 1A. Size: $1\frac{1}{8}$ x $1\frac{1}{8}$ x $1\frac{3}{4}$ "							
1A	117 AC	I	300	.17	$\frac{1}{8}$ — $\frac{1}{2}$	8	\$2.48
1A	117 AC	C	675	.076	$\frac{1}{8}$ — $\frac{1}{2}$	3	2.48
Type 2. Size: $1\frac{1}{8}$ x $1\frac{5}{8}$ x $1\frac{1}{8}$ "							
2	117 AC	I	60	.50	$\frac{1}{8}$ — $\frac{7}{8}$	27	2.90
2	117 AC	C	166	.155	$\frac{1}{8}$ — $\frac{7}{8}$	10.5	2.90
Type 4. Size: $1\frac{1}{8}$ x $1\frac{5}{8}$ x 2"							
4	117 AC	I	37	.64	$\frac{1}{8}$ — $1\frac{1}{8}$	24	3.13
4	117 AC	C	133	.14	$\frac{1}{8}$ — $1\frac{1}{8}$	6	3.13
Type 11. Size: $1\frac{5}{8}$ x $1\frac{1}{8}$ x $1\frac{1}{8}$ "							
11	6 DC	C	3.54		$\frac{1}{8}$ —1	21	3.08
11	24 DC	C	32		$\frac{1}{8}$ —1	21	3.08
Type 12. Size: $1\frac{1}{8}$ x $1\frac{1}{8}$ x $1\frac{5}{8}$ "							
12	117 AC	I	100	.27	$\frac{1}{8}$ —1	32	3.88
12	117 AC	C	150	.155	$\frac{1}{8}$ —1	22	3.88
Type 14. Size: $1\frac{7}{8}$ x $2\frac{1}{8}$ x $2\frac{1}{8}$ "							
14	117 AC	I	11	1.4	$\frac{1}{8}$ — $1\frac{1}{2}$	110	5.61
14	117 AC	C	18	.52	$\frac{1}{8}$ — $1\frac{1}{2}$	65	5.61
Type 16. Size: $1\frac{1}{8}$ x $1\frac{5}{8}$ x $2\frac{1}{8}$ "							
16	117 AC	I	41	.540	$\frac{1}{8}$ — $\frac{9}{8}$	80	3.48
16	117 AC	C	85.2	.21	$\frac{1}{8}$ — $\frac{9}{8}$	60	3.48
Type 18. Size: $1\frac{3}{4}$ x $2\frac{1}{2}$ x $2\frac{1}{8}$ "							
18	117 AC	I	8.8	1.45	$\frac{1}{8}$ —1	183	4.88
18	117 AC	C	19.7	.39	$\frac{1}{8}$ —1	145	4.88

# GUARDIAN ELECTRIC MANUFACTURING COMPANY

# SIGMA SENSITIVE RELAYS

## PLATE CIRCUIT RELAY . . . SERIES 4

Single-pole, double-throw, general purpose relay with 20 and 50 mw. sensitivity. Balanced armature. Operates in any position. Spring tension and air gaps screwdriver adjustable; open style only. Silver (SIL) contacts rated 2 amp. 28 VDC. 120 VAC for 100,000 operations. 4F-8,000-S SIL widely used for radio controlled models. Available in other mountings and enclosures.

TYPICAL ADJUSTMENTS	Coil Ohms	Operate Ma. DC	Net Each
4F-1,000-S SIL	1,000	4.5	\$5.50
4F-2,500-S SIL	2,500	3.0	5.50
4F-5,000-S SIL	5,000	2.0	5.75
4F-8,000-S SIL	8,000	1.6	6.00



SIGMA 4F RELAY  
1-1/2" x 1-5/8" x 1-5/32" h.  
Wt. 2-1/4 oz.



## RADIO CONTROL MODEL RELAY . . . SERIES 26

Single-pole, double-throw, balanced armature relay with adjustments from 4 mw. to 20 mw. sensitivity. Silver (SIL), gold alloy (GSP), and palladium (PAL) contacts for CDS adjustment rated 0.5 amp. at 28 VDC. 120 VAC. 26F-8,000-CDS SIL exceptionally rugged and especially designed for R/C models. Unenclosed only. Uses less plate current thus prolonging tube life.

"S", "G" and "W" adjustments available unenclosed or hermetically sealed.

TYPICAL ADJUSTMENTS	Relay	Operate Ma. DC	Net Each
	26F-1,000-S SIL	2.3	\$6.80
	26F-8,000-CDS SIL	0.7	8.30
	26F-12,000-G SIL	0.9	9.80



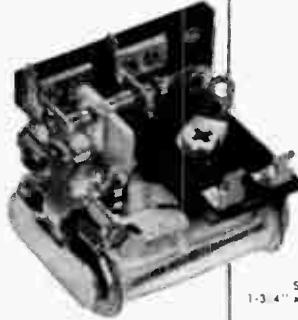
SIGMA 26F RELAY  
1" x 1-7/8" x 1-1/16" h.  
Wt. 2 oz.

## EXTRA SENSITIVE PRECISION RELAY . . . SERIES 5

Extremely precise, rugged AC\* and DC general purpose sensitive relay. Balanced armature, single-pole, double-throw. Suitable for wide range of adjustments from 1.0 mw. to 2.0 watts. Contact rating varies up to 3 amp. at 28 VDC/120 VAC for 100,000 operations, depending on contact material and adjustment.

\*AC operation accomplished by means of built-in rectifiers. Available in other mountings and enclosures.

TYPICAL ADJUSTMENTS	Coil Ohms	Operate Ma. DC	Net Each
5F-1,000-S SIL	1,000	2.3	\$7.50
5F-2,500-S SIL	2,500	1.4	7.50
5F-5,000-S SIL	5,000	1.0	8.00
5F-10,000-S SIL	10,000	0.7	8.75



SIGMA 5F RELAY  
1-3/4" x 1-5/16" x 1-11/16" h.  
Wt. 4-1/4 oz.

## SMALL LOW-COST RELAY . . . SERIES 11

Small, single-pole double-throw DC with random drop-out. Operate sensitivity either 50 mw. in "G" adjustment or 200 mw. in "W" adjustment. Contacts rated 1 amp. ("G"), 5 amp. ("W") at 28 VDC/120 VAC. Available unenclosed in four mounting styles:

- 11F — 2 tapped holes, uninsulated
- 11F2 — Insulated base
- 11F3 — Insulated base interchangeable with relays of other manufacture
- 11FP — Solder lug mounting for use in printed circuits.

TYPICAL ADJUSTMENTS	Coil Ohms	Operate Ma. DC	Net Each
11F-1,000-G SIL	1,000	7.0	\$1.50
11F-2,300-G SIL	2,300	4.6	1.50
11F-6,000-G SIL	6,000	2.9	1.70
11F-9,000-G SIL	9,000	2.4	1.85



SIGMA 11F RELAY  
1-5/32" x 1-5/16" x 1" h.  
Wt. 1 oz.

Limited quantities available through stocking distributors in major cities. All prices subject to change without notice.

# SIGMA

SIGMA INSTRUMENTS, INC.,

# SIGMA SENSITIVE RELAYS

## HIGH SPEED POLAR SWITCHING RELAY... SERIES 72

For high speed switching and pulse repeating applications. Capable of switching 600 pulses per second with virtual elimination of contact bounce. High immunity to extremes of temperature, vibration and shock. Form "Z" side-stable. Maintenance and adjustment manual available for easy field repair and adjustment. Removable nylon cover.



SIGMA 72AOZ RELAY  
1-7/16" dia. x 2-5/8" H.  
Wt. 3-5/8 oz. max.

### TYPICAL ADJUSTMENTS

Relay	Trip Ma. DC	Recommended Operate Current Ma. DC	Recommended Source Voltage	Net Each
72AOZ-160-TS TCP	0.6-1.4	15	50 VDC	\$30.00
72AOZ-160-TG TCP	2.4-3.6	0.6	50 VDC	30.00

## MISSILE TYPE RELAY... SERIES 22

Miniature DC relay widely used in special commercial and military applications. "G" adjustment operates at sensitivities of 20 mw. SPDT and 40 mw. DPDT. Contact rating at 28 VDC/120 VAC silver (SIL) 2 amp; palladium (PAL) and gold (GSP) 0.5 amp. New "HG" adjustment operates at 20 and 40 mw. "W" adjustment operates at 40 and 80 mw. Silver (SIL) contacts rated 1.0 amp at 28 VDC/120 VAC. Both adjustments vibration resistant: "HG" 15 g to 500 cps, "W" 10 g to 2,000 cps.



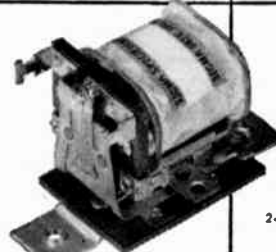
SIGMA 22RJC RELAY  
1" square x 1-3/4" H.  
Wt. 3 oz.

### TYPICAL ADJUSTMENTS

SPDT	Coil Ohms	Operate Ma. DC	Net Each	DPDT	Coil Ohms	Operate Ma. DC	Net Each
22RJC-1,000-G SIL	1,000	4.5	\$16.00	22RJC-1,000-G SIL	1,000	6.3	17.50
22RJC-2,500-G SIL	2,500	2.8	16.50	22RJC-2,500-G SIL	2,500	4.0	18.00
22RJC-5,000-G SIL	5,000	2.0	17.00	22RJC-5,000-G SIL	5,000	2.8	18.50
22RJC-8,000-G SIL	8,000	1.6	17.50	22RJC-8,000-G SIL	8,000	2.3	19.00

## SINGLE-POLE AC AND DC RELAY... SERIES 41

General purpose, highly sensitive, rugged design. Quiet enough for electric blanket controls. Contact rating from 0.5 amp. to 5.0 amp. at 28 VDC/120 VAC. AC operation by shaded pole with sensitivity down to 0.06 volt-ampere. "K" adjustment adapted for high speed keying, largely free of contact bounce when operated SPST, normally open. Tungsten (TUN) contacts only, rated at 1.0 amp. 28 VDC/120 VAC. Other mountings and enclosures available.



SIGMA 41F RELAY  
2-1/4" x 1-1/4" x 1-5/16" H.  
Wt. 2-1/2 oz.

### TYPICAL ADJUSTMENTS

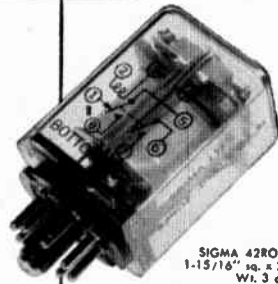
AC TYPES	Coil Voltage	Operate v.-a.	Contact Rating amp.	Net Each	DC TYPES	Coil Ohms	Operate Ma. DC	Net Each
41FZ-10-ACG SIL	6	0.4	5	\$3.50	41F-5-S SIL	5	90	\$3.50
41FZ-35-ACS SIL	6	0.2	2	3.50	41F-50-S SIL	50	30	3.50
41FZ-200-ACG SIL	24	0.4	5	3.50	41F-200-S SIL	200	15	3.50
41FZ-500-ACS SIL	24	0.4	5	3.65	41F-1,000-S SIL	1,000	6.5	3.50
41FZ-5,000-ACG SIL	115	0.4	2	3.85	41F-5,000-S SIL	5,000	3.0	3.65
41FZ-10,000-ACS SIL	115	0.2	2	3.85	41F-10,000-S SIL	10,000	2.0	3.85
41FZ-12,000-ACG SIL	230	0.4	5	4.15				

## DOUBLE-POLE AC AND DC RELAY... SERIES 42

General purpose, double-pole version of Series 41. Shown with plastic dust cover. Operates under 0.2 watt DC and under 0.5 volt-ampere AC.

### TYPICAL ADJUSTMENTS

AC TYPES	Coil Volts	Operate Voltage	Contact Rating amp.	Net Each	DC TYPES	Coil Ohms	Operate Ma. DC	Net Each
42ROZ-8-ACG SIL	6	4.0	5	\$7.75	42RO-5-G SIL	5	200	\$7.75
42ROZ-25-ACS SIL	6	5.0	2	7.75	42RO-50-G SIL	50	65	7.75
42ROZ-200-ACG SIL	24	19.0	5	7.75	42RO-200-G SIL	200	32	7.75
42ROZ-340-ACS SIL	24	19.0	2	7.75	42RO-1,000-G SIL	1,000	14	7.75
42ROZ-4,000-ACG SIL	120	90.0	5	7.75	42RO-5,000-G SIL	5,000	6.5	8.00
42ROZ-7,000-ACS SIL	120	90.0	2	8.00	42RO-10,000-G SIL	10,000	4.5	8.25



SIGMA 42RO RELAY  
1-15/16" sq. x 2-1/16" H.  
Wt. 3 oz.

Limited quantities available through stocking distributors in major cities. All prices subject to change without notice.

# SIGMA

SIGMA INSTRUMENTS, INC.,

# SIGMA SENSITIVE RELAYS

## POLARIZED MULTIPOLE RELAY . . . SERIES 6

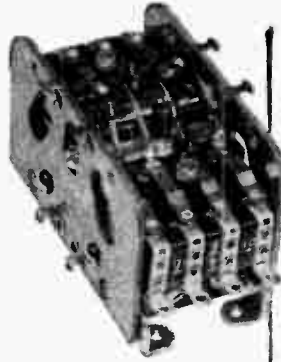
Up to four pole, double-throw in either single or dual coil arrangement. High vibration immunity. Sensitive enough for low power electronic circuits. Fast enough for follow-up systems. Contacts rated 2 and 5 amp. at 28 VDC/120 VAC.

- "X" — 3-position null center (up to 4 Form K)
- "Y" — Spring biased (up to 4 Form C)
- "Z" — Magnetic latching (up to 4 Form C)

Available hermetically sealed or unenclosed.

### TYPICAL ADJUSTMENTS

Relay	Coil Ohms	Operate Mo. DC	Net Each
Single coil			
6FX2A2A-5,000-G SIL	5,000	1.9	\$26.00
6FX2A2A-10,000-G SIL	10,000	1.5	26.50
Dual Coil			
6FX2A2A-2,500-GD SIL	2500/2500	4.2	26.75
6FX2A2A-5,000-GD SIL	5000/5000	3.0	27.50



SIGMA 6FX4C RELAY  
1-7/8" x 3-7/16" x 1-7/8" h.  
Wt. 10 oz.

## DOUBLE-POLE 3-POSITION POLAR . . . SERIES 23

For single or double pole 3-position switching with single or dual coils. Unusual magnetic circuit restores armature to mid-position between fixed contacts improving mechanical and thermal stability. Sensitivity varies from 6 mw. to 24 mw. Silver (SIL) contacts rated 28 VDC/120 VAC for 100,000 operations. Hermetically sealed only.

### TYPICAL ADJUSTMENTS

Relay	Coil	Operate Mo. DC	Price
Single Coil			
23J0XC-4,000-G SIL	4,000	1.55	\$30.50
23J0XC-6,000-G SIL	6,000	1.4	31.00
Dual Coils			
23J0XC-2,500-GD SIL	2500/2500	2.2	31.50
23JMCC-4,200-GD SIL	4200/4200	2.3	34.00



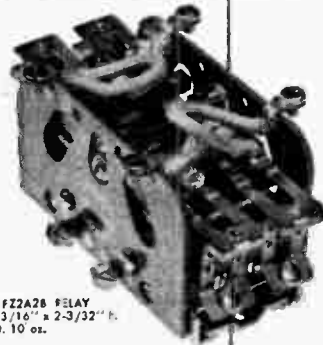
SIGMA 23J0X RELAY  
1-19/32" x 3-7/8" h.  
Wt. 8-5/8 oz.

## LATCHING POWER RELAY . . . SERIES 61

Heavy duty Form "Z" 2-position, single or dual coil modification of Series 6. For switching heavy loads with small coil power. Load switched by momentary signal of appropriate polarity. Remains magnetically latched until signal of opposite polarity received. 2A2B only. Silver cadmium (SC) contacts only, rated 20 amp. at 28 VDC/120 VAC.

### TYPICAL ADJUSTMENTS

Relay	Operate Each Polarity	Net Each
Single Coil		
61FZ2A2B-10,000-G SC	48 VDC	\$19.00
Dual Coil		
61FZ2A2B-10,000-GD SC	45 VDC	21.00



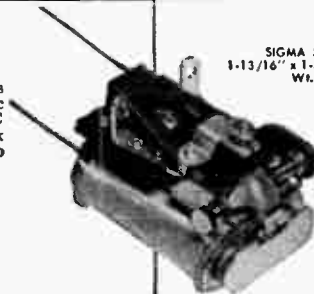
SIGMA 61FZ2A2B RELAY  
3-1/2" x 2-3/16" x 2-3/32" h.  
Wt. 10 oz.

## SENSITIVE POWER RELAY . . . SERIES 51

Single-pole, double-break, normally closed DC, for control of loads from 10 amp. to 1 kw. Used in commercial photoelectric streetlighting control. Rated for 1,000 watt incandescent 120 VAC loads with inrush currents in the order of 100 amp. Double-break contact construction eliminates faulty circuit operation due to sticking contacts. Unenclosed style (FB) only.

### TYPICAL ADJUSTMENT

Relay	Operate Mo. DC	Net Each
51FB-5,000-G SIL	4.5	\$8.50



SIGMA 51FB RELAY  
1-13/16" x 1-3/8" x 1-5/16" h.  
Wt. 3-1/4 oz.

Limited quantities available through stocking distributors in major cities. All prices subject to change without notice.

# SIGMA

SIGMA INSTRUMENTS, INC.,

# SIGMA SENSITIVE RELAYS

## CdS PHOTORELAY . . . MODEL #1

A miniature tubeless photorelay with a cadmium sulfide photocell. For furnace flame-out controls, pinball machines, elevators, conveyors, etc. 5-pin plug-in base, dust-proof can, operates at 5 foot-candles or less, releases at 0.1 foot-candle or more. 2 operations per second guaranteed minimum. 120 VAC 50/60 cps at temperature range of  $-40^{\circ}$  to  $75^{\circ}\text{C}$ .

SIGMA CdS PHOTORELAY, MODEL #1  
1-1/2" square x 1-7/8" h.  
Wt. 3 oz. . . . Price \$12.00



## SIGMA RELAY MANUAL

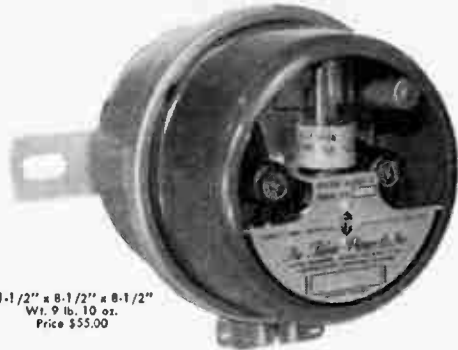
Detailed information on Sigma relay series, types and standard adjustments. Includes general descriptions, performance characteristics, electrical characteristics of various adjustments, physical and mechanical specifications, and wiring diagrams. About 300 pages in loose leaf binder. Additional pages issued periodically. Price of Manual and one year subscription to supplementary pages: \$5.00. After first year, Supplement Service \$1.00 per year. All relays listed in the Manual are available through stocking distributors.



## PHOTOELECTRIC LIGHTING CONTROLS

by FISHER-PIERCE

AFFILIATE OF SIGMA INSTRUMENTS, INC.



11-1/2" x 8-1/2" x 8-1/2"  
Wt. 9 lb. 10 oz.  
Price \$55.00

### EXTERIOR LIGHTING CONTROL . . . MODEL 63305-C

Rugged, stable and reliable photoelectric unit for controlling aircraft obstruction lighting on towers, smoke stacks, bridges, buildings, etc., and other types of outdoor lighting. Automatically switches lights on as daylight drops to CAA-recommended turn-on point (35 foot-candles), off when daylight returns. No seasonal adjustment needed; unaffected by time of day or weather. Load rating 3000 watts. Contactor SPST, double break. Adjustable turn-on range 25-45 foot-candles; standard factory setting, 35 f-c. Supply voltage 105-130, 50/60 cycles; power consumption 10-11 watts daytime, 6-7 watts nighttime. Features pre-aged tubes for 20,000 hours min. life; highest quality components; fail-safe operation; time delay to prevent accidental turn-off by transient lights; weatherproof housing; standard meter socket with mounting bracket; glass-enclosed plug-in chassis.



3-1/2" x 4-1/2" x 3-1/2"  
Wt. 20 oz. . . . Price \$15.95

### INTERIOR LIGHTING CONTROL . . . MODEL 6502

Dependable, low cost, tubeless device for automatic turn-on of lights as darkness approaches, turn-off when daylight returns. No setting or resetting needed. Light to be controlled is simply plugged into 6502 plug, which is then connected to any 110V, 60 cycle AC outlet. "Eye" of control is faced toward daylight. Maximum lamp load 300 watts; handles heavier loads by energizing auxiliary relays. Compact, sturdy bakelite case. Max. power consumption 2 watts. Ideal for controlling lights in store windows, outdoor telephones, greenhouses, poultry houses, porches, etc., and in many other commercial and industrial applications.

All prices subject to change without notice.

# SIGMA INSTRUMENTS, INC.

# PIC ELECTRIC COUNTERS and ACTUATORS

**PIC** *Production Instruments* DIVISION OF  
**GENERAL CONTROLS CO. CHICAGO 6, ILLINOIS**



## PIC ELECTRIC COUNTERS



**PIC-600 Panelmount**

PIC Electric Counters are actuated by electric impulses which may come from any suitable switch, relay photoelectric unit or other circuit breaking device. Counters rated for 1000 counts per minute (cpm) require .024 second minimum closed period and .036 second minimum open period for each count. Counters rated at 600 cpm require .040 second minimum closed period and .060 second minimum open period for each count. Additional models are available for other voltages from 12 to 230 v-ac, and for 115 or 230 volts d-c. Ask for PIC catalog E-100-A for complete information, or write to us for price and delivery.



**PIC-600 Basemount**



**Super-Wizard Dustproof**



**Super Wizard Basemount**

### PIC-600 COUNTERS TO 999,999, WITH RESET

Compact and rugged construction for reliable, continuous operation in any position. Balanced armature permits airborne use. Conservative life rating 50 million counts. Counting rate 1000 cpm. (1600 cpm with electronic actuation.) Continuous duty coils consume 7 watts. Has white figures on black wheels. One-piece, die-cast dust resistant enclosure. Overall size: 6115A 3 1/2" x 1.668" x 2 1/2" high; P6115A has 4 1/8" x 1 3/8" panel, is 2 1/8" deep. For operation on 115 v-ac 60 cycles.

**6115A** For Base Mounting  
**P6115A** For Panel Mounting

Net **\$18.50**  
 Net **\$19.00**

### SUPER-WIZARD COUNTERS TO 999,999, WITH RESET

For industrial use where reliability, low up-keep and long life are requisites. Balanced armature permits operation in any position. Estimated life rating 200 million counts. Counting rate 1000 cpm. (1600 cpm. with electronic actuation.) Has white figures on black wheels. Continuous duty coils consume 5 watts. Dust-proof model has gasket-sealed aluminum case 5 3/4" x 3 5/8" x 4 1/8" high. Base mount model is 4 3/4" x 3 3/8" x 5 1/8" deep. For operation on 115 volts a-c 60 cycles.

**ECS-9** For Base Mount  
**DP1A-ESC9** Dust-Proof

Net **\$38.50**  
 Net **\$47.25**

### MERCURY COUNTERS TO 9,999, WITH RESET

Small units for built-in applications, laboratory use and industrial service where the counting duty is moderate. Estimated life 6 million counts. Counting rate 600 cpm, higher with electronic actuation. Has white figures on black wheels. Coils consume 3 watts. Tamper-proof metal enclosure with plastic window. Basemount model is 2 1/4" x 1 3/8" x 2 1/4" high. Panel mount model is 2 3/4" deep, has panel 2 1/8" x 1 1/8" high. For operation on 115 v-ac 60 cycles.

**MDA-S4-115A** Base Mount  
**MDB-S4-115A** Panel Mount

Net **\$11.50**  
 Net **\$13.50**



### MERCURY COUNTERS TO 99,999, NO RESET

Counts to 99,999 and then repeats. Widely used in coin-operated vending machines, amusement machines, and similar applications where the counting duty is moderate and reset is not required. Estimated life 3 million counts. Counting rate 600 cpm. Operates in any position. Coil consumes 3 watts. Has white figures on black wheels. Tamper-proof metal enclosure with plastic window. Base mount model is 2 1/4" x 1 3/8" x 2 1/4" high. Panel mount model is 1 3/8" x 2 3/4" x 1 3/8" high, requires 1 1/8" x 1 3/8" opening in panel. For 115 v-ac 60 cycle operation.

**MEA-N5-115A** Base Mount  
**MEB-N5-115A** Panel Mount



Net **\$5.00**  
 Net **\$5.40**

## PIC ACTUATORS

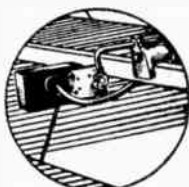
These are a few of the more commonly used actuators for PIC Electric Counters. They may be easily adapted for use in the automatic processes employed in photographic printing, counting, packaging, bottling, sorting, etc. A typical example is illustrated with each actuator. Accessories provided are only those specified.



### ROTARY & RECIPROCAL ES-1A

At upper left. For heavy duty use on punch presses, printing presses, measuring machines, etc. Withstands continuous operation at relatively high speeds. Life expectancy 100 million counts. Minimum operating torque 2 inch-oz. Rated speed 600 rpm. Arm motion rotary or reciprocal, clockwise or counter-clockwise. In rotary operation SPST switch is closed 140° and open 220°. Reciprocal motion 20° minimum, 340° maximum, overthrow 10° to 60°. Arm position adjustable. Contact rating 10 amps. 115 v-ac. Overall size 6" x 1 1/4" x 1 3/8" deep. Furnished with arm, less bracket and link coupling shown at the left.

**Actuator ES-1A** Net **\$10.50**



### SENSITIVE ES-41

Widely used on folding machines. Requires only 3/4 in.-oz. torque. Arm motion; reciprocal 24° min., 59° max., overthrow 10° to 45°. Arm position adjustable, easily shortened or bent. Rated speed 300 cpm. SPST contacts rated 2 amps 115 v-ac. Body size 2 1/2" x 1 1/4" x 1 3/8" deep. Furnished with straight spring steel arm, 2 1/8" long.

**ES-41 Actuator** Net **\$7.00**

### HEAVY DUTY ES-5

Arm has spring return. For operation by boxes, cans, packages, etc. Minimum torque 3 oz-in. Arm motion; reciprocal, 31° min., 65° max., overthrow 10° to 42°. Arm position adjustable. Rated speed 300 cpm. SPST contacts rated 10 amps 115 v-ac. Body size 3 3/8" x 2 3/8" x 1 1/8" deep. Furnished with lever as shown at the upper right.

**ES-5 Actuator** Net **\$8.50**

SEND FOR CATALOG





# LINE ELECTRIC COMPANY

Newark 3, New Jersey

## RELAYS — BUZZERS

### GENERAL PURPOSE RELAYS

Dependability was built into these relays through skillful design, careful workmanship, the use of quality materials and thorough testing of the completed unit. These rugged relays can be applied to innumerable industrial control problems. They are used in lighting systems, signal devices, motor starting, heater loads, photographic applications, or any load circuit requiring fast positive switching of A.C. or D.C. power.



**SERIES LG** RATING — 15 Amperes  
 DIMENSIONS:  $3\frac{3}{8} \times 1\frac{1}{2} \times 1\frac{1}{8}$  high.  
 MOUNTING: Two holes tapped 6-32 on 2" centers.  
 WEIGHT: 10 oz.

Contacts	A.C. RELAYS 6-12-24-115-230 V. 60 C.		D.C. RELAYS 6-12-24-115 V.	
	Type	Net	Type	Net
SPDT	LG1A	4.10	LG1D	4.00
DPDT	LG2A	4.75	LG2D	4.60
3PDT	LG3A	5.60	LG3D	5.45

Add 40c. to above prices for 220 V. A.C., 60c for 115 V. D.C.



**SERIES LR** RATING — 10 Amperes  
 15 Amperes double break  
 DIMENSIONS:  $2\frac{3}{8} \times 1\frac{1}{2} \times 1\frac{1}{8}$  high.  
 MOUNTING: Two holes tapped 6-32 on 2" centers.  
 WEIGHT: 10 oz.

Contacts	A.C. RELAYS 6-12-24-115-230 V. 60 C.		D.C. RELAYS 6-12-24-115 V.	
	Type	Net	Type	Net
SPST-NO-DB	LRAX	3.60	LRAY	3.60
SPST-NO	LRBX	3.50	LRBY	3.50
SPDT	LRCX	3.75	LRCY	3.75
DPST-NO	LRDX	3.80	LRDY	3.80
DPDT	LRFX	4.00	LRFY	4.00

Add 40c. to above prices for 220 V. A.C., 60c for 115 V. D.C.



**SERIES SM** RATING — 5 Amperes  
 DIMENSIONS:  $1\frac{1}{8} \times \frac{3}{8} \times 1\frac{1}{8}$  high.  
 MOUNTING: One hole tapped 6-32 w  $\frac{1}{8}$  dia. locating boss.  
 WEIGHT: 3 oz.

Contacts	A.C. RELAYS 6-12-24-115-230 V. 60 C.		D.C. RELAYS 6-12-24-115 V.	
	Type	Net	Type	Net
SPDT	SM1A	2.80	SM1D	2.70
DPDT	SM2A	3.30	SM2D	3.15
3PDT	SM3A	3.65	SM3D	3.50

Add 40c. to above prices for 220 V. A.C., 60c for 115 V. D.C.

### PLUG-IN RELAYS



**SERIES LGP** RATING — 15 Amperes  
 DIMENSIONS:  $1\frac{1}{8} \times 2 \times 3\frac{3}{8}$  high.  
 MOUNTING: Plug-in Standard Octal for LGP 1 and LGP 2, 11 Pin for LGP 3.  
 WEIGHT: 14 oz.

Contacts	A.C. RELAYS 6-12-24-115-230 V. 60 C.		D.C. RELAYS 6-12-24-115 V.	
	Type	Net	Type	Net
SPDT	LGP1A	6.60	LGP1D	6.50
DPDT	LGP2A	7.75	LGP2D	7.60
3PDT	LGP3A	9.10	LGP3D	8.95

**SERIES LRP** RATING — 10 Amperes  
 15 Amperes double break  
 DIMENSIONS:  $1\frac{1}{8} \times 2 \times 3\frac{3}{8}$  high.  
 MOUNTING: Plug-in Standard Octal for LRP 1 and LRP 2, 11 Pin for LRP 3.  
 WEIGHT: 10 oz.

Contacts	A.C. RELAYS 6-12-24-115-230 V. 60 C.		D.C. RELAYS 6-12-24-115 V.	
	Type	Net	Type	Net
SPST-NO-DB	LRP-AX	6.10	LRP-AY	6.10
SPST-NO	LRP-BX	6.00	LRP-BY	6.00
SPDT	LRP-CX	6.25	LRP-CY	6.25
DPST-NO	LRP-DX	6.80	LRP-DY	6.80
DPDT	LRP-EX	7.00	LRP-EY	7.00

Add 40c. to above prices for 220 V. A.C., 60c for 115 V. D.C.

### INDUSTRIAL TYPE BUZZERS

DIRECT TO LINE • TRANSFORMER UNNECESSARY  
 Available in the following AC Voltages: 6-12-24-115-230-460



#### TYPE MC — Encased Type Mini-Buzzer

DIMENSIONS:  $3\frac{3}{8} \times 2\frac{1}{2} \times 1\frac{1}{8}$  high.  
 MOUNTING: Two holes .156 dia. on  $3\frac{3}{8}$  centers.  
 WEIGHT: 12 oz.

- Ideally suited for paging systems, warning alarms, starting and dismissal signals.
- These A.C., non-contact type buzzers were designed to give a clear penetrating signal.
- Totally enclosed, ideal for external mounting.
- Finished in two-tone baked on grey enamel.
- Heavy gauge pressed steel base and cover.
- Snap on dust cover.
- Screw terminal connections for easier wiring. NET PRICE: \$2.00



#### TYPE MB — Bracket Mounted Buzzer

DIMENSIONS:  $2\frac{3}{8} \times \frac{7}{8} \times 1\frac{1}{8}$  high.  
 MOUNTING: Two holes .128 dia. on  $2\frac{3}{8}$  centers.  
 WEIGHT: 7 oz.

- Supplied with bracket for on chassis mounting. NET PRICE: \$2.00



#### TYPE MA — Assembly Type Buzzer

DIMENSIONS:  $2\frac{3}{8} \times 1\frac{1}{8} \times 1\frac{1}{8}$  high.  
 MOUNTING: One 8-32 tapped hole.  
 WEIGHT: 6 oz.

- This unit is identical to above buzzer with mounting bracket eliminated for requirements where space is at a premium. NET PRICE: \$1.80

Add 40c to above price for 230 and 460 V Coils.

### SERIES SMF

The SMF is physically the same as our SMP relay. A highly efficient low cost unit enclosed in a polystyrene case.

### PLUG-IN PLATE RELAY

CONTACT RATING — 5 Amperes  
 SENSITIVITY

S.P.D.T.	130 Milliwatts
D.P.D.T.	260 Milliwatts
3.P.D.T.	375 Milliwatts

Type	Contacts	Coil Resistance	Pull-In M.A.	Price
SMF-1	SPDT	2,500	7.2	\$5.15
SMF-1	SPDT	5,000	5.0	5.25
SMF-1	SPDT	10,000	3.5	5.75
SMF-2	DPDT	2,500	10.0	5.60
SMF-2	DPDT	5,000	7.2	5.70
SMF-2	DPDT	10,000	5.0	6.25
SMF-3	3PDT	2,500	12.0	7.00
SMF-3	3PDT	5,000	8.5	7.10
SMF-3	3PDT	10,000	6.0	7.65



### SERIES SMP

POLYSTYRENE CASE

RATING — 5 Amperes

DIMENSIONS:  $1\frac{1}{8} \times 1\frac{1}{8} \times 2\frac{3}{8}$  high.

MOUNTING: Plug-in Standard Octal for SMP 1 and SMP 2, 11 Pin for SMP 3.

Contacts	A.C. RELAYS 6-12-24-115-230 V. 60 C.		D.C. RELAYS 6-12-24-115 V.	
	Type	Net	Type	Net
SPDT	SMP1A	5.10	SPM1D	5.05
DPDT	SMP2A	5.65	SMP2D	5.60
3PDT	SMP3A	7.05	SMP3D	7.00

Add 40c to above prices for 220 V. A.C., 60c for 115 V. D.C.

RATINGS — Relay Contacts are rated at 115 Volts 60 Cycles Non-Inductive.

### ORDERING INFORMATION

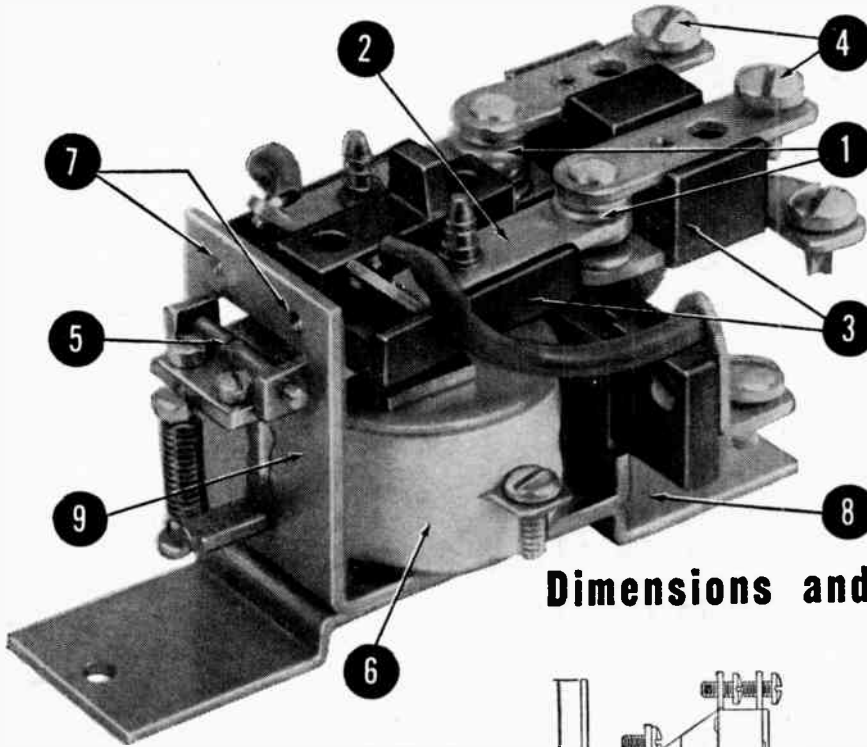
WHEN ORDERING RELAYS OR BUZZERS PLEASE SPECIFY TYPE AND COIL VOLTAGES.

SPECIFY LUGS OR LEAD FOR TYPE MA MB.

Prices and Specifications are subject to change without notice.



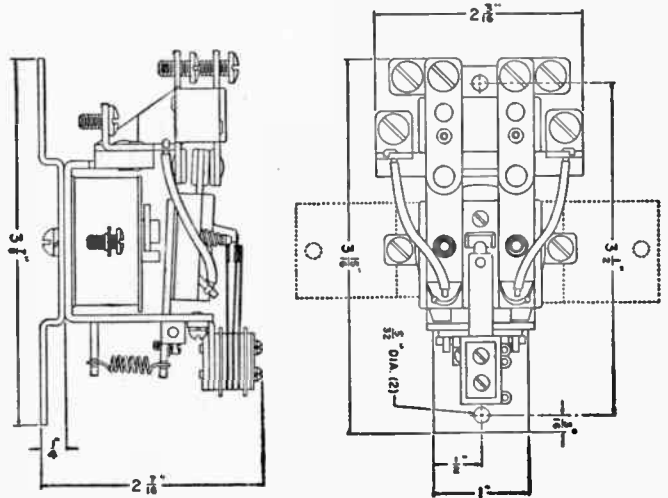
## GENERAL PURPOSE RELAY SERIES 130 RELAY



1. **CONTACTS:** Coin silver; generous safety factor; conservatively rated at 20 amps, 115 volt 60 cycle AC or 24 volt DC.
2. **CONTACT ARMS:** Rigid arms backed by compression springs provide self-cleaning contact wipe.
3. **CONTACT SUPPORTS:** Moulded bakelite supports provide high dielectric protection for both movable and stationary contacts.
4. **TERMINALS:** Large binding-head screws accommodate #12 wire or lugs.
5. **HINGE PIN:** Stainless steel ground to close tolerance assures contact alignment and long life.
6. **COILS:** Interchangeable; replaced by removing one screw in base; continuous duty.
7. **AUXILIARY CONTACT MOUNTING:** (see illustration below.)
8. **MOUNTING BASE:** Metal strap or bakelite; removable; can be rotated 90° either direction (see dimension drawing).
9. **FINISH:** Cadmium Cronok.

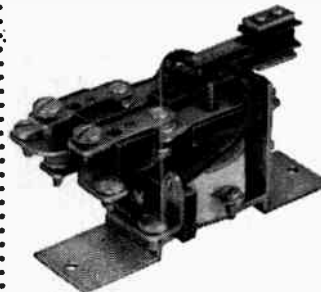
### Dimensions and Mounting Area

60 CYCLE AC RELAYS		
Type	Contacts	6, 12, 24, 48, 115, 230 V
130-2C	DPDT	Net Price \$6.53
DC RELAYS		
Type	Contacts	
140-2C	DPDT	6, 12, 24, 48 V Net Price \$6.53
140-2C	DPDT	115 V Net Price \$7.13
Auxiliary SPDT Contact 5 Amp at 110 V AC, Add Net \$1.50		
Heavy Gauge Metal Enclosure Available Net \$3.50		



### THE MOST USEFUL RELAY FOR INDUSTRIAL APPLICATION

These Relays are conservatively rated and are designed to provide reliable, trouble-free service over long periods of time, when used within the limits of their rated capacity. The space requirements have been reduced as much as practicable, consistent with good electrical practice, and meet the requirements of the Underwriters' Laboratories.



### AUXILIARY CONTACTS (SERIES 131)

Auxiliary contacts (SPDT) rated 5 amps at 110 volts can be furnished with relay or easily attached later if required (see No. 7 above).

Superior . . .

RIPLEY COMPANY, INC.

**RIPLEY**  
ESTABLISHED 1936

through Research

MIDDLETOWN, CONN.

## ELECTRONIC CONTROLS & DEVICES

**SUNSWITCH LIGHT CONTROLS** The SUNSWITCH uses an amplifier and phototube that responds to the foot candle value of daylight. When illumination falls below a pre-determined value, the lights are turned on. When the illumination has increased to the correct value, the lights are automatically turned off. Applications are numerous — Street Lights, Radio and TV Towers, Signs, Factories, Construction Work, Airports, Railroads, etc. Mounted in standard watt-hour meter case or in extruded aluminum housing.



8500 SERIES

Model No.	Voltage 50/60 Cy.	Setting F.C.	Turn-on Range in F.C.	Load Relay*	Rated Load (Watts)	List Price
8239-A	110-220	1	1-10	SP ST DB	3000 WTS.	\$60.00
8239-B	110-220	1	1-10	SP ST	500 WTS.	52.50
8500-M	110	1	1-10	SP ST DB	3000 WTS.	44.00
8500-M1	220	1	1-10	SP ST DB	3000 WTS.	44.00
8500-M2	110	1	1-10	SP ST DB (2 circuit ea.)	3000 WTS.110V (ea. circuit)	57.00
8500-M3	220	1	1-10	SP ST DB (2 circuit ea.)	3000 WTS.110V (ea. circuit)	57.00
8500-CM	110	1	1-10	SP DT DB	3000 N/C 3000 N/O	46.00

\* SP—Single Pole; ST—Single Throw; DT—Double Throw; DB—Double Break  
N/C—Normally Closed; N/O—Normally Open; FC—Foot Candle



8239 SERIES

### REGISTRATION CONTROLS



This highly sensitive Registration Control responds to all colors — insures accurate control of register in printing, packaging, wrapping, cutting, etc. No change in method of scanning required to switch from opaque to translucent or transparent wrapping material.

High Speed — 500 operations per minute . . . sensitive to hairline registration. Ruggedly built, compact and simple to install.

Model No. 102 . . . List Price \$275.00

### ELECTRONIC SWITCHES

Engineered for exceptional reliability, long life with minimum maintenance. These Switches are highly sensitive and utilize no coaxial cable. Designed for applications needing a very short or medium impulse . . . as short as .0005 seconds.

List Price

Model ES-15 SPDT relay-contacts  
3 amp., non-inductive, at  
110 V A.C. . . . \$33.00

Model ES-15MS SPDT relay-  
contacts 10 amp., non-induc-  
tive, at 110 V A.C. . . . 37.40



### ELECTRONIC TIMERS



The Ripley Timers are of the short interval period, stop cycle, type. Built to control industrial processes, they meet the most exacting requirements by delivering dependable, accurate, and long-lived performance. Basic models cover the ranges of from .05 to .5, .1 to 10., and 1. to 100. sec.

List Price

Model 52 SPDT relay-contacts 3  
amp., non-inductive, at 110V  
A.C.—Range .05 to .5 sec. . . \$43.00

Model 54 SPDT relay-contacts 3  
amp., non-inductive, at 110V  
A.C.—Range .1 to 10. sec. . . 45.20

Model 56 SPDT relay-contacts 3  
amp., non-inductive, at 110V  
A.C.—Range 1. to 100. sec. . . 44.10

### ELECTRONIC Phototube COUNTERS

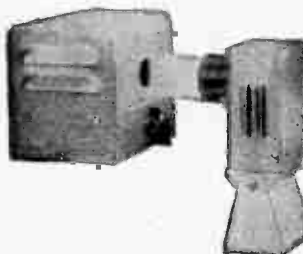
These sturdy, well built Electronic Counters are furnished with 5-digit counters. Available with outside light source as well as a built-in light source. The model with built-in light source incorporates a reflector mirror which directs the beam back into the Phototube, thus eliminating the need for an extra pair of wires. Operates on 110 volts, 60 cycles. Dimensions: 5 1/4" x 6" x 6 1/4" high.

Model 151 with external light  
source . . . . . List Price \$61.60

Model 153 with built-in light  
source . . . . . List Price \$58.30



### PHOTO-ELECTRIC CONTROL



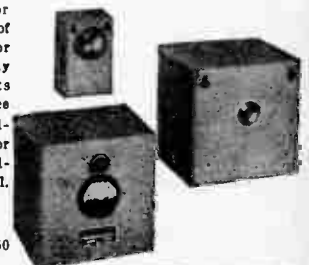
Here's an accurate, efficient, automatic control that anyone can install. Simply plug into your current supply and you are ready to count, control, start, stop, signal or measure objects as they interrupt the beam of light. Housed in hammer-tone gray finished steel case. Only 4" high. Operates on 110 volts, 60 cycles A.C. Contact rating 10 amps. A.C. Complete with Light Source and plug-in wire connections.

Model PE-150 . . . . List Price \$49.50

### SMOKE DENSITY INDICATOR

The Ripley Smoke Density Indicator will indicate small quantities of smoke in an air exhaust, duct or other location, thus giving early warning of fire even in remote parts of the building. Composed of three principal parts: the "eye" and amplifier, light source, and the Indicator unit consisting of a meter, red tell-tale lamp and sensitivity control. Operates on 110 volts, 60 cycles.

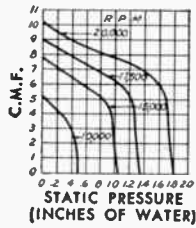
Model 1510 (Complete — three  
units) . . . . . List Price \$132.50



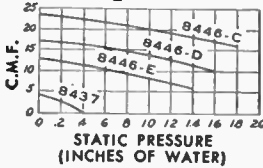
FOR MORE DATA ON RIPLEY'S QUALITY PRODUCTS SEE THE FOLLOWING PAGES

**L-R MOTOR & BLOWER ASSEMBLIES**

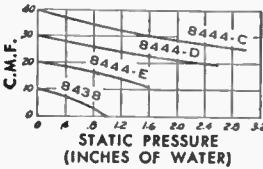
**NO. 1**



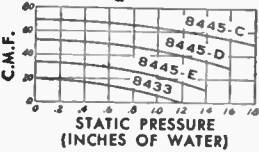
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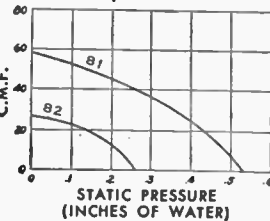
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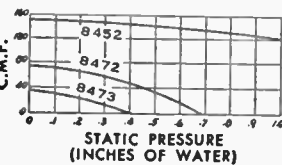
**NO. 2 1/2**



**NO. 2 3/4**

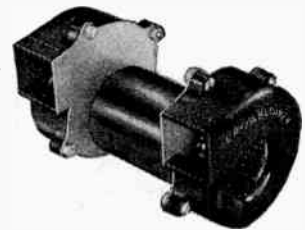


**NO. 3**

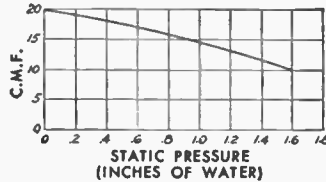


Model No.	Type	Input Voltage	Watts	Duty Cycle	R.P.M.	Output	Dimensions		List Price
						Free Air C.F.M.	Length O.A.	Motor Dia.	
8474	1	27.5V. D.C.	8	Continuous	18,000	9	2 3/4	3/8	49.00
8437	1 1/2	115V. AC-60 Cycle	15	Continuous	3,150	4	4 1/2	2 1/2	13.29
8446-E	1 1/2	115V. AC/DC	25	Intermittent	8,000	12	4 1/2	2 3/4	17.96
8446-D	1 1/2	115V. AC/DC	45	Intermittent	11,000	17	4 1/2	2 3/4	17.96
8446-C	1 1/2	115V. AC/DC	70	Intermittent	15,000	23	4 1/2	2 3/4	17.96
8438	2	115V. AC-60 Cycle	18	Continuous	3,100	10	4 1/2	2 1/2	13.48
8444-E	2	115V. AC/DC	27	Intermittent	6,500	20	4 1/2	2 3/4	18.14
8444-D	2	115V. AC/DC	53	Intermittent	10,000	30	4 1/2	2 3/4	18.14
8444-C	2	115V. AC/DC	90	Intermittent	13,000	40	4 1/2	2 3/4	18.14
8433	2 1/2	115V. AC-60 Cycle	17	Continuous	2,800	17	4 1/2	2 1/2	13.60
8445-E	2 1/2	115V. AC/DC	30	Intermittent	6,000	35	4 3/4	2 3/4	18.26
8445-D	2 1/2	115V. AC/DC	55	Intermittent	9,000	53	4 3/4	2 3/4	18.26
8445-C	2 1/2	115V. AC/DC	105	Intermittent	12,000	70	4 3/4	2 3/4	18.26
82	2 3/4	115V. AC-60 Cycle	35	Continuous	1,550	28	5 3/4	2 3/4	17.40
81	2 3/4	115V. AC-60 Cycle	40	Continuous	3,100	58	5 3/4	2 3/4	16.50
8473	3	115V. AC-60 Cycle	35	Continuous	1,550	40	6 1/4	2 3/4	16.95
8472	3	115V. AC-60 Cycle	40	Continuous	3,100	77	6 1/4	2 3/4	16.05
8452	3	115V. AC/DC	120	Intermittent	6,000	150	6 1/4	2 3/4	22.40

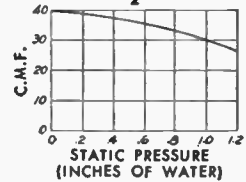
**L-R BLOWERS DUAL ASSEMBLY**



**NO. 2 Dual**



**NO. 2 1/2 Dual**



Model No.	Type	Input Voltage	Watts	Duty Cycle	R.P.M.	Output	Dimensions		List Price
						Free Air C.F.M.	Length O.A.	Motor Dia.	
8442	2 Dual	115V. AC-60 Cycle	18	Continuous	3,000	10-10	6 1/4	2 3/4	19.52
8434	2 1/2 Dual	115V. AC-60 Cycle	20	Continuous	2,800	20-20	6 1/4	2 3/4	20.59

Superior ...  
**RIPLEY COMPANY, INC.**



through Research  
**MIDDLETOWN, CONN.**

## L-R BLOWERS — "Mighty-Mites"



### No. 1

High Impact Phenolic Housing. Weight 1 ounce. Wheel is 1" in dia. Standard shaft bores, 1/8" or 3/16". Overall height 2-5/16". Overall width 2-1/8". Depth 63/64". Blower outlet 63/64" wide by 11/16" high.

List Price \$3.64 ea.



### No. 1 1/2

High Impact Phenolic Housing. Weight 2-1/2 ounces. Wheel is 1-1/2" dia. Standard shaft bores, 3/16" or 1/4". Overall height 3". Overall width 2-7/8". Depth 1". Blower outlet 1" wide by 1-3/16" high.

List Price \$4.44 ea.



### No. 2

High Impact Phenolic Housing. Weight 5 ounces. Wheel is 2" dia. Standard shaft bores, 3/16" or 1/4". Overall height 3-3/4". Overall width 3-1/2". Depth 1-3/8". Blower outlet 1-1/8" diameter.

List Price \$4.53 ea.



### No. 2 1/2

High Impact Phenolic Housing. Weight 5-1/2 ounces. Wheel is 2" in dia. Standard shaft bores, 3/16" or 1/4". Overall height 4-3/8". Overall width 3-7/8". Depth 1-7/16". Blower outlet 1-7/16" wide by 1-19/32" high.

List Price \$4.65 ea.

### No. 2.7

Rigid Steel Housing. Weight 8-1/2 ounces. Wheel is 2-1/2" in dia. Standard shaft bores, 1/4" or 5/16". Overall height 4-5/8". Overall width 4-13/32". Depth 1-33/64". Blower outlet 1-33/64" wide by 1-3/4" high.

List Price \$4.90 ea.



### No. 2 3/4

Rigid Steel Housing. Weight 10 ounces. Wheel is 2-1/2" in dia. Standard shaft bores, 1/4" or 5/16". Overall height 4-5/8". Overall width 4-13/32". Depth 2-5/64". Blower outlet 2-5/64" wide by 1-3/4" high.

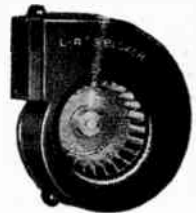
List Price \$4.90 ea.



### No. 3

High Impact Phenolic Housing. Weight 12-1/2 ounces. Wheel is 3" in dia. Standard shaft bores, 1/4" or 5/16". Overall height 6-7/16". Overall width 5-1/2". Depth 2-3/8". Blower outlet 2-3/8" wide by 2-1/2" high.

List Price \$5.36 ea.



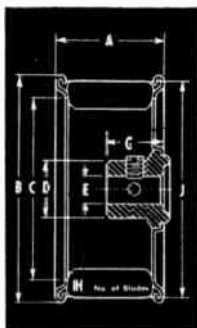
## L-R Whirlwind BLOWER WHEELS

A key factor in the superior efficiency of any blower is the wheel utilized in the housing. The Ripley Company provides the utmost in equipment and engineering "know-how" to produce small blower wheels of the highest standard and quality. Manufactured from the finest material available, precision engineered and rigidly inspected to meet your most exacting requirements. Standard wheels are cadmium plated steel. Other material and finishes available. Available for CW or CCW Rotation.

### DIMENSIONS AND SPECIFICATIONS

Wheel Size Dia. Width	Used in Blower No.	A Width (± 1/32)	B Dia. (± 1/32)	C Dia. (± 1/64)	D Dia. (± .005)	E* (+.001 -.000)	F Set Screw (± .010)	G	H Number of Blades (± 1/2)	J Dia.
1 x 3/8	1	3/8	1	3/16	.3125	.125, .1875	5-40	.3125	10	5/16
1 1/2 x 3/8	1 1/2	5/8	1 1/2	1/4	.5625	.1875, .250	8-32	.5156	16	1 1/2
2 x 3/4	2, 2 1/2	3/4	2	1 3/4	.5625	.1875, .250	8-32	.5156	24	1 3/4
2 1/2 x 3/4	2 1/2	7/8	2 1/2	2	.750	.250, .3125	8-32	.6562	31	2 1/2
2 1/2 x 1 1/4	2 1/2	1 1/8	2 1/2	2 1/2	.750	.250, .3125	10-32	.6562	24	2 1/2
3 x 1 1/2	3	1 1/4	3	2 3/4	.750	.250, .3125	10-32	.6562	24	2 1/2
3 3/8 x 1 3/4	3 3/8	1 3/4	3 1/4	3	.9375	.250, .3125	1/2-28	.750	30	3

\* Standard Bore—Other Sizes Available



### ROTATION

is determined  
viewing closed  
end of wheel



**ELECTRONICALLY OPERATED RELAYS  
MODEL 63**



Especially designed for use with a correct combination of the standardized Worner Photo-Cell and Exciter Lamp units shown at right. However, this Electronically Operated Relay will operate also from light sources

such as daylight, artificial lights, radiant energy from metallic processing, etc.

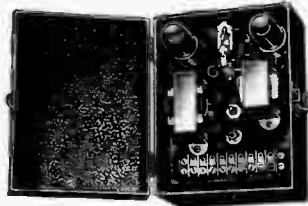
Model 63 Electronically Operated Relay is a specially engineered, highest quality unit. It enjoys wide preference as it efficiently meets exacting requirements and replaces the need of costly individually engineered equipment. Technical details on request.

**ELECTRONICALLY OPERATED RELAYS**

Model 63, Described Above .....	Price, Each
Model 63-A, combines Model 63 and Time Delay Circuit giving delay from zero to 45 seconds.....	\$125.00
Model 63-B, same as Model 63 with additional amplification to operate on less active change of light .....	\$150.00
	\$150.00

**ELECTRONICALLY OPERATED RELAY  
MODEL 64**

An economical unit for practically any industrial application where cost is a factor. Designed for use with a combination of standardized Worner Photo-Cell and Exciter Lamp units shown at right.



Model 64 Electronically Operated Relay...each \$81.60

**EXCITER LAMP & PHOTO-CELL  
RECEIVER UNITS**

For Use With Models 63, 63-A, 63-B and 64  
Electronically Operated Relays

NOTE: "Exciter Lamp" and "Light Source" Mean the Same.



Model 33



Model 23



Model 31



Model 21

The Exciter Lamp unit is designed to project the light beam and the Photo-Cell Receiver is designed to pick up the beam and convert its light into electrical energy through the Electronically Operated Relay unit.

Model 33 Exciter Lamp Unit is "standard" for general applications. Its light beam covers a distance from a few inches to 10 feet from Exciter Lamp Unit to Photo-Cell Unit. Heavy duty cast iron unit with 1/2-inch conduit fittings. Gray finish.

Model 23 Photo-Cell Receiver is engineered for use with Model 33 Exciter Lamp. Same case specifications.

For use in damp surroundings, Models 33 and 23 can be made moisture-proof at slight additional cost.

Model 31 Exciter Lamp Unit is "standard" where a lighter weight case is practical. Its light beam covers a distance from a few inches to 15 feet from Exciter Lamp Unit to Photo-Cell Unit. Case is 18 gauge steel, gray wrinkle finish. Has 1/2-inch knockout.

Model 21 Photo-Cell Receiver is engineered for use with Model 31 Exciter Lamp. Same case specifications.

Model No.	Description	Size, Inches	Price, Each
33	Exciter Lamp Unit.....	4 1/4 x 2 3/4 x 2 3/4	\$19.20
23	Photo-Cell Receiver.....	4 1/4 x 2 3/4 x 2 3/4	24.60
31	Exciter Lamp Unit.....	6 5/8 x 2 x 1 3/4	13.20
21	Photo-Cell Receiver.....	6 5/8 x 2 x 1 3/4	19.00

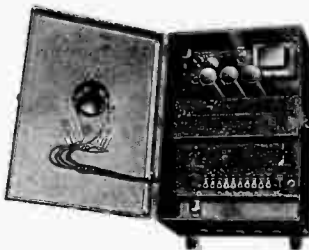
**FOTOLECTRIC COMBUSTION SUPERVISOR**

A three-piece set: consisting of Exciter Lamp, Photo-cell Receiver and a choice of three Electronically Operated Relay units. Operates on the smoke detection principle. Dependably sets into operation the controls that maintain combustion efficiency.

**MODEL 71A.** Used as alarm, and to actuate combustion control equipment.

**MODEL 71B.** Has input time delay to prevent needless operation from voltage drop, etc.

**MODEL 71C.** Same as 71B plus additional time delay holding circuit.



**FOTOLECTRIC FIRE PROTECTION**

The Worner Fan Motor Stop installed on ventilating ducts detects smoke, gives alarm. stops fan to prevent fan-driven fire to a succession of outbreaks. Approved by Underwriters Laboratories. Write for Bulletin 650.

**MODEL 62 R & L  
ELECTRONICALLY OPERATED RELAY  
AND EXCITER LAMP SET**



Model 62-R Electronically Operated Relay Unit



Model 62-L Exciter Lamp (Light Source Unit)

This "two-unit" set has specially designed Light Source Unit and an Electronically Operated Relay unit that includes the Photo-Cell Receiver, Relay and other electrical components. This combination has proved efficient for countless simple applications for distances from a few inches to 75 feet or where Relay is not required to operate in excess of 300 times a minute. Supervises efficiently on simple applications such as: Counting or sorting large objects; limit switches; start and stop operations; opening doors, etc.

Model 62 R & L "Two-Unit Set".....	per set	\$92.00
Model 62-R Electronically Operated Relay.....	each	76.80
Model 62-L Exciter Lamp Unit.....	each	25.20

**FOTOLECTRIC BURGLAR ALARM SYSTEMS**

**MODEL 9000 SERIES.** The Worner Master Control System consists of a Master Control Panel used in combination with 1, 2, 3 or 4 Fotoelectric Sets. (Each Fotoelectric Set consists of Exciter Lamp for invisible beam and Photo-cell). Operates alarms the user installs. May be used with foil systems, etc. Sets off alarm if wiring of Fotoelectric Set is tampered with. **MODEL 9000-N Master Control Panel** prevents false alarm if power fluctuates 5 volts or more. If power fails completely, the unit automatically resets supervision when power is restored.



Model 9000-N

Relays controlled by a switch. For 110-120 V. Panels are supplied with plate relays for the number of Fotoelectric Sets ordered. Should Fotoelectric Sets be added later, plug-in relays are supplied with Fotoelectric Sets ordered. 9000-N Master Control Panel .....ea. \$74.00

Sets for 150', 250', and 500' have unwanted light rejector which increases day-light range. Ranges listed are for infra-red light.

Model No.	Fotoelectric Set	Range	Per Set
9100	Master Trespass Trap.....	100 ft.	\$ 94.00
9150	Master Trespass Trap.....	150 ft.	114.00
9250	Master Trespass Trap.....	250 ft.	145.00
9500	Master Trespass Trap.....	300 ft.	195.00

**MODEL 7000 SERIES** operates with burglar alarm company's central office control, police signal or local alarm. The Relay may be connected either in series or parallel to meet circuit requirements. One or more Fotoelectric Sets (illustrated below) can be used and can be operated by an existing control panel. Can be used with foil systems, etc. For 110-120V or 24V.

Model No.	Fotoelectric Set	Range	Per Set
7100	Remote Cont. Trespass Trap..	100 ft.	\$ 94.00
7150	Remote Cont. Trespass Trap..	150 ft.	114.00
7250	Remote Cont. Trespass Trap..	250 ft.	145.00
7500	Remote Cont. Trespass Trap..	500 ft.	195.00

**MODEL 5000 SERIES** for 100' range and 150' range for interior use where a single beam is ample protection. Not intended for use with foil systems, etc. The Electronically Operated Relays of this series are equipped with lock and key. 110V. Illustrated below.

Model No.	Fotoelectric Set	Range	Per Set
5100	Single Beam Trespass Trap....	100 ft.	\$ 98.00
5150	Single Beam Trespass Trap....	150 ft.	118.00

**FOTOLECTRIC SETS FOR ABOVE SYSTEMS**



Exciter Lamp (Light Source Unit) 100' and 150' range

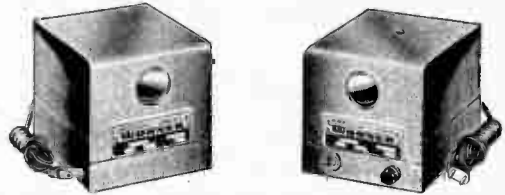
Electronically Operated Relay for 100 ft. Range.

Electronically Operated Relay for 150 ft. Range.



Exciter Lamps (Light Source Units) and Electronically Operated Relays for 250' and 500' ranges are externally the same and are weather-proof.

**THE TWO-UNIT WORNER WATCHMAN**



Operation is activated by the interruption of an "invisible" light beam as the Exciter Lamp is equipped with removable infra-red filter. Range up to 35 feet for black light, 50 feet for white light.

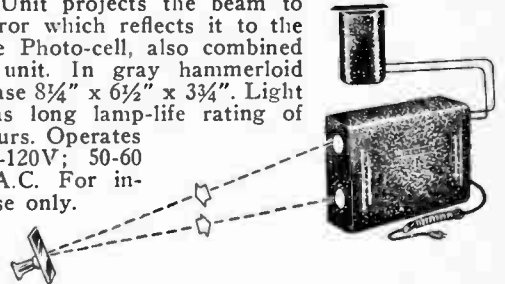
The Electronically Operated Relay combines Photo cell and electrical components. Equipped with toggle switch for either continuous alarm or to sound only while light beam is broken. Has extraneous light rejector to maintain daylight range. Two-piece case construction enables removal of cover for easy installation; also for accessibility to interior without unmounting. Identical cases 5" x 5" x 5 1/2" welded steel, mahogany hammerloid finish. For indoor use; 110-120V. 60 cycle A.C.

**MODEL 4000 Two-Unit Watchmen.....per set \$64.00**

**THE ELECTRONIC RECEPTIONIST**

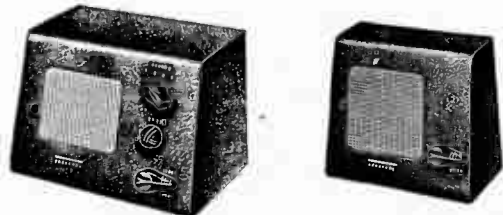
This complete three-piece set is designed to project a beam of light across any entrance to any room or building. Breaking of this light beam by person entering activates a pleasant chime, which can be located remotely wherever the signal is desired.

The unit has efficient grid controlled rectifier circuit which insures maximum stability. The Exciter Lamp in the Unit projects the beam to the mirror which reflects it to the sensitive Photo-cell, also combined in the unit. In gray hammerloid metal case 8 1/4" x 6 1/2" x 3 3/4". Light bulb has long lamp-life rating of 1000 hours. Operates on 110-120V; 50-60 cycle, A.C. For indoor use only.



**MODEL 61 Fotoelectric Announcer, three-piece set including Unit, Mirror and Chime.....Set, each \$38.80**

**WORNER COMMUNICATING SYSTEMS**



Models P-359, P-353

Model P-360

All units operate up to 2000 feet apart. Persons at Sub-stations may answer without leaving work, from as far away as 25 feet. "Silent feature" shuts out noise in vicinity at Station. 110-120, A.C. or D.C. — Metal cabinets, hammered walnut lacquer finish.

**MODEL P-359 Selective Master Station.** Handles 1 to 5 Sub-stations. Contains 5-inch speaker for maximum input without talking directly into unit. Size 9 x 6 1/4 x 6 in. ....each \$34.75

**MODEL P-353 Combination Master Station.** 2 to 5 units may be used, in any combination of Masters to Masters, or Masters to Sub-stations. 5-inch speaker. ....each \$47.50

**MODEL P-360 Sub-station.** Has 5-inch speaker. Talk-listen switch used by Sub to originate call. Size: 7 1/2 x 4 x 6 in. ....each \$11.50

# AUTOTRON Photoelectric Controls

AUTOTRON, INC. DANVILLE, ILL.

## S SERIES PHOTOELECTRIC CONTROLS

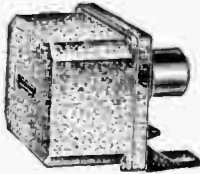


Rugged, industrial quality controls preadjusted for use with 100% light beam interruption. Used for counting and control applications where phototube dark time and phototube light time each is .060 second or more. Plate Relay: Energized when light beam is interrupted. Contacts SPDT, rated 5 amps. at 115 v., AC, noninductive load. Splashproof cast aluminum case with adjustable mounting bracket, tapped for 1/2" conduit. Power consumption 10 watts.



**S1A Photoelectric Control**—Requires 20 foot-candle minimum light. Lens diameter 1 1/2". 115/230 v. 50-60 cycles. Net Each **\$38.75**  
**S1AR**—S1A with built-in Safety Relay\*. 115 or 230 v. 50-60cycles (specify). Net **\$50.75**  
**S2A Photoelectric Control**—Requires 10 foot-candles minimum light. Lens diameter 1 1/2". 115/230 v. 50-60 cycles. Net Each **\$45.00**  
**S2AR**—S2A with built-in Safety Relay\*. 115 or 230 v., 50-60 cycles (specify). Net **\$57.00**

## F SERIES PHOTOELECTRIC CONTROLS



"Fail Safe", sensitive, high speed. Widely used where "safe" relay action is required in case of tube failure, where light change is limited, and where phototube dark time or light time is short. Special, quick response DC circuit permits speeds to 1200 operations (cycles) per minute. Sensitivity adjustment inside case inhibits tampering. Shaftlock secures setting. Minimum light, 5 foot-candles. Minimum phototube dark time, .025 second; minimum phototube light time, .025 second.

Plate Relay: Contacts DPDT, rated 8 amps. at 115 v., AC, non-inductive load. Splashproof cast aluminum case tapped for 1/2" conduit. Rigid mounting feet. Lens dia. 1 1/2". 115/230 v. 50-60 cycles. Power consumption, 20 watts.

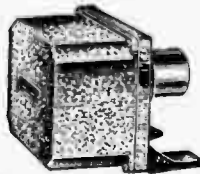
**F1A Photoelectric Control**. Plate Relay energizes when the light beam is on the phototube and all tubes are operating. De-energizes when light beam is interrupted, when a tube filament fails or any tube loses emission. Used where the phototube normally sees light, such as high level bin control, travel-limit, SAFETY controls, combustion controls, smoke detection, and for repetitive type applications. **\$67.50** Net Each.

**F1ARW**—F1A with built-in SAFETY RELAY and warm-up protection (prevents operation before tubes warm-up). Net Each **\$79.50**

**F2A Photoelectric Control**. Plate Relay energizes when the light beam is interrupted. De-energizes when the light beam is on the phototube, when a tube filament fails or the power or rectifier tube loses emission. Used for counting, or where the phototube is normally dark, such as web breakage detection, low level bin control, certain types of die protection. Net Each **\$67.50**

**F2ARW**—F2A with built-in Safety Relay and warm-up protection. Net Each **\$79.50**

## T SERIES TIMING CONTROLS



For photoelectric Control applications requiring delayed plate relay response to light change, such as conveyor jam-up, merging conveyors, paint spraying, processing and counting where phototube dark time or light time is too short.

Plate Relay: Contacts DPDT, rated 8 amps. at 115 v., AC, noninductive load. Time delay adjustment has shaft lock to secure setting.

Splashproof cast aluminum case tapped for 1/2" conduit. Lens diameter 1 1/2". 115/230 v., 50-60 cycles. Power consumption, 20 watts.

**T2A Photoelectric Timing Control**: Plate relay energizes when light is on the phototube, de-energizes when the light beam is interrupted and the timing period expires. Timing accuracy 3%. Minimum light, 20 foot-candles.

Adjustable Timing Ranges (specify)	Minimum Phototube Light Time
No. 1. .25 to 3 seconds	.25 second
No. 2. 1.25 to 10 seconds	.5 second
No. 3. 3.0 to 20 seconds	1.0 second

**T2A Photoelectric Timing Control**—Net Each **\$72.50**  
**T2ARW**—T2A with SAFETY Relay and warm-up protection. Net Each **\$84.50**

**T3A Photoelectric Timing Control**. Plate relay energizes when light is on the phototube and timing period expires. De-energizes when the light beam is interrupted. Timing accuracy, 2%. Minimum light, 10 foot candles.

Adjustable Timing Ranges (specify)
No. 0.1 .03 second to 0.1 second
No. 0.5 .25 second to 8.0 seconds
No. 1. .5 second to 15 seconds
No. 2. 1 second to 30 seconds
No. 3. 5 seconds to 10 minutes

**T3A Photoelectric Timing Control**—Net Each **\$72.50**  
**T3AR, T3A with Safety Relay\***—Net Each **\$84.50**

## L1A LIGHT SOURCE

Has 1/2" OD straight, fixed beam conservatively rated as follows—  
 Foot-Candles . . . . . 20 10 5 2  
 Distance in feet . . . . . 8 12 15 18  
 Dustproof, cast aluminum case. Adjustable bracket. Tapped for 1/2" conduit. 115/230 v., 50-60 cycles.

Model	Features	Net
L1A	Light Source only	\$14.30
L1AY	Y feature (beam int. adj.†)	21.80
L1AR	R feature (safety relay**)	26.30
L1ARY	R and Y features	33.80



## L2A LIGHT SOURCE

Has 1 1/2" OD straight, fixed beam conservatively rated as follows—  
 Foot-Candles . . . . . 20 10 5 2  
 Distance in feet . . . . . 13 20 30 45  
 Splashproof, cast aluminum case. Adjustable bracket. Tapped for 1/2" conduit. 115/230 v., 50-60 cycles.

Model	Features	Net
L2A	Light Source only	\$21.80
L2AY	Y feature (beam int. adj.†)	29.30
L2AR	R feature (safety relay**)	33.80
L2ARY	R and Y features	41.30



## L3A ADJUSTABLE FOCUS LIGHT SOURCE

Light beam adjustable from a minimum focal length of 4 1/2" and corresponding focal size of 1/4" x 1/4" to a straight light beam of 1 1/2" OD. Light input at twice the focal distance exceeds 30 foot-candles. Increasing the focal length increases the focal size. For example, at 6" focal length the focal size is 1/4" x 1/4"; at 9" focal length the focal size is 3/8" x 3/8"; and at 12" focal length the focal size is 1/2" (straight light beam).  
 Splashproof, cast alum. case; adjustable bracket, tapped for 1/2" conduit. 115/230 v., 50-60 cycles.

Model	Features	Net
L3A	Light Source only	\$29.30
L3AY	Y feature (beam int. adj.†)	36.80
L3AR	R feature (safety relay**)	41.30
L3ARY	R and Y features	48.80



## L4 DUAL FILAMENT LIGHT SOURCE

Has a prefocused two-filament lamp for protection against shutdowns. When one filament fails, the other comes on automatically—operation is not interrupted—and a signal lights up in the case, indicating the lamp should be replaced. Has 1 1/2" OD straight, fixed beam, with normal and low voltage connections.

Foot-Candles . . . . . 20 10 5 2  
 Distance in feet—Normal. 7 12 17 24  
 —Low. . . . . 2 4 6 12

\*Used at short distances to further increase lamp and tube life.  
 Splashproof, cast alum. case; rigid mounting, tapped for 1/2" conduit. 115/230 v., 50-60 cycles. **\$49.50** Net Each

**L4 Dual Filament Light Source**—Net Each **\$49.50**

## L6 HIGH INTENSITY LIGHT SOURCE

Developed for extremely adverse conditions such as steam, vapor, fog, heavy rainfall and other applications where extra light intensity is needed.

Has high intensity spot beam with normal and low voltage connections affording two foot-candle-distance ratings as follows:

Foot-Candles . . . . . 20 10 5 2  
 Distance in ft.—Normal 30 42 57 85  
 —Low . . . . . 18 25 31 40

The lamp assembly is swivel-mounted in the case for convenient directional adjustment of the beam.

The lamp is a No. 4515 sealed-beam spot; average life, 3000 hours at normal 10,000 hours at low voltage. replacement cost, \$1.95. Case is splashproof, cast aluminum; rigid mounting, tapped for 1/2" conduit. 115/230 v., 50-60 cycles, standard.

**L6 High Intensity Light Source**—Net Each **\$36.00**

### FOOTNOTES

\*The Safety Relay may be used to control a machine, operate a signal or other safety circuit when a tube filament burns out. Energizes when power comes on the photoelectric control; de-energizes when power goes off or a tube fails. Contacts are SPDT, rated at 5 amperes, 115 v. AC, noninductive load.

†The Safety Relay with warm-up protection energizes after the photoelectric control tubes warm up to operating temperature. Otherwise same as 1 above.

‡Available with built-in heating element at \$7.50 extra. Heats inside case during shut down periods. Used where humidity and temperature change are excessive.

§Safety Relay energizes when the lamp comes on, de-energizes when the lamp fails or goes off. Otherwise same as \* above.

\*\*Has a built-in adjustable resistor. Permits adjustment to minimum intensity required for reliable operation—thus prolonging life of tube and lamp.

SEND FOR CATALOG



# Thank You!

When ordering products shown in this book or writing for additional information, please be sure to specify:

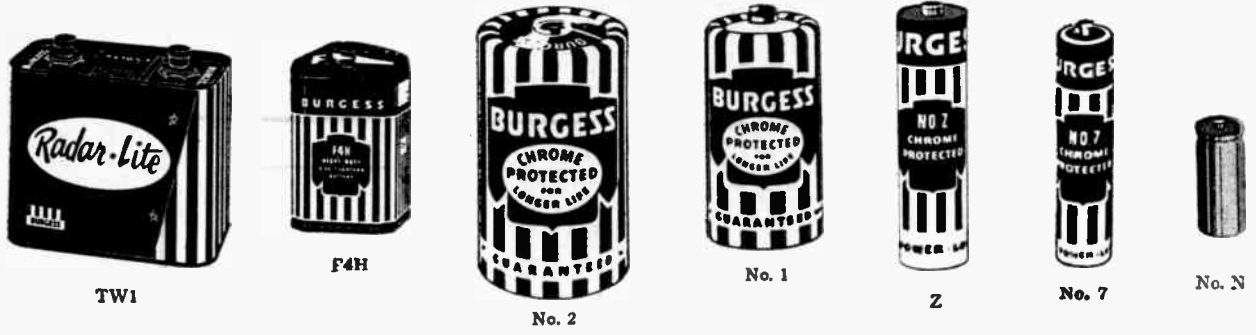
1. **Manufacturer's Catalog Numbers and Page Numbers.**
2. **The Year and Edition of This MASTER.**

This will avoid confusion and expedite delivery.

**The**  
*Radio-Electronic*  
**MASTER**

# BURGESS BATTERIES

AMERICA'S MOST COMPLETE LINE OF DRY BATTERIES



## BURGESS FLASHLIGHT AND LANTERN BATTERIES

No. 1.	1½ volts.	Size, 6¼" x 1¾".	Standard package 12.....	List price, \$ .20
No. 2.	1½ volts.	Size, 1¾" x 2¾".	Standard package 48.....	List price, .20
No. Z.	1½ volts.	Size, 3¼" x 1¾".	Standard package 12.....	List price, .125
No. 7.	1½ volts.	Size, 1¾" x 1¾".	Standard package 12.....	List price, .125
F4H.	6 volts.	Size, 2¾" x 2¾" x 3¼".	Standard package 12.....	List price, .98
4F2H.	3 volts.	Size, 3¾" x 2¼" x 5¼".	Standard package 1.....	List price, 1.85
No. 210	1½ volts.	Size, 1¾" x 2¾".	Standard package 50.....	List price, .25
N (Bare)	1½ volts.	Size, ¾" x 1¼".	Standard package 24.....	List price, .125
530	45 volts.	Size, 4¼" x 2¼" x 5¼".	Standard package 2.....	List price, 3.85
*TW1	6 volts.	Size, 5¾" x 2¾" x 4¼".	Standard package 1.....	List price, 2.45

\*For use with Radar Line.

## BURGESS IGNITION—TELEPHONE AND PROTECTIVE SYSTEM BATTERIES

4FH.	1½ volts.	Size, 2¾" x 2¾" x 4".	Standard package 12.....	List price, 1.05
4F2H.	3 volts.	Size, 3¾" x 2¼" x 5¼".	Standard package 1.....	List price, 1.85
4F4H.	6 volts.	Size, 8¼" x 2¼" x 5¼".	Standard package 1.....	List price, 4.35
4F5H.	7½ volts.	Size, 7¼" x 3¾" x 5¼".	Standard package 1.....	List price, 5.50
4F6H.	9 volts.	Size, 8½" x 3¾" x 5¼".	Standard package 1.....	List price, 6.45
No. 6 R. R. and Ind.	1½ volts.	Size, 2½" Diam. 6½".	Standard package 12.....	List price, 1.15
No. 6 IGN.	1½ volts.	Size, 2½" Diam. 6½".	Standard package 12.....	List price, 1.05
No. 6 TEL.	1½ volts.	Size, 2½" Diam. 6½".	Standard package 12.....	List price, 1.05
S 461.	6 volts.	Size, 10½" x 2¾" x 7¼".	Standard package 6.....	List price, 4.35
No. 6 Alarm	1½ volts.	Size, 2½" Diam. 6½".	Standard package 12.....	List price, 1.15
22ZPI	3 volts.	Size, 1¾" x 1¾" x 2¼".	Standard package 12.....	List price, .85

## BURGESS INDUSTRIAL - ELECTRONIC - TRANSISTOR BATTERIES

("A" Types)

No. 2F2H.	3 volts.	Size, 2¾" x 2¾" x 4¼".	Standard package 5.....	List price, 1.35
No. 2FBP.	1½ volts.	Size, 2¼" x 1¾" x 4¼".	Standard package 5.....	List price, 1.05
No. B2BP.	3 volts.	Size, 1¾" x 1¾" x 2¼".	Standard package 6.....	List price, 1.40
No. F2BP.	3 volts.	Size, 2¼" x 1¾" x 4¼".	Standard package 5.....	List price, 1.05
No. F4BP.	6 volts.	Size, 2¾" x 2¾" x 4".	Standard package 1.....	List price, .98
No. Z.	1½ volts.	Size, 3¼" x 1¾".	Standard package 12.....	List price, .125
No. 7.	1½ volts.	Size, 1¾" x 1¾".	Standard package 12.....	List price, .125
No. 2R.	1½ volts.	Size, 1¾" x 2¼" diameter.	Standard package 48.....	List price, .20
5R	1½ volts.	Size, 4¼" (Diam.) 2¼".	Standard package 12.....	List price, .125
8R	1½ volts.	Size, 1¾" (Diam.) 3¼".	Standard package 24.....	List price, .50
9R	1½ volts.	Size, 3¼" (Diam.) 1¼".	Standard package 12.....	List price, .17
2Z	1½ volts.	Size, 1¾" x 1¾" x 1¼".	Standard package 10.....	List price, .34
422	3 volts.	Size, 1¼" x 2¾" x 2¼".	Standard package 10.....	List price, .60
432	4½ volts.	Size, 1¾" x 2¼" x 2¼".	Standard package 10.....	List price, .70
532	4½ volts.	Size, 2¼" x 1¾" x 2¼".	Standard package 1.....	List price, .75
2F4FL	6 volts.	Size, 4¼" x 2¼" x 5¼".	Standard package 1.....	List price, 2.35



A QUALITY DRY BATTERY FOR EVERY PURPOSE

# BURGESS BATTERIES

AMERICA'S MOST COMPLETE LINE OF DRY BATTERIES



5308



5540



2370



10308



2308



F4BP



D6



4D4



2R



4F

## BURGESS INDUSTRIAL - ELECTRONIC - TRANSISTOR BATTERIES ("B" Types)

No. W30.	45 volts.	Size, 3" x 1 1/4" x 3 3/32".	Standard package 1.....	List price, \$3.15
W30BPX	45 volts.	Size, 3" x 1 1/4" x 3 3/32".	Standard package 1.....	List price, 2.85
No. Z30NX.	45 volts.	Size, 3 1/2" x 1 7/8" x 4 1/32".	Standard package 5.....	List price, 3.40
K10	15 volts.	Size, 1 1/4" x 7/8" x 1 1/32".	Standard package 1.....	List price, 1.50
K15	22 1/2 volts.	Size, 1 1/4" x 7/8" x 2 3/32".	Standard package 1.....	List price, 1.65
K20	30 volts.	Size, 1 1/4" x 7/8" x 2 23/32".	Standard package 1.....	List price, 1.95
U10	15 volts.	Size, 1" x 3 3/64" x 1 1/16".	Standard package 1.....	List price, 1.15
U15	22 1/2 volts.	Size, 1" x 3 3/64" x 1 31/32".	Standard package 1.....	List price, 1.50
U20	30 volts.	Size, 1" x 3 3/64" x 2 1/32".	Standard package 1.....	List price, 1.75
XX15	22 1/2 volts.	Size, 1 1/32" x 1 1/16" x 3 7/8".	Standard package 1.....	List price, 1.80
XX22	33 volts.	Size, 2 1/32" x 3 1/32" x 3 1/8".	Standard package 1.....	List price, 2.05
XX30PI	45 volts.	Size, 2 1/32" x 3 1/32" x 4 1/32".	Standard package 1.....	List price, 2.50
Y10	15 volts.	Size, 1 1/32" x 1 1/32" x 1 23/64".	Standard package 1.....	List price, 1.15
Y15	22 1/2 volts.	Size, 1 1/32" x 1 1/32" x 1 1/32".	Standard package 1.....	List price, 1.50
Y20	30 volts.	Size, 1 1/32" x 1 1/16" x 1 1/32".	Standard package 1.....	List price, 1.85
Y20S	30 volts.	Size, 1 1/32" x 1 1/32" x 2 1/16".	Standard package 1.....	List price, 1.85
No. 4156.	22 1/2 volts.	Size, 3 1/32" x 2 1/8" x 2 29/32".	Standard package 1.....	List price, 2.35
No. 5156SC.	22 1/2 volts.	Size, 4 1/8" x 2 1/2" x 2 3/4".	Standard package 5.....	List price, 2.90
No. 5156PI.	22 1/2 volts.	Size, 4 7/8" x 2 3/8" x 2 55/64".	Standard package 1.....	List price, 2.90
No. 5308.	45 volts.	Size, 4 1/6" x 2 1/16" x 5 1/8".	Standard package 1.....	List price, 3.75
U200.	300 volts.	Size, 2 3/4" x 2 29/32" x 3 7/8".	Standard package 1.....	List price, 11.00

## BURGESS INDUSTRIAL AND ELECTRONIC "C" BATTERIES

No. A8BP.	12 volts.	Size, 2 25/32" x 1 25/64" x 2 1/32".	Standard package 1.....	List price, 3.80
No. W5BP.	7 1/2 volts.	Size, 2 23/32" x 2 3/32" x 1 3/4".	Standard package 6.....	List price, 1.95
No. 2156.	22 1/2 volts.	Size, 6 21/32" x 1 7/8" x 2 31/32".	Standard package 6.....	List price, 4.45
No. 2370.	4 1/2 volts.	Size, 3 15/16" x 1 3/8" x 2 7/8".	Standard package 5.....	List price, 1.32
No. 2370PI.	4 1/2 volts.	Size, 4 1/4" x 1 7/8" x 2 5/16".	Standard package 5.....	List price, 1.50
No. 5360.	4 1/2 volts.	Size, 2 1/32" x 2 1/2" x 2 21/32".	Standard package 10.....	List price, .90
No. 5540.	7 1/2 volts.	Size, 4" x 7/8" x 2 3/4".	Standard package 5.....	List price, 1.47

## BURGESS ACTIVATORS FOR TRANSISTOR CIRCUITS

NE	1 1/2 volts.	Size, 7/16" (diam.) x 1 1/64".	Standard package 48.....	List price, .125
XX9	9, 13 1/2 volts.	Size, 1 1/32" x 2 29/32" x 2 1/32".	Standard package 1.....	List price, 1.35
D6	9 volts.	Size, 2 1/6" x 2" x 3 3/32".	Standard package 1.....	List price, 1.65
2N6	9 volts.	Size, 1 3/8" x 1 3/8" x 2 3/4".	Standard package 1.....	List price, 1.85
4D4	6 volts.	Size, 2 1/32" x 2" x 7 1/16".	Standard package 1.....	List price, 3.95
2U6	9 volts.	Size, 1" x 3 3/64" x 1 7/8".	Standard package 1.....	List price, 1.65
A4	6 volts.	Size, 1 3/32" x 1 1/32" x 2 1/32".	Standard package 1.....	List price, 1.00
D6P1	3, 6, 9 volts.	Size, 2 1/32" x 1 1/16" x 7 27/32".	Standard package 1.....	List price, 1.65
C6X	9 volts.	Size, 2 3/16" x 1 1/32" x 6 1/16".	Standard package 1.....	List price, 1.60
P6	9 volts.	Size, 3 1/2" x 3 1/2" x 1 31/32".	Standard package 1.....	List price, 1.10
D5	7 1/2 volts.	Size, 2 1/16" x 2" x 2 23/32".	Standard package 1.....	List price, 1.45
130	1 1/2 volts.	Size, 6 3/64" (diam.) x 1 1/16".	Standard package 12.....	List price, .20
230	1 1/2 volts.	Size, 1 21/64" (diam.) x 2 25/64".	Standard package 48.....	List price, .25
930	1 1/2 volts.	Size, 3 5/64" (diam.) x 1 13/32".	Standard package 12.....	List price, .17

## BURGESS PORTABLE RADIO "A" BATTERIES

No. 2F.	1 1/2 volts.	Size, 2 1/32" x 1 3/8" x 4 1/4".	Standard package 1.....	List price, .85
No. 2F4.	6 volts.	Size, 4" x 2 1/16" x 5 1/16".	Standard package 1.....	List price, 2.95
No. 2F.	1 1/2 volts.	Size, 1 21/64" diameter x 2 25/64".	Standard package 48.....	List price, .20
No. 4R.	1 1/2 volts.	Size, 2 3/8" x 2 5/8" x 4 3/32".	Standard package 6.....	List price, 1.35
No. 4FL.	1 1/2 volts.	Size, 4 7/8" x 1 3/8" x 5 1/8".	Standard package 1.....	List price, 2.20
No. 6F.	1 1/2 volts.	Size, 4 3/32" x 2 3/4" x 4 1/16".	Standard package 1.....	List price, 1.95

A QUALITY DRY BATTERY FOR EVERY PURPOSE

# BURGESS BATTERIES

## AMERICA'S MOST COMPLETE LINE OF DRY BATTERIES



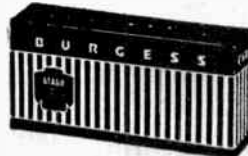
A30



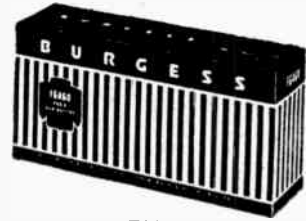
F3



F4PI



6TA60



F6A60

### BURGESS PORTABLE RADIO "A" BATTERIES (Continued)

No. 8F.	1½ volts. Size, 3 <sup>3</sup> / <sub>32</sub> " x 2 <sup>3</sup> / <sub>32</sub> " x 5 <sup>1</sup> / <sub>8</sub> ". Standard package 1.....	List price, \$2.35
No. F4PI.	6 volts. Size, 2 <sup>1</sup> / <sub>32</sub> " x 2 <sup>1</sup> / <sub>32</sub> " x 4 <sup>1</sup> / <sub>8</sub> ". Standard package 6.....	List price, 1.35
No. G3.	4½ volts. Size, 4 <sup>1</sup> / <sub>16</sub> " x 1 <sup>7</sup> / <sub>8</sub> " x 4 <sup>1</sup> / <sub>16</sub> ". Standard package 6.....	List price, 1.10
No. T5.	7½ volts. Size, 2 <sup>1</sup> / <sub>32</sub> " x 2 <sup>1</sup> / <sub>32</sub> " x 3 <sup>2</sup> / <sub>32</sub> ". Standard package 3.....	List price, 1.35
No. D3.	4½ volts. Size, 3 <sup>7</sup> / <sub>8</sub> " x 1 <sup>1</sup> / <sub>16</sub> " x 2 <sup>1</sup> / <sub>16</sub> ". Standard package 6.....	List price, .90
No. 2D.	1½ volts. Size, 2 <sup>1</sup> / <sub>16</sub> " x 1 <sup>1</sup> / <sub>2</sub> " x 2 <sup>1</sup> / <sub>2</sub> ". Standard package 1.....	List price, .75
No. Z4.	6 volts. Size, 1 <sup>1</sup> / <sub>16</sub> " x 1 <sup>1</sup> / <sub>16</sub> " x 2 <sup>1</sup> / <sub>32</sub> ". Standard package 1.....	List price, .90
No. B5	7½ volts. Size, 3 <sup>3</sup> / <sub>32</sub> " x 3 <sup>7</sup> / <sub>8</sub> " x 2 <sup>2</sup> / <sub>32</sub> ". Standard package 6.....	List price, 1.50
No. C5.	7½ volts. Size, 2 <sup>2</sup> / <sub>32</sub> " x 1 <sup>1</sup> / <sub>16</sub> " x 3 <sup>1</sup> / <sub>32</sub> ". Standard package 6.....	List price, 1.35
No. F3.	4½ volts. Size, 4" x 1 <sup>1</sup> / <sub>16</sub> " x 4 <sup>1</sup> / <sub>8</sub> ". Standard package 6.....	List price, 1.05
No. 21R.	1½ volts. Size, 1 <sup>1</sup> / <sub>4</sub> " (diam.) 4 <sup>1</sup> / <sub>2</sub> ". Standard package 12.....	List price, .40
No. 37	1½ volts. Size, 1 <sup>1</sup> / <sub>16</sub> " (diam.) 6 <sup>7</sup> / <sub>8</sub> ". Standard package 1.....	List price, .98

### BURGESS PORTABLE RADIO "B" BATTERIES

No. A30.	45 volts. Size, 3 <sup>3</sup> / <sub>16</sub> " x 2 <sup>1</sup> / <sub>4</sub> " x 4 <sup>5</sup> / <sub>16</sub> ". Standard package 2.....	List price, 3.05
No. B30.	45 volts. Size, 4 <sup>1</sup> / <sub>16</sub> " x 2 <sup>1</sup> / <sub>32</sub> " x 5 <sup>5</sup> / <sub>16</sub> ". Standard package 2.....	List price, 3.85
No. M30.	45 volts. Size, 3 <sup>3</sup> / <sub>16</sub> " x 1 <sup>3</sup> / <sub>4</sub> " x 5 <sup>1</sup> / <sub>2</sub> ". Standard package 6.....	List price, 3.15
No. XX30.	45 volts. Size, 2 <sup>1</sup> / <sub>32</sub> " x 3 <sup>1</sup> / <sub>2</sub> " x 3 <sup>3</sup> / <sub>16</sub> ". Standard package 6.....	List price, 2.45
No. XX45.	67½ volts. Size, 2 <sup>3</sup> / <sub>4</sub> " x 1 <sup>1</sup> / <sub>32</sub> " x 3 <sup>3</sup> / <sub>16</sub> ". Standard package 6.....	List price, 3.50
No. XX50.	75 volts. Size, 1 <sup>2</sup> / <sub>32</sub> " x 1 <sup>1</sup> / <sub>16</sub> " x 6 <sup>1</sup> / <sub>16</sub> ". Standard package 6.....	List price, 3.95
No. Z30.	45 volts. Size, 3" x 2 <sup>1</sup> / <sub>16</sub> " x 4 <sup>1</sup> / <sub>16</sub> ". Standard package 2.....	List price, 3.95
No. U200.	300 volts. Size, 2 <sup>3</sup> / <sub>4</sub> " x 2 <sup>3</sup> / <sub>32</sub> " x 3 <sup>7</sup> / <sub>8</sub> ". Standard package 1.....	List price, 11.00
No. N60.	90 volts. Size, 3 <sup>1</sup> / <sub>16</sub> " x 1 <sup>1</sup> / <sub>2</sub> " x 3 <sup>1</sup> / <sub>32</sub> ". Standard package 6.....	List price, 4.25
No. K45.	67½ volts. Size, 2 <sup>1</sup> / <sub>16</sub> " x 1 <sup>1</sup> / <sub>16</sub> " x 2 <sup>1</sup> / <sub>4</sub> ". Standard package 6.....	List price, 3.15
No. XX69.	103½ volts. Size, 1 <sup>1</sup> / <sub>32</sub> " x 1 <sup>1</sup> / <sub>32</sub> " x 11 <sup>2</sup> / <sub>32</sub> ". Standard package 1....	List price, 5.65
No. P45.	67½ volts. Size, 1 <sup>3</sup> / <sub>32</sub> " x 1" x 5 <sup>5</sup> / <sub>32</sub> ". Standard package 6.....	List price, 3.10
No. U30.	45 volts. Size, 1 <sup>3</sup> / <sub>32</sub> " x 1 <sup>1</sup> / <sub>32</sub> " x 3 <sup>1</sup> / <sub>32</sub> ". Standard package 1.....	List price, 2.50
P45M	67½ volts. Size, 1 <sup>3</sup> / <sub>32</sub> " x 1" x 5 <sup>5</sup> / <sub>32</sub> ". Standard package 6.....	List price, 4.00
P60	90 volts. Size, 1 <sup>3</sup> / <sub>32</sub> " x 1" x 7 <sup>1</sup> / <sub>32</sub> ". Standard package 6.....	List price, 3.75
U15	22½ volts. Size, 1" x 3 <sup>4</sup> / <sub>4</sub> " x 1 <sup>3</sup> / <sub>32</sub> ". Standard package 1.....	List price, 1.50
UX45	67½ volts. Size, 1 <sup>1</sup> / <sub>2</sub> " x 3 <sup>1</sup> / <sub>2</sub> " x 3 <sup>1</sup> / <sub>2</sub> ". Standard package 1.....	List price, 2.95
N60X	90 volts. Size, 1 <sup>7</sup> / <sub>8</sub> " x 1 <sup>1</sup> / <sub>32</sub> " x 7 <sup>7</sup> / <sub>8</sub> ". Standard package 1.....	List price, 4.25

### BURGESS PORTABLE RADIO "A & B" BATTERIES

2TXX40.	1½A, 60B volts. Size, 2 <sup>1</sup> / <sub>32</sub> " x 1 <sup>1</sup> / <sub>32</sub> " x 7 <sup>3</sup> / <sub>2</sub> ". Std. package 1.....	List price, 5.04
4CA42.	1½A, 63B volts. Size, 9 <sup>1</sup> / <sub>16</sub> " x 2 <sup>1</sup> / <sub>8</sub> " x 4 <sup>3</sup> / <sub>4</sub> ". Std. package 1.....	List price, 7.35
6TA60.	1½A, 90B volts. Size, 9 <sup>1</sup> / <sub>32</sub> " x 2 <sup>1</sup> / <sub>4</sub> " x 4 <sup>1</sup> / <sub>16</sub> ". Std. package 1.....	List price, 7.15
F4A50.	6A, 75B volts. Size, 9 <sup>3</sup> / <sub>32</sub> " x 2 <sup>2</sup> / <sub>32</sub> " x 3 <sup>2</sup> / <sub>32</sub> ". Std. package 1.....	List price, 7.25
F6A60.	7½, 9A, 90B volts. Size, 9 <sup>5</sup> / <sub>16</sub> " x 2 <sup>2</sup> / <sub>32</sub> " x 4 <sup>5</sup> / <sub>16</sub> ". Std. package 1....	List price, 7.25
F6A60P.	9A, 90B volts. Size, 9 <sup>1</sup> / <sub>16</sub> " x 2 <sup>3</sup> / <sub>4</sub> " x 4 <sup>1</sup> / <sub>32</sub> ". Std. package 1.....	List price, 6.85
T5Z50.	6, 7½A, 75B volts. Size, 8 <sup>1</sup> / <sub>2</sub> " x 3 <sup>1</sup> / <sub>32</sub> " x 2 <sup>3</sup> / <sub>8</sub> ". Std. package 1....	List price, 6.25
T5Z50P.	7½A, 75B volts. Size, 8 <sup>1</sup> / <sub>2</sub> " x 3 <sup>1</sup> / <sub>32</sub> " x 2 <sup>3</sup> / <sub>8</sub> ". Std. package 1.....	List price, 6.25
G6B60.	9A, 90B volts. Size, 13 <sup>2</sup> / <sub>32</sub> " x 2 <sup>1</sup> / <sub>16</sub> " x 4 <sup>2</sup> / <sub>32</sub> ". Std. package 1.....	List price, 7.75
G6M60.	7½, 9A, 90B volts. Size, 10 <sup>3</sup> / <sub>16</sub> " x 3 <sup>1</sup> / <sub>8</sub> " x 4 <sup>1</sup> / <sub>32</sub> ". Std. package 1....	List price, 7.85
T6Z60P.	9A, 90B volts. Size, 8 <sup>1</sup> / <sub>16</sub> " x 2 <sup>1</sup> / <sub>16</sub> " x 3 <sup>1</sup> / <sub>16</sub> ". Std. package 1.....	List price, 6.85
4TZ60.	1½A, 90B volts. Size, 7 <sup>5</sup> / <sub>8</sub> " x 2 <sup>1</sup> / <sub>16</sub> " x 3 <sup>3</sup> / <sub>4</sub> ". Std. package 1.....	List price, 5.75
T6Z60.	7½, 9A, 90B volts. Size, 8 <sup>1</sup> / <sub>16</sub> " x 2 <sup>1</sup> / <sub>16</sub> " x 3 <sup>1</sup> / <sub>16</sub> ". Std. package 1...	List price, 6.75

### BURGESS FARM RADIO "A" BATTERIES

No. 20F.	1½ volts. Size, 7 <sup>5</sup> / <sub>8</sub> " x 2 <sup>1</sup> / <sub>16</sub> " x 6 <sup>1</sup> / <sub>16</sub> ". Standard package 1.....	List price, 6.75
No. 20F2.	3 volts. Size, 11 <sup>1</sup> / <sub>2</sub> " x 4" x 6 <sup>7</sup> / <sub>8</sub> ". Standard package 1.....	List price, 9.30

### BURGESS FARM RADIO "B" BATTERIES

No. 10308SC or PI.	45 volts. Size, 8 <sup>1</sup> / <sub>2</sub> " x 4 <sup>1</sup> / <sub>2</sub> " x 7 <sup>1</sup> / <sub>8</sub> ". Standard package 1..	List price, 5.75
No. 21308SC or PI.	45 volts. Size, 8 <sup>1</sup> / <sub>8</sub> " x 4 <sup>1</sup> / <sub>32</sub> " x 7 <sup>1</sup> / <sub>32</sub> ". Standard package 1..	List price, 6.35
No. 2308 SC or PI.	45 volts. Size, 8 <sup>3</sup> / <sub>32</sub> " x 2 <sup>1</sup> / <sub>32</sub> " x 7 <sup>1</sup> / <sub>4</sub> ". Standard package 1..	List price, 4.55



N60



M30



XX45



XX30



P45M

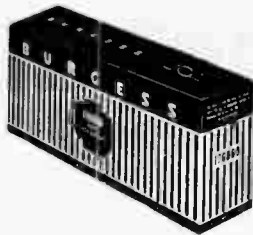


21R

A QUALITY DRY BATTERY FOR EVERY PURPOSE

# BURGESS BATTERIES

## AMERICA'S MOST COMPLETE LINE OF DRY BATTERIES



17GD60



220



TW7



TW8



149



152



261

### BURGESS FARM RADIO "A & B" BATTERIES

No. 17GD60.	1½ volt "A", 90 volt "B". Size 15 <sup>11</sup> / <sub>16</sub> " x 4 <sup>3</sup> / <sub>8</sub> " x 7 <sup>1</sup> / <sub>16</sub> ".	Std. pkg. 1	List Price \$9.65
No. 4SD60.	1½ volt "A", 90 volt "B". Size 10 <sup>11</sup> / <sub>16</sub> " x 4 <sup>3</sup> / <sub>8</sub> " x 6 <sup>1</sup> / <sub>16</sub> ".	Std. pkg. 1	List Price 9.65
No. S6D60.	7½ volt "A", 9 "A" 90 volt "B". Size 9 <sup>7</sup> / <sub>8</sub> " x 4 <sup>3</sup> / <sub>8</sub> " x 7 <sup>1</sup> / <sub>16</sub> ".	Std. pkg. 1	List Price 12.50

### BURGESS PHOTO-FLASH BATTERIES

120	1½ volts. Size, 1" (diam.) 1 <sup>1</sup> / <sub>4</sub> ". Standard package 12.....	List price, .20
220	1½ volts. Size, 1 <sup>11</sup> / <sub>32</sub> " (diam.) 2 <sup>5</sup> / <sub>4</sub> ". Standard package 12....	List price, .20
920	1½ volts. Size, 3 <sup>3</sup> / <sub>4</sub> " (diam.) 1 <sup>1</sup> / <sub>2</sub> ". Standard package 24.....	List price, .15
U15PF	22½ volts. Size, 3 <sup>3</sup> / <sub>32</sub> " x 1 <sup>1</sup> / <sub>16</sub> " x 1 <sup>1</sup> / <sub>32</sub> ". Standard package 1.....	List price, 1.50
U10	15 volts. Size, 1" x 3 <sup>3</sup> / <sub>4</sub> " x 1 <sup>1</sup> / <sub>16</sub> ". Standard package 1.....	List price, 1.15
U20	30 volts. Size, 1" x 3 <sup>3</sup> / <sub>4</sub> " x 2 <sup>1</sup> / <sub>32</sub> ". Standard package 1.....	List price, 1.75
Y10	15 volts. Size, 1 <sup>1</sup> / <sub>32</sub> " x 1 <sup>1</sup> / <sub>32</sub> " x 1 <sup>1</sup> / <sub>4</sub> ". Standard package 1.....	List price, 1.15
Y15	22½ volts. Size, 1 <sup>1</sup> / <sub>32</sub> " x 1 <sup>1</sup> / <sub>32</sub> " x 1 <sup>1</sup> / <sub>32</sub> ". Standard package 1.....	List price, 1.50
XX45	67½ volts. Size, 2 <sup>3</sup> / <sub>4</sub> " x 1 <sup>11</sup> / <sub>32</sub> " x 3 <sup>3</sup> / <sub>4</sub> ". Standard package 6.....	List price, 3.50
N60	90 volts. Size, 3 <sup>11</sup> / <sub>16</sub> " x 1 <sup>1</sup> / <sub>2</sub> " x 3 <sup>11</sup> / <sub>32</sub> ". Standard package 6.....	List price, 4.25
D3	4½ volts. Size, 3 <sup>7</sup> / <sub>8</sub> " x 1 <sup>1</sup> / <sub>16</sub> " x 2 <sup>1</sup> / <sub>16</sub> ". Standard package 6.....	List price, .90
XX150	225 volts. Size, 4 <sup>1</sup> / <sub>4</sub> " x 2 <sup>5</sup> / <sub>8</sub> " x 4 <sup>1</sup> / <sub>4</sub> ". Standard package 1.....	List price, 9.95
U160	240 volts. Size, 2 <sup>1</sup> / <sub>16</sub> " x 1 <sup>1</sup> / <sub>4</sub> " x 4 <sup>1</sup> / <sub>32</sub> ". Standard package 1.....	List price, 7.95
N150	225 volts. Size, 3 <sup>1</sup> / <sub>16</sub> " x 2 <sup>3</sup> / <sub>4</sub> " x 4 <sup>3</sup> / <sub>4</sub> ". Standard package 1.....	List price, 7.95
U320	510 volts. Size 2 <sup>1</sup> / <sub>16</sub> " x 1 <sup>1</sup> / <sub>32</sub> " x 5 <sup>1</sup> / <sub>16</sub> ". Standard package 1.....	List price, 15.95
K45	67½ volts. Size, 2 <sup>1</sup> / <sub>16</sub> " x 1 <sup>1</sup> / <sub>16</sub> " x 2 <sup>1</sup> / <sub>4</sub> ". Standard package 6.....	List price, 3.15
M30	45 volts. Size 3 <sup>1</sup> / <sub>16</sub> " x 1 <sup>1</sup> / <sub>4</sub> " x 5 <sup>1</sup> / <sub>2</sub> ". Standard package 6.....	List price, 3.15

### BURGESS RADAR-LITE LANTERNS (less batteries)

TW3.	RADAR-LITE (with flasher) Spotlight Beam. Stand. package 1..	List price, 9.50
TW4.	RADAR-LITE (without flasher) Spotlight Beam. Stand. pack. 1..	List price, 6.95

### BURGESS RADAR-LAMP LANTERNS (less batteries)

TW7	Radar-Lamp (chrome finish). Standard package 1.....	List price, 6.50
TW8	Radar-Lamp (copper finish). Standard package 1.....	List price, 6.50

### BURGESS RADAR BEARCAT LANTERN (less battery)

TW9	Radar Bearcat (focusing lantern). Standard package 1.....	List price, 4.50
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### BURGESS RADAR-FLASH (less battery)

TW34	Radar-Flash (flashing red light). Standard package 1.....	List price, 3.95
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### BURGESS BATTERY AND ACCESSORIES FOR RADAR-LINE

TW1	6 volts. Size, 5 <sup>3</sup> / <sub>8</sub> " x 2 <sup>7</sup> / <sub>8</sub> " x 4 <sup>1</sup> / <sub>16</sub> ". Standard package 1... ..	List price, 2.45
RL11	Lens Guard for Radar-Lite. Standard package 1. ....	List price, 1.25
RL22	Storage Bracket for Radar-Lite. Standard package 1.....	List price, 1.50
RL33	Bracket Hanger for Radar-Lite. Standard package 1. ....	List price, 1.50





### BURGESS FLASHLIGHT CASES (less batteries)

146.	2 cell prefocused Maroon & Chrome. Standard package 6.	List price, 1.89
152.	New slim Penlight—Duo-Tone Colors. Std. package 12...	List price, .88
248.	5 cell Prefocused Chrome. Standard package 1. ....	List price, 4.25
250.	Rangefinder 2 cell focusing Chrome. Standard package 4...	List price, 2.25
251.	Zebra Light with cells. Standard package 12.....	List price, .69
252.	3 cell prefocused Maroon & Chrome. Standard package 1.	List price, 2.95
255.	Town and Country, 2 cell Chrome. Standard package 6.....	List price, 1.89
346.	2 cell Baby Prefocused Maroon & Chrome. Std. pkg. 6 ..	List price, 1.70
350.	2 cell Tough Industrial Light. Stand. package 6.....	List price, 1.90
P92	Penlight Maroon Chrome. Standard package 6.....	List price, .88
953	Key Chain Zebra Light with Cells. Std. pkg. 12.....	List price, .79
450.	3 Cell Tough Industrial. Standard package 1.....	List price, 2.15
452.	2 Cell Prefocused—Chrome. Standard package 6.....	List price, 1.45
453.	2 Cell Industrial—Safety Light. Std. package 1.....	List price, 5.00
561-A	1-561 Hyd-Away Bracket, 1-255 flashlight. Std. pkg. 1... ..	List price, 3.19
LD34	Lens Display Kit (32 Popular Lenses). Standard package 1	List price, 3.20

**A QUALITY DRY BATTERY FOR EVERY PURPOSE**

# RCA BATTERIES



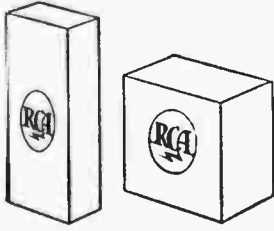
**RADIO • FLASHLIGHT • FARM • TRANSISTOR • INDUSTRIAL • SPECIAL**

	RCA TYPE NO.	DEALER PRICE EA.*	LIST PRICE EA.*	VOLTAGE	INTERCHANGEABILITY GUIDE			STANDARD PKG.		MAX. DIMENSIONS (in.)		
					EVEREADY	NEDA	BURGESS	QTY.	WT. (lbs.)	L.	W. or DIAM.	HT.
<b>PORTABLE "A" TYPES</b>												
	VS002	.77	1.10	4½	746	7	G3	6	8	4	1¾	4¼
	VS004	.95	1.35	1½	742	4	4F	6	9	2¾	2¾	4¼
	VS009	.95	1.35	6	744	6	4FPI	6	9¼	2¾	2¾	4¼
	VS010	2.07	2.95	6	718	1	2F4	5	17	3¾	2¼	5½
	VS035	.125	.20	1½	935	14	1	120	11	—	1	1¾
	VS036	.125	.20	1½	950	13	2R	192	38	—	1¾	2¾
	VS065	.95	1.35	7½	717	9	C5	12	6½	2¾	1¾	3½
	VS067	.74	1.05	4½	736	3	F3	6	7	4	1¾	4¾
	VS068	.63	.90	6	724	2	Z4	24	3¼	1¼	1¼	2¾
	VS069	.53	.75	1½	720	18	2D	12	3¼	2¾	1¾	2¼
	VS072	.63	.90	4½	726	19	D3	12	9½	3¾	1¾	3
	VS129	1.05	1.50	7½	713	8	B5	12	7½	4¼	1¾	3
	VS236	.28	.40	1½	964	20	21R	48	19	—	1¾(dia.)	4¼
	VS315	.78	1.45	7½	707	26	—	6	4¾	2¾	2¼	2¼
<b>PORTABLE "B" TYPES</b>												
	VS012	2.70	3.85	45	484	207	B30	6	19¾	3¾	2¼	5¼
	VS013	2.21	3.15	45	482	202	M30	6	12½	3¾	1¾	5½
	VS014	2.12	3.05	45	W359	206	A30	6	12	3¾	2¼	4¾
	VS015	2.76	3.95	22½-45	738	205	Z30	6	8½	3	2¾	4¾
	VS016	2.45	3.50	67½	467	200	XX45	24	19¼	2¼	1¾	3¾
	VS055	1.72	2.45	45	455	201	XX30	12	6¾	2¾	1	3¼
	VS082	2.21	3.15	67½	457	203	K45	12	6½	2¼	1¾	2½
	VS084	1.05	1.50	22½	412	215	U15	12	1	1½	¾	2
	VS086	1.75	2.50	45	415	213	U30	24	3½	1¾	¾	3¼
	VS090	2.98	4.25	90	490	204	N60	12	13	3¾	1¾	3¾
	VS215	2.45	3.50	67½	477	211M	P45M	24	14¾	1¾	1	5¾
	VS216	2.71	3.95	67½	477	211M	P45M	24	20½	1½	1½	5¾
	VS217	2.77	3.95	75	437	212	XX50	12	12½	1½	1½	6¼
	VS218	2.17	3.10	67½	477	211P	P42	12	6½	1¾	¾	5¾
	VS219	2.63	3.75	90	479	214	P60	12	9¼	1¾	1½	7¼
	VS316	2.33	4.25	90	495	216	—	6	6¼	1½	1½	7¾
	VS318	2.07	2.95	67½	416	—	—	6	1¾	1¾	¾	3½
	<b>PORTABLE "A-B" TYPES</b>											
	VS019	5.08	7.25	7½-9-90	753	401	F6A60	6	36¾	9¾	2¼	4¾
	VS047	5.43	7.75	9-90	752	400	G6B60	6	55	13¾	2¼	4¾
	VS050	4.38	6.25	6-7½-75	755	403	T5Z50	6	21½	8¾	2½	3¼
	VS057W	4.73	6.75	7½-9-90	756	405	T6Z60	6	25½	8¾	2½	3¾
	VS058	4.80	6.85	9-90	757	406	F6A60P	6	36¾	9¾	2¼	4¾
	VS059	4.80	6.85	9-90	727	428	T6Z60P	6	25½	9¾	2¼	3¾
	VS060	4.38	6.25	7½-75	785	431	T5Z50P	6	21½	8¾	2¾	3¼
	VS064	4.03	5.75	1½-90	729	—	4TZ60	6	21½	7¼	2¼	3¼
<b>TRANSISTOR BATTERIES</b>												
	VS300	1.23	1.75	9	226	1600	—	24	6½	—	¾	1¾
	VS301	1.16	1.65	3, 6, 9	2506	1601	—	12	17	8	1¾	2¼
	VS304	.95	1.35	13½	239	1900	XX9	12	2¾	1¾	1½	2¼
	VS305	1.30	1.85	9	246	1602	2N6	12	4	1¾	1½	3¾
	VS306	1.16	1.65	9	276	1603	D6	6	5¾	2¾	2¼	3¾
	VS307	.79	1.44	5.5	—	1402	—	12	1¼	—	¾	1¾
	VS308	.70	1.28	4	—	1302	—	12	1	—	¾	1¾
	VS309	.88	1.61	9	—	1606	—	12	¾	—	¾	1¾
	VS310	.71	1.29	5.5	—	1401	—	12	½	—	¾	1¾
	VS311	.60	1.10	4	—	1301	—	12	¾	—	¾	1¾
	VS312	1.85	2.75	8	216	—	—	12	1¼	1	1¾	1¾
	VS313	.51	.75	1.4	E9	15	—	20	1½	—	¾	1¾
	VS314	.77	1.10	9	226	1600	—	12	1	1	1	1¾
	VS400	1.80	2.65	4	E233	1300	—	10	2¼	—	1¾	1¾

■ Sealed-in-Steel      \*Optional

# RCA BATTERIES

RADIO • FLASHLIGHT • FARM • TRANSISTOR • INDUSTRIAL • SPECIAL

	RCA TYPE NO.	DEALER PRICE EA.*	LIST PRICE EA.*	VOLTAGE	INTERCHANGEABILITY GUIDE			STANDARD PKG.		MAX. DIMENSIONS (in.)		
					EVEREADY	NEDA	BURGESS	QTY.	WT. (lbs.)	L.	W. or DIAM.	HT.
<b>LIGHTING TYPES</b>												
	VS034	.08	.125	1½	915	15	Z	120	4	—	¾	2
	VS035	125	.20	1½	935	14	1	120	11	—	1	1½
	VS036	125	.20	1½	950	13	2	192	38	—	1¾	2½
	VS040C	.65	.98	6	509	908	F4H	10	16	2¾	2¾	4¾
	VS040S	.65	.98	6	510S	915	F4BP	10	16	2¾	2¾	4¾
	VS073	.08	.125	1½	W468	910	N	240	5	—	¾	1¾
	VS138	1.25	1.85	3	W357	901	4F2H	5	14½	3½	2¾	6½
	VS074	.08	.125	1½	912	24	7	60	1½	—	¾	1¾
	VS317	1.63	2.45	6	731	TW1	—	4	14½	5¾	2¾	4¾
<b>FARM TYPES</b>												
	VS022	7.21	9.65	1½-90	759	413	17GD60	1	22½	16¼	4¼	6¼
	VS026	3.19	4.55	22½-45	W365P	717	2308PI	3	24	8¼	3¾	7¾
	VS045	7.21	9.65	1½-90	—	426	18GD60	1	22½	12½	5¾	6¾
	VS119	8.75	12.50	7½-9-90	776	415	SD60	1	20	8¼	4½	13¾
	VS006C	.70	1.05	1½	6GL	914	—	12	22	—	2¾	6¾
	VS006S	.70	1.05	1½	6IGN	905	6IGN	12	22	—	2¾	6¾
	VS026	3.19	4.55	22½-45	W365P	717	2308PI	3	24	8¼	3¾	7¾
	VS028	.63	.90	4½	781	714	5360	5	1½	2½	1¾	3½
	VS029	1.02	1.47	1½-3-4½-6-7½	773	713	5540	10	6¼	4¼	1¾	3
	VS039	2.90	4.35	6	1461	907	S461	3	28	10½	2¾	7¾
	VS070	.35	.50	1½	960P	23	8R	25	9	—	1¾	3½
	VS083	.81	1.15	15	411	208	U10	12	¾	1½	¾	1¾
	VS085	1.23	1.75	30	413	210	U20	12	1¼	1½	¾	2¾
	VS093	7.70	11.00	300	493	722	U200	3	3½	2½	2½	3½
	VS100	.74	1.05	3	W352	701	F2BP	8	6½	2½	1¾	4½
	VS101	.74	1.05	1½	W354	700	2FBP	8	6½	2½	1¾	4½
	VS102	1.61	2.35	-22½	763	710	4156	6	6	3¼	2¾	2½
	VS103	2.90	4.35	6	706	902	4F4H	4	27	8¾	2½	6¾
	VS106	.70	1.05	1½	735	900	4FH	10	16	2½	2½	4¾
	VS112	2.64	3.75	22½-45	W376	709	5308	5	18	4¾	2½	6
	VS114	2.37	3.40	22½-45	W350	711	230NX	5	8	3	1¾	4½
	VS127	4.00	5.75	22½-45	W363F	716	10308SC	3	36½	8¾	4¾	8
	VS127W	4.41	6.30	22½-45	W363F	724	10308SC	3	37	8¾	4¾	8
	VS130	.92	1.32	-1½-3-4½	761T	712	2370ST	8	6	4	1¾	3½
	VS131	2.02	2.90	-22½	778	708	5156SC	5	7½	4¼	2½	3¾
	VS132	1.98	2.95	9	—	909	D68P	5	7¾	4¼	2½	3
	VS133	.52	.75	4½	703	706	532	5	1½	2¾	1¾	3½
	VS134	.42	.60	3	750	704	422	10	3	1¼	¾	2¾
	VS139	3.67	5.50	7½	715	903	4F5H	5	39½	7¼	4	6¾
	VS141	.59	.85	1½	W353	11	2F	6	5	2½	1¾	4½
	VS157	4.45	6.35	22½-45	W364F	715	21308SC	5	67½	8¼	4¾	7½
	VS317	1.63	2.45	6	731	TW1	—	4	14½	5¾	2¾	4¾
<b>TYPES MADE TO ORDER ONLY</b>												
	VS005	1.27	1.86	1½	—	12	4FL	5	7	3½	1¾	5¾
	VS011	2.28	3.25	6	747	16	2F4L	6	17	3¾	1¾	10¾
	VS030	1.05	1.50	3-4½	771	718	2370P1	5	3½	3½	1¾	2¾
	VS031	2.02	2.90	3-4½-16½-22½	768	721	5156P1	5	6½	4	2½	3
	VS038	5.68	8.50	7½-63	W367	408	G5A42	6	26	8¾	2¾	4¾
	VS043	4.26	6.13	1½-90	—	409	50A60	5	23	5½	2½	7½
	VS046	4.17	5.95	6-75	—	422	G4B50	6	39½	12¾	2¾	4¾
	VS052	3.40	4.86	1½-61½	—	423	4GA41	5	19	9¾	2½	3¾
	VS053	4.95	7.35	1½-63	W366	407	45A42	5	19	9¾	2	4¾
	VS054	4.80	7.15	1½-90	W369	410	6TA60	5	24	10	2¾	4¾
	VS126	3.19	4.55	22½-45	W365F	723	2308SC	5	37	8¾	3¼	7¾
	VS136	.94	1.35	3	W356	703	2F2H	5	8	2½	2½	4¾
	VS140	4.30	6.45	9	716	904	4F6H	5	50	8½	4¼	6¾
	VS142	.49	.70	4½	751	705	432	10	4	2	¾	2¾
	VS157W	4.83	6.90	22½-45	—	—	—	5	68½	8¼	4¾	7½

● Wax coated.

◆ Other voltage taps: 3, 4½, 6, 9, 10½, 16½.

\* Optional.

■ Sealed-in-Steel

# EVEREADY

TRADE-MARK

## BATTERIES FOR RADIO ELECTRONIC AND OTHER APPLICATIONS

**PORTABLE "B" TYPES**

No. 477  
67 1/2 VOLTS  
No. 477

No. 479  
90 VOLTS  
No. 479

No. 415  
45 VOLTS  
No. 415

No. 467  
67 1/2 VOLTS  
No. 467

**PORTABLE "A" TYPES**

No. 736  
4 1/2 VOLTS  
No. 736

No. 717  
7 1/2 VOLTS  
No. 717

No. 964  
1 1/2 VOLTS  
No. 964

1 1/2 VOLTS  
No. 635

**PORTABLE "A-B" PACKS**

6 - 7 1/2 - 75 VOLTS  
No. 755

7 1/2 - 9 - 90 VOLTS  
No. 753

**"A-B" FARM PACKS**

1 1/2 - 90 VOLTS  
No. 759

**LANTERN BATTERIES**

No. 731  
6 VOLTS

No. 509  
6 VOLTS

**DRY CELL**

1 1/2 VOLTS  
No. 6 IGNITOR

**HOT-SHOT BATTERY**

6 VOLTS No. 1461  
1462 6 VOLTS  
1562 7 1/2 VOLTS  
1662 9 VOLTS

**EMERGENCY LIGHTING TYPES**

No. 715 7 1/2 Volts  
No. 706 6 Volts  
No. 716 9 Volts

**ENERGIZERS FOR TRANSISTOR RADIOS & OTHER ELECTRONIC APPLICATIONS**

No. 233\*  
4 VOLTS

No. 216  
9 VOLTS

No. A100  
1 1/2 VOLTS

No. E9\*  
1.3 VOLTS

No. 239  
13 1/2 VOLTS

No. 276  
9 VOLTS



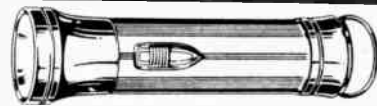
# EVEREADY

TRADE-MARK

# FLASHLIGHTS and BATTERIES



D99      950      935      915      912



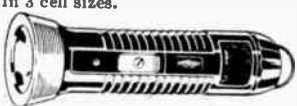
No. 8251—End-Loader Automatic Spotlight. All-chrome finish. Removable bottom cap. Ring-hanger. List price each (Without Batteries).....\$1.59



No. 5MF. The always handy No. 5MF Magnet Lite attaches with 15 lb. pull to steel, iron, etc. Powerful permanent-type "Alnico" magnet. Ideal for use anywhere on automobile and around the home. Uses two "Eveready" No. 950 or D-99 batteries and PR2 lamp. List price per light.....\$1.99



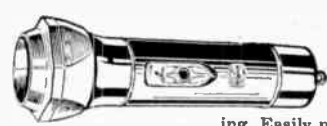
No. 1251A—2-Cell Heavy Duty Spotlight. Rugged Insulated Case. Will not shatter, crack or dent. Unbreakable safety-glow lens-guard. Streamlined to slip in and out of pocket without snagging. Ring-hanger. List price each (Without Batteries).....\$2.50 Also available in 3 cell sizes.



No. 1259A—2-Cell Safety Flashlight. Approved by United States Bureau of Mines and listed with Underwriters Laboratories Inc. List price each (Without Batteries).....\$4.15 Also available in 3 cell sizes.



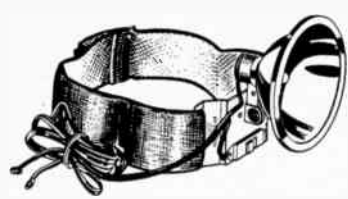
6-5MF. Display package No. 6-5MF contains 6 5MF Magnet Lites and a free display for each! List price per package.....\$11.94



No. 1258. This rugged No. 1258 Strapper flashlight has exclusive rawhide strap and leather-like covering. Easily personalized with ink. Non-rolling head of unbreakable polyethylene. Perfect for the outdoors-man. Uses two "Eveready" No. 950 or D-99 batteries and PR2 lamp. List price per light.....\$1.95

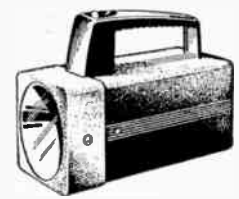


No. 58. Display package No. 58 contains 6 No. 1258 Strapper flashlights, shows flashlights and their straps to best advantage. List price per package.....\$11.70



Head-Lite No. 3452

Long-range beam, leaves both hands free for work around the home and on the job. Uses No. 5108 lantern battery. List price each.....\$2.75 (Without Batteries)



No. 59. High quality lantern. No. 59 is low priced and ideal for all outdoor and indoor uses. Features lightweight seamless metal case, push-button switch and durable, sure-grip handle. Uses one "Eveready" No. 509 standard 6 volt lantern battery and PR13 lamp. List price.....\$4.25



Display Package No. 15

"Little Jim" Miniature Pocket-Lite. Replica of famous "Eveready" "Masterlite" Square Flashlight. Unbreakable lens-guard glows red for greater light and safety. List price each.....\$0.69 (With Batteries)



Display Package No. 128

"Eveready" Masterlite Square Flashlights. Exclusive square case. Unbreakable "safety-glow" lens-guard. List price each (Without batteries).....\$1.85 to \$2.35



Display Package No. 132

"Walkaround" island display for both flashlights and batteries. 36 flashlights, ten different types. List price each from \$1.59 - \$3.50 (Without Batteries)

FOR COMPLETE BATTERY SPECIFICATIONS SEE PAGES M-784, 785





Rely on



Batteries

SUPPORTED BY A COMPLETE MERCHANDISING PROGRAM

A B BATTERIES

STOCK NO.	VOLTAGE	DIMENSIONS			TERMINALS	COMPARATIVE GUIDE		
		L	W	† O.A.H.		EVEREADY	BURGESS	RCA
A400*	9, 90	13 <sup>3</sup> / <sub>8</sub>	2 <sup>3</sup> / <sub>4</sub>	4 <sup>5</sup> / <sub>16</sub>	4 Prong Recessed Plug	752	G6B60	VS047
401	7 <sup>1</sup> / <sub>2</sub> , 9, 90	9 <sup>3</sup> / <sub>8</sub>	2 <sup>3</sup> / <sub>8</sub>	4 <sup>3</sup> / <sub>8</sub>	RETMA 116	753	F6A60	VS019
403	6, 7 <sup>1</sup> / <sub>2</sub> , 75	8 <sup>3</sup> / <sub>8</sub>	3 <sup>1</sup> / <sub>16</sub>	2 <sup>7</sup> / <sub>16</sub>	RETMA 116	755	T5Z50	VS050
405	7 <sup>1</sup> / <sub>2</sub> , 9, 90	8 <sup>1</sup> / <sub>16</sub>	2 <sup>3</sup> / <sub>16</sub>	3 <sup>3</sup> / <sub>4</sub>	RETMA 116	756	T6Z60	VS057W
406	9, 90	9 <sup>1</sup> / <sub>2</sub>	2 <sup>3</sup> / <sub>8</sub>	4 <sup>3</sup> / <sub>8</sub>	4 Prong Recessed Plug	757	F6A60P	VS058
407	1 <sup>1</sup> / <sub>2</sub> , 63	9 <sup>1</sup> / <sub>8</sub>	2	4 <sup>3</sup> / <sub>4</sub>	4 Hole Socket	W366	4GA42	VS053
408	7 <sup>1</sup> / <sub>2</sub> , 63	8 <sup>3</sup> / <sub>8</sub>	2 <sup>3</sup> / <sub>4</sub>	4 <sup>1</sup> / <sub>8</sub>	RETMA 116	W367	G5A42	VS038
409	1 <sup>1</sup> / <sub>2</sub> , 90	5 <sup>1</sup> / <sub>2</sub>	2 <sup>1</sup> / <sub>16</sub>	7 <sup>1</sup> / <sub>8</sub>	RETMA 115	—	5DA60	VS043
410	1 <sup>1</sup> / <sub>2</sub> , 90	10	2 <sup>5</sup> / <sub>16</sub>	4 <sup>1</sup> / <sub>16</sub>	RETMA 115	W369	6TA60	VS054
413	1 <sup>1</sup> / <sub>2</sub> , 90	15 <sup>3</sup> / <sub>4</sub>	4 <sup>1</sup> / <sub>4</sub>	6 <sup>1</sup> / <sub>16</sub>	RETMA 115	759	17GD60	VS022
415	7 <sup>1</sup> / <sub>2</sub> , 9, 90	8 <sup>1</sup> / <sub>4</sub>	4 <sup>1</sup> / <sub>2</sub>	13 <sup>7</sup> / <sub>8</sub>	RETMA 116 & 4 Prong Plug	776	S6D60	VS119
422	6, 75	12 <sup>3</sup> / <sub>8</sub>	2 <sup>3</sup> / <sub>4</sub>	4 <sup>1</sup> / <sub>8</sub>	4 Prong Recessed Plug	—	G4B50	VS046
423	1 <sup>1</sup> / <sub>2</sub> , 61 <sup>1</sup> / <sub>2</sub>	9 <sup>3</sup> / <sub>8</sub>	2 <sup>1</sup> / <sub>16</sub>	3 <sup>7</sup> / <sub>8</sub>	4 Hole Socket	—	—	VS052
425	1 <sup>1</sup> / <sub>2</sub> , 90	3 <sup>3</sup> / <sub>8</sub>	2 <sup>3</sup> / <sub>8</sub>	7 <sup>3</sup> / <sub>4</sub>	RETMA 115	729	4TZ60	VS064
426	1 <sup>1</sup> / <sub>2</sub> , 90	12 <sup>3</sup> / <sub>8</sub>	5 <sup>3</sup> / <sub>8</sub>	6 <sup>3</sup> / <sub>8</sub>	RETMA 115 & 8 Hole Socket	—	18GD60	VS045
428	9, 90	8 <sup>1</sup> / <sub>16</sub>	2 <sup>3</sup> / <sub>8</sub>	3 <sup>3</sup> / <sub>4</sub>	4 Prong Recessed Plug	727	T6Z60P	VS059
431	7 <sup>1</sup> / <sub>2</sub> , 75	8 <sup>3</sup> / <sub>8</sub>	3 <sup>3</sup> / <sub>4</sub>	2 <sup>3</sup> / <sub>8</sub>	5 Prong Recessed Plug	785	T5Z50P	VS060



A400\*



403



401



413



709



711



6 lgn. 5C.



713



941

INDUSTRIAL AND SPECIAL-PURPOSE BATTERIES

STOCK NO.	VOLTAGE	DIMENSIONS			TERMINALS	COMPARATIVE GUIDE		
		L	W	† O.A.H.		EVEREADY	BURGESS	RCA
700	1 <sup>1</sup> / <sub>2</sub>	2 <sup>3</sup> / <sub>8</sub>	1 <sup>3</sup> / <sub>8</sub>	4 <sup>1</sup> / <sub>16</sub>	2 Screw	W354	2FBP	VS101
701	3	2 <sup>3</sup> / <sub>8</sub>	1 <sup>3</sup> / <sub>8</sub>	4 <sup>1</sup> / <sub>16</sub>	2 Screw	W352	F2BP	VS100
703	3	2 <sup>1</sup> / <sub>16</sub>	2 <sup>1</sup> / <sub>16</sub>	4 <sup>3</sup> / <sub>8</sub>	2 Screw	W356	2F2H	VS136
704	3	1 <sup>1</sup> / <sub>16</sub>	3/4	2 <sup>3</sup> / <sub>16</sub>	2 Flat Spring	750	422	VS134
705	4 <sup>1</sup> / <sub>2</sub>	2	3/4	2 <sup>3</sup> / <sub>16</sub>	2 Flat Spring	751	432	VS142
706	4 <sup>1</sup> / <sub>2</sub>	2 <sup>1</sup> / <sub>8</sub>	1 <sup>3</sup> / <sub>16</sub>	3 <sup>1</sup> / <sub>16</sub>	2 Flat Spring	703	532	VS133
708	3, 4 <sup>1</sup> / <sub>2</sub> , 6, 9, 10 <sup>1</sup> / <sub>2</sub> , 16 <sup>1</sup> / <sub>2</sub> , 22 <sup>1</sup> / <sub>2</sub>	4 <sup>1</sup> / <sub>8</sub>	2 <sup>1</sup> / <sub>2</sub>	3 <sup>3</sup> / <sub>8</sub>	8 Spring Clip	778	5156SC	VS131
709	22 <sup>1</sup> / <sub>2</sub> , 45	4 <sup>1</sup> / <sub>8</sub>	2 <sup>3</sup> / <sub>8</sub>	5 <sup>1</sup> / <sub>16</sub>	3 Screw	W376	5308	VS112
A710*	—22 <sup>1</sup> / <sub>2</sub>	3 <sup>3</sup> / <sub>8</sub>	2 <sup>1</sup> / <sub>8</sub>	2 <sup>3</sup> / <sub>4</sub>	2 Screw	763	4156	VS102
711	22 <sup>1</sup> / <sub>2</sub> , 45	2 <sup>3</sup> / <sub>8</sub>	1 <sup>3</sup> / <sub>8</sub>	4 <sup>1</sup> / <sub>16</sub>	3 Screw	W350	Z30NX	VS114
712	1 <sup>1</sup> / <sub>2</sub> , 3, 4 <sup>1</sup> / <sub>2</sub>	3 <sup>1</sup> / <sub>16</sub>	1 <sup>3</sup> / <sub>8</sub>	3	4 Screw	761T	2370ST	VS130
713	1 <sup>1</sup> / <sub>2</sub> , 3, 4 <sup>1</sup> / <sub>2</sub> , 6, 7 <sup>1</sup> / <sub>2</sub>	3 <sup>1</sup> / <sub>16</sub>	7/8	3	5 Screw 1 Pigtail	773	5540	VS029
714	4 <sup>1</sup> / <sub>2</sub>	2 <sup>1</sup> / <sub>8</sub>	1 <sup>3</sup> / <sub>16</sub>	2 <sup>7</sup> / <sub>8</sub>	2 Screw	781	5360	VS028
715	22 <sup>1</sup> / <sub>2</sub> , 45	8 <sup>1</sup> / <sub>8</sub>	4 <sup>5</sup> / <sub>8</sub>	7 <sup>1</sup> / <sub>16</sub>	3 Spring Clip	W364F	21308SC	VS157
A716*	22 <sup>1</sup> / <sub>2</sub> , 45	8	4	7 <sup>3</sup> / <sub>8</sub>	3 Spring Clip	W363F	10308SC	VS127
717	22 <sup>1</sup> / <sub>2</sub> , 45	8 <sup>1</sup> / <sub>16</sub>	3 <sup>3</sup> / <sub>8</sub>	7 <sup>1</sup> / <sub>16</sub>	RETMA 107	W365P	2308PI	VS026
718	3, 4 <sup>1</sup> / <sub>2</sub>	4	2	2 <sup>1</sup> / <sub>8</sub>	RETMA 112	771	2370PI	VS030
721	3, 4 <sup>1</sup> / <sub>2</sub> , 16 <sup>1</sup> / <sub>2</sub> , 22 <sup>1</sup> / <sub>2</sub>	4	2 <sup>1</sup> / <sub>2</sub>	3	RETMA 113	768	5156P1	VS031
722	300	2 <sup>5</sup> / <sub>8</sub>	2 <sup>3</sup> / <sub>8</sub>	3 <sup>1</sup> / <sub>16</sub>	2 Flush Pin Jack	493	U200	VS093
723	22 <sup>1</sup> / <sub>2</sub> , 45	8 <sup>1</sup> / <sub>8</sub>	3 <sup>1</sup> / <sub>4</sub>	7 <sup>1</sup> / <sub>8</sub>	3 Spring Clip	W365F	2308SC	VS126
724	22 <sup>1</sup> / <sub>2</sub> , 45	8	4	7 <sup>3</sup> / <sub>8</sub>	3 Spring Clip	—	10308SC(P)	VS127W

\* Prefix A added to NEDA number to eliminate duplication of existing Ray-O-Vac number.  
 † Over-all height.

RAY-O-VAC FIRST WITH NEDA NUMBERING

# BATTERIES FOR ALL RADIO, ELECTRONIC, LIGHTING & HOBBY NEEDS

## A NEW COMPLETE LINE OF POWERFUL BATTERIES



### A BATTERIES



**2LP**

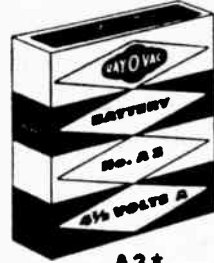


**1LP**

STOCK NO.	VOLT-AGE	MAX. DIMENSIONS			TERMINALS	COMPARATIVE GUIDE		
		L	W	† O.A.H.		EVEREADY	BURGESS	RCA
A1*	6	3 <sup>7</sup> / <sub>16</sub>	2 <sup>1</sup> / <sub>4</sub>	5 <sup>1</sup> / <sub>2</sub>	RETMA 104	718	2F4	VS010
A2*	6	1 <sup>3</sup> / <sub>32</sub>	2 <sup>1</sup> / <sub>4</sub>	2 <sup>1</sup> / <sub>32</sub>	Flashlight	724	Z4	VS068
A3*	4 <sup>1</sup> / <sub>2</sub>	4	1 <sup>1</sup> / <sub>16</sub>	4 <sup>1</sup> / <sub>16</sub>	RETMA 103	736	F3	VS067
A4*	1 <sup>1</sup> / <sub>2</sub>	2 <sup>3</sup> / <sub>16</sub>	2 <sup>3</sup> / <sub>16</sub>	4 <sup>1</sup> / <sub>16</sub>	RETMA 101	742	4F	VS004
A6*	6	2 <sup>1</sup> / <sub>16</sub>	2 <sup>1</sup> / <sub>16</sub>	4	RETMA 104	744	F4P1	VS009
A7*	4 <sup>1</sup> / <sub>2</sub>	4	1 <sup>1</sup> / <sub>16</sub>	4 <sup>1</sup> / <sub>16</sub>	RETMA 103	746	G3	VS002
8	7 <sup>1</sup> / <sub>2</sub>	4 <sup>3</sup> / <sub>16</sub>	1 <sup>5</sup> / <sub>16</sub>	3	RETMA 105	713	B5	VS129
9	7 <sup>1</sup> / <sub>2</sub>	2 <sup>3</sup> / <sub>16</sub>	2	3 <sup>1</sup> / <sub>16</sub>	RETMA 105	717	C5	VS065
11	1 <sup>1</sup> / <sub>2</sub>	2 <sup>3</sup> / <sub>16</sub>	1 <sup>3</sup> / <sub>16</sub>	4 <sup>3</sup> / <sub>16</sub>	RETMA 101	W353	2F	VS141
12	1 <sup>1</sup> / <sub>2</sub>	3 <sup>1</sup> / <sub>16</sub>	1 <sup>3</sup> / <sub>16</sub>	5 <sup>3</sup> / <sub>16</sub>	RETMA 101	—	4FL	VS005
2LP	—	—	—	—	—	—	—	—
(NEDA 13)	1 <sup>1</sup> / <sub>2</sub>	1 <sup>11</sup> / <sub>32</sub> Diam.	—	2 <sup>1</sup> / <sub>32</sub>	Flashlight	950	2-2R	VS036
5LP	1 <sup>1</sup> / <sub>2</sub>	1 <sup>11</sup> / <sub>32</sub> Diam.	—	2 <sup>1</sup> / <sub>32</sub>	Flashlight	950	2-2R	VS036
6LP	1 <sup>1</sup> / <sub>2</sub>	1 <sup>11</sup> / <sub>32</sub> Diam.	—	2 <sup>1</sup> / <sub>32</sub>	Flashlight	—	—	—
10LP	1 <sup>1</sup> / <sub>2</sub>	1 <sup>11</sup> / <sub>32</sub> Diam.	—	1 <sup>1</sup> / <sub>32</sub>	Flashlight	—	—	—
1LP	—	—	—	—	—	—	—	—
(NEDA 14)	1 <sup>1</sup> / <sub>2</sub>	1 <sup>1</sup> / <sub>32</sub> Diam.	—	1 <sup>1</sup> / <sub>32</sub>	Flashlight	935	1	VS035
7R	—	—	—	—	—	—	—	—
(NEDA 15)	1 <sup>1</sup> / <sub>2</sub>	3 <sup>1</sup> / <sub>16</sub> Diam.	—	1 <sup>3</sup> / <sub>32</sub>	Flashlight	915	Z	VS034
7LP	1 <sup>1</sup> / <sub>2</sub>	3 <sup>1</sup> / <sub>16</sub> Diam.	—	1 <sup>3</sup> / <sub>32</sub>	Flashlight	915	Z	VS034
16	6	—	—	10 <sup>3</sup> / <sub>16</sub>	RETMA 104	747	2F4L	VS011
18	1 <sup>1</sup> / <sub>2</sub>	2 <sup>3</sup> / <sub>16</sub>	1 <sup>3</sup> / <sub>16</sub>	2 <sup>2</sup> / <sub>32</sub>	RETMA 101	720	2D	VS069
19	4 <sup>1</sup> / <sub>2</sub>	3 <sup>7</sup> / <sub>16</sub>	2	3	RETMA 103	726	D3	VS072
20	1 <sup>1</sup> / <sub>2</sub>	1 <sup>3</sup> / <sub>16</sub> Diam.	—	4 <sup>1</sup> / <sub>16</sub>	Flashlight	964	21R	VS236
23	1 <sup>1</sup> / <sub>2</sub>	1 <sup>3</sup> / <sub>16</sub> Diam.	—	4 <sup>1</sup> / <sub>16</sub>	RETMA 101	960P	8R	VS070
400	—	—	—	—	—	—	—	—
(NEDA 24)	1 <sup>1</sup> / <sub>2</sub>	3 <sup>1</sup> / <sub>16</sub> Diam.	—	1 <sup>4</sup> / <sub>32</sub>	Flashlight	912	7	VS074



**20**



**A3\***



**211M**



**1600**



**204**

### B BATTERIES

STOCK NO.	VOLT-AGE	MAX. DIMENSIONS			TERMINALS	COMPARATIVE GUIDE		
		L	W	† O.A.H.		EVEREADY	BURGESS	RCA
200	67 <sup>1</sup> / <sub>2</sub>	2 <sup>25</sup> / <sub>32</sub>	1 <sup>11</sup> / <sub>32</sub>	3 <sup>3</sup> / <sub>16</sub>	RETMA 119	467	XX45	VS016
201	45	2 <sup>25</sup> / <sub>32</sub>	3 <sup>1</sup> / <sub>16</sub>	3 <sup>1</sup> / <sub>16</sub>	RETMA 119	455	XX30	VS055
202	45	3 <sup>3</sup> / <sub>16</sub>	1 <sup>13</sup> / <sub>16</sub>	5 <sup>1</sup> / <sub>2</sub>	RETMA 110	482	M30	VS013
203	67 <sup>1</sup> / <sub>2</sub>	2 <sup>25</sup> / <sub>32</sub>	2 <sup>1</sup> / <sub>32</sub>	2 <sup>1</sup> / <sub>32</sub>	RETMA 119	457	K45	VS082
204	90	3 <sup>1</sup> / <sub>16</sub>	1 <sup>3</sup> / <sub>16</sub>	3 <sup>3</sup> / <sub>16</sub>	RETMA 119	490	N60	VS090
205	22 <sup>1</sup> / <sub>2</sub> , 45	3 <sup>1</sup> / <sub>16</sub>	2 <sup>3</sup> / <sub>16</sub>	4 <sup>1</sup> / <sub>16</sub>	RETMA 111	738	Z30	VS015
206	45	3 <sup>7</sup> / <sub>16</sub>	2 <sup>1</sup> / <sub>4</sub>	4 <sup>3</sup> / <sub>16</sub>	RETMA 111	W359	A30	VS014
207	45	4 <sup>1</sup> / <sub>16</sub>	2 <sup>3</sup> / <sub>16</sub>	5 <sup>3</sup> / <sub>16</sub>	RETMA 111	484	B30	VS012
208	15	1 <sup>1</sup> / <sub>32</sub>	3 <sup>1</sup> / <sub>16</sub>	1 <sup>1</sup> / <sub>16</sub>	RETMA 120	411	U10	VS083
A210*	30	1 <sup>1</sup> / <sub>32</sub>	3 <sup>1</sup> / <sub>16</sub>	2 <sup>1</sup> / <sub>16</sub>	RETMA 120	413	U20	VS085
211M	67 <sup>1</sup> / <sub>2</sub>	1 <sup>3</sup> / <sub>32</sub>	1	5 <sup>3</sup> / <sub>16</sub>	2 Snap Fasteners	—	P45M	VS216/215
211P	67 <sup>1</sup> / <sub>2</sub>	1 <sup>7</sup> / <sub>16</sub>	1	5 <sup>1</sup> / <sub>32</sub>	2 Snap Fasteners	477	P45	VS218
212	75	1 <sup>13</sup> / <sub>16</sub>	1 <sup>3</sup> / <sub>16</sub>	6 <sup>1</sup> / <sub>16</sub>	2 Snap Fasteners	437	XX50	VS217
213	45	1 <sup>1</sup> / <sub>16</sub>	3 <sup>1</sup> / <sub>16</sub>	3 <sup>1</sup> / <sub>16</sub>	2 Snap Fasteners	415	U30	VS086
214	90	1 <sup>7</sup> / <sub>16</sub>	1	7 <sup>1</sup> / <sub>32</sub>	2 Snap Fasteners	479	P60	VS219
215	22 <sup>1</sup> / <sub>2</sub>	1 <sup>3</sup> / <sub>16</sub>	3 <sup>1</sup> / <sub>16</sub>	2	RETMA 120	412	U15	VS084
220	15	1 <sup>1</sup> / <sub>32</sub>	1 <sup>1</sup> / <sub>32</sub>	1 <sup>1</sup> / <sub>32</sub>	—	504	Y10	—
221	22 <sup>1</sup> / <sub>2</sub>	1 <sup>3</sup> / <sub>32</sub>	1 <sup>3</sup> / <sub>32</sub>	1 <sup>3</sup> / <sub>32</sub>	—	505	Y15	—

### TRANSISTOR BATTERIES

STOCK NO.	VOLT-AGE	MAX. DIMENSIONS			TERMINALS	COMPARATIVE GUIDE		
		L	W	† O.A.H.		EVEREADY	BURGESS	RCA
1600	9	3 <sup>1</sup> / <sub>32</sub>	3 <sup>1</sup> / <sub>32</sub>	1 <sup>3</sup> / <sub>32</sub>	2 Snap Fasteners	226	P6	VS300
1601	9, 6, 3	diam. 2 <sup>3</sup> / <sub>8</sub>	1 <sup>1</sup> / <sub>16</sub>	8	4-Hole Socket	2506	D6P1	VS301
1602	9	1 <sup>3</sup> / <sub>8</sub>	1 <sup>3</sup> / <sub>8</sub>	2 <sup>3</sup> / <sub>8</sub>	2 Snap Terminals	246	2N6	VS305
1603	9	2 <sup>3</sup> / <sub>16</sub>	2 <sup>1</sup> / <sub>32</sub>	3 <sup>1</sup> / <sub>32</sub>	2 Snap Fasteners	276	D6	VS306
1604	9	1	3 <sup>3</sup> / <sub>16</sub>	1 <sup>3</sup> / <sub>32</sub>	2 Snap Terminals	216	2U6	—
1900	9, 13 <sup>1</sup> / <sub>2</sub>	1 <sup>1</sup> / <sub>8</sub>	3 <sup>1</sup> / <sub>8</sub>	2 <sup>3</sup> / <sub>8</sub>	RETMA 108	239	XX9	VS304

Note: 2LP or 5LP size D, 1LP size C and 7R or 7LP size AA 1<sup>1</sup>/<sub>2</sub> Volt batteries are also used in transistor applications. These batteries are listed under the "A" battery section.

### IGNITION AND LANTERN BATTERIES

STOCK NO.	VOLT-AGE	MAX. DIMENSIONS			TERMINALS	COMPARATIVE GUIDE		
		L	W	† O.A.H.		EVEREADY	BURGESS	RCA
900	1 <sup>1</sup> / <sub>2</sub>	2 <sup>1</sup> / <sub>16</sub>	2 <sup>1</sup> / <sub>16</sub>	4 <sup>3</sup> / <sub>16</sub>	2 Screw	735	4FH	VS106
901	3	3 <sup>7</sup> / <sub>16</sub>	2 <sup>1</sup> / <sub>16</sub>	5 <sup>3</sup> / <sub>16</sub>	2 Spring Clip	W357	4F2H	VS138
902	6	8 <sup>5</sup> / <sub>32</sub>	2 <sup>25</sup> / <sub>32</sub>	6 <sup>3</sup> / <sub>16</sub>	2 Screw	706	4F4H	VS103
903	7 <sup>1</sup> / <sub>2</sub>	7 <sup>1</sup> / <sub>16</sub>	4	6 <sup>5</sup> / <sub>16</sub>	2 Screw	715	4F5H	VS139
904	9	8 <sup>1</sup> / <sub>16</sub>	4	6 <sup>1</sup> / <sub>32</sub>	2 Screw	716	4F6H	VS140
6 Ign. SC. (NEDA 905)	1 <sup>1</sup> / <sub>2</sub>	2 <sup>3</sup> / <sub>8</sub> Diam.	—	6 <sup>3</sup> / <sub>16</sub>	2 Screw	6 Ign.	6 Ign.	VS006S
6 Tel. (NEDA 906)	1 <sup>1</sup> / <sub>2</sub>	2 <sup>3</sup> / <sub>8</sub> Diam.	—	6 <sup>3</sup> / <sub>16</sub>	2 Spring Clip	6 GL	6 Tel.	VS042C
641 (NEDA 907)	6	10 <sup>3</sup> / <sub>8</sub>	2 <sup>1</sup> / <sub>16</sub>	7 <sup>3</sup> / <sub>16</sub>	2 Screw	1461	S461	VS039
941 (NEDA 908)	6	2 <sup>1</sup> / <sub>16</sub>	2 <sup>1</sup> / <sub>16</sub>	4 <sup>3</sup> / <sub>16</sub>	2 Coil Spring	509	F4H	VS040C
716 (NEDA 910)	1 <sup>1</sup> / <sub>2</sub>	3 <sup>3</sup> / <sub>16</sub> Diam.	—	1 <sup>3</sup> / <sub>16</sub>	Flashlight	W468	N	VS073
6 Ign. Clip (NEDA 914)	1 <sup>1</sup> / <sub>2</sub>	2 <sup>3</sup> / <sub>8</sub> Diam.	—	6 <sup>5</sup> / <sub>16</sub>	2 Spring Clip	6 Ign. Clip	6 Ign. Cl.	VS006C
918	6	5 <sup>3</sup> / <sub>16</sub>	2 <sup>7</sup> / <sub>16</sub>	4 <sup>3</sup> / <sub>16</sub>	2 Screw	731	TW1	—

\* Prefix A added to NEDA number to eliminate duplication of existing Ray-O-Vac number.  
† Over-all height.

# Mueller Electric Co.

CLEVELAND, OHIO

## MUELLER BATTERY AND TEST CLIPS

U.S. PATENTS: 2,136,814; 2,416,113; 2,519,589; 2,593,130; 2,762,028

For use in making quick, temporary electrical connections. Screw connections.

### "60 SERIES" ALLIGATOR CLIPS

#### No. 60—CONVENTIONAL TYPE

Accurately made, slim jaws, fine meshing teeth. Convenient, round thumb grip, barrel connection for banana plug. Equipped with small soldering lip. Strong spring with a hard bite. Cadmium plated. 2" long.



EACH NET.....\$0.07      LOTS OF 10.....\$0.05

#### No. 60-S—SCREW CONNECTION

Eliminates necessity for soldering. Otherwise same as No. 60.



EACH NET.....\$0.08      LOTS OF 10.....\$0.058

#### No. 60-CS—COPPER ALLIGATOR CLIP

Solid copper version of No. 60-S. Screw connection. 2" long. 10 per box.

EACH NET.....\$0.12      LOTS OF 10.....\$0.084

#### No. 62 FLEXIBLE VINYL INSULATOR

Red and black insulators for Alligator Clips 60S, 60CS and 60.



EACH NET.....\$0.07      LOTS OF 10.....\$0.048

#### No. 60-HS—STEEL ALLIGATOR CLIP WITH INSULATED HANDLE

Same as No. 60-S except equipped with red and black insulating sleeves on end. Very convenient for distinguishing leads. Has screw connection also. Cadmium plated. 2 1/4" long. Shipped half red, half black.



EACH NET.....\$0.14      LOTS OF 10.....\$0.095

#### No. 60-CHS—COPPER ALLIGATOR CLIP, INSULATED HANDLE

Solid copper version of No. 60-HS. Screw connection. Shipped with half red, half black insulating sleeves. 10 per box.

EACH NET.....\$0.16      LOTS OF 10.....\$0.11

### NEW "70 SERIES" ALLIGATOR CLIPS

U.S. Patent No. 2,762,028

A modern, streamlined version of our standard size Alligator Clips. Features simplified design, fast connection of wire with cord strain relief ears, patented hinge construction and lower cost. Mueller's traditionally snappy spring, full jaw spread, fine meshing teeth, round thumb grip and trim shape give most wanted features for test work in close quarters.

#### No. 70—FOR SOLDERED CONNECTION

Steel, cadmium plated. 1 1/4" long.

EACH NET.....\$0.07      LOTS OF 10.....\$0.044



#### No. 70-S—SCREW CONNECTION

Otherwise same as No. 70.

EACH NET.....\$0.08      LOTS OF 10.....\$0.05



#### No. 70-CS—COPPER SCREW CONNECTION

Solid copper version of No. 70-S.

EACH NET.....\$0.11      LOTS OF 10.....\$0.075

#### No. 62—FLEXIBLE VINYL INSULATOR

Red and black insulators for Alligator Clips 70-S, 70-CS and 70.

EACH NET.....\$0.07      LOTS OF 10.....\$0.048



### MINI-GATOR CLIP

(Smallest Insulated Clip Ever Made)

U.S. Patent No. 2,762,028

Trademark Reg.



Mini-Gator



Mini-Gator with Insulator

A truly miniaturized clip—the only one of its kind. Indispensable for testing or incorporation into miniaturized equipment. Skin-tight flexible Vinyl Insulator (sold separately) covers completely—has slotted "lip action" tip. Clip weighs 1/20th oz., has tiny 1/64" O.D. nose, but ample 3/8" jaw spread. Crimping ears. Solder connection. Surprisingly strong bite penetrates corrosion and coatings.

No. 30 (Steel, cadmium plated)      LOTS OF 10.....\$0.044  
EACH NET.....\$0.07

No. 30-C (Solid Copper)      LOTS OF 10.....\$0.056  
EACH NET.....\$0.08

No. 32 (Insulator for Nos. 30 and 30-C)      LOTS OF 10.....\$0.076  
EACH NET.....\$0.11

### COMPLETELY INSULATED ALLIGATOR CLIPS

Patent Pending



#### No. 63 or 63-C Clip

Sold only as a unit, with factory-applied insulators.

A radically new development that doubles the usefulness of Alligator Clips! Completely insulated right down to the nose. Flexible 2-piece skin-type vinyl insulator of high dielectric strength, with "lip action" slotted nose that permits opening of clip without exposing metal. Insulator nose is only 15/64" O.D. The tight fitting sheath preserves all the slimness of the Alligator Clip, still giving complete protection against shorts in even the tightest spots. These clips could be bunched together—touching all around—without danger of shorting. Screw connection easily made by slipping insulator forward.

#### No. 63—INSULATED ALLIGATOR CLIP (STEEL)

Composed of Mueller No. 60-S Alligator Clip steel, cadmium plated, screw connection, complete with 2-piece vinyl insulator. Shipped half with red insulators, half black. 10 per box.

EACH NET.....\$0.28      LOTS OF 10.....\$0.20

#### No. 63-C—INSULATED ALLIGATOR CLIP (COPPER)

Composed of Mueller No. 60-CS Alligator Clip, solid copper, screw connection. Shipped half with red insulators, half black. 10 per box.

EACH NET.....\$0.30      LOTS OF 10.....\$0.21

### CROCODILE CLIPS



No. 85 or 85-C Clip with No. 87 Insulator



No. 85-T Clip

No. 85—A very small clip with slender, elongated jaws for getting into tight places in radio or electrical test work. Screw connection. 2 1/4" long.  
EACH NET.....\$0.08      LOTS OF 10.....\$0.058

No. 85-C—Same as No. 85, except solid copper. A radio frequency, entirely non-ferrous test clip. 10 per box.  
EACH NET.....\$0.16      LOTS OF 10.....\$0.11

No. 85-T—Crocodile "Tip-Clip"—equipped with standard phone tip on one jaw, otherwise same as No. 85. Ideal for use as a prod. for ordinary clip connections and for connections to insulated binding posts having non-removable heads. 2 3/8" long. 10 per box.  
EACH NET.....\$0.21      LOTS OF 10.....\$0.15

Use No. 87 Insulators for clips 85, 85-C and 85-T. Red and Black. Cover entire clip except nose. Protect against short and shock. Help to distinguish leads.

### WEE-PEE-WEE No. 88

Entirely Non-ferrous. Smaller Than Ever!



An extremely small clip for fine testing in radio and electrical work. Light-Weight; thin-nosed; spring-temper phosphor bronze. Ideal for close-wound coils. 1 1/4" long; jaw spread 3/8". 10 per box.

EACH NET.....\$0.22      LOTS OF 10.....\$0.15

Use No. 93 Insulator.

# Mueller Electric Co.

## TEST CLIPS



### No. 45 PEE WEE

A very small test clip for radio, ignition, meter and similar work. 1 1/2" long. Jaw spread 1/16". Steel, cadmium plated.

EACH NET.....\$0.07      LOTS OF 10.....\$0.05



### No. 45-C Clip No. 47 Insulator

### No. 45-C Solid Copper R.F. Test Clip

Solid copper radio frequency test clip. Phosphor bronze spring, brass screw. Will not heat up in high frequency test work, entirely non-ferrous. 1 1/2" long. 10 per box.

EACH NET.....\$0.13      LOTS OF 10.....\$0.09

Use No. 47 Insulator for clips 45 and 45-C.



### No. 48-B

A small test and battery clip for radio use and general testing purposes. 2" long. Jaw spread 1/8". Steel, cadmium plated. 10 per box.

EACH NET.....\$0.10      LOTS OF 10.....\$0.07

No. 48C—Solid Copper. Same size as 48-B.

EACH NET.....\$0.14      LOTS OF 10.....\$0.08



### No. 50-C Needle Clip

Solid bronze. Needle pierces insulation of wire for quick test contact. 2 1/4" long. 10 per box.

EACH NET.....\$0.25      LOTS OF 10.....\$0.18

No. 51-C—Large crocodile clip. Same as 50-C but without needle. 10 per box.

EACH NET.....\$0.17      LOTS OF 10.....\$0.12

Use No. 49 Insulator for Clips 48-B, 48-C, 50-C and 51-C.



### No. 27

A high grade test clip with meshing teeth on three sides of jaws. For laboratory and shop test work 2 1/2" long. Jaw spread 5/16". Steel, cadmium plated. 10 per box.

EACH NET.....\$0.12      LOTS OF 10.....\$0.08

No. 27-C—Solid copper. Same size as No. 27. 10 per box.

EACH NET.....\$0.20      LOTS OF 10.....\$0.14

Use No. 29 Insulator for clips 27 and 27-C.

## LARGER SIZES OF CLIPS



### No. 24-A 25 Amp.

A medium sized battery clip. Stands erect on battery post. Lead coated, copper shunt protects spring. 2 3/4" long. Jaw spread 3/8". Steel, lead plated. 10 per box.

EACH NET.....\$0.20

LOTS OF 10.....\$0.14

No. 24-C—Solid copper 30 Amp. Same size as No. 24-A.

EACH NET.....\$0.34      LOTS OF 10.....\$0.24

Use No. 26 Insulator for Clips 24-A and 24-C.



50 Amp.

No. 21-A—Heavy Duty Steel, lead plated, 4" long. 10 per box.....\$0.36      \$0.25

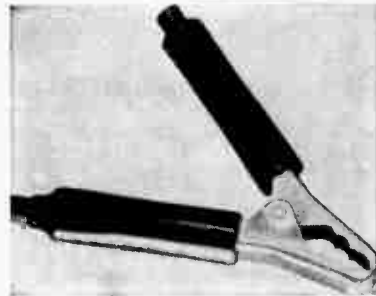
## LARGER SIZES OF CLIPS (Continued)



All packed 10 per box.

	Each Net	Lots of 10
No. 21-C—100 Amp. Solid Copper, 4 1/2" long.....	\$0.88	\$0.62
No. 11-A—100 Amp. Steel, lead plated, 6" long.....	1.00	.70
No. 11-C—200 Amp. Solid Copper, 6" long.....	1.70	1.19
No. 33-C—300 Amp. Solid Copper, 7 3/4" long.....	3.25	2.28

(Furnished with detachable lug connection for easy securing to large cables.)



### HIPPO-CLIP

An improved clip for fast chargers and booster cables. Full 1 3/8" jaw spread. Detachable lug connection. Rugged design. Optional vinyl handle insulators. red for positive, black for negative.

	List Price Ea.
No. 41-A Hippos-Clip.....	\$ .95
No. 41-C Hippos-Clip.....	2.00
No. 43 Insulators (per pair).....	.45

## FLEXIBLE INSULATORS FOR CLIPS



A convenient protection against short circuit and electric shock. Colors help to distinguish leads. Packed half red and half black to indicate polarity. Long tail prevents breakage of wire. Constructed so that clip is held in firmly. NOW AVAILABLE also in blue, white and yellow at 10% above regular price are insulators marked \* below.

Insulator No.	For Use with Clip No.	Each Net	Lots of 10
13	11-A, 11-C	\$0.77	\$0.54
23	21-A, 21-C	.48	.34
26*	24-A, 24-C	.24	.17
29*	27, 27-C	.16	.11
32	30, 30-C	.11	.076
35	33-C	2.58	1.80
47*	45, 45-C	.07	.048
49*	48-B, 48-C, 50-C, 51-C	.10	.07
62*	60S, 60CS, 60, 70S, 70CS, 70	.07	.048
87*	85, 85-C, 85-T	.07	.048
93	88	.10	.07

\*Also available in blue, white and yellow.

## GROUND CLAMP



CLAMPIPE  
No. 58

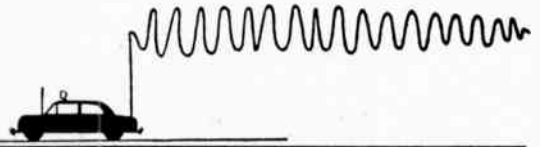
The exclusive patented feature of a U-shaped cross section in combination with a U-shaped clamp gives a rigidity and effectiveness to the ClamPipe that cannot be found in any other make.

The ClamPipe will not bend or lop over when applied to a pipe. The point of the large case hardened screw, cuts through rust, paint or corrosion into clean, fresh metal, insuring a good contact. The Clamp may be installed on a pipe lying flush against a wall. Will not spread open.

The best ground clamp value on the market. Applicable to pipe 3/8" to 1 3/8" outside diameter.

Packed 10 in a box  
EACH NET.....\$0.20      LOTS OF 10.....\$0.14

# JAMES



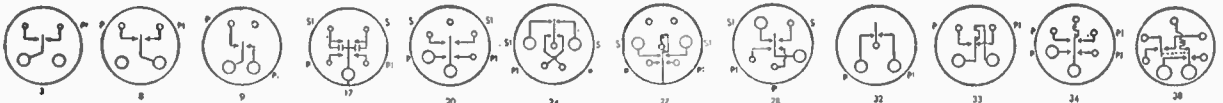
## AUTO REPLACEMENT VIBRATORS

JAMES	TYPE	CAN	DIA.	DESCRIPTION	MALLORY	RADIART
J2S	Intr.	1½ x 3⅛	3	4 prong std. — Medium height	294	5300
J2SP	"	1½ x 2⅞	3	4 prong std. — Short height	859	5301
J2SF	"	1½ x 2⅞	3	4 prong std. — Philco	509P	5326
J2SM	"	1½ x 2⅞	3	4 prong std. — Motorola	903M	5342
12J2	"	1½ x 2⅞	3	4 prong. 12 volt	G859	6301
12J7	"	1½ x 2⅞	32	3 prong-12 volt — GM	G-874	6330
J8S	"	1½ x 3⅛	8	4 prong std. — special wiring	854	5331
J9SA	"	1½ x 2⅞	9	Delco base. small can	870	5335
J21	"	1⅞ x 2⅞	3	4 prong std. small can. Ford	1100	5314

## COMMUNICATION REPLACEMENT VIBRATORS

JAMES	TYPE	CAN	DIA.	DESCRIPTION
J22	Intr.	1½ x 3⅛	3	8 contact. heavy duty, Motorola, Link receiver service.
J23	"	1½ x 2⅞	33	Heavy duty for transmitter service, Motorola, Link.
J24	"	1½ x 2⅞	34	6 prong. 8 contact, Motorola Unichannel, Bendix.
J28	"	1½ x 2⅞	38	7 prong. Split Reed.

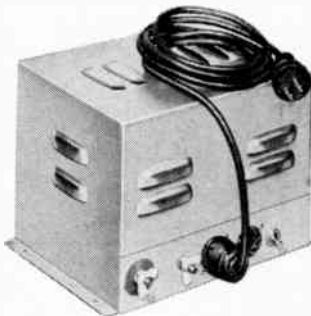
## BASE DIAGRAMS



## C-1470 FIXED/MOBILE

with Dual Vibrators

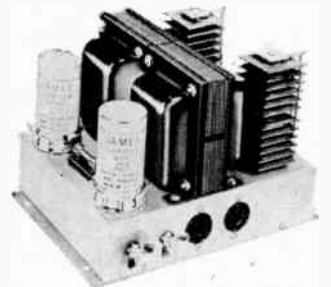
A completely new design for powering fixed and mobile transmitter and receiver — featuring dual vibrators for long life; complete control relay system; separate AC filament transformer; improved filter and hash circuits. For operation from 12v mobile and 117v A.C. fixed. Transmit power 500 volts at 175 ma; receive power 200 volts at 90 ma. C-1470 wired complete with vibrators, fuses and instruction book with installation data popular commercial mobile transmitter and receiver.



Amateur net .....\$69.95

## C-1050/51 ALL MOBILE

An improved 6 or 12 volt all mobile power supply with dual vibrator design. Complete with transmit/receiver control relay. Transmit Power 500 volts at 175 ma, and Receiver 200 volts at 90 ma. Instructions give full information on popular commercial equipment.



C-1050—wired and tested, Amateur net .....\$49.95

C-1051—kit form, Amateur net .....\$39.95

JAMES VIBRAPOWR COMPANY • CHICAGO ILLINOIS





### Vibrators

Mallory Vibrators are engineered to exacting specifications. Their superior action is a result of more than 20 years' research. Pure, natural rubber liners deaden sound and assure quiet operation. Special, tough-spring steel eliminates reed breakage. Heavy framing insures correct and exact alignment. Extra size and quality of contact points assure longer life. Each Mallory Vibrator is tested individually for correct output, starting voltage and wave form.

VP-555H  
VP-557



### Vibrapacks

Mallory Vibrapacks are the ideal vibrator power supplies designed to provide at low cost, dependable, high-voltage, direct current from low-voltage, storage batteries. Mallory Vibrapacks offer high efficiency, dependability, low maintenance cost and long life because of years of field testing. Added features are; light weight, compactness and simplicity of installation.

Type No.	Notes*	Volt	Type	Base Dia.	Can Type	Size A B C	List Price
F294	1	32	Int.	8	1	1½ x 3¼	\$ 7.15
F826C	1, 2	32	Int.	8	1	1½ x 3¼	7.70
G567C		12	Int.	38	1	1½ x 3¼	9.95
G725C	1, 2	12	Syn.	32	1	1½ x 3¼	9.95
G749C	1, 2	12	Syn.	21	1	1½ x 3¼	9.35
G826C	1, 2	12	Int.	8	1	1½ x 3¼	7.70
G859		12	Int.	8	1	1½ x 2¾	4.70
G883		12	Int.	55	9	1½ x 2¾	4.70
G4501	1	12	Int.	53	1	1½ x 2¾	6.90
G4546		12	Syn.	33	1	1½ x 3¼	8.55
G4548		12	Syn.	44	1	1½ x 3¼	8.55
G4549		12	Syn.	32	1	1½ x 3¼	8.55
M4501		24	Int.	53	1	1½ x 2¾	6.90
T4002		2	Syn.	52	8	1½ x 2½ x 1½	10.70
T4003		2	Syn.	50	1	1½ x 2½	9.80
W759	3	4	Syn.	21	1	1½ x 2¾	8.25
W859	3	4	Int.	8	1	1½ x 2¾	4.90
245	1	6	Syn.	21	1	1½ x 3¼	7.70
247		6	Syn.	46	1	1½ x 3¼	7.70
271HD		6	Syn.	24	1	2 x 4½	9.15
273C		6	Syn.	29	1	2 x 4½	9.15
294		6	Int.	8	1	1½ x 3¼	4.90
298		6	Int.	51	1	1½ x 2¾	6.35
576		6	Syn.	32	1	1½ x 3¼	7.70
509P		6	Int.	8	1	1½ x 2¾	4.15
716		6	Syn.	30	7	1½ x 3¼	7.70
725C	1, 2	6	Syn.	32	1	1½ x 3¼	8.55
742		6	Syn.	32	1	1½ x 2¾	7.70
743		6	Syn.	38	1	1½ x 3¼	7.70
748		6	Syn.	44	1	1½ x 2¾	7.70
825C	1, 2	6	Int.	8	1	1½ x 3¼	6.90
826C	1, 2	6	Int.	8	1	1½ x 3¼	6.35
854		6	Int.	11	1	1½ x 3¼	4.90
859	1	6	Int.	8	1	1½ x 2¾	4.70
870		6	Int.	14	1	1½ x 3	4.90
903M		6	Int.	8	1	1½ x 2¾	3.60
953W		6	Syn.	16	1	1½ x 3¾	7.70
954		6	Syn.	39	1	1½ x 3¾	7.70
1804		6	Int.	8	1	1½ x 2¾	4.90
1701	6/12	6	Int.	57	1	1½ x 2¾	9.80
1751		6	Int.	58	1	1½ x 2¾	9.80
1852		6	Syn.	59	1	1½ x 2¾	9.70
4501	1	6	Int.	53	1	1½ x 2¾	6.35
4512		6	Int.	54	1	1½ x 2¾	6.90
4513	6/12	6	Int.	56	1	1½ x 2¾	6.90
4514		6	Int.	53	1	1½ x 2¾	6.90
4546		6	Syn.	38	1	1½ x 3¼	7.70
4548		6	Syn.	44	1	1½ x 3¼	7.70
4549		6	Syn.	32	1	1½ x 3¼	7.70

Int.—Interrupter      Syn.—Synchronous

#### \* Notes:

- Use only these types in design of new equipment. Other types are for replacement purposes only.
- Hermetically Sealed Construction.
- Designed for photo flash applications.
- A grounding cup for 1½" dia. vibrators which makes a low r.f. ground connection between vibrator can and power supply chassis.
- Will be discontinued when present stocks are exhausted.
- Five special sockets for Practical Vibrator Tester. Supplied as complete kit only.
- For 1½" diameter vibrators. See next column for Vibrator Base Diagrams.

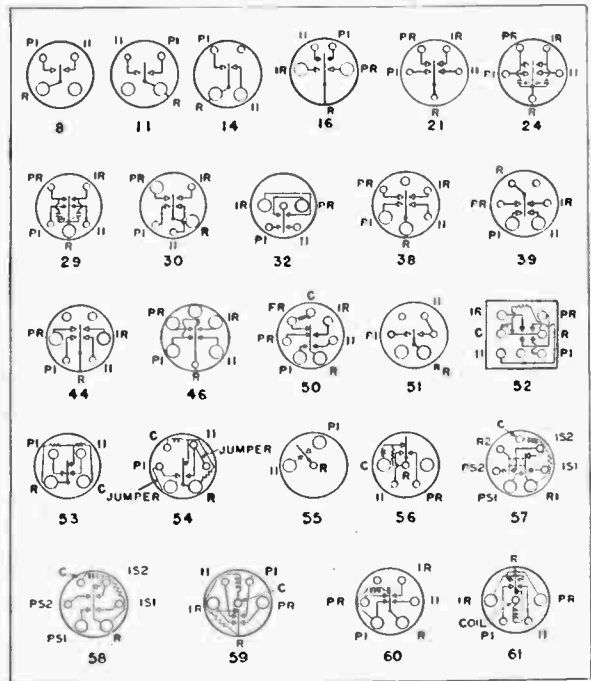
Catalog Number	Nominal Operating Voltage	Nominal Output Voltage	Maximum Output Current	Type	List Price
VP-552	6	225-250	50-60-80	Self-Rectifying	\$55.00
VP-G556	12	275-300	100 ma.		
VP6-260	6	200-260	60 ma.	Self-Rectifying	55.00
VP12-260	12	200-260	60 ma.		
VP24-260	24	200-260	60 ma.	Self-Rectifying	28.95
VP6-325	6	325	100 ma.		
VP12-325	12	325	100 ma.	Self-Rectifying	30.95
VP24-325	24	325	100 ma.		
VP-557†	6	400	150 ma.	Tube Rectifier	32.95
					79.95

\* Includes complete audio filter.

† Maximum ratings are for mobile transmitter service. For continuous duty with radio receivers where longer vibrator life is essential. Reduces maximum output watts ratings to 75% of listed values.

‡ Will be deleted when present stock is exhausted.

### Vibrator Base Diagrams



C=Coil    I=Inertia Interrupter    IS=Inertia Spring    PS=Pull Spring    R=Reed  
FR=Frame    IR=Inertia Rectifier    PI=Pull Interrupter    PR=Pull Rectifier

# RECTIFIER STACKS & POWER SUPPLIES

P. R. MALLORY & CO., INC. · INDIANAPOLIS



## Chart of Replacement Magnesium-Copper Sulfide Rectifier Stacks

New Catalog Number	List Price	Maximum AC Volts (Normal Line)		Approx. DC Volts			Max. DC† Amperes		Approximate Overall Dimensions in Inches		
		No Load	Full Load	Inductive Load	Resistive Load	Capacitive-Battery Load	Continuous Duty‡	Intermittent Duty	Length	Width	Height
IB4R	\$2.40	3.6	3.2	1.5	1.7	2.5	1.5	5.0	1	1/8	7/8
IB8R	2.85	7.2	6.4	3.1	3.4	5.1	1.5	5.0	1 1/2	1/8	7/8
IB12R	3.25	10.8	9.7	4.8	5.2	7.8	1.3	5.0	1 1/2	1/8	7/8
IB12L5	5.85	10.8	9.7	4.5	5.0	7.6	4.5	15.0	2 1/2	2 1/2	2 1/2
IB12C1J	6.55	10.8	9.8	4.6	5.1	7.7	3.2	24	2 1/2	1 1/2	1 1/2
IB12C3	6.80	10.8	9.7	4.5	5.0	7.6	4.5	24	2 1/2	1 1/2	2 1/2
IB12C5	7.40	10.8	9.7	4.5	5.0	7.6	5.3	24.0	3	2 1/2	2 1/2
F16C3	8.85	14.4	13.0	6.1	6.8	10.2	3.9	24	3	1 1/2	2 1/2
IF16CB7M	10.20	14.4	12.8	5.9	6.6	9.9	6.0	24	3	2 1/2	3 1/8
IS16CB7	10.20	14.4	12.8	5.9	6.6	9.9	6.0	24	3 1/2	2 1/2	3
IS16B7	11.25	14.4	12.8	5.8	6.5	9.8	8.3	24	5 1/2	2 1/2	3
IS16B9	12.80	14.4	12.7	5.7	6.4	9.7	11.6	24	5 1/2	3 1/2	4 1/4
F20C7	12.75	18.0	16.2	7.6	8.4	12.6	4.8	24	4 1/2	2 1/2	3 1/8
IS24C7J	12.80	21.6	19.4	9.0	10.1	15.1	4.0	24	4 1/2	2 1/2	3 1/8
IS24B9	17.95	21.6	19.1	8.5	9.6	14.4	11.0	24	7 1/2	3 1/2	4 1/4
IS28C7J	15.30	25.2	22.7	10.7	11.7	17.8	4.3	24	6	2 1/2	3

NOTE: All rectifiers are single phase, full wave, bridge type. Mounting Prefix: IB=Insulated Bolt; F=Grounded Foot; IF=Insulated Foot; IS=Insulated Stud. P suffix designates reverse polarity stacking. Center terminal is DC positive. J suffix designates universal construction with loose mounting feet for foot, bolt or stud mounting replacement.

† To determine AC Amps: Multiply the DC amps by the following factors: Inductive load by 1.1; resistive load by 1.2; capacitive load by 1.4.

‡ Ratings given are for resistive and inductive loads. To determine the Max. continuous DC amp. rating for capacitive and battery loads multiply these ratings by 0.82.

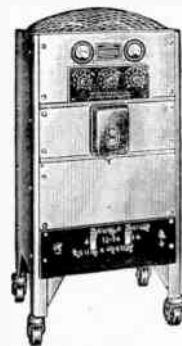
### Mallory VA Series Rectopower® Rectifier DC Power Supplies

Seven models are contained in the line of general utility filtered rectifier DC power supplies for designing, building, testing and repairing electrical and electronic equipment for the automotive, aviation and military equipment industries. The models may also be used for battery charging and electrolytic processes such as plating, anodizing, electrocleaning and electropolishing. These units incorporate voltmeter, ammeter, isolating-type transformer and many other features which make them desirable for production or laboratory use.

The four independent filtered output circuits may be paralleled, series-paralleled, seriesed, used independently or connected in several different combinations to provide simultaneous outputs as required. Delivery information and more detailed specifications on special Rectostarters® for aircraft engine starting and industrial electric truck battery charging, may be had by writing to P. R. Mallory & Co., Inc., Box 1558, Indianapolis, Ind.



VA400  
VA800



VA1500  
VA3000  
VA4500  
VA6000

MODEL	VA400	VA800	VA1500	VA3000	VA4500	VA6000
<b>AC Input</b>						
Volts ± 10% .....	115	208-230 or 115	208-230 or 460	208-230 or 460	208-230 or 460	208-230 or 460
Phase* .....	1	1	3	3	3	3
Cycles .....	60	60	60	60	60	60
KVA .....	1.2	2.4	3.0	6.0	9.0	12.0
<b>DC Output Rating</b>						
Max. Amperes at Nominal Volts of different Circuit Combinations.	Amps.	Amps.	Amps.	Amps.	Amps.	Amps.
6 volts ..... (all paralleled) .....	50	100	200	400	600	800
12 ..... (series-paralleled) .....	25	50	100	200	300	400
24 ..... (all seriesed) .....	12 1/2	25	50	100	150	200
<b>DC Output Adjustment</b>						
Voltage Adjustment Range at Max. Rated Ampere Output.	Volts	Volts	Volts	Volts	Volts	Volts
6 volt nominal .....	0-8	0-8	4-8	4-8	4-8	4-8
12 volt nominal .....	0-16	0-16	8-16	8-16	8-16	8-16
24 volt nominal .....	0-32	0-32	16-32	16-32	16-32	16-32
Number of Voltage Controls .....	1	1	1	1	1	1
Number of Voltage Control Positions .....	Infinite	Infinite	28	28	28	28
<b>DC Output Ripple—At Rated Output Less Than</b> .....	2%	2%	2%	2%	2%	2%
<b>DC Output Regulation</b>						
From 0 to Rated Amps. at Max. DC Volts and Constant AC Volts .....	15%	15%	25%	25%	25%	25%
<b>Overall Dimensions—Width</b> .....	22	25 1/2	25 1/2	25 1/2	25 1/2	25 1/2
Depth .....	9	12 1/2	19	19	19	19
Height .....	14	15 1/2	55	55	55	55
<b>Weight in Pounds—Net</b> .....	90	175	300	370	415	480
Shipping .....	95	175	415	485	530	600
<b>List Price</b> .....	\$375.00	\$575.00	\$850.00	\$1055.00	\$1160.00	\$1325.00

\* 25 and 50 cycle Rectopower supplies are available at additional cost.

**Rectifier Battery Chargers —  
 Power Supplies · UL Approved**

Mallory Automotive, Marine and Aviation Battery Chargers provide convenient, efficient and economical charging of any storage battery used in automobiles, buses, trucks, tractors, taxicabs, small boats, airplanes and on the farm. Taper charging (an automatically decreasing charging rate) is designed into all Mallory chargers to prevent damage to battery plates and to insure maximum battery life. These chargers also are ideal for charging any 6 or 12-volt storage battery used in industrial, engineering and research laboratories.



Mallory Charger Model Number	Nominal Battery DC Volts	Maximum Charging Rate DC Amps.	Tapered Rate DC Amps.	Maximum Continuous DC Amps. as Power Supply	DC Output Termination	Type of Charging Indicator	Approx. Overall Dimensions in Inches			Approx. Shipping Wt. in Pounds	List Price
							Height	Width	Depth		
6SAC4*	6	4	2	3	Universal	None	4 3/8	4 1/4	4 3/8	5 1/4	\$19.95
6SAC6*	6	6	4	5	Universal	Light	6 7/8	4 3/8	4 3/8	6	22.95
6SAC10*	6	10	7	8	Universal	Light	7 7/8	6 1/2	5 3/4	9	33.95
12SAC5*	12	5	3	4	Universal	Light	7 7/8	6 1/2	5 3/4	9	33.95
12SAC10D	6 12	20 10	15 8	16 8	6' Clamps	Meter	9 1/8	6 1/2	5 3/4	15 1/2	66.95

\* These chargers are equipped with a Universal DC Output Socket. No DC Cable Assemblies are packaged with Charger. Purchase either R670 or R675 Cable Assembly.

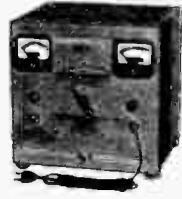
**Mallory 12RS6D Bench Power Supply**

The Mallory 12RS6D is a dual purpose bench power supply designed for use on the radio service bench for operating conventional 6 and 12 volt automobile and truck radio sets. Fully AC-operated from the 115V/60 cycle line, the 12RS6D supplies rectified and filtered DC in either of 2 ranges. Range "A" supplies 0 to 16 volts at 6 amperes continuously, or 12 amperes intermittently. Range "B" supplies 0 to 8 volts at 10 amperes; or 20 amperes intermittently. Both ranges are infinitely variable from zero to maximum output to permit precise adjustment of bench test voltages. The 12RS6D is equipped with a DC voltmeter, a DC ammeter, infinitely variable voltage control, a range switch, an on-off toggle switch, automatic overload protection, primary fuse and rubber-covered line cord and plug. The rectifying system employs a full-wave metallic rectifier. The cabinet is sheet steel finished in blue enamel and measures 6 3/4" high, 10 3/8" wide and 5 1/2" deep. Shipping weight approximately 8 lbs. Catalog No. 12RS6D \$42.95 Net



**Mallory 12RS14D Heavy Duty Six Volt DC Power Supply**

The Mallory 12RS14D 6/12 volt, 25 ampere rectifier type power supply is designed to replace storage battery-charger combinations for bench testing medium power 2-way mobile-phone equipment. It may also be utilized for non-radio uses requiring well-filtered low voltage DC in the 25 ampere range. Heavy sheet-steel housing makes it adaptable for use in garages as mobile radio bench equipment.



The 12RS14D operates from a standard 115 volt 60 cycle source to supply DC voltage from 0 to 8 volts at continuous or variable loads of 0 to 25 amperes. Intermittently, it will supply a maximum of 40 amperes at 6 volts.

An adjustable variable control allows quick selection of any voltage from 0 to 8 at 0 to 25 amperes. Three capacitors totaling 30,000 mfd. filter the output to less than 1 volt ripple and suppress RF and power line interference. A 0-10 volt DC voltmeter and a 0-40 ampere DC ammeter are included.

Conduction cooling of the full-wave Selenium Rectifier Cells, automatic overloading protection, and a self resetting circuit breaker insure long life.

Overall dimensions—11" high, 10 1/2" wide, 8 3/4" deep. Shipping weight—26 lbs. Catalog No. 12RS14D \$139.50 Net

**Mallory Service Bench Rectopower Supplies**

Model 28RS15D is designed to operate from 110-120 volts, 60-cycles, and is equipped with accurate reading DC voltmeters and ammeters, self-reclosing overload circuit breakers in the DC circuit, fuse protection in the AC circuit and an "on-off" switch. Both models are equipped with a continuously adjustable transformer-rotor system to provide precise adjustment of the output voltage to any value from 0 to rated output voltage. Both models are filtered by high-capacity electrolytic capacitors.



These models are also equipped with a new, simplified automatic voltage regulating system (no relays) which keeps the output voltage relatively constant as the load changes from no-load to full load. Model 28RS15D will supply 0-16VDC @ 30A or 0-32VDC @ 15A. Model 28RS16D \$224.00 Net.

**Accessories**

Catalog Number	Description	List Price
R670	Polarized Battery Clip D.C. Cord Assembly for 6SAC4, 6SAC6, 6SAC10 and 12SAC5.	\$1.95
R675	Universal Cigarette Lighter Plug D.C. Cord Assembly for 6SAC4, 6SAC6, 6SAC10 and 12SAC5.	2.25
R653	Extra Battery Clip.	.25

# Mercury Batteries • Transistor Radio Batteries

P. R. MALLORY & CO., INC. • INDIANAPOLIS



## Mercury "A" Batteries



Provide up to 4 times energy-volume ratio of other types of batteries. Ideal for use in portable electronic equipment, etc. Perform under wide range of adverse weather and humidity conditions. No need for rotation or rest periods. Uniform and optimum discharge voltage throughout long service life. 1.34 volts. Button height .058".

Catalog Number	Capacity MAH	Diameter (Inches)	Overall Height (Inches)	Max. Drain (Ma.)	No Load Voltage	List Price
RM-1R	1000	.620	.650	100	1.34	\$0.53
RM-3R	2200	.980	.650	60	1.34	.74
RM-4R	3400	1.190	.650	80	1.34	.95
RM-4ZR	2400	1.190	.500	80	1.34	.85
RM-12R	3600	.620	1.950	250	1.34	1.15
RM-42R*	14,000	1.190	2.375	1000	1.34	2.75
RM-400R	80	.450	.125	10	1.34	.36
RM-401R	800	.455	1.130	100	1.34	.47
RM-450R*	400	.450	.560	40	1.34	.44
RM-502R	2400	.530	1.950	200	1.34	.85
RM-601R*	1800	.620	1.125	150	1.34	.75
RM-625R	250	.610	2.33	20	1.34	.42
RM-630R	350	.610	.233	20	1.40	.42
RM-640R	500	.620	.430	50	1.34	.47
RM-925R	1500				1.3	.70

## Transistor Batteries

Mallory Mercury Batteries are preferred by original equipment manufacturers of transistor radios. The batteries marked(\*) above and those on page 3 are especially recommended for replacement purposes.

Catalog Number	Capacity MAH	Length (Inches)	Diameter (Inches)	Overall Height (Inches)	Max. Drain (Ma.)	No Load Voltage	List Price
TR-113R**	250		.650	.844	20	4.0	\$1.35
TR-114R**	250		.650	1.060	20	5.0	1.80
TR-115R	250		.650	1.295	20	6.5	2.25
TR-120R**	800	.980	.505	1.227	100	2.5	1.60
TR-132R	1000		.655	1.305	100	2.5	1.25
TR-133R	1000		.655	1.960	100	4.0	1.75
TR-134R	1000		.655	2.605	100	5.0	2.25
TR-135R	1000		.655	3.218	100	6.5	2.75
TR-136R	1000		.655	3.906	100	8.0	3.40
TR-140R	1600	.960	.505	1.227	200	1.3	1.65
TR-145R	350		.650	1.050	20	7.5	2.20
TR-146R	400	1.000	.531	1.938	40	9.0	2.75
TR-152R	400		.480	1.125	40	2.5	1.05
TR-153R**	400		.480	1.687	40	4.0	1.35
TR-162R**	500		.655	.875	50	2.5	1.15
TR-163R**	500		.655	1.350	50	4.0	1.60
TR-164R**	500		.655	1.780	50	5.0	2.00
TR-165R**	500		.655	2.185	50	6.5	2.45
TR-233R	2200		1.015	1.969	60	4.0	2.65

\*\*Available on special order.

## Transistor Type Zinc-Carbon Batteries for Radio and Instrument Applications

Mallory's new line of special mix Zinc-Carbon Batteries for use with the new and popular portable transistor radios and industrial electronic applications are now available. They offer greatly improved shelf and service life as well as a more stable current drain.

Catalog Number	Capacity MAH	Length (Inches)	Width (Inches)	Overall Height (Inches)	Max. Drain (Ma.)	No Load Voltage	List Price
M-215		1 1/2	3/8	2		22 1/2	\$1.50
M-1600		1	1	1 31/32		9	1.10
M-1601		2 3/8	1 1/2	7 1/16		3, 6, 9	1.65
M-1602		1 3/8	1 1/16	2 7/16		9	1.85
M-1603		2 1/2	1 1/16	3 3/8		9	1.65
M-1900		1 1/2	3/8	2 1/16		9, 13 1/2	1.35

## Mallory Power-Pak Batteries

Multi-cell power-pak batteries are available in various standard and special sizes for applications in geophysical, radiation detection, recording instruments, transceivers and other approved applications requiring batteries of various capacities and voltages to meet specialized power supply requirements.

Catalog Number	Description	Nominal Voltage	Capacity MAH	Suggested Industrial Prices
302108	See 302904			
302125-M	Fire Alarm	5.3	2400	\$ 2.80
302157	SU-10 Radiation Detector "A"	1.3	28000	8.25
302158	SU-10 Radiation Detector "B"	45.0-22.5	500	19.50
302227*	P. H. Meter	4.0	250	1.18
302229*	P. H. Meter	5.3	250	1.40
302240	Aircraft Instrument	24.0	2400	15.50
302249	Radiation Detector	6.7	250	1.65
302250	Radiation Detector	9.4	250	1.85
302257*	Aircraft Test Equipment	1.3	14400	5.60
302351-M	Home Fire Alarm Battery	5.3	2200	2.00
302354*	Radiation Detector	5.3	250	1.34
302358*	Radiation Detector	10.4	250	2.25
302360*	Radiation Detector	13.0	250	3.10
302362*	Radiation Detector	15.6	250	3.30
302424	Automotive Test Meter	6.7	1000	1.70
302425	Standard "B" Battery	45.0	250	13.50
302435	Radiation Detector	6.7	250	1.65
302437	Radiation Detector	9.4	250	1.85
302462	Transmitter "B" Supply	96.0	1000	28.00
302463	New Style Geophysical	1.3	18000	4.95
302464	New Style Geophysical	6.7	3600	4.95
302465	New Style Geophysical	45.0	1000	13.50
302467*	Test Meter	5.3	1000	1.47
302478-M	Minifon Recorder	9.0	2300	3.00
302497*	Test Meter	6.5	2200	3.45
302499	Missile Equipment	64.0	500	25.00
302502	Geophysical Amplifier	90.0	250	22.75
302506*	Telemetering Equipment	16.0-4.0	250	7.20
302510*	Voltage Reference for Computer	1.3	36000	13.00
302519*	Aircraft Test Equipment	10.4	3600	7.70
302527	Standard "B" Battery	90.0	250	22.75
302530*	Nike Equipment	10.4	14000	38.50
302539	Aircraft Test Equipment	21.5	250	8.70
302540*	Aircraft Test Equipment	1.3	14000	1.80
302554	Standard "B" Battery	90.0	250	22.75
302558*	Missile Equipment	64.0-35.0	500	22.50
302573*	Aircraft Test Equipment	30.0	250	9.20
302580	Aircraft Test Equipment	27.0	3400	16.80
302589	Portable Radio	21.5	250	10.50
302599-M*	Portable Radio	4.0	2200	1.55
302642-M	Fire Alarm	6.5	2400	2.55
302667	Portable Communications Equipment	6.7	14000	15.50
302702*	Geophysical Equipment	2.6	2200	1.95
302800	Aircraft Test Equipment	70.0	1000	24.00
302830	Portable Communications Equipment	12.06-6.7	1000-7200	16.80
302896-M	Portable Communications Equipment	9.0-1.3	3600	6.80
302904	Aircraft Meter	5.3	3400	3.00
302905	Aircraft Test Equipment	6.5	3400	4.35
302908	Radiation Detector	10.6	3400	6.50

\*Available on special order.

## New Mercury Batteries for Radio and Instrument Applications

A series of new standard size Mercury Batteries recently added to the Mallory line is now available. They are suitable for the direct replacement of zinc-carbon types now used in existing electronic and radio applications. These new Mallory Mercury Batteries provide two to three times the service and shelf life of the ordinary type, and at a lower operating cost to the user.

Catalog Number	Capacity MAH	Length (Inches)	Width (Inches)	Overall Height (Inches)	Max. Drain (Ma.)	No Load Voltage	List Price
RM-411R	130	1.000	1 7/32	1 1/2	10	15.0	\$1.75
RM-412R	130	1.000	1 7/32	1 1/16	10	22.5	2.25
RM-413R	130	1.000	1 7/32	2 1/2	10	30.0	2.65
RM-415R	130	1.000	1 7/32	3 1/2	10	45.0	3.95
RM-42R	14,000		1.190	2.375	1000	1.34	2.50
ZM-9	2400		.530	1.950	200	1.5	.75
TR-145R	350		.650	1.050	20	7.5	2.20
TR-146R	400	1.000	.531	1.938	40	9.0	2.75
TR-233R	2200		1.015	1.969	60	4.0	2.95

**Mallory Batteries for Portable Radio Applications**

Mallory Dry Batteries incorporate many outstanding improvements as extra heavy seamless zinc cups, more of the active ingredients, curled rim "sure-lock" seals and other features found only in Mallory Batteries. These features assure longer shelf and service life, and the maximum in dry battery operation.

Mallory and NEDA Numbers	No Load Voltage	Length (Inches)	Width (Inches)	Overall Height (Inches)	List Price
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**"A" Batteries**

M-3	4½	3¾	1¾	4	\$1.05
M-9	7½	3	1¾	2½	1.35
M-13R	1½		1½	2¾	.20
M-14R	1½		1	1¾	.20
M-15R	1½		1¾	1½	.125
M-20	1½		1½	4¼	.40

**"B" Batteries**

M-200	67½	2¼	1½	3%	\$3.50
M-201	45	2%	1½	3½	2.45
M-211P	67½	1¾	¾	5%	3.10
M-212	75	1¾	1½	6%	3.95
M-213	45	1	¾	3%	2.50
M-214	90	1¾	1½	7%	3.75
M-215	22½	1	¾	1½	1.50

**"A-B" Battery Packs**

A-400	9-90	12¾	2¼	4%	\$7.75
A-401	7½, 9-90	9½	2½	4%	7.25
M-405	7½, 9-90	8¾	2¾	3%	6.75
M-413	1½-90	16	4%	6%	9.65

**Batteries for Flashlights and Toys**

M-14F	1½		1	1%	\$0.20
M-13F	1½		1½	2%	.20
M-15F	1½		1¾	1½	.125

**Batteries for Industrial, Instrument and Lantern Applications**

M-902	6	8¾	2¼	5½	4.35
M-907	6	10¾	2¼	7%	4.35
M-908	6	2¼	2¼	3%	.98
M-908S	6	2¼	2¼	3%	.98
M-914	6	2¼	2¼	6%	1.05
M-916	6	2¼	2¼	3%	.98
M-918	6	5¾	2¾	4½	2.45

**Photo Flash Batteries and B-C Cartridges**

M-13P	1½	"D" Cell		1½	3%	\$0.20
M-14P	1½	"C" Cell		1	1%	.20
M-15P	1½	"AA" Penlight Cell		1¾	1½	.15
PX-411	15	Mercury—for built in B-C unit	¾	1½	1½	1.75
PX-412	22½	Mercury for units with built in capacitors	¾	1½	2	2.25
PX-413	30	Mercury for units with built in capacitors	¾	1½	2¼	2.65
PX-10		2 "C" cells aligned vertically		1	3%	3.50
PX-12		2 "D" cells aligned vertically		1¼	4%	3.95
PX-18		2 pen cells aligned horizontally	1½	1¾	1½	3.25
PX-20		2 "C" cells aligned horizontally	2%	1	1%	4.50
PX-2	4	for low voltage flash units	battery power pak			1.50
PX-502	1½	for low voltage flash units		1¾	1½	.80



M-13R



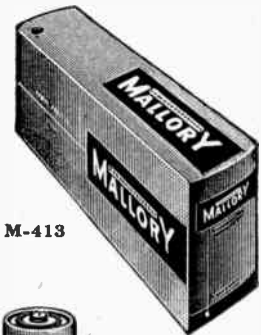
M-15R



M-200



M-214



M-413



M-13F



M-1600



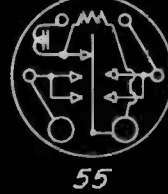
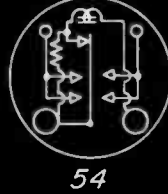
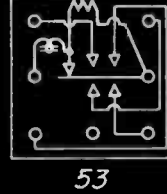
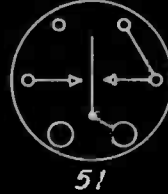
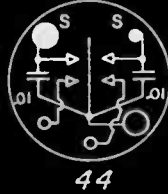
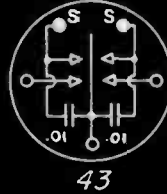
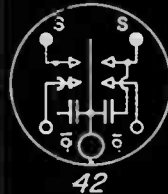
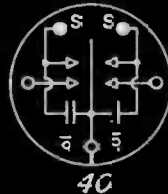
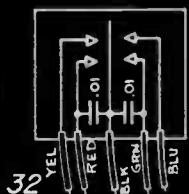
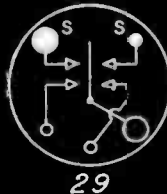
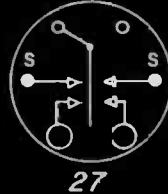
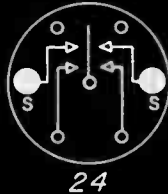
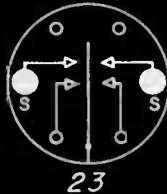
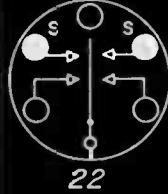
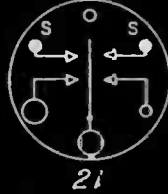
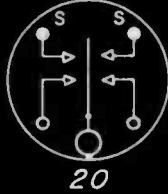
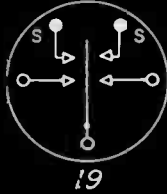
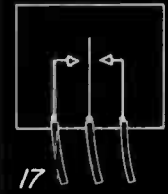
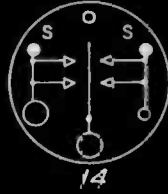
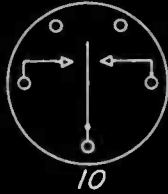
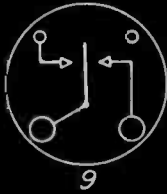
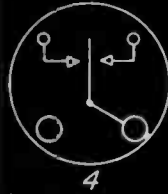
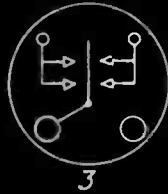
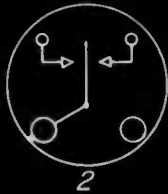
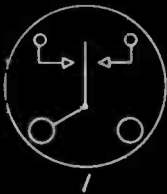
**INSIST on ATR VIBRATORS-Get the Best!!**



# ATR Replacement Vibrator Specifications

Base Diagrams

External Views



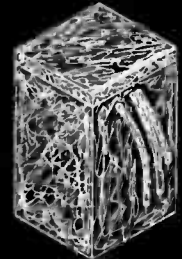
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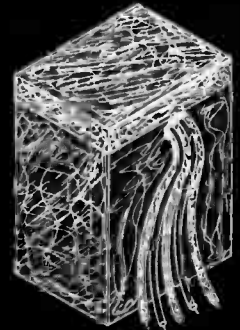
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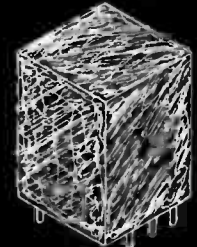
J



K



M





# ATR VIBRATORS *have Ceramic Stack Spacers*



## ATR Replacement Vibrator Specifications

Frequency: 115 Cycles except as noted.

N.S.—Non Synchronous S.—Synchronous

Type No.	Voltage	Type	Base Dia.	Can Style	Dimensions	List Price	Type No.	Voltage	Type	Base Dia.	Can Style	Dimensions	List Price
303	6	N.S.	17	J	1½" x 1¾" x 2½"	\$6.35	523	6	S.	22	A	1½" x 3¼"	\$7.70
320	6	N.S.	10	A	1¼" x 3¼"	6.35	524	6	S.	23	A	1½" x 3¼"	7.70
324	6	N.S.	1	A	1½" x 3¼"	4.90	525	6	S.	24	A	1½" x 3¼"	7.70
324A	6	N.S.	2	A	1¾" x 3¾"	4.90	529	4	S.	21	A	1½" x 3¼"	7.70
324B	6	N.S.	1	A	1½" x 3½"	4.90	540	6	S.	27	A	1½" x 3¼"	7.70
324C	6	N.S.	2	A	1¾" x 4¾"	4.90	541	4	S.	19	A	1½" x 3¼"	8.25
325	6	N.S.	51	A	1½" x 2¾"	6.35	541A	4	S.	19	A	1½" x 3¼"	8.25
328	6	N.S.	4	A	1½" x 3¼"	4.90	544†	6	S.	28	A	1¾" x 2¾"	7.70
335	6	N.S.	9	A	1¾" x 3¾"	4.90	545†	6	S.	28	A	1½" x 3¼"	7.70
337	6	N.S.	14	A	1½" x 3½"	6.35	547	6	S.	29	C	1½" x 3½"	7.70
338	6	N.S.	9	C	1½" x 3¼"	4.90	*548	6	S.	24	A	1½" x 3¼"	8.55
340	6	N.S.	1	A	1½" x 2¾"	4.45	*549	6	S.	21	A	1½" x 3¼"	8.95
*344	6	N.S.	3	A	1½" x 3¼"	8.55	550	6	S.	32	K	4¾" x 1¾" x 1¾"	9.15
345	6	N.S.	9	A	1½" x 2¾"	4.90	561	6	S.	24	A	1½" x 2¾"	7.70
347†	6	N.S.	1	A	1½" x 3¼"	6.35	562	6	S.	21	A	1¼" x 3¼"	7.70
*348	6	N.S.	54	A	1½" x 2¾"	8.95	564†	6	S.	23	A	1½" x 2¾"	7.70
*349	6	N.S.	55	A	1½" x 2¾"	8.95	*574	6	S.	23	A	1½" x 3¼"	8.95
350	6	N.S.	1	A	1¼" x 2¾"	4.90	*575	6	S.	24	A	1½" x 3¼"	8.95
380	4	N.S.	1	A	1½" x 2¾"	4.90	900	2	S.	52	A	1¾" x 2¾"	9.80
503	6	S.	43	A	1¾" x 4½"	9.15	902	2	S.	53	M	1½" x 2¾" x 1½"	10.70
ADAPTER						1.50	1340	12	N.S.	1	A	1½" x 2¾"	5.50
506	6	S.	40	A	1¾" x 4½"	9.15	1343	12	N.S.	56	A	1½" x 3¼"	4.90
507	6	S.	44	A	1¾" x 4½"	9.15	*1344	12	N.S.	3	A	1½" x 3¼"	9.95
508	6	S.	42	A	1¾" x 4½"	9.15	*1348	12	N.S.	54	A	1½" x 2¾"	9.95
520	6	S.	19	A	1½" x 3¼"	7.70	1520	12	S.	19	A	1½" x 3¼"	9.95
520A	6	S.	19	A	1¾" x 3½"	7.70	1524	12	S.	23	A	1½" x 3¼"	8.55
521	6	S.	20	A	1½" x 3¼"	7.70	*1548	12	S.	24	A	1½" x 3¼"	9.95
522	6	S.	21	A	1½" x 3¼"	7.70	2324	32	N.S.	1	A	1½" x 3¼"	7.15
522A	6	S.	21	A	1¾" x 3½"	7.70	2401	32	S.	22	A	1½" x 3¼"	8.55

†140 Cycles †180 Cycles †With 5 Ohm Resistors \*Communications Type Vibrator for Super Service.

### Recommended Substitutions for Discontinued Vibrators

Discontinued Type	Recommended Replacement	Discontinued Type	Recommended Replacement	Discontinued Type	Recommended Replacement
305	303	330	324C	543	522A
307	303	332	522	543A	522A
314	324	342	325	546	522
316	324	504	503	551	550
317	324	505	503	553	550
323	340	531	550	591	524
326	325	536	524	2327	2324
327	325	537	525	2403	2324



# ATR VIBRATORS have Ceramic Stack Spacers



## ATR Vibrator Equivalent Charts

by Vibrator Manufacturers' Replacement Part Number

Part No.	ATR Part No.	Part No.	ATR Part No.	Part No.	ATR Part No.	Part No.	ATR Part No.
<b>CORNELL-</b>	<b>DUBILIER</b>	<b>CORNELL-</b>	<b>-DUBILIER (Cont.)</b>	<b>MALLORY</b>	<b>(Cont.)</b>	<b>RADIART</b>	
C00	340	5342	340	W245	541	2742	303
C00-32	2324	5343	324	W245A	541	2743	303
C01	340	5363	303	W246	No Rep.	2747	303
C03	345	5366	325	W779	541	2819	303
C04	324	5397-32	2324	W859	380	2864	303
C07	No Rep.	5370	380	221	303	2867	303
C08	347	5400	524	222	550	3200	303
C09	328	5401	510	223	550	3223	325
C14	350	5406	525	224	550	3225	No Rep.
C20P	324B	5407	545	226	550	3226	No Rep.
C21	340	5408	564	245	520	3227	303
C23P	340	5409	520	245A	320A	3260	340
C26P	340	5409-4	541	245C	521	3261	325
C28P-32	No Rep.	5410	521	245SW	520	3262	340
C31	328	5411	522	246	522	3263	325
C33	338	5413-4	541A	246A	522	3264	324
C35	345	5425	508	246P	562	3283	503
C43M	340	5426	547	247	523	3290	No Rep.
C43M	324	5429	507	248	524	3299	325
C63	303	5431-4	No Rep.	249	525	3300	303
C66	325	5434	522	253	324	3302	325
C67-32	2324	5435	522	253T	324	3308	550
CS03-12	1344	5435-4	No Rep.	253Y	324	3310	No Rep.
CS03-32	1344	5436	No Rep.	264	522	3311	No Rep.
CS01P	337	5437	545	270B	503	3312	No Rep.
CS06	No Rep.	5438	524	271	503	3313	303
CS10	No Rep.	5440	524	271ED	506	3314	No Rep.
CS11-12	No Rep.	5443	523	273C	508	3315	550
CS15	344	5443-32	No Rep.	273D	507	3316	No Rep.
D00	524	5454	501	275	503	3317	550
D04	510	5463	550	277A	324	3318	No Rep.
D06	525	5464	503	286S	324	3319	503
D07	545	5468-2	902	287M	524	3320	340
D08	564	5469-2	900	289Y	525	3356	325
D09	520	5503-12	1344	292	303	3357	303
D09-4	No Rep.	5504	337	294	324	3358	2324
D10	521	5506	No Rep.	294C	345	3397	2324
D11	582	5510	No Rep.	294SW	328	3398	303
D13	520A	5511-12	No Rep.	296	325	3399	324
D13-4	No Rep.	5513-12	No Rep.	297	325	3407	2324
D-16	503	5514-4	No Rep.	298	325	3417	324
D21	522	5515	344/348	299	325	3442	No Rep.
D22	No Rep.	5516	324	500P	340	3443	No Rep.
D25	508	5517-12	No Rep.	501P	340	3444	No Rep.
D26	547	5518	319	503	303	3445	No Rep.
D29	507	5519	348	504	522	3460	No Rep.
D31	No Rep.	5560	No Rep.	505P	324B	3461	508
D34	522	5604	506	506P	337	3462	No Rep.
D35	522	5605	548	507P	310	3463	No Rep.
D35-4	No Rep.	5605-12	1548	508P	340	3481	2324
D36	No Rep.	5605-32	No Rep.	509P	340	3503	2324
D37	545	5607	No Rep.	510P	340	3588	No Rep.
D38	524	5607-12	No Rep.	514	547	3607	No Rep.
D40	524	5607-32	No Rep.	716	547	3608	No Rep.
D43	523	5609-12	1520	722A	522	3651	No Rep.
D43-32	2401	5610	582	725C	548	3679	521
D54	561	5610-12	No Rep.	742	561	3741	340
D53	550	5614-12	1548	743	562	3774	1344
D64	503	5615	545	748	564	3782	340
D804	508	5615-24	No Rep.	825	324	3786	No Rep.
D805	548	5616	No Rep.	826C	344	3789	523
D805-12	1548	5616-12	No Rep.	839	347	3806	340
D805-32	No Rep.	5620	374	850	340	3815	324
D807	No Rep.	5621	549	852	345	3818	340
D807-12	No Rep.	5622	No Rep.	853	340	3842	324
D807-32	No Rep.	5623	575	854	328	3848	550
D809-12	1520	6330	1343	859	340	3850	524
D810	562	6370	340	860	338	3865	340
D810-12	No Rep.			863	345	3880	303
D814-12	No Rep.			866	340	3883	521
D815-12	No Rep.			868	345	3888	340
D815-24	No Rep.			869	340	4251H	324
D816	No Rep.			870	345	4253	344
D816-12	No Rep.			901M	340	4253-32	344
D820	524			902M	340	4254	No Rep.
6VL10-2	No Rep.			903M	340	4254-12	No Rep.
5300	324			951P	522	4254-32	No Rep.
5300-32	2324			952W	545	4255	548
5301	340			953W	545	4255-12	1548
5303	345			954	510	4255-32	No Rep.
5307	No Rep.			1100	350	4255H	548
5308	340			1501	348	4256	No Rep.
5309	328			1502	349	4256-12	1344
5314	350			4501	348	4256-32	2324
5320	324B			4502	349	4257	No Rep.
5321	340			4516	549	4257-12	No Rep.
5323	340			4548	574	4257-32	No Rep.
5326	340			4549	375	4258	No Rep.
5331	328					4258-12	1548
5333	338					4258-32	No Rep.
5335	345					4260	340
						4301	324

Note:—For recommended replacement refer to listings by receiver name and model number in Section A.





# ATR VIBRATORS *have Ceramic Stack Spacers*



## ATR Vibrator Equivalent Charts by Vibrator Manufacturers' Replacement Part Number

Part No.	ATR Part No.	Part No.	ATR Part No.	Part No.	ATR Part No.	Part No.	ATR Part No.
<b>RADIART—</b> (Cont.)		<b>RADIART—</b> (Cont.)		<b>JAMES—</b> (Cont.)		<b>JAMES</b> (Cont.)	
4306..... No Rep.		5413..... 520A		J9..... 315		32J2..... 2324	
4306-12..... No Rep.		5413-4..... 541A		J8S..... 338		32J15ST..... 2324	
4306-24..... No Rep.		5415..... 541		J9SA..... 345		32J19S..... 2324	
4131..... 324		5416..... 503		J15ST..... 324B		32J59..... 2324	
4314..... 2324		5418..... 320		J16..... 337		32J63..... No Rep.	
4318..... 522		5418-12..... 520		J19S..... 325		32PJ3S..... 2324	
4319..... No Rep.		5420P..... 522		J21..... 350		32PJ19..... 2324	
4320..... 235		5421..... 522		J22..... 324		32PJ50..... No Rep.	
4332..... No Rep.		5422..... No Rep.		J23..... 340			
4402..... 520		5425..... 508		J24..... 349			
4403..... 520A		5426..... 547		J25..... 348			
4404..... 2401		5427..... 529		J50..... 550			
4414..... 525		5428..... 527		J52..... 545		<b>OAK</b>	
4415..... 530		5429..... 502		J54..... 508		<b>D-7</b> ..... 522	
4415-12..... No Rep.		5430..... 522		J55..... 503		35ZH..... 562	
4416..... 522		5431..... No Rep.		J58..... 522		2098..... No Rep.	
4417..... 541		5431-4..... No Rep.		J58A..... 522		V5011..... No Rep.	
4500..... 550		5434..... 522		J58P..... 522		V5064..... 522	
4501..... 524		5435..... 522		J58W..... No Rep.		V5105..... 340	
4502..... 903		5435-4..... No Rep.		J59..... 523		V5107..... 328	
4504..... 507		5437..... 545		J60..... 508		V5108..... No Rep.	
4505..... 506		5438..... 524		J61..... 520		V5113..... 522	
4607..... No Rep.		5439..... 562		J61A..... 520A		V5123..... No Rep.	
4608..... No Rep.		5439-12..... No Rep.		J61C..... 503		V5124..... 522	
4610..... No Rep.		5440..... 524		J62..... 507		V5133..... 340	
4611..... 507		5443..... 523		J63..... 525		V5143..... No Rep.	
4612..... 322		5443-32..... No Rep.		J63NC..... 525		V5179..... 340	
4613..... 508		5454..... 561		J63SP..... 561		V5193..... 340	
4614..... 508		5463..... 550		J65..... 524		V5208..... 522	
4631..... 340		5464..... 503		J65M..... 524		V5247..... No Rep.	
5300..... 324		5467..... 900		J65SP..... 564		V5259..... 522	
5300-12..... 1344		5468-2..... 902		J66..... 547		V5337..... 340	
5300-32..... 2324		5469 2..... 900		J67..... 524		V5389..... 522	
5301..... 340		5500..... 324		J68N..... 522		V5392..... 328	
5303..... 345		5501..... 324		J69..... 540		V5410..... 340	
5304-32..... No Rep.		5503..... 344		J73..... 525		V5413..... 522	
5305..... 340		5503-12..... 1344		PJ1..... 340		V5416..... No Rep.	
5306..... 325		5503-32..... 2324		PJ2..... 340		V5447..... No Rep.	
5307..... No Rep.		5504..... 337		PJ3..... 324		V5481..... No Rep.	
5308..... 340		5504P..... 337		PJ4..... 325		V5485..... 325	
5309..... 328		5506..... No Rep.		PJ4S..... 325		V5522..... No Rep.	
5310..... 310		5510..... No Rep.		PJ5..... No Rep.		V5530..... 340	
5312..... 325		5511-12..... No Rep.		PJ6..... 325		V5570..... 340	
5313..... 324		5513-12..... No Rep.		PJ6S..... 325		V5608..... No Rep.	
5314..... 350		5514-4..... No Rep.		PJ7..... 345		V5624..... No Rep.	
5320..... 324B		5515..... 345/348		PJ8..... 328		V5641..... 340	
5320P..... 324B		5516..... 344		PJ8S..... 328		V5645..... 522	
5321..... 340		5517-12..... No Rep.		PJ9..... 335		V5670..... 522	
5322..... 350		5518..... 349		PJ10S..... 522		V5704..... No Rep.	
5322P..... 340		5519..... 348		PJ11..... 324		V5709..... No Rep.	
5323..... 340		5560..... No Rep.		PJ12..... 324		V5745..... 340	
5323P..... 340		5604..... 506		PJ14S..... 325		V5770..... 328	
5324..... 337		5605..... 548		PJ15S..... 340		V5868..... 522	
5324P..... 337		5605-12..... 1548		PJ16..... 340		V6027..... No Rep.	
5325P..... 340		5605 32..... No Rep.		PJ17..... 340		V6087..... 1344	
5326P..... 340		5607..... No Rep.		PJ18..... 340		V6248..... 1344	
5327P..... 110		5607-12..... No Rep.		PJ19..... 325		V6270..... 522	
5328P-32..... No Rep.		5607-32..... No Rep.		PJ50..... 550		V6347..... No Rep.	
5330..... 340		5609-12..... 1520		PJ51..... 550		V6605..... No Rep.	
5331..... 328		5610..... 562		PJ54..... 508		V6833-32..... No Rep.	
5333..... 338		5610-12..... No Rep.		PJ55..... 503		V4763..... No Rep.	
5334..... 345		5614-12..... 1548		PJ56..... 524		ZW-37216..... 328	
5335..... 345		5615..... 545		PJ57..... 525			
5339..... 345		5615-12..... No Rep.		PJ58..... 522			
5340M..... 340		5615-24..... No Rep.		PJ59..... 523			
5341M..... 340		5616..... No Rep.		PJ60..... 521			
5342..... 340		5616-12..... No Rep.		PJ61..... 520			
5342M..... 340		5620..... 574		PJ62..... 507			
5343M..... 324		5621..... 549		PJ63..... 525			
5355..... No Rep.		5622..... No Rep.		PJ64..... 522			
5355-14..... No Rep.		5623..... 575		PJ65..... 324			
5356-14..... No Rep.		6330..... 1343		PJ66..... 547			
5356-28..... No Rep.		6370..... 340		PJ67..... 524			
5363..... 303				PJ68..... 522			
5365..... 325				PJ69..... 540			
5366..... 325				2J70..... 902			
5367-32..... 2324				2J71..... 900			
5370..... 380				4J2SW..... No Rep.		<b>VOKAR</b>	
5400..... 524				4J58..... No Rep.		NP6V..... 325	
5404..... 540				4J61..... 541		NP42V..... 328	
5405..... 521				4J61A..... 541		NP43V..... 328	
5406..... 525				12J15ST..... 1344		NP44V..... 340	
5406-12..... 1548				12J2..... 1344		NP47V..... 345	
5407..... 545				12J22..... 1324		SP51V..... 508	
5408..... 564				12J23W..... No Rep.		SP54V..... 547	
5409..... 520				12J25W..... No Rep.		SP66V..... 522	
5409-4..... 541				12J28W..... No Rep.		SP71V..... 525	
5409-12..... 1520				12J61..... 1520			
5409-32..... No Rep.				12J63..... 1548			
5410..... 521				12J72W..... No Rep.			
5411..... 522				12PJ21..... 1344			
				24J58W..... No Rep.			

Note—For recommended replacement refer to listings by receiver name and model number in Section A.

## Communication Vibrators for SUPER SERVICE

As introduced in the 1954 May-June issues of many leading radio magazines, ATR COMMUNICATION VIBRATORS are truly THE WORLD'S FINEST. See reprint of ad on this page for feature specifications.

ATR COMMUNICATION VIBRATORS eliminate the problem of short-life call-backs on those tough two-way communication rigs. Yes, Sir! these ATR COMMUNICATION VIBRATORS deliver SUPER SERVICE.

For additional specifications pertaining to ATR SUPER SERVICE COMMUNICATION VIBRATORS, see page M-797.

### ATR VIBRATORS FEATURE:

CERAMIC STACK SPACERS with Two-Bolt Stack Construction—for adjustment permanency under any operating condition.

INSTANT STARTING—as a result of highly efficient magnetic circuit with formed base for more uniform operation on both high and low voltages.

LARGE OVERSIZED TUNGSTEN CONTACTS having Full Wiping Action—for greater reliability and longer life.

PERFORATED REED of Highest Quality Swedish Spring Steel—for uniform flexibility and prevention of reed breakage.

HIGHEST PRECISION CONSTRUCTION AND WORKMANSHIP—Practically all parts used are held to within a tolerance of 0.0005 of an inch.

VALUE PLUS—as readily evidenced by the Larger Contacts, Ceramic Spacers and Precision Construction and Workmanship.



## The World's Finest Communication VIBRATORS

featuring:

- CERAMIC STACK SPACERS
- 1/4" DIAMETER POWER CONTACTS
- DRIVER-TYPE COIL CONSTRUCTION
- SPECIAL REED HINGE and WIRING
- POWER CAPABILITY UP TO 15 AMPERES

### A COMPLETE LINE OF REPLACEMENT

## ATR VIBRATORS

FOR AUTOMOTIVE, HOUSEHOLD and  
TWO-WAY COMMUNICATION SETS

ATR VIBRATORS are proven units of the highest quality, engineered to perfection. They are backed by more than 26 years of vibrator design and research, development and manufacturing.  
ATR pioneered in the vibrator field.



FREE

ATR VIBRATOR  
MASTER MANUAL



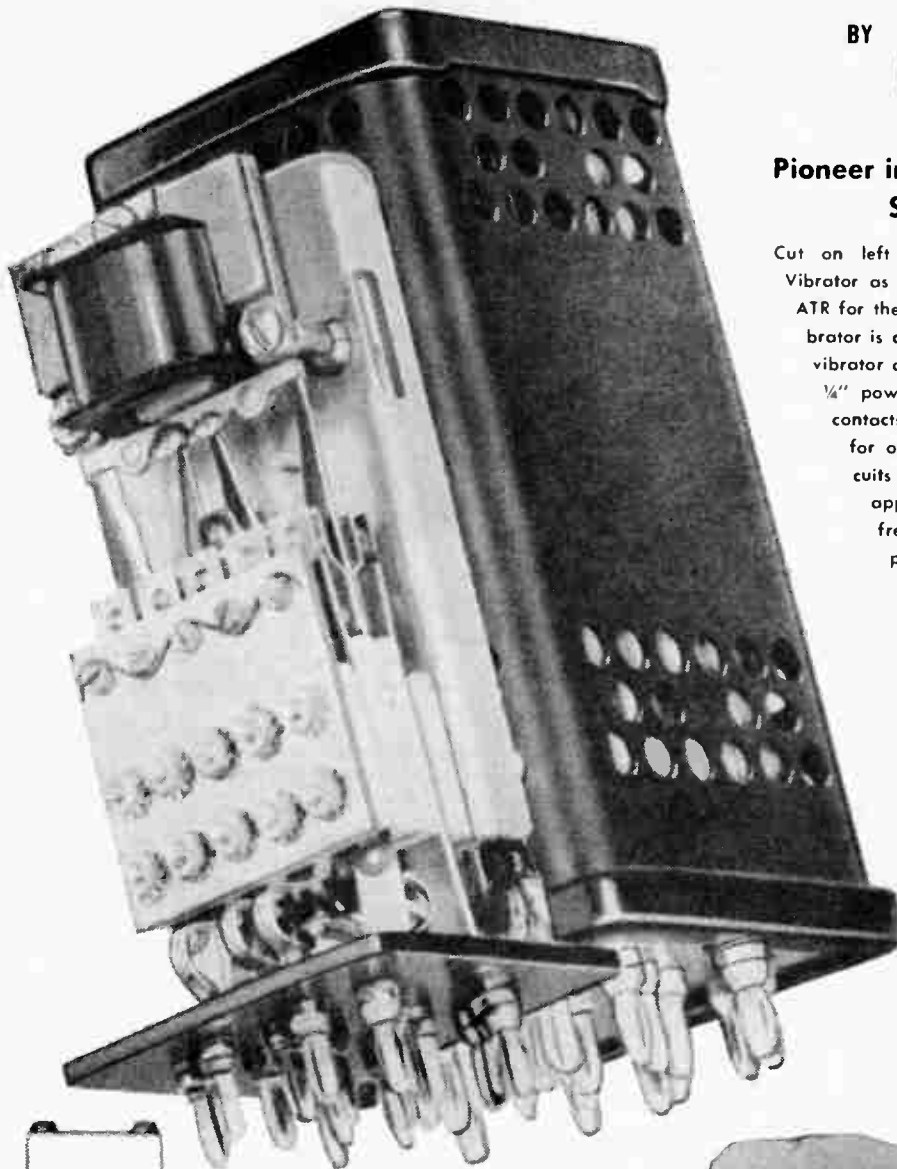
# INTRODUCING THE WORLD'S LARGEST VIBRATOR

BY

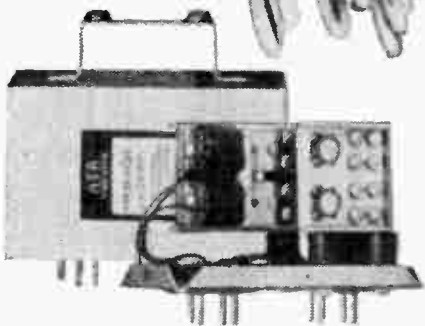


**Pioneer in the Vibrator Field  
Since 1931**

Cut on left illustrates the ATR VB-16 Vibrator as developed and produced by ATR for the Army Signal Corps. This vibrator is considered the world's largest vibrator and is equipped with twenty  $\frac{1}{4}$ " power contacts and two driver contacts and is normally available for operation in 6 or 12 volt circuits with a power capability of approximately 200 watts, the frequency being 200 cycles plus or minus 2%.

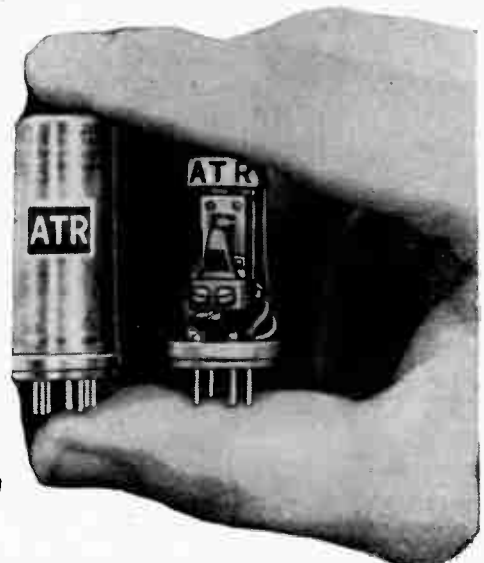


Illustrates ATR 10 contact vibrator as utilized in ATR RSF and RME model Inverters.



Cut above illustrates the ATR 20 contact type vibrator as used in ATR Model RHG and HSJ Inverters.

Illustrates the ATR — World's smallest vibrator, developed in cooperation with Squier Signal Lab., Lab., Ft. Monmouth, New Signal Corps Engineering Jersey.



**BIG OR SMALL**



**MAKES THEM ALL!**

WRITE FOR ADDITIONAL INFORMATION ON ATR VIBRATORS



# UNIVERSAL INVERTERS

Specially Designed for  
Operating Standard A.C.  
Tape Recorder, Television Set,

Dictating Machine, Radio Set, Ham Gear, Public Address System, Amplifier, Record Player, Electric Razor, Food Mixer, Vacuum Cleaner, Sewing Machine, Business Machine, Electric Drill, Fluorescent and Incandescent Lamp, and Electronic Test Equipment from D.C. Voltages in Automobiles, Buses, Trucks, Boats, Trains, Planes, and D.C. Districts. Ideal for Emergency Lighting Applications for Civil Defense, Red Cross, Rescue Work, etc., Simply Using Extension Cords.

ATR Universal Inverters are actually a combination of 4 Inverter designs in one unit! These Inverters are especially recommended for applications as mentioned above and feature complete RF frequency interference suppression, instant starting, frequency stability, and built-in power factor corrector utilizing a simple toggle switch. With ATR Inverters, the need for special equipment is eliminated. They are designed for quiet, long-life operation at high efficiency and maximum reliability. All models indicated are equipped with ATR heavy duty plug-in Inverter Vibrators. These Inverters also come equipped with four-point voltage regulator which make possible the correct output voltage for minimum to maximum loads and also help compensate for input voltages which are lower or higher than normal. The operating efficiency is in excess of 75%. To figure approximate current consumption from storage battery, divide the rated input wattage of the recorder (or load) being operated by the storage battery voltage and further divide this answer by .75 which will give the actual current consumption based on the actual load and efficiency. The battery current consumption required for a tape recorder is normally less than that drawn by ordinary automobile headlight(s). These Universal Inverters are recommended only for use with loads having power factors in excess of 70%.



Featured cut above illustrates  
Model 12U-RHG.

ATR Inverters should be used only for the applications as outlined above and on the reverse side of this sheet.

"-P" models equipped with cigarette lighter cord set to plug into dash receptacle.

All ATR Universal Inverters are housed in attractively finished grey-hammerloid metal cabinets.

Dimensions of Standard (RSF) Model Universal Inverters, 8½" x 9¾" x 5¼"; shipping weight 22 lbs.

Dimensions of Heavy Duty (RHG) Model Universal Inverters, 6¾" x 11¼" x 8½"; shipping weight 27 lbs.

Dimensions of Super Heavy Duty (HSJ) Model Universal Inverters 6½" x 12¾" x 8½"; shipping weight 37 lbs.

For correct replacement Vibrator, consult Inverter Vibrator Guide.

Type	Input D.C. Volts	A.C. Output 60 Cycles	Output Watt.		Shipping Weight	List Price
			Int.	Cont.		
6U-RSF	6	110 Volts	100	80	22 lbs.	\$ 75.00
6U-RSF-P	6	110	100	80	22	75.00
6U-RHG	6	110	150	125	27	89.95
6U-HSJ	6	110	175	150	37	125.00
12U-RSF	12	110	125	100	22	75.00
12U-RSF-P	12	110	125	100	22	75.00
12U-RHG	12	110	175	150	27	89.95
12U-HSJ	12	110	250	200	37	125.00
*28U-RSF	28	110	125	100	22	89.95
*28U-RHG	28	110	175	150	27	105.75
*28U-HSJ	28	110	250	200	37	145.00
32U-RSF	32	110	150	100	22	89.95
32U-RHG	32	110	200	180	30	105.75
32U-HSJ	32	110	325	225	37	145.00
50U-RSF	50	110	150	100	22	89.95
110U-RSF	110	110	250	150	22	75.00
110AU-RHG	110	110	325	250	27	89.95
110BU-RHG	110	110	450	350	30	105.75
110U-HSJ	110	110	600	400	37	145.00
220U-RSF	220	110	250	150	22	79.50
220U-RHG	220	110	325	250	27	99.50
220U-HSJ	220	110	500	300	37	155.00

\* Recommended for 24 volt battery systems.

## ACCESSORIES for 6, 12, and 28 Volt D.C. Input Inverters.



REMOTE CONTROL UNIT — for under-dash mounting permitting installation of inverter in auto-trunk compartment. List Price \$7.95

MOUNTING BRACKETS — to securely mount inverter in trunk compartment of car or under-dash, as illustrated. List Price \$4.95 pr.

EXTENSION CABLES — to provide additional cable lengths for installation of inverter in trunk compartment. List Price \$9.95 pr.

**JOBBER ATTENTION: See Pages M-809 and M-810 in this ATR Section for your Catalog Needs!**



# PORTABLE — Plug-in Type INVERTERS

**Specially Designed for Operating Standard A.C. Dictating Machines, Record Players, Incandescent Lamps, Electric Razors, Electronic Test Equipment, and Other Small Electrical and Electronic Devices from D.C. Voltages in Automobiles, Buses, Trucks, Boats, Planes, Trains, and D.C. Districts.**

ATR Portable Inverters are light-weight plug-in units for applications as recommended above. These Inverters feature instant starting, frequency stability, and high efficiency and reliability. Inverters have partial RF filtering which is only suitable for small insensitive type radios. For sensitive radio sets, ATR Universal Inverters, catalog sheet 657U, must be used. The 6 and 12-volt units are equipped with cigarette lighter cord set to plug into dash receptacle; whereas, the other higher input voltage units are equipped with standard two-blade plug-in cord sets. With ATR Inverters the need for special equipment is eliminated. They are designed for quiet, long-life operation. All ATR Models indicated are equipped with ATR plug-in Inverter Vibrators. Models RME and RMF come equipped with a four-point voltage regulator which makes possible the correct output voltage for minimum to maximum loads. The battery current consumption required is normally less than that drawn by one ordinary automobile headlight. The operating efficiency is approximately 75%. To figure battery current consumption see catalog sheet 657U. These Inverters are recommended only for use with loads having power factors in excess of 80% and should be used only for the applications as outlined above and on the reverse side of this sheet. These Portable Inverters are not recommended for tape recorder operation.



Illustrates ATR Mighty Midget (DME) Model Inverter having Cigarette Lighter Plug Attachment.



Illustrates ATR Medium (RME and RMF) Model Inverter having Four-Point Voltage Regulator and Cigarette Lighter Plug Attachment.

**EASY TO INSTALL**  
**EASY TO OPERATE**



Illustrates Under-Dash Mounting for ATR Models RME and RMF. See Page M-802 for available accessories.

**Ideal for Emergency Lighting Applications for Civil Defense, Red Cross, Rescue Work, etc., Simply Using Extension Cords.**

TYPE	INPUT D.C. VOLTS	A.C. OUTPUT 60 CYCLES	OUTPUT WATTAGE		SHIPPING WEIGHT	LIST PRICE
			Int.	Cont.		
6-DME (1)	6	110 Volts	40	30	5 lbs.	\$19.95
6C-DME (1)	6/12	110	40	30	5	23.50
6-RMF (2)	6	110	80	60	12	45.00
6C-RMF (2)	5/12	110	80	60	12	49.50
12-DME (1)	12	110	50	40	5	19.95
12T-RME (2) (3)	12	110	125	90	12	42.50
*28-RME (2)	28	110	100	80	12	57.50
32-RME (2)	32	110	100	80	12	57.50
110-RME (2)	110	110	150	100	12	47.50

\* Recommended for 24-Volt Battery Systems.

For Inverters having larger or smaller output capacities, or for operation on other D.C. input voltages, please consult available ATR Inverter catalog sheets.

All models designated above are housed in attractively finished grey-hammerloid metal cabinets. Dimensions of Medium (RME and RMF) Model Inverters, 8<sup>3</sup>/<sub>8</sub>" x 8" x 3<sup>3</sup>/<sub>4</sub>"; shipping weight, 12 lbs. Dimensions of Mighty Midget (DME) Model Inverters, 5<sup>1</sup>/<sub>4</sub>" x 4<sup>3</sup>/<sub>4</sub>" x 2<sup>3</sup>/<sub>4</sub>"; shipping weight, 5 lbs. For correct replacement vibrator, consult Inverter Vibrator Guide.

(1) These Inverters primarily recommended for Edison VP dictating machines. May also be used with Model 200 Soundscriber (with engine of car not running).

(2) Primarily recommended for Dictaphone's Time Master, Gray Audograph dictating machines, or other similar types.

(3) THIS INVERTER SPECIALLY DESIGNED AND RECOMMENDED ALSO FOR USE WITH RCA 8<sup>1</sup>/<sub>2</sub>" PORTABLE TV SET OR G.E. 9" PORTABLE TV SET IN AN AUTOMOBILE.

**JOBBER'S ATTENTION: See Pages M-809 and M-810 in this ATR Section for your Catalog Needs!**



# Electronic Tube PROTECTOR

Specially Designed To Protect ALL Electronic Tubes in TV or Hi-Fi Sets, Amplifiers, and Similar Electronic Equipment. Will Double or Triple Tube Life Including Picture Tubes.

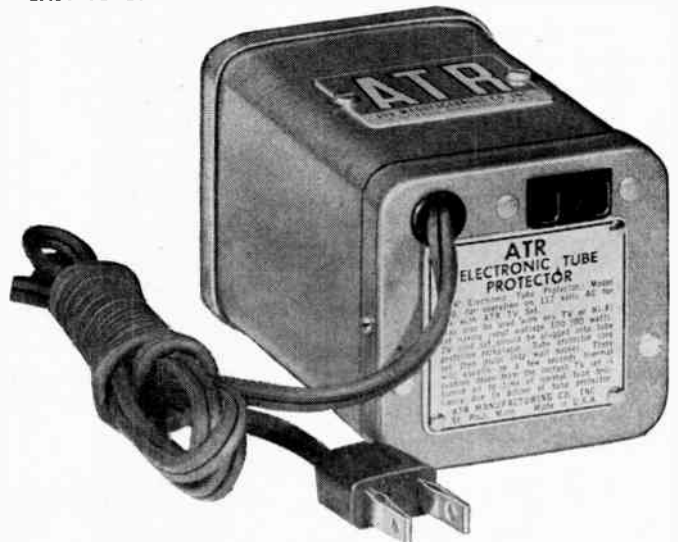
## EASY TO OPERATE

ATR Electronic Tube Protectors should double or triple the life of all electronic tubes including picture tube in TV or Hi-Fi Sets, Amplifiers, Electronic Organs, and other similar electronic equipment. The ATR Electronic Tube Protector utilizes a thermal cushion-action principle which also protects all other components by eliminating initial damaging surge currents. The ATR Electronic Tube Protector can be used with any electronic equipment having input wattage of 100 to 300 watts. The Electronic Tube Protector plugs into the AC wall socket; whereas, the TV or Hi-Fi Set then plugs into the tube protector receptacle. There will usually be a few seconds thermal cushion-action delay from the instant TV set is turned on to time of normal tube brilliancy due to action of Tube Protector.

Two (2) models are available as illustrated

### Features —

- Small Size
- Fuse Protection
- Metal Case
- Long Life
- Rugged Construction
- Automatic Operation



Illustrates ATR Electronic Tube Protector Model 300



Illustrates ATR Electronic Tube Protector Model 250

TYPE	INPUT A.C. Volts	A.C. OUTPUT		SHIPPING WEIGHT	LIST PRICE
		Volts	Amperes		
250	115	115	1-3	1	\$4.95
300	115	115	1-3	2	6.95

ATR Type 250 Electronic Tube Protector has dimensions 1 $\frac{1}{4}$ " OD x 3 $\frac{1}{8}$ " in length. Housed in attractively finished golden brown hammerloid metal container. Plugs directly into wall socket as illustrated on reverse side.

ATR Type 300 Electronic Tube Protector has dimensions 4" x 2 $\frac{5}{8}$ " x 2 $\frac{3}{4}$ ". Housed in attractively finished golden brown hammerloid steel case having rubber mounting feet. Has cord set to plug into wall socket providing flexibility in positioning.



# SHAV-PAKS

Specially Designed for Operating Standard A.C. Electric Shavers in Automobiles, Buses, Trucks, Boats, and Planes.

ATR SHAV-PAKS are miniature DC-AC Inverters designed especially for the operation of standard A.C. electric shavers from 6 or 12-volt storage batteries in automobiles, buses, trucks, boats, and planes. They are ideally suitable for traveling salesmen, executives, sportsmen, and all owners of electric shavers. The ATR SHAV-PAK very simply plugs into the cigarette lighter receptacle on the dash and changes the D.C. battery power to standard 110-volt A.C. electricity for the operation of electric shavers anywhere! The ATR SHAV-PAK may also be used for operating other small A.C. devices having a wattage requirement of not more than 15 watts such as flea power timing motors. ATR SHAV-PAKS are equipped with ATR plug-in type vibrators which will give many years of satisfactory and dependable service.

**EASY TO OPERATE**



Plug into Cigarette Lighter Receptacle on Dash



Keep in Glove Compartment

### Features—

- Small Size
- Plug-in ATR Vibrator
- Fuse Protection
- Rubber Mounting Feet
- Steel Case
- Rugged Construction

SALESMEN AND EXECUTIVES —“Be Neat,” have your electric razor handy! Shave in the comfort of your own car, boat, or plane.

TYPE	INPUT D.C. VOLTS	A.C. OUTPUT 60 CYCLES	OUTPUT WATTAGE	SHIPPING WEIGHT	LIST PRICE
6-SPB	6	115 volts	15	2½ lbs.	\$9.95
12-SPB	12	115	15	2½	9.95

Radio frequency interference not suppressed.

For Inverters having larger or smaller output capacities, or for operation on other D.C. input voltages, please consult available ATR Inverter Catalog Sheets.

All ATR SHAV-PAKS are housed in attractively finished grey hummerloid steel cabinets. Dimensions 4" x 2½" x 2¾"; shipping weight, 2½ lbs.

For correct replacement vibrator, consult Inverter Vibrator Guide.

**JOBBER ATTENTION: See Pages M-809 and M-810 in this ATR Section for your Catalog Needs!**



# "A" BATTERY ELIMINATORS

## ... FOR DEMONSTRATING AND TESTING AUTO RADIOS

### 6 VOLT OR 12 VOLT!

#### TRANSISTOR or VIBRATOR OPERATED!

Specially Designed for Testing and Operating Auto Radios and D.C. Electrical Apparatus on Regular A.C. Lines, 105-125 Volts, 50-60 Cycles.

#### SUGGESTED USES:

As a power supply for radio sets, aircraft instruments, relays, motors and other electrical and electronic equipments. In the laboratory, for supplying various low D.C. voltages.

Battery Eliminators may be treated as batteries in the sense that they can be connected in series for higher voltages at the same current output per unit or in parallel for the same output voltage per unit at higher currents.

- ✓ Eliminates Storage Batteries and Battery Chargers.
- ✓ Operates the Equipment at Maximum Efficiency at All Times.
- ✓ Delivers Filtered Direct Current at the Correct Voltage for Proper Operation.
- ✓ Minimum Ripple
- ✓ Fully Automatic and Fool-Proof
- ✓ Adjustable Voltage Control



Featured cut illustrates Heavy Duty "A" Battery Eliminator, Model 620C-ELIT; equipped with Voltmeter, Ammeter and Voltage Control.



Illustrates Standard "A" Battery Eliminator, Model 610C-ELIF; equipped with Voltmeter, Ammeter and Voltage Control.

Equipped with Full-Wave Dry Disc Selenium Rectifier, Assuring Noiseless, Interference-Free Operation and Extreme Long Life and Reliability.

TYPE 610C-ELIF—Rated output 6 volts at 10 amperes continuous or 12 volts at 6 amperes continuous. Size 6½" x 9⅞" x 8½". Shipping weight, 22 lbs. Code word "SELIT." USER NET PRICE \$42.95

TYPE 620C-ELIT—Rated output 6 volts at 20 amperes continuous or 12 volts at 10 amperes continuous. Uses dual rectifiers. Sizes 6½" x 12⅞" x 8½". Shipping weight, 33 lbs. Code word "HELIT." USER NET PRICE \$59.95

Either 6 or 12 volt output obtainable by means of simple output toggle switching arrangement having locking device to prevent accidental switching.

All ATR Eliminators have as standard equipment: On-Off Switch, 8-Position Voltage Control, Meter(s), Fuse Protection, Rubber Mounting Feet, 6-ft. All-Rubber Cord Set and Cabinet of heavy gauge metal having attractive grey-hammerloid finish.

**JOBBER'S ATTENTION: See Pages M-809 and M-810 in this ATR Section for your Catalog Needs!**





# AUTO Plug-In Type — Portable BATTERY CHARGERS

NO INSTALLATION — JUST PLUG INTO CIGARETTE LIGHTER RECEPTACLE

For keeping the storage battery fully charged right in the car, truck, boat, or plane A storage battery necessity — needed more now than ever before — makes motor starting easy!

The additional appliances — such as auto radios, spotlights, motors, heaters, fans, cigarette lighters, etc. — operated from the storage battery impose a severe drain on the battery making the normal "hard starting", especially in cold weather, still more difficult. The ATR Automatic Tapering Battery Charger solves this problem by charging the storage battery right in the car, truck, boat, or plane conveniently and economically. No need to remove the battery! Simply plug special charger cable into dash receptacle of the vehicle; or, if truck type charger, clip charger cable leads to the storage battery and flip the charger toggle switch "on". Danger of over-charging battery is minimized due to automatic tapering charge feature.

- Light in Weight
- Portable
- Rugged
- Economical
- No Radio Interference
- Noiseless
- Long Life

ATR CHARGER MODEL NUMBER	AS ILLUSTRATED RIGHT	NOMINAL BATTERY DC VOLTAGE	MAXIMUM CHARGE RATE DC AMPS.	APPROX. TAPERED RATE DC AMPS.	APPROX. SHIPPING WT. IN POUNDS	LIST PRICE
6CA4	A	6	4	2	5	\$14.95
6CA6	C	6	6	3	7	19.95
6CA10	E	6	10	5	9	27.95
12CA4	A	12	3	1	5	15.95
12CA6	C	12	6	2	7	23.95
12CA10	E	12	10	4	9	32.95
612CA4	B	6 or 12	4	2	6	18.95
612CA6	D	6 or 12	6	3	8	27.95
612CA10	F	6 or 12	10	4	10	36.95
612CT20	G	6	20 (Hi) 14 (Lo)	9 5	18	49.95
		and 12	10 (Hi) 9 (Lo)	4 1		
612CT40	H	6	40 (Hi) 27 (Lo)	17 10	24	65.95
		and 12	20 (Hi) 15 (Lo)	6 1		

All Prices Subject to Change Without Notice.

ATR Plug-In and Truck clamp type battery chargers, as above illustrated, operate from any 110-120 volt 50-60 cycle AC line. ATR chargers utilize a full-wave dry-disc type selenium rectifier, assuring extreme long life and reliability. ATR Charger models protected with automatic reset circuit breaker eliminating need for fuses. All of the above chargers equipped with charger indicators such as pilot light or meter as above illustrated with the exception of the 4 ampere grouping. The cigarette lighter in chargers have a simple reversible polarized plug arrangement for negative-grounded vehicles or positive-grounded vehicles. Models, as illustrated, are housed in attractively finished grey hammerloid steel cabinets. Charger illustrations A and B have dimensions 5<sup>3</sup>/<sub>8</sub>" x 4<sup>7</sup>/<sub>8</sub>" x 2<sup>3</sup>/<sub>4</sub>"; C and D, dimensions 8<sup>1</sup>/<sub>2</sub>" x 5<sup>1</sup>/<sub>2</sub>" x 3<sup>7</sup>/<sub>8</sub>"; E and F, dimensions 8<sup>1</sup>/<sub>2</sub>" x 5<sup>1</sup>/<sub>2</sub>" x 5<sup>1</sup>/<sub>4</sub>"; G, dimensions 6<sup>1</sup>/<sub>2</sub>" x 9<sup>1</sup>/<sub>8</sub>" x 8<sup>1</sup>/<sub>2</sub>"; H, dimensions 6<sup>1</sup>/<sub>2</sub>" x 12<sup>7</sup>/<sub>8</sub>" x 8<sup>1</sup>/<sub>2</sub>".

For additional information on ATR Battery Chargers or Inverters, consult ATR catalog sheets which are available directly from the factory.

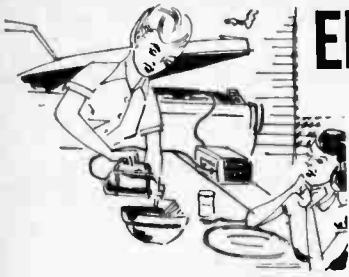


## TRUCK Clamp Type — Portable BATTERY CHARGERS (as illustrated below)

EASILY CONNECTED DIRECTLY TO STORAGE BATTERY TERMINALS BY MEANS OF LARGE BATTERY CLIPS.

Especially recommended for charging storage batteries in trucks, tractors, boats, and planes.





# ENJOY Household ELECTRICITY

Anywhere! Anytime!

In your CAR, BOAT or PLANE!



WITH

# ATR

## PORTABLE INVERTERS



for changing your storage battery current to A.C.  
*Household ELECTRICITY Anywhere . . .*  
IN YOUR CAR, BOAT OR PLANE!

ATR PORTABLE INVERTERS . . . especially designed to change 6 or 12 volt D.C. to 110 volt A.C. 60 cycles.

- |     |                    |               |                    |
|-----|--------------------|---------------|--------------------|
| for | • EXECUTIVES       | • POLICEMEN   | • FIELD INSPECTORS |
|     | • SALESMEN         | • FIREMEN     | • DOCTORS          |
|     | • PUBLIC OFFICIALS | • OUTDOOR MEN | • LAWYERS, ETC.    |
|     |                    | • REPORTERS   |                    |

**NO INSTALLATION**

**JUST PLUG INTO  
CIGARETTE LIGHTER  
RECEPTACLE!**



### ATR UNIVERSAL INVERTERS

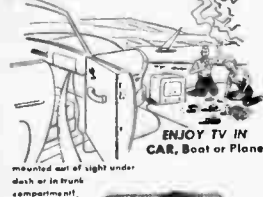
Operates Standard A.C.

- TAPE RECORDERS
- Television Sets
- Dictating Machines
- Business Machines
- Radios
- Public Address Systems
- Electric Shavers
- Record Players
- Mix-masters
- Electronic Test Equipment
- Emergency Lighting, etc.

MODELS	List Price
6U-RSF-P (6 volts)	
85 to 100 watts	\$75.00
12U-RSF-P (12 volts)	
100 to 125 watts	75.00

A.C. HOUSEHOLD ELECTRICITY

Anywhere . . .  
in your own car!



ENJOY TV IN  
CAR, Boat or Plane



### ATR DICTATING MACHINE INVERTERS

Operates Standard A.C.

- DICTATING MACHINES
- Small Radios
- Record Players
- Electric Shavers
- Electronic Test Equipment
- Heating Pads, etc.

MODELS	List Price
6C-RMF (6/12 volts)	
60 to 80 watts	\$49.50
6-RMF (6 volts)	
60 to 80 watts	45.00
12T-RME (12 volts)	
90 to 125 watts	42.50

(See below)



### ATR MIGHTY MIDGET DICTATING MACHINE INVERTERS

Operates Standard A.C.

- DICTATING MACHINES
- Small Radios
- Record Players
- Electric Shavers
- Electronic Test Equipment
- Heating Pads, etc.

MODELS	List Price
6-DME (6 volts)	
30 to 40 watts	\$19.95
6C-DME (6/12 volts)	
30 to 40 watts	23.50
12-DME (12 volts)	
40 to 50 watts	19.95



### ATR SHAV-PAKS

Operates Standard A.C.

- ELECTRIC SHAVERS
- Small Timing Devices . . . in CARS, BUSES, TRUCKS, BOATS and PLANES.

MODELS	List Price
6-SPB (6 volts)	
15 watts	\$9.95
12-SPB (12 volts)	
15 watts	9.95

### ALL ATR PORTABLE INVERTERS FEATURE

- Small Size
- Rubber Mounting Feet
- Plug-in ATR Vibrator
- Steel Case
- Fuse Protection
- Rugged Construction
- PLUS MANY OTHERS!



## INVERTERS FOR USE WITH PORTABLE TV SETS!

### ATR TYPE 12T-RME TELEVISION INVERTER

(See below)

The ATR Type 12T-RME Television Inverter is equipped with cigar lighter cord set and plugs directly into cigarette lighter receptacle on the dash. This Inverter has ample output capacity to handle nicely the RCA 8 1/2" portable television set rated 90 watts or equivalent operating from a 12-volt storage battery system.

List Price . . . . . \$42.50

**NO INSTALLATION  
JUST PLUG INTO CIGARETTE  
LIGHTER RECEPTACLE**



### ATR TYPE 12U-RSF-P UNIVERSAL INVERTER

The ATR Type 12U-RSF-P Universal Inverter is equipped with cigarette lighter cord set and plugs directly into the cigarette lighter receptacle on the dash of the automobile. This Inverter will handle most of the new small portable TV Sets presently on the market with screen size of 8 1/2" to 10 3/8" such as those sold by Emerson, Admiral, GE, Motorola, Sylvania, Crosley, and others. The ATR 12U-RSF-P Inverter operates from a 12-volt storage battery system. 100-125 watts. List Price . . . . . \$75.00

### ATR TYPE 6U-RHG-P UNIVERSAL INVERTER

This Inverter equipped with cigarette lighter cord set to plug into dash receptacle for 6-volt operation and has possible use for most of small portable TV sets to operate from 6-volt storage battery system; however, caution must be observed to make certain that cigarette receptacle wiring is adequate to carry required current. 125 watts. List Price . . . . . \$89.95

For other ATR Universal Inverters, Portable Plug-in Type Inverters, etc. of smaller or larger capacities for operation from 6 or 12-volts DC as well as from other DC input voltages such as 28 volts, 32 volts, 110 volts, and 220 volts DC, please consult complete ATR descriptive literature which is available directly from the factory.



# PRODUCTS

**AMERICAN TELEVISION & RADIO Co.** *Quality Products Since 1931*

ALL ATR INVERTER PRODUCTS CHANGE D.C. STORAGE BATTERY CURRENT TO STANDARD 110 VOLT A.C. *Household* ELECTRICITY *Anywhere!*



## ATR UNIVERSAL INVERTERS

IDEAL FOR PORTABLE TV AND TAPE RECORDERS!

Specially Designed for Operating A.C. Tape Recorder, Television Set, Dictating Machine, Radio Set, Ham Gear, Public Address System, Amplifier, Record Player, Electric Razor, Food Mixer, Vacuum Cleaner, Sewing Machine, Business Machine, Electric Drill, Fluorescent and Incandescent Lamp, and Electronic Test Equipment from D.C. Voltages in Automobiles, Buses, Trucks, Boats, Trains, Planes, and D.C. Districts. Ideal for Emergency Lighting Applications for Civil Defense, Red Cross, Rescue Work, etc., Simply Using Extension Cords.

Type	Input DC Volts	A.C. Output 60 Cycles	OUTPUT WATT. Int. Cont.	Shipping Weight	List Price
6U-RSF	6	110 Volts	100 80	22 lbs.	\$75.00
6U-RSF-P	6	110	100 80	22	75.00
6U-RHG	6	110	150 125	27	89.95
6U-HSJ	6	110	175 150	37	125.00
12U-RSF	12	110	125 100	22	75.00
12U-RSF-P	12	110	125 100	22	75.00
12U-RHG	12	110	175 150	27	89.95
12U-HSJ	12	110	250 200	37	125.00
*28U-RSF	28	110	125 100	22	89.95
*28U-RHG	28	110	175 150	27	105.75
*28U-HSJ	28	110	250 200	37	145.00
32U-RSF	32	110	150 100	22	89.95
32U-RHG	32	110	200 180	30	105.75
32U-HSJ	32	110	325 225	37	145.00
50U-RSF	50	110	150 100	22	89.95
110U-RSF	110	110	250 150	22	75.00
110AU-RHG	110	110	325 250	27	89.95
110BU-RHG	110	110	450 350	30	105.75
110U-HSJ	110	110	600 400	22	145.00
220U-RSF	220	110	250 150	37	79.50
220U-RHG	220	110	325 250	27	99.50
220U-HSJ	220	110	500 300	37	155.00

All ATR Inverters deliver 110 Volts A.C. 60 Cycles Current.  
\*Recommended for 24 Volt Battery System.



## SHAV-PAKS

EASY to OPERATE

Keep in Glove Compartment PLUGS INTO CIGARETTE LIGHTER RECEPTACLE ON DASH

Specially Designed for Operating Standard A.C. Electric Shavers in Automobiles, Buses, Trucks, Boats, and Planes.

TYPE	INPUT D.C. VOLTS	OUTPUT WATTAGE	SHIPPING WEIGHT	LIST PRICE
6-SPB	6	15	2 1/2 lbs.	\$9.95
12-SPB	12	15	2 1/2	9.95

ATR SHAV-PAKS deliver 115 Volts A.C. 60 Cycles Current.

### Features —

- Small Size
- Plug-in ATR Vibrator
- Fuse Protection
- Rubber Mounting Feet
- Steel Case
- Rugged Construction



## "A" BATTERY ELIMINATORS

FOR DEMONSTRATING AND TESTING AUTO RADIOS

6 Volt or 12 Volt

TRANSISTOR or VIBRATOR OPERATED!

Specially Designed for Testing and Operating Auto Radios and D.C. Electrical Appliances on Regular A.C. Lines, 105-125 Volts, 50-60 Cycles.

SUGGESTED USES:

As a power supply for radio sets, aircraft instruments, relays, motors and other electrical and electronic equipments. In the laboratory, for supplying various low D.C. voltages.

Featured cut illustrates Heavy Duty "A" Battery Eliminator, Model 620C-ELIT; equipped with Voltmeter, Ammeter and Voltage Control.

Battery Eliminators may be treated as batteries in the sense that they can be connected in series for higher voltages at the same current output per unit or in parallel for the same output voltage per unit at higher currents.

TYPE 610C-ELIF—Rated output 6 volts at 10 amperes continuous or 12 volts at 6 amperes continuous. Size 6 1/2" x 9 1/8" x 8 1/2". Shipping weight 22 lbs. Appearance similar to 620C-ELIT, above LIST PRICE \$66.58

TYPE 620C-ELIT—Rated output 6 volts at 20 amperes continuous or 12 volts at 10 amperes continuous. Uses dual rectifiers. Size 6 1/2" x 12 1/8" x 8 1/2". Shipping weight 33 lbs. LIST PRICE \$93.90



Illustrates ATR Mighty Midget (DME) Model Inverter Having Cigarette Lighter Plug Attachment.



Illustrates ATR Medium (RME and RMF) Model Inverter Having Four-Point Voltage Regulator and Cigarette Lighter Plug Attachment.



†DICTATING MACHINE

## INVERTERS

Specially Designed for Operating Standard A.C. Dictating Machines, Small Radios, Record Players, Mix-masters, Food Blenders, Electric Razors, Electronic Test Equipment, and Most Small Electrical and Electronic Devices from D.C. Voltages in Automobiles, Buses, Trucks, Boats, Planes, and Trains.

Type	Input D.C. Volts	A.C. Output 60 Cycles	OUTPUT WATT. Int. Cont.	Shipping Weight	List Price
6-DME (1)	6	110 Volts	40 30	5 lbs.	\$19.95
6C-DME (1)	6/12	110	40 30	5	23.50
6-RMF (2)	6	110	80 60	12	45.00
6C-RMF (2)	6/12	110	80 60	12	49.50
12-DME (1)	12	110	50 40	5	19.95
12T-RME (2) (3)	12	110	125 90	12	42.50
*28-RME (2)	28	110	100 80	12	57.50
32-RME (2)	32	110	100 80	12	57.50
110-RME (2)	110	110	150 100	12	47.50

All ATR Inverters deliver 110 Volts A.C. 60 Cycles Current.

\* Recommended for 24 volt battery systems. Dimensions of Mighty Midget (DME) Model Inverters, 5 1/4" x 4 3/4" x 2 3/4". Dimensions of Medium (RME) and (RMF) Model Inverters, 8 3/8" x 8" x 3 3/4".

†DME AND RME MODELS NOT RECOMMENDED FOR TAPE RECORDS.



# P R O D U C T S

**AMERICAN TELEVISION & RADIO Co.** *Quality Products Since 1931*

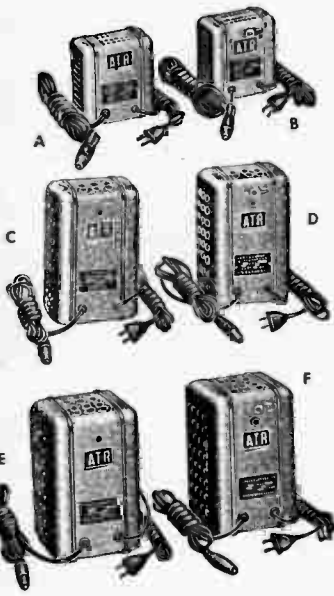
ALL ATR INVERTER PRODUCTS CHANGE D.C. STORAGE BATTERY CURRENT TO STANDARD 110 VOLT A.C. *Household* ELECTRICITY *Anywhere!*



## AUTO Plug-In Type — Portable BATTERY CHARGERS

NO INSTALLATION —  
JUST PLUG INTO CIGARETTE  
LIGHTER RECEPTACLE

For keeping the storage battery fully charged right in the car, truck, boat, or plane! A storage battery necessity — needed more now than ever before — makes motor starting easy!



ATR Charger Model Number	As Illustrated Right	Nominal Battery DC Voltage	Maximum Charge Rate DC Amps.	Approx. Tapered Rate DC Amps.	Approx. Shipping Wt. in Pounds	List Price
6CA4	A	6	4	2	5	\$14.95
6CA6	C	6	6	3	7	19.95
6CA10	E	6	10	5	9	27.95
12CA4	A	12	3	1	5	15.95
12CA6	C	12	6	2	7	23.95
12CA10	E	12	10	4	9	32.95
612CA4	B	6 or 12	4	2	6	18.95
612CA6	D	6 or 12	6	3	8	27.95
612CA10	F	6 or 12	10	4	10	36.95
612CT20	G	6.....20 (Hi) 14 (Lo) and 12.....10 (Hi) 9 (Lo)		9 5 4 1	18	49.95
612CT40	H	6.....40 (Hi) 27 (Lo) and 12.....20 (Hi) 15 (Lo)		17 10 6 1	24	65.95

All Prices Subject to Change Without Notice.

## Clamp Type Portable BATTERY CHARGER

(as illustrated below)

EASILY CONNECTED DIRECTLY TO STORAGE BATTERY TERMINALS BY MEANS OF LARGE BATTERY CLIPS.

Especially recommended for charging storage batteries in trucks, tractors, boats, and planes.



Illustrates ATR Electronic Tube Protector Model 300



## Electronic TUBE PROTECTOR

Specially designed to protect ALL Electronic Tubes in TV or Hi-Fi Sets, Amplifiers, and similar Electronic Equipment. Will double or triple tube life including picture tubes.

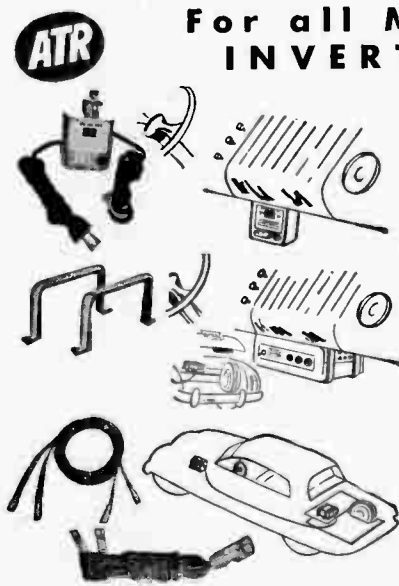
Type	INPUT A.C. Volts	A.C. OUTPUT Volts	Shipping Amps.	Shipping Weight	List Price
250	115	115	1-3	1	\$4.95
300	115	115	1-3	2	6.95

Two (2) models are available as illustrated.

### FEATURES

- Small Size
- Fuse Protection
- Metal Case
- Long Life
- Rugged Construction
- Automatic Operation

## ACCESSORIES For all Mobile INVERTERS



REMOTE CONTROL UNIT — for under-dash mounting permitting installation of inverter in auto trunk compartment.

List Price \$7.95

MOUNTING BRACKETS — to securely mount inverter in trunk compartment of car or under-dash, as illustrated.

List Price \$4.95 pr.

EXTENSION CABLES — to provide additional cable lengths for installation of inverter in trunk compartment.

List Price \$9.95 pr.

CIGARETTE LIGHTER CORD SET — to plug into cigarette lighter receptacle on dash. List Price \$3.95

# FOR THOSE WHO WANT THE FINEST!



## 15 FULL-DOOR DELUXE CONSOLE TELEVISION SETS

*to choose from!*

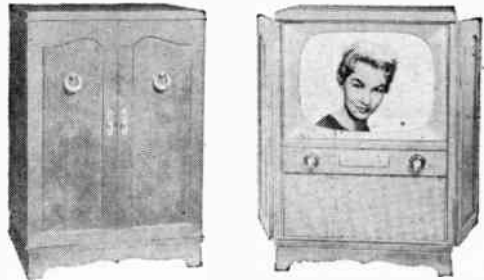
FEATURING THE ULTIMATE IN HIGH-QUALITY, AUTHENTICALLY-STYLED, FINE-FURNITURE CABINETS AND THE FULL-TRANSFORMER SUPER-POWERED ATR No. 2600 CHASSIS.

Includes push-pull, high-fidelity audio system; dual extended-range, large permanent magnet speakers; spot-light tuning; giant 265 square inches 90° aluminized 21" picture tube; and super VHF cascade tuner for high sensitivity fringe area reception.

UNSURPASSED  
IN BEAUTY

UNEQUALLED  
IN PERFORMANCE

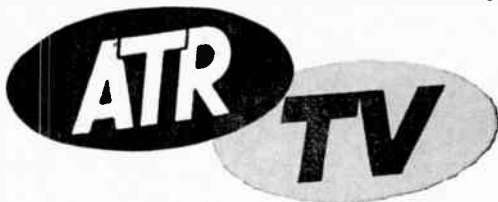
UNMATCHED IN  
QUALITY CONSTRUCTION



*Provincial* by **ATR**

Model No. 26002  
(Illustrated)

Cabinet has concealed casters for easy mobility. Available in 18th Century Mahogany, Early American Antique Maple and French Provincial in Cherrywood with Fruitwood finish. Dimensions: 24½" wide, 36½" high, and 20" deep. Rich finishes are applied and hand rubbed to smooth lustrous beauty.

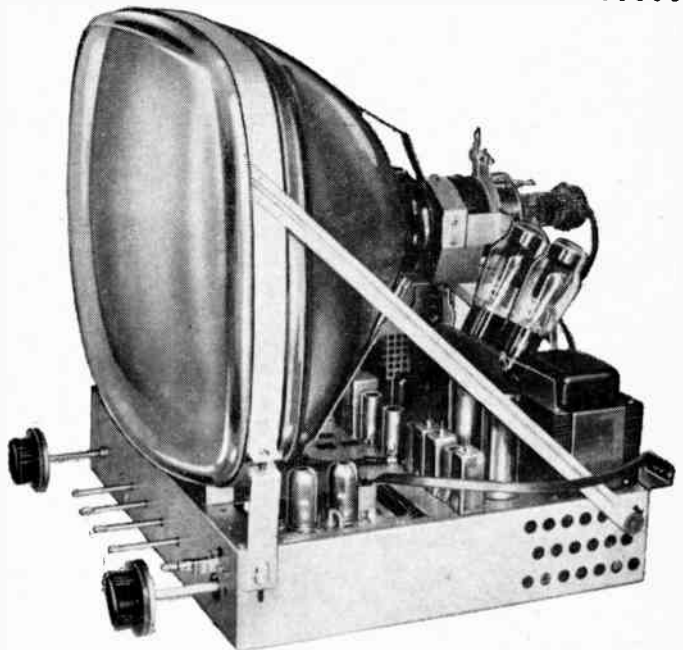


### SUPER-POWERED ATR No. 2600 FULL-TRANSFORMER CHASSIS

For Maximum Dependability  
and Performance

SPECIALLY DESIGNED BY ATR FOR  
MOVIE-CLEAR, SHARPEST PICTURES WITH  
MAXIMUM PICTURE STABILITY  
DESIGN AND CONSTRUCTION INCLUDE  
EXTRA VALUE FEATURES THAT MAKE  
FOR QUALITY PLUS . . .

- 18,000 volts of quality picture power
- Super-powered full-transformer 26 tube chassis
- Extended-range speakers of heavy duty construction
- Automatic gain control
- 4-Stage 41 MC IF amplifier
- Interference rejector
- Push-pull audio system
- Permanent-magnet focus
- Higher gain video amplifier



- Wider band width
- Precision interlace
- Highest quality components including molded capacitors
- Improved dependable long life ATR circuitry
- Front tuning of all important control functions

**THE RADIART CORPORATION**  
CLEVELAND 2, OHIO



- ROTATORS
- VIBRATORS
- AUTO AERIALS
- TV ANTENNAS
- POWER SUPPLIES



There are many reasons for the nation-wide preference for Radiart Vibrators! One is the absolutely complete selection of types manufactured . . . there is a CORRECT Radiart replacement vibrator for most every need, to original specifications. In addition, the precision engineering behind the design of each type is backed up by highest standards of manufacture that assure peak performance . . . always!

The Radiart Vibrator Guide is the Standard of the Industry — Ask your jobber for your copy today!

Subject to change without notice.

AUTO-RADIO OR SPECIAL PURPOSE VIBRATORS									
INTERRUPTER						SYNCHRONOUS			
6 Volt		6 Volt		12 Volt		6 Volt		12 Volt	
Type No.	Price	Type No.	Price	Type No.	Price	Type No.	Price	Type No.	Price
5300	\$4.70	5342	\$3.60	6301	\$4.90	5400	\$7.70	6607	\$9.95
5301	4.70	5363	6.35	6326	4.50	5404	7.70	6609	9.95
5303	4.90	5366	6.35	6330	4.90	5406	7.70	6610	8.55
5304	6.35	5370	4.90	6370	4.70	5407	7.70	6614	8.55
5307	4.90	5506	7.15	6511	7.70	5408	7.70	6615	8.55
5314	4.90	5510	7.15	6513	7.70	5409	7.70	6616	9.95
5320	4.90	5513	7.70	6514	9.95	5410	7.70	Other Voltages	
5371	4.90	5516	6.90	6517	7.70	5411	7.70	5468-2	10.70
5323	4.15	5560	8.55	Other Voltages		5425	9.15	5469-2	9.80
5326	4.15			5300-32	7.15	5426	7.70	5615-24	8.55
5331	4.90			5314-4	4.90	5429	9.15		
5333	4.90			5513-4	7.70	5437	7.70		
5335	4.90			5514-4	7.70	5438	7.70		
						5454	7.70		

Section II contains additional listings of many vibrators now out of Production.

COMMUNICATIONS VIBRATORS											
INTERRUPTER						SYNCHRONOUS					
6 Volt		12 Volt for 6/12*		12 Volt only**		6 Volt		12 Volt for 6/12*		12 Volt only**	
Type No.	Price	Type No.	Price	Type No.	Price	Type No.	Price	Type No.	Price	Type No.	Price
5715	\$6.90	6715	\$6.90	6715S	\$6.90	5805	\$7.70	6805	\$7.70	6820S	\$7.70
5718	6.90	6718	6.90			5820	7.70	6820	7.70		
5721	6.90	6721	6.90			5821	6.90	6821	6.90		
5722	8.55	6722	8.55			5822	8.55	6822	8.55		
5725	6.90	6725	6.90			5824	9.95	6824	9.95		

Vibrators as produced by different manufacturers employ driving circuits which require more or less power. Such power is applied by either series or shunt driving means. Where shunt drive is employed, a given vibrator must be used at its design voltage only. Where series drive is used, an external resistor may be used to drop a higher voltage for use of a particular vibrator. These considerations apply to many 6/12 Mobile Communications equipment.

\* Radiart vibrators have always used an exceptionally strong driving coil to obtain long and dependable service. When a 6 volt Radiart series drive vibrator is used for 12 volt operation in a 6/12 equipment, the usual resistor may not pass enough power to drive it properly. To avoid any dependence at all upon the coil resistor, Radiart provides similarly numbered shunt drive vibrators for use when 6/12 equipment is used on 12 volts.

In addition to insuring proper drive, the practice of using a 6 volt vibrator at 6 volts and a 12 volt vibrator on 12 volts, permits the factory to provide an adjustment and selection of contact that is best for each application.

\*\* Where 12 volt operation only is involved, a choice of either shunt drives such as 6715 or series drive such as (6715 S) is available.

- ROTATORS
- VIBRATORS
- AUTO AERIALS
- TV ANTENNAS
- POWER SUPPLIES



# THE RADIART CORPORATION

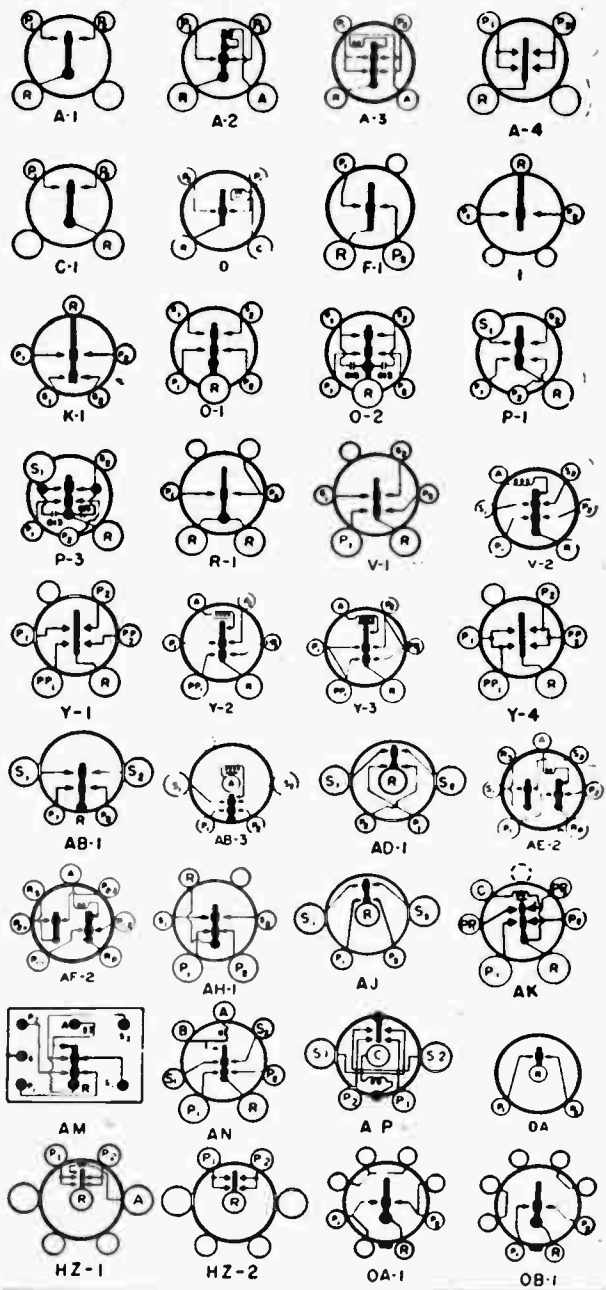
CLEVELAND 2, OHIO

## Cross Index by Base Diagrams

Diagram	Number	Voltage	Frequency	Maximum Load, Amps	Diameter*	Height*	†Use of Characteristic
A-1	5300	6	115	6	1 1/2	3 1/4	Std. 4 prong
	5300-32	32	115	1.4	1 1/2	3 3/8	32 v.
	5301	6	115	6	1 1/2	2 7/8	Shorter height
	5307	6	150	6	1 1/2	3 1/4	Spl. freq.
	5314	6	115	3	1 1/2	2 3/4	Small size
	5314-4	4	115	4	1 1/2	2 3/8	Photoflash
	5320	6	115	6	1 1/2	3 1/4	Phileo Dup
	5321	6	115	6	1 1/2	3 1/4	Larger Can
	5323	6	115	6	1 1/2	4 3/8	Phileo Dup
	5326	6	115	6	1 1/2	2 7/8	Late Phileo
	5342	6	115	6	1 1/2	2 3/8	Late Motorola
	5370	6	115	6	1 1/2	3 1/4	Autronic Eye
	5514-4	4	180	5	1 1/2	2 7/8	Photoflash
	5516	6	115	9	1 1/2	3 1/4	H.D. with handle
	6301	12	115	4	1 1/2	2 7/8	12v. Standard
6326	12	115	4	1 1/2	2 7/8	Phileo 12v.	
6370	12	115	4	1 1/2	3 1/4	Autronic Eye	
6514	12	180	3	1 1/2	2 7/8	Aviation	
A-2	5560	6	60	5	1 1/2	3 1/4	Phono Inverter
A-3	6715	6	115	9	1 1/2	2 7/8	Communications
	6715-S	12	115	5	1 1/2	2 7/8	Communications
A-4	6715	12	115	5	1 1/2	2 7/8	Communications
C-1	5331	6	115	6	1 1/2	3 1/4	Stewart-Warner
D	5506	6	115	10	1 1/2	3 1/4	Radiart Viewers
F-1	5303	6	115	6	1 1/2	3 1/4	Larger Size
	5333	6	115	6	1 1/2	3 1/4	Puller Handle
	5335	6	115	6	1 1/2	2 7/8	Standard
I	5304	6	115	6	1 1/2	3 1/4	Setchell-Carlson
K	5409	6	115	6	1 1/2	3 1/4	Standard
	6609	12	115	3	1 1/2	3 1/4	Aviation Spl.
O-1	5410	6	115	6	1 1/2	3 1/4	Deleo base
O-2	5425	6	115	6	1 1/2	4 1/2	Internal buffers
P-1	5426	6	115	6	1 1/2	3 1/4	Buick Dup.
P-3	5429	6	115	6	1 1/2	4 1/2	Internal Buffers
R-1	5366	6	115	6	1 1/2	2 7/8	Spl. Base wiring
V-1	5411	6	115	6	1 1/2	3 1/4	Standard
	5435	6	115	6	1 1/2	3 1/4	Smaller diameter
	5610	6	115	6	1 1/2	3 1/4	Motorcycle sets
	5615-24	24	180	1.4	1 1/2	2 7/8	Rendix Spl.
	6517	12	180	3	1 1/2	3 1/4	Aviation Spl.
	6610	12	115	3	1 1/2	3 1/4	Aviation Spl.
	6615	12	180	3	1 1/2	2 7/8	Rendix Spl.
	6821	12	115	5	1 1/2	2 7/8	Communications
V-2	5821	6	115	10	1 1/2	2 7/8	Communications
Y-1	6718	12	115	6	1 1/2	2 7/8	Communications
Y-2	5718	6	115	10	1 1/2	2 7/8	Communications
Y-3	5721	6	115	10	1 1/2	2 7/8	Communications
Y-4	6721	12	115	6	1 1/2	2 7/8	Communications
AB-1	5400	6	115	6	1 1/2	3 1/4	Std. reversible
	5407	6	180	5	1 1/2	3 1/4	180 cycles
	5408	6	140	6	1 1/2	2 7/8	140 cycles, short
	5487	6	180	5	1 1/2	2 7/8	Small 180 cycles
	5438	6	140	6	1 1/2	3 1/4	Std. 140 cycles
	5620	6	115	6	1 1/2	2 7/8	Cab and Police
	6820	12	115	6	1 1/2	2 7/8	Communications
	6820-S	12	115	5	1 1/2	2 7/8	Communications
AD-1	5406	6	115	6	1 1/2	3 1/4	Std. reversible
	5454	6	115	6	1 1/2	2 7/8	Short reversible
	5805	6	115	10	1 1/2	2 7/8	Communications
	6805	12	115	5	1 1/2	2 7/8	Communications
	6614	12	115	4	1 1/2	2 7/8	Aviation Spl.
	6614	12	115	4	1 1/2	2 7/8	Aviation Spl.
AE-2	5822	6	100	6	1 1/2	2 7/8	Communications
	6822	12	100	4	1 1/2	2 7/8	Communications
AF-2	5722	6	100	6	1 1/2	2 7/8	Communications
	6722	12	100	4	1 1/2	2 7/8	Communications
AH-1	5104	6	150	6	1 1/2	3 1/4	Communications
AJ	5607	6	180	5	1 1/2	2 7/8	Spl. base wiring
	5616	6	180	5	1 1/2	2 7/8	Small 180 cycle
	6607	12	180	3	1 1/2	2 7/8	Std. 180 cycle
	6616	12	180	3	1 1/2	2 7/8	Small 180 cycle
	6616	12	180	3	1 1/2	2 7/8	12v. std. 180 cycle
AK	5513	6	180	5	1 1/2	3 1/4	Photoflash
	5513-4	4	180	6	1 1/2	3 1/4	Photoflash
	6513	12	180	3	1 1/2	3 1/4	Aviation
	6513	12	180	3	1 1/2	3 1/4	Aviation
AM	5468-2	2	115	2	1 1/2	2 1/4	Sq. 2 v. portable
AN	5469-2	3	115	3	1 1/2	2 1/4	Round 2 v. port.
AP	6824	6	115	10	1 1/2	2 7/8	Communications
	6824	12	115	5	1 1/2	2 7/8	Communications
DA	6330	12	115	4	1 1/2	2 7/8	Deleo 12 v.
HZ-1	5725	6	115	9	1 1/2	2 7/8	Communications
HZ-2	6725	12	115	5	1 1/2	2 7/8	Communications
OA-1	5510	6	115	10	1 1/2	3 1/4	Aviation Spl.
OB-2	6511	12	115	6	1 1/2	3 1/4	12 v. aviation

### Symbols Used in Vibrator Base Diagrams

- A—A hot line into vibrator.
- B—By-pass for driving point.
- C—External coil lead in shunt vibrator.
- P1—Primary contact, usually, but not necessarily connected to the magnet coil in shunt vibrators.
- P1P1—Dual primary contact, closed when P1 is closed.
- P2—Primary contact, may be the magnet coil connection instead of P1.
- P1P2—Dual primary contact, closed when P2 is closed.
- R—Vibrating reed in single-reed vibrators.
- R1P1—Primary vibrating reed in split-reed vibrators.
- R2—Secondary vibrating reed in split-reed vibrators.
- S1—Secondary contact, closed when P1 is closed.
- S2—Secondary contact, closed when P2 is closed.
- \*All dimensions given are in inches.



- ROTATORS
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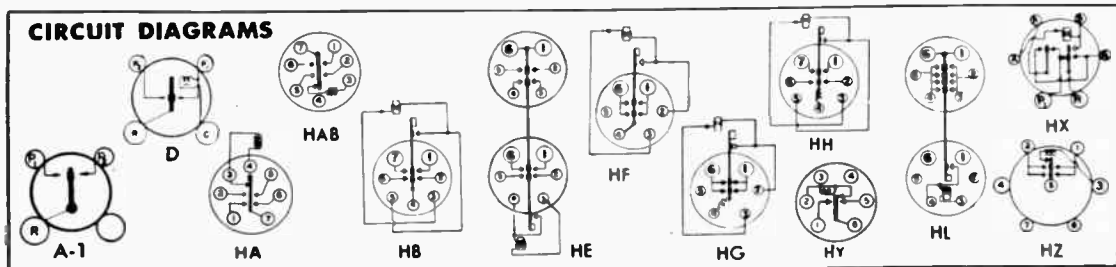


THE **RADIART CORPORATION**  
CLEVELAND 2, OHIO

## Heavy-Duty Vibrator Specifications

Vibrator	Voltage	Frequency	*D.C. Amps.	Base	Type	Size
<b>POPULAR TYPES IN STANDARDIZED SERIES</b>						
6VB6	6	60 ± 2	15	HB	Horiz. Single	2 3/32 x 5 1/16 x 2 3/16
6VD6	6	60 ± 2	30	HE	Horiz. Tandem	2 3/32 x 5 1/16 x 3 3/8
6VL6	6	60 ± 2	12	HA	Vert. Single	1 3/32 Dia. x 4 3/16
6VL10	6	100 ± 3	10	HA	Vert. Single	1 3/32 Dia. x 4 3/16
12VB6	12	60 ± 2	10	HB	Horiz. Single	2 3/32 x 5 1/16 x 2 3/16
12VD6	12	60 ± 2	20	HE	Horiz. Tandem	2 3/32 x 5 1/16 x 3 3/8
12VD6H	12	60 ± 1/2				
12VL6	12	60 ± 2	9	HA	Vert. Single	1 3/32 Dia. x 4 3/16
12VL10	12	100 ± 3	8	HA	Vert. Single	1 3/32 Dia. x 4 3/16
28VB6	28	60 ± 2	8	HB	Horiz. Single	2 3/32 x 5 1/16 x 2 3/16
28VD6H	28	60 ± 1/2	15	HE	Horiz. Tandem	2 3/32 x 5 1/16 x 3 3/8
28VL6	28	60 ± 2	7	HA	Vert. Single	1 3/32 Dia. x 4 3/16
28VL10	28	100 ± 3	6	HA	Vert. Single	1 3/32 Dia. x 4 3/16
32VB6	32	60 ± 2	6	HB	Horiz. Single	2 3/32 x 5 1/16 x 2 3/16
32VB6H	32		6	HB		
32VD6H	32	60 ± 1/2	12	HE	Horiz. Tandem	2 3/32 x 5 1/16 x 3 3/8
32VL6	32	60 ± 2	6	HA	Vert. Single	1 3/32 Dia. x 4 3/16
32VL6	32	100 ± 3	5	HA	Vert. Single	1 3/32 Dia. x 4 3/16
110VB6	110	60 ± 2	3	HB	Horiz. Single	2 3/32 x 5 1/16 x 2 3/16
110VB6H	110	60 ± 1/2	3	HB	Horiz. Single	2 3/32 x 5 1/16 x 2 3/16
110VC6H	110	60 ± 1/2	6	HE	Horiz. Tandem	2 3/32 x 5 1/16 x 3 3/8
110VL6H	110	60 ± 1	3	HA	Vert. Single	1 3/32 Dia. x 4 3/16
<b>POPULAR OLD TYPES (Not directly replaceable by Standardized Series)</b>						
427	6	60 ± 2	12	HF	Vert. Single	2 3/16 Dia. x 4 1/16
490	6	60 ± 3.0	25	HL	Horiz. Tandem	2 3/32 x 5 1/16 x 3 3/8
491	6	60 ± 2	20	HL	Horiz. Tandem	2 3/32 x 5 1/16 x 2 3/8
1315	110	60 ± 2	3	HH	Horiz. Single	2 3/32 x 5 1/16 x 2 3/16
1315H	110	60 ± 1/2	3	HH	Horiz. Single	2 3/32 x 5 1/16 x 2 3/16
1684	6	120 ± 5	8	HB	Single-Sync.	2 3/32 x 5 1/16 x 2 3/16
3077	110	60 Adj.	2	HH	Horiz. Single	2 3/32 x 5 1/16 x 2 3/16
11028	110	60 ± 2	3	HF	Horiz. Single	2 3/32 x 5 1/16 x 2 3/16
<b>SMALL VIBRATORS USED IN VIPOWERS</b>						
2522	110	60 ± 3	5	HX	Vert. ARV	1 1/2 dia. x 2 7/8
2529	6	60 ± 5	5	None	Wire-in	1 x 1 x 2 3/8
2530	12	60 ± 5	3	None	Wire-in	1 x 1 x 2 3/8
2531	6	60 ± 3	10	A-1	Vert ARV	1 1/2 Dia. x 2 7/8
2532	12	60 ± 3	5	A-1	Vert ARV	1 1/2 Dia. x 2 7/8
2533	110	60 ± 5	6	None	Wire-in	1 x 1 x 3/8
2563	6	60 ± 3	15	HZ	Vert ARV	1 1/2 Dia. x 2 7/8
2564	28	60 ± 3	5	HZ	Vert ARV	1 1/2 Dia. x 2 7/8
2565	110	60 ± 3	8	HY	Vert ARV	1 1/2 Dia. x 2 7/8
5301	6	115 ± 7	6	A-1	Vert ARV	1 1/2 Dia. x 2 7/8
5725	6	115 ± 7	9	HZ	Vert ARV	1 1/2 Dia. x 2 7/8
6301	12	115 ± 7	4	A-1	Vert ARV	1 1/2 Dia. x 2 7/8
<b>POPULAR OLD TYPES (Directly replaceable by Standardized Series)</b>						
Old 2989 3047	New 32VB6 12VD6		Old 3079 3087	New 110VC6H 12VB6H	Old 3103 4123	New 6VB6 6VD6

\*D.C. Ampere rating is based upon measurement made with a D.C. ammeter in primary lead. Circuit must be properly designed for load being handled. Technical advice is available through Jobber Service Department.



### OBsolete TYPES

It is entirely impractical to continue to stock the hundreds of different heavy-duty vibrators that have been supplied in past years for a large variety of uses. Every attempt is made to maintain equipment in service, even though it originally used vibrators which have generally become obsolete. Some obsolete vibrator types are still carried in limited stock at the factory. In a great many cases, simple instructions are available so that a radio technician can change wiring, sockets, or other minor

features in an old design to adapt it for use with new standard vibrators.

For information regarding a possible replacement for obsolete vibrators, send details including model number of equipment, original vibrator type number, voltage and frequency to the Jobber Service Department.



# THE RADIART CORPORATION

CLEVELAND 2, OHIO



- ROTATORS
- VIBRATORS
- AUTO AERIALS
- TV ANTENNAS
- POWER SUPPLIES

## RADIART VIPOWERS

### SPECIFICATIONS—6, 12, and 28 VDC TO 110 VAC VIPOWERS

(See Engineering Bulletin EB3006 for 6 and 12 volt models and EB-3008 for 28 volt models)

MODEL	INPUT		OUTPUT VAC	OUTPUT WATTS		REPL. VIB.	REPL. FUSE	CLASS	PRINCIPAL USES
	VDC	AMPS.		CONT.	INT.				
6SP2	6	5	110	20	20	2529	10A-3AG	SP	SH
6LM3	6	7	110	30	40	2529	15A-3AG	LM	SH, PH, A
6M4	6	10	110	40	50	2531	20A-3AG	M	SH, DI, PH, A
6L6	6	15	110	60	80	2563	25A-3AG	L	SH, DI, PH, A, IN
6S8	6	20	110	80	100	6VB6	30A-3AG	S	RA, DI, TR, A, IN
6H10	6	25	110	100	125	6VD6	40A-2 in.	H	RA, DI, TR, PA, IN
6SH15	6	38	110	150	175	6VD6	50A-2 in.	SH	RA, DI, TR, PA, IN
6SW8	6	20	110	80	100	6VB6	30A-2 in.	H	RA, DI, TR, PA, IN
6SW15	6	38	110	150	175	6VD6	50A-2 in.	SH	RA, DI, TR, PA, IN
12SP2	12	2 1/2	110	20	20	2530	5A-3AG	SP	SH
12LM4	12	5	110	40	50	2530	10A-3AG	LM	SH, PH, A
12M6	12	7 1/2	110	60	80	2532	10A-3AG	M	SH, DI, RA, PH, A
12L8	12	10	110	80	100	2563	15A-3AG	L	RA, DI, TR, A, IN
12S10	12	12 1/2	110	100	125	12VB6	15A-3AG	S	RA, DI, TR, PA, IN
12H15	12	20	110	150	175	12VD6	20A-2 in.	H	RA, DI, TR, TV, IN
12SH22	12	26	110	200	250	12VD6H	30A-2 in.	SH	TV, DI, TR, RA, IN
12SW10	12	12 1/2	110	100	125	12VB6	20A-2 in.	H	RA, DI, TR, PA, IN
12SW20	12	26	110	200	250	12VD6H	30A-2 in.	SH	TV, DI, TR, RA, IN
23L8	28	4	110	80	100	2564	10A-3AG	L	RA, DI, PA, PH, SHR IN
23S10	28	5	110	100	125	28VB6	10A-3AG	S	RA, TR, DI, PA, PH, IN
28H15	28	7 1/2	110	150	175	28VB6	15A-3AG	H	RA, TR, DI, TV, PH, IN
28SH22	28	10	110	200	250	28VD6H	20A-3AG	SH	TV, RA, TR, DI, PA, IN

### SPECIFICATIONS—32, 110 and 220 VDC TO 110 VAC VIPOWERS

(See Engineering Bulletin EB-3008 for 32 volt models and EB-3010 for 110 or 220 volt models)

32L8	32	3 1/2	110	80	100	2564	10A-3AG	L	RA, DI, PA, PH, SH, IN
32S12	32	5	110	125	150	32VB6	10A-3AG	S	RA, TR, DI, PA, PH, IN
32H18	32	7 1/2	110	180	200	32VB6H	15A-3AG	H	RA, TR, DI, PA, PH, IN
32SH22	32	10	110	225	275	32VD6H	20A-3AG	SH	TV, RA, TR, DI, PA, IN
110LM5	110	.6	110	50	60	2533	2A-3AG	LM	PH, DI, A
110M7	110	.8	110	70	90	2565	2A-3AG	M	RA, DI, PH, PA, A
110L10	110	1.1	110	100	150	110VB6	3A-3AG	L	RA, TR, DI, PA, IN
110S15	110	1.7	110	150	200	110VB6H	5A-3AG	S	TV, RA, TR, DI, PA, IN
110H25	110	2.8	110	250	325	110VB6H	10A-3AG	H	TV, RA, TR, DI, PA, IN
110F35	110	4.0	110	350	450	110VC6H	10A-3AG	SH	TV, RA, TR, DI, PA, IN
110SH40	110	4.5	110	400	600	110VC6H	10A-3AG	H	TV, RA, TR, DI, PA, IN
110SW15	110	1.7	110	150	200	110VB6H	5A-3AG	SH	TV, RA, TR, DI, PA, IN
110SW40	110	4.5	110	400	500	110VB6H	10A-3AG	H	TV, RA, TR, DI, PA, IN
220S15	220	.85	110	150	200	110VB6H	10A-3AG	SH	TV, RA, TR, DI, PA, IN
220H25	220	1.4	110	250	325	110VB6H	2A-3AG	S	TV, RA, TR, DI, PA, IN
220SH40	220	2.2	110	400	600	110VB6H	3A-3AG	H	TV, RA, TR, DI, PA, IN
						110VC6H	5A-3AG	SH	TV, RA, TR, DI, PA, IN

### SPECIFICATIONS—MOBLPAK VIPOWERS—LOW DC TO HIGH DC

(See Sales Bulletin for Dictator model)

6DC3	6	8		300VDC - 100MA	5301	15A-3AG	M	A, RA, PA
6/12DC6	6 12	16 8		300VDC - 200MA	5725	20/10A-3AG	S	A, MT, PA
12DC3	12	4		300VDC - 100MA	6301	10A-3AG	M	A, RA, PA
6/12DC12	6 12	30 15		500VDC - 225MA	5725(2)	(2) 20/10A-3G	S	A, MT, PA

### SPECIFICATIONS—DICTATOR VIPOWERS—6/12 VDC TO 110 VAC

(See Sales Bulletin EB-3009 for Moblpak line)

6/12D6	6 12	15 7	110	60	75	2563	25A-3AG	L	DI, PH, A
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### SPECIFICATIONS—BATTERY ELIMINATOR VIPOWERS—110 VAC TO 6/12 VDC

(See Engineering Bulletin EB-3012 for Battery Eliminators)

110E6	110 VAC to 6VDC-10A or 12VDC-6A						3A-3AG	H	BE
110E12	110 VAC to 6VDC-20A or 12VDC-10A						5A-3AG	H	BE

### SPECIFICATIONS—SPORTSMAN SENIOR VIPOWER

12SS14	12	55	110	140	175	12VL6H	20A-3AG	SH	TV, RA, SH, TR, PA
							110VAC-2A-3AG		

### NOTES ON SPECIFICATIONS

Note 1: Continuous ratings are based on operation of nameplate rating indefinitely at ambient temperatures not to exceed 100° F. with free air circulation. Intermittent ratings are based on 25% duty cycle, with on-time not in excess of 15 minutes. Up to 30 minutes operation at the intermittent maximum is not detrimental, provided it can be followed with approximately two hours of cooling time.

Note 2: Output watts ratings are based upon 70%-100% Power Factor loads.

Note 3: Classes of Models indicate case size and approximate weight as follows:

SP—Shaver Pack	2-5/8 x 2-1/2 x 3-7/32	— 2 Lbs.
LM—Light Midget	3-1/2 x 3 x 4-13/16	— 4 Lbs.
M—Midget	4-5/8 x 3-15/16 x 5-5/16	— 6 Lbs.
L—Lightweight	5-1/2 x 6-1/4 x 8	— 12 Lbs.
S—Standard	5-1/2 x 6-1/4 x 9	— 14 Lbs.
H—Heavy Duty	6-1/2 x 7-1/2 x 11	— 20 Lbs.
SH—Super Heavy	8 x 9-1/2 x 13	— 35 Lbs.

Note 4: RADIART VIPOWERS contain added components required to make them universally applicable to various kinds of loads within their name-plate rating. For example, the same unit may be used for television, radio, dictating service, office machines, and even for industrial purposes. Principal uses are coded in Specifications as follows. Any model is suitable for uses coded for models of lower output rating.

RA—Radio  
TV—Television  
DI—Dictation  
TR—Tape Recorder  
BE—Battery Eliminator  
MT—Mobile Transmitters  
A—Amplifiers  
PH—Phonamotors  
IN—Industrial  
SH—Shaver  
PA—Public Address

Note 5: Power Factor Correctors are available for use with highly inductive loads, so that they may be handled by Regular VIPOWERS. Model PF1 corrector used an 60% PF loads handles up to 100 watts; On 30% loads, to 25 watts. PF2 on 60% PF loads handles 150-300 watts; on 30% loads, 50-75 watts. PF3 on 60% loads handles 350-500 watts; on 30% loads 100-150 watts. See Engineering Bulletin EB-3007 for details.

Note: See Engineering Bulletin EB-3013 for mounting kits for all models, and for leads, master fuse kits and remote control kits for 6 or 12 volt models.

# TODAY'S OUTSTANDING D. C. POWER SUPPLIES...

**in performance! in reliability!  
in dollar-for-dollar value!**

## SCHAUER BATTERY ELIMINATORS FOR SERVICING BOTH 6 and 12 VOLT AUTO RADIOS

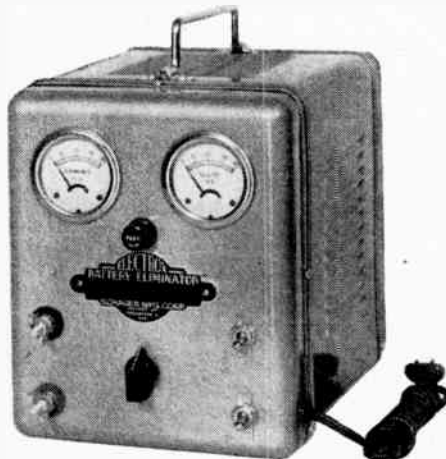
Again Schauer leads the field! Here are streamlined, new Battery Eliminators specifically engineered to meet the growing needs of auto radio service men. In one compact unit, quality-built D.C. Power Supplies which more than meet manufacturers' specifications for the operation and servicing of any 6- or 12-volt auto radio equipped with signal-seeking, push-button or manual tuners.

**SCHAUER MODEL AR 5612** — Output adjustable by means of a rugged, silver contact tap switch. Toggle switch changes unit from 6-volt to 12-volt operation. Low range output: 7½ volts at 12 amps., continuous; 20 amps., intermittent. High range: 15 volts at 6 amps., continuous; 11 amps., intermittent. Components include Selenium rectifiers, transformer, condenser-type filters, accurate 0-20 V. and 0-20 A. meters, heavy wing-nut binding posts and carrying handle. Housed in sturdy steel case 7½" wide x 9½" deep x 9" high.

**SCHAUER MODEL AR 4612** — Non-adjustable 6-volt and 12-volt Battery Eliminator. Built to same high-quality standards as Model AR 5612, above. Equipped with high-low switch to change from nominal 6-volt to nominal 12-volt operation.

Own SCHAUER Battery Eliminators — they're the choice of leading service men. Specifications and illustrations of these units are found in Bulletin No. 1469. Write for your free copy.

SCHAUER MODEL AR 5612



## SCHAUER BATTERY CHARGERS

A complete line of battery chargers designed for safe recharging of storage batteries. Available in models for charging 6-volt batteries, for 12-volt batteries, and other models for charging both 6-volt and 12-volt batteries. Four to 20 ampere capacities. Equipped with exclusive Schauer "Charger Guard" — an automatic corrector which acts instantly in case of an overload or short circuit. No manual resetting of the circuit breaker, and fuses are eliminated. Approved by Underwriters' Laboratories, Inc. Write for Bulletin 2477.



Model BX-2

Schauer 4-ampere capacity charger for both 6 and 12-volt batteries. Selector switch changes the unit from 6-volt to 12-volt operation. Small, rugged, thoroughly reliable.



Model AX612

With a charging rate of 20 amperes for both 6-volt and 12-volt batteries, the Model FX612 will deliver a complete charge to a run-down battery within 1½ to 2½ hours. Also equipped with a trickle charge for maintaining the battery in peak operating condition. May be used to trickle charge from 50 to 60 batteries at a time when connected in parallel. Equipped with accurate ammeter to show actual charge entering the battery.



Model FX612

Many other models.

RECTIFIER



DIVISION

# SCHAUER MANUFACTURING CORP.

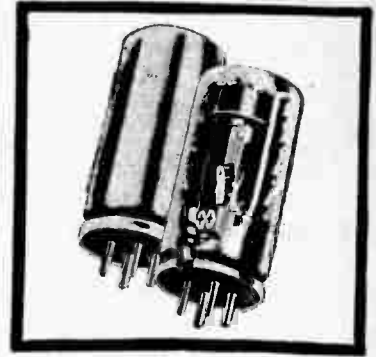
# CORNELL



# DUBILIER

## VIBRATORS

- AUTO RADIO REPLACEMENT
- COMMUNICATIONS
- SPECIAL PURPOSE



### AUTO-RADIO OR SPECIAL PURPOSE VIBRATORS

INTERRUPTER						SYNCHRONOUS					
6 Volt		6 Volt		12 Volt		6 Volt		6 Volt		12 Volt	
Type No.	Price	Type No.	Price	Type No.	Price	Type No.	Price	Type No.	Price	Type No.	Price
5300	\$4.70	5342	\$3.60	6301	\$4.90	3400	\$7.70	3607	\$8.55	6607	\$9.95
5301	4.70	5363	6.35	6326	4.50	3404	7.70	3610	7.70	6609	9.95
5303	4.90	5366	6.35	6330	4.90	3406	7.70	3616	8.55	6610	8.55
5304	6.35	5370	4.90	6370	4.70	3407	7.70	3620	7.70	6614	8.55
5307	4.90	5306	7.15	6511	7.70	3408	7.70			6615	8.55
5314	4.90	5510	7.15	6513	7.70	3409	7.70			6616	8.55
5320	4.90	5513	7.70	6514	9.95	3410	7.70				
5321	4.90	5516	6.90	6517	7.70	3411	7.70				
5323	4.15	5560	8.55			3425	9.15				
5326	4.15			Other Voltages		3426	7.70			Other Voltages	
5331	4.90			5300-32	7.15	3429	9.15			3468-2	10.70
5333	4.90			5314-4	4.90	3437	7.70			3469-2	9.80
5335	4.90			5313-4	7.70	3438	7.70			5615-24	8.55
				5314-4	7.70	3454	7.70				

### COMMUNICATIONS VIBRATORS

INTERRUPTER						SYNCHRONOUS					
6 Volt		12 Volt for 6/12*		12 Volt Only**		6 Volt		12 Volt for 6/12*		12 Volt Only**	
Type No.	Price	Type No.	Price	Type No.	Price	Type No.	Price	Type No.	Price	Type No.	Price
5715	\$6.90	6715	\$6.90	67155	\$6.90	5805	\$7.70	6803	\$7.70	68205	\$7.70
5718	6.90	6716	6.90			5820	7.70	6820	7.70		
5721	6.90	6721	6.90			5821	6.90	6821	6.90		
5722	8.55	6722	8.55			5822	8.55	6822	8.55		
5725	6.90	6725	6.90			5824	9.95	6824	9.95		

Vibrators as produced by different manufacturers employ driving circuits which require more or less power. Such power is applied by either series or shunt driving means. Where SHUNT drive is employed, a given vibrator must be used at its design voltage only. Where SERIES drive is used, an external resistor may be used to drop a higher voltage for use of a PARTICULAR vibrator. These considerations apply to many 6/12 Mobile Communications equipment.

\* Cornell-Dubilier vibrators have always used an exceptionally strong driving coil to obtain long and dependable service. When a 6 volt Cornell-Dubilier series drive vibrator is used for 12 volt operation in a 6/12 equipment, the provided resistor may not pass enough power to drive it properly. To avoid any dependence of all upon the coil resistor, Cornell-Dubilier provides similarly numbered shunt drive vibrators for use when 6/12 equipment is used on 12 volts.

In addition to insuring proper drive, the practice of using a 6 volt vibrator at 6 volts and a 12 volt vibrator on 12 volts, permits the factory to provide an adjustment and selection of contact that is best for each application.

\*\* Where 12 volt operation only is involved, a choice of either shunt drives such as 6715 or series drive such as (6715 S) is available.

### SUBSTITUTION GUIDE COVERING C-D TYPES NOT LISTED IN TABLES ABOVE

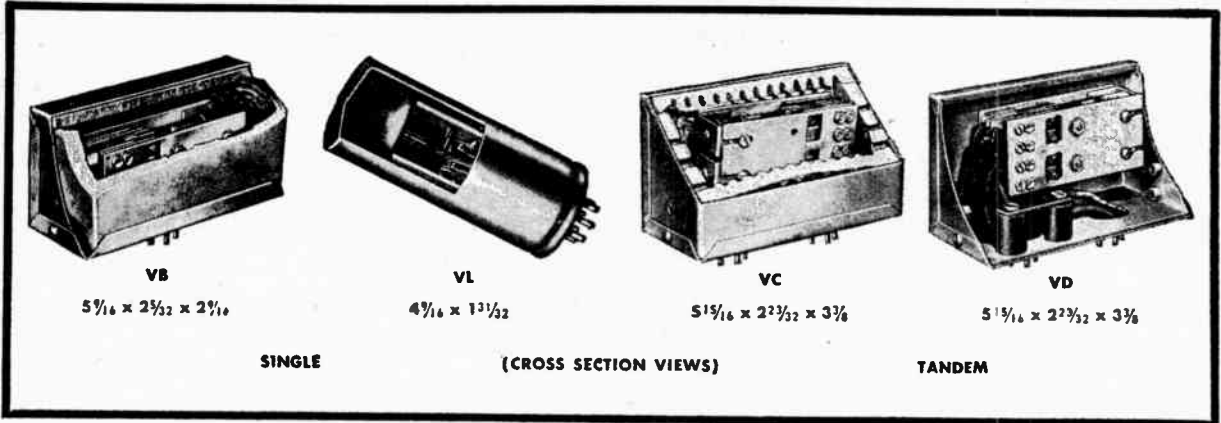
For Type	Use	For Type	Use	For Type	Use	For Type	Use
5300-12	6715	5341-M	5300	5501	5516	5605	5805
5308	5300	5343	5321	5503	5715	5605-12	6805
5309	5314	5365	5610	5503-12	6715	5607-12	6607
5312	5366	5406-12	5605	5503-32	5300-32	5609-12	6609
5313	5715	5409-12	5607	5504	5718	5610-12	6610
5322-P	5323	5413	5407	5511-12	6511	5614-12	6614
5324-P	5718	5420-P	5411	5513-12	6513	5615-12	6615
5325-P	5326	5421	5411	5514-12	6514	5616-12	6616
5327-P	5301	5428	5411	5515	5715	5621	5821
5334	5335	5439	5610	5517-12	6517	5622	5822
5339	5303	5440	5400	5518	5718	56225	5822
5340-M	5342	5500	5715	5519	5301	5623	5805
						6503	6715
						6605	6805

# CORNELL



# DUBILIER

## STANDARD HEAVY-DUTY SINGLE AND TANDEM VIBRATORS



**VB**  
5 1/16 x 2 1/2 x 2 1/8

**VL**  
4 7/16 x 1 3/16

**VC**  
5 1/16 x 2 3/16 x 3 1/8

**VD**  
5 1/16 x 2 3/16 x 3 1/8

SINGLE

(CROSS SECTION VIEWS)

TANDEM

CORNELL-DUBILIER HEAVY DUTY VIBRATORS are available in the above four styles for operation at 60 or 100 cycles with regular or close frequency adjustment in any of 6 standard operating voltages — 6, 12, 28, 32, 64 and 110. Although these combinations result in 96 "standard" vibrators, only those models which are generally used are listed below for Jobber distribution.

All heavy duty vibrators have separate driving circuits with provision for external suppression. Two or four sets of power contacts are brought out individually. Center reads are common.

Precision ground ceramic spacers, micrometrically selected Swedish steel center reads, and precision oscillographic adjustments combine to insure uniform reliable service life.

Coding of the heavy duty vibrators is meaningful. In a typical part number such as 110VB6, the prefix 110 denotes operating voltage, V denotes vibrator, B denotes the style, and 6 denotes 60 cycles with regular frequency tolerance. Close frequency adjustment as desired for television is denoted by a final H suffix. A typical close frequency vibrator is 110VB6H.

### HEAVY-DUTY VIBRATOR SPECIFICATIONS

Type No.	Voltage	Frequency	List Price	Type No.	Voltage	Frequency	List Price	Type No.	Voltage	Frequency	List Price		
6VB6	6	60 ± 2	<b>Note 1</b> \$13.50	32VB6	32	60 ± 2	<b>Note 1</b> \$13.50	427	6	60 ± 2	\$12.25		
6VB6H	6	60 ± 1/2		32VB6H	32	60 ± 1/2		490	6	60 ± 3	23.50		
6VD6	6	60 ± 2		32VD6H	32	60 ± 2		491	6	60 ± 2	23.50		
6VD6H	6	60 ± 1/2		32VL6	32	60 ± 2		1315	110	60 ± 2	13.50		
6VL6	6	60 ± 2		32VL10	32	100 ± 3		1315H	110	60 ± 1/2	14.50		
6VL10	6	100 ± 3		12.25	64VL10	64		100 ± 3	12.25	3077	110	60 Adj.	14.50
12VB6	12	60 ± 2	<b>Note 1</b> 13.50	110VB6	110	60 ± 2	<b>Note 1</b> 13.50	11028	110	60 ± 2	14.50		
12VB6H	12	60 ± 1/2		110VB6H	110	60 ± 1/2		2522	110	60 ± 3	8.65		
12VD6	12	60 ± 2		110VC6H	110	60 ± 1/2		2529	6	60 ± 5	4.15		
12VD6H	12	60 ± 1/2		110VL6H	110	60 ± 1/2		2530	12	60 ± 5	4.15		
12VL6	12	60 ± 2		12.25	110VL10	110		100 ± 3	12.25	2531	6	60 ± 3	7.70
12VL6H	12	60 ± 1/2		13.50						2532	12	60 ± 3	7.70
12VL10	12	100 ± 3	12.25					2533	110	60 ± 3	7.70		
28VB6	28	60 ± 2	<b>Note 1</b> 13.50	Old Types Replaced by Above				2563	6	60 ± 3	10.35		
28VB6H	28	60 ± 1/2		2989	Replaced by	32VB6H	2564	24	60 ± 3	10.35			
28VD6H	28	60 ± 1/2		3047	Replaced by	12VD6H	2565	110	60 ± 3	10.35			
28VL6	28	60 ± 2		3079	Replaced by	110VC6H	5301	6	115 ± 7	4.70			
28VL10	28	100 ± 3		3087	Replaced by	12VB6H	5725	6	115 ± 7	6.90			
				3103	Replaced by	6VB6H	6301	12	115 ± 7	4.90			
			4123	Replaced by	6VD6H								

NOTE 1. This vibrator, which had a broad frequency tolerance, is no longer manufactured. Use similar type (such as 6VB6H) listed directly below, which has close frequency tolerance.

### VIBRATOR REPLACEMENTS — CURRENT MODEL POWERCONS

### OLD POWERCONS

For Powercon	Use Vibrator	For Powercon	Use Vibrator	For Powercon	Use Vibrator	For Powercon	Use Vibrator	Old Listing
6DC3	5301	12DC3	6301	32H18	32VB6H	6/110DH6	6VB6H	3103
6H10	6VD6H	12H15	12VD6H	32L8	2564	6R5	6VB6H	3103
6L6	2563	12L8	2563	32S12	32VB6H	6R10	6VD6H	4123
6LM3	2529	12LM4	2530	32SH22	32VD6H	12R8	12VB6H	3087
6M4	2531	12M6	2532			12RU15	12VD6H	3047
6S8	6VB6H	12S10	12VB6H	110H25	110VB6H	32R8	32VB6H	2989
65H15	6VD6H	12SH20	12VD6H	110H35	110VD6H	32RU15	32VB6H	2989
65P2	2529	12SP2	2530	110L10	110VB6H	110PA5	2522	2522
65W8	6VB6H	12SW10	12VB6H	110LM5	2533	110PB5	2522	2522
65W15	6VD6H	12SW25	12VD6H	110M7	2565	110R10	1315	1315
				110S15	110VB6H	110RA15	1315	1315
				110SH40	110VC6H	110RT15	3077	3077
				110SW15	110VB6H	110RT25	1315H	1315H
				110SW40	110VC6H	110RT25DL	1315H	1315H
6/12D6	2563	28H15	28VB6H	220H25	110VB6H	110RT35	110VC6H	3079
6/12DC6	5725	28L8	2564	220S15	110VB6H	110WR15A	1315	1315
6/12DC12	(2) 5725	28S10	28VB6H	220SH40	110VB6H	110WR15B	1315	1315
		28SH20	28VD6H		110VC6H			

# CORNELL



# DUBILIER

## POWERCON LINE



**INVERTERS  
DC-AC**

**BATTERY ELIMINATORS  
AC-DC**

**MOBLPAKS  
DC-DC**

**SPORTSMAN, SR.  
PORTABLE**

- **COMPLETE COVERAGE** — Each inverter applicable to widest variety of uses. Good inventory turnover.
- **SIMPLIFIED SERVICING** — All components individually and readily accessible. No potted assemblies.
- **SINE-WAVE-REGULATED** — Models hold output steady as input or load varies and provide commercial wave form for best operation of sensitive equipment.
- **POWER FACTOR CORRECTION** — Auxiliary PF Correctors available to permit standard inverters to handle low PF loads. Special Inverters are not required.
- **SPORTSMAN, SR. POWERCON** — Combines a vibrator inverter, battery charger and a compartment for standard 12 volt auto battery, so that 110 volt AC power is available for operation of TV, radio, record players, etc.
- **MOBLPAK POWERCONS** — Supply up to 500 V. DC — 225 MA from 6 or 12 volt sources for mobile radio service.
- **BATTERY ELIMINATORS** — Compact, well filtered, conveniently styled power package for test bench.

REGULAR POWERCONS (DC to 110 V.AC)					SINE-WAVE-REGULATED POWERCONS (DC to AC)					POWERCON ACCESSORIES		
Model	Input Volts	Output Watts	Class	List Price	Model	Input Volts	Output Watts	Class	List Price	Model No.	Explanation	List Price
6SP2	6	20	SP	\$13.40	6SW8	6	80	H	\$134.50	LK-605	Dual #6 — 5 feet	\$8.95
6LM3	6	30	LM	23.95	6SW15	6	150	SH	144.50	LK-612	Dual #6 — 12 feet	16.50
6M4	6	40	M	35.75	12SW10	12	100	H	139.50	LK-616	Dual #6 — 16 feet	20.50
6L6	6	60	L	64.30	12SW25	12	250	SH	154.50	LK-805	Dual #8 — 5 feet	6.25
6S8	6	80	S	77.50	110SW15	110	150	H	139.50	LK-812	Dual #8 — 12 feet	10.75
6H10	6	100	H	89.95	110SW40	110	400	SH	199.50	LK-816	Dual #8 — 16 feet	13.00
6SH15	6	150	SH	124.50	<b>SPORTSMAN, SR. POWERCON</b> (110 V.AC from self-contained battery) Model 125514 Input Volts 12 Output Watts 140 Class SS User Net \$79.50 Note: Unit includes 140 Watt Inverter, built-in Battery Charger and compartment for standard 12 V. auto battery (not provided)					LK-1005	Dual #10 — 5 feet	5.25
12SP2	12	20	SP	13.40						LK-1012	Dual #10 — 12 feet	6.50
12LM4	12	40	LM	23.95						LK-1016	Dual #10 — 16 feet	10.25
12M6	12	60	M	34.50						<b>LEAD KITS</b>		
12L8	12	80	L	44.95						MK-3544-1	For L and S cases	\$3.50
12S10	12	100	S	72.50						MK-3544-2	For H case only	6.00
12H15	12	150	H	99.50						MK-3544-3	For SH case only	7.50
12SH20	12	200	SH	129.50	<b>MOUNTING KITS</b>							
28L8	28	80	L	74.50	<b>REMOTE CONTROL KITS</b>							
28S10	28	100	S	89.95	(For 6 and 12 volt models in L, S, H and SH cases)							
28H15	28	150	H	112.95	6/12D6	6/12	60	L	\$50.00	RK-105	5' extension cable	\$9.00
28SH20	28	200	SH	167.50	<b>MOBLPAK POWERCONS (Low DC to High DC)</b>			RK-112	12' extension cable	11.00		
32L8	32	80	L	69.50	6DC3	6	300 V.DC 100 MA	M	\$39.95	RK-116	16' extension cable	12.00
32S12	32	125	S	83.95	12DC3	12	300 V.DC 100 MA	M	39.95	<b>MASTER FUSE KITS (2" cartridge)</b>		
32H18	32	180	H	118.00	6/12DC6	6/12	300 V.DC 200 MA	S	74.85	FK-220	20 ampere	\$3.50
32SH22	32	225	SH	162.50	6/12DC12	6/12	300 V.DC 225 MA	S	119.80	FK-230	30 ampere	3.50
110LM5	110	50	LM	28.50	<b>BATTERY ELIMINATOR POWERCONS</b>			FK-240	40 ampere	4.50		
110M7	110	70	M	44.50	110B6	110	6A-12V.DC 10A-6V.DC	H	\$99.50	FK-250	50 ampere	4.50
110L10	110	100	L	57.50	110B12	110	10A-12V.DC 20A-6V.DC	H	127.50	FK-260	60 ampere	4.50
110S15	110	150	S	72.00	<b>POWER FACTOR CORRECTORS</b>			PF-1	60% PF loads 10-100 watts; 30% PF loads 10-25 watts	\$19.95		
110H25	110	250	H	89.50	PF-2	60% PF loads 150-300 watts; 30% PF loads 50-75 watts	39.95					
110H35	110	350	H	135.00	PF-3	60% PF loads 350-500 watts; 30% PF loads 100-150 watts		49.95				
110SH40	110	400	SH	170.00								
220S15	220	150	S	91.50								
220H25	220	250	H	139.50								
220SH40	220	400	SH	199.50								

- Standard models deliver 110 volts, 60 cycle, AC power. Output watt ratings are based on continuous operation on high power factor loads. They should be reduced by the percent of power factor where inductive loads are involved.
- All models are housed in cases of similar design and appearance. The class designations signify approximate size and weight as follows:  
 SP — Shaver Pack — 2 5/8 x 2 1/2 x 3 7/8 ..... 2 lbs.  
 LM — Light Midget — 3 x 3 1/2 x 4 1/8 ..... 4 lbs.  
 M — Midget — 3 1/8 x 4 3/8 x 5 1/8 ..... 6 lbs.
- For complete information, refer to Cornell-Dubilier Bulletins EB-3006 for 6, 12 volts; EB-3007 for Power Factor Correctors; EB-3008 for 28, 32 volts; EB-3009 for Moblpak series; EB-3010 for 110, 220 volts; EB-3011 for Dictator Model only; EB-3012 for Battery Eliminators; EB-3013 for Accessories and installation procedures; EB-3015 for Sportsman, Sr.

# Perma-Power Equipment----made better!

## RADIO-CONTROL GARAGE DOOR OPENER

Just a touch of your finger . . . opens and closes your garage door

The Perma-Power Garage Door Opener embodies novel design features providing maximum convenience and safety to the user. Styling, too, was given important consideration. All mechanism is contained in a modern spun-aluminum fixture that illuminates as well as beautifies the garage interior.

The concealed motor is a 1/4 HP, 117 volt, capacitor-start type with ample power to operate the largest of modern, residential, garage doors. Also in the fixture is the radio receiver which turns on the motor when it gets a signal from the transmitter in the car.

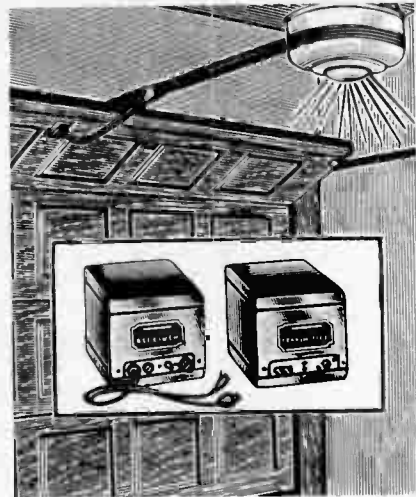
- When button is pressed, door automatically opens and turns on a fixture light, illuminating garage. When button is pressed again, door automatically closes and light turns off.
- Door locks securely when shut. No conventional key lock required.
- New automatic shut-off gives extra protection. If door hits an obstacle, power shuts off instantly. When strated again, door reverses, pulling away, so object cannot be trapped.
- Sensitive safety clutch is easily adjusted by a knob to exert just enough force to move door reliably. This vital safeguard makes door travel gentle and, consequently, easy to arrest.
- A detachable door arm permits unlatching for manual operation of the door in case of power failure.
- A push-button with wire is supplied for wall mounting in garage or other location to operate door from inside. This control circuit is only 24 volts and safely isolated from the main service line. Additional buttons may be easily installed at auxiliary points. A key operated switch is available for outside mounting.

- Electrical overload devices protect the entire installation. The radio-control receiver is individually fused.
- The radio-control transmitter is crystal-controlled, sending out its signal on an FCC authorized frequency of 27.255 mcs. Being small, it mounts under the hood and operates directly from the 6 or 12 volt car battery. When door operation from more than one car is desired, a separate transmitter is installed in each additional car.
- The radio-control receiver is contained inside the aluminum fixture in the garage. It plugs into the main assembly and is constantly ready to obey the car signal to open or close the door.
- An exclusive, coded channel is set up in each radio control system upon installation. Ten different factory-sealed plug-in channel units are available, requiring no adjustment at the point of use. This allows interference-free operation to and from neighboring installations and other electrical devices.

**DOOR REQUIREMENTS** — The Perma-Power Garage Door Opener will operate all one-piece tilt-up or sectional roll-up residential doors that travel on horizontal or curved roller tracks. Doors may be up to 18' wide and 8' high and of metal or wood construction. As little as 2" of headroom (space between high-arc of door and ceiling) in garage is adequate for installation.

**INSTALLATION** — Entire system was designed to make installation an easy one-man job. Simplified step-by-step instruction manual assures fast, professional results using common hand tools. Every part required is supplied, including mounting materials.

**Perma-Power Model G212 Complete System**—Including operator mechanism, radio-control, ant



mtg. hardware, wall and dash buttons, etc. **\$154.00**  
Shipping Weight, 95 lbs. Net Each  
**Perma-Power Model G412 Operator Only**—Including motor mechanism, mtg. hardware, wall button, etc. **\$98.00**  
Shipping Weight, 85 lbs. Net Each  
**Perma-Power Model G314 Radio-Control Only** — Including receiver, transmitter (6/12 v.), antennae, dash button, etc. Shipping Weight, 10 lbs. **\$56.00** Net Each  
**Perma-Power Model G315 Extra Transmitter** (6/12 v.) For additional car, including antennae, dash button, etc. Shipping Wt., 7 lbs. Net Each **\$24.50**  
**Perma-Power Model G511 Key Switch**—For electrical operation from outdoor jamb or driveway **\$4.20** post. Shipping Weight, 1/4 lb. Net Each

## TRANSISTOR POWER SUPPLY



**Model A-400**  
Especially designed to operate, service and test transistor portable radios and low power transistor circuits. Features: Continuously adjustable output using variable auto-former control. Two output voltage ranges (0-15 volts

and 0-30 volts) for accurate setting of all transistor battery voltages. Two output current ranges (0-15 MA and 0-60 MA) monitor current for single transistor or entire set. Extremely low ripple (less than 500  $\mu$ v—0.02% at full load) for testing lowest level transistor circuits. Very low internal impedance (less than 20 ohms DC to R. F.; including 7 ohm removable meter fuse) providing excellent regulation. 2% Precision, D'Arsonval meters provide laboratory accuracy. Milliammeter protected by front panel fuse; additional internal line fuse. Output isolated from line and case. Attractive Slope—Front, Maroon Hammerloid Cabinet — Rubber feet. **\$64.50** From Electronic Parts Distributors only Net

## BATTERY ELIMINATORS



**Model "A"**  
1 1/2 Volt Supply

as well as battery compartments of most portables. "A" Voltage: 1.45 volts DC at 200 to 350 ma. "B" Voltage: 90 volts DC at 13 ma. Size: 2 1/8" x 4 1/2" x 6 3/4". Weight, 4 lbs. **\$11.90** Perma-Power Model A-101—Net Each

**CONVERT BATTERY RADIOS TO ALL-ELECTRIC OPERATION** For 1 1/2 volt radios with 4, 5 or 6 tubes. Designed to give nearly constant power from varying line voltages. Maintains rated output under varying tube loads. Universal sockets for all battery plugs. Fits in back of battery radios as well as battery compartments of most portables. "A" Voltage: 1.45 volts DC at 200 to 350 ma. "B" Voltage: 90 volts DC at 13 ma. Size: 2 1/8" x 4 1/2" x 6 3/4". Weight, 4 lbs. **\$11.90** Perma-Power Model A-101—Net Each



**Model D-101**  
300 watts

**TV VOLTAGE REGULATOR** Returns Height & width of picture when low line voltage distorts picture.  
• Boosts 10 volts  
• Lowers 10 volts  
• Feed line thru  
**Model D-101 300 watts**  
Reduces tube failures—increases set sensitivity. Eliminates intermittent sync and oscillator drift. Turns on and off with TV set; simple plug-in installation. Reduces low line and high line hazard. **\$3.97** Shipping Weight, 2 1/2 lbs. Net Each

## TV TUBE RESTORER



**Model K-101**

Restores Picture to Defective Picture Tube of any Set.

- Locates and Corrects for:
- Open Cathode
  - Heater-Cathode Short
  - Open Control Grid
  - Control Grid-Cathode Short
  - Low Emission
  - Combinations of Above

Perma-Power's unique design for its Universal Tube Britener, is used in the Restorer so that one simple unit provides the cure to any defective picture tube in any TV set. Works on electrostatic or electromagnetic focus picture tubes in series or parallel-wires filament TV sets. Corrects for dozens of picture tube faults. Shipping Wt. 1 lb. **\$3.30** Net Each

As above, but designed for:

- Open control grid
- Control grid to cathode short, only

Net Each **\$1.49**  
Shipping Weight 8 oz.



**Model K-201**

## COLOR TV SERVICE AIDS

### COLOR GUN KILLER



**Model T-101**

Operates red, green, or blue guns individually or in combinations to make purity adjustments. Enables each gun of three gun Kinescope to be operated singly or in combination. Avoids cutting or disconnecting leads to make color purity adjustments. Shipping Weight 8 oz. **\$2.98** Net Each

### COLOR KINE ADAPTER

To Test Color Kinescope on Black and White Testers. Enables each gun of three gun color Kinescope to be individually tested on tube-testers designed for black and white Kinescopes. Shipping Wt. 8 oz. **\$1.49** Net Each



**Model T-201**

## TV TUBE BRITENERS

### UNIVERSAL BRITENER



**Model C-301**

trostatic or magnetic focus picture tubes. **\$2.49** Shipping Weight 10 oz. — Net Each

Britens and Isolates Parallel or Series TV Picture Tubes

Multi-purpose isolation-transformer type Britener. Gives 6.3 volts to relieve cathode-filament short problems or 7.8 volts for increasing emission. Works on electrostatic or magnetic focus picture tubes. **\$2.49** Shipping Weight 10 oz. — Net Each



**Model C-201**

ing. Gives 7.8 volts output. Works on electrostatic or magnetic focus picture tubes. **\$1.92** Shipping Weight 8 oz. — Net Each

**GOLDEN C-BRITE** Britens Parallel or Series TV Picture Tubes

Dual purpose auto-former Britener. Exclusive reversible plug adapts to parallel or series wired filaments. Gold-anodized aluminum housing. Works on electrostatic or magnetic focus picture tubes. **\$1.92** Shipping Weight 8 oz. — Net Each



**Model C-401**  
Parallel Sets only.

Shipping Weight 8 oz. — Net Each **98¢**

### VU-BRITENERS

Low Cost and High Quality Single purpose auto-former Britener. Gives 7.8 volts output. Works on electrostatic or magnetic focus picture tubes. **Model C-401—Parallel Sets only.** **Model C-402 — Series Sets only.**



**Model C-501**

Shipping Weight 1 lb. — Net Each **\$5.73**

**COLOR BRITE** Extend the Useful Life of the 3 Gun Color Tubes Single purpose auto-former Britener. Provides increased filament voltage to boost electron emission and return full contrast and color quality. **\$5.73**

Manufactured by **PERMA-POWER COMPANY, Chicago 18, Ill.**

Manufacturers of Electronic Equipment Since 1928



# GENEMOTORS



**CARTER GENEMOTOR**  
7 1/8" Long, 4 3/4" Wide  
3 1/2" High, Weight 10 lbs.

The favorite power supply for over 20 years. 60 to 70% efficiency, small size and complete dependability. Starts in less than 150 milliseconds. Up to 90 watts continuous, 150 watts intermittent output. Sealed ball bearings, line-o-life brushes, less than 1% ripple. Special military models available. Any input voltage from 5.5 to 115 volt available.

**3" Frame—7 1/8" x 4 3/4" x 3 1/2" High,  
Weight 10 lbs.**

Code No.	DC Input Volts	DC Input Amps	DC Output Volts	DC Output MA	Duty	List Price
320B	12	8	300	200	Con.	74.00
3020BF*	12	8.7	300	200	Con.	83.00
3732BS	12	16	375	325	Int.	78.00
420B	12	10	400	200	Con.	75.00
4020BF*	12	11.5	400	200	Con.	84.00
4228BS	11.8	17	420	280	Int.	76.00
4228BSC	11.8	17	420	280	Int.	78.00
450BS	12	13.5	400	250	Int.	76.00
520BS	12	14	500	200	Int.	76.00
532BS	12	18	500	325	Int.	79.00
6030BS	12	23	600	300	Int.	79.00
6040BS	12	28	600	400	Int.	80.00
617BS	11.8	14	600	170	Int.	77.00
620BS	12	15	600	200	Int.	78.00
624BS	12	18	600	240	Int.	79.00
6030CS	32	8	600	300	Int.	79.00
6040CS	32	10.5	600	400	Int.	80.00
6050CS	32	13	600	500	Int.	81.00
6030DS	115	2.2	600	300	Int.	84.00
6040DS	115	3	600	400	Int.	85.00
6050DS	115	4	600	500	Int.	86.00

\*Fan cooled, recommended for geophysical and industrial service.

## CARTER 1 1/2" AND 2" FRAME GENEMOTORS

Carter 1 1/2" and 2" frame models are for amplifiers, small AM/FM transmitters and are of the same construction as the 3" frame Genemotor. Highest quality components. 2" frame is 6 1/8" long x 4 3/4" wide with base, 3 1/2" high weight 8 1/4 lbs. up to 60 watts continuous, 120 watts intermittent duty output. 1 1/2" frame is 5 5/8" long 4 3/4" wide with base, 3 1/2" high, weight 7 lbs up to 35 watts continuous, 80 watts intermittent duty output. Special military models available.

2" Frame — 6 1/8" x 4 3/4" x 3 1/2" high, Weight 8 lbs.				1 1/2" Frame—5 5/8" x 4 3/4" x 3 1/2" High, Weight 7 lbs.					
320BS2B	12	8.6	300 200	Int.	\$72.00	3715ABS	6 14 375 150	Int.	\$73.00
3515BB	12	8	350 150	Con.	71.00	251BB	12 4 250 100	Con.	71.00
415BB	12	9.5	400 150	Con.	72.00	2715BBS	12 6.2 275 150	Int.	71.00
420BS2B	12	11	400 200	Int.	72.00	301BB	12 5 300 100	Con.	71.00
520BS2B	12	14	500 200	Int.	73.00	351BB	12 5.5 350 100	Con.	72.00
						3715BBS	12 9.5 375 150	Int.	73.00
						2580EB	24 1.7 200 080	Con.	71.00
						3715CBS	32 3 375 150	Int.	73.00

Any input voltage from 5.5 to 72 volts available on both models.



## HEAVY DUTY GENEMOTORS



**NEW CARTER HEAVY DUTY GENEMOTOR.** Now, outputs up to 800 volts from 5.5 volt input! For low cost, high output mobile transmitters. 160 watt intermittent duty capacity at 5.8 volt input, silk insulated windings, large brushes with more air space around brush holders for greater dielectric.

## FAN COOLED GENEMOTORS

**CARTER "FAN-COOLED" GENEMOTOR.** Has forced ventilation and larger brush areas for cooler running and efficient operation in confined quarters, for military and geophysical applications, tropical climates, and where continuous duty and long brush life are essential. Write for information.



## DUTY RATINGS — INPUT VOLTAGES — BRUSHES

### REPLACEMENT BRUSHES

Duo-Volt Genemotors .....	\$4.00 set of 6
Genemotors, Magmotors .....	\$2.50 set of 4
Change-A-Volt .....	\$3.00 set of 4
Custom Converters .....	\$3.70 set of 4
Custom Dynamotors .....	\$5.00 set of 4

**DUTY RATINGS**—Dynamotor intermittent duty shall be 10 seconds on, 20 seconds off. Continuous duty is 24 hours per day.

**SPECIAL INPUT VOLTAGE**—Add 5.00 to list for input other than listed.

**STARTING RELAYS**—6, 12, 24, 28 and 32 volt starting relays available. \$8.00 list.

**DO YOU HAVE OUR LATEST DYNAMOTOR CATALOG #157, CONVERTER CATALOG 557 AND PRICE LIST 800?**

DC-DC



# DUOVOLT GENEMOTORS

Carter Duo-Volt Genemotors provide 6/12 volt operation and are specified by major mobile radio manufacturers. High efficiency, slower speed for longer life reduces maintenance. Standard and Super models provide dependable power for 25 to 100 watt output transmitters.



### STANDARD DUOVOLT...for 30-100 Watt Transmitters (Size 8" x 4 3/4" x 3 1/2" High—Weight 11 1/2 Pounds)

Code	Input		Input		Output		Duty	List Price
	Volts	Amps	Volts	Amps	Volts	Amps		
420VBN	5.5	26	11	13	400	.200	Con.	\$97.50
420BEN	12	10	24	5	400	.200	Con.	98.00
450ABNS	6	29	12	14.5	400	.250	Int.	98.50
4030VBNS	5.2	40	10.4	20	400	.300	Int.	99.00
4037ABNS	6	41	12	20.5	400	.375	Int.	99.25
4228VBNS	5.8	33	11.6	16.5	420	.280	Int.	99.00
4230VBNS	5.8	37	11.6	18.5	420	.300	Int.	99.00
4432VBNS	5.8	42	11.6	21	430	.325	Int.	101.00
520ABNS	6	28	12	14	500	.200	Int.	101.00
520VBNS	5.5	31	11	15.5	500	.200	Int.	101.00
520BENS	12	12	24	6	500	.200	Int.	101.00
617VBNS	5.5	30	11	15	600	.170	Int.	101.00
624VBNS	5.7	46	11.4	23	600	.240	Int.	101.00
6427VBNS	5.7	51	11.4	25.5	640	.270	Int.	101.00
6825VBNS	5.7	47	11.4	24	685	.263	Int.	105.00
7212ABNS	6.1	28	12.2	14	720	.125	Int.	103.00

### SUPER DUOVOLT...for 50-100 Watt Transmitters (Size 8 3/8" x 5 3/8" x 4 3/8" High—Weight 16 3/4 Pounds)

Code	Input		Input		Output		Mo.	Duty	List Price
	Volts	Amps	Volts	Amps	Volts	Amps			
TAB430	6	32	12	16	400	300	Con.	\$125.00	
TV85627	5.5	46	11	23	600	270	Int.	128.00	
TV856027	5.7	48	11.4	24	600	265	Int.	132.00	
TV85630	5.5	52	11	26	600	300	Int.	128.00	
TA856228	6	46	12	23	620	280	Int.	128.00	
TV856537	5.8	66	11.6	33	650	370	Int.	130.00	

## CARTER CHANGE-A-VOLT DYNAMOTORS

Designed for long life, this slow speed Dynamotor is equipped with low copper content Line-O-Life brush grades for operating radio receivers continuously. Most models operate less than 3000 RPM. 615V and 128V models are designed for 30 watt transmitters and deliver 3 times rated current for intermittent transmit service. 610V and 125V are designed for 10 to 20 watt transmitters and deliver two times rated current on intermittent transmit service. High efficiency. Voltage regulation from 15 amperes to 45 amperes is approximately 1.3 volts.

Change-a-Volt can also serve as a battery equalizer when operating low voltage equipment on several cells of a higher voltage battery system. A double pole switch or relay must be used when operating the dynamotor as a battery equalizer. Size 1 1/8" long, 7/16" high, 4 1/2" wide. Weight approx. 25 lbs.



### FOR 10 TO 20 WATT SYSTEMS

Change-A-Volt Model	Input		Output		Duty	Temp. Rise °C.	List Price
	Volts	Amps	Volts	Amps			
B610V	12	8	6	10	Con.	50	\$118.00
E610V	24	4	6	10	Con.	50	\$118.00
J610V	28	3.4	6	10	Con.	50	\$118.00
C610V	32	3	6	10	Con.	50	\$118.00
HS610V	70	1.4	6	10	Con.	50	\$118.00
E125V	24	4	12	5	Con.	50	\$118.00
J125V	28	3.5	12	5	Con.	50	\$118.00
C125V	32	3.1	12	5	Con.	50	\$118.00
HS125V	70	1.5	12	5	Con.	50	\$118.00

### FOR 30 WATT SYSTEMS

B615V	12	11.5	6	15	Con.	50	\$118.00
E615V	24	5.7	6	15	Con.	50	\$118.00
J615V	28	5.0	6	15	Con.	50	\$118.00
C615V	32	4.3	6	15	Con.	50	\$118.00
HS615V	70	2.1	6	15	Con.	50	\$118.00
E128V	24	6.0	12	8	Con.	50	\$118.00
J128V	28	5.3	12	8	Con.	50	\$118.00
C128V	32	4.6	12	8	Con.	50	\$118.00
HS128V	70	2.2	12	8	Con.	50	\$118.00

Non-grounded dynamotors in above models are available at the same price for low power Industrial Radio operation. Maximum output 60 watts. These models supplied less relay and fuse block.

## CARTER MAGMOTORS

Small, light weight, the Magmotor is the ideal power supply for Geophysical equipment, guided missiles, and rocket research. PM Fields reduce size and weight. 35 watts continuous, 60 watts intermittent duty output capacity. Extended

shaft models available for power take off or external driving as an AC or DC self-excited generator. Military models available.



Code No.	Volts	Amps.	DC Output		Duty	List Price
			DC Input	Volts MA		
MB1512	12	3	150	120	CON.	70.00
MB260	12	2.5	200	60	CON.	70.00
MB2550	12	2.8	250	50	CON.	70.00
MBS2515	12	7	250	150	CON.	70.00
MJS252	28	3.2	250	200	INT.	73.00
MJS2525	28	4	250	250	INT.	74.00
MBS2525	12	8.5	250	250	INT.	74.00
MB351	12	6	350	100	CON.	72.00
MB3015	12	7.5	300	150	CON.	73.00
MBS320	12	9.5	300	200	INT.	73.00
MBS3315	12	7.5	330	150	INT.	73.00
MBS3515	12	8	350	150	INT.	73.00

## FILTERS — STARTING RELAYS

**FILTERS**—Any Standard Genemotor or Magmotor can be equipped with filter mounted in a box below the unit. Add "X" to end of Code No. 1 1/2" and 2" frame Genemotors and Magmotors add \$31.00 list. 3" Genemotors add \$33.00 list. Filter not available for

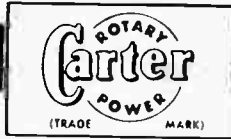
dua-volt Genemotor Models.

**RELAYS**—Heavy Duty starting relays are available for 6-12-24-28-32 volt input \$8.00 list.

DO YOU HAVE OUR LATEST DYNAMOTOR CATALOG #157, CONVERTER CATALOG 557 AND PRICE LIST 800?



# New



# Mark II Super Converters



## NEW MARK II MODEL

The new Mark II Super Converter incorporates new features of design that greatly improve performance and brush life. The premium "long life" brush feature is now standard on all Super II models. Brushes and commutators operate far longer without attention.

Standard models are designed for high power factor loads only, such as amplifiers, radios (when filtered) etc. Not recommended for refrigerators, AC motors, low power factor transformers, etc. See selector chart page for 70% power factor converters to operate tape recorders. Manual frequency controls available on all models to maintain 115 V. 60 cycle output with  $\pm 10\%$  input voltage variation. Continuous duty type.

### SPECIFICATIONS

Carter Mark II Super Converter, 40 to 150 watt models 8 1/4" long, 4 1/2" wide, 5" high, weight 13 lbs. 100% power factor, Less Filter. Output 115 V. AC; Continuous duty.

Code No.	DC Input		60 cy. Volt-Amps. (Watts)	List Price
	Volts	Amps		
K1040CB	230	.4	40	\$120.00
K1060CB	230	.5	60	121.00
K1080CB	230	.6	80	122.00
K1010CB	230	1.0	100	123.00
K1015CB	230	1.2	150	124.00
D1040CB	115	.7	40	115.00
D1060CB	115	1	60	116.00
D1080CB	115	1.1	80	117.00
D1010CB	115	1.7	100	118.00
D1015CB	115	2.0	150	119.00
H1040CB	64	1.5	40	110.00
H1060CB	64	2	60	111.00
H1080CB	64	2.2	80	112.00
H1010CB	64	2.5	100	113.00
H1015CB	64	3.4	150	114.00
C1040CB	32	3	40	106.00
C1060CB	32	4	60	107.00
C1080CB	32	5	80	108.00
C1010CB	32	5.5	100	109.00
C1015CB	32	7.4	150	110.00
J1040CB	28	3	40	106.00
J1060CB	28	4	60	107.00
J1080CB	28	5.2	80	108.00
J1010CB	28	7	100	109.00
J1015CB	28	9	150	110.00
E1040CB	24	3.5	40	106.00
E1060CB	24	4.3	60	107.00
E1080CB	24	6	80	108.00
E1010CB	24	8.3	100	109.00
E1015CB	24	10	150	110.00
B1040CB	12	8	40	106.00
B1060CB	12	10	60	107.00
B1080CB	12	14	80	108.00
B1010CB	12	15	100	109.00
B1015CB	12	23	150	110.00
A1040CB	6	15	40	106.00
A1060CB	6	19	60	107.00
A1030CB	6	25	80	108.00
A1010CB	6	27	100	109.00
A1015CB	6	46	150	110.00

### OUTSTANDING FEATURES

**GREATER PERFORMANCE** — Long life design now standard on all models!

**MODERN DESIGN** — Smallest Rotary Converter — improved handle and end covers.

**BALL BEARINGS** — Sealed ball bearings at no extra cost. Requires no lubrication.

**ARMATURE** — Double wound, insulated windings. Now have more commutator segments for longer life.

### HEAVY DUTY MARK II SUPER CONVERTER

10 1/4" long, 4 1/2" wide, 5" high, weight 19 lbs. Overall efficiency 60% AC voltage regulation 25%. Output 110 V. AC. Continuous duty.

Code No.	Volts	DC Input		60 cy. (Watts)	List Price
		Amps.			
K1020CB	230	1.3		200	\$137.00
K1025CB	230	1.6		250	137.00
D1020CB	115	2.6		200	132.00
D1025CB	115	3.2		250	132.00
H1020CB	64	4.8		200	127.00
H1025CB	64	5.3		250	127.00
C1020CB	32	10		200	123.00
C1025CB	32	12		250	123.00
J1020CB	28	12		200	123.00
J1025CB	28	14		250	123.00
E1020CB	24	15		200	123.00
E1025CB	24	19		250	123.00
B1020CB	12	30		200	123.00
B1025CB	12	34		250	123.00

**FILTERS** — Available on all Super Converters. Eliminates Converter noise on most frequencies from 560 KC to 54 MC. Filter mounted in cast aluminum housing below Converter. Add "X" to Code Number and \$30.00 to list.

**FREQUENCY CONTROL** — Manually operated frequency control available on all models. Complete with vibrating reed meter, and rheostat control in aluminum housing. Add \$60.00 to list.

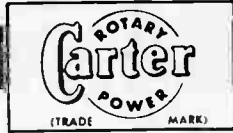
**FOR LOW COST** — "Change-a-Cycle" Frequency Control, add "A" to end of Code No. and \$10.00 to list.

**VOLTAGE-FREQUENCY** — Add \$5.00 to list for 50 cycle output. Add \$5.00 to list for 230 volt AC Output.

DO YOU HAVE OUR LATEST DYNAMOTOR CATALOG #157, CONVERTER CATALOG 557 AND PRICE LIST 800?

See Carter Selector Chart for Tape recorder, Television receivers, etc., recommended Converters.

**300-750 W.  
OUTPUTS**



# Custom Converters

## CUSTOM CONVERTER FOR 60 CYCLE AC OUTPUT—300-400-500-750 WATT, 115 VOLT



300 watt, 11 $\frac{1}{8}$ " long, 6 $\frac{1}{16}$ " wide, 7 $\frac{1}{4}$ " high—Weight 38 lbs. 400 and 500 watt, 12 $\frac{3}{8}$ " long, 6 $\frac{1}{16}$ " wide, 7 $\frac{1}{4}$ " high—Weight 47 lbs. 750 watt, 13 $\frac{3}{8}$ " long, 6 $\frac{1}{16}$ " wide, 7 $\frac{1}{4}$ " high—Weight 58 lbs.

Created to meet the demands for a compact and highly efficient two pole rotary converter, the Custom has been designed especially for laboratory and industrial service, amplifiers, office business machine, marine and mobile communications and high quality tape recorder requirements. Output 115 V. 60 cycle AC. Continuous duty. Temperature rise 50° C.

	Code No.	DC Input Amps.	Volts	60 Cy. Watts	Price List
230 Volt	K1030CP	230	2.3	300	\$200.00
	K1040CP	230	2.8	400	220.00
	K1050CP	230	3.5	500	220.00
	K1075CP	230	4.4	750	256.00
115 Volt	D1021CP	115	2.5	210	185.00
	D1030CP	115	4.6	300	190.00
	D1040CP	115	5.6	400	210.00
	D1050CP	115	7	500	215.00
	D1075CP	115	8.8	750	246.00
64 Volt	H1030CP	64	8.2	300	190.00
	H1040CP	64	10	400	213.50
	H1050CP	64	12.5	500	218.50
	H1075CP	64	16	750	246.00
32 Volt	C1030CP	32	19	300	190.00
	C1040CP	32	21	400	213.00
	C1050CP	32	25	500	218.50
	C1075CP	32	32	750	246.00
28 Volt	J1021CP	28	18	210	183.50
	J1030CP	28	20	300	190.00
	J1040CP	28	24	400	213.50
	J1050CP	28	28	500	218.50
	J1075CP	28	38	750	246.00
24 Volt	E1030CP	24	22	300	190.00
	E1040CP	24	28	400	213.50
	E1050CP	24	33	500	218.50
	E1075CP	24	44	750	246.00
12 Volt	B1021CP	12	29	210	183.50
	B1030CP	12	45	300	190.00

## FREQUENCY CONTROLLED CUSTOM FOR PROFESSIONAL TAPE RECORDING

Provides constant 60 cycle output for broadcast and professional tape recorders. Rheostat permits manual control to keep output frequency at 60 cycle with a  $\pm 10\%$  input voltage variation. Special models available at no Extra Cost. Write for information.

Filter available for any Custom Converter model. Add \$40.00 to list, and "X" to code number. For 220 Volt AC output or 50 cycle output add \$5.00 to list for each.

Frequency Controlled Custom Converters Recorder Model: Ampex 400A-401A, Magnecord Binaural; Magnecord M80-81-90, Ampex 350.

CUSTOM CONVERTER MODEL		
12V	28V	115V
BR1021CP	JR1021CP	DR1021CP
\$260.00	\$260.00	\$260.00
BRS1040CP	JR1040CP	DR1040CP
\$288.50	\$288.50	\$288.50

300 watt with Frequency Control, 11 $\frac{1}{8}$ " long, 6 $\frac{1}{16}$ " wide, 10 $\frac{1}{4}$ " high—Weight 44 lbs.

400 and 500 watt with Frequency Control, 12 $\frac{3}{8}$ " long, 6 $\frac{1}{16}$ " wide, 10 $\frac{1}{4}$ " high—Weight 54 lbs.



## NEW! INDUSTRIAL CONVERTERS for MARINE, R.R., AND TELEPHONE SERVICE



These converters are engineered to the highest industrial standards, using the same rugged, heavy duty construction that has made Carter Custom Dynamotors so successful in railroad, marine and other industrial applications.

Constructed in a frame capable of delivering 500 watts continuous duty, these Converters normally are designed to deliver 75 watts continuous and 200 watts intermittent in industrial service, assuring long life, cool running, and adequate output regulation to compensate for irregularities in input voltage. Output 115 V. AC, 75 W. receive, 200 W. transmit.

Model	Input Range d.c. volts	List Price
DS1020C5P	118 - 132	\$210.00
HS1020C5P	67 - 74	213.50
CS1020C5P	33 - 37	213.50

Size 12 $\frac{3}{8}$ " long, 6 $\frac{1}{16}$ " wide, 7 $\frac{1}{4}$ " high. Weight 47 lbs. Filter not normally required.

Other outputs up to 750 watts, and other input voltage models are available at comparable costs. Please submit your requirements.

DO YOU HAVE OUR LATEST DYNAMOTOR CATALOG #157, CONVERTER CATALOG 557 AND PRICE LIST 800?

The MASTER—22nd Edition

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DC to DC



# Industrial Dynamotors

FOR DIESEL LOCOMOTIVE, TELEPHONE STANDBY  
MARINE RADIO-TELEPHONE COMMUNICATIONS



This Custom Dynamotor permits use of 6 volt or 12 volt Mobile Communications equipment on 24, 32, 48, 64 or 110 volt Diesel locomotives. Now, switch engines can easily be tied in with the rest of mobile communication systems. Rugged, Heavy Duty construction throughout makes it ideal for Diesel and Marine service. The under-loading permits slow speed and low temperature rise. Coupled with over-size brushes, extra long life is attained. Excellent results; have been reported on units in operation more than 3 years. High voltage outputs up to 1000 volts available.

Model No.	Input Range	Output Volts	Output Rec.	Amps Trans.	List Price
DS1220P	118 - 132	12.8	5	18	\$230.00
HS1220P	67 - 74	12.8	5	18	230.00
CS1220P	33 - 37	12.8	5	18	230.00
DS640P	118 - 132	6.3	15	40	230.00
HS640P	67 - 74	6.3	15	40	230.00
CS640P	33 - 37	6.3	15	40	230.00

Size 12 3/4" long, 6 1/4" wide, 7 1/4" high. Weight 47 lbs. Filter not normally required.

Regulation on 6.3 volt output is slightly higher than 12.8 volt output.

Other output or input combinations available at same or slightly higher prices. Please submit your requirements.

A new 750 watt frame is available for higher outputs. Write for information.

## SELECTOR CHART - Converters for Popular Wire and Tape Recorders

Most wire and tape recorders are of medium Power Factor design, approximately 70%. Standard high power factor (85 to 100%) Rotary Converters therefore will not operate the recorders properly as this type Converter will produce higher AC voltage and frequency because of the inductive recorder load. If the equipment is not listed on this chart, please write to the factory.

erly as this type Converter will produce higher AC voltage and frequency because of the inductive recorder load. If the equipment is not listed on this chart, please write to the factory.

MAKE & MODEL EQUIPMENT	6 Volt	CARTER CONVERTER MODEL	115 VOLT DC INPUT	Size & Weight
<b>60 WATT</b> Ampro 730-731; Edison Voicewriter, VP (for 115 Volt DC only)	A1060CBW (29 amps drain) \$107.00	B1060CBW (14 amps drain) \$107.00	D1060CBW (1 amp drain) \$116.00	8 1/4" L, 4 1/2" W, 5" H Wt. 13 lbs.
<b>80 WATT</b> Bell Record-O-Fone RT50-RT65B-RT75, FME 37B; Gray Autograph, Elcor 1000-15-115-400-230; General Industries Foundation Unit; Knight Tape, Peirce 55B; Masco D37, LD37, DC37, 500; Pentron T3-9T3-9T3C-CT1-TR4-HT225; Revere T100, T500, LR-1, T900, T1100, T1400; Web-Cor 210-1; 4B10-4C10; Dictophone Time-Master.	A1080CBW (31 amps drain) \$108.00	B1080CBW (15 amps drain) \$108.00	D1080CBW (1.5 amps drain) \$117.00	8 1/4" L, 4 1/2" W, 5" H Wt. 13 lbs.
<b>FREQ. CONTROL</b> Ampex 600, 610, 612	A1080CB AR1080CB \$168.00	B1080CB BR1080CB \$168.00	D1080CB DR1080CB \$177.00	8 1/4" L, 4 1/2" W, 7 1/2" H Wt. 15 lbs.
<b>WITH FILTER</b> Revere TR-200, TR-600, TR-800, TR-20; Masco LD37R	A1080CBWX \$138.00	B1080CBWX \$138.00	D1080CBWX \$147.00	8 1/4" L, 4 1/2" W, 7 1/2" H Wt. 15 lbs.
<b>100 WATT FREQ. CONTROL</b> Ampex 620A with 600; Berlant BR-1	AR1010CB (27 amps drain) \$169.00	BR1010CB (15 amps drain) \$169.00	DR1010CB (1.7 amps drain) 178.00	8 1/4" L, 4 1/2" W, 7 1/2" H Wt. 15 lbs.
<b>130 WATT</b> Brush; BK-442-BK443P-BK455; RCA-SRT-301, Webcor 2010-2030. VM700	A1090CBW4 (35 amps drain) \$121.00 AX 1090CBW4 \$103.00	B1090CBW4 (17 amps drain) \$121.00 BX 1090CBW4 \$103.00	D1010CBW (2 amps drain) \$118.00 DX 1090CBW \$90.50	6 & 12 Volt 10 1/4" L, 4 1/2" W, 5" H Wt. 18 lbs. 8 1/4" L, 4 1/2" W, 5" H Wt. 13 lbs.
<b>160-210 WATT</b> Berlant 20/20 Ampex 400A-401A; Magnecord Binaural; TDC Stereotone 130.	ARS-1016CP \$260.00 6 Volt not recommended	BR1016CP \$260.00 BR1021CP (29 amps) \$260.00	DR1016CP \$260.00 DR1021CP (2.5 amps) \$260.00	11 1/4" L, 6 3/4" W, 7 1/4" H Wt. 38 lbs.
<b>300-500 WATT FREQ. CONTROL</b> Magnecord M80, M81, M90; Ampex 350.	not recommended	†BRS1040CP \$288.50	DR1030C5P \$285.00	12 3/4" L, 6 3/4" W, 10 1/4" H Wt. 54 lbs.

\* Including average recorder amplifier

† 1 hour continuous duty cycle

### SOUND PROJECTORS AND PHONO MOTOR CONVERTERS

Ampro Premier 20 & 30, Bell & Howell No. 179, DeVry Super No. 16, Victor Lite Weight, Victor Triumph No. 60\*, Victor Sonomaster\*, General Industries FM4, Green Flier Dual Speed. D1015CB \$118.00  
\*Victor Animatograph Co.

CONVERTER OPERATES SOUND AMPLIFIER ONLY, NOT PROJECTOR LAMP OR MOTOR.  
WILL NOT OPERATE PROJECTORS FROM BATTERY INPUT. 115 OR 230 VOLT D.C. INPUT ONLY

### CARTER TELEVISION CONVERTERS

	12 V.	115 V.
130 to 160 WATTS (some 17"-20"-21" models)	B1016CBT \$131.00	D1016CBT 140.00
160 to 190 WATTS (most 17" to 21" models)	B1019CBT 133.00	D1019CBT 142.00
190 to 250 WATTS	B1025CPT 195.00	D1025CPT 195.00
250 to 300 WATTS	B1030CPT 200.00	D1030CPT 200.00

### CARTER SUPER DYNAMOTOR



Input voltages range from 5.5 v. DC to 115 v. DC . . . outputs from 400 v. to 1000 v. DC. Size 8 1/4" x 4 1/2". Weight 13 lbs.

### CARTER INDUCTOR ALTERNATOR



Provides mobile AC power (400 to 650 cycles), up to 100 watts, from DC source. For aircraft, geophysical, Government research. Can also supply up to 400 v. DC plate voltage if necessary.



WRITE FOR NEW CATALOGS

DO YOU HAVE OUR LATEST DYNAMOTOR CATALOG #157, CONVERTER CATALOG 557 AND PRICE LIST 800?

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The MASTER - 22nd Edition

# PRECISE MEASUREMENTS COMPANY BUILDS HIGH VOLTAGE POWER SUPPLIES

These well designed and constructed power packs are proven by many years of service in industry, laboratories, universities and by the United States Government. Only the best available selected material goes into these units. Listed below are some of our standard design models. Other voltages and currents available as we stock large quantities of specialized transformers and components to give you faster more efficient service. Since 50 per cent of our orders are for special supplies, we will cheerfully give you quotations on your specific requirements.

## HANDY PORTABLE MODELS



One of the most popular power supplies on the market. Completely redesigned for greater ruggedness and convenience of operation. Widely used for powering electronic equipment and for routine breakdown and insulation testing. Output voltage is well filtered D.C. which is adjustable with convenient front panel control. Input is 115 Volt, 60 cycle A.C. Equipment is available without meter, with one meter (4 1/2"), with two meters or with larger 6" precision 1% mirror scale movement. Regulated models offer closely stabilized output voltage regardless of line or load changes.

Model	Maximum Voltage	Price	Price Regulated Model
6000-1 With Kilovolt Meter	1,000	\$75.00	
6000	2,500	60.00	
6000-A With Kilovolt Meter	2,500	80.00	120.00
6005	5,000	75.00	
6005-A With Kilovolt Meter	5,000	95.00	135.00
6010	10,000	85.00	
6010-A With Kilovolt Meter	10,000	105.00	145.00
6015	15,000	95.00	
6015-A With Kilovolt Meter	15,000	115.00	155.00
6025	25,000	115.00	
6025-A With Kilovolt Meter	25,000	155.00	205.00

**MIRROR SCALE HIGHER ACCURACY METER.** Recommended for more exact calibration or test purposes. Add \$35.00 to any meter equipped power supply.

For additional built-in current meter (both meters are 3 inch size), including automatic meter protector circuit, add \$35.00 to any power supply.

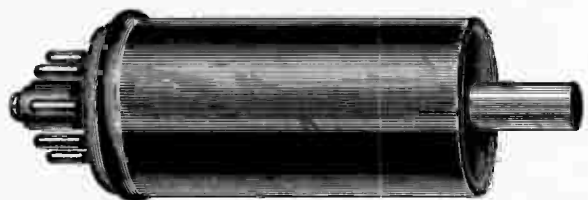
## PACKAGED POWER SUPPLIES



These conveniently packaged power units will be found ideal for applications requiring minimum size and weight. Features isolated high voltage terminals permitting either the positive or negative side to be grounded. Rectifier tubes are operated from separate filament transformers so that DC output voltage can be varied from zero to full rated value. Selenium rectifier types have extra cells to assure operation under high line voltage or light loading. All standard units have well filtered DC output. Power packs with AC output available on order.

Model	Output Voltage	Current
05-KV-5MA	500 Volts DC	5 Ma.
1-KV-5MA	1-KV-DC	5 Ma.
2-KV-5MA	2-KV-DC	5 Ma.
5-KV-5MA	5-KV-DC	1 Ma.
5-KV-5MA	5-KV-DC	5 Ma.
10-KV-1MA	10-KV-DC	1 Ma.
10-KV-5MA	10-KV-DC	5 Ma.
15-KV-1MA	15-KV-DC	1 Ma.
15-KV-5MA	15-KV-DC	5 Ma.
20-KV-1MA	20-KV-DC	1 Ma.
20-KV-5MA	20-KV-DC	5 Ma.
30-KV-1MA	30-KV-DC	1 Ma.
30-KV-5MA	30-KV-DC	5 Ma.
50-KV-1MA	50-KV-DC	1 Ma.
50-KV-5MA	50-KV-DC	5 Ma.
75-KV-1MA	75-KV-DC	1 Ma.
100-KV-1MA	100-KV-DC	1 Ma.

## HIGH VOLTAGE CONVERTERS



**VIBRATOR TYPES** now available from stock. Simply connect input to battery and obtain your high voltage output. Replaces expensive and bulky high voltage batteries. Output is AC and may be easily rectified with a tube or selenium stack.

Model	Primary	Secondary	Price
7 MVT Illustrated	1 to 4 V	0 to 6,000	.1 Watt 12.50
10 MVT " (not cased)	"	"	.1 Watt 10.00

# PRECISE MEASUREMENTS COMPANY

FLEMINGTON • NEW JERSEY

# PRECISE MEASUREMENTS COMPANY BUILDS HIGH VOLTAGE POWER SUPPLIES

FOR INDUSTRIAL APPLICATIONS

## INDUSTRIAL POWER SUPPLIES



Regulated Types Available

Standard hum level 5% or less. .01% to 1% ripple available. All power supplies have automatic overload cutout control circuits. Regulated models available.

These industrial type power supplies are built for service and efficiency. All are of the transformer type and employ husky components that have been selected for their power handling capacity. Controls are arranged so that operation is greatly simplified and a number of safety features are built in for maximum protection of personnel and equipment. Output is continuously variable from zero to full rated value. Polarity reversing models (as illustrated) can be had at additional cost.

Model	Voltage	Current	Price
F-500V	0-500	3 Amp	\$800.00
F-6001	0-1000	2 Amp	975.00
F-6002	0-2000	1 Amp	985.00
F-6005-A1-H	0-5000	100 MA	550.00
F-6005-AV	0-5000	500 MA	650.00
F-6005-A1K	0-5000	1 Amp	1100.00
F-6010-A1	0-10,000	100 MA	800.00
F-6020-A05	0-20,000	50 MA	975.00
F-6050-T	0-50,000	1/2 MA	600.00
F-6100-T	0-100,000	1/2 MA	1100.00

## KILOVOLT METER

ONE HUNDRED  
THOUSAND VOLTS!

### FEATURES

- Shielded Polyesterene Probe
- Simple Foolproof Circuits
- AC or DC Measurements

Measure high voltages quickly - easily. All voltage is dissipated in the shielded polyesterene probe. "Normal-Reverse" key is provided so that probe may be used regardless of polarity of voltage under test. Indicator has large clear scale for easy reading. Additional low leakage path. Special insulated probe is supplied on all 100 KV models.



Model	Range Kilovolts	Price D.C. Model	Price A.C./D.C. Model
4000	0-25/50	\$67.50	\$100.00
4000-A	0-100	80.00	125.00
4000-B	0-50/100	85.00	130.00
4000-C	0-10/50/100	95.00	160.00

## ULTRA SENSITIVE RELAYS

These compact units are very rugged. Sensitivity to 5 uamps at 200 millivolts. Unit consists of powerful relay controlled by reliable transistors. Requires only a small battery to operate. Battery life is almost equal to life as current drain is negligible. Contacts rated at 2 amps. Features automatic resetting when signal level goes lower.

Model	Sensitivity	Price
5 UA	5 Microamps	\$50.00
10 UA	10 Microamps	40.00
50 UA	50 Microamps	32.00
100 UA	100 Microamps	25.00

## AC INSULATION AND BREAKDOWN TESTERS

Used in testing insulation where AC voltages are desired. Dual instruments are also available which provide choice of AC or DC output with simple toggle switch selection. Units include kilovoltmeter, current meter and automatic overload cutout circuits.



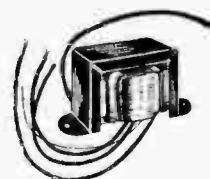
Model	Voltage	VA	AC	Price AC and DC
3000	0 to 3,000	75	\$150.00	\$ 250.00
3010	0 to 3,000	300	250.00	400.00
3050	0 to 3,000	1,500	500.00	650.00
3100	0 to 6,000	3,000	700.00	1,100.00

These instruments also available with heavy duty steel dolly as illustrated. Tester slips into place for easy movement around your plant. Dolly can be used for any standard relay rack cabinet. Price \$100.00

## TRANSFORMERS, HIGH VOLTAGE

For those who build their own power supplies. These units are small and compact and rated for constant service. Primary designed for 115 Volts 60 Cycle. Only standard models are listed, other voltages and currents available on order.

Model	Voltage	Current
1 KVT	1 KV	1 MA
2 KVT	2 KV	1 MA
3 KVT	3 KV	1 MA
5 KVT	5 KV	1 MA
10 KVT	10 KV	1 MA
15 KVT	15 KV	1 MA
25 KVT	25 KV	1 MA



## RACK MOUNTED POWER PACKS



Save valuable bench space by using these convenient rack mounted units. Insert instruments into your equipment rack for neatness of appearance and utility. Any power supply we manufacture can be obtained with this type of mounting. Exact price depends upon type of power supply. Delivery in most cases is about the same as standard models. Automatic breakdown testers are available for production line testing. May be made part of your automation set-up. Tested parts or equipment are rejected when a pre-set level of leakage is exceeded. A red reject light and leakage meter indicates faulty unit. These testers are available with a range of 0 to 500 Volts or 0 to 5,000 Volts.

**PRECISE MEASUREMENTS COMPANY**  
FLEMINGTON • NEW JERSEY

# POWER

## VARIABLE TRANS

For Single and Three

VOLTS	LINE CYCLES	OUTPUT			TYPE:†‡	WEIGHT		MOTOR SPEEDS*
		VOLTS	MAX. AMPERES	MAX. KVA		NET	SHIPP.	
<b>SINGLE PHASE</b>								
120	60	0-132	1.00	.132	2PF10	3	3.3	
120	**60	0-132‡	1.25	.165	10	1.8	2.5	
120	**60	0-140‡	3.0	.42	20	4	6	
120	50/60	0-140‡	7.5	1.0	116U	10	11	
120	50/60	0-140‡	7.5	1.0	116	11	12	
120	50/60	0-140	7.5	1.0	3PF116	11	12	
120	50/60	0-140	7.5	1.0	3PN116	11	12	
120	50/60	0-140	7.5	1.0	3TF116	11	12	
120	50/60	0-140‡	20.0	2.8	136	22	25	5, 15, 30, 60
120	50/60	0-140‡	20.0	2.8	F136	22	25	5, 15, 30, 60
120	50/60	0-140‡	20.0	2.8	2PF136	23	26	
120	50/60	0-140‡	20.0	2.8	2TF136	23	26	
120	50/60	0-140‡	20.0	2.8	3PF136	23	26	
120	50/60	0-140‡	20.0	2.8	3PN136	23	26	
120	50/60	0-140‡	20.0	2.8	3TF136	23	26	
120	50/60	0-140‡	40.0	5.6	136-2P	47	53	5, 15, 30, 60
120	50/60	0-140	45.0	6.3	1156	73	80	W, X, Y, Z
120	50/60	0-140	45.0	6.3	F1156	74	81	W, X, Y, Z
120	50/60	0-140	90.0	12.6	1156-2P	150	170	W, X, Y, Z
120	50/60	0-140	135.0	18.9	1156-3P	225	295	W, X, Y, Z
120	50/60	0-140	180.0	25.2	1156-4P	330	420	W, X, Y
120	50/60	0-140	270.0	37.8	1156-6P	500	600	W, X, Y
<b>THREE PHASE</b>								
240	**60	0-264‡	1.25	.33	10-2E	4.5	5	
240‡	50/60	0-280‡	3.0	.84	216U	10	11	
240‡	50/60	0-280‡	3.0	.84	216	11	12	
240	50/60	0-280	3.0	.84	3PF216	11	12	
240	50/60	0-280	3.0	.84	3PN216	11	12	
240	50/60	0-280	3.0	.84	3TF216	11	12	
240	50/60	0-280‡	7.5	2.1	116U-2S	17	22	
240	50/60	0-280‡	7.5	2.1	116-2S	18	23	
240‡	50/60	0-280‡	9.0	2.5	236	22	25	5, 15, 30, 60
240‡	50/60	0-280‡	9.0	2.5	F236	22	25	5, 15, 30, 60
240‡	50/60	0-280‡	9.0	2.5	2PF236	23	26	
240‡	50/60	0-280‡	9.0	2.5	2TF236	23	26	
240‡	50/60	0-280‡	9.0	2.5	3PF236	23	26	
240	50/60	0-280‡	9.0	2.5	3PN236	23	26	
240‡	50/60	0-280‡	9.0	2.5	3TF236	23	26	
240	50/60	0-280‡	20.0	5.6	136-2S	45	51	5, 15, 30, 60
240‡	50/60	0-280	28.0	7.8	1256	73	80	W, X, Y, Z
240	50/60	0-280	28.0	7.8	F1256	74	81	W, X, Y, Z
240	50/60	0-280	45.0	12.6	1156-2S	144	164	W, X, Y, Z
240‡	50/60	0-280	54.0	15.7	1256-2P	150	170	W, X, Y, Z
240‡	50/60	0-280	84.0	23.5	1256-3P	225	295	W, X, Y, Z
240‡	50/60	0-280	112.0	31.4	1256-4P	330	420	W, X, Y
240‡	50/60	0-280	168.0	47.0	1256-6P	500	600	W, X, Y
480‡	50/60	0-560‡	3.0	1.7	216U-2S	17	22	
480‡	50/60	0-560‡	3.0	1.7	216-2S	18	23	
480‡	50/60	0-560‡	9.0	5.0	236-2S	45	51	5, 15, 30, 60
480‡	50/60	0-560	28.0	15.7	1256-2S	144	164	W, X, Y, Z
480‡	50/60	0-560	56.0	31.4	1256-4PS	330	420	W, X, Y
480‡	50/60	0-560	84.0	47.0	1256-6PS	500	600	W, X, Y
<b>OIL-COOLED POWERSTATS</b>								
120	50/60	0-140	15.0	2.1	0-116	44	85	
120	50/60	0-140	30.0	4.2	0-1126	70	100	
240	50/60	0-280	6.0	1.7	0-216	44	85	
240	50/60	0-280	18.0	5.0	0-1226	74	105	
<b>EXPLOSION-PROOF POWERSTATS</b>								
120	50/60	0-140	7.5	1.0	X-116	35	47	
120	50/60	0-140	12.0	1.7	X-1126	125	142	
240	50/60	0-280	3.0	.84	X-216	35	47	
240	50/60	0-280	6.0	1.7	X-1226	130	152	



**TYPE 10**  
For back-of-panel



**TYPE 2PF10**  
Portable assembly with 6 ft. cord



**TYPE 20**  
For back-of-panel

These autotransformers are of toroidal core design with movable brush tap which is rotated to deliver any desired output voltage from zero, to, or above, line voltage. They provide excellent regulation, high efficiency, conservative ratings, zero waveform distortion and rugged construction.



**TYPE 136**  
Exposed terminal connections



**TYPE 2PF136**  
With cord-plug, fuse, receptacle



**TYPE LW136**  
Double wound assembly with isolated secondary



**TYPE O-1126**  
For oil-cooled operation



**TYPE X-1126**  
Explosion-proof



**TYPE 1126-1001**  
Dust-proof container



**TYPE 10-1002**  
Complete rotation



**TYPE 1156**  
For heavy duty



**TYPE MZ1156**  
Motor-driven for remote control

\*Unit has terminals for operating at 1/2 this input voltage if desired.  
 †Unit has terminals for limiting maximum output voltage to line voltage if desired. Other units must be ordered "L" connected.  
 ‡For all motor-driven models prefix the speed designation to the type number. Time given is time for full range travel.  
**136-236 Series:**  
 For 5 seconds, prefix 5M, for 15 seconds prefix 15M, for 30 seconds, prefix 30M, for 60 seconds prefix 60M. (For example, 30M136)  
**1156-1256 Series:**  
 For 6 seconds prefix MZ, for 14 seconds, prefix MY, for 19 seconds, prefix MX, for 45 seconds, prefix MW. (For example, MW1156)  
**1156 letters in type numbers designate as follows:**  
**Prefixes:**  
 F — Enclosed terminal box with cartridge type fuse  
 O — Oil-Cooled  
 E — Explosion-Proof  
 2PF — 2-prong parallel-blade plug and receptacle, enclosed terminal box with cartridge type fuse  
 2TF — Same as 2PF except twist-lock plug and receptacle  
 3PF — 3-Prong Grounded plug and receptacle, 3rd wire grounded to frame enclosed terminal box with cartridge type fuse  
 3PN — Same as 3PF except twist-lock connections  
 3TF — Same as 3PF except twist-lock connections  
**Suffixes:**  
 U — Supplied without protective screening, terminal enclosure, etc.  
 Numbers (2, 3, 4 or 6) indicate number of units in assembly  
 D — Units open-delta connected (3-Phase)  
 E — Units electrically independent (1- or 3-Phase)  
 L — Connected so maximum output voltage cannot exceed input voltage  
 P — Units parallel connected (1-Phase)  
 PS — Units series-parallel connected (1-Phase)  
 S — Units series connected (1-Phase)  
 Y — Units wire connected (3-Phase)  
 \*If the maximum output voltage is limited to the input voltage ("L" connection) the frequency range is 50/60 cycles.



# STAT<sup>®</sup> FORMERS

## Phase Duty



**TYPE 116U**  
For back-of-panel



**TYPE 116**  
Enclosed with cord-plug, receptacle, fuse, switch



**TYPE 3PN116**  
Third wire grounded



**TYPE 15M136-3Y**  
Motor-driven for remote control



**TYPE MW1156-6Y**  
Motor-driven for easy operation

## POWERSTAT Line Correctors



**TYPE 2106LC**

Corrects line voltage variations to maintain a constant output voltage. Consists of a POWERSTAT<sup>®</sup> variable transformer which controls the primary of a fixed ratio buck-boost transformer. Can also be used to handle large amounts of current in supplying a limited output voltage range from stable a-c power sources.

LINE VOLTAGE	OUTPUT VOLTAGE	MAX. OUTPUT AMPERES	OUTPUT KVA	FREQ'Y	TYPE	APPROX. WEIGHT (LBS.) NET	APPROX. WEIGHT (LBS.) SHIPP.	*STD. MOTOR SPEEDS
<b>SINGLE PHASE</b>								
95-135	115	52.0	6.0	50/60	2106LC	45	80	W, X, Y, Z
95-135	115	130.0	15.0	50/60	2116LC	175	200	W, X, Y, Z
195-255	230	32.5	7.5	50/60	2207LC	75	90	W, X, Y, Z
195-255	230	120.0	28.5	50/60	2228LC	180	205	W, X, Y, Z
400-520	460	15.0	6.6	50/60	2407LC	70	85	W, X, Y, Z
400-520	460	40.0	17.6	50/60	2418LC	180	210	W, X, Y, Z
<b>THREE PHASE</b>								
195-255	230	25.0	10.0	50/60	3210YLC	185	210	W, X, Y, Z
195-255	230	38.0	15.0	50/60	3219YLC	200	225	W, X, Y, Z
195-255	230	50.0	20.0	50/60	3220YLC	215	240	W, X, Y, Z
195-255	230	113.0	45.0	50/60	3243YLC	535	615	W, X, Y, Z
195-255	230	175.0	70.0	50/60	3270DL	685	795	W, X, Y, Z
400-520	460	16.0	12.5	50/60	3412YLC	185	210	W, X, Y, Z
400-520	460	22.0	17.5	50/60	3417YLC	200	225	W, X, Y, Z
400-520	460	33.0	25.0	50/60	3423YLC	215	240	W, X, Y, Z
400-520	460	66.0	50.0	50/60	3450YLC	500	580	W, X, Y, Z
400-520	460	100.0	75.0	50/60	3473YLC	550	630	W, X, Y, Z
420-500	460	131.0	100.0	50/60	34100YLC	550	630	W, X, Y, Z

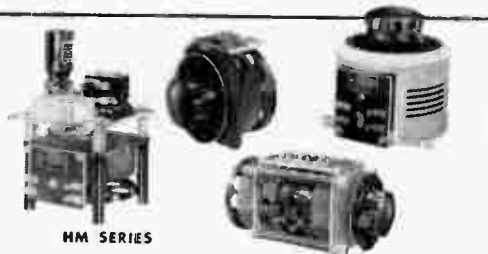
\*When a motor drive is required, prefix the letter "M" together with the speed designation letter to the type number. Z-6 seconds, Y-14 seconds, X-19 seconds and W-45 seconds for full range travel.

## New Standard Line for HIGH FREQUENCY Applications

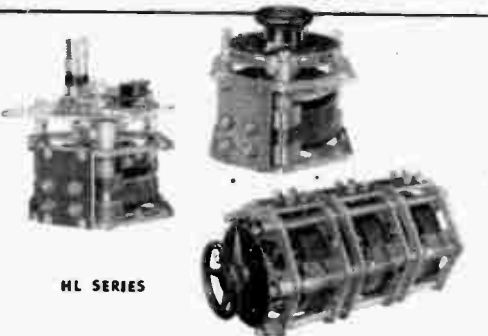


**HS SERIES**

One-third the weight . . . one-half the size of 60 cycle units, these POWERSTATS are ideal for ship, aircraft, guided missile and other 400/800 cycle applications.



**HM SERIES**



**HL SERIES**

INPUT VOLTS	FREQ. CYCLES PER SECOND	OUTPUT VOLTS	MAX. INPUT AMPS	MAX. OUTPUT KVA	TYPE OF CON. STRUC.	MANUALLY-OPERATED MODELS				MOTOR-DRIVEN MODELS				
						TYPE	METHOD OF TUNING	APPROX. WEIGHT (POUNDS) NET	APPROX. WEIGHT (POUNDS) SHIP	TYPE	STD. MOTOR DRIVES	SPEED OF TRAVEL IN SECONDS	APPROX. WEIGHT (POUNDS) SHIP	
<b>SINGLE PHASE</b>														
75	400/800	0-28	1.0	0.56	Open	3HS20UR	Hand	0.5	1.0					
75	400/800	0-28	4.1	1.12	Open	3HS24UR	Hand	0.8	1.1					
120	400/800	0-120	4.0	1.4	Open	1HS20UR	Hand	0.9	1.3					
120	400/800	0-18	7.6	2.3	Open Square Frame	1HS20UR	Hand	0.6	1.0					
120	400/800	0-120	13.0	4.1	Open Square Frame	1HS20UR	Hand	1.4	2.1	DM1HS20U	78 Volt D.C.	60	45	5.1
120	400/800	0-120	13.0	4.1	Open Square Frame	1HS20UR	Hand	2.4	3.6	AM1HS20U	170 Volt A.C. 400 Cycles	60	45	5.1
120	400/800	0-120	13.0	4.1	Open Square Frame	1HS20UR	Hand	2.4	3.6	DM1HS20U	78 Volt D.C.	60	55	6.1
120	400/800	0-120	13.0	4.1	Open Square Frame	1HS20UR	Hand	2.4	3.6	AM1HS20U	170 Volt A.C. 400 Cycles	60	55	6.1
120	400/800	0-120	13.0	4.1	Open Square Frame	1HS20UR	Hand	11.4	16.0	DM1HS15U	78 Volt D.C.	60	13.2	16.2
120	400/800	0-120	13.0	4.1	Open Square Frame	1HS20UR	Hand	11.4	16.0	AM1HS15U	170 Volt A.C. 400 Cycles	60	13.2	16.2
140	400/800	0-740	3.3	0.1	Open Square Frame	2HS20UR	Hand	2.4	3.9	DM2HS20U	78 Volt D.C.	60	55	6.1
140	400/800	0-740	3.3	0.1	Open Square Frame	2HS20UR	Hand	2.4	3.9	AM2HS20U	170 Volt A.C. 400 Cycles	60	55	6.1
140	400/800	0-740	9.2	2.5	Open	2HS20UR	Hand	1.9	15.4	DM2HS20U	78 Volt D.C.	60	14.6	17.6
140	400/800	0-740	9.2	2.5	Open	2HS20UR	Hand	1.9	15.4	AM2HS20U	170 Volt A.C. 400 Cycles	60	14.6	17.6
<b>THREE PHASE</b>														
240	400/800	0-740	3.2	1.3	Open	3HS20UR 3Y	Hand	7.0	8.5	DM3HS20U 3Y	78 Volt D.C.	60	9.3	10.5
240	400/800	0-740	3.2	1.3	Open	3HS20UR 3Y	Hand	7.0	8.5	AM3HS20U 3Y	170 Volt A.C. 400 Cycles	60	9.3	10.5
240	400/800	0-740	7.5	3.6	Open	2HS20UR 3Y	Hand	10.8	11.6	DM2HS20U 3Y	78 Volt D.C.	60	12.3	13.6
240	400/800	0-740	7.5	3.6	Open	2HS20UR 3Y	Hand	10.8	11.6	AM2HS20U 3Y	170 Volt A.C. 400 Cycles	60	12.3	13.6
240	400/800	0-740	15.0	7.1	Open	1HS15UR 3Y	Hand	14.5	41.0	DM1HS15U 3Y	78 Volt D.C.	60	38.0	45.0
240	400/800	0-740	15.0	7.1	Open	1HS15UR 3Y	Hand	14.5	41.0	AM1HS15U 3Y	170 Volt A.C. 400 Cycles	60	38.0	45.0
480	400/800	0-480	3.2	2.8	Open	4HS20UR 3Y	Hand	10.6	11.6	DM4HS20U 3Y	78 Volt D.C.	60	12.3	13.6
480	400/800	0-480	3.2	2.8	Open	4HS20UR 3Y	Hand	10.6	11.6	AM4HS20U 3Y	170 Volt A.C. 400 Cycles	60	12.3	13.6
480	400/800	0-480	9.0	8.1	Open	1HS15UR 3Y	Hand	21.0	45.5	DM1HS15U 3Y	78 Volt D.C.	60	42.5	41.5
480	400/800	0-480	9.0	8.1	Open	1HS15UR 3Y	Hand	21.0	45.5	AM1HS15U 3Y	170 Volt A.C. 400 Cycles	60	42.5	41.5

# STABI

## Automatic VOLTAGE

The STABILINES maintain a constant output voltage regardless of line or load changes. They are precision products — conservatively rated, ruggedly built. Offered in a wide range with ratings which include requirements previously considered special.

RATINGS TYPE IE

INPUT VOLTAGE RANGE	OUTPUT VOLTAGE RANGE	FREQUENCY IN CYCLES	LOAD RANGE IN AMPERES	LOAD POWER FACTOR RANGE	RATED OUTPUT KVA	TYPE
95-135	110-120	60±10%	0-2.2		0.25	IES1002
95-135	110-120	60±10%	0-2.2	.5 lagging	0.25	IES1002R
195-255	220-240	60±10%	0-1.1		0.25	IES2002
195-255	220-240	60±10%	0-1.1		0.25	IES2002R
95-135	110-120	60±10%	0-4.5		0.5	IES1005
95-135	110-120	60±10%	0-4.5		0.5	IES1005R
95-135	110-120	50±10%	0-4.5		0.5	IELS1005
95-135	110-120	50±10%	0-4.5		0.5	IELS1005R
195-255	220-240	60±10%	0-2.2	to	0.5	IES2005
195-255	220-240	60±10%	0-2.2		0.5	IES2005R
195-255	220-240	50±10%	0-2.2		0.5	IELS2005
195-255	220-240	50±10%	0-2.2		0.5	IELS2005R
95-135	110-120	60±10%	0-8.5		1.0	IES101
95-135	110-120	60±10%	0-8.5		1.0	IES101R
95-135	110-120	50±10%	0-8.5		1.0	IELS101
95-135	110-120	50±10%	0-8.5		1.0	IELS101R
195-255	220-240	60±10%	0-4.5	.9 leading	1.0	IES201
195-255	220-240	60±10%	0-4.5		1.0	IES201R
195-255	220-240	50±10%	0-4.5		1.0	IELS201
195-255	220-240	50±10%	0-4.5		1.0	IELS201R
95-135	110-120	60±10%	0-22.0		2.5	IES102
95-135	110-120	60±10%	0-22.0		2.5	IES102R
195-255	220-240	60±10%	0-11.0		2.5	IES202
195-255	220-240	60±10%	0-11.0		2.5	IES202R
195-255	220-240	50±10%	0-11.0		2.5	IELS202
195-255	220-240	50±10%	0-11.0		2.5	IELS202R
95-135	110-120	60±10%	0-43.5		5.0	IES105
195-255	220-240	60±10%	0-22.0		5.0	IES205

### Three types to suit individual applications

Type IE provides exact control . . . is ideal for laboratories, test lines, component. Type EM efficiently controls large industrial loads . . . also used where zero waveform distortion is needed. Type TM is used at unattended locations or where failure can never be tolerated.

### Models of each type for High Frequency applications

These STABILINES meet the low weight and small size requirements for 400 cycle applications. Type IEH5101 meets MIL-E-5400. Type EM10009 meets MIL-E-4158 — is ideal for low temperature use. Optional shock mountings provided for Types IEH5101 and TMH7101.

RATINGS TYPE EM

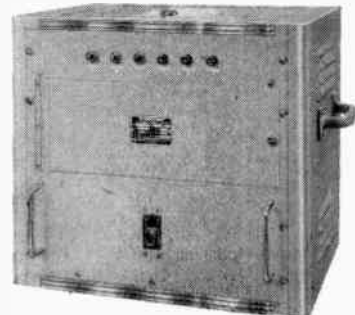
NOMINAL OUTPUT VOLTAGE	INPUT VOLTAGE RANGE	OUTPUT VOLTAGE RANGE	OUTPUT CURRENT (AMPERES)	OUTPUT KVA	TYPE
<b>SINGLE PHASE</b>					
115	95-135	110-120	17.5	2.0	EM4102
			17.5	2.0	EM4102R
			52.0	6.0	EM4106
			130.0	15.0	EM4115
230	195-255	220-240	32.5	7.5	EM4207
			120.0	27.5	EM4228
460	400-520	420-460	15.0	6.6	EM4407
			40.0	17.6	EM4418
<b>THREE PHASE</b>					
230	195-255	220-240	25.0	10.0	EM6210Y
			38.0	15.0	EM6215Y
			50.0	20.0	EM6220Y
			113.0	45.0	EM6245Y
			175.0	70.0	EM6270Y
460	400-520	420-460	16.0	12.5	EM6412Y
			22.0	17.5	EM6417Y
			33.0	25.0	EM6425Y
			66.0	50.0	EM6450Y
			100.0	75.0	EM6475Y
	420-500	420-460	131.0	100.0	EM64100Y

RATINGS TYPE TM

NOMINAL OUTPUT VOLTAGE	INPUT VOLTAGE RANGE	OUTPUT VOLTAGE RANGE	FREQ'Y (CYCLES)	LOAD POWER FACTOR	MAX. OUTPUT KVA	MOUNTING	TYPE
115	95-135	110-120	57-63	.5	1.0	Rack	TM7101R
115	95-135	110-120	57-63	lagging	1.0	Cabinet	TM7101
115	95-135	110-120	57-63	to 1.0	5.0	Rack or Wall	TM7105

### Other standard types to fulfill the most exacting requirements

Have you a special automatic voltage regulation requirement? Chances are it can be handled by a standard STABILINE. Look at the range of characteristics shown here.



EMD4208 — Two Type EM with individual control and power circuits in one cabinet.

EMD4208S — Same as Type EMD4208 except with common control.





# LINE<sup>®</sup> REGULATORS

## TYPE IE

(Instantaneous Electronic)

Completely electronic with no moving parts. Holds output voltage to within  $\pm 0.1$  volts of nominal for wide line variations and within  $\pm 0.15$  volts of nominal for any load current or load power factor change from .5 lagging to .9 leading. Waveform distortion never exceeds 3%.

## TYPE EM

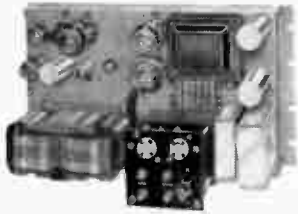
(Electro Mechanical)

Consists of POWERSTAT variable transformer, detector circuit, auxiliary transformer. Corrects faster than most regulators and maintains constant voltage to large loads without waveform distortion.

## TYPE TM

(Tubeless Magnetic)

Has no moving parts . . . no tubes . . . no transistors. Ideal for unattended locations with infrequent maintenance . . . or critical situations where failure under the most adverse conditions cannot be tolerated.



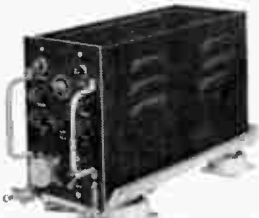
TYPE IE5101R



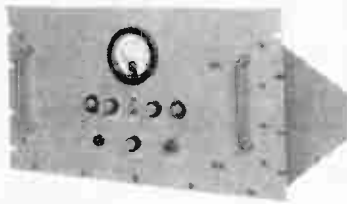
TYPE EM4102R



TYPE TM7101R



TYPE IEH5101



TYPE EM10009



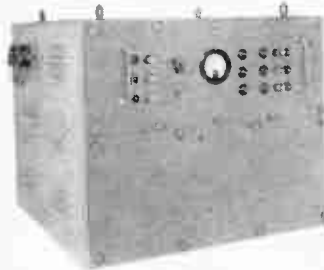
TYPE TMH7101



TYPE IE51002



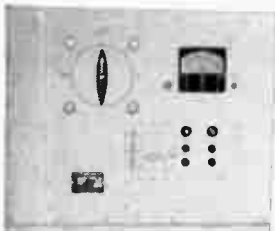
TYPE EM64100Y



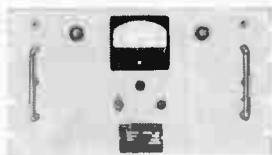
TYPE EM10002



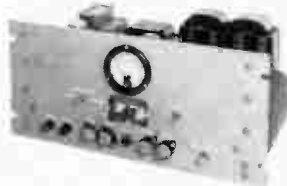
TYPE EM10006



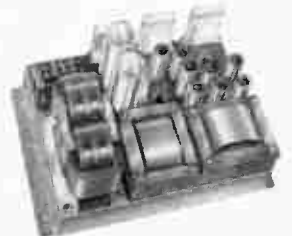
TYPE EM10004



TYPE EM1000C3



TYPE IE20003

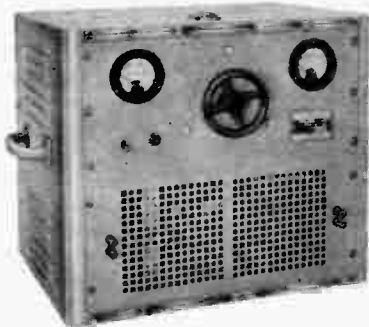


TYPE IE20002



# VOLTAGE CONTROL EQUIPMENT

## VARICELL<sup>®</sup> D-C Power Supplies



**A VARIABLE RANGE OF STABILIZED AND REGULATED D-C VOLTAGES FROM AN A-C SOURCE**

Operates from a nominal 115 volt, 60 cycle source. Output voltages from 0-30 volts. Rating: 15 amperes. For settings from 6 to 30 volts. (1) is unaffected by line or load current changes (2) RMS ripple voltage never exceeds 0.1 volts . . . stabilization and regulation is  $\pm 0.25$  volts.

## VOLTBOX<sup>®</sup> A-C Power Supplies



**A COMPACT, PORTABLE SOURCE OF VARIABLE A-C VOLTAGE**

Variable transformer, voltmeter and connection leads all housed in a compact case.

INPUT VOLTAGE	OUTPUT VOLTAGE	MAX. OUTPUT AMPERES	FREQ. Y	PHASE	TYPE	APPROX. WEIGHT (LBS.)	
						NET	SHIPP.
120	0-140	7.5	50/60	1	UC1M	14	17
120	0-140	15.0	50/60	1	U-2000	65	105
240	0-280	3.0	50/60	1	UC2M	14	17
240	0-280	9.0	50/60	1	U-2400	69	110

## Temperature Limited DIODE type 1236C



characteristics

	AVERAGE	MAXIMUM
<b>CATHODE (Tungsten)</b>		
VOLTAGE	1.9 volts a-c or d-c	2.3 volts a-c or d-c
CURRENT	440 MA	520 MA
<b>PLATE</b>		
VOLTAGE	600 volts d-c	700 volts d-c
CURRENT	0.7 MA d-c	1.0 MA d-c

**APPLICATIONS:**

RMS detector for differential volt meters.  
RMS detector for a-c voltage and current stabilizers.  
Detector for d-c voltage and current stabilizers.

## SUPERIOR 5-WAY Binding Posts



**NOW IN 5 COLORS: RED, YELLOW, GREEN, BLACK AND WHITE**

These colored binding posts enhance the beauty of your product and, through color, provide circuit identification. They also offer 5 methods of connection: permanent clamping, spade lug, clip-lead, banana plug, or looping and clamping. They provide complete insulation, current capacity of 30 amperes and working voltage of 1000 volts.

Precision Products of

**THE SUPERIOR ELECTRIC COMPANY**  
BRISTOL, CONNECTICUT



# ADVANCED DESIGN DC POWER SUPPLIES

Popular-priced . . . yet better than ever. Standard for the industry.  
All selenium rectifier models offer patented EPL conduction cooling.



**NEW MODEL "D-612T"**  
for portable and auto transistor sets, 6/12 V. tube sets

**DUAL RANGE: 0-8 & 0-16 V. CONTINUOUSLY VARIABLE**  
10 amps. continuous duty up to 12 V. 1/2% ripple (up to 5 amperes). No finer transistor servicing unit at the price.

Improved model—Rugged for all-around bench use, including servicing portable and auto TRANSISTOR sets and all 6/12 volt vibrator types. Handy for electroplating, laboratory work, battery charging, operating low voltage devices. 4 bridge-type, heavy duty selenium rectifiers—patented heat-sink cooled for double life and high overloads.



**NEW MODEL "GFA"**  
For heavy duty universal higher voltage servicing & DC power source

**0-125 V. CONTINUOUSLY VARIABLE**  
0-10 amps. continuous duty. Less than 1% ripple. High-efficiency germanium rectifiers. Internal impedance: 1.6 ohms.

Semi-regulated. Has broadest range for DC equipment. Special combination voltage regulating and filtering circuit. Regulation: 12%, no-load to full-load. Circuit breaker type on-off switch. Latest-type full view 2% D'Arsonval movement meters with large 4 1/2" scales. Recessed front panel protects meters and controls. Custom-built cabinet.



**NEW MODEL "EFB"**  
For laboratory & design work on transistor circuits & electronic equipment

**DUAL RANGE: 0-16 & 0-32 V. CONTINUOUSLY VARIABLE**  
8 amps. continuous duty up to 16 V., 4 amps. to 32 V. Less than 1/10% ripple for transistor design & servicing. Internal impedance: 4 ohms at 32 V., 2 ohms at 16 V.

Deluxe model . . . Ideal for all applications requiring minimum-ripple DC power with incremental voltage adjustment. Carbon-brush type variable transformer for smooth voltage control. Choke and Pi-type filters give lowest ripple yet. Patented bridge-type selenium rectifiers withstand heavy loads. Latest-type full view 2% D'Arsonval movement meters. Voltmeter has separate scale for each range.

**MODEL "EB"** . . . Same rating and specifications except for 5% ripple at top load.



**MODEL "H"**  
For heavy duty, high current, low voltage requirements (mobile communication equipment servicing)

**DUAL RANGE: 6/12 V.**  
10 amps. up to 12 V. & 20 amps. up to 6 V. Continuous rating. Up to 50% overload for intermittent duty. Less than 5% ripple. Services LPI & 10 watt 2-way mobile sets.

Regulation is adequate for switching from standby to transmit on mobile sets. Excellent substitute for wet batteries or auxiliary power source for marine use. Heavy duty transformer, choke and selenium rectifiers, 6/12 volt selector switch. Multiple units may be connected in series or parallel to operate higher powered mobile sets.



**NEW MODEL "NFB"**  
For aircraft & missile electronic equipment & universal servicing

**0-32 V. CONTINUOUSLY VARIABLE**  
15 amps. continuous rating. Less than 3/4% ripple. High efficiency germanium rectifiers. Internal impedance: 1/2 ohm.

Widely used for aircraft, industrial and research applications. Regulation: 16%, no-load to full-load. Automatic circuit breaker for overload protection. Bridge-type germanium rectifiers. Latest-type full view D'Arsonval meters with 2% accuracy. Finest components at moderate price.

**MODEL "NB"** . . . Similar to "NFB" except for 5% ripple at 15 amperes.

**MODEL "NFB"** . . . Similar to "NFB" but with rock panel for Western Electric and RETMA rocks. Panel 10 1/2" high by 19" wide.



MORE DC POWER PER DOLLAR

## ELECTRO PRODUCTS LABORATORIES

CHICAGO 40, ILLINOIS

# RAYTHEON STANDARD CONTROL KNOBS

6 styles in 5 sizes



AVAILABLE MODELS for 1/4" shafts											
Description	70 Series		90 Series		125 Series		175 Series		225 Series		
Style	Cat. No.	Std. Pkg.	Cat. No.	Std. Pkg.	Cat. No.	Std. Pkg.	Cat. No.	Std. Pkg.	Cat. No.	Std. Pkg.	
Round	70-1-2	12	90-1-2	12	125-1-2	6	175-1-2	6	225-1-2	4	
Skirted Round	70-2-2	12	90-2-2	12	125-2-2	6	175-2-2	6	225-2-2	4	
Dial Skirted Round	70-3-2	12	90-3-2	6	125-3-2	6	175-3-2	2	225-3-2	2	
Pointer	70-4-2	12	90-4-2	12	—	—	—	—	—	—	
Skirted Pointer	70-5-2	12	90-5-2	12	—	—	—	—	—	—	
Crank	—	—	—	—	125-6-2	4	175-6-2	2	225-6-2	2	

ROUND & DIAL	Series	A	B	C	D	E
	70	.80	.62	.65	.72	1.14
90	1.03	.80	.83	.93	1.51	
125	.87	.70	1.16	1.27	1.82	
175	1.09	.85	1.67	1.77	2.45	
225	1.11	.89	2.16	2.27	3.01	

Cat. Nos. above for mirror finish. For matte finish, add "G" to end of number.

\*Bar Knob—Cat. No. 1154-G1 (mirror), 1154-G2 (matte)

Series	A	B	C	D	E
70	.80	.62	.94	1.06	.32
90	1.03	.80	1.23	1.38	.42

Series	A	B	C
125	.87	1.38	1.09
175	1.09	1.77	1.50
225	1.11	1.80	1.75

## RAYTHEON PANEL COMPONENTS



### Standard Test Jack

Rugged, high quality construction • Beryllium copper spring pin contact • 9 colors available for circuit coding • Meets the requirements of MIL-STD-242A (ships)



### Printed Circuit Test Jacks

Specially designed for printed circuit use • Accepts standard 0.080" test prod • Simple mounting—just insert and dip-solder • 9 brilliant insulator colors for circuit coding



### Subminiature Test Jack

Fixed or snap-in contact types available • Fast, easy expansion mounting • Accept standard 0.080" test prod • Colored insulators for circuit coding



### Knob Lock

Prevents control movement by shock or vibration • Replaces potentiometer mounting hardware • Neat appearance—matches standard Raytheon knobs • Available in Mirror or Matte finish



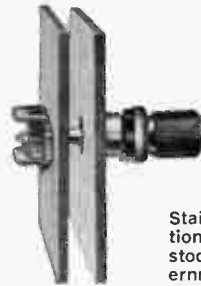
### Binding Posts

Provides 5-way connection • High strength nylon and brass construction • Accept standard 0.080" test prod • Available in black or red



### Shaft Lock

For use with screwdriver-adjusted controls • Constant friction drag prevents accidental rotation • Provides seal against dirt and moisture • Replaces standard mounting hardware



### Captive Hardware

Stainless steel construction • Wide assortment of stock sizes • Meets government specifications • Neoprene gasket provides dirt and moisture seal



### Terminal Board Bracket

Provides rigid support under shock or vibration • Mounts single or double panels • Meets military specifications • Cold-rolled carbon steel, cadmium plated



A-4030

## RAYTHEON MANUFACTURING COMPANY

Equipment Marketing Department • Waltham 54, Mass.

Excellence in Electronics

District Offices: Atlanta, Baltimore, Boston, Chicago, Cleveland, Kansas City, Los Angeles, New Orleans, New York, Seattle

# RAYTHEON VOLTAGE STABILIZERS

## Standard Catalog Models

Catalog No.	Output Capacity Watts	Style	Dimensions in Inches								Net Wt. Lbs.
			Overall			Mounting		Voltages			
			L	W	H	L	W	Input	Output		
VR-6110	15	F	6 $\frac{1}{4}$	2 $\frac{3}{8}$	3	5 $\frac{1}{8}$	5 $\frac{1}{8}$	95-130	115	4	
VR-61F0**	15	F	5 $\frac{3}{4}$	2 $\frac{3}{8}$	4 $\frac{1}{8}$	5 $\frac{3}{8}$	4 $\frac{1}{8}$	95-130	6.3	4	
VR-61D0**	15	D	3 $\frac{3}{8}$	2 $\frac{3}{8}$	4 $\frac{1}{8}$	2 $\frac{1}{4}$	1 $\frac{3}{4}$	95-130	6.3	6	
VR-6710**	25	W	7 $\frac{3}{8}$	3 $\frac{1}{8}$	3 $\frac{3}{8}$	7 $\frac{3}{8}$	1 $\frac{1}{2}$	95-130	6.0	4	
VR-6101	30	E	7 $\frac{1}{2}$	3 $\frac{1}{8}$	4 $\frac{1}{8}$	6 $\frac{1}{8}$	2 $\frac{1}{4}$	95-130	6.0/7.5	5	
VR-6111	30	E	7 $\frac{1}{2}$	3 $\frac{1}{8}$	4 $\frac{1}{8}$	6 $\frac{1}{8}$	2 $\frac{1}{4}$	95-130	115	5	
VR-6111-CP	30	E	7 $\frac{1}{2}$	3 $\frac{1}{8}$	4 $\frac{1}{8}$	6 $\frac{1}{8}$	2 $\frac{1}{4}$	95-130	115	5	
VR-6221	30	E	7 $\frac{1}{2}$	3 $\frac{1}{8}$	4 $\frac{1}{8}$	6 $\frac{1}{8}$	2 $\frac{1}{4}$	190-260	230	5	
VR-6112***	60	E	7 $\frac{1}{2}$	3 $\frac{1}{8}$	4 $\frac{1}{8}$	6 $\frac{1}{8}$	2 $\frac{1}{4}$	95-130	115	8	
VR-6112CP†	60	E	7 $\frac{1}{2}$	3 $\frac{1}{8}$	4 $\frac{1}{8}$	6 $\frac{1}{8}$	2 $\frac{1}{4}$	95-130	115	8	
VR-6222	60	E	7 $\frac{1}{2}$	3 $\frac{1}{8}$	4 $\frac{1}{8}$	6 $\frac{1}{8}$	2 $\frac{1}{4}$	190-260	230	8	
VR-6113***	120	E	7 $\frac{1}{2}$	3 $\frac{1}{8}$	5 $\frac{1}{8}$	6 $\frac{1}{8}$	2 $\frac{1}{4}$	95-130	115	14	
VR-6113CP†	120	E	7 $\frac{1}{2}$	3 $\frac{1}{8}$	5 $\frac{1}{8}$	6 $\frac{1}{8}$	2 $\frac{1}{4}$	95-130	115	14	
VR-6223	120	E	7 $\frac{1}{2}$	3 $\frac{1}{8}$	5 $\frac{1}{8}$	6 $\frac{1}{8}$	2 $\frac{1}{4}$	190-260	230	14	
VR-6114	250	E	12 $\frac{3}{8}$	5	7 $\frac{1}{8}$	11 $\frac{1}{8}$	3 $\frac{1}{2}$	95-130	115	25	
VR-6224	250	E	12 $\frac{3}{8}$	5	7 $\frac{1}{8}$	11 $\frac{1}{8}$	3 $\frac{1}{2}$	190-260	230	25	
VR-6115	500	E	12 $\frac{3}{8}$	5	7 $\frac{1}{8}$	11 $\frac{1}{8}$	3 $\frac{1}{2}$	95-130	115	45	
VR-6225	500	E	12 $\frac{3}{8}$	5	7 $\frac{1}{8}$	11 $\frac{1}{8}$	3 $\frac{1}{2}$	190-260	230	45	
VR-6116	1000	H	13 $\frac{3}{8}$	14 $\frac{1}{8}$	9 $\frac{1}{8}$	11 $\frac{1}{8}$	12 $\frac{3}{8}$	95-130	115	92	
VR-6226	1000	H	13 $\frac{3}{8}$	14 $\frac{1}{8}$	9 $\frac{1}{8}$	11 $\frac{1}{8}$	12 $\frac{3}{8}$	190-260	230	92	
VR-6117	2000	H	36 $\frac{1}{4}$	14 $\frac{1}{8}$	10 $\frac{1}{8}$	34	12 $\frac{3}{8}$	95-130	115	185	
VR-6227	2000	H	36 $\frac{1}{4}$	14 $\frac{1}{8}$	10 $\frac{1}{8}$	34	12 $\frac{3}{8}$	190-260	230	185	
VR-7B	2000	C	16 $\frac{1}{4}$	14 $\frac{1}{8}$	11 $\frac{1}{8}$	9 $\frac{1}{8}$	13 $\frac{3}{8}$	115/230	115/230	200	
VHF-6114*	250	E	14 $\frac{1}{8}$	13 $\frac{3}{8}$	9 $\frac{1}{8}$	12 $\frac{3}{8}$	11 $\frac{1}{8}$	95-130	115	49	
VHF-6115*	500	E	14 $\frac{1}{8}$	13 $\frac{3}{8}$	9 $\frac{1}{8}$	12 $\frac{3}{8}$	11 $\frac{1}{8}$	95-130	115	75	
VHF-6116*	1000	E	29 $\frac{1}{4}$	14 $\frac{1}{8}$	10 $\frac{1}{8}$	27 $\frac{1}{8}$	12 $\frac{3}{8}$	95-130	115	150	

\*Harmonic filtered models. Harmonic content less than 3%.

\*\*Isolated secondary units.

\*\*\*Available with isolated secondary if desired.

†Portable models, supplied with cord and plug and output receptacle.

### FEATURES

1. Deliver accurate AC voltage within  $\pm \frac{1}{2}$  %
2. Stabilize output with more precision
3. Regulate better at full load
4. Hold up better under overload
5. Better no-load to full-load regulation
6. Accept wider input voltage range
7. Less voltage change as units heat up
8. Less change in output as frequencies fluctuate
9. Smaller, lighter, more compact; no moving parts
10. Cost less to operate



STYLE D



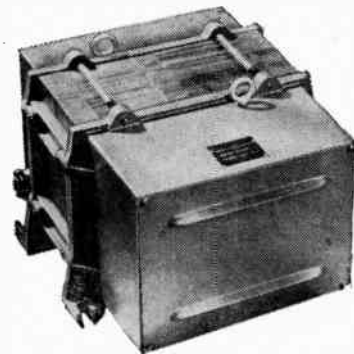
STYLE E



STYLE F



STYLE H



STYLE C

The complete line of Raytheon Voltage Stabilizers is available through 155 authorized distributors. Special custom-built units, ranging from 5 to 10,000 watts are also available to meet special needs. Write for complete information.



A-4029

*Excellence In  
Electronics*

### RAYTHEON MANUFACTURING COMPANY

Equipment Marketing Division Dept. 6270-MC • Waltham 54, Mass.

District Offices: Boston, New York, Cleveland, Chicago, New Orleans, Los Angeles (Wilmington), San Francisco, Seattle

# TERADO Trav-Electric Mobile Power Converters

OPERATE  
PORTABLE TV  
AND OTHER APPLIANCES  
Anywhere



## TRAV-ELECTRIC "SUPREME"



## REMOTE CONTROL

with



## "SUPER"

(Filtered)

No installation. Just plug into cigarette lighter on dash. Operates all tools and appliances up to rated capacities.

Model 6-71160 (6 volt) — 60-75 Watts  
Model 12-71160 (12 volt) — 75-100 Watts  
List \$46.95 Dealer Net \$28.17



## "SENIOR"

(Filtered)

No installation. Just plug in — and operate. See list of Uses below, for many items operated by "Senior".

Model 6-1160 (6 volts) — 35-40 Watts  
Model 12-1160 (12 volts) — 40-50 Watts  
List \$21.95 Dealer Net \$13.17



— on the lake shore — Camp — Outings —  
anywhere within Station range.

## "SUPREME"

Model No. 50153  
Capacity: 175 to 200 Watts  
(Filtered)  
Operates Portable TV, and all appliances and electric tools up to rated capacity. Remote Control mounted under dash. For 12 volt batteries only.

List \$99.95 Dealer Net \$59.97  
(Price Incl. Remote Control)

## "TV SPECIAL CHIEF"

Automatic Voltage Control  
(Filtered)  
Model No. 50152 or TV12-81160  
Capacity: 100 to 125 Watts  
Operates Portable TV and all tools and appliances up to rated capacity. Mounted under dash. For 12 volt batteries only.

List \$64.95 Dealer Net \$38.97



## ALL TRAV-ELECTRIC MODELS deliver HOUSE CURRENT Anywhere

## "CHIEF"

(Filtered)

Automatic On-Off Switch. Same case as "TV Special Chief." Mounted under dash. The "Chief" operates all tools and appliances as listed below.

Model 6-81160 — 6 volt — 75-100 Watts  
Model 12-81160 — 12 volt — 100-125 Watts  
List \$64.95 Dealer Net \$38.97



shave. Enclosed is beautiful, long-lasting polyethylene case. Specify if for 6 or 12 volt battery.

## "AUTOMATIC"

Model A-5585

6 volt battery (55-75 watts) List \$54.95  
12 volt battery (85-110 watts) Dealer Net \$32.97

"DUAL" operates from either 6 or 12 volt battery. Manual switch for either voltage. Same Case as "Chief" Model.

Model M-5585  
6 volt battery (55-75 watts) List \$51.95  
12 volt battery (85-110 watts) Dealer Net \$31.17

## AUTO SHAVER

List (both models) \$12.95  
Dealer Net (both models) \$7.77

Models	Watts
A615	10-15
A1215	15-20

Operates all makes and models of Electric Shavers. No installation. Just plug into cigarette lighter — and



## "MASTER"

(Filtered)

Operates all appliances of capacity from Electric Shavers to dictating machines.  
Model 6-51160 (6 volt) — 40-50 Watts  
Model 12-51160 (12 volt) — 50-60 Watts  
List \$38.95 Dealer Net \$23.37



## "JUNIOR"

(Filtered — 115 Cycles)

For radios, lights, test equipment only. (Not for operation of Electric Shavers.) Available in the following models:

Model 6-110 (6 volt) — 30-40 Watts  
Model 12-110 (12 volt) — 40-50 Watts  
List \$15.95 Dealer Net \$9.57

## "101" USES

(All Trav-Electric Mobile Power Converters change storage battery current to 110 volt, A.C. 60 cycle (except "Junior" Model))



Portable TV Sets  
Lights  
Radio  
Test Equipment  
Drills  
Dictating Machines  
Soldering Irons

Electric Shavers  
Hand Vacuum Cleaners  
Tape Recorders  
Food & Liquid Mixers  
Electric Clocks  
Wire Recorders  
Address Systems

Phonographs  
Vibrators, Massage  
Hedge Trimmers  
Car Polishers  
Heating Pads  
Paint Sprayers  
Business Machines



# TERADO COMPANY

Export Sales Division—St. Paul, Minn.

MORHAN EXPORTING CORP.

458 Broadway

New York 13, N. Y.

In Canada, Write  
ATLAS RADIC CCRP., LTD.  
560 King Street, West  
Toronto 23, Ontario

GETZ BROS. CO.  
231 Sansone St.  
San Francisco 4, Cal.

# SOLA *Constant Voltage* TRANSFORMERS

## AUTOMATIC, INSTANTANEOUS VOLTAGE REGULATION


Sola Constant Voltage Transformers are static-magnetic voltage regulators. They are designed to provide a constant output voltage which is unaffected by changes in input voltage. You will find, listed in the following pages, the widest range of ratings and types available from stock offered by any manufacturer.

They have eight distinct advantages over regulators which depend solely upon saturation of core materials for their regulating action, or electronic type regulators:

1. Ultra-fast regulating action. Response time is usually 1.5 cycles or less.
2. No moving or renewable parts or manual adjustments; eliminates need for routine maintenance and spare parts stock.
3. Completely automatic, continuous regulation. No manual adjustments or instruction booklets are required.
4. Self-protecting against short circuits on output or load circuit.
5. Current-limiting characteristic protects load equipment from excessive fault currents.
6. Availability of transformer ratio for step-up, step-down, plate and/or filament supply permits substitution in place of conventional non-regulating transformers.
7. Relatively compact compared to other equipment for comparable ac voltage regulation.
8. Provide isolation between input and output circuits.

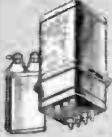
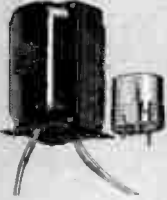


In addition, CUSTOM DESIGNED UNITS can be manufactured in capacities from 1 va to 25,000 va, to suit your individual specifications. When ordered in substantial quantities, they cost only slightly more than standard units of the same general size. Often, time and money can be saved by direct use or modification of a regulator from the several hundred special designs on file. Custom designs can include: SPECIAL VOLTAGE RATIOS, SPECIAL FREQUENCIES, COMPENSATION FOR FREQUENCY VARIATION, MULTIPLE OUTPUT VOLTAGES, THREE-PHASE SERVICE, and MILITARY SPECIFICATIONS.



**turn page for electrical and  
mechanical specifications  
of stock types and  
sizes available** 

Manufactured by Sola Electric Co. • Chicago 50, Illinois

# SOLA CONSTANT VOLTAGE TRANSFORMERS

Standard Constant Voltage Transformers. Regulation $\pm 1\%$		Electrical and Mechanical Specifications • 60 Cycle, Single Phase									
		Catalog Number	Output Capacity in VA	VOLTAGE		Dimensions in Inches*					Approx. Shipping Weight in Lbs.
				Input Range	$\pm 1\%$ Regulated Output	A	B	C	E	F	
 <p>Typical Structure, Hermetic-Sealed Housing, 301002-3</p>		30488	15	95-125	6.0	5 $\frac{11}{16}$	2 $\frac{5}{8}$	3 $\frac{1}{2}$	5 $\frac{1}{16}$	.....	6
		30492	15	95-125	6.3	5 $\frac{11}{16}$	2 $\frac{5}{8}$	3 $\frac{1}{2}$	5 $\frac{1}{16}$	.....	6
		30498	15	95-125	115.0	5 $\frac{11}{16}$	2 $\frac{5}{8}$	3 $\frac{1}{2}$	5 $\frac{1}{16}$	.....	6
		301002	15	95-125	6.3	5 $\frac{1}{4}$	3 $\frac{1}{2}$	2 $\frac{1}{4}$	3	1 $\frac{1}{2}$	2 $\frac{1}{2}$
		301003	15	95-125	115.0	5 $\frac{1}{4}$	3 $\frac{1}{2}$	2 $\frac{1}{4}$	3	1 $\frac{1}{2}$	2 $\frac{1}{2}$
 <p>Typical Structure, Filament Regulators, 5-25 a</p>			<b>amps</b>								
		20-04-030	5	95-130 x 190-260	6.3	4 $\frac{13}{16}$	3 $\frac{1}{8}$	3 $\frac{1}{8}$	2 $\frac{1}{2}$	2 $\frac{1}{16}$	6
		20-04-065	10	95-130 x 190-260	6.3	4 $\frac{13}{16}$	3 $\frac{1}{8}$	3 $\frac{3}{4}$	2 $\frac{1}{2}$	2 $\frac{11}{16}$	7
		20-04-095	15	95-130 x 190-260	6.3	4 $\frac{13}{16}$	3 $\frac{1}{8}$	4 $\frac{11}{16}$	2 $\frac{1}{2}$	3 $\frac{5}{8}$	11
		20-04-113	20	95-130 x 190-260	6.3	7	4 $\frac{1}{2}$	5 $\frac{1}{8}$	3 $\frac{5}{8}$	3 $\frac{3}{8}$	20
		20-04-116	25	95-130 x 190-260	6.3	7	4 $\frac{1}{2}$	5 $\frac{11}{16}$	3 $\frac{5}{8}$	4 $\frac{1}{8}$	23
		30804	30	95-125	115.0	8 $\frac{9}{16}$	4 $\frac{3}{16}$	4 $\frac{3}{16}$	7 $\frac{7}{8}$	2 $\frac{3}{8}$	12
		30805	60	95-125	115.0	8 $\frac{13}{16}$	4 $\frac{3}{16}$	4 $\frac{3}{16}$	8 $\frac{1}{8}$	2 $\frac{3}{8}$	13
		30806	120	95-125	115.0	9 $\frac{3}{4}$	4 $\frac{3}{16}$	4 $\frac{3}{16}$	9	2 $\frac{3}{8}$	17
		30888	150	95-125	115.0	10 $\frac{1}{4}$	4 $\frac{3}{16}$	4 $\frac{3}{16}$	9 $\frac{1}{2}$	2 $\frac{3}{8}$	18
30885	60	95-125	115.0	10 $\frac{3}{8}$	4 $\frac{3}{16}$	4 $\frac{3}{16}$	9 $\frac{5}{8}$	2 $\frac{3}{8}$	13		
30886	120	95-125	115.0	11 $\frac{1}{4}$	4 $\frac{3}{16}$	4 $\frac{3}{16}$	10 $\frac{1}{2}$	2 $\frac{3}{8}$	17		
30M705#	120	190-250	230.0	9 $\frac{3}{8}$	4 $\frac{5}{16}$	4 $\frac{3}{8}$	9	2 $\frac{3}{4}$	14		
#Terminals on exposed panel											
 <p>Typical Structure, 250-1000 va ratings</p>		20-13-125	250	95-130	118.0	11 $\frac{1}{8}$	6 $\frac{1}{16}$	6 $\frac{1}{16}$	3 $\frac{1}{4}$	6 $\frac{1}{8}$	24
		20-20-125	250	190-260	118.0	11 $\frac{1}{8}$	6 $\frac{1}{16}$	6 $\frac{1}{16}$	3 $\frac{1}{4}$	6 $\frac{1}{8}$	24
		20-13-150	500	95-130	118.0	12 $\frac{1}{2}$	6 $\frac{1}{16}$	6 $\frac{1}{16}$	4 $\frac{3}{8}$	6 $\frac{1}{8}$	36
		20-20-150	500	190-260	118.0	12 $\frac{1}{2}$	6 $\frac{1}{16}$	6 $\frac{1}{16}$	4 $\frac{3}{8}$	6 $\frac{1}{8}$	36
		20-24-150	500	190-260 x 380-520	236.0	12 $\frac{1}{2}$	6 $\frac{1}{16}$	6 $\frac{1}{16}$	4 $\frac{3}{8}$	6 $\frac{1}{8}$	36
		20-13-210	1000	95-130	118.0	15 $\frac{1}{8}$	6 $\frac{1}{16}$	6 $\frac{1}{16}$	4 $\frac{3}{8}$	6 $\frac{1}{8}$	52
		20-20-210	1000	190-260	118.0	15 $\frac{1}{8}$	6 $\frac{1}{16}$	6 $\frac{1}{16}$	4 $\frac{3}{8}$	6 $\frac{1}{8}$	52
		30811	2000	95-125	115.0	31 $\frac{1}{8}$	9 $\frac{1}{2}$	7 $\frac{7}{8}$	12 $\frac{1}{4}$	8 $\frac{1}{2}$	205
		30M811	2000	190-250	115.0	30 $\frac{1}{8}$	9 $\frac{1}{2}$	7 $\frac{7}{8}$	12 $\frac{1}{4}$	8 $\frac{1}{2}$	205
		30968	2000	190-250	230.0	30 $\frac{1}{8}$	9 $\frac{1}{2}$	7 $\frac{7}{8}$	12 $\frac{1}{4}$	8 $\frac{1}{2}$	205
 <p>Typical Structure, 3-5 kva ratings</p>		301706	3000	95-125 x 190-250	115.0	27 $\frac{11}{16}$	16 $\frac{1}{4}$	12	23 $\frac{1}{8}$	14 $\frac{1}{4}$	345
		301707	3000	190-250 x 380-500	230.0	27 $\frac{11}{16}$	16 $\frac{1}{4}$	12	23 $\frac{1}{8}$	14 $\frac{1}{4}$	345
		301704	4000	95-125 x 190-250	115.0	32 $\frac{11}{16}$	16 $\frac{1}{4}$	12	23 $\frac{1}{8}$	14 $\frac{1}{4}$	415
		301702	5000	95-125 x 190-250	115.0	39 $\frac{1}{16}$	16 $\frac{1}{4}$	12	34 $\frac{1}{2}$	14 $\frac{1}{4}$	485
		301703	5000	190-250 x 380-500	230.0	39 $\frac{1}{16}$	16 $\frac{1}{4}$	12	34 $\frac{1}{2}$	14 $\frac{1}{4}$	485
		301700	10,000	190-250 x 380-500	115.0	48 $\frac{1}{8}$	34 $\frac{1}{4}$	14	41 $\frac{1}{2}$	31 $\frac{1}{4}$	1025
		301701	10,000	190-250 x 380-500	230.0	48 $\frac{1}{8}$	34 $\frac{1}{4}$	14	41 $\frac{1}{2}$	31 $\frac{1}{4}$	1025

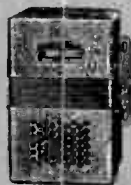
\*DIMENSIONS—A: Overall Length; B: Overall Width; C: Overall Height; E & F: Mounting Dimensions.

Specifications subject to change without notice.



# SOLA CONSTANT VOLTAGE TRANSFORMERS

## Harmonic Neutralized Transformer



$\pm 1\%$  Regulated Sine Wave Output with less than 3% Harmonic Distortion.

Catalog Number	Former Catalog Number	Output Capacity in VA	VOLTAGE		Dimensions in Inches					Approx. Shipping Weight in Lbs.
			Input Range	$\pm 1\%$ Regulated Output	A	B	C	E	F	
5003	.....	60	95-125	115	11 $\frac{3}{4}$	4 $\frac{3}{16}$	4 $\frac{1}{2}$	10 $\frac{3}{4}$	2 $\frac{5}{16}$	22
5004	.....	120	95-125	115	11	7 $\frac{1}{8}$	5 $\frac{5}{8}$	8 $\frac{3}{4}$	6 $\frac{1}{2}$	31
23-13-125	5005	250	95-130	118	11 $\frac{1}{4}$	9	6 $\frac{7}{16}$	5 $\frac{3}{8}$	8 $\frac{1}{8}$	32
23-13-150	5006	500	95-130	118	12 $\frac{5}{8}$	9	6 $\frac{7}{16}$	5 $\frac{5}{8}$	8 $\frac{1}{8}$	47
23-13-210	5008	1000	95-130	118	17 $\frac{15}{16}$	9	6 $\frac{7}{16}$	5 $\frac{5}{8}$	8 $\frac{1}{8}$	80
5010	.....	2000	95-125	115	20 $\frac{3}{8}$	26 $\frac{1}{4}$	9 $\frac{5}{8}$	12 $\frac{1}{4}$	24 $\frac{1}{4}$	315

## Adjustable Regulated A. C. Voltage Supply



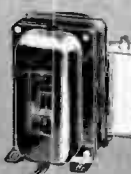
$\pm 1\%$  Regulated Sine Wave Output with less than 3% Harmonic Distortion. Adjustable from 0-130 v.

One outlet regulated  $\pm 1\%$  and adjustable from 0 to 130 volts. One outlet for fixed value 115 volts regulated  $\pm 1\%$ . Total harmonic distortion less than 3%. Regulating response 1.5 cycles or less. Self-protecting against short circuit. Portable for use in shop or laboratory.

Input 95-125 v; Output No. 1, 115 v; Output No. 2, 0-130 v; 60 cycle, single phase.

Catalog Number	Output Capacity in VA	Dimensions in Inches			Approx. Shipping Weight in Lbs.
		A	B	C	
50106	500	15 $\frac{3}{4}$	7 $\frac{1}{2}$	13 $\frac{3}{8}$	75

## Regulated Power Supply Transformer



$\pm 3\%$  Regulation for Plate and Filament Supply

A single, compact source of plate and filament supply voltages regulated to within  $\pm 3\%$  or less, with line voltage variations of 100-130 volts. Each unit is furnished complete with capacitor and capacitor mounting bracket. The capacitor is not wired to the transformer, to permit maximum flexibility in mounting on the chassis.

itor mounting bracket. The capacitor is not wired to the transformer, to permit maximum flexibility in mounting on the chassis.

Input 100-130v., 60 cycle, single phase

Catalog Number	Typical Rectifier Tube	D.C. Input Volts To Filter	Filament Windings		Dimensions in Inches			Approx. Shipping Weight in Lbs.
			6.3 volts	5.0 volts	A	B	C	
7104	5Y3	275v D.C. @ 50 M.A.	2.5 amps C.T.	2.0 amps	4 $\frac{13}{16}$	3 $\frac{1}{8}$	3 $\frac{3}{8}$	5
7106	5Y3	385v D.C. @ 110 M.A.	3.0 amps C.T.	2.0 amps	4 $\frac{13}{16}$	3 $\frac{1}{8}$	3 $\frac{15}{16}$	8
7107	5U4	380v D.C. @ 250 M.A.	No. 1: 4.0 amps No. 2: 8.0 amps unregulated	3.0 amps	7	4 $\frac{1}{2}$	5	19

## Constant Voltage Transformer for Television Receivers



$\pm 3\%$  Plug-in Regulator for Television Receivers and Other Appliances

Voltage regulation for home TV Receivers eliminates flicker and distortion due to line voltage variations. Moderate price . . . plug-in type . . . regulation  $\pm 3\%$  or less.

Input 95-130 v, Nominal Output Value in 115-120 volt range; 60 cycle, single phase.

Catalog Number	Output Capacity in VA	Dimensions in Inches			Approx. Shipping Weight in Lbs.
		A	B	C	
7201	180	7 $\frac{1}{4}$	8 $\frac{1}{4}$	4 $\frac{3}{4}$	21
7202	300	7 $\frac{1}{4}$	9 $\frac{1}{8}$	4 $\frac{3}{4}$	28

Typical Characteristics of 300 VA No. 7202 Transformer with 300 VA Load

Primary			Secondary		
Volts	Amps	Watts	Volts	Amps	Reg.
95	3.84	345	113.2	2.57	-2.84%
117	3.28	360	116.5	2.62	
130	3.28	368	117.9	2.66	+1.2%

See next page for regulated DC power supplies

## Sola DC power supplies:

### compact, regulated, for high-amp loads

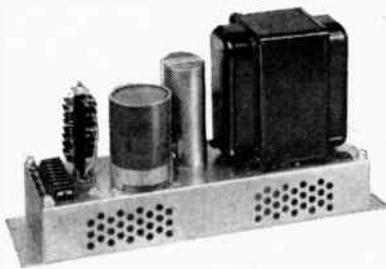
This combination of Sola Constant Voltage Transformer, germanium power rectifier, and high-capacitance filter yields a dc power supply compact in size, low in weight, and with other important advantages.

1. Output regulation of  $\pm 1\%$  or less with  $\pm 10\%$  line voltage variations.
2. Minimum output voltage change with wide, rapid load changes.
3. Low input power, with resultant good efficiency.
4. Ability to withstand high, short-time overloads without damage to components.
5. Ripple voltage of approximately 1% (rms) or less.
6. High overall economy by eliminating overload capacity needed in other types of power supplies for certain applications.

7. Low ratio of size and weight to power output.
8. Freedom from routine adjustment and maintenance.
9. Exceedingly low output impedance.

In addition to its important function of correcting line voltage variations, the Sola CV's inherent current-limiting action permits safe, economical use of the efficient germanium rectifier with its low forward voltage drop and other advantages. This same current-limiting action also permits use of high-capacitance filter sections by controlling excessive charging currents which might damage rectifier junctions. The high-capacitance filter yields very low ripple voltage without need for heavy, bulky choke components, with their substantial and often-varying load voltage drops.

## FIXED DESIGNS



For  
intermittent, variable,  
or pulse loads.

### ELECTRICAL SPECIFICATIONS

All Inputs 100-130 volts, 60 cps

Catalog Number	Output Rating			Efficiency Approx. %	Ripple Voltage (rms)- % of Total	Approx. Shipping Weight Each Pounds
	Watts	Volts	Amps			
28156	144	24	6.0	72	Less Than 1%	45
28120	192	48	4.0	77	Less Than 1%	45
28152	250	125	2.0	82	Less Than 1%	55
28106	300	150	2.0	80	Less Than 1%	50
28193	200	200	1.0	76	Less Than 1/2%	45
28192	250	250	1.0	81	Less Than 1/2%	55

DIMENSIONS—Above six stock units have identical dimensions: overall length, 19"; overall width, 5 1/4"; overall height, 9 3/4". All supplies furnished with drilling for standard relay rack mounting.

## ADJUSTABLE DESIGNS



Give all the advantages of fixed designs plus an output adjustable over a considerable range of voltages.

### ELECTRICAL SPECIFICATIONS

All inputs 100-130 volts, 60 cps

Catalog Number	Adjustable Output Voltage Range	Rated Loadings in Amperes		Ripple* Voltage— % of Total Output	Approx. Shipping Weight Each— Pounds
		At max. Voltage Setting	At min. Voltage Setting		
28510	5-35	7.0		0.10	80
28520	25-60	4.0	6.0	0.05	80
28530	30-90	2.8	4.0	0.04	80
28540	60-180	1.4	2.0	0.03	80
28550	150-250	1.0	1.5	0.02	80
28560	250-400	0.6	0.75	0.02	80

\*Figures in this column ripple voltages measured at full rated load and input of 115 volts.

DIMENSIONS—Above six stock units are for relay rack mounting on standard, 19" frame. Front panel is 7" high and chassis is 12 1/4" deep. Removable handles, for portability, are available as an accessory.

**SOLA** *Constant Voltage*  
**DC POWER SUPPLIES**

**SOLA ELECTRIC CO.**  
Chicago 50, Illinois



**ELECTRONICALLY  
REGULATED  
D.C.  
CONSTANT VOLTAGE  
POWER SUPPLIES**

**MODEL 1  
RELAY RACK MOUNTING \$52.50**

**Input:** 105-125 volts AC. 50-60 cycles.

**DC Output Voltage:** Continuously variable from 200 to 325 volts DC for load currents 0 to 100 ma.

**Regulation of DC Voltage:** Better than 1% for loads of 0 to 100 ma. and line voltage variations from 105 to 125 volts.

**Ripple Output:** Less than 10 millivolts rms.

**Isolated Output:** Both positive and negative sides of the output are isolated from ground. Either side may be grounded or the output may be left floating.

**AC Output for Filaments:** An isolated AC voltage of 6.3 volts AC at 3 amperes is available at the output terminal connections.

**Overload Protection:** A fuse mounted on the front panel protects supply against external overloads or internal failure.

**Input and Output Connections:** All input and output connections are made to a single terminal strip conveniently located on the rear of the chassis.

**Dimensions:** Standard 19" relay rack mounting. Panel Width: 19 inches; Panel Height: 5 1/4 inches; Depth Behind Panel: 8 1/2 inches.

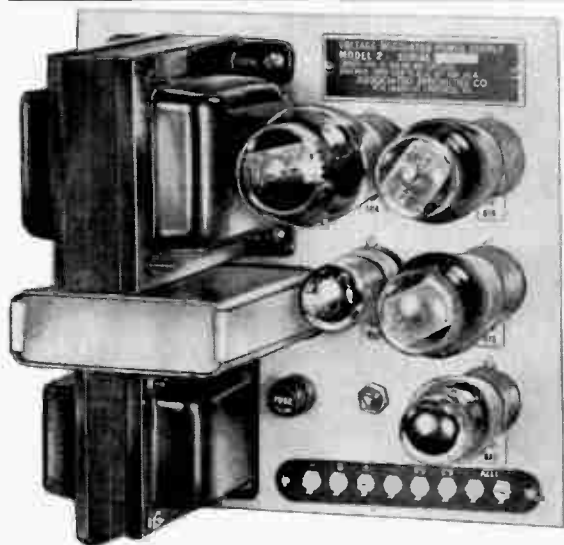
**Cabinet and Panel Finish:** Standard Black ripple enamel.

**Controls:** Rear Chassis—DC output voltage control. Front Panel—Pilot light, input power switch, and fuse.

**Weight:** Net weight is approximately 20 pounds.

**High Quality Components:** Only components of the highest quality are used in this equipment insuring you years of trouble-free dependable operation.

**Accessibility:** By removing two small screws, the front panel may be removed while the supply stays mounted on a relay rack or cabinet. This allows quick and easy inspection.



**MODEL 2 SUB-CHASSIS MOUNTING \$49.50**

Sub-chassis mounting type regulated power supplies are designed to save space and money. They can be mounted on a chassis along with other components and thereby save space which would be used by a relay rack mounting supply. Savings are made in the size and cost of the cabinet required for a job along with the lower cost of the sub-chassis mounting supplies.

**SAME AS MODEL 1 EXCEPT**

**Dimensions:** 9" wide, 8 3/4" long, 4 3/4" high above chassis, 1 3/4" clearance required below chassis. Size of cut-out required: 8 1/8" wide x 8" high. Location of four mounting holes: 8 5/8" wide x 8 1/2" high.



**MODEL 3 CABINET MOUNTING \$69.50**

An ideal unit for bench work or assembly into equipment.

**SAME AS MODEL 1 EXCEPT**

**Input Connections:** A line cord at rear of cabinet.

**Output Connections:** 5 way binding posts.

**Dimensions:** 5" wide, 7" high, 16" deep.

**Panel Finish:** Aluminum.

**Cabinet Finish:** Gray enamel.

**Controls:** D.C. output voltage on front panel.

**Meters:** Output voltage.

**Weight:** Net weight is approximately 20 pounds.

**Chassis Finish:** Zinc plated or equivalent.

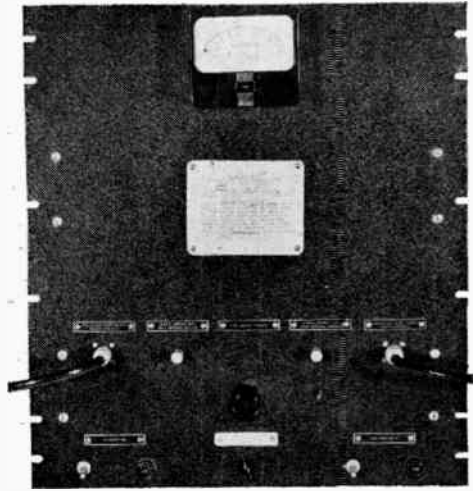
**Controls:** DC output voltage control adjustable from the top side of the chassis.

**Weight:** Net weight is approximately 14 1/2 lbs.

**SPELLMAN****HIGH VOLTAGE****POWER SUPPLIES****RF TYPE****MODEL LAB-60****CONTINUOUSLY VARIABLE 0-60 KV DC REGULATED POWER SUPPLY**

Current output 1 ma. at 60 KV, 2 ma. may be drawn from 50 KV to 0. Supplied with either positive polarity or negative polarity output. Regulation stability—1% at 1 ma. Cabinet Dimensions: 21 $\frac{3}{4}$ " wide x 22 $\frac{3}{4}$ " high x 18" deep.

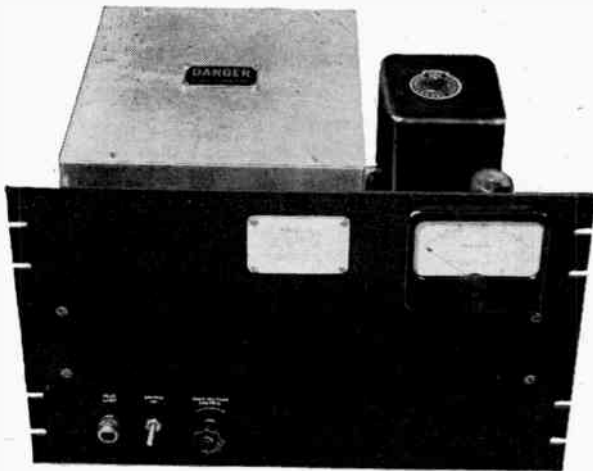
LAB-60 Complete with meter .....\$695.00 Net  
 LAB-60 PN Reversible polarity model of above .....\$745.00 Net

**MODEL RG-30****CONTINUOUSLY VARIABLE 15-30 KV REGULATED DC POWER SUPPLY WITH REGULATED FOCUS**

A high grade supply which incorporates a voltage tap in the range of 4 to 6 KV for use with 5WP15, 5TP4 and flying spot tubes. Regulations better than .5% at 1 milliamper. In wide use for color tube development work, transcription recording systems. Power supply also available with focus and convergence voltage taps for RCA Tri-Color tubes at slight additional cost. This model can be adjusted for 40 KV output at .5 milliamper for new 40 KV projection tubes.

MODEL RG-30 19 $\frac{1}{2}$ " wide x 12 $\frac{1}{4}$ " high x 13" deep .....\$295 Net  
 With meter installed on front panel.....\$345 Net

MODEL RG-40 Same specifications as above except high voltage range is approx. 15 KV to 40 KV. Current output .7 ma. at 40 KV. Regulated focus covers range 5 to 10 KV. In wide use in projection television systems.....\$295 Net  
 With meter installed on front panel—\$50 add.

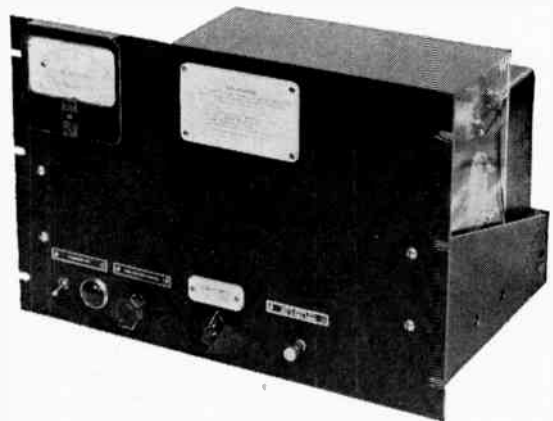
**MODEL LAB-30PN****REVERSIBLE POLARITY CONTINUOUSLY VARIABLE 1 TO 30 KV**

Regulated DC Power Supply with regulations of 0.5% at 1 milliamper. Although rated at 1 ma., this unit is capable of 2 ma. operation within regulation specifications. This 16 tube unit is of the RF type consisting of a separate oscillator and buffer feeding the power oscillator into a doubler rectifier. Regulations accomplished through feed-back into a DC amplifier plus simultaneous output control of the buffer. Polarity reversible from front panel. Standard Rack Model—19" wide x 12" high x 13" deep. Standard Bench Model—21" wide x 14" high x 15" deep.

With Meter \$645 Net — Less Meter \$595 Net

MODEL LAB-30 is a positive polarity output regulated High Voltage DC Power Supply with same electrical characteristics and dimensions as the LAB-30PN. Available in either positive or negative polarity.

With Meter \$545 Net — Less Meter \$495 Net



**SPELLMAN TELEVISION CO., INC.**
**N. Y. 67, N. Y.**

# SPELLMAN

# HIGH VOLTAGE

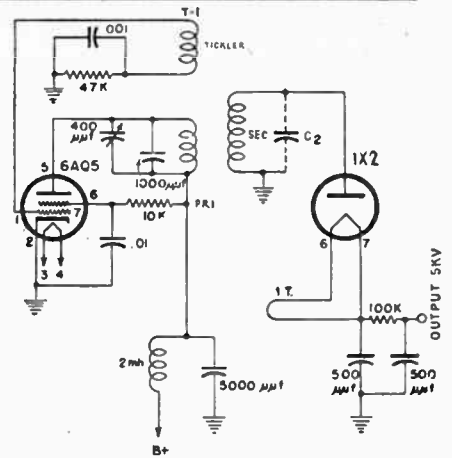
# STEP-UP COILS

## 5 KV



### RF TYPE

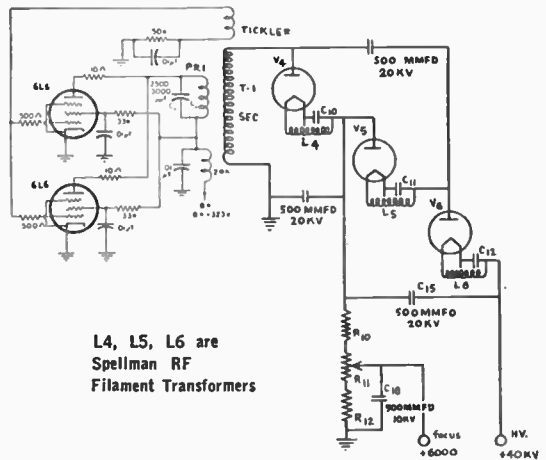
Secondary Height ..... 3 1/2"  
 Secondary Windings ..... 1 3/4"  
 Consisting of 4 Pie Windings  
 Primary Diameter ..... 2 1/4"  
 Secondary Voltage Output..... 5 KV  
 Secondary Current..... 2 Milliamperes  
 Approx. Frequency..... 300 KC  
 5KV Coil ..... \$7.00 Net



## 10-15 KV



Secondary Height ..... 5 1/4"  
 Secondary Windings ..... 1 3/4"  
 Consisting of 7 Pie Windings  
 Diameter ..... 2 1/2"  
 Secondary Voltage Output ...10-15 KV  
 Secondary Current..... 2 Milliamperes  
 Approx. Frequency..... 175 KC  
 10-15KV Coil ..... \$12.00 Net



L4, L5, L6 are  
 Spellman RF  
 Filament Transformers

## 70 KV



Secondary Height.....10"  
 Secondary Windings . .4" dia.  
 Consisting of 12 Pie Windings  
 Primary—  
 (separate from secondary)  
 Height ..... 4"  
 Diameter ..... 5"  
 Secondary Voltage Output—  
 70 KV  
 Secondary Current—  
 5 Milliamperes  
 Approx. Frequency... 70 KC  
 70KV Coil ..... \$75.00 Net

## 35 KV



Secondary Height ..... 7"  
 Secondary Windings ..... 3" dia.  
 Consisting of 10 Pie Windings  
 Primary ... (separate from secondary)  
 Height ..... 4"  
 Diameter ..... 4 1/4"  
 Secondary Voltage Output..... 35 KV  
 Secondary Current..... 5 Milliamperes  
 Approx. Frequency..... 70 KC  
 35KV Coil ..... \$42.00 Net  
 25KV—Same as 35 KV except  
 Secondary Height ..... 6"  
 25KV Coil ..... \$36.00 Net

### RF FILAMENT TRANSFORMERS

A self-resonant auto transformer for use with type 1B3 Rectifier tube. Complete with instructions.

Will operate with Spellman HV coils..... \$1.50  
 TUNING PADDER for Filament Transformer..... 0.58



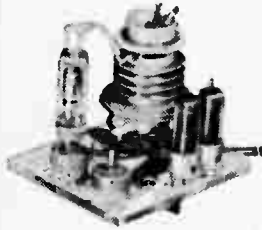
N. Y. 67, N. Y.

# SPELLMAN

# HIGH VOLTAGE

# POWER SUPPLIES

## RF TYPE



### MODEL 4575

#### 4 1/2 KV POWER SUPPLY

This compact, well designed, ruggedly built DC supply utilizes two 6AQ5 tubes as a parallel oscillator feeding a 1X2 rectifier tube. For an output voltage of 4 1/2 KV DC at 1 milliamper, the low voltage input requirement is 250 V at 50 milliamperes. By varying the DC input the output voltage can be varied from approx. 1 KV to 7 1/2 KV. Dimensions: 5 3/4" high x 5" deep x

4 1/4" wide. In completely enclosed metal housing (not shown). Less low voltage DC supply .....\$32.50 Net



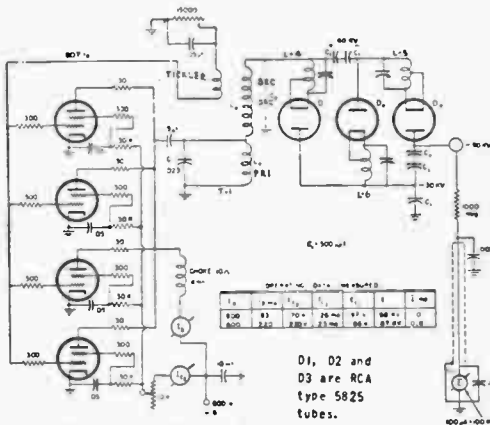
### MODEL 2040

#### 40 KV DC POWER SUPPLY

A ruggedly built power supply which is in constant use in laboratories and industrial plants throughout the world for condenser charging, electrostatic spraying and stress testing, etc. Nothing finer available at five times the price. Designed for constant use and will stand severe abuse. Available with either positive or negative 40 KV output. Voltage range of approx. 15 to 40

KV. The 15 to 40 KV variance in voltage is controlled through a knob on the front panel. If required for TV use, a voltage output of approx. 4 to 6 KV is available through a tap. Voltages supplied through a 4 ft. HV Safety Cable. 19" wide x 12 1/4" high x 13" deep.

Specify desired polarity when ordering .....\$150.00 Net  
With HV meter installed in front panel.....\$50 additional



L4, L5, L6 are Spellman RF Filament Transformers

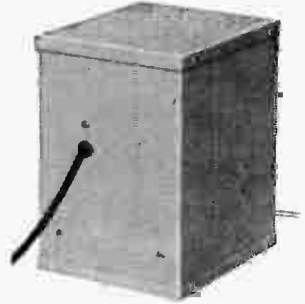
Send for Full Engineering Specifications

### MODEL 7512

#### 7 1/2 KV POWER SUPPLY

Model 7512 is an RF type power supply with a voltage output of approx. 7.5 to 12 KV. 1 ma. of current may be drawn throughout the voltage range. To obtain an output voltage of 7.5 KV. at 1 ma., low voltage input requirement is 300 V DC at 50 ma. By varying the DC input, the output voltage can be increased. Maximum input voltage of 425 V at 100 ma. will give an output of 12 KV at 1 ma. 5 3/4" W., 8 1/4" H., 6 3/4" D.

Net Price \$42.50



### MODEL PN-30R

#### REVERSIBLE POLARITY

#### Continuously Variable 1-30 KV Unregulated DC Power Supply

A light, compact unit in wide use for insulation testing, precipitators and laboratory research. Polarity reversible from front panel. Current output — approx. 2 milliamperes at 20 KV; 250 microamperes at 30 KV. Input — 110V AC 60 cycles. Dimensions: 19" x 12 1/4" x 13" .....

\$205 Net

With meter installed on front panel.....\$50 additional



### MODEL LAB-40

#### Continuously Variable Regulated 25 to 40KV DC Power Supply

Unit has a 4 to 6 KV focus tap for use with flying spot kinescope recording tubes, etc. Regulations of 0.5% at 1 milliamper. Available either with locking controls or standard knob.

10 1/2" wide x 12 1/4" high x 15" deep.



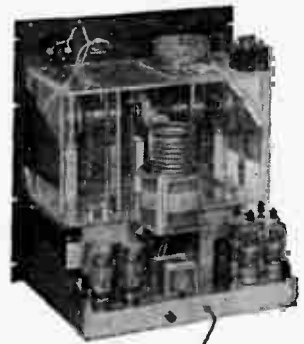
With Meter \$595 Net — Less Meter \$545 Net

### MODEL PN-60

#### REVERSIBLE POLARITY RF DC POWER SUPPLY

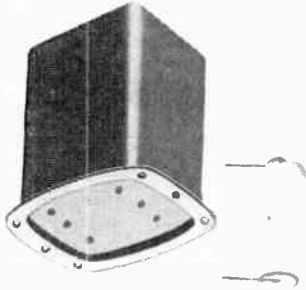
Polarity changes made on front panel. Continuously variable from 0 KV to 60 KV. Current output 1 milliamper at 60 KV. Overall dimensions 22 1/2" x 21" x 15". Ideal for electrostatic paint spraying, capacitor charging and testing as well as many other uses.

PN-60 Complete with Meter \$675.00 Net



# SPELLMAN TELEVISION CO., INC.

N. Y. 67, N. Y.

**SPELLMAN****HIGH VOLTAGE****POWER SUPPLIES****ULTRASONIC CERAMIC TRANSDUCER AND MATCHING TRANSFORMER KIT**

Designed to operate at 40 KC. Output transformer will operate from 16 or 500 ohm output of audio amplifier at 40 watts maximum.

Furnished complete with operating instructions and information on how to mount barium titanate driver to metal tanks, rods, etc., using an epoxy resin which is supplied with ultrasonic kit.

**MODEL 16500** .....\$69 Net

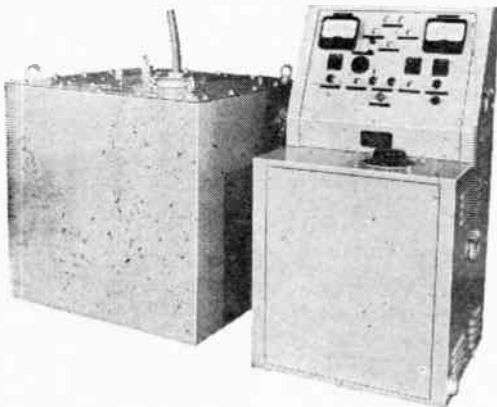
**MODEL HP** — Designed to operate from the plates of the output tubes  
\$69 Net



**MODEL 99**  
**ELECTRONIC BATCH COUNTER**

For use in production line predetermined counting in the range of 0 to 99 counts. Will count speeds up to 4000 per second. Unit incorporates on front panel a mechanical indicator which is limited to counts of 1000 per minute and shows batch counts up to 999,999. Unit also has spacing adjustment control on front panel which will control internal relay or external relays and solenoids with delays up to 60 seconds. Relay in unit has two sets of SPST contacts; one set normally open and one set normally closed.

*Send for Full Technical Information*



**MODEL 100**  
**TWO SECTION 100,000 VOLT DC**  
**POWER SUPPLY**

This constant duty supply is constructed in accordance with the highest electrical standards.

**SAFETY FEATURES:**

- Automatic output voltage starting mechanism that reduces the output voltage to zero.
- Zero start interlock ensuring zero output voltage upon initial application of high voltage to load.
- Series resistance in output circuit, limiting initial short circuit surges available from power supply.
- Automatic high voltage cut-off in the event of any external arcing.
- Unit incorporates many other safety and protective features not listed.

*Send for Full Engineering Specifications*

**SPELLMAN** TELEVISION CO., INC.

**N. Y. 67, N. Y.**



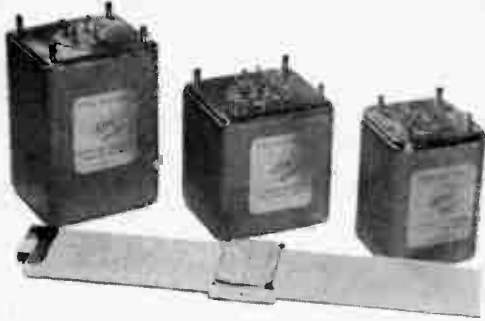
# ELECTRONIC RESEARCH ASSOCIATES, INC.

NUTLEY, NEW JERSEY

## TRANSPACS®

Miniaturized Power Packs for Transistor,  
Vacuum Tube and Standard Applications

### SAVE SPACE, WIRING AND WEIGHT



The standard 60 cycle models listed may also be operated at 400 cycles. The 400 cycle equivalents, however, are smaller and lighter for the same power rating.

Tubeless, miniaturized, self-contained, AC operated DC power packs. Wired into circuits TRANSPAC supplies a rugged, reliable source of DC power for miniature or standard size electronic devices. Design features include line isolation, rectification using semi-conductor diodes, use of selenium, gas, or transistor amplifier regulators (dependent on model type) and high efficiency filtering. All units are in transformer type housings and specially potted to resist shock and vibration.

## STANDARD MODEL TRANSPACS

### HIGH AMPERAGE TRANSPACS

For high power transistors, DC filament, solenoid and high amperage applications. Input 115 volts, 60 or 400 cycles. Ripple less than 5%. High voltage insulation greater than 1500 volts to case. All units include rectifier aging tap.

Model No.	Output Volts	Current Amps-Max	Case Size		Weight, Lbs.		Net Price	
			60 Cps	400 Cps	60 Cps	400 Cps	60 Cps	400 Cps
F2	2.5	3	F	D	7.0	2.0	\$55.00	\$60.00
F5	5.0	3	F	E	7.0	3.5	55.00	60.00
F6	6.3	3	F	E	7.0	3.5	55.00	60.00
F7	7.5	3	F	E	7.0	3.5	55.00	60.00
F10	10.0	2	F	D	7.0	3.5	55.00	60.00
F12	12.6	2	F	D	5.5	3.0	55.00	60.00
F25	25.2	1	F	D	6.5	3.4	55.00	60.00

### TRANSISTORIZED REGULATED TRANSPACS

For all tube and transistor applications. Input 105-125 VAC, 60 or 400 cps. Uses transistor regulator. Input regulation better than  $\pm 0.5\%$ . Output regulation better than  $\pm 0.5\%$ . Ripple less than 0.05%. Also available in adjustable voltage models.

Model No.	Output Volts*	Current	Case Size		Weight, Lbs.		Net Price	
			60 Cps	400 Cps	60 Cps	400 Cps	60 Cycle	400 Cycle
TR5	5	0-200	D	C	1.7	1.5	\$ 70.00	\$ 95.00
TR10	10	0-200	D	C	1.7	1.5	70.00	95.00
TR20	20	0-200	D	C	1.7	1.5	70.00	95.00
TR30	30	0-150	D	C	2.7	1.7	70.00	95.00
TR40	40	0-150	D	C	2.7	1.7	70.00	95.00
TR50	50	0-150	D	C	2.7	1.7	70.00	95.00
TR100	100	0-100	D	C	2.7	1.7	90.00	110.00
TR150	150	0-100	E	D	4.5	2.7	90.00	110.00
TR200	200	0-100	F	E	5.7	4.5	115.00	150.00
TR300	300	0-100	G	E	5.9	4.5	120.00	160.00

\* Nominal voltage, specified within 5%.

### HIGH TEMPERATURE TRANSPACS

Listed are stock model high temperature designs for military and similar critical applications. Temperature ratings of these units extend to 85°C. Units utilize silicon semiconductors and similar high temperature components and are designed to take high shock and vibration. Electrical ratings correspond to the standard Transpac equivalent per designated type (i.e., CV20HT same as CV20 etc.)

Model No.	Voltage VDC*	Current Ma	Case Size		Weight, Lbs.		Net Price	
			60 Cps	400 Cps	60 Cps	400 Cps	60 Cps	400 Cps
CV20HT	20	15	B	A	1.2	0.7	\$135.00	\$145.00
CV105HT	105	20	C	B	2.0	1.6	110.00	120.00
CV150HT	150	20	C	B	2.0	1.6	125.00	135.00
CV250HT	250	20	D	C	2.7	1.3	135.00	145.00
CV900HT	900	5	F	E	6.0	4.3	155.00	165.00
V30HT	30	50	C	B	2.0	1.6	115.00	125.00
V150HT	150	70	D	C	2.7	1.3	135.00	145.00
V250HT	250	70	E	D	4.4	2.7	145.00	155.00
TR20HT	20	200	E	D	4.5	2.7	375.00	385.00
TR40HT	40	150	F	E	6.0	4.3	375.00	385.00
TR150HT	150	100	F	E	6.0	4.3	405.00	415.00

\* Nominal voltage, specified within 5%.

### CONSTANT CURRENT TRANSPACS

For transistor solenoid, electro-chemical, medical research, and general applications. Input 105-125 volts, 60 or 400 cycles. Line and load regulated. Input regulation better than  $\pm 1\%$ . Internal impedance approx. 250,000 ohms or greater. Ripple less than 0.1%.

Model No.	Output Volts	Current Ma-Max	Case Size		Weight, Lbs.		Net Price	
			60 Cps	400 Cps	60 Cps	400 Cps	60 Cps	400 Cps
CC1	—	1	A	AB	1.2	0.7	\$40.00	\$45.00
CC2	—	2	B	AB	1.2	0.7	40.00	45.00
CC5	—	5	B	A	1.3	1.2	45.00	50.00
CC10*	—	10	D	C	2.0	1.3	50.00	55.00
CC15**	—	0.5 to 5.0	B	A	1.4	1.2	50.00	55.00
CCP54**	—	0.25 to 2.0	B	A	1.3	1.2	40.00	45.00

\* 50,000 ohms internal impedance.

\*\* Multi-tap designs.

### LOW VOLTAGE TRANSPACS

Ideal for Magnetic Amplifier references, transistor and vacuum tube bias, and all types of regulated low voltage applications. Line and load regulated. Input, 105-125 volts, 60 or 400 cycles. Input regulation better than  $\pm 2\%$ . Output regulation better than  $\pm 2\%$ . Ripple less than 0.2%.

Model No.	Output Volts*	Current Ma-Max	Case Size		Weight, Lbs.		Net Price	
			60 Cps	400 Cps	60 Cps	400 Cps	60 Cycle	400 Cycle
CV5	5	15	B	A	1.2	0.7	\$40.00	\$45.00
CV10	10	15	B	A	1.2	0.7	40.00	45.00
CV15	15	15	B	A	1.2	0.7	40.00	45.00
CV20	20	15	B	A	1.2	0.7	40.00	45.00
CV25	25	15	B	A	1.2	0.7	40.00	45.00
CV30	30	15	B	A	1.2	0.7	40.00	45.00
CV40	40	15	B	A	1.3	0.7	40.00	45.00
CV45	45	15	B	A	1.3	0.7	40.00	45.00
CV50	50	15	B	A	1.3	0.7	40.00	45.00
CV60	60	15	B	A	1.3	0.7	45.00	50.00

\* Nominal voltage, specified within 5%.

### CONSTANT VOLTAGE TRANSPACS

For general tube and transistor applications. Input 105-125 volts, 60 or 400 cycles. Line and load regulated. Input regulation better than  $\pm 1\%$ . Output regulation better than  $\pm 1\%$ . Ripple less than 0.1%.

Model No.	Output Volts*	Current Ma-Max	Case Size		Weight, Lbs.		Net Price	
			60 Cps	400 Cps	60 Cps	400 Cps	60 Cps	400 Cps
CV75	75	20	C	—	1.5	—	\$35.00	\$ —
CV105	105	20	B	A	1.3	0.8	35.00	40.00
CV150**	150	20	B	A	1.3	0.8	35.00	40.00
CV180	180	20	D	—	2.0	—	45.00	—
CV210**	210	20	C	B	2.0	1.6	45.00	50.00
CV250**	250	20	C	B	2.0	1.3	45.00	50.00
CV300**	300	20	D	B	2.0	1.6	45.00	50.00
CV350**	350	20	D	C	2.7	1.3	55.00	60.00
CV450**	450	15	D	C	4.5	2.0	55.00	60.00
CV600**	600	5	D	C	4.5	2.0	60.00	65.00
CV750**	750	5	E	D	4.5	2.0	70.00	75.00
CV900**	900	5	E	D	4.5	2.0	75.00	80.00

\* Nominal voltage, specified within 5%.

\*\* Also supplied in next case size for free air operation.





# ELECTRONIC RESEARCH ASSOCIATES, INC.

NUTLEY, NEW JERSEY

## UNREGULATED TRANSPACS

For general tube and transistor application. Input 115 volts 60 or 400 cycles. Low internal impedance. Ripple less than 0.5%.

Model No.	Output Volts*	Current Ma-Max	Case Size		Weight, Lbs.		Net Price	
			60 Cps	400 Cps	60 Cps	400 Cps	60 Cps	400 Cps
V5	5	50	B	A	1.2	0.9	\$35.00	\$40.00
V10	10	50	B	A	1.3	0.9	35.00	40.00
V20	20	50	B	A	1.3	0.9	35.00	40.00
V30	30	50	B	A	1.3	0.9	35.00	40.00
V60	60	50	B	A	1.3	1.0	35.00	40.00
V135	135	75	C	A	2.0	1.0	35.00	40.00
V150	150	70	C	A	2.2	0.9	40.00	50.00
V250	250	70	D	C	3.5	1.5	45.00	55.00
V300	300	100	E	C	5.0	1.5	50.00	60.00
V350	350	100	E	C	5.0	1.5	50.00	60.00
V500	500	1.0	C	B	3.5	1.5	45.00	50.00
V1K5	1500	1.0	F	D	5.7	4.2	55.00	65.00
V2K4	2400	1.5	F	D	6.0	4.3	65.00	75.00

\* Nominal voltage, specified within 5%.

## ADJUSTABLE TRANSISTORIZED TRANSPACS

Closely regulated all semiconductor designs with adjustable voltage feature. Input 105-125 VAC, 60 or 400 cps. Input regulation better than -0.5%. Output regulation better than ±0.5%. Ripple less than 0.05%. Voltage variable by means of screwdriver adjustment.

Model No.	Voltage Range VDC	Output Ma	Case Size		Weight, Lbs.		Net Price	
			60 Cps	400 Cps	60 Cps	400 Cps	60 Cps	400 Cps
TR5A	5-10	0-200	D	C	2.7	1.3	\$ 80.00	\$105.00
TR10A	10-20	0-200	D	C	2.7	1.3	80.00	105.00
TR20A	20-30	0-150	D	C	2.7	1.3	80.00	105.00
TR30A	30-40	0-150	D	C	2.7	1.3	80.00	105.00
TR40A	40-50	0-150	D	C	2.7	1.3	80.00	105.00
TR50A	50-55	0-150	D	C	2.7	1.3	80.00	105.00
TR100A	100-110	0-100	E	D	4.4	2.7	100.00	120.00
TR150A	150-160	0-100	E	D	4.5	2.7	100.00	120.00
TR200A	200-210	0-100	F	E	6.0	4.3	125.00	160.00
TR300A	300-310	0-100	G	E	6.0	4.3	130.00	170.00

## TRANSPAC TRANSISTORIZED INVERTERS AND CONVERTERS STANDARD MODELS

### DC to DC Converters

Converts low voltage DC to high voltage DC. Output regulation approximately 10% for 50%-100% load change. Units may be operated over wide range of input with proportional output voltage change.

Model No.	Input VDC	Output VDC	Output Current	Output Watts Max.	Size Inches	Weight Pounds	Price FOB Nutley
TC617	6	150	75 ma	12	C	2.0	\$ 95
TC111	12	150	100 ma	15	C	2.0	115
TC121	12	250	100 ma	25	D	2.7	125
TC131	12	350	100 ma	35	D	2.7	140
TC211	24	150	100 ma	15	C	2.0	115
TC212	24	150	200 ma	30	D	2.7	125
TC221	24	250	100 ma	25	D	2.7	125
TC222	24	250	200 ma	50	E	4.0	140
TC231	24	350	100 ma	35	D	2.7	140

### DC to AC Inverters

Converts low voltage DC to higher voltage AC. Output voltage is RMS value at rated wattage and frequency. Waveform is approximately square wave for maximum efficiency. Conversion efficiency greater than 85%.

Model No.	Input VDC	Output VAC	Output VA	Frequency Cps	Size Inches	Weight Pounds	Price FOB Nutley
IT616	6	115	15	60	C	2.0	\$70
IT614	6	115	15	400	B	1.0	70
IT126	12	115	25	60	D	2.7	80
IT124	12	115	25	400	C	2.0	80
IT226	24	115	25	60	D	2.7	80
IT224	24	115	25	400	C	2.0	80
IT256	24	115	50	60	E	4.0	95
IT254	24	115	50	400	D	2.7	95

## SPECIAL MODELS

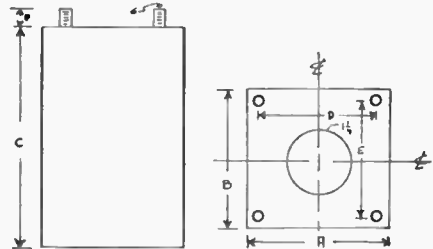
ERA specializes in the design and manufacture of semi-conductor converters and inverters designed in accordance with customer specifications. These designs include single or multiple output types, models with special regulation or stability requirements. Units also designed to meet military specifications or for operation under extreme temperature or physical requirements. Quotations and technical recommendations supplied without obligation.

## DUAL OUTPUT TRANSPACS

For AC operated transistor equipment. Supplies constant current emitter bias and regulated collector bias. Input 105-125 VAC, 60 or 400 cycles. Input regulation better than ±1%. Emitter internal impedance greater than 20,000 ohms. Ripple less than 0.2%. PNP or NPN (specify type desired).

Model No.	Emitter Ma-Max	Collector Volts	Case Size		Weight, Lbs.		Net Price	
			60 Cps	400 Cps	60 Cps	400 Cps	60 Cps	400 Cps
DU1	2	5	AB	AA	0.6	0.5	\$36.00	\$45.00
DU2	3	10	AB	AA	0.6	0.5	36.00	45.00
DU3	5	20	A	AB	1.1	0.6	40.00	50.00
DU3V*	5	0-20	A	AB	1.1	0.6	45.00	55.00

\* Variable, screwdriver adjustment.



### DIMENSIONS

Case Size	A	B	C	D	E	F	G
AA	1 1/4	1 1/4	1 1/4	7/8	7/8	3/8	6/32
AB	1 1/4	1 1/4	2 3/4	1 3/4	1 1/4	3/8	6/32
A	2 1/8	2 1/8	2 3/4	1 3/4	1 3/8	3/8	6/32
B	2 3/8	2 3/8	2 1/4	1 3/4	2 1/8	3/8	6/32
C	2 3/8	2 3/8	3 1/4	1 3/4	2 1/8	3/8	6/32
D	2 3/8	3 1/8	4 1/4	1 3/4	2 1/4	3/8	8/32
E	3 1/4	3 1/4	4 7/8	2 1/8	2 5/8	3/8	8/32
F	3 7/8	3 7/8	4 3/4	3 1/8	3 1/8	3/8	8/32
G	4 1/8	4	4 1/8	3 1/8	3	1/2	1 1/4

## TRANSISTORIZED REGULATED DC POWER SUPPLIES ADJUSTABLE VOLTAGE, LABORATORY AND INDUSTRIAL TYPES

Types listed are intended for 105-125 VAC input, 60 cps. DC output is continuously adjustable zero-max. Line regulation is better than 0.5%. Load regulation is better than 0.5% or 5 ohms internal DC impedance.\* Ripple less than 0.02%. Models numbered 100T and above include a 6.3 VAC, 2 amp. output.

These designs are for both bench and rack mounting and dimensions are sub-multiples of 19 inches, which permits several units to be mounted horizontally in a standard rack.

Model No.	Voltage Range VDC**	Current Ma	Size Inches	Price FOB Plant
50T	0-50	0-150	3 1/2 x 10 3/8 x 6 3/8	\$175.00
50TM	0-50	0-150	3 1/2 x 9 3/8 x 9 1/2	195.00
100T	0-150	0-100	3 1/2 x 9 1/4 x 6 3/8	165.00
100TM	0-150	0-100	3 1/2 x 9 3/8 x 9 1/2	185.00
101T	0-300	0-100	3 1/2 x 10 3/8 x 9 1/2	255.00
101TM	0-300	0-100	3 1/2 x 10 3/8 x 9 1/2	275.00
200T	0-150	0-200	3 1/2 x 9 3/8 x 9 1/2	195.00
200TM	0-150	0-200	3 1/2 x 9 3/8 x 9 1/2	215.00
201T	0-300	0-200	3 1/2 x 10 3/8 x 9 1/2	315.00
201TM	0-300	0-200	3 1/2 x 10 3/8 x 9 1/2	335.00

\* Load regulation specified down to 10% max. output voltage; Models 50T, 50TM DC impedance less than 2 ohms.

\*\* Maximum voltage, specified within 5%.

## HIGH CURRENT STANDARD MODELS

Models listed are designed for 105-125 VAC input, 60-400 cps. Line regulation is within ±0.5%. Load regulation is within ±0.5% (20%-100% load change). Frequency response of regulator extends into high audio frequencies. Ripple less than 0.05% or 5 mv (for 32 v models).

Model No.	Voltage VDC	Current Amps	Size Inches	Price F.O.B. Plant
TR-32-4	6-32	0-4	19 x 9 x 5 1/4	\$375.00
TR-32-8	6-32	0-8	19 x 10 x 8 3/4	410.00
TR-32-12	6-32	0-12	19 x 11 x 10 1/2	495.00
TR150-1	20-150	0-1.0	19 x 9 x 5 1/4	425.00
TR-300-1	170-300	0-1.0	19 x 9 x 8 3/4	605.00

Models listed are stock units. Special designs also available to customers specifications. Write for quotations.



# ELECTRONIC RESEARCH ASSOCIATES, INC.

NUTLEY, NEW JERSEY

## TUBELESS REGULATED DC/AC POWER SUPPLIES

### TUBELESS GENERAL PURPOSE SUPPLY MODEL 312

Model 312 Tubeless Supply is a Combined DC/AC supply ideally suited for all applications where low heat dissipation, long life operation is a requirement. In addition to the tubeless features, this model provides regulated filament and variable AC voltages.

#### SPECIFICATIONS

Input	100-125 VAC, 60 cps.
Output Voltage	0-3/30/300V DC or 0-130V AC
Output Current	250 ma DC or 1.0 amp. AC
Line Regulation	+0.5% change in output for 100-125v AC
Internal Impedance	DC, 10/15/75 ohms, AC (60 cps) 10 ohms
Ripple	Less than 0.05% for DC output
Filament	6.3v AC @ 3 amps, line regulated
Size	Bench and Rack mounting, 8 3/4" Panel
Other Models same as above except as follows:	
MODEL 312H	
Output Current	1 amp DC on 0-3/30 volt range
Internal Impedance	DC Impedance, 2/4/75 ohms
Model 312	Price \$295
Model 312M (metered)	Price \$325
Model 312H	Price \$325
Model 312MH (metered)	Price \$355

### TUBELESS HIGH CURRENT SUPPLY MODEL 30

This Model 30 Tubeless Supply is a portable, variable low voltage high current DC/AC power supply designed especially for high amperage applications. Ideally suited for high power transistor amplifiers, regulated AC or DC filament supply, solenoid and magnetic clutch operation, AC motor control, and all types of high current AC or DC laboratory and factory applications. This supply features constant impedance continuously adjustable output positive or negative polarity.

#### SPECIFICATIONS

Input	100-125 VAC, 60 cps.
Output Voltage	0-30 volts DC or 0-130 volts AC
Output Current	1.5 amperes max., 30 va capacity
Line Regulation	+1% change in output for 100-125 v input
Load Regulation	Internal DC impedance less than 3 ohms
Ripple	Less than 1% for DC output
Size	Hardwood Cabinet 8" x 11" sloping panel
Model 30	Price \$155
Model 30M	Price \$175

## TRANSISTOR TEST EQUIPMENT

### TRANSISTOR COMPARISON TESTER

Tests all types of transistors and diodes simply by depressing the indicated lever switch. Compares a reference unit or equivalent circuit with the transistor under test and yields comparative measurements of  $R_e$ ,  $R_b$ ,  $R_c$ , gain, and stability characteristics. Can be set up for either production "Go, No-Go" tests or quantitative laboratory measurements.

#### SPECIFICATIONS

Types of Tests	Bridge Comparison with Standard
Tests Performed	Forward Diode ( $r_e + r_b$ ) Amplification ( $= \alpha$ ) Reverse Diode ( $r_c + r_b$ ) Stability (Oscillation)
Sweep Voltage	120 cps
DC Bias	NPN or PNP; $I_e$ , 0-10 ma; $I_b$ , 0-100 v
Indicating Meter	4 1/2" meter reads bias and deviation
Size	Hardwood Cabinet 8" x 11" sloping Panel
Model TT11A	Price \$279

### AUTOMATIC TRANSISTOR NF METER

Automatically measures Noise Figure of all types of transistor amplifiers on a continuous reading basis. Just plug in the transistor or amplifier and read Noise Figure directly on the meter. Indispensable for low noise figure selection, optimization of circuit and operating parameters, quality control and production testing, reliability evaluation, and all laboratory and factory Noise Figure applications.

#### SPECIFICATIONS

Noise Figure Range	5 to 65 db
Measurement Freq.	1000 cps center Ft
Type of Reading	Direct Reading
Input Circuit	500 ohm emitter R
Emitter Supply	$I_e$ , 0-1.0/10 MA
Collector Supply	$I_c$ , 0-10/100 volts
Indicating Meters	4 1/2" meters
HARDWOOD CASE 8 3/4" x 19" PANEL 14" DEPTH	
† Other frequencies on special order.	
Model NFT-2	Price \$775
Also Available. Noise Figure Calibrator — Supplies Reference Figures values also calibration and reference. Noise Figures Range 5-60 db in 5 db steps.	
Model NFC-1A	Price \$325

## TUBELESS DUAL TRANSISTOR SUPPLY MODEL 110

The Model 110 series are the well known ERA Dual Transistor supplies used by leading technical organizations throughout the world. Designed for transistors and other multi-polarity low voltage applications, these supplies feature dual vernier controlled DC outputs for any combination of emitter or collector bias, or constant current, positive or negative.

#### SPECIFICATIONS

Input	95-125 VAC, 60 cps
Dual Voltage Outputs	#1, 0-1/10/100 VDC; #2, 0-100 VDC
Current (Max.)	Either output, 100 MA
Constant Current Output	Dual 0-5 MA, 20,000 ohms impedance
Ripple	Less than 0.01%
Regulation (Input)	+1% change in output for 95-125 VAC
Internal Imped., DC	Constant Voltage, 13/20/100 ohms, max.
Size	19" Rack and Bench Mounting, Panel 5 3/4"
Other Models same as above except as follows:	
MODEL 110DC	
Output	#2, 0-1/10/100 VDC
Model 110C	Price \$195
Model 110DC	Price \$205
Model 110MC	Price \$240
Model 110DMC	Price \$260
(Metered)	

## CONSTANT CURRENT GENERATOR MODEL CC250

The Model CC250 is an electronically regulated constant current supply which provides continuously adjustable constant current over a wide range of load variation. Typical applications include transistor biasing and processing, electroplating, solenoid operation, instrument calibration, coulometric titrations, medical therapy, and many other low, medium, or high constant current uses.

#### SPECIFICATIONS

Input	100-125 VAC, 60 cps.
Constant Current	Adjustable 5-250 MA
Current Regulation	Constant within +2% for 0-250 VDC output
Ripple	Less than 0.5%
Line Regulation	+1% change in output for 100-125 VAC input
Metering	4 1/2" current meter
Size	19" Rack and Bench Mounting 8 3/4" panel
Model CC250	Price \$385
Also Model CC60 Constant Current Converter 0-60 MA	
Price \$ 85	

## TRANSISTOR ALPHA-BETA TESTER

Gives direct reading of the dynamic values of  $\alpha$ ,  $\beta$  for all types of transistors, as a function of emitter and collector bias. Also tests for a cut-off and value of  $\alpha$  at high frequencies. Particularly convenient for quick checking of transistors in experimental set-ups. Ideal for both production testing and laboratory measurement.

#### SPECIFICATIONS

Alpha Range	0-0.99
Beta Range	0-100
Accuracy	5%, full scale
Alpha Frequency	Internal, 240 cps; External Osc, 5 mc max.
Alpha Cut-Off Range	2 mc max. (External Osc.)
DC Bias	NPN or PNP; $I_e$ , 0-10 ma; $I_c$ , 0-100 volts
Indicating Meter	4 1/4" meter reads Alpha, DC bias
Size	Hardwood cabinet, 8" x 11" sloping panel
Model AT10A	Price \$385

## TRANSISTOR APPLICATION POWER SUPPLIES

### TRANSISTOR LABORATORY SUPPLY MODEL 210

#### SPECIFICATIONS

Input	95-125 VAC, 60 cps
Line Regulation	+1% change in output for 95-125 VAC
Dual Voltage Outputs	#1, 0-1/10/100 VDC; #2, 0-100 VDC
Current (Max.)	Either output 100 MA
Internal Impedance (DC)	13/20/100 ohms max.
Dual Constant Current Outputs	#3, 2-30 MA; #4, 2-30 MA
Current Regulation	Within +1% for output 0-150 VDC
Ripple	Less than 0.05%
Size	19" Rack and Bench Mounting; Panel 8 3/4"
Model 210H same as above except as follows:	
Dual Voltage Outputs	#1, 0-30 VDC; #2, 0-60 VDC
Current (Max.)	Either output 1.5 amps. or 30 VA
Internal Impedance (DC)	Less than 3 ohms
Model 210	Price \$365
Model 210H	Price \$465

## TUBELESS DUAL TRANSISTOR SUPPLY MODEL 310

Input	100-125 VAC, 60 cps
Dual Voltage Outputs	#1, 0-30 VDC; #2, 0-30 VDC
Current (Max.)	Either output 1.5 amperes or 30 VA
Ripple	Less than 0.05%
Regulation (Input)	+1% change in output for 100-125 v input
Internal Impedance (DC)	Less than 3 ohms
Shunt Impedance (AC)	Less than 1.0 ohms at 60 cps
Size	19" Bench and Rack Mounting, 8 3/4" panel
Model 310	Price \$295
Model 310M	Price \$335

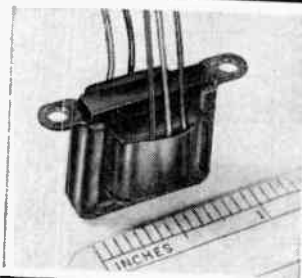
CHICAGO STANDARD TRANSFORMER CORPORATION

# STANCOR TRANSFORMERS AND RELATED COMPONENTS



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## TRANSISTOR TYPE TRANSFORMERS

Stancor Transformer TA-5, illustrated here is typical of the design and construction of the transistor transformer listed below. They are designed to match the most popular and most commonly available types of transistor in use today. They have extensive applications in original equipment and replacement transformers in many of the transistor circuits used in portable radios and other commercial equipment.

### TRANSISTOR AUDIO TRANSFORMER

Part No.	Application	Imp. in Ohms Pri.	Imp. in Ohms Sec.	Max. Pri. DC Ma.	DC Res. Pri.	DC Res. Sec.	Power in Watts	Ht.	Base Area	Mtg. Ctrs.	Mtg. Type	Shpg. Wt.	List Price
TA-1	Input	600 C.T.	10	20	42	.8	.05	1 1/8	1 1/8 x 1 1/8	1 1/8	A	1 oz.	\$3.22
TA-2	Interstage	100 C.T.	10 C.T.	100	4.3	.8	.25	1 1/8	2 1/8 x 1 3/8	1 1/8	A	3 oz.	3.22
TA-3	Interstage	100	1000 C.T.	100	5.8	45	.25	1 3/8	2 1/8 x 1 3/8	2	A	3 oz.	3.22
TA-4	Interstage	500 C.T.	5000 C.T.	12	3 1/2	250	.03	1 3/8	2 1/8 x 1 3/8	2	A	3 oz.	4.22
TA-5	Driver	1000	200 C.T.	10	400	115	.05	3/4	1 1/2 x 1 1/2	1 1/8	A	2 oz.	7.99
TA-6	Driver	2000	200 C.T.	5	720	115	.05	3/4	1 1/2 x 1 1/2	1 1/8	A	2 oz.	9.05
TA-7	Driver	100	100 C.T.	100	12	12	.5	1 1/8	1 1/8 x 1 3/8	2 3/8	A	5 oz.	3.22
TA-8	Output	9800	15	2	640	2	.05	1 1/8	2 1/8 x 1 3/8	2	A	2 oz.	7.22
TA-9	Output	1000	4/8/16	10	180	3.5	.2	3/4	1 1/8 x 3/4	1 3/8	A	1 oz.	8.27
TA-10	Output	2000 C.T.	4/8/16	—	250	4	.2	3/4	1 1/8 x 3/4	1 3/8	A	1 oz.	9.05
TA-11	Output	48 C.T.	8/16	275	5	1.5	5	2	3 1/8 x 1 3/8	2 3/8	A	1 lb.	4.66
TA-12	Output	20 C.T.	8	500	.55	.35	10	1 3/8	1 1/8 x 1 1/2	2	A	4 oz.	3.22
TA-13	Driver	200 C.T.	400 C.T.	10	—	—	.6	3	2 1/8 x 2 3/8	2 3/8 x 1 1/2	TD	1 1/2 lb.	6.83
TA-14	Output	24 C.T.	16/4 C.T.†	200	—	—	10	4 1/4	4 3/8 x 3 1/8	3 3/8 x 2 3/4	TD	6 1/4 lb.	15.98

† 2 secondaries 16 ohm series, 4 ohms parallel.

### TRANSISTOR POWER TRANSFORMERS—Primary 117 volts, 60 cycle operation

Part No.	Plate Supply AC Volts	No. 1 DC Ma	Plate Supply AC Volts	No. 2 DC Ma	Height	Base Area	Mtg. Type	Shpg. Wt.	List Price
*TP-1	13 or 18	900	13 or 18	900	3"	3x2 1/2	C	2 3/4	\$8.27

\* For bridge rectifier systems.

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# HI-FI & TV TRANSFORMERS

CHICAGO STANDARD TRANSFORMER CORPORATION

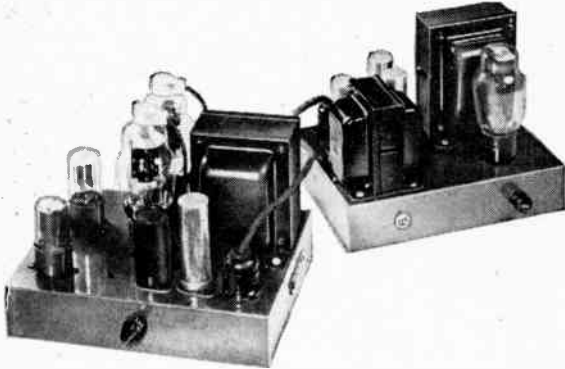
## TELEVISION COMPONENTS

Almost 300 TV replacement transformers and related components, the most complete line in the industry, are available from Chicago Standard. These include over 140 exact replacement flybacks and almost 60 power transformers, as well as yokes, vertical outputs, width and linearity coils

and many other popular TV replacement units.

Ask your distributor for a free copy of the latest edition of the Stancor TV Transformer Catalog and Replacement Guide listing these units and replacement data on thousands of television sets.

## STANCOR ULTRA-LINEAR HIGH-FIDELITY AMPLIFIER

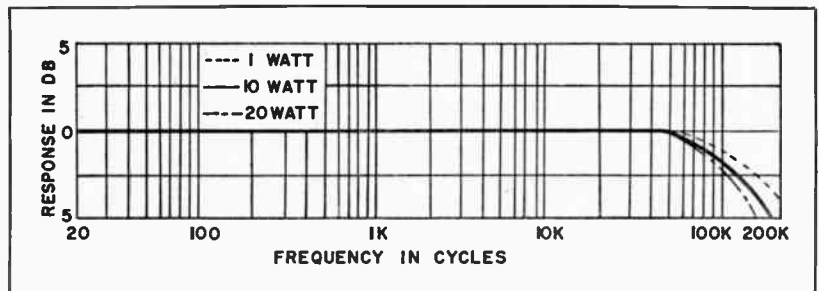
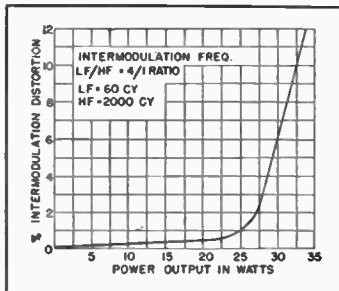


Now you can build an Ultra-Linear version of the famous Stancor Williamson high fidelity amplifier, using Stancor Ultra-Linear Output Transformer A-8072. For complete construction details see Stancor Bulletin 479.

The original Stancor-Williamson amplifier can be converted to Ultra-Linear operation by a few simple circuit changes and the installation of the A-8072. Conversion instructions are included in Bulletin 479.

Stancor supplies a set of two completely punched and finished chassis for the Ultra-Linear Amplifier; Chassis Set WM-8, \$5.75 net. In addition to Ultra-Linear Output Transformer A-8072, \$15.00 net, this amplifier uses power transformer PC8412, \$8.58 net and filter choke C-1411, \$4.29 net. The other components used cost about \$25.00. They are all stock parts and can be readily obtained from your Stancor distributor.

Write for your FREE copy of Bulletin 479.



## HIGH FIDELITY OUTPUT TRANSFORMERS

Better than  $\pm 1$  db from 20 to 20,000 cps.

These Stancor output transformers combine the most advanced design and manufacturing practices to provide outstanding audio response at low cost. Maximum power level is conservatively rated at 50 watts. They are designed to match the most popular types of output tubes to speaker or line impedances.

Extensively interleaved "trifilar" windings, extremely tight coupling and careful electrical balance result in audio fidelity to please the most critical specialist. Inasmuch as elaborate shielding is not required at the audio output level, an inexpensive, but thoroughly practical, Type C mounting is used. Shipping weight is 6.5 lbs.

Part No.	Pri. Imp. (P-P) in Ohms	Sec. Imp.* in Ohms	Max. Pri. D.C. Per Side	Audio Watts	Height Overall	Base Area	List Price
A-8050	1500	8, 16	200	50	4 1/4"	3 1/4" x 4 3/4"	\$22.70
A-8051	2500	8, 16	150	50	4 1/4"	3 1/4" x 4 3/4"	22.70
A-8052	3000	8, 16	175	50	4 1/4"	3 1/4" x 4 3/4"	22.70
A-8053	5000	8, 16	150	50	4 1/4"	3 1/4" x 4 3/4"	22.70
A-8054	9000	8, 16	100	50	4 1/4"	3 1/4" x 4 3/4"	22.70
A-8056	6600	8, 16	125	50	4 1/4"	3 1/4" x 4 3/4"	22.70
A-8060	1500	500	200	50	4 1/4"	3 1/4" x 4 3/4"	22.70
A-8061	2500	500	150	50	4 1/4"	3 1/4" x 4 3/4"	22.70
A-8062	3000	500	175	50	4 1/4"	3 1/4" x 4 3/4"	22.70
A-8063	5000	500	150	50	4 1/4"	3 1/4" x 4 3/4"	22.70
A-8064	9000	500	100	50	4 1/4"	3 1/4" x 4 3/4"	22.70
A-8072†	7600	4, 8, 16	100	25	3 1/2"	3 1/4" x 4 3/4"	27.75
A-8066	6600	500	125	50	4 1/4"	3 1/4" x 4 3/4"	22.70

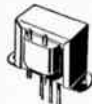
\*Where more than one secondary impedance is shown, only one value is to be used at any time.  
†Primary provided with seven taps for Ultra-Linear application.



A



C



Q



J



KC



FS



FK

# DRIVER TRANSFORMERS



CHICAGO STANDARD TRANSFORMER CORPORATION

## SINGLE PLATE TO PUSH-PULL GRIDS

Part No.	Pri. Impedance in Ohms	Pri./ $\frac{1}{2}$ Sec. Ratio	Core	Max. Pri. D.C.	Mtg.	Height Overall	Base Area	Shpg. Wt. in Lbs.	List Price
A-4713	10,000	2:1	$\frac{5}{8}$ " x $\frac{5}{8}$ "	30 ma.	A	1 $\frac{5}{8}$ "	2 $\frac{1}{8}$ " x 1 $\frac{1}{8}$ "	0.7	\$3.33
A-4752	10,000	2/1.5/1:1	$\frac{3}{4}$ " x $\frac{3}{4}$ "	40 ma.	A	2"	3 $\frac{1}{4}$ " x 1 $\frac{3}{4}$ "	1.2	4.88
A-4722	10,000	2:1	$\frac{4}{3}$ " x 1"	30 ma.	TD	2 $\frac{1}{16}$ "	2 $\frac{3}{4}$ " x 2 $\frac{3}{8}$ "	1.7	7.22
A-4292	10,000	2.5:1	$\frac{7}{8}$ " x $\frac{7}{8}$ "	20 ma.	A	1 $\frac{5}{8}$ "	2 $\frac{1}{8}$ " x 1 $\frac{1}{8}$ "	0.7	3.50
A-4723	10,000	3:1	$\frac{5}{8}$ " x $\frac{5}{8}$ "	30 ma.	A	1 $\frac{5}{8}$ "	2 $\frac{1}{8}$ " x 1 $\frac{1}{8}$ "	0.7	3.33
A-4210	1,500 to 5,000	3:1	1" x 1"	40 ma.	C	3 $\frac{1}{16}$ "	2 $\frac{5}{8}$ " x 2 $\frac{5}{8}$ "	2.4	8.27
A-4702	1,500 to 5,000	5:1	1" x 1"	80 ma.	C	3 $\frac{1}{16}$ "	2 $\frac{5}{8}$ " x 2 $\frac{5}{8}$ "	2.5	8.16

## PUSH-PULL PLATES TO PUSH-PULL GRIDS

Part No.	Pri. Imp. (P.P.) in Ohms	Pri./ $\frac{1}{2}$ Sec. Ratio	Core	Max. Pri. D.C.	Mtg.	Height Overall	Base Area	Shpg. Wt. in Lbs.	List Price
A-4208†	20,000 to 80,000	2.8:1	1" x 1"	15 ma.	C	3 $\frac{1}{16}$ "	2 $\frac{5}{8}$ " x 2 $\frac{5}{8}$ "	2.5	\$ 9.27
A-4701‡	20,000	3:1	1" x 1"	25 ma.	C	3 $\frac{1}{16}$ "	2 $\frac{5}{8}$ " x 2 $\frac{5}{8}$ "	2.7	10.66
A-4212	1,500 to 5,000	3.2:1	1" x 1"	50 ma.	C	3 $\frac{1}{16}$ "	2 $\frac{5}{8}$ " x 2 $\frac{5}{8}$ "	2.5	8.66
A-4703‡	3,000 to 10,000	5:1	1 $\frac{1}{8}$ " x 1 $\frac{1}{8}$ "	95 ma.	C	3 $\frac{1}{8}$ "	3" x 3 $\frac{1}{8}$ "	3.7	10.55

## POLY-PEDANCE DRIVER MULTI-TAPPED UNITS FOR USE IN CIRCUITS WHERE THE OPTIMUM RATIO CANNOT BE PREDETERMINED.

Driver circuit changes often require new transformers. Many times it is impossible to match correctly tubes involved with a specific transformer, with high distortion resulting. *Poly-Pedance* units solve that problem; three transformers with the maximum number of usable ratios will match the driver tubes to any Class B modulator grid circuit without exceeding the power capabilities of the driver tubes.

Part No.	Application and Ratio Pri./ $\frac{1}{2}$ Sec.	Max. D.C.	Audio Watts	Mtg.	Height Overall	Base Area	Shpg. Wt. in Lbs.	List Price
A-4761	Driver to Class "B" Grids 1.25:1/ 1.4:1/ 1.6:1/ 1.8:1/ 2:1/ 2.2:1/ 2.4:1	Pri—150 ma. Sec—100 ma.	15	CD	3 $\frac{1}{16}$ "	2 $\frac{5}{8}$ " x 3 $\frac{5}{8}$ "	3.4	\$18.48
A-4762	Driver to Class "B" Grids 2.6:1/ 3:1/ 3.2:1/ 3.4:1/ 4:1/ 4.5:1/ 5:1	Pri—150 ma. Sec—180 ma.	15	CD	3 $\frac{1}{16}$ "	2 $\frac{5}{8}$ " x 3 $\frac{5}{8}$ "	2.7	17.43
A-4763	Driver to Class "B" Grids 1.25:1/ 1.5:1/ 1.75:1/ 2:1/ 2.25:1/ 3.2:1	Pri—225 ma. Sec—280 ma.	30	CD	3 $\frac{5}{8}$ "	3" x 4"	4.3	21.59

## POLY-PEDANCE LINE DRIVER MULTI-TAPPED UNIT TO MATCH ALL COMMON LINE IMPEDANCES TO GRID CIRCUIT OF MODULATOR OR CLASS "B" AMPLIFIER.

Designed with pie wound coils to assure low leakage inductance, low resistance and low capacity, these two units will easily match all common line impedances to any modulator grid circuit. Individually boxed with complete instructions.

Part No.	Application and Ratio Pri./ $\frac{1}{2}$ Sec.	Max. D.C.	Audio Watts	Mtg.	Height Overall	Base Area	Shpg. Wt. in Lbs.	List Price
A-4765	Line to Grid 1:0.75/ 1:0.85/ 1:1/ 1:1.25/ 1:1.45/ 1:1.75/ 1:2/ 1:2.25/ 1:2.5/ 1:2.75/ 1:3.15	Pri—180 ma. Sec—100 ma.	15	CD	3 $\frac{1}{16}$ "	2 $\frac{5}{8}$ " x 3 $\frac{5}{8}$ "	3.2	\$19.15

## AUDIO CHOKES

Audio reactors are rated at 2 volts, 200 cycles, with maximum D.C. in windings. Tolerance of plus 15% is maintained on all ratings.

Part No.	Rated Inductance	Max. D.C.	D.C. Res. in Ohms	Test Volts	Core	Mtg.	Height Overall	Base Area	Shpg. Wt. in Lbs.	List Price
C-1003	16 hy at 50 ma.	50 ma.	580	1500	$\frac{3}{4}$ " x $\frac{3}{4}$ "	A	2"	3 $\frac{1}{4}$ " x 1 $\frac{3}{4}$ "	1.1	\$2.94
C-2301	135 hy at 5 ma.	10 ma.	6500	1500	$\frac{4}{4}$ " x 1"	TD	2 $\frac{1}{16}$ "	2 $\frac{3}{4}$ " x 2 $\frac{3}{8}$ "	1.7	7.05

†These units have split secondaries for individual bias adjustment and/or use of inverse feedback.  
‡To be removed from next catalog.





# INPUT-INTERSTAGE

## CHICAGO STANDARD TRANSFORMER CORPORATION

### MICROPHONE OR LINE TO LINE

Part No.	Impedance In Ohms	Mtg.	Height Overall	Base Area	Shpt. In Lbs.	List Price
A-4350#	Pri-500/333/200/125/50 Sec-500/333/200/125/50	Q	2"	3 1/4" x 1 3/4"	1.0	\$ 7.22
A-4407#†	Pri-500/333/200/125/50 Sec-500/333/200/125/50	D	3 1/8"	2 3/8" x 3 1/4"	2.4	14.54

### MICROPHONE PICKUP OR LINE TO GRID

Part No.	Application	Impedance in Ohms	Turns Ratio	Mtg.	Height Overall	Base Area	Shpg. Wt. in Lbs.	List Price
A-4705	S. B. Mic. to S. Grid	Pri-200/70 Sec-80,000	1:20	A	1 3/8"	2 3/8" x 1 3/8"	0.4	\$3.55
A-4706	S. B. Mic. to S. Grid	Pri-100 Sec-60,000	1:24.5	A	1 3/8"	2 3/8" x 1 1/2"	0.5	3.61
A-4708	D. B. Mic. to S. Grid	Pri-200 CT Sec-57,000	1:17	J	2"	2 3/8" x 1 5/8"	0.7	4.88
A-4742	S. B. Mic. to P.P. Grids	Pri-100 Sec-400,000 CT	1:64	S	2 1/8"	2 1/8" x 1 3/4"	1.2	5.22
A-4747	S. B. Mic. or Low Imp. Line to S. Grid	Pri-10 Sec-1,300,000	1:137	VE	1 1/8"	1 1/8" x 1 1/4"	1 1/2" 0.5	4.00
A-4351#	Mic. or Line to S. Grid	Pri-500/333/200/125/50 Sec-89,000	1:13.3	TD	2 11/16"	2 3/4" x 2 3/16"	1.4	7.71
A-4352#	Mic. or Line to S. Grid	Pri-500/333/200/125/50 Sec-89,000	1:13.3	Q	2"	3 1/4" x 1 3/4"	1.0	6.71
A-4709	Dynamic Mic. or Pickup to S. Grid	Pri-30/15/8/4 Sec-106,000	1:60	TD	2 11/16"	2 3/4" x 2 3/16"	1.7	8.66

### INTERCOMMUNICATOR AND TRANSCEIVER

Part No.	Application	Impedance in Ohms	Max. Watts	Mtg.	Height Overall	Base Area	Shpg. Wt. in Lbs.	List Price
A-4744	Intercom. input	Pri-4 Sec-25,000		VE	1 3/8"	2 3/8" x 1 1/2"	0.5	\$3.11
A-4748	Intercom. input	Pri-45 or 50 Sec-50,000		A	1 3/8"	2 3/8" x 1 3/4"	1 1/2" 0.4	3.44
A-4749	Telephone Patch Circuit	Pri-10,000 Sec-500 each (2 secs.)		TD	1 13/16"	1 1/2" x 2 1/4"	1.0	7.22
A-8090	Line to Voice Coil	Pri-45-50 Sec-3-4, 6-8	3	QL	1 3/8"	2 3/8" x 1 1/2"	0.5	2.83
A-8091	Line to Voice Coil	Pri-45-50 Sec-3-4, 6-8	8	QL	1 3/8"	2 3/8" x 1 5/8"	0.7	3.11
A-3833	Transceiver Input Mic. and Plate to Grid	Pri-200 and 5,000 Sec-60,000	5	A	1 5/8"	2 1/8" x 1 1/2"	0.7	4.77
A-3836	Transceiver Output. Plate to Low or High impedance phones	Pri-10,000 Sec-50 and 2,000	5	A	1 5/8"	2 1/8" x 1 1/2"	0.7	4.66
A-4749	Telephone Patch Circuit	Pri-10,000 Sec-500		TD	1 13/16"	1 1/2" x 2 1/4"	1.0	7.22

### SINGLE PLATE TO SINGLE GRID—FOR 7,000-20,000 OHM PLATE IMPEDANCES

Part No.	Turns Ratio	Core	Max. Pri. D.C.	Mtg.	Height Overall	Base Area	Shpg. Wt. in Lbs.	List Price
A-53	1:3	1/2" x 1/2"	10 ma.	A	1 3/8"	2 3/8" x 1 1/2"	0.5	\$2.94

### SINGLE PLATE TO PUSH-PULL GRIDS—FOR 7,000-15,000 OHM PLATE IMPEDANCES

Part No.	Turns Ratio	Core	Max. Pri. D.C.	Mtg.	Height Overall	Base Area	Shpg. Wt. in Lbs.	List Price
A-52-C	1:2	1/2" x 1/2"	10 ma.	A	1 3/8"	2 3/8" x 1 3/8"	0.4	\$3.05
A-62-C	1:2	5/8" x 5/8"	10 ma.	A	1 5/8"	2 3/8" x 1 1/2"	0.7	3.44
A-4745	1:2	3/4" x 1"	10 ma.	TD	2 11/16"	2 3/4" x 2 3/16"	1.7	9.44
Recommended for use in super-regenerative circuits. Has a static shield between pri. and sec. windings.								
A-53-C	1:3	1/2" x 1/2"	10 ma.	A	1 3/8"	2 3/8" x 1 3/8"	0.5	3.00
A-63-C	1:3	5/8" x 5/8"	10 ma.	A	1 5/8"	2 3/8" x 1 1/2"	0.7	3.39
A-73-C	1:3	3/4" x 3/4"	10 ma.	A	2"	3 1/4" x 1 3/4"	1.0	4.22
A-4719	1:3	3/4" x 1"	10 ma.	TD	2 11/16"	2 3/4" x 2 3/16"	1.7	8.27
A-64-C	1:4	5/8" x 5/8"	10 ma.	A	2"	2 3/4" x 1 3/4"	0.7	4.05

### MULTI-PURPOSE INTERSTAGE—SPLIT SECONDARIES

May be used as a single plate to single grid, single plate to push-pull grid, or push-pull plate to push-pull grid interstate transformers. Overall ratios are 3:1, however, primaries are center-tapped and secondaries have split windings, thus providing ratios of 1:1, 3:1 and 6:1 in either step-up or step-down applications. ‡ Has split secondary.

Part No.	Turns Ratio	Core	Max. Pri. D.C.	Mtg.	Height Overall	Base Area	Shpg. Wt. in Lbs.	List Price
A-4774	1:3	3/4" x 1"	10 ma.	S	2 1/8"	2 1/4" x 1 3/4"	1.2	\$5.11
A-4773	1:3	3/4" x 1"	10 ma.	TD	2 11/16"	2 3/4" x 2 3/16"	1.7	8.66

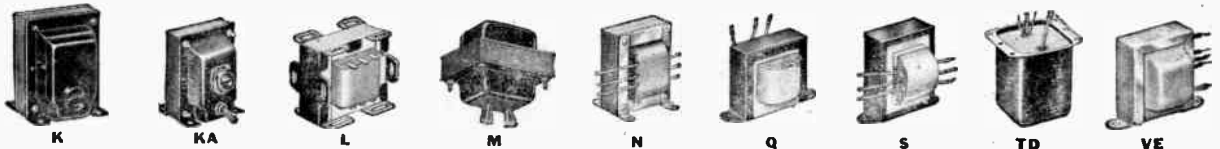
### PUSH-PULL PLATES TO PUSH-PULL GRIDS—FOR 7,000-15,000 OHM PLATE IMPEDANCES

A-4711	1:1	5/8" x 5/8"	10 ma.	A	1 5/8"	2 3/8" x 1 1/2"	0.7	\$4.05
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### PUSH-PULL PLATES TO PARALLEL OR PUSH-PULL GRIDS—FOR 7,000-20,000 OHM PLATE IMPEDANCES

A-4208	1:1.4	1" x 1"	15 ma.	C	3 1/8"	2 5/8" x 2 5/8"	2.5	\$9.27
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#Has a dual primary—when properly connected the 500 and 200 ohm sections are center tapped. ‡Has split secondary.  
 †Has a static shield between primary and secondary windings. ‡Designates part numbers to be removed from next catalog.



# OUTPUT TRANSFORMERS



CHICAGO STANDARD TRANSFORMER CORPORATION

## SINGLE PLATE TO VOICE COIL

Part No.	Application	Max. Pri. D.C.	Typical Output Tubes	Class	Audio Watts	Mtg.	Height Overall	Base Area	Shpg. Wt. in Lbs.	List Price
A-3332	2,000 ohms to 3.2 ohms	50 ma.	25B5, 25B6, 25L6, 35A5, 35L6, 50L6	A	3	A	1 3/8"	2 3/8" x 1"	0.4	\$1.78
A-3876	2,000 ohms to 4 ohms	60 ma.	2A3, 6A3, 6B4, 6W6, 6Y6, 25AC5, 25B5, 25B6, 25L6, 35A5, 35L6, 50L6	A	5	A	1 3/8"	2 3/8" x 1 3/8"	0.4	2.11
A-3328	4,000 ohms to 3.5 ohms	10 ma.	1S4, 3S4	A	3	A	1 3/16"	2 1/8" x 1"	0.4	2.28
A-2203	4,000 ohms to 8 ohms	40 ma.	43, 45, 48, 12A5, 25A6	A	5	A	1 3/8"	2 3/8" x 1 5/8"	0.7	4.11
A-3877	5,000 ohms to 4 ohms	40 ma.	43, 39, 6V6, 7C5, 25A5	A	5	A	1 3/8"	2 1/8" x 1 3/8"	0.4	2.22
A-3310	5,000 ohms to 500/15/8/4 ohms	55 ma.	45, 6L6, 6V6, 25A6, 25A7	A	20	C	3 3/8"	2 5/8" x 2 5/8"	2.5	8.94
A-3878	7,000 ohms to 4 ohms	30 ma.	20, 31, 33, 42, 2A5, 6AC5, 6B5, 6F6, 6K6, 6N6, 7B5	A	5	A	1 3/8"	2 3/8" x 1 3/8"	0.4	2.16
A-2313	7,000 ohms to 8 ohms	40 ma.	33, 41, 42, 47, 59, 89, 2A5, 6AC5, 6F6, 6K6, 6N6, 7B5	A	10	A	2"	3 1/4" x 1 3/4"	1.0	3.77
A-8114	7,600 ohms to 3.2 ohms	32 ma.	33, 41, 42, 47, 59, 89, 2A5, 6AC5, 6F6, 6K6, 6N6, 7B5	A	5	A	1 3/8"	2 3/8" x 1 5/8"	0.4	2.94
A-3329	8,000 ohms to 3.5 ohms	10 ma.	1C5-GT, 1G5-G, 1Q5-GT/G, 1S4, 3S4	A	3	A	1 3/16"	2 1/8" x 1"	0.4	2.11
A-3879	10,000 ohms to 4 ohms	30 ma.	1J6, 3C5, 6A4, 6C6, 6N7	A	5	A	1 3/8"	2 3/8" x 1 3/8"	0.4	2.11
A-3881	15,000 ohms to 4 ohms	10 ma.	1D8, 1E7, 1F4, 1F5, 1J6, 1T5, 6V7, 6Y7, 12A7	A	5	A	1 3/8"	2 3/8" x 1 3/8"	0.4	2.39
A-3327	25,000 ohms to 4 ohms	5 ma.	1A5, 1D8-GT, 1F4, 1F5-G, 1LA4, 1LB4, 1N6-G	A	5	A	1 3/8"	2 3/8" x 1 3/8"	0.4	2.72

## PUSH-PULL PLATES TO VOICE COIL

A-3802	3,800 3,300 to 500/250/8/4 ohms	250 ma.	45, 6L6, Par. 6L6	AB2, AB1	75	C	4 3/4"	4" x 3 7/8"	7.9	\$16.76
A-3851§	4,400 ohms to 500/250/15/8/4 ohms	70 ma.	6L6	AB1	30	C	3 5/8"	3" x 3 1/8"	3.6	11.99
A-3872	5,000 ohms to 15/8/4 ohms	75 ma.	45, 2A3, 6A3, 6L6	AB	18	TD	2 1/16"	2 3/8" x 2 3/8"	1.7	7.77
A-3800	5,000 ohms to 500/250/15/8/4 ohms	80 ma.	45, 2A3, 6A3, 6L6	AB	30	C	3 5/8"	3" x 3 3/8"	3.7	10.27
A-3307	6,000 ohms to 500/15/8/4 ohms	100 ma.	46, 59, 42, 2A5, 6F6, Par. 53, 6A6, 6N7	B, AB2	30	C	3 5/8"	3" x 3 3/8"	3.5	12.54
A-3801	6,600 ohms to 500/250/15/8/4 ohms	150 ma.	6L6	AB1	35	C	4"	3 1/4" x 3 3/8"	5.8	12.32
A-3835	9,000 ohms to 500/250/15/8/4 ohms	150 ma.	6L6	AB1	35	C	4"	3 1/4" x 3 3/8"	4.5	14.10
A-3304	10,000/7,000 ohms to 500/15/8/4 ohms	60 ma.	45, 6V6, 6AC5	AB	25	C	3 1/8"	2 5/8" x 2 5/8"	2.7	10.71
A-3311	10,000 ohms to 500/15/8/4 ohms	70 ma.	6F6, 6V6, 6AC5	AB	25	C	3 5/8"	3" x 3 1/4"	3.5	10.10
A-3831	10,000 ohms to 8/4/2 ohms	40 ma.	30, 49	AB	5	A	1 5/8"	2" x 1 1/2"	0.7	4.00
A-3335	10,000 ohms to 6-8/3-2-4 ohms	40 ma.	10	S	2 1/16"	2 1/16"	2 1/4" x 2 3/8"	1.0	4.88	
A-2312	14,000 ohms to 4 ohms	40 ma.	33, 41, 42, 47, 49, 2A5, 6F6, 6K6, 7B5	AB	10	A	2"	3 1/4" x 1 3/4"	1.0	3.89
A-3496	14,000 ohms to 4 ohms	25 ma.	33, 41, 42, 47, 49, 2A5, 6F6, 6K6, 7B5	AB	5	A	1 3/8"	2 3/8" x 1 3/8"	0.4	3.55
A-3303	14,000 ohms to 500/15/8/4 ohms	55 ma.	41, 42, 47, 59, 89, 2A5, 6F6, 6K6, 7B5	AB	20	C	3 1/8"	2 5/8" x 2 5/8"	2.7	10.88
A-3857	25,000 ohms to 4 ohms	10 ma.	1F4, 1F5, 1J5, 1T5, 6G6, 12A7, 950	A	5	A	1 3/8"	2 3/8" x 1 3/8"	0.4	2.83

## HUM-REDUCING TRANSFORMERS, Single Plate to Voice Coil

A-3330	†2,000 ohms to 3.5 ohms	60 ma.			5	A	1 3/8"	2 3/8" x 1 3/8"	2 0.4	\$3.05
A-3336	‡2,500 ohms to 3.5 ohms	50 ma.			5	A	1 3/8"	2 3/8" x 1 3/8"	2 0.4	2.94

## CRYSTAL RECORDER OUTPUT

Part No.	Application	Max. Pri. D.C.	Audio Watts	Core Size	Mtg.	Height Overall	Base Area	Shpg. Wt. in Lbs.	List Price	
A-3859	Push-pull 10,000 ohm plates to 70,000 ohm crystal cutter OR 4 ohm voice coil	30 ma. ea.	1/2	5	3/4" x 3/4"	A	2"	3 1/4" x 1 3/4"	1.0	\$7.10
A-3860	Push-pull 10,000 ohm plates to 70,000 ohm crystal cutter AND 4 ohm voice coil	35 ma. ea.	1/2	10	3/8" x 3/8"	A	2 3/4"	3 3/4" x 2 1/4"	1.5	7.99

‡ Has tapped primary for use in hum-reducing circuit. § This unit has a tertiary winding to provide 10% inverse feedback.  
 † Designates part number to be removed from next catalog. † Has a 4.5% primary tap.



CD



KA



L



M



N



Q



S



TD



W1-2



# OUTPUT TRANSFORMERS

CHICAGO STANDARD TRANSFORMER CORPORATION

## UNIVERSAL OUTPUT

Part No.	Application	Max. Pri. D.C.	Audio Watts	Mtg.	Height Overall	Base Area	Shpg. Wt. in Lbs.	List Price
A-3856	Single or Push-pull plates (4,000 to 14,000 ohms) to voice coil	35 ma.	4	Q	1 3/8"	2 3/8" x 1 3/8"	0.4	\$3.61
A-3822	Single plate (7,000 to 10,000 ohms) to voice coil	35 ma.	4	Q	1 3/8"	2 3/8" x 1 3/8"	0.4	3.05
A-3848	Single plate (7,000 to 16,000 ohms) to voice coil	10 ma.	5	Q	1 3/8"	2 3/8" x 1 3/8"	0.4	4.33
A-3823	Single or Push-pull plates (4,000 to 14,000 ohms) to voice coil	40 ma.	8	Q	1 3/8"	2 3/8" x 1 3/8"	0.7	3.89
A-3850	Single or Push-pull plates (4,000 to 14,000 ohms) to voice coil	40 ma.	8	J	2"	2 3/8" x 1 3/8"	0.7	4.38
A-3825	Single plate (1,500 to 4,500 ohms) to voice coil	75 ma.	8	Q	2"	3 1/4" x 1 3/8"	0.9	4.38
A-3824	Single or Push-pull plates (6,000 to 10,000 ohms) to voice coil	75 ma.	8	Q	2"	3 1/4" x 2"	1.4	5.49
A-3849	Single plate (1,500 to 10,000 ohms) to voice coil	55 ma.	10	Q	1 3/8"	2 7/8" x 1 3/8"	0.7	3.72
A-3880	Push-pull plates (4,000 to 14,000 ohms) to voice coil	40 ma. ea. 1/2	15	Q	2 3/8"	3 3/4" x 2 1/4"	1.7	6.60
A-2855	Push-pull plates (4,000 to 14,000 ohms) to voice coil	50 ma. ea. 1/2	15	L	2 1/8"	2 3/8" x 2 3/8"	1.0	5.88
A-3890	Push-pull plates (4,000 to 14,000 ohms) to voice coil	50 ma. ea. 1/2	15	TD	2 1/8"	2 3/8" x 2 3/8"	1.5	9.05
A-3852	Push-pull plates (4,000 to 14,000 ohms) to voice coil	40 ma. ea. 1/2	18	J	2 3/8"	2 3/8" x 2"	1.3	4.83
A-3870	Push-pull plates (4,000 to 14,000 ohms) to voice coil	50 ma. ea. 1/2	18	Q	2"	3 1/4" x 2"	1.3	5.49
A-3830	Push-pull plates (3,000 to 10,000 ohms) to voice coil	60 ma. ea. 1/2	20	J	2 1/8"	3 3/8" x 2 1/4"	1.8	5.99

§Secondary impedance 0.7, 1, 1.4, 2, 2.8, 4 ohms.

§Secondary impedance, 1, 2, 4 ohms.

## SINGLE AND/OR PUSH-PULL PLATES TO LINE

Part No.	Application	Impedance in Ohms	Max. Pri. D.C.	Audio Watts	Mtg.	Height Overall	Base Area	Shpg. Wt. in Lbs.	List Price
A-3841	Single plate to line	Pri—7,000/6,000/5,000/4,000/2,500 Sec—500	60 ma.	10	J	2 1/8"	3 3/8" x 2 1/4"	1.5	\$8.33
A-3842	Push-pull plates to line	Pri—14,000/12,000/10,000/8,000 CT Sec—500	55 ma.	10	J	2 1/8"	3 3/8" x 2 1/4"	1.7	8.66
A-4770	Single plate to line	Pri—7,000/6,000/5,000/4,000/2,500 Sec—500	60 ma.	20	J	3 1/8"	3 3/8" x 2 1/4"	2.4	8.77
A-3250	Single plate or Push-pull plates to line	Pri—20,000/10,000/5,000 Pri—20,000 CT Sec—500/333/200/125/50	15 ma.	—	Q	2"	3 3/8" x 1 3/4"	1.0	5.45
A-3315	Single plate or Push-pull plates to line	Pri—20,000/10,000/5,000 Pri—20,000 CT Sec—500/333/200/125/50	35 ma.	—	D	3 3/8"	2 5/8" x 2 5/8"	2.7	12.54

## LINE TO VOICE COIL

Part No.	Impedance in Ohms	Audio Watts	Mtg.	Height Overall	Base Area	Shpg. Wt. in Lbs.	List Price
A-8101	Pri—500 Sec—3.2/6-8	5	Q	1 3/8"	2 3/8" x 1 3/8"	0.4	\$2.61
A-3883	Pri—500 Sec—15/8/6/4	25	J	2 3/8"	2 3/8" x 1 3/4"	1.1	5.22
A-3882	Pri—500/333/250 Sec—15/8/4	25	D	3 3/8"	2 5/8" x 3 1/2"	2.4	10.32
A-3838	500/250/175/150/140/125/100/85/45/14/4/0.7 This Unit is designed to operate one or more speakers in series across a 500 ohm line or to match unequal lines.	30	B	3 1/8"	2 1/2" x 2 1/2"	2.3	8.16
A-3818	Pri—1,500/1,000/500 Sec—15/8/4	25	J	3 1/8"	3 3/8" x 2 1/4"	2.2	6.06
A-7947	Pri—2,000/1,500/1,000/500 Sec—6 ohms	8	Q	1 3/8"	2 1/8" x 1 3/8"	0.7	3.55
A-7949	Pri—2,000/1,500/1,000/500 Sec—6-8 ohms	12	J	2 3/8"	2 3/8" x 1 13/16"	1.1	4.72
A-3820	Pri—2,000/1,500/1,000/500 Sec—15/8/4	40	D	4 1/8"	3 5/8" x 4 1/2"	5.0	17.87
A-8104	Pri—3,000/2,000/1,500/1,000/500 Sec—16/8/4	10	J	2 3/8"	2 1/8" x 1 3/4" 2 3/8"	1.5	6.77
A-3837	Line to Line or V. C. (Autoformer) Pri—500 Sec—8/4/2.65/2.35/ 2/1.5/0.7/0.5/0.3/0.2/0.1/0.05	15	J	2 3/8"	2 3/8" x 2"	1.4	6.11

This Unit is designed to operate one or more speakers in parallel across a 500 ohm line.

## 70.7 VOLT LINE TO VOICE COIL

Part No.	Power Steps in Watts	Impedance in Ohms	Mtg. Type	Height Overall	Base Area	Mtg. Ctrs.	Shpg. Wt. in Lbs.	List Price
A-8102	8/4/2/1/0.5	Pri—625/1,250/2,500/5,000/10,000 Sec—4/8/16	J	2"	1 3/8" x 2 3/8"	2"	0.7	\$5.00
A-8103	16/8/4/2/1/0.5	Pri—312.5/625/1,250/2,500/5,000/10,000 Sec—4/8/16	J	2 3/8"	2 3/4" x 3 1/4"	2 1/8"	1.5	6.99
A-8105	5/2.5/1.25/0.62/0.31	Pri—1,000/2,000/4,000/8,000/16,000 Sec—4/8	J	1 3/8"	2 3/8" x 1 3/8"	2"	0.4	3.61

## 140 VOLT LINE TO VOICE COIL

Part No.	Power Steps in Watts*	Impedance in Ohms	Mtg. Type	Height Overall	Base Area	Mtg. Ctrs.	Shpg. Wt. in Lbs.	List Price
A-8106	1/2/4/8	Pri—2,500/5,000/10,000/20,000 Sec—4/8/16	J	2	1 3/8" x 2 1/8"	2	0.7	5.00
A-8107	1/2/4/8/16	Pri—1,250/2,500/5,000/10,000/20,000 Sec—4/8/16	J	2	3 3/8" x 2"	2 1/8"	1.8	6.99
A-8108	0.625/1.25/2.5/5.0	Pri—4,000/8,000/16,000/32,000 Sec—4/8	Q	1 3/8"	2 3/8" x 1 3/8"	2	0.4	3.61





# POWER TRANSFORMERS

CHICAGO STANDARD TRANSFORMER CORPORATION



## COMBINATION PLATE AND FILAMENT SUPPLY

POWER TRANSFORMERS TO PROVIDE APPROXIMATELY 260 VOLTS D.C. TO CONDENSER INPUT FILTER

Type and Part No.	Plate Supply A.C. Volts	D.C. Ma.	Rectifier Volts	Fil. Amps.	Other Volts	Windings Amps.	Base Area	Overall Height	Mtg. Centers	Shpg. Wt. in Lbs.	List Price
PC8401	235-0-235	40	5.0	2.0	6.3 CT	2.0	2 5/8" x 2 5/8"	3 3/16"	2" x 1 9/16"	2.2	\$ 7.49
PM8401							2 1/2" x 3"	2 5/8"	2" x 2 1/2"		
PC8402	240-0-240	55	5.0	2.0	6.3 CT	2.0	2 5/8" x 2 3/4"	3 3/16"	2" x 1 11/16"	2.4	8.33
PM8402							2 1/2" x 3"	2 3/4"	2" x 2 1/2"		
PC8403	250-0-250	70	5.0	2.0	6.3 CT	2.5	2 5/8" x 3 1/8"	3 3/16"	2" x 2 1/16"	3.2	9.32
PM8403							2 1/2" x 3"	3 1/4"	2" x 2 1/2"		
PC8404	260-0-260	90	5.0	2.0	6.3 CT	3.0	3" x 3 1/2"	3 5/8"	2 1/4" x 2 1/4"	4.0	10.49
PM8404							2 7/8" x 3 3/8"	3 5/8"	2 1/4" x 2 1/16"		
PC8405	270-0-270	120	5.0	3.0	6.3 CT	3.5	3 1/4" x 3 1/2"	4"	2 1/2" x 2 1/16"	4.9	11.60
PM8405							3 1/4" x 3 3/4"	3 1/4"	2 1/2" x 3 1/8"		

POWER TRANSFORMERS FOR USE WITH CHOKE INPUT FILTER, VR-TUBE REGULATED SUPPLY, SPEAKER FIELD IN FILTER, OR HIGHER VOLTAGE WITH CONDENSER INPUT FILTER

PC8406	325-0-325	40	5.0	2.0	6.3 CT	2.0	2 5/8" x 2 3/4"	3 3/16"	2" x 1 11/16"	2.4	\$ 7.66
PM8406							2 1/2" x 3"	2 3/4"	2" x 2 1/2"		
PC8407	325-0-325	55	5.0	2.0	6.3 CT	2.0	2 5/8" x 3 1/8"	3 3/16"	2" x 2 1/16"	3.2	8.44
PM8407							2 1/2" x 3"	3 1/8"	2" x 2 1/2"		
PC8422	325-0-325	50	5.0	3.0	6.3 CT	5.0	3 1/4" x 3 7/8"	4"	2 3/8" x 2 1/16"	5.8	14.93
PM8422							3 1/8" x 3 3/4"	3 3/8"	2 1/2" x 3 1/2"		
PC8408	340-0-340	70	5.0	2.0	6.3 CT	2.5	3" x 3 3/8"	3 5/8"	2 1/4" x 2 1/8"	3.8	9.55
PM8408							2 7/8" x 3 3/8"	3 1/2"	2 1/4" x 2 13/16"		
PC8409	350-0-350	90	5.0	2.0	6.3 CT	3.0	3" x 3 5/8"	3 5/8"	2 1/4" x 2 3/8"	4.5	10.66
PM8409							2 7/8" x 3 3/8"	3 5/8"	2 1/4" x 2 13/16"		
PC8410	360-0-360	120	5.0	3.0	6.3 CT	3.5	3 1/4" x 3 3/4"	4"	2 1/2" x 2 1/16"	5.5	11.77
PM8410							3 1/8" x 3 3/4"	3 3/4"	2 1/2" x 3 1/8"		
PC8411	375-0-375	150	5.0	3.0	6.3 CT	4.5	3 5/8" x 4"	4 3/16"	2 3/4" x 2 13/16"	5.8	14.10
PM8411							3 1/2" x 4 1/8"	3 7/8"	2 3/4" x 3 1/16"		
PC8412	400-0-400	200	5.0	3.0	6.3 CT	5.0	4" x 4"	4 3/4"	3" x 2 13/16"	8.2	15.87
PM8412							3 3/4" x 4 1/2"	3 7/8"	3" x 3 3/8"		
PC8413	400-0-400	250	5.0	4.0	6.3 CT	5.0	4" x 4 1/2"	4 3/4"	3" x 3 3/8"	10.0	19.92
PC8414	600-0-600	200	5.0	3.0	6.3	3.0	4" x 4"	4 3/4"	3" x 2 13/16"	8.3	20.04
					6.3	3.0					

POWER TRANSFORMERS FOR USE WITH 6AX5, 6X4, 6X5, OR SELENIUM RECTIFIERS

PS8415	125 1/2-wave	15	...	...	6.3	0.6	2 3/8" x 1 3/8"	2"	2"	0.7	\$ 3.50
PS8416	125-0-125	25	...	...	6.3	1.0	2 7/8" x 1 3/4"	2 1/16"	2 3/8"	1.0	4.38
*PA8421	125 1/2-wave	50	---	---	6.3	2.0	3 3/8" x 2 1/8"	2 1/4"	3 1/8"	1.5	5.83
PC8417	220-0-220	50	6.3	0.6	25.2	0.5	2 5/8" x 2 5/8"	3 3/16"	2" x 1 9/16"	2.2	8.21
PC8418	230-0-230	50	...	...	6.3	2.5	2 5/8" x 2 5/8"	3 3/16"	2" x 1 9/16"	2.2	7.27
PM8418							2 1/2" x 3"	2 5/8"	2" x 2 1/2"		
PC8419	240-0-240	70	...	...	6.3	3.0	2 5/8" x 2 7/8"	3 3/16"	2" x 1 13/16"	2.6	8.33
PM8419							2 1/2" x 3"	2 7/8"	2" x 2 1/2"		
PC8420	260-0-260	90	...	...	6.3	4.0	3" x 3 1/2"	3 3/8"	2" x 2 1/4"	3.5	9.27
PM8420							2 3/4" x 3 3/8"	3 1/2"	2 1/4" x 2 13/16"		

## REPLACEMENT POWER TRANSFORMERS (Misc.)

Part No.	Plate Supply A.C. Volts	D.C. Ma.	Rectifier Filament Volts--Amperes	Other Windings Volts--Amperes	Mtg.	Height Overall	Base Area	Shpg. Wt. in Lbs.	List Price
P-8173	250-0-250	10	---	6.3-0.6 6.3-1.2	C	2 1/4"	2 3/8" x 2 1/8"	1.0	\$ 7.77
P-8174	250-0-250	20	---	6.3-0.6 6.3-1.2	C	2 5/8"	3 5/16" x 2 1/4"	1.5	8.05
P-6001	325-0-325	40	5.0 CT-2.0	2.5 CT-4.0	M	2 3/4"	2 1/2" x 3"	2.5	9.99
P-6348	240-0-2 0	60	---	6.3 CT-2.75	M	2 3/4"	2 3/16" x 2 11/16"	2.3	7.99
P-4047	350-0-350	70	5.0-3.0	2.5 CT-9.0 6.3-3.0	C	4"	3 1/4" x 3"	3.8	14.10
P-8175	300-0-300	70	5.0-3.0	6.3 CT-3.0	C	3 1/2"	2 7/8" x 3 3/8"	4.0	10.82
P-6007	400-0-400	110	5.0 CT-3.0	2.5 CT-15.0 2.5 CT-3.5	M	3 3/8"	3 1/8" x 3 3/4"	5.4	16.43
P-8176	350-0-350	110	5.0-2.0	6.3 CT-3.0 6.3 CT-3.0	C	3 7/8"	3 3/16" x 3 7/8"	5.5	15.71
P-8177	300-0-300	120	5.0-3.0	6.3 CT-5.0	C	3 3/8"	3 3/16" x 3 3/4"	5.8	13.04



PC



KA



L



PM



N



Q



PS



TD



VE



# POWER TRANSFORMERS

CHICAGO STANDARD TRANSFORMER CORPORATION

## REPLACEMENT POWER TRANSFORMERS (Misc.)

Part No.	Plate Supply A.C. Volts	D.C. Ma.	Rectifier Filament Volts—Amperes	Other Windings Volts—Amperes	Mtg.	Height Overall	Base Area	Shpg. Wt. in Lbs.	List Price
P-6143	440-0-440	130	5.0-3.0	6.3 CT-3.5	C	4 3/8"	3 3/8" x 3 3/8"	7.0	\$16.93
P-4004#	400-0-400 80 v. Bias	175	5.0 CT-3.0	2.5-1.75 6.3 CT-2.5	C	4 3/4"	4" x 3 3/8"	8.3	21.03
P-5053#	337.5-0-337.5	200	5.0 CT-3.0	6.3 CT-5.0	C	4 3/8"	4" x 4 1/4"	9.6	19.87
P-6315	370-0-370	275	5.0 CT-3.0	6.3 CT-7.0	M	4 1/2"	3 3/4" x 4 1/2"	9.3	21.65

#Primary for 117/107 Volts.

## SELENIUM RECTIFIER TRANSFORMERS—See Page N-868

## VIBRATOR TRANSFORMERS WITH 6 VOLT D.C. PRIMARY

Part No.	Secondary A.C. Volts	Secondary Volts	D.C. to Filter Milliamperes	Recommended Buffer Cap.	Mtg.	Height Overall	Base Area	Shpg. Wt. in Lbs.	List Price
P-6301	210-0-210	150	40	0.008 mfd.	S	2 3/8"	2 7/8" x 1 3/4"	1.2	\$5.77
P-6491	188-0-188	200	40	0.003 mfd.	S	2 3/4"	3 1/4" x 2 1 1/8"	1.5	5.55
P-4060	240-0-240	225	40	0.008 mfd.	N	3 1/4"	2 1/2" x 2 3/8"	2.5	7.49
P-4061	290-0-290	250	50	0.006 mfd.	N	3 1/8"	2 1/2" x 2 3/4"	2.5	7.22
P-4062	300-0-300	260	65	0.006 mfd.	N	3 3/8"	2 3/8" x 2 3/4"	2.3	7.94
P-4063	320-0-320	285	75	0.006 mfd.	N	3 1/2"	2 3/8" x 2 3/4"	2.8	10.10
P-6131	370-0-370	330	100	0.007 mfd.	N	3 1/2"	2 7/8" x 2 7/8"	3.5	11.16

## VIBRATOR TRANSFORMER WITH 6 VOLT D.C. AND 117 VOLT A.C. PRIMARY

P-6166	350-0-350	—	135	—	C	4 3/4"	4" x 3 3/8"	6.9	\$18.70
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Filament—6.3 volts at 2.25 Amps.

## AUTO RADIO VIBRATOR TRANSFORMERS—EXACT DUPLICATE

Write for FREE Stancor Auto Radio Transformer Replacement Guide listing detailed replacement information of 540 car radios.

Part No.	Original Part No.	Original Manufacture	D.C. Volts at Filter Input	D.C. Ma.	Recommended Buffer Cap.	Height Overall	Base Area	Shpg. Wt. in Lbs.	List Price
P-4064	7240519	United Motors (Delco)	280	65	0.015-0.015 mfd.	3 3/8"	2 1/8" x 2 3/8"	2.5	\$13.04
P-4065	7255881	United Motors (Delco)	265	56	0.006 mfd.	4 1/8"	2 3/8" x 2 3/8"	2.6	12.10
P-6470	140-111	Regal (5-tube univ. series)	145	50	0.009 mfd.	2 1 1/8"	2 1 1/8" x 2 3/8"	1.4	8.49
P-6471	25B472533	Motorola (408, 508, etc.)	235	70	0.006 mfd.	3"	3 3/8" x 2 3/8"	2.0	8.44
P-6472	D 71014 C 217020 C 71014 25B70950	Colonial-Detrola No. 8072 Colonial-Bendix M1 Colonial-Motorola Motorola (405, 505, etc.)	270	56	0.007 mfd.	2 5/8"	2 7/8" x 2 3/8"	2.0	8.44
P-6473	95-1073	Zenith	272	73	0.008 mfd.	3 1/8"	2 3/8" x 2 1/2"	2.4	9.60
P-6474	95-1066	Zenith	240	52.5	0.008 mfd.	3 1/8"	2 3/8" x 2 1/2"	2.2	8.77
P-6476	D 70267 C 70267	Colonial-Detrola No. 7070 Col.-Mot.-Det. No. 8030	220	53.5	0.008 mfd.	2 5/8"	2 7/8" x 2 3/8"	2.0	8.66
P-6477	25C500189	Motorola	150	50	.03 mfd.	2"	1 3/8" x 2 1/4"	1.0	5.16
P-6478	25C501644	Motorola	225	70	.02 mfd.	2 3/4"	2 3/8" x 2 3/8"	1.5	5.61
P-6479	65-0358	Philco	260	60	.005 mfd.	2 1/2"	2 3/8" x 3"	2.3	6.99
P-6480	65-0347	Philco	225	70	.0033 mfd.	2 3/8"	2 1/4" x 2 3/8"	1.5	5.94
P-6481	32-8313-1	Philco	250	60	.0068 mfd.	2 1/4"	2 3/8" x 2 3/8"	1.5	6.33
P-6483	VE-169	Farnsworth	210	60	.006	3 1/8"	2 3/8" x 2 3/8"	2 1/2	8.77
P-6484	25B70950-E	Motorola	265	70	.007	3 1/8"	2 3/8" x 2 3/8"	2 1/2	9.32
P-6485	95-1071	Zenith	240	70	.008	3 1/8"	2 3/8" x 2 3/8"	2 1/2	9.66
P-6486	25C472586-C	Motorola	240	80	.007	3 1/4"	2 3/8" x 2 3/4"	3 1/2	10.27
P-6487	25B-231303	Motorola	170	60	.007	2 1 1/8"	2 3/8" x 2 3/8"	1 3/4	7.83
P-6488	25C-521454	Motorola	225	50	.007	2 3/8"	2 3/8" x 2 3/8"	2	5.55
P-6490	C291787-1	Bendix (Ford Model 5B8F)	265	52	.006	2 3/8"	2 3/8" x 2 3/8"	1.5	5.55

## FOR 12 VOLT D.C. PRIMARY

P-6482	6064	United Motors (Delco)	250	60	.004 mfd.	3 1/4"	2 1 1/8" x 2 1 1/8"	2.5	\$9.71
P-6489	6067	United Motors (Delco)	250	60	.004 mfd.	2 3/8"	2 3/8" x 2 3/8"	2.0	5.55
P-6493	*25C535794	Motorola	275	75	(See Footnote)	2 3/8"	2 3/8" x 2 3/8"	1.7	5.16
P-6494	32-8592-1	Philco	245	70	0.0047 mfd.	2 3/8"	2 3/8" x 2 3/8"	1.5	5.33
P-6495	★25K535795	Motorola	275	75	(See Footnote)	2 3/8"	2 3/8" x 2 3/8"	1.7	5.33

★2 Buffer capacitors used 0.5 mfd. and 0.04 mfd. as in original circuit.



# FILTER CHOKES



**CHICAGO STANDARD TRANSFORMER CORPORATION**

## SMOOTHING CHOKES FOR D.C. POWER SUPPLIES.

Inductance varies with the amount of D.C. flowing through the coil, therefore these units have been tested under uniform conditions. They are rated at 10 volts, 60 cycles, with maximum D.C. in winding Tolerance of plus 15% is maintained on all ratings.

Part No.	Rating Induc. at Ma.	D.C.	D.C. Res. in Ohms	R.M.S. V. Insul.	Mtg.	Height Overall	Base Area	Shpg. Wt. in Lbs.	List Price
C-1515	20.0 hy.	at 15 ma.	900	1500	A	1 3/8"	2 7/8" x 1 1/2"	0.7	\$2.44
C-2318	12.0 hy.	at 30 ma.	400	2000	A	1 3/8"	2 3/8" x 1 3/8"	0.5	3.05
C-1706	4.5 hy.	at 50 ma.	300	1500	A	1 3/8"	2 3/8" x 1 3/8"	0.4	2.05
C-1707	7.0 hy.	at 50 ma.	550	1500	A	1 3/8"	2 3/8" x 1 3/8"	0.4	2.16
C-1003	16.0 hy.	at 50 ma.	580	1500	A	2"	3 1/4" x 1 3/8"	1.1	2.94
C-1708	18.0 hy.	at 65 ma.	500	1500	A	2"	3 1/4" x 1 3/8"	1.0	3.39
C-1355	8.0 hy.	at 75 ma.	290	1500	L	2 1/8"	2 3/8" x 1 3/8"	1.0	3.39
C-1002	15.0 hy.	at 75 ma.	400	1500	A	2 1/8"	3 3/8" x 2 3/8"	1.7	3.61
C-1420	16.0 hy.	at 80 ma.	360	1500	C	3 1/8"	2 3/8" x 2 3/8"	2.5	5.99
C-1709	8.0 hy.	at 85 ma.	250	1500	A	2"	3 1/4" x 2 3/8"	1.4	3.77
C-2305	5.0 hy.	at 100 ma.	300	1500	TD	2 1/8"	3 3/8" x 2 3/8"	1.5	5.22
C-1001	10.5 hy.	at 110 ma.	225	3000	A	2 3/8"	4" x 2 3/8"	2.3	4.94
C-2303	2.5 hy.	at 130 ma.	100	2000	A	2"	3 1/4" x 1 3/8"	1.0	3.44
C-1421	7.0 hy.	at 140 ma.	165	3000	C	3 3/8"	2 3/8" x 2 3/8"	2.5	6.83
C-2304	2.3 hy.	at 150 ma.	60	1500	A	2"	3 1/4" x 1 3/8"	1.0	3.55
C-2309	3.0 hy.	at 150 ma.	90	2000	A	2 1/4"	3 3/4" x 2 1/4"	1.7	4.27
C-1710	7.0 hy.	at 150 ma.	200	1500	A	2 5/8"	4" x 2 1/4"	2.2	5.49
C-1410	4.0 hy.	at 175 ma.	100	3000	C	3 3/8"	2 3/8" x 2 3/8"	2.4	6.99
C-2327	1.5 hy.	at 200 ma.	85	1500	A	1 5/8"	2 7/8" x 1 1/2"	0.8	2.72
C-1646	5.0 hy.	at 200 ma.	90	5000	C	4"	3 3/4" x 3 3/8"	4.5	9.99
C-1411	4.5 hy.	at 200 ma.	80	3000	C	3 5/8"	3" x 3 1/8"	3.5	7.94
C-1721	8.5 hy.	at 200 ma.	120	3000	N	3 3/8"	3 1/8" x 3"	4.4	9.60
C-1703	4.0 hy.	at 250 ma.	60	3000	B	3 1/8"	2 3/8" x 3 1/8"	4.2	10.10
C-1412	4.0 hy.	at 250 ma.	60	3000	C	3 5/8"	3" x 3 1/2"	4.3	11.60
C-1722	8.0 hy.	at 300 ma.	80	3000	N	4 5/8"	3 3/4" x 3 1/2"	7.3	15.93
C-2308	8.0 hy.	at 300 ma.	80	3000	C	4 3/8"	4" x 3 3/8"	7.8	16.10
C-1413	8.0 hy.	at 300 ma.	80	5000	D	4 3/8"	4" x 4 1/8"	7.8	16.10
C-2328	0.8 hy.	at 375 ma.	25	1500	A	2 3/8"	3 3/4" x 2"	1.5	5.61
C-1414	7.5 hy.	at 400 ma.	60	5000	D	4 3/8"	4" x 5 1/8"	11.8	23.25
C-1415	6.0 hy.	at 500 ma.	75	7500	FS	8 1/8"	5 5/8" x 5 1/2"	23.7	53.89

## SWINGING CHOKES FOR INPUT SECTION OF D.C. POWER SUPPLIES.

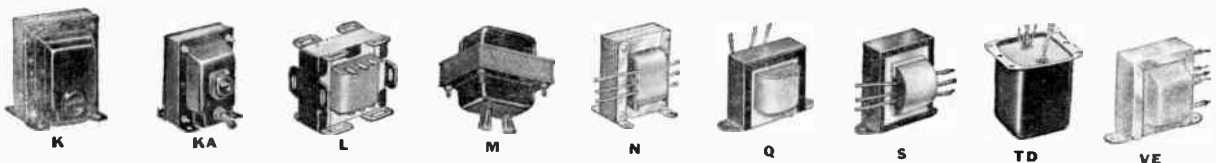
Inductance varies with the amount of D.C. flowing through the coil, therefore these units have been tested under uniform conditions. Swinging chokes are rated at 10 volts, 60 cycles, from maximum to 10% of maximum D.C. in windings. Tolerance of plus 15% is maintained on all ratings.

Part No.	Min. Swg. Induc.	D.C. Res. in Ohms	Approx. Range of Induc. at D.C. Ma.	R.M.S. V. Insul.	Mtg.	Height Overall	Base Area	Shpg. Wt. in Lbs.	List Price	
C-1718	10 hy.	180	13.5-3.5 hy. at	15-150	2000	C	3 3/8"	2 5/8" x 2 1/4"	2.3	\$7.05
C-1400	10 hy.	100	12-2 at	17.5-175	3000	CC	3 3/8"	2 5/8" x 2 5/8"	2.4	7.88
C-1401	10 hy.	80	12-2 at	20-200	3000	C	3 5/8"	3" x 3 1/2"	3.5	8.99
C-1645	10 hy.	90	12-2 at	20-200	5000	C	4"	3 1/4" x 3 3/8"	4.5	10.32
C-1702	10 hy.	60	12-2 at	25-250	3000	B	3 1/2"	2 7/8" x 3 1/4"	4.3	10.32
C-1402	10 hy.	60	12-2 at	25-250	3000	C	3 5/8"	3" x 3 1/2"	4.3	11.60
C-1720	16 hy.	80	20-4 at	30-300	3000	N	4 5/8"	3 3/4" x 3 3/8"	7.2	14.76
C-2307	16 hy.	80	20-4 at	30-300	3000	C	4 3/8"	4" x 3 3/8"	7.9	17.70
C-1403	16 hy.	80	20-4 at	30-300	5000	D	4 3/8"	4" x 4 3/8"	7.7	15.82
C-1404	14 hy.	60	17-3 at	40-400	5000	D	4 3/8"	4" x 5 1/8"	11.7	23.25
C-1405	12 hy.	75	16-4 at	50-500	7500	FS	7 5/8"	6 1/8" x 7"	24.3	47.90

## SMOOTHING CHOKES FOR USE IN A.C.-D.C. POWER SUPPLIES.

Inductance varies with the amount of D.C. flowing through the coil, therefore these units have been tested under uniform conditions. Filter chokes are rated at 10 volts, 60 cycles, with maximum D.C. in windings Tolerance of plus 15% is maintained on all ratings.

Part No.	Rating Induc. at Ma.	D.C.	D.C. Res. in Ohms	R.M.S. V. Insul.	Mtg.	Height Overall	Base Area	Shpg. Wt. in Lbs.	List Price
C-1080	3.5 hy.	at 50 ma.	200	1500	A	1 5/8"	2 7/8" x 1 1/2"	0.7	\$2.39
C-1325	5.0 hy.	at 50 ma.	250	1500	A	1 5/8"	2 3/8" x 1 1/2"	0.7	2.55
C-1277	7.0 hy.	at 50 ma.	300	1500	A	1 5/8"	2 3/8" x 1 1/2"	0.7	2.83
C-1723	4.5 hy.	at 50 ma.	325	1500	A	1 5/8"	2 3/8" x 1 3/8"	0.4	2.22
C-1227	7.0 hy.	at 50 ma.	350	1500	A	1 5/8"	2 3/8" x 1 1/2"	0.7	2.78
C-1279	8.5 hy.	at 50 ma.	400	1500	A	1 5/8"	2 3/8" x 1 1/2"	0.7	2.44
C-1333	8.0 hy.	at 50 ma.	450	1500	A	1 5/8"	2 3/8" x 1 1/2"	0.7	2.50
C-1215	9.0 hy.	at 50 ma.	500	1500	A	1 5/8"	2 3/8" x 1 1/2"	0.7	2.28





# MODULATION TRANSFORMERS

## CHICAGO STANDARD TRANSFORMER CORPORATION

### PLATE MODULATION

Part No.	Impedance in Ohms	Max. D.C./Tube Pri. Sec.	Typical Output Tubes	Class	Audio Watts	Mtg.	Height Overall	Base Area	Shpg. Wt. in Lbs.	List Price
A-3812	Pri—10,000 CT Sec—4,000	32 50	Sgl.—37, 38, 41, 1G5, 6K6 Sgl.—19, 1G6, 1J6, 6E6, 6G6, 6Z7 P.P.—30, 49, 1H4	A B B	5	A	1 3/8"	2 7/8" x 1 1/8"	0.7	\$4.05
A-3871	Pri—4,500 Sec—8,500 #Secondary used as primary.	60 50	Sgl.—6L6, HY69 #Sgl.—6B5, 6F6, 6N6	A A	10	TD	2 1/16"	2 3/4" x 2 3/16"	1.4	7.38
A-3845	Pri—10,000 CT Sec—8,000/6,500/5,000/3,000	100 100	Sgl. 53, 79, 6A6, 6N7, 6Y7 P.P.—42, 2A5, 6F6, 6V6	B AB2	25	C	3 3/16"	2 5/8" x 2 3/4"	2.8	9.27
A-3808	Pri—3,800/3,300 CT Sec—10,000/7,500/5,000/4,000	260 170	P.P.—6L6, 807, HY61, RK41 P.P. Par—6L6	AB2 AB1	60	D	4 3/4"	4" x 2 3/8"	7.7	22.09
A-3829	Pri—9,000/6,900 CT Sec—6,250/5,000/4,000/3,300	250 300	P.P.—RK12, HY25, 35T, HY40Z, T40, TZ40, 100TL, HK354, 756, 809, 830B	B	175	D	4 3/4"	4" x 6 1/4"	11.4	28.03

### POLY-PEDANCE MODULATION MULTI-TAPPED UNITS TO PROPERLY MATCH THE OUTPUT OF THE MODULATOR STAGE TO THE MODULATED LOAD. WILL MATCH ALL COMMON IMPEDANCES OF CLASS "B" MODULATOR (2,000 to 20,000 OHMS) TO CLASS "C" LOAD IMPEDANCES OF 2,000 TO 20,000 OHMS.

The number of excellent transmitting tubes available is constantly increasing. R.F. applications, too, have increased and it is sometimes difficult to obtain the correct modulation transformer suitable for matching some given modulator tubes or R.F. load. These units give an almost unlimited range in power and impedance ratings to assure a correct impedance match in all cases.

Part No.	Max. Watts	Max. D.C.	Mtg.	Height Overall	Base Area	Shpg. Wt. in Lbs.	List Price
A-3891	15	Pri—100 ma. Sec—100 ma.	D	3 3/16"	2 5/8" x 2 7/8"	2.5	\$15.98
A-3892	30	Pri—150 ma. Sec—150 ma.	D	4"	3 1/4" x 3 5/8"	4.3	20.26
A-3893	60	Pri—180 ma. Sec—180 ma.	D	4"	3 3/4" x 4 1/2"	6.2	21.92
A-3894	125	Pri—225 ma. Sec—225 ma.	D	4 3/4"	4" x 4 5/8"	9.4	26.47
A-3898	300	Pri—260 ma. Sec—260 ma.	FS	8 1/2"	5 3/4" x 7 5/8"	37.9	83.14
A-3899	600	Pri—500 ma. Sec—500 ma.	FS	9 1/2"	7 1/4" x 10 1/4"	70.0	165.39

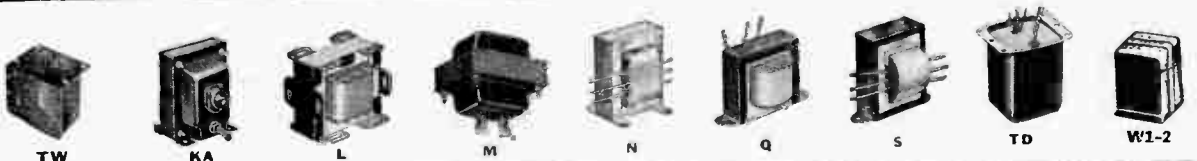
### SELENIUM RECTIFIER TRANSFORMERS\*

Part No.	Rectifier Circuit	Range of Applied A.C. Volts Under Load (Approx.)	Output Resistive or Inductive Load Max. D.C.		Output Capacitive Load* Max. D.C.		Mtg. Type	Overall Dimensions H W D	Shpg. Wt. (lbs.)	List Price
			Volts	Amps.	Volts	Amps.				
RT-201	C. T.	11.7 to 29.4	11.2	2.0	13.8 <sup>1</sup>	2.0	B	3 1/2" x 2 1/2" x 3 3/8"	2.5	\$ 8.05
	Bridge	11.1 to 28.5	23.0	1.25	30.0 <sup>2</sup>	1.25	B	3 1/2" x 2 1/2" x 3 3/8"	2.5	
RT-202	C. T.	12.0 to 29.8	11.1	4.0	14.7 <sup>3</sup>	4.0	B	3 3/8" x 2 7/8" x 3 1/2"	3.8	10.66
	Bridge	12.0 to 29.8	24.3	2.0	33.0 <sup>1</sup>	2.0	B	3 3/8" x 2 7/8" x 3 1/2"	3.8	
RT-204	C. T.	11.7 to 29.2	12.0	8.0	14.5 <sup>4</sup>	8.0	B	4" x 3 1/4" x 4 1/2"	6.1	13.43
	Bridge	11.6 to 29.2	24.0	4.0	32.4 <sup>3</sup>	4.0	B	4" x 3 1/4" x 4 1/2"	6.1	
RT-206	C. T.	12.0 to 29.7	11.5	12.0	14.4 <sup>5</sup>	12.0	B	4 1/4" x 3 1/8" x 5 1/4"	9.1	17.87
	Bridge	12.0 to 29.7	24.0	6.0	32.0 <sup>6</sup>	6.0	B	4 1/4" x 3 1/8" x 5 1/4"	9.1	
RT-208	C. T.	12.1 to 29.2	11.4	15.0	14.8 <sup>7</sup>	15.0	B	4 3/4" x 3 3/4" x 5 1/4"	12.6	21.15
	Bridge	12.1 to 29.2	23.7	8.0	32.5 <sup>4</sup>	8.0	B	4 3/4" x 3 3/4" x 5 1/4"	12.6	
RT-2012	C. T.	12.1 to 29.0	11.4	22.5	14.3 <sup>8</sup>	22.5	B	5 3/8" x 4 3/8" x 6 3/8"	20.5	32.80
	Bridge	12.0 to 29.0	23.5	12.0	33.0 <sup>5</sup>	12.0	B	5 3/8" x 4 3/8" x 6 3/8"	20.5	
RT-408	C. T.	25.0 to 53.5	44.0	8.0	33.0 <sup>1</sup>	8.0	B	5 3/4" x 4 3/8" x 7 1/2"	26.5	47.18
	Bridge	25.0 to 53.5	43.5	12.0	60.0 <sup>2</sup>	12.0	B	5 3/4" x 4 3/8" x 7 1/2"	26.5	
RT-4012	Bridge	25.0 to 53.0	43.5	12.0	60.0 <sup>2</sup>	12.0	B	7 1/8" x 5 3/8" x 6 1/4"	33.5	63.83

\*Transformers and Rectifiers will have a higher temperature rise when operating with a capacitive load as compared to a resistive or inductive load for a given load current. If this is undesirable extra ventilation should be provided or else the output current from the rectifier should be derated by approximately 20% from the values shown.

†Designates part number to be removed from next catalog. ★ Designed for a nominal input of 117 volts, 50-60 cycles.

RT Footnotes: MFD. Filter Capacitor: 1,1,000 2. 500 3. 2,000 4. 4,000 5. 6,000 6. 3,000 7. 7,300 8. 12,000.



# FILAMENT TRANSFORMERS

CHICAGO STANDARD TRANSFORMER CORPORATION



## FILAMENT TRANSFORMERS WITH SINGLE SECONDARY

Part No.	Volts	Secondary Amperes	R.M.S. V. Insul.	Primary Volts <sup>#</sup>	Mtg.	Height Overall	Base Area	Shpg. Wt. in Lbs.	List Price
P-4026	2.5	1.5	2,500	117	A	1 7/8"	2 1/8" x 1 1/2"	0.7	\$4.00
P-4082	2.5 CT	2.5	2,500	117/107	TD	2 1/16"	2 3/8" x 2 3/16"	1.5	8.05
P-6133	2.5 CT	5.0	7,500	117	S	2 1/16"	3 3/8" x 2 1/4"	1.5	6.33
P-4083	2.5 CT	6.0	2,500	117/107	C	3 3/16"	2 5/8" x 2 3/8"	2.2	8.44
P-3024	2.5 CT	10.0	2,500	117/107	C	3 3/16"	2 5/8" x 2 3/8"	2.5	8.33
P-6454	2.5 CT	10.0	7,500	107/117	S	3 1/2"	3 3/8" x 2 1/2"	2.5	6.38
P-3060	2.5 CT	10.0	10,000	117	B	3 1/2"	2 3/8" x 2 1/2"	2.5	7.94
P-3026	5.0 CT	3.0	2,500	117/107	C	3 3/16"	2 5/8" x 2 3/8"	2.4	8.33
P-4088	5.0 CT	3.0	2,500	117	B	3 1/8"	2 1/2" x 2 1/2"	1.8	6.60
P-6467	5.0 CT	3.0	2,500	117	A	2	3 1/8" x 2"	1.4	5.33
P-6455	5.0 CT	6.0	2,000	107/117	S	2 5/8"	3 3/8" x 2 1/2"	2.0	7.22
P-3062	5.0 CT	6.0	2,500	117	B	3 1/8"	2 1/2" x 2 1/2"	2.3	7.05
P-5000	5.0 CT	6.0	2,500	117/107	C	3 3/16"	2 5/8" x 2 3/8"	3.1	9.66
P-6135	5.0 CT	10.0	2,500	117	N	3 1/8"	2 1/2" x 2 3/8"	3.0	8.27
P-4086	5.0 CT	14.0	10,000	117/107	FA	5 1/8"	4 1/4" x 8 1/2"	12.3	29.14
P-6302	5.0 CT	22.0	10,000	117/107	FA	5 1/8"	4 1/4" x 8 1/2"	13.5	32.75
P-6492	5.0 CT	30.0	2,500	117	C	4 3/8"	3 3/4" x 3 1/8"	7.5	18.08
P-6468	6.0 CT	30.0	2,500	117/107	D	4 5/8"	3 3/8" x 3 3/8"	4.3	18.04
P-6305	5.0 CT	30.0	10,000	117/107	FB	5 1/8"	4 1/4" x 10"	18.3	40.79
P-6137	5.25 CT	13.0	2,500	117	N	3 3/8"	3 1/8" x 3 1/4"	5.2	12.88
P-6465	6.3 CT	0.6	1,500	117	A	1 3/8"	2 3/8" x 1 3/8"	0.5	2.94
P-6465	6.3 CT	0.6	1,500	117	A	1 1/8"	2 3/8" x 1 3/8"	0.5	2.94
P-6134	6.3 CT	1.2	3,000	117	A	1 5/8"	2 1/2" x 1 1/2"	0.8	3.22
P-8190	6.3	1.2	5,000	117	A	2	3 1/4" x 1 3/8"	1.0	4.22
P-8191	6.3	1.2	5,000	6.3	A	2	3 1/4" x 1 3/8"	1.0	4.55
P-5014	6.3 CT	3.0	2,500	117	B	3 1/8"	2 1/2" x 2 1/2"	2.0	6.05
P-6466	6.3 CT	3.0	2,500	117	A	2	3 1/8" x 2"	1.4	5.16
P-6462	6.3	3.0	7,000	107/117	A	2 5/8"	4" x 2 5/8"	2.0	9.32
P-4019	6.3 CT	4.0	2,500	117/107	C	3 3/16"	2 5/8" x 2 3/8"	2.7	7.99
P-6456	6.3 CT	6.0	2,000	107/117	A	2 1/4"	3 3/8" x 2 1/2"	2.0	5.88
P-3064	6.3 CT	6.0	2,500	117	B	3 1/8"	2 1/2" x 2 3/8"	2.4	9.64
P-4089	6.3 CT	6.0	2,500	117/107	C	3 3/8"	3" x 3 1/2"	3.5	9.16
P-6308	6.3 CT	10.0	2,500	117/107	N	3 1/2"	2 7/8" x 2 3/4"	3.4	8.33
P-6309	6.3 CT	20.0	2,500	117/107	N	4 3/8"	3 3/8" x 3"	6.7	15.76
P-5015	7.5 CT	4.0	2,500	117	B	3 1/8"	2 1/2" x 2 3/8"	2.7	7.05
P-6457	7.5 CT	5.0	2,000	107/117	C	4 1/2"	3 3/4" x 4"	6.0	21.15
P-4091	7.5 CT	5.0	2,500	117/107	C	3 3/8"	3" x 3"	3.4	11.16
P-6138	7.5 CT	8.0	2,500	117	N	3 3/8"	3 1/2" x 2 7/8"	4.7	10.21
P-5016	10.0 CT	4.0	2,500	117	B	3 1/2"	2 3/8" x 2 3/8"	3.3	8.49
P-6458	10.0 CT	5.0	2,000	107/117	N	3 1/8"	2 1/2" x 2 1/2"	3.0	7.49
P-4096	10.0 CT	5.0	2,500	117/107	C	4"	3 1/2" x 3 3/8"	4.0	10.10
P-6139	10.0 CT	8.0	2,500	117	N	3 3/8"	3 1/8" x 3 3/8"	4.9	10.32
P-4097	10.0 CT	8.0	2,500	117/107	C	4"	3 1/4" x 3 3/8"	5.2	11.21
P-6461	10.0 CT	10.0	2,300	117*	C	3 1/2"	3 1/2" x 3 3/8"	5.0	11.66
P-5002	10.0 CT	12.0	7,500	117/107	FA	5 1/8"	4 1/4" x 8 1/2"	14.7	31.47
P-3020	11.0 CT	10.0	2,500	117/107	C	4 3/8"	4" x 3 3/8"	7.7	16.59
P-8130	12.6 CT	2.0	1,500	117	A	2"	3 1/4" x 2"	1.4	5.72
P-6469	25.2	1.0	1,500	117	A	2"	3 1/4" x 2"	1.4	5.44

## FILAMENT TRANSFORMERS WITH MULTIPLE SECONDARY

P-6144	2.5 CT	3.5	2,500	117	C	3 5/8"	3" x 3 1/8"	3.7	\$12.99
	5.0 CT	3.0	2,500						
	6.3 CT	3.0	2,500						
P-6338	2.5	3.0	2,500	117	N	3 1/2"	2 1/8" x 2 3/4"	3.4	12.32
	5.0	3.0	2,500						
	5.0 CT	2.0	2,500						
	6.3 CT	3.0	2,500						
P-5009	5.0 CT	3.0	2,500	117/107	C	4"	3 1/4" x 3 1/4"	4.5	14.82
	6.3 CT	6.0	2,500						
P-5008	5.0 CT	4.0	2,500	117/107	C	3 5/8"	3" x 3 1/4"	3.8	13.04
	6.3 CT	3.6	2,500						
P-4022	5.0 CT	6.0	2,500	117/107	C	4"	3 1/4" x 3 3/8"	4.8	13.93
	6.3 CT	6.0	2,500						
P-6333	5.0	3.0	2,500	117	B	3 1/2"	2 7/8" x 3 3/8"	4.7	14.32
	5.0	3.0	2,500						
	6.3 CT	4.0	2,500						
	7.5/6.3 CT	3.0	2,500						

<sup>#</sup>All primary windings for 60 cycle operation.

\*Primary 50/60 cycles.





# PLATE TRANSFORMERS

CHICAGO STANDARD TRANSFORMER CORPORATION

## PLATE TRANSFORMERS

Part No.	D.C. Volts	Sec. A.C. Volts at Plate	D.C. CCS	Ma. ICAS	Pri. Volts	Mtg.	Height Overall	Base Area	Shpg. Wt. in Lbs.	List Price
P-8040	400 40	500/40-0-500	300	375	115	C	4 3/4"	4" x 4 1/2"	9.8	\$22.48
P-8041	500 400 40	615/520/40-0-520/615	250	310	115	C	4 3/4"	4" x 5 1/8"	13.6	24.31
P-8042	600 400 40	770/510/40-0-510/770	300	375	115	C	4 3/4"	4" x 6 1/8"	18.0	35.80
P-8043	750 600 40	950/750/40-0-750/950	300	375	115	FS	7 5/8"	6 1/8" x 8 1/2"	29.0	66.54
P-8025	1000 750	1230/940-0-940/1230	400	500	115	FS	7 5/8"	6 1/8" x 9 1/2"	35.0	84.64
P-8026	1250 1000	1475/1175-0-1175/1475	300	375	115	FS	7 3/4"	7 3/8" x 8 1/4"	36.5	80.48
P-8027	1250 1000	1510/1210-0-1210/1510	500	625	115	FS	8"	5 5/8" x 8 1/4"	45.2	95.18
P-8028	1500 1250	1740/1460-0-1460/1740	300	375	115	FS	8 1/4"	5 5/8" x 7 7/8"	38.7	85.19
P-8029	1500 1250	1775/1500-0-1500/1775	500	625	115-230	FS	9 1/8"	7 1/4" x 8 3/8"	65.0	130.92
P-8030	1750 1500	2100/1800-0-1800/2100	300	375	115	FS	7 3/4"	7 3/8" x 9"	45.8	93.80
P-8031	1750 1500	2075/1775-0-1775/2075	500	625	115-230	FS	10 1/2"	7 1/4" x 8 1/8"	65.5	129.81
P-8032	2000 1750	2400/2100-0-2100/2400	300	375	115	FS	7 3/4"	7 3/8" x 9 1/4"	46.0	110.45
P-8033	2000 1750	2375/2065-0-2065/2375	500	625	115-230	FS	11 1/4"	7 3/8" x 9 1/2"	77.0	162.62
P-8034	2500 2000	2900/2385-0-2385/2900	300	375	115-230	FS	11 1/4"	7 3/8" x 8 3/4"	62.8	158.18
P-8035	2500 2000	2950/2375-0-2375/2950	500	575	115-230	FS	11 1/4"	7 3/8" x 10 1/4"	80.0	172.61

## PLATE TRANSFORMERS—NEW FUNCTIONAL UNITS

No exposed terminals. Insulated leads provide protected routing to circuits. Simplified design offers ease of mounting and neat, convenient circuit wiring. No difficult cutouts needed.

Each of these units is "all transformer," taking a minimum of chassis space. No bulky casing or protruding, "hot" terminals to increase mounting area.

D.C. output rated CCS at load terminals of single-section reactor-input filter, ICAS with single-section capacitor-input filter. Primaries for 117 volts, 60 cycles.

Type Part No.	Secondary A.C. Volts	D.C. Output Volts	Ma.	Type Filter	Rectifier	List Price
PC8301	415-0-415	300	200	Reactor Input	5U4G	\$13.38
		425	160	Capacitor Input	5U4G	
PC8302	515-0-515	385	235	Reactor Input	5U4G	17.35
		500	200	Capacitor Input	5R4GY	
PC8303	665-0-665	500	250	Reactor Input	5R4GY	21.70
		750	200	Capacitor Input	5R4GY	
PC8304	750-0-750	600	265	Reactor Input	2-5R4GY	24.31
		850	200	Capacitor Input	5R4GY	
PC8305	920-0-920	750	250	Reactor Input	2-5R4GY	25.36
		1000	200	Capacitor Input	5R4GY	
PC8306*	920-0-920	750	150	Reactor Input	5R4GY	25.75
		1100	125	Capacitor Input	5R4GY	
PC8306*	500-0-500	380	150	Reactor Input	5U4G	25.75
		550	125	Capacitor Input	5U4G	

D.C. output rated at load terminals of single-section, reactor-input filter with full-wave mercury-vapor rectification. Primaries for 117 volts, 60 cycles

Type and Part No.	Secondary A.C. Volts	D.C. Volts	CCS	D.C. Ma.	ICAS	List Price
PT8311	1200-0-1200	1000	225		280	\$27.97
PT8312	1200-0-1200	1000	325		405	46.29
PT8313	1475-0-1475	1250	250		310	44.34
PT8214	1790-0-1790	1500	225		280	51.17
PT8315	2065-0-2065	1750	200		250	51.62

\*Tapped for use with dual rectifier-filter systems to deliver two rated outputs simultaneously.

## BIAS SUPPLY TRANSFORMERS

Part No.	High Voltage Supply A.C. Volts at D.C. Milliamps.	Rectifier Fil. Volts—Amperes	Mtg.	Height Overall	Base Area	Shpg. Wt. in Lbs.	List Price
P-6317	200/170/130/90/0/90/130/170/200 @ 200 ma.	5.0 3.0	CD	4"	3 1/4" x 3 5/8"	4.9	\$19.09
P-6318	450/400/350/250/0/250/350/400/450 @ 200 ma.	5.0 3.0	CD	4 3/8"	3 5/8" x 4 1/4"	7.0	21.70

## TUBE CHECKER MULTI-TAPPED FILAMENT TRANSFORMER

Part No.	Secondary Volts	Primary Volts	Mtg.	Height Overall	Base Area	Shpg. Wt. in Lbs.	List Price
P-1834-3	1.1/ 1.4/ 1.5/ 2.0/ 2.5/ 3.0/ 3.3/ 5.0/ 6.3/ 7.0/ 7.5/ 12/ 25/ 30/ 35/ 50/ 70/ 85/ 110/ 117	125/115/105	A	2 5/8"	4" x 2"	2.4	\$15.76

‡Designates part number to be removed from next catalog.  
 §Output changed by means of tap on primary winding. Rating is for a single section choke input filter using a 6 mfd. condenser.

# ISOLATION AND AUTOFORMERS



CHICAGO STANDARD TRANSFORMER CORPORATION

## STRAIGHT ISOLATION—125/115/105 VOLTS TO 115 VOLTS.†

Part No.	Wattage	Primary#	Secondary	Mtg.	Height Overall	Base Area	Shpg. Wt. in Lbs.	List Price
P-6160	100	125/115/105	115		4 3/4"	4" x 3 3/8"	7.0	\$22.37
P-6161	250	125/115/105	115	KA	4 3/4"	4" x 5 5/8"	14.2	42.12
P-6298	500	125/115/105	115	KA	4 3/4"	4" x 5 5/8"	14.2	42.12
P-6125	1000	125/115/105	115	FK	7 3/4"	6 1/2" x 7 1/2"	28.0	65.77
P-6123	1500	125/115/105	115	FK	7 3/4"	5 3/4" x 7 3/4"	34.8	86.30
				FK	7 3/4"	5 3/4" x 9"	49.8	107.61

## STEP-DOWN ISOLATION—250/230/210 VOLTS TO 115 VOLTS.†

Part No.	Wattage	Primary#	Secondary	Mtg.	Height Overall	Base Area	Shpg. Wt. in Lbs.	List Price
P-6383	100	250/230/210	115	KA	4 3/4"	4" x 3 3/8"	7.3	\$24.36
P-6385	250	250/230/210	115	KA	4 3/4"	4" x 5 5/8"	14.2	39.68
P-6387	500	250/230/210	115	KA	4 3/4"	4" x 5 5/8"	14.2	39.68
P-6389	1000	250/230/210	115	FK	7 3/4"	6 1/2" x 7 1/2"	29.5	66.54
P-6390	1500	250/230/210	115	FK	7 3/4"	5 3/4" x 8"	33.8	87.41
				FK	7 3/4"	5 3/4" x 9 3/4"	50.3	120.93

†Built-in electrostatic shields are grounded to core internally.

## ISOLATION TESTING TRANSFORMER

Part No.	Wattage	Primary#	Secondary	Mtg.	Height Overall	Base Area	Shpg. Wt. in Lbs.	List Price
P-6415	350	117	105/115/125	KC	5 3/4"	4 1/2" x 5 3/4"	17.0	\$35.46

Large enough to handle almost any television or radio receiver on test. 115 and 125, with 117 volts, A.C., from the line for testing purposes or Has three standard receptacles, providing output voltages of 105, for correction of high or low line voltage. Has electrostatic shield.

## AUTOFORMERS

Part No.	Wattage	Primary#	Secondary	Mtg.	Height Overall	Base Area	Shpg. Wt. in Lbs.	List Price
P-6287	40	230	115		4 1/4"	3" Diam. can	2.7	\$10.55
P-5062	80	230	115		3 3/8"	3" x 3 1/2"	3.8	11.99
P-5063	100	230	115	K	4"	3 1/4" x 3 1/2"	4.5	13.32
P-5064	150	230	115	K	4 1/16"	3 5/8" x 3 5/8"	6.2	15.71
P-5065	300	230	115	K	4 3/4"	4" x 4 1/2"	8.8	20.70
P-6141	500	230	115	K	4 3/4"	4" x 5 1/2"	13.7	25.64
P-6124	1000	230	115	FK	7 1/8"	5 3/4" x 6 3/4"	24.5	59.11
P-6299	150	115	150/140/130/120/110/100/90	KA	4"	3 1/4" x 4 3/4"	6.0	21.15

Testing Autoformer—Incorporates a convenient tap switch to permit variable voltages from 90 to 150 volts. Primary equipped with 6 ft. approved cord and plug. Secondary connected to female receptacle.

## LINE ADJUSTING AUTOFORMERS

Type and Part No.	Va.*	Input Voltage 50-60 Cycle	Output Voltage	Height	Base Area	Shpg. Wt. in Lbs.	List Price
PV-6441	150	65/75/90/100/115/130/145	115	5 1/2"	3 1/4" x 5 3/8"	6.4	\$24.36
PV-6442	350	65/75/90/100/115/130/145	115	5 1/2"	3 1/4" x 6 1/2"	10.5	30.97
PV-6443	500	65/75/90/100/115/130/145	115	5 1/2"	3 1/4" x 6 7/8"	15.0	38.57
PV-6444	750	65/75/90/100/115/130/145	115	6 1/16"	4 1/2" x 8 1/4"	19.0	58.16

\*Watts to pure resistive load. To other types of loads, multiply rating of line adjuster by power factor of load for actual wattage.

## AIR CONDITIONER AUTO-TRANSFORMERS—230 VOLTS TO 208 VOLTS

Part No.	Rating KVA	Motor Size	Input Voltage	Output Voltage	Mtg.	Height	Base Area	Shpg. Wt. in Lbs.	List Price
PSU-2000	2.3	1/2-1 hp.	208/230	230/208	PSU	3 1/2"	3 3/4" x 6 1/2"	9	\$24.56
PSU-3000	3.0	1-2 hp.	208/230	230/208	PSU	4"	4 1/2" x 6"	10	27.64

## CATHODE RAY TUBE POWER TRANSFORMERS

For use with type 2X2 rectifier tubes in a conventional half-wave voltage supply.

Part No.	Plate Supply A.C. Volts	D.C. Milliamperes	Rectifier Filament Volts—Amperes	Other Windings Volts—Amperes	Mtg.	Height Overall	Base Area	Shpg. Wt. in Lbs.	List Price
P-8150	1,550 half-wave	1.5	2.5 1.75	...	TD	3 1/16"	3" x 2 1/2"	1.8	\$12.21
P-8151	2,400 half-wave	5.0	2.5 2.0	2.5 2.0	C	4 3/16"	3 9/16" x 3 7/8"	6.4	18.09

## PHOTOFLASH POWER TRANSFORMER

Part No.	Application	Pri.	Sec.	Mtg. Type	Height Overall	Base Area	Mtg. Ctrs.	Shpg. Wt. in Lbs.	List Price
P-6425	For use in Sprague electronic flash circuits. See Sprague Electronic Flash Handbook C-703	105/115/125V.	Charges up to 1050 mfd. to 450 Volts D.C.	S	2 5/8"	2 1/4" x 2"	2 3/8"	1.4	\$5.23
P-6426	Trigger coil for use with 450V. flashtube. Replaces G.E. 86G41.				1/4"	1/4" diam.		0.2	\$2.78

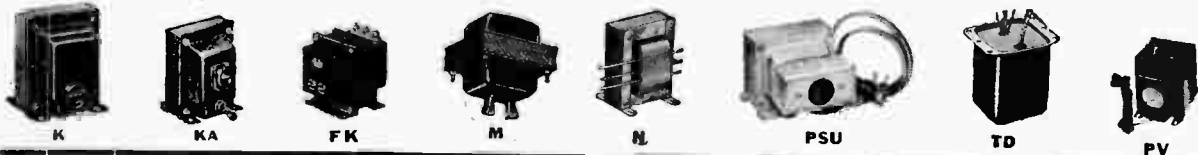
## SPEAKER FIELD SUPPLY TRANSFORMER

Part No.	Plate Supply A.C. Volts	D.C. Milliamperes	Rectifier Filament Volts—Amperes	Mtg.	Height Overall	Base Area	Shpg. Wt. in Lbs.	List Price
P-6146	120-0-120	250	5.0 3.0	C	4"	3 1/4" x 3 1/4"	4.2	\$13.04

## CONDENSER TESTER POWER TRANSFORMER

Part No.	Plate Supply A.C. Volts	D.C.-M.A.	Fil. Wdgs. Volts	Amps.	Overall Dimensions	Mtg. Type	Shpg. Wt. in Lbs.	List Price
P-6459	550 55	30 60	6.3 6.3	0.9 0.6	L W D 2 1/4" 2 1/4" 2 1/4"	Coil and Iron	1.4	\$9.10

†All Primary Windings for 117 V-60 cycle operation unless otherwise indicated.







# CHICAGO

## MILITARY STANDARD POWER AND FILAMENT TRANSFORMERS MOLDED TOROIDAL INDUCTORS

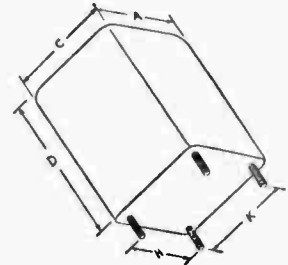


CHICAGO STANDARD TRANSFORMER CORPORATION

### MS (MILITARY STANDARD) POWER AND FILAMENT TRANSFORMERS



Case Type	Dimensions in Inches					Stud Size
	A	C	D	H	K	
EB	1 1/16	1 1/16	2 3/16	1 3/8	1 1/4	6-32
FB	2 5/16	2 1/2	2 3/8	1 1/16	1 1/4	6-32
GA	2 3/4	2 3/4	3 1/8	2 1/8	1 3/4	6-32
GB	2 3/4	2 3/4	2 1/8	2 1/8	1 3/4	6-32
HB	3 1/16	2 5/8	3 3/8	2 19/32	1 5/8	8-32
HA	3 1/16	2 5/8	4 1/4	2 19/32	1 5/8	8-32
JB	3 3/8	3 1/8	3 7/8	2 5/8	2 3/8	8-32
KA	3 1/8	3 3/8	5 1/4	3	2 7/8	10-32
KB	3 1/8	3 3/8	4 3/8	3	2 7/8	10-32
LB	4 5/16	3 11/16	4 1/2	3 5/8	2 1/16	10-32
MB	4 11/16	4	4 13/16	3 11/16	3	1/4-20
NB	5 1/16	4 5/16	5 1/2	4 1/16	3 5/16	1/4-20



### POWER TRANSFORMERS—Primary, 105/115/125 V.—Frequency, 54-66 Cycles

MIL-T-27 Classification	MIL-T-27 Part No.	High Voltage Secondary		D-C V Output	Rect. Fil.		Fil. No. 2		Wt. Lbs.	Case Size	Catalog Number	List Price
		A-C Volts	D-C Ma.		Volts	Amps	Volts	Amps				
TF4RX03HA001	MS-90026	200-100-0-100-200	70	385	6.3/5	2	6.3	3	4	HA	PMS-70	\$34.50
TF4RX03JB002	MS-90027	325-0-325	70	260	6.3/5	2	6.3	4	5	JB	PMS-70A	29.50
TF4RX03KB006	MS-90028	325-0-525	150	245	6.3	5	5	3	7 1/4	KB	PMS-150	36.50
TF4RX03LB003	MS-90029	400-0-400	175	318	5	3	6.3	8	10	LB	PMS-175	42.50
TF4RX03MB004	MS-90030	450-0-450	250	345	5	3	6.3	8	13	MB	PMS-250	47.50
TF4RX02KB001	MS-90031	350-0-350	250	255					7 1/2	KB	PMS-350	31.50
TF4RX02LB002	MS-90032	550-0-550	250	419					11	LB	PMS-550	36.50
TF4RX02NB003	MS-90036	800-0-800	250	640					16 1/2	NB	PMS-800	49.50

### FILAMENT TRANSFORMERS—Primary, 105/115/125 V.—Frequency, 54-66 Cycles

MIL-T-27 Classification No.	MIL-T-27 Part No.	Secondary		Insulation Volts RMS	Wt. Lbs.	Case Size	Catalog Number	List Price
		Volts	Amps					
TF4RX01EB002	MS-90016	2.5	3.0	2500	1 1/2	EB	FMS-23	\$16.95
TF4RX01FB003	MS-90017	2.5	10	2500	2 1/2	GB	FMS-210	23.50
TF4RX01FB004	MS-90018	5.0	3.0	2500	1 3/4	FB	FMS-53	18.50
TF4RX01HB005	MS-90019	5.0	10	2500	4	HB	FMS-510	25.50
TF4RX01FB006	MS-90020	6.3	2.0	2500	1 3/4	FB	FMS-62	18.50
TF4RX01GB007	MS-90021	6.3	5.0	2500	2 3/4	HB	FMS-65	21.50
TF4RX01JB008	MS-90022	6.3 CT	10	2500	5	JB	FMS-610	29.50
TF4RX01KB009	MS-90023	6.3	20	2500	8	KB	FMS-620	36.50
TF4RX01B012	MS-90024	2.5	10	10000	4 3/4	JB	FMS-210H	27.50
TF4RX01KB013	MS-90025	5.0	10	10000	7	KB	FMS-510H	35.00

### MULTIPLE FILAMENT TRANSFORMERS (TR4RX01—) Primary, 105/115/125 V., Frequency, 50/60 cycles

Designed and built in accordance with MIL-T-27A. Grade 4, Class R operating temperature; life expectancy X (10,000 hours minimum). Maximum operating altitude 10,000 feet. Also available in type S, Sealed-in-Steel cases (catalog Numbers F-1 through F-8, listed below). Dimensions on page N-872.



Sec. No. 1	Sec. No. 2	Sec. No. 3	Insul. Test	Case Size†	Wt. Lbs.	Catalog No.	List Price	Catalog No.	Case Size	List Price
5 V. 2A	6.3 V. CT 2.5 A	—	2500 V.	GA	2 1/2	FMS-1	\$26.50	F-1	15	\$16.50
5 V. 2A	16.6 V. CT 1.25A	—	2500 V.	GA	3 1/2	FMS-2	26.50	F-2	15	16.50
5 V. 3A	6.3 V. CT 5A	—	2500 V.	HA	4	FMS-3	29.25	F-3	17	17.25
5 V. 3A	6.3 V. CT 3A	6.3 V. CT 3A	2500 V.	JB	4 3/4	FMS-4	34.50	F-4	18	19.75
5 V. 3A	6.3 V. CT 1A	6.3 V. CT 5A	2500 V.	JB	4 3/4	FMS-5	34.50	F-5	18	20.00
6.3 V. CT 3A	6.3 V. CT 3A	—	2500 V.	HA	4	FMS-6	28.75	F-6	17	17.25
6.3 V. CT 6A	6.3 V. CT 6A	—	2500 V.	KA	6 1/2	FMS-7	33.50	F-7	21	20.50
5 V. CT 3A	5 V. CT 3A	5 V. CT 6A	5000 V.	KA	7	FMS-8	43.75	F-8	21	21.50

†Refer to case size. All secondary A.C. voltages ± 3%.

### MOLDED TOROIDAL INDUCTORS

CHICAGO toroids, plastic encapsulated in molded cases, are stocked for immediate delivery. Units may be stacked and mounted with a single screw. CHICAGO toroids are wound on high density, high permeability cores of powdered molybdenum permalloy, with utmost attention given to stability, low temperature co-efficients, insulation and ruggedness. All units are 1 1/8" diameter, 1/2" high, with 90° spacing of terminals and mounting hole for 4-40 screw.

- Features:
- High Q over wide frequency ranges
  - Minimum pickup from external magnetic fields
  - Close tolerance of plus, minus 1%
  - High stability over temperature range of —55° to plus 85° centigrade
  - Not affected by high humidity
  - Resist shock and vibration
  - Small sized, uniform, easily stacked



Catalog No.	Inductance (m.h.)	D.C. Res. (ohms)	List Price	Catalog No.	Inductance (m.h.)	D.C. Res. (ohms)	List Price
TM-1A	1	.32	\$3.00	TM-80 A	80	29.5	\$3.00
TM-2 A	2	.72	3.00	TM-100 A	100	32.5	3.00
TM-5 A	5	1.85	3.00	TM-200 A	200	71.5	3.40
TM-8 A	8	2.25	3.00	TM-500 A	500	185	3.80
TM-10 A	10	3.25	3.00	TN-800 A	800	300	3.80
TM-20 A	20	7.0	3.00	TM-1000 A	1000	340	3.80
TM-50 A	50	18.5	3.00				

# CHICAGO

## MILITARY and NEW EQUIPMENT AUDIO TRANSFORMERS



CHICAGO STANDARD TRANSFORMER CORPORATION

### FULL FREQUENCY RANGE AUDIO TRANSFORMERS Frequency Response within $\pm 1/2$ db, 30 to 15,000 Cycles INPUT TRANSFORMERS—TF4RX—YY†† YY Case (Cat. No. BIH) and B-Type (Cat. No. BI) Mountings



Application	Impedance Primary—Secondary	Max. Power Level	Hum Shielding, dbm	Case Family Size	Wt. Lbs.	Cat. No.	List Price
Line to Single or P-P Grids	*Pri: 600/150 ohms CT	+15 dbm.	-70	13	1 1/2	BIH-1	\$39.50
	*Sec: 50,000 ohms CT					BI-1	28.75
Line to Single or P-P Grids	*Pri: 600/150 ohms CT	+15 dbm.	-90	13	1 1/2	BI-2	36.75
	*Sec: 50,000 ohms CT						
Line bridging to P-P Grids	*Pri: 8,000/6,000 ohms CT	+15 dbm.	-70	13	1 1/2	BI-3	29.95
	*Sec: 50,000 ohms CT						
Line to Line	Pri: 600/150 ohms CT	+15 dbm.	-70	13	1 1/2	BIH-4	39.50
	Sec: 600/150 ohms CT					BI-4	29.50
Line to Line	*Pri: 600/150 ohms CT	+30 dbm.	-90	18	3 1/4	BIH-5	61.95
	*Sec: 600/150 ohms CT					BI-5	39.15
Interstage: P-P Plates to Sgl. or P-P Grids	*Pri: 20,000 ohms CT	+15 dbm.	-70	13	1 1/2	BIH-6	40.50
	*Sec: 50,000 ohms CT					BI-6	28.75
Low Imped. Mike, Pickup, or Multiple Line to Grid	Pri: 50/150/250/600	+15 dbm.	-70	13	1 1/2	BIH-7	39.50
	*Sec: 50,000 ohms CT					BI-7	29.95
Single Plate to Push- Pull Grids	Pri: 10,000 ohms	+15 dbm.	-70	13	1 1/2	BIH-8	37.50
	*Sec: 50,000 ohms CT						

††Refer to family.

### OUTPUT TRANSFORMERS—TR4RX13YY YY Case (Cat. No. BOH) and B-Type (Cat. No. BO) Mountings

Application	Impedance Primary—Secondary	Max. Power Level	Case Size	Wt. Lbs.	Cat. No.	List Price
Single Plate to Line	†Pri: 15,000 ohms	+15 dbm. (22 mw)	14	2 1/4	BOH-1	\$26.80
	*Sec: 600/150 ohms CT				BO-1	16.95
P-P Plates to Line	*Pri: 20,000 ohms CT	+30 dbm. (1 watt)	16	3	BOH-2	39.20
	*Sec: 600/150 ohms CT				BO-2	22.50
P-P Plates to Line	Pri: 5,000 ohms CT	+40 dbm. (10 watts)	20	5 3/4	BO-3	22.15
	*Sec: 600/150 ohms CT					
P-P Plates to Line	Pri: 7,500 ohms CT	+43 dbm. (20 watts)	20	6	BOH-4	37.10
	*Sec: 600/150 ohms CT†				BO-4	23.50
P-P Plates to Line or Voice Coil	*Pri: 10,000 ohms CT	+37 dbm. (5 watts)	18	4	BOH-5	49.50
	*Sec: 600/16/8 ohms CT and 150/4 ohms				BO-5	27.20
P-P Plates to Voice Coil	Pri: 7,500 ohms CT	+43 dbm. (20 watts)	20	6	BO-6	29.25
	Sec: 8/20 ohms†					
P-P Parallel Pl. to Line or Voice Coil	Pri: 1500 ohms CT	+45 dbm. (30 watts)	21	6 1/2	BO-8	30.80
	*Sec: 600/16/8 ohms CT and 150/4 ohms					
P-P Plates to Line or Voice Coil	*Pri: 5000/3000 ohms CT	+42 dbm. (15 watts)	20	6	BOH-9	45.40
	*Sec: 600/16/8 ohms CT and 150/4 ohms				BO-9	28.75
P-P Low Level Plates to Line	Pri: 20,000 ohms CT	+15 dbm. (22 mw)	13	1 1/2	BO-10	27.50
	*Sec: 600/150 ohms CT					
P-P Plates to Line or Voice Coil	*Pri: 3000/2500 ohms CT	+46 dbm. (40 watts)	22	9 1/2	BO-11	41.45
	*Sec: 600/16/8 ohms CT and 150/4 ohms					
P-P Plates to Line or Voice Coil	Pri: 10,000 ohms CT	+40 dbm. (10 watts)	22	9	BO-12	29.75
	Sec: 600/16/8 ohms					
P-P Plates to Voice Coil	Pri: 10,000 ohms	+43 dbm. (20 watts)	21	7	BO-13	29.75
	Sec: 16/8/4 ohms					
P-P Plates to VC, pentode, triode or Ult.-Lin. Circuits	Pri: 5000 ohms CT	+50 dbm. (100 watts)	24	24	BO-14	66.25
	Sec: 16/8 ohms; 70.7 volts					

Split and balanced windings. †0 to 10 ma. D.C. †Has tertiary winding to provide 15% inverse feedback. \*\*Has D.C. in primary; frequency response  $\pm 2$  db, 30-15,000 cycles.  
**LOW PASS FILTER LPF-2**—Hermetically sealed unit for attenuating frequencies above 3,000 cycles in low level speech amplifiers, 50,000 ohm plate to 50,000 ohm grid. Insertion loss 0.8 db. Height 2 1/8", width 1 7/16", depth 1 1/8", mtg. ctrs. 1 1/16". Shpg. wt. 1/2 lb. List Price \$26.50.

### DETAILS OF NEW EQUIPMENT LINE MOUNTINGS

**YY CASE MOUNTING**—Hermetic sealing meets all MIL-T-27A specifications. Steel base cover is bonded into the case by deep-seal soldering. Terminals are hermetically sealed by unique rubber gasket—ceramic bushing construction. Units are stud mounted.

**C-TYPE MOUNTING**—Moisture-resistant compound surrounds coil and core. Ten-inch RETMA color-coded leads, ends stripped and tinned for easy soldering. Flange-mounted drawn steel cases.

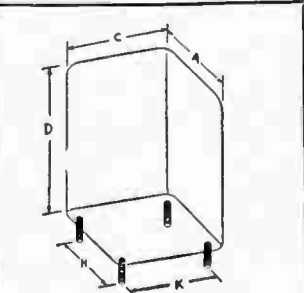
**S-TYPE MOUNTING**—Precision-fitted steel base-covers and terminal boards, plus compound filling, keep moisture out. Solder-lug terminals are clearly identified, easy to use. Drawn steel cases are flange-mounted.

**B-TYPE MOUNTING**—Steel bases are bonded into the drawn steel cases by deep-seal soldering to make units completely moisture proof. Stud-mounted cases take minimum chassis space. Convenient, compact, pin-type terminals.

### BIAS TRANSFORMERS—Combination Plate and Filament—Primary 50-60 Cycles

Primary Volts	High Voltage Secondary			Rect. Volts	Filt. Amps.	YY Case Mounting*		S-Type Mounting		C-Type Mounting			
	AC Volts	CT	DC MA			Cat. No.	Case List No. Price	Cat. No.	Case List No. Price	Cat. No.	Case List No. Price		
115	180-160-140-120	150	5.0	3.0	1BH-150	19	\$31.50	1BS-150	19	\$24.50	1BC-150	18	\$10.75
230	180-160-140-120	150	5.0	3.0	2BH-150	19	31.75	2BS-150	19	25.50	2BC-150	18	10.50

\*TF4RX03YY.



YY Case & H Type Mtg. Dimensions

Case Size	Dimensions in Inches				
	A	C	D	H	K
8	1 1/2	1 1/2	1 1/16	1	1
9	1 1/2	1 1/2	2 1/8	1	1
12	2 1/4	2 1/4	2 1/16	1 9/16	1 3/8
13	2 1/4	2 1/4	2 1/16	1 9/16	1 3/8
14	2 1/2	2 1/2	3 1/16	1 11/16	1 11/16
15	2 1/2	2 1/2	3 1/16	1 11/16	1 11/16
16	2 1/2	2 1/2	3 1/2	2	1 7/8
17	2 1/2	2 1/2	3 3/4	2	1 7/8
18	3 1/4	3	3 1/2	2 1/8	2 1/8
19	3 1/4	3	4 1/4	2 1/8	2 1/8
20	3 1/16	3 1/16	4 1/16	2 5/8	2 5/8
21	3 1/16	3 1/16	4 1/16	2 5/8	2 5/8
22	4 1/16	4 1/16	5 1/16	3 3/8	3
24	5 1/16	4 13/16	6 1/16	3 3/8	3

### HIGH Q CHOKES

For Dynamic  
Noise Suppression  
Circuits  
(S-Type Mounting)

Two efficient reactors, inductance values .8 and 2.4 henrys respectively, are designed for noise suppression circuits, but can be used in any tuned circuit requiring the given inductances. Inductance values accurate within -5% with up to 15 ma. d-c. Minimum Q of 20. Mounted in drawn steel cases, 1 1/2" x 1 1/2" x 1 1/2" high.

Cat. No.	Inductance	List Price
NSI-1	.8 hy.	\$12.50
NSI-2	2.4 hy.	12.50

(S-Type and C-Type Case Dimensions on Page N-872.)

# CHICAGO

## MILITARY STANDARD AUDIOS MS TRANSISTOR AUDIOS MIL-T-27A SATURABLE TRANSFORMERS

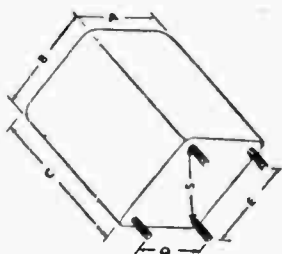


CHICAGO STANDARD TRANSFORMER CORPORATION

### MILITARY STANDARD AUDIO TRANSFORMERS

Designed and built in accordance with MIL-T-27A, Grade A, Class R operating temperature; Life Expectancy X (10,000 hrs. min.).

Maximum Operating Altitude 50,000 ft.  
Frequency Response  $\pm 2$  db 300-10,000 cps, AJ Case Size—Max. Wt., 6 lbs.



MIL-T-27A Classification	MIL-T-27A Part No.	Application	Impedance	Operating Level	Pri. DCMA	Catalog No.	List Price
TF 1RX 15AJ001	MS-90000	P-P Plates to P-P Grids	Pri: 10,000 ohms CT Sec: 90,000 ohms CT	15 dbm.	10	AMS-1	\$26.50
TF 1RX 16AJ002	MS-90001	Line to Voice Coil	Pri: 600 ohms CT Sec: 4/8/16 ohms	2W	—	AMS-2	24.50
TF 1RX 10AJ001	MS-90002	Line to P-P Grids	Pri: 600 ohms CT Sec: 135,000 ohms CT	15 dbm.	—	AMS-3	23.50
TF 1RX 16AJ001	MS-90003	Line to Line	Pri: 600 ohms CT Sec: 600 ohms CT	15 dbm.	—	AMS-4	23.50
TF 1RX 13AJ001	MS-90004	Single Plate to Line	Pri: 7600/4800 ohms Sec: 600 ohms CT/150 ohms	2W	40	AMS-5	21.25
TF 1RX 13AJ002	MS-90005	Single Plate to Voice Coil	Pri: 7600/4800 ohms Sec: 4/8/16 ohms	2W	40	AMS-6	21.50
TF 1RX 13AJ003	MS-90006	P-P Plates to Line	Pri: 15,000 ohms CT Sec: 600 ohms CT/150 ohms	2W	10	AMS-7	20.80
TF 1RX 13AJ004	MS-90007	P-P Plates to Line	Pri: 24,000 ohms CT Sec: 600 ohms CT/150 ohms	1W	20	AMS-8	21.50
TF 1RX 13AJ005	MS-90008	P-P Plates to Line	Pri: 60,000 ohms CT Sec: 600 ohms CT/150 ohms	5W	20	AMS-9	20.00

### TRANSISTOR AUDIO TRANSFORMERS—TF4RX— — — †

Designed and built in accordance with MIL-T-27A, Grade 4, Class R operating temperature; Life Expectancy X (10,000 hrs. min.).

Maximum Operating Altitude 50,000 ft.

Application	Impedance in Ohms		Max. Pri. D.C. Ma.	DC Res. in Ohms		Power in Watts	Case Size	Family †	Wt. Lbs.	Catalog No.	List Price
	Pri.	Sec.		Pri.	Sec.						
Input	600 CT	10	20	42	.8	.05	AG	17	2 1/2 oz.	TAMS-1	\$17.00
Interstage	100 CT	10 CT	100	4.3	.8	.25	AH	17	5 oz.	TAMS-2	17.00
Interstage	100	1000 CT	100	5.8	.45	.25	AJ	17	11 oz.	TAMS-3	17.00
Interstage	500 CT	5000 CT	12	37	250	.03	AJ	17	11 oz.	TAMS-4	18.00
Driver	1000	200 CT	10	400	115	.05	AG	17	2 oz.	TAMS-5	22.15
Driver	2000	200 CT	5	720	115	.05	AG	12	2 oz.	TAMS-6	22.15
Driver	100	100 CT	100	12	12	.5	EB	17	1 lb.	TAMS-7	17.00
Output	9800	15	2	640	2	.05	AG	12	2 oz.	TAMS-8	21.50
Output	1000	4/8/16	10	180	3.5	.2	AG	17	2 1/2 oz.	TAMS-9	22.50
Output	2000 CT	4/8/16	—	250	4	.2	AG	12	2 1/2 oz.	TAMS-10	23.30
Output	48 CT	8/16	275	5	1.5	5	FA	17	1 1/2 lb.	TAMS-11	20.80
Output	20 CT	8	500	.55	.35	10	AJ	17	12 oz.	TAMS-12	17.00

†Refer to Family and Case Size.

#### CASE DIMENSIONS

Case Size	Dimensions in inches				
	A	E	C	D	S
AG	1 1/8	1	1 3/8	—	—
AH	1 1/8	1 1/8	1 3/8	—	1 1/4
AJ	1 5/8	1 1/8	2 1/4	1 1/8	1 1/4
EA	1 15/16	1 15/16	2 3/4	1 1/8	1 1/4
EB	1 15/16	1 1/8	2 3/8	1 1/8	1 1/4
FA	2 3/8	2 1/8	3 1/8	1 1/4	1 1/8

### MIL-T-27A SATURABLE TRANSFORMERS (Magnetic Amplifiers)

Application: For use with 2 phase 115v. 400 cycle Servo-Motors.

Saturable Transformer Ratings Maximum Altitude 50,000 ft.

All Primaries 115v., 400 cycles: TF4RX40Y

Catalog No.	STH-3		STH-5	STH-10	STH-18
Power Output in watts	2.7	3.5	5	10	18
Voltage Output, volts	26	115	115	115	115
Load Resistance in ohms	250	3800	2610	1320	775
Tuning Capacitor, MFD	.28	.19	.4	.6	1.0
Primary Current in amps	.085	.1	.13	.24	.35
Control Current, MA	8	8	8	8	8
Control Coil	2900	2900	3100	4200	5600
Res. (Per Coil) in ohms	—	—	—	—	—
Control Coil By pass Capacitors, MFD	.1	.1	.1	.1	.1
Base Area, Dimensions, in.	1 5/16 x 1 13/16	1 1/2 x 2 3/8	1 3/4 x 2 1/2	2 3/8 x 3 3/8	2 3/8 x 3 3/8
Height, in.	2 7/16	2 3/4	2 3/4	3 3/8	3 3/8
Mtg. Ctrs., in.	3/4 x 1 13/16	1 x 1 1/8	1 1/2 x 1 7/8	1 1/2 x 2 1/2	1 1/2 x 2 1/2
Actual Wt., Lbs.	3/4	1	1 1/2	1 1/2	2 1/2
Typical Servo-Motor Load:					
Kearfott	R-118	R-119-2	R-110-2	R-111-2	R-112-2
G. M. Labs.	—	665-54-19	665-54-17	665-53-40	665-53-14
			665-52-48	665-53-41	665-53-15
List Price		\$45.00	\$43.50	\$47.50	\$62.50

### 400 CYCLE STEP-DOWN TRANSFORMER—TF1RX01YY

Y-Y connected, HP3-140 is identical to CHICAGO Specification No. 9926A in size and construction, but is rated at 140 va. instead of 88 va. Primary is 115 volts per phase, 3-phase, 400 cycles. Designed primarily for aircraft applications.

Catalog No.	Secondary Volts	Secondary Va. Cap.	Case Size	Terminal Type	Weight Lbs.	List Price
HP3-140	28.5	140	17	R	3	\$00.00

All secondary A.C. voltages  $\pm 3\%$

### SATURABLE TRANSFORMERS

are designed and built in accordance with MIL-T-27A, Grade 4, Class R operating temperature and life expectancy X (10,000 hrs. min.).



# CHICAGO

## MILITARY STANDARD AND MIL-T-27A 400 CYCLE TRANSFORMERS AND REACTORS

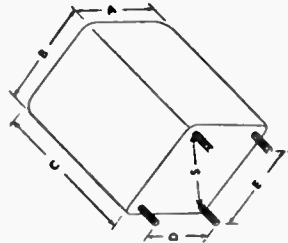


CHICAGO STANDARD TRANSFORMER CORPORATION



### MS CASE DIMENSIONS

Case Size	Dimensions in Inches					
	A	B	C	D	E	S
AH	1 3/16	1 3/16	1 3/4	—	—	1 1/4
AJ	1 5/8	1 5/8	2 3/8	1 3/8	1 3/8	—
EA	1 13/16	1 13/16	2 3/8	1 3/8	1 1/4	—
EB	1 13/16	1 13/16	2 3/8	1 3/8	1 1/4	—
FA	2 5/16	2 5/16	3 3/8	1 1/2	1 1/4	—
GA	2 5/16	2 5/16	3 3/8	2 3/8	1 3/4	—
GB	2 3/4	2 3/4	2 13/16	2 3/8	1 1/4	—
HA	3 1/8	2 5/8	4 1/2	2 1/2	1 5/8	—
JB	3 3/8	3 1/8	3 3/8	2 5/8	2 3/8	—
KA	3 13/16	3 3/8	5 1/4	3	2 3/8	—
KB	3 13/16	3 3/8	4 5/8	3	2 3/8	—



### MILITARY STANDARD CASES

Designed and built in accordance with MIL-T-27A, Grade 4, Class S\* operating temperature and life expectancy X (10,000 hours minimum). Maximum operating altitude 70,000 feet. The complete line is housed in Chicago's one piece drawn-steel cases. Outside case dimensions and mounting dimensions are within the tolerance of the Military Standard Specifications. \*High Temperature Operation 85° C. ambient, 45° C. rise.

### POWER TRANSFORMERS—TF4SX03— — † (Cap. Input. All pri. 105/115/125 V., 380-1000 c.

High Voltage Secondary		Rectifier Filament		Other Filaments		Case Size	Wt. Lbs.	Catalog Number	List Price
A.C. Volts	D.C. Ma.	Volts	Amps.	Volts	Amps.				
255-0-255	40	5.0	2.0	6.3 CT	2.0	GB	1 1/2	4PMS-40	\$38.20
270-0-270	55	5.0	2	6.3 CT	2	GB	1 3/4	4PMS-55	38.90
335-0-335	70	5.0	2	6.3 CT	3	GB	1 3/4	4PMS-70	42.50
330-0-330	85	5.0	2.0	6.3 CT	3.0	GA	2 1/2	4PMS-85	42.95
345-0-345	105	5.0	2.0	6.3 CT	3.5	GA	2 1/2	4PMS-105	47.65
375-0-375	120	5.0	3	6.3 CT	4	GA	3	4PMS-120	49.50
370-0-370	150	5.0	3.0	6.3 CT	4.0	JB	4 1/2	4PMS-150	64.50
440-0-440	165	5.0	3	6.3 CT	1.0	KB	6 1/2	4PMS-165	81.75
450-0-150	200	5.0	2	6.3 CT	3	KB	6 1/2	4PMS-200A	74.50
550-370-75-0	300	5.0	6	6.3 CT	0.6	KB	6 1/2	4PMS-200A	74.50
75-370-550				6.3 CT	4	KB	6 1/2	4PMS-200A	74.50
				6.3 CT	0.6	KB	6 1/2	4PMS-200A	74.50
				6.3 CT	4	KB	6 1/2	4PMS-200A	74.50
				6.3 CT	0.6	KB	6 1/2	4PMS-200A	74.50
				6.3 CT	5	KA	7 1/2	4PMS-300†§	81.75
				6.3 CT	1	KA	7 1/2	4PMS-300†§	81.75

### FILTER REACTORS—TF4SX04— — †

Inductance (henries)	Maximum D.C. Ma.	D.C. Resistance (ohms)	Insulation Volts RMS	Case Size	Wt. Lbs.	Catalog Number	List Price
2.0	40	190	2,500	AH	1/4	4RMS-240	\$14.70
2.0	55	160	2,500	AH	1/4	4RMS-255	13.50
2.0	70	165	2,500	AJ	1/4	4RMS-270	13.00
2.0	85	125	2,500	AH	1/4	4RMS-265	14.50
2.0	105	110	2,500	EB	1/2	4RMS-2105	13.50
2.0	120	100	2,500	EB	1	4RMS-2120	14.50
2.0	150	95	2,500	EB	1	4RMS-2150	14.00
2.0	165	90	2,500	EB	1	4RMS-2165	14.50
2.0	200	73	2,500	FA	2	4RMS-2200	18.25
2.0	300	47	2,500	HA	4	4RMS-2300§	21.55

### FILAMENT TRANSFORMERS—TF4SX01— — † (All Prim. 105, 115, 125 V., 380-1000 cys.

Sec. Volts	Sec. Amps.	Insulation Volts RMS	Case Size	Wt. Lbs.	Catalog No.	List Price
6.3 CT	3	2,500	EB	1	4FMS-63	\$27.75
6.3 CT	5.5	2,500	EA	1 1/4	4FMS-65	28.75
6.3 CT	10	2,500	FA	2	4FMS-610	32.00
6.3 CT	20	2,500	GA	2 1/2	4FMS-620	40.50

†Reactor Input. †Refer to Case Size. All secondary A.C. voltages ±3% §Max. operating Alt. 50,000 ft.

### 400 CYCLE TRANSFORMERS AND REACTORS (YY ALTERNATE CASES) (Max. Alt. 10,000 ft.)

### POWER TRANSFORMERS (All Primaries 105/115/125 V., 380-1000 Cycles)—TF4SX03YY



### CASE DIMENSIONS

Case Size	Dimensions in Inches				
	A	C	D	H	K
3	1 3/16	1 3/16	2	1 3/8	2 Studs
7	1 3/8	1 3/8	2	1 3/8	2 Studs
10	1 7/8	1 7/8	2 3/8	1 3/8	1 1/4
11	1 7/8	1 7/8	2 3/8	1 3/8	1 1/4
12	2 1/4	2 1/4	2 13/16	1 3/8	1 3/8
13	2 1/4	2 1/4	2 13/16	1 3/8	1 3/8
15	2 1/4	2 1/4	3 3/8	1 3/8	1 13/16
16	2 1/4	2 1/4	3 3/8	2	1 7/8
17	2 7/8	2 11/16	3 3/8	2	1 7/8
20	3 11/16	3 3/8	4 5/8	2 5/8	2 3/8
21	3 11/16	3 3/8	4 11/16	2 5/8	2 3/8

High Voltage Secondary		Rect. Fil.		Other Fil.		Case Size	Wt. Lbs.	Catalog Number	List Price
A.C. Volts	D.C. Ma.	Volts	Amps.	Volts	Amps.				
270-0-270	55	5.0	2	6.3 CT	2	13	1 1/2	4PHC-55	\$33.50
335-0-335	70	5.0	2	6.3 CT	3	13	1 3/4	4PHC-70	34.00
375-0-375	120	5.0	3	6.3 CT	4	17	2 1/2	4PHC-120	39.50
440-0-440	165	5.0	3	6.3 CT	7.5				
				6.3 CT	3				
				6.3 CT	3				
				6.3 CT	0.6	20	6	4PHC-165	64.50
				6.3 CT	4				
				6.3 CT	4				
				6.3 CT	0.6	20	5 3/4	4PHC-200A	59.50
550-370-75-0	300	5.0	6	6.3 CT	5				
75-370-550				6.3 CT	1	21	6 1/2	4-PHR-300	87.50

### FILTER REACTORS—TF4SX04YY

Inductance (henries)	Maximum D.C. Ma.	D.C. Resistance (Ohms)	Insulation Volts RMS	Case Size	Wt. Lbs.	Catalog Number	List Price
2.0	55	160	2,500	3	1/2	4RH-255	\$11.00
2.0	70	165	2,500	7	1 1/2	4RH-270	11.50
2.0	120	100	2,500	11	1	4RH-2120	13.50
2.0	165	90	2,500	11	1 1/2	4RH-2165	13.00
2.0	200	73	2,500	13	1 3/4	4RH-2200	14.50
2.0	300	47	2,500	16	3 1/4	4RH-2300	17.50

### FILAMENT TRANSFORMERS (All Prim. 105/115/125 V., 380-1000 cycles)—TF4SX04YY

Sec. Volts	Sec. Amps.	Insulation Volts RMS	Case Size	Wt. Lbs.	Catalog Number	List Price
6.3 CT	3	2,500	10	3/4	4FH-63	\$25.50
6.3 CT	5.5	2,500	11	1	4FH-65	26.50
6.3 CT	10	2,500	13	1 3/4	4FH-610	29.50
6.3 CT	20	2,500	15	2 1/2	4FH-620	32.50

### 400 CYCLE STEP-DOWN TRANSFORMER (See Page N-875)

# CHICAGO

**NEW EQUIPMENT**  
**AUDIO**  
**TRANSFORMERS**  
 CHICAGO STANDARD TRANSFORMER CORPORATION



## TRANSISTOR TRANSFORMERS

Here are the smallest iron core audio transformers ever built. They weigh less than 1/10 ounce and are no larger than the transistors they power. Write for Bulletin 462 showing typical circuit application.

These transformers are designed primarily for transistor audio application but they can be used wherever low power is involved. Useful range, below 1 mw level. They are constructed of extremely fine wire, wound on molded nylon bobbins, with special nickel alloy steel laminations. Mounting style is coil and iron only, type UM.

**SPECIAL Chicago-Stancor ultra-miniature transformer, designed and built to your requirements, can be supplied in quantities of five or more. Send your specifications for information on price and delivery.**

Part No.	Application	Pri. Imp.	Sec. Imp.	Pri. DC Res.	Sec. DC Res.	Dimensions <sup>§</sup>	Weight in ounces	List Price
UM-110	Interstage	20,000	1,000	1675	285	1/4" x 3/8" x 3/8"	0.07	\$9.50
UM-111	Output or matching	1,000	50/60	120	9.0	3/8" x 3/8" x 3/8"	0.10	6.50
UM-112	High imp. mic. input	200,000	1,000	4000	195	3/8" x 3/8" x 3/8"	0.10	10.50
UM-113	Interstage	20,000	1,000	1350	205	3/8" x 3/8" x 3/8"	0.10	7.25
UM-114	Output or matching	500	50/60	70	9.0	3/8" x 3/8" x 3/8"	0.10	6.50

<sup>§</sup>Dimensions ±.015".

## MINIATURE HIGH FIDELITY AUDIO TRANSFORMERS

Chicago-Stancor Tinytrans are miniature transformers made with nickel steel laminations. They have an exceptional frequency response for units of this size; ±1 db. 30-15,000 cps, Maximum level 0 db. Write for Bulletin 463 showing frequency response curves on these transformers.

These units are sealed and potted in 7/8" square, anodized aluminum cases with phenolic terminal boards. Total height, including terminals, is 1 1/4". The case has two 2-56 threaded inserts, 11/16" centers, for easy chassis mounting. The entire transformer weighs only 1.3 ounces.



Part No.	Application	Primary Impedance	Secondary Impedance	List Price
TT-11	Mic., pickup or line to single grid	50, 200/250, 500/600	50,000	\$14.15
TT-12	Mic., pickup or line to push-pull grids	50, 200/250, 500/600	50,000	14.75
TT-13	Dynamic mic. to single grid	7.5/30	50,000	13.45
TT-14	Single plate to single grid	15,000*	60,000	11.60

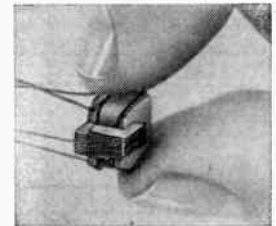
\*No DC in primary.

## PUBLIC ADDRESS RANGE TRANSFORMERS

Frequency Response within ±1 db, 50 to 10,000 Cycles

Driver and output transformers in this CHICAGO series are designed for three general power levels to fit a wide range of application. Up-to-date secondary impedances match 600 or 150-ohm lines, 16, 8, and 4-ohm speakers.

(16/8/4-ohm taps also suitable for 20/6/3.2-ohm speakers.) Output transformers have tertiary windings for 10% inverse feedback that minimizes distortion and provides extra audio watts without loss of fidelity.



**DRIVERS** H-Type—TF4RX12YY (Cat. No. PHD), S-Type (Cat. No. PSD) and C-Type (Cat. No. PCY) Mountings

Application	Primary Impedance	Max. D.C. Pri.	Ratio, Pri. to 1/2 Sec.	Case Size	Wt. Lbs.	Cat. No.	List Price
P-P Plates to P-P Grids	20,000 ohms (Pri. CT)	10 ma.	3:1	14	2 1/4	PHD-10	\$15.00
						PSD-10	11.50
						PCD-10	7.00
P-P Plates to P-P Grids	20,000 ohms (Pri. CT)	25 ma.	3:1	15	2 1/4	PHD-25	14.45
						PSD-25	12.50
						PCD-25	6.65
P-P Plates to P-P Grids	5,000/10,000 ohms (Pri. CT)	100 ma.	5:1	18	4 1/2	PHD-100	24.75

**TYPE UM**

**YY CASE MOUNTING**



**S-TYPE MOUNTING**

**OUTPUTS** H-Type—TF4RX13YY (Cat. No. PHO), S-Type (Cat. No. PSO) and C-Type (Cat. No. PCO) Mountings

Application	Impedances	Typical Output Tubes	Class	Max. Audio Watts	Max. D.C. Pri. CT	Case Size Wt.	Cat. No.	List Price
P-P Plates to Line or Voice Coil	Primary: 5,000 ohms, CT Secondary: * 600/150/16/8/4 ohms	6B4G, 6L6, 6V6, etc.	A <sub>1</sub>	20	120 ma.	20: 6 1/2 lbs.	PHO-80	\$30.95
			AB				PSO-80	19.25
P-P Plates to Line or Voice Coil	Primary: 10,000 ohms, CT Secondary: * 600/150/16/8/4 ohms	6V6, 6F6, 6K6, etc.	AB	15	200 ma.	19: 5 lbs.	PSO-150	19.00
			AB <sub>1</sub>				PCO-150	12.50
P-P Plates to Line or Voice Coil	Primary: 6,000 ohms, CT Secondary: * 600/150/16/8/4 ohms	Two 6L6's, Four 6V6's, or similar	B, AB <sub>2</sub> †	30	250 ma.	22: 9 lbs.	PSO-200	23.25
							PCO-200	14.50

\*Has tertiary winding to provide 10% inverse feedback.  
 †For low distortion, use fixed bias.



**C-TYPE MOUNTING**

See Pages N-872 and N-874 For Mounting Dimensions

# CHICAGO

NEW EQUIPMENT

## AUDIO TRANSFORMERS

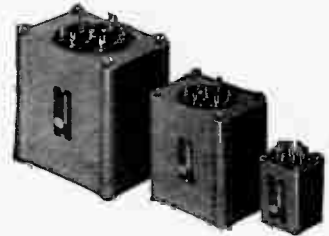
CHICAGO STANDARD TRANSFORMER CORPORATION



### HF AND WF SERIES HIGH FIDELITY AUDIO TRANSFORMERS

#### HF Series

These units have a wide frequency response of 20 to 20,000 cps with  $\pm 1$  db. Correct design reduces harmonic and intermodulation distortion to a negligible amount. Balanced construction minimizes hum pickup. Chicago-Stancor impregnation insures long life. Cases are finished in gray enamel and have four threaded holes at each end for flush mounting. Stud-type terminals are plainly marked for easy identification.



#### LOW IMPEDANCE TO GRID

Part No.	Application	Primary Imp Ohms	Secondary Imp Ohms	Max. Level	Hum-Pickup Reduction <sup>¶</sup>	Mtg. \$	List Price
HF-20	Low Imp. Mic., Pickup, or Line to Grid	50, 125/150, 200, 250, 333, 500/600	60,000 overall, in two sections	15 db	-74 db	HF-1	\$32.50
HF-20X	Low Imp., Mic., Pickup, or Line to Grid	50, 125/150, 200, 250, 333, 500/600	50,000	14 db	-92 db <sup>‡</sup>	HF-1	39.50
HF-22	Low Imp. Mic., Pickup, or Line to P.P. Grids	50, 125/150, 200, 250, 333, 500/600	120,000 overall, in two sections	15 db	-74 db	HF-1	29.50
HF-22X	Low Imp. Mic., Pickup, or Line to P.P. Grids	50, 125/150, 200, 250, 333, 500/600	80,000 overall, in two sections	14 db	-92 db <sup>‡</sup>	HF-1	42.50

#### INTERSTAGE

HF-29	Sgl. Pl. to P.P. Grids—Split secondary	15,000	95,000 (Turn ratio 2.5:1 overall)	17 db	-50 db	HF-1	\$31.20
HF-31	Single Plate to P.P. Grids. Split pri. and sec.	15,000	135,000 (Turn ratio 3:1 overall)	14 db	-74 db	HF-1	39.50
HF-32	P.P. Plates to P.P. Grids. Split pri. and sec.	30,000 Plate to Plate	80,000 (Turn ratio 1.6:1 overall)	26 db	-50 db	HF-2	47.50

#### MIXING

HF-40	Low Imp. Mixer, Mic., Pickup, or Line to Line	50, 125/150, 200, 250, 333, 500/600	50, 125/150, 200, 250, 333, 500/600	17 db	-74 db	HF-1	\$39.50
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#### OUTPUT

HF-65†	P.P. 2A3's, 6L6's, etc. to Line or Voice Coil	3,000 or 5,000 Plate to Plate	1.2, 2.5, 5, 7.5, 10, 15, 20, 30, 50, 125, 200, 250, 333 or 500	20 watts	.....	HF-2	\$42.50
HF-67†	P.P. 2A3's, 6L6's, etc. to Voice Coil	3,000 or 5,000 Plate to Plate	30, 20, 15, 10, 7.5, 5, 2.5, 1.2	20 watts	.....	HF-2	33.50
HF-68†	P.P. Par. 2A3's, 6A5G's, 300A's, 6A3's to Line or Voice Coil	1,500 or 2,500 Plate to Plate	500, 333, 250, 200, 125, 50, 30, 20, 15, 10, 7.5, 5, 2.5, 1.2	40 watts	.....	HF-3	65.00

§HF-1 Case: Shpg. wt., 3.0 lbs. Height overall, 3 $\frac{1}{4}$ ". Base area, 2 $\frac{3}{8}$ "x3 $\frac{1}{8}$ ". Mtg. ctrs., 1 $\frac{1}{8}$ "x2 $\frac{1}{8}$ ". HF-2 Case: Shpg. wt., 7.5 lbs. Height overall, 4 $\frac{3}{8}$ ". Base area, 3 $\frac{1}{4}$ "x4 $\frac{3}{8}$ ". Mtg. ctrs., 2 $\frac{1}{8}$ "x3 $\frac{1}{8}$ ". HF-3 Case: Shpg. wt., 15.0 lbs. Height overall, 4 $\frac{1}{4}$ ". Base area, 4 $\frac{1}{8}$ "x5 $\frac{1}{8}$ ". Mtg. ctrs.,

3 $\frac{3}{8}$ "x5 $\frac{1}{8}$ ".  
 †Response  $\pm 1$  db from 25 to 20,000 cps.  
 ‡As compared to standard uncased units.  
 ††Quadruple alloy magnetic shield.

#### WF Series

These units are of the same outstanding quality as the HF Series above, and, with the exception of two units, have a frequency response of 30-20,000 cps within  $\pm 2$  db. The WF-21 and WF-35 have a response within  $\pm 2$  db from 50-20,000 cps and have multiple alloy shields for

extremely low hum pickup. All WF units are cased in the WF-6 type cast case with phenolic terminal board and four tapped holes for flush mounting. Overall dimensions are 2" high with 1 $\frac{1}{2}$ " x 1 $\frac{1}{2}$ " base area. Mounting centers are 1 $\frac{1}{8}$ " x 1 $\frac{1}{8}$ ". Shipping weight is 0.6 lbs.

Part No.	Application	Primary Imp/Ohms	Secondary Imp/Ohms	List Price
WF-20	Low Imp. Mic., Pickup, or Line to Grid	50, 125/150, 200, 250, 333, 500/600	50,000	\$19.50
WF-21	Low Imp. Mic., Pickup, or L. to Sgl. or P.P. Grids	50, 200, 500	50,000	20.80
WF-22	Low Imp. Mic., Pickup, or Line to P.P. Grids	50, 125/150, 200, 250, 333, 500/600	80,000 overall, in two sections	19.50
WF-24	Dynamic Microphone to 1 or 2 Grids	30	50,000 overall, in two sections	17.70

#### INTERSTAGE

WF-26	Single Plate to Single Grid	15,000	60,000 (Turn ratio 2:1)	\$16.45
WF-28	Sgl. Pl. to 2 Grids. Can use split pri. for P.P. Pl.	15,000	80,000 overall (Turn ratio 2.3:1 overall)	18.20

#### LOW LEVEL OUTPUT

WF-34	Single Plate to Line	15,000	50, 125/150, 200, 250, 333, 500/600	\$19.50
WF-36	P.P. Low Level Plates to Line	30,000 Plate to Plate	50, 125/150, 200, 250, 333, 500/600	19.50
WF-35	Single Plate to Multiple Line Primary D.C. 8.0 ma. Response from 50-20,000 cps within $\pm 2$ db	15,000	50, 125/150, 200, 250, 333, 500/600	18.20

#### MIXING

WF-30	Low Imp. Mixer, Mic., Pickup, or Line to Line	50, 125/150, 200, 250, 333, 500/600	50, 125/150, 200, 250, 333, 500/600	19.50
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# CHICAGO

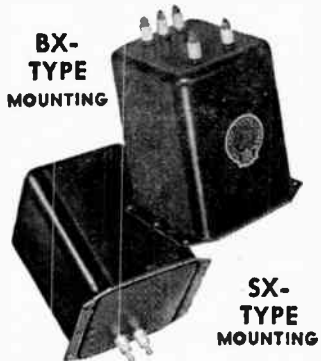
## NEW EQUIPMENT

### TRANSFORMERS and REACTORS

for Broadcast, Amateur and Industrial Application



CHICAGO STANDARD TRANSFORMER CORPORATION



## LARGE CAPACITY TRANSFORMERS AND REACTORS For Broadcast, Communications and Industrial Use

### DRIVER TRANSFORMERS

In:	Recommended Application: Tubes:	Ratio Pri./1/2 Sec.	Mtg. Type	Case Size	Wt. Lbs.	Cat. No.	List Price
250-Watt Transmitter	From two 2A3's, 6B4's, or similar P-P Plates to Class B 838's, 805's, 203-A's, etc.	3.5:1	B*	20	6 1/2	BD-1	\$34.50
1-KW Transmitter	From four 2A3's, 6B4's, or similar P-P Plates to two 833-A's or similar P-P Grids	3:1	†	24	12 1/4	BD-2	42.50
5-KW Transmitter	From four 845's, two 152-TL's or similar P-P Plates to 891-R's or similar P-P Grids	3.5:1	BX	26	24	BD-3	58.50

†Similar to SX-Type mounting, but with screw terminals on a terminal board.  
\*B-Type mounting, but with screw terminals. See page N-872 for dimensions.

### MODULATION TRANSFORMERS

Recommended Application In:	Recommended Application With:	Impedances (Pri. Plate to Plate)	Modulator Tubes	Mtg. Type	Case Size	Wt. Lbs.	Cat. No.	List Price
250-Watt Transmitter	Driver Transformer #BD-1	Pri: 7500 ohms CT Sec: 5000 ohms	203-A, 838 805, etc.	BX	26	25	BM-1	\$62.50
1-KW Transmitter	Driver Transformer #BD-2	Pri: 9000 ohms CT Sec: 7500 ohms	833-A, etc.	FS	84	175	BM-2	350.00
500-Watt Transmitter	Driver Transformer #BD-2 Class C Amplifier	Pri: 11000 ohms CT Sec: 5500 ohms	833-A, etc.	FS-1		105	BM-4	190.00

### MODULATION REACTORS

Recommended Application In:	Recommended Application With:	Inductance	D.C. Ma.	Mtg. Type	Case Size	Wt. Lbs.	Cat. No.	List Price
250-Watt Transmitter	Mod. Transformer #BM-1	65 hy.	250	BX	28	41	BR-1	\$ 95.50
1-KW Transmitter	Mod. Transformer #BM-2	100 hy.	500	FS	81	165	BR-2	225.00
5-KW Transmitter	Mod. Transformer #BM-3	120 hy.	900	WC		1100	BR-3	652.08(net)

### PLATE TRANSFORMERS

Primary: Volts	Max. VA.	Secondary: A.C. Load Volts	D.C. Volts after Filter	D.C. Ma.	Mtg. Size	Mtg. Type	Wt. Lbs.	Cat. No.	List Price
115-230	185	675-0-675 575-0-575	500 400	250	22	S	12	P-45	\$25.50
115-230	250	900-0-900 735-0-735	750 600	250	22	S	13 1/2	P-67	28.00
115-230	310	1150-0-1150 870-0-870	1000 750	250	60	FS	37	P-107	79.50
115-230	360	1425-0-1425* 600-0-600	1250 400	150 200	24	S	26	P-1240	42.50
115-230	550	1710-0-1710 1430-0-1430	1500 1250	300	63	FS	43	P-1512	89.50
115-230	915	2820-0-2820 2260-0-2260	2500 2000	300	71	FS	71	P-2520	127.50
115-230	1600	2900-0-2900 2320-0-2320	2600 2100	500	64	FS	85	P-2126	152.50
115-230	1850	3450-0-3450 2850-0-2850	3000 2500	500	81	FS	137	P-3025	229.00
115-230	3050	4600-0-4600 4050-0-4050 3400-0-3400	4000 3500 3000	600	90	FS	150	P-4353	298.00

\*Both secondaries may be rectified simultaneously.

### FILTER REACTORS

Inductance in Henrys	Max. D.C. Ma.	D.C. Resistance, Ohms	Insulation Test Volts	Mtg. Type	Mtg. Size	Wt. Lbs.	Cat. No.	List Price
10	500	40	9,000	FS	62	35	R-105	\$66.50
10	300	40	7,500	SX	26	22	R-103	32.50
6	700	35	10,000	FS	61	35	R-67	67.50
6	500	35	9,000	FS	60	35	R-65	54.50
6	300	35	7,500	SX	24	16 1/2	R-63	27.50

### Splatter Chokes for High Level "Clipper" Filters

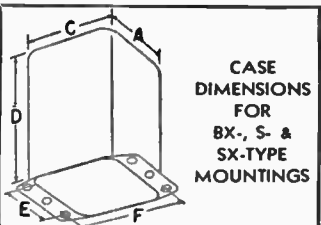
Can withstand high peak voltages. Has tapped windings to cover an inductance from .02 to 1.5 henries at relatively constant Q. Eliminates splatter, caused by heavy modulation; limits band width to 3,000 cycles, effectively increases "get through" ability of phone signals, and prevents negative peak clipping.

Type	D.C. Ma.	Insulation Volts	Inductance in Henrys	Mounting		List
				Type	Size	
SR-300	300	7,500	.02 to 1.5 Hy	BX	22	\$29.50
SR-500	500	10,000	.02 to 1.5 Hy	BX	24	31.50

### Low Pass Filter No. LPF-1

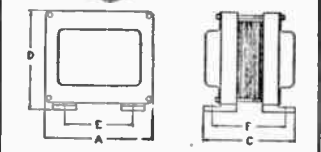
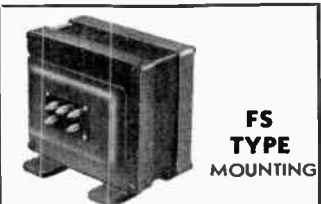
For attenuating frequencies above 3,000 cycles in low level speech amplifiers. Operates out of a 15,000 ohm source, e.g., the plate of 6C5, 6J5, etc. when its 60,000 ohm secondary is connected to an equal impedance output. Operates at signal levels up to -8 db. Complete with operating instructions. S type mtg. Case size 13. (See pg. N-872).

List Price.....\$29.50



CASE DIMENSIONS FOR BX-, S- & SX-TYPE MOUNTINGS

Case Size	Dimensions in Inches					
	A	C	D	E	F	
22	4 1/16	4 1/8	5 5/16	2 1/2	4 3/4	
24	5 5/16	4 1/8	6 1/8	3 1/4	5 5/8	
26	6 1/8	5 1/4	7 1/8	4 1/4	6	
28	7 1/8	6 1/8	8 1/8	5	7	



Size	Dimensions in Inches					
	A	D	E	F	C	
60	7 1/2	7	4 3/4	5 1/2	6 5/8	
61	7 1/2	7	4 3/4	5 1/2	6 5/8	
62	7 1/2	7	4 3/4	6 1/4	7 1/2	
63	7 1/2	7	4 3/4	6 1/4	7 1/2	
64	7 1/2	10	8 3/4	6	7 1/2	
65	7 1/2	7	4 3/4	6 3/4	7 1/2	
71	8 1/4	8 1/2	5 1/2	6 1/2	8 1/2	
81	11 1/2	10 1/2	7 1/2	8 1/2	10 1/2	
84	11 1/2	10 1/2	7 1/2	11 1/2	13 1/2	
90	13 1/2	12 1/2	9	8 7/8	10 3/8	



Overall Case Dimensions:  
H—31 1/2" W—26 1/2" D—23 1/2"

## COMMUNICATIONS RANGE AUDIO TRANSFORMERS

### Frequency Response within $\pm 1$ db, 200 to 3,500 Cycles

These transformers are specifically designed for use in receiving and transmitting equipment such as amateur, police, railroad, and aircraft types, where clear voice reproduction is desired.

INPUTS H-Type-TF4RX--YY† (Cat. No. CIH), S-Type (Cat. No. CIS) and C-Type (Cat. No. CIC) Mountings\*



YY CASE

S-TYPE MOUNTING

Application	Impedances: Primary—Secondary	Case Size	Wt. Lbs.	Cat. No.	Family	List Price
Low Level Line to Single or Push-Pull Grids	Pri: 600/150 ohms CT *Sec: 100,000 ohms CT	9	3/4	<b>CIH-1</b> <b>CIS-1</b> <b>CIC-1</b>	10	\$25.50 17.50 12.50
Low Level S. B. or D. B. Mike to Sgl. or P-P Grids	Pri: 125/50 ohms @ 80 ma. Sec: 125,000 ohms CT	9	3/4	<b>CIH-2</b> <b>CIS-2</b> <b>CIC-2</b>	11	17.50 10.50 6.50

\*\*Split and balanced windings: may be used singly or push-pull.

†Refer to family.

OUTPUTS H-Type-TF4RX13YY (Cat. No. COH), S-Type (Cat. No. COS) and C-Type (Cat. No. COC) Mountings\*



C-TYPE MOUNTING

Application	Impedances: Pri.—Sec.	Typical Audio Tubes	Pri. Class	Max. Watts	Max. Pri. D.C.	Case Size	Wt. Lbs.	Cat. No.	List Price
Sgl. P. to Line or Speaker	Pri.: 5000 ohms Sec. ohms: 600/150/16/8/4	6L6, 6V6, 25A6	A	5	55 ma.	14	2 3/4	<b>COH-1</b> <b>COS-1</b> <b>COC-1</b>	\$17.50 12.50 7.00
Sgl. Pl. to Line or Speaker	Pri.: 8000 ohms Sec. ohms: 600/150/16/8/4	6F6, 6V6, 6K6	A	5	55 ma.	14	2 3/4	<b>COH-2</b> <b>COS-2</b> <b>COC-2</b>	19.30 12.50 7.00

DRIVER H-Type (Cat. No. CDH), S-Type (Cat. No. CDS) and C-Type (Cat. No. CDC) Mountings\*

BX MOUNTING

Application	Primary Impedance	Max. D.C. Pri. CT	Ratio, Pri. to 1/2 Sec.	Case Size	Wt. Lbs.	Cat. No.	List Price
P-P Plates (2A3's, etc.) to P-P Grids	5,000 ohms (Pri. CT)	100 ma.	3:1	17	3 1/2	<b>CDS-1</b> <b>CDC-1</b>	\$15.50 7.50

\*Mounting Dimensions on Page N-879.

### MODULATION TRANSFORMERS—Class B Plates to Class C Load



STEP-DOWN

Catalog No.	Typical Mod. Tubes	Impedances Primary—Secondary	D.C. Ma.		Power Level	Mounting Type	Size	Wt., Lbs.	List Price
			Pri.	Sec.					
<b>CMS-1</b>	203A's, 805's, 75TL's, 203Z's	Pri: 8000/6700 ohms CT Sec: 8000/6000/4000 ohms	350	350	250-350 watts	SX	26	22	\$32.70
<b>CMS-3</b>	810's, 822's, 4-250A's, etc.	Pri: 18,000/12,000 ohms CT Sec: 8250 ohms	500	500	500.750 watts	FS†	64†	43	59.70

†Mounting Dimensions and Illustration on Page N-878.

### STEP-DOWN TRANSFORMERS—Primary, 50/60 cycles

CHICAGO step-down autotransformers solve the problem of operating standard 117-volt radios, amplifiers, and various electrical appliances from 220-volt power sources. They are particularly well adapted to use in Central and South American countries, where 220-volt lines are frequently found, and where the Sealed-in-Steel construction protects them against corrosion caused by excessive humidity. Input side is equipped with 8-foot, rubber-covered cord and plug. Output side has standard female receptacle.



ISOLATION

Catalog No.	Input Voltage	Output Voltage	Rating, Continuous Duty	Case Size	Wt., Lbs.	List Price
<b>SD-50</b>	220-250	110-125	50 watts	16	2 3/4	\$ 5.34
<b>SD-100</b>	220-250	110-125	100 watts	20	4 1/4	6.66
<b>SD-150</b>	220-250	110-125	150 watts	22	7	7.80
<b>SD-250</b>	220-250	110-125	250 watts	22	8 3/4	9.45
<b>SD-500</b>	220-250	110-125	500 watts	24	14 1/2	12.00
<b>SD-1000</b>	220-250	110-125	1000 watts	26	22 1/2	19.70

### ISOLATION TRANSFORMERS—Primary, 50/60 cycles

A rotary switch on each CHICAGO isolation transformer adjusts to either of three primary voltages, 125/115/105 volts. With the unit operating on a 115-volt line, the three switch positions also provide varying secondary voltages, 105/115/125 volts isolated from line. Eight-foot, rubber-covered cord and plug on primary, standard female receptacle on secondary.

DIMENSIONS for S, SX, STEP-DOWN and ISOLATION TRANSFORMERS

Case Size	Dimensions in Inches					
	A	B	C	D	E	F
16	2 7/8	3 1/2	2 1/16	3 1/2	2	3 1/2
20	3 11/16	4 7/16	3 5/16	4 5/16	2 3/4	3 7/8
21	3 11/16	4 7/16	3 5/16	4 11/16	2 3/4	3 7/8
22	4 9/16	5 1/4	4 1/8	5 1/8	2 3/2	4 3/4
24	5 5/16	5 7/8	4 13/16	6 1/16	3 1/2	5 3/8
26	6 1 1/8	6 5/8	5 1/4	7 1/16	4 1/4	6

Catalog No.	Input Voltage	Output Voltage	Rating, Continuous Duty	Case Size	Wt., Lbs.	List Price
<b>IS-50</b>	105/115/125	125/115/105*	50 watts	21	5	\$ 8.25
<b>IS-100</b>	105/115/125	125/115/105*	100 watts	22	8 1/2	11.85
<b>IS-150</b>	105/115/125	125/115/105*	150 watts	24	12 1/2	14.10
<b>IS-250</b>	105/115/125	125/115/105*	250 watts	24	18 1/4	16.65

\*With 115-volt primary.



# FERRANTI TRANSFORMERS

This group of transformers are hermetically sealed in standard Mil-T-27A case sizes, and are designed to meet the full requirements of the Mil-T-27A specification. They provide the highest standard of quality necessary for professional and military requirements.

The range includes the specific types stan-

dardized by the Armed Services Electro Standards Agency for universal military use, as well as a group of standard types for 400 cycle power supplies.

Use of these standard high quality components in experimental equipment will avoid the necessity for redesign for production.

## Military Standard Filament Transformers *Input 105/115/125 Volts 60 Cycles ± 10%.*

Cat. No.	MIL Types	Military Standards No.	Sec. Volts	Sec. Amps	Test Volts	Case	List Price
FMF 20	TF1RX01EB002 or TF4RX01EB002	MS90016-1 or 2	2.5	3	2500	EB	\$14.40
FMF 21	TF1RX01GB003 or TF4RX01GB003	MS90017-1 or 2	2.5	10	2500	GB	21.60
FMF 22	TF1RX01FB004 or TF4RX01FB004	MS90018-1 or 2	5.0	3	2500	FB	15.90
FMF 23	TF1RX01HB005 or TF4RX01HB005	MS90019-1 or 2	5.0	10	2500	HB	24.60
FMF 24	TF1RX01FB006 or TF4RX01FB006	MS90020-1 or 2	6.3	2	2500	FB	15.60
FMF 25	TF1RX01GB007 or TF4RX01GB007	MS90021-1 or 2	6.3	5	2500	GB	19.80
FMF 26	TF1RX01JB008 or TF4RX01JB008	MS90022-1 or 2	6.3	10	2500	JB	27.00
FMF 27	TF1RX01KB009 or TF4RX01KB009	MS90023-1 or 2	6.3	20	2300	KB	33.00
FMF 28	TF1RX01JB012 or TF4RX01JB012	MS90024-1 or 2	2.5	10	10,000	JB	25.80
FMF 29	TF1RX01KB013 or TF4RX01KB013	MS90025-1 or 2	5.0	10	10,000	KB	31.80

## Military Standard Plate and Filament Transformers

*Input 105/115/125 Volts 60 Cycles ± 10%. Choke Input Filter*

Cat. No.	MIL Type	Military Standards No.	FIL 1	FIL 2	Plate (RMS)	Current Case	List Price
FMP 30	TF1RX03HA001 or TF4RX03HA001	MS90026-1 or 2	6.3/5v 2a	6.3v 3a	200-100-0-100-200	.07A.DC HA	\$27.00
FMP 31	TF1RX03JB002 or TF4RX03JB002	MS90027-1 or 2	6.3/5v 2a	6.3v 4a	325-0-325	.07A.DC JB	27.90
FMP 32	TF1RX03KB006 or TF4RX03KB006	MS90028-1 or 2	5v 3a	6.3v 5a	325-0-325	.150A.DC KB	36.00
FMP 33	TF1RX03LB003 or TF4RX03LB003	MS90029-1 or 2	5v 3a	6.3v 8a	400-0-400	.175A.DC LB	43.20
FMP 34	TF1RX03MB004 or TF4RX03MB004	MS90030-1 or 2	5v 3a	6.3v 8a	450-0-450	.250A.DC MB	51.00
FMP 35	TF1RX02KB001 or TF4RX02KB001	MS90031-1 or 2			350-0-350	.250A.DC KB	33.60
FMP 36	TF1RX02LB002 or TF4RX02LB002	MS90032-1 or 2			550-0-550	.250A.DC LB	39.00
FMP 37	TF1RX02NB003 or TF4RX02NB003	MS90036-1 or 2			800-0-800	.250A.DC NB	54.00

## 400 Cycle Transformers

### Filament Transformers

*Input 115 Volts 380-1200 Cycles*

Cat. No.	Sec. Volts	Sec. Amps	Test Volts	Case	List Price
FF 440	6.3 ct	2	1500	AJ	\$16.20
FF 41	6.3 ct	5	1500	EA	21.60
FF 42	6.3 ct	5	2500	FA	24.00
	6.3	5	2500		
FF 43	5/6.3	3	2500	EB	21.00
FF 44	5 ct	6	2500	EA	21.60
FF 45	2.5 ct	10	5000	HB	27.60

### Plate and Filament Transformers

*Input 115 Volts 380-1200 Cycles. Choke Input Filter*

Cat. No.	Plate RMS	DC Amps	Filaments	Case	List Price
FP 40	250-0-250	.070	5/6.3V 2A 6.3Vct 3A	GB	\$29.40
FP 41	325-0-325	.120	5V 3A 6.3 ct 5A	JB	37.20
FP 42	400-0-400	.200	5V 3A 6.3Vct 6A	KB	45.00
FP 43	350-0-350	.250	---	JB	33.60
FP 44	500-0-500	.250	---	KB	39.60

# FERRANTI ELECTRIC, INC.



# FERRANTI TRANSFORMERS

## Military Standard Audio Transformers

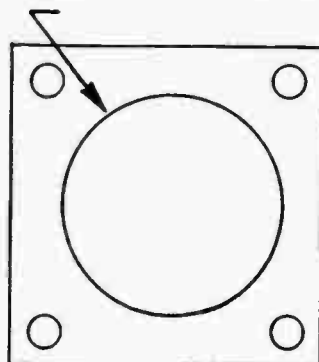
Frequency Response 300-10,000 c.p.s.  $\pm$  2DB

All units are hermetically sealed in Mil-T-27A case size AJ and are designed to meet the full requirements of the Mil-T-27A specification.

Use of these standard units in equipment at the experimental stage will avoid the necessity of redesign for production.

See dimension chart for AJ case details.

TERMINAL MOUNTING  
AREA — 1½" DIA. MAX.



Cat. No.	Function	Type Designation	Impedance Level (in ohms)			Max. Power Level DBM	Pri. D.C. Per Side in MA	Max. D.C. Unbalance	List Price
			Primary	Secondary	Ratio				
FMA 550	Interstage, Single or P.P. plates to single or P.P. grids	TF1RX15AJ001	10,000 CT	90,000 split and CT	1:3 overall	+15	10	10	\$25.80
FMA 551	Matching, 600 ohm line to voice coil	TF1RX16AJ002	600 split	4,8,16	6,12:1 overall	+33	0	0	25.80
FMA 552	Input, 600 ohm line to single or P.P. grids	TF1RX10AJ001	600 split	135,000 CT	1:15	+15	0	0	25.80
FMA 553	Matching 600 ohm line to 600 ohm line	TF1RX16AJ001	600 split	600 split	1:1	+15	0	0	25.80
FMA 554	Output, single plate 7600 ohm or 4800 ohm to 600 ohm line	TF1RX13AJ001	7600 top @ 4800	600 split	3,56:1	+33	40	40	25.80
FMA 555	Output, single plate 7600 ohm or 4800 ohm to voice coil	TF1RX13AJ002	7600 top @ 4800	4,8,16	21.8:1	+33	40	40	25.80
FMA 556	Output, single or P.P. plates to 600 ohm line	TF1RX13AJ003	15,000 CT	600 split	5:1	+33	10	10	25.80
FMA 557	Output, P.P. plates to 600 ohm line	TF1RX13AJ004	24,000 CT	600 split	6.32:1	+30	10	1	25.80
FMA 558	Output, P.P. plates to 600 ohm line	TF1RX13AJ005	60,000 CT	600 split	10:1	+27	10	1	25.80

# FERRANTI ELECTRIC, INC.



# FERRANTI TRANSFORMERS

## Filter Reactors

To match the power and audio transformers, these reactors are of the same high quality in design and construction, and are hermetically sealed in standard Mil-T-27A cases. Types particularly suitable for 400 cycle power supplies are included.

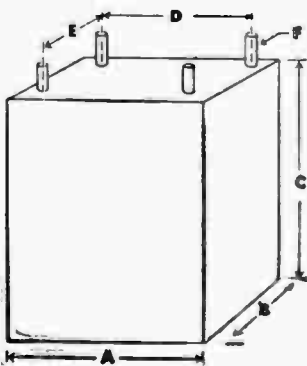
### For 60 Cycle Power Supplies

Cat. No.	DC Amps	Inductance Henries	Resistance Ohms	Test Volts	Case	List Price
FC 410	.020	30	930	1500	AJ	\$13.80
FC 11	.070	15	260	2500	GB	15.60
FC 12	.150	10	110	2500	JB	19.20
FC 13	.200	8	90	2500	KB	23.40
FC 14	.300	10	95	2500	LB	27.90

### For 400-Cycle Power Supplies

Cat. No.	DC Amps	Inductance Henries	Resistance Ohms	Test Volts	Case	List Price
FC 440	.070	3	225	1500	AJ	\$13.20
FC 41	.120	3	145	2000	EB	14.40
FC 42	.200	3	115	2000	FB	17.40
FC 43	.250	3	65	2000	GB	18.60

### Mil-T-27A Case and Mounting Dimensions



Case	A	B	C	D	E	F
AJ	1 $\frac{1}{8}$	1 $\frac{1}{8}$	2 $\frac{3}{8}$	1 $\frac{3}{8}$	1 $\frac{3}{8}$	6-32
EA	1 $\frac{1}{8}$	1 $\frac{1}{8}$	2 $\frac{3}{8}$	1 $\frac{3}{8}$	1 $\frac{1}{4}$	6-32
EB	1 $\frac{1}{8}$	1 $\frac{1}{8}$	2 $\frac{3}{8}$	1 $\frac{3}{8}$	1 $\frac{1}{4}$	6-32
FA	2 $\frac{3}{8}$	2 $\frac{3}{8}$	3 $\frac{1}{8}$	1 $\frac{1}{8}$	1 $\frac{1}{8}$	6-32
FB	2 $\frac{3}{8}$	2 $\frac{3}{8}$	2 $\frac{1}{2}$	1 $\frac{1}{8}$	1 $\frac{1}{8}$	6-32
GB	2 $\frac{3}{8}$	2 $\frac{3}{8}$	2 $\frac{1}{8}$	2 $\frac{1}{4}$	1 $\frac{1}{4}$	6-32
HA	3 $\frac{1}{8}$	2 $\frac{3}{8}$	4 $\frac{1}{8}$	2 $\frac{1}{8}$	1 $\frac{5}{8}$	8-32
HB	3 $\frac{1}{8}$	2 $\frac{3}{8}$	3 $\frac{1}{8}$	2 $\frac{1}{8}$	1 $\frac{5}{8}$	8-32
JB	3 $\frac{1}{8}$	3 $\frac{1}{8}$	3 $\frac{1}{8}$	2 $\frac{3}{8}$	2 $\frac{1}{8}$	8-32
KB	3 $\frac{1}{8}$	3 $\frac{1}{8}$	4 $\frac{1}{8}$	3	2 $\frac{1}{8}$	10-32
LB	4 $\frac{1}{8}$	3 $\frac{1}{8}$	4 $\frac{1}{2}$	3 $\frac{1}{8}$	2 $\frac{1}{8}$	10-32
MB	4 $\frac{1}{8}$	4	4 $\frac{1}{8}$	3 $\frac{1}{8}$	3	¼-20
NB	5 $\frac{1}{8}$	4 $\frac{1}{8}$	5 $\frac{1}{2}$	4 $\frac{1}{8}$	3 $\frac{1}{8}$	¼-20

# FERRANTI ELECTRIC, INC.





# TRIAD TRANSFORMER CORP.

## MINIATURES

### JAF SERIES — Hermetically Sealed

Type No.	Primary Impedance	Secondary Impedance	Max. Level-DBM	Freq. Resp.	Case
JAF-1	600 250/50	50000	0	60-15000	AF
JAF-2	600/250/50	25000	0	150-7000	AF
JAF-3	600 250/50	60000 CT.	0	60-15000	AF
JAF-5	30/12/4	50000	0	60-12000	AF
JAF-11	15000	50000	10	60-15000	AF
JAF-12	15000	60000 CT.	10	60-15000	AF
JAF-13	15000	95000 CT.	10	350-7000	AF
JAF-14	200	1/2 megohm	0	350-5000	AF
JAF-15	15000	1 megohm	10	350-5000	AF
JAF-21	15000	600/250 50	10	350-7000	AF
JAF-22	15000	600/250 50	10	350-7000	AF
JAF-23	20000 CT.	600/250 50	10	60-15000	AF
JAF-31	600/250/50	600/250/50	10	60-15000	AF
JAF-33	5000 CT.	5000 CT.	10	60-15000	AF
JAF-101	50 h.-.75 Ma.				

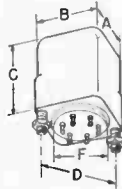
Low frequency loss will result from DC in windings other than where specified.



JAF Series

### SUB-MINIATURE AUDIO — Hermetically Sealed

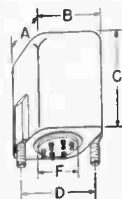
Type No.	Primary Impedance	Secondary Impedance	DC Res. Ohms (Approx.)		Case
			Pri.	Sec.	
JZ-1	600/250/50	60000	555	4100	JZ
JZ-5	600 250 50	50000	11.5	3800	JZ
JZ-7	30/12/4	1000	20	335	JZ
JZ-13	1500 (1 Ma.)	135000 CT.	1570	4700	JZ
JZ-15	20000 (.5 Ma.)	1200/600/100	2150	300	JZ
JZ-25	10000 (1 Ma.)	20	1500	120	JZ
JZ-26	1000 (5 Ma.)	50	365	23.5	JZ



AF  
AJ

### SUB-MINIATURE AUDIO — Open Frame

Type No.	Primary Impedance	Secondary Impedance	DC Res. Ohms (Approx.)		Case
			Pri.	Sec.	
TZ-1	600/250/50	6000	555	4100	
TZ-5	30/12/4	50000	11.5	3800	
TZ-7	30/12/4	1000	20	335	
TZ-13	15000 (1 Ma.)	135000 CT.	1570	4700	
TZ-15	20000 (.5 Ma.)	1200 600/100	2150	300	
TZ-25	10000 (1 Ma.)	200	1500	120	
TZ-26	1000 (5 Ma.)	50	365	23.5	
T-41X	1000 (10 Ma.)	200 CT.			
T-42X	9800 (2 Ma.)	16			
TY-44X	1000 (10 Ma.)	16/8/4			
TY-47X	2000 CT.	16/8/4			



AG  
AH

### POWER OUTPUT to Line and VC. Hermetically Sealed

Type No.	Primary Impedance	Secondary Impedance	Max. Level-Watts	Freq. Resp.	Case
HS-71	10000 (10 Ma.)	600/150	2	150-15000	AH
HS-73	5000 (40 Ma.)	500/250/16 8/4	5	150-15000	AJ
HS-75	10000 CT. (50 Ma. bal.)	500/250/16 8/4	10	150-15000	EB
HS-77	9000 CT. (102 Ma. bal.)	500/250/16 8/4	25	150-15000	GA



JZ



TZ

	AF	AG	AH	AI
A	3/4	1	1 1/4	1 1/2
B	3/4	1	1 1/4	1 1/2
C	1 1/8	1 3/8	1 1/2	2 3/8
D	2 3/32	1 1/32	1 1/32	1 1/8
F	5/8	3/4	7/8	7/8
I	4/40	6/32	6/32	6/32
Unit Wt.	1 1/4 oz.	2 1/2 oz.	5 1/4 oz.	11 oz.

\*Not in conformance with MIL-T-27A  
†Not in conformance with MIL-T-27

## MINIATURES

### TRANSISTOR Transformers

Type No.	Primary Impedance	Secondary Impedance	Maximum Level
JZ-7	30/12/4	1000	—10DBM
TZ-7	30/12/4	1000	—10DBM
*TY-64X	32 CT. (575 Ma.)	16/8/4	10W
*TY-65Z	32 CT. (575 Ma.)	6000 4000/3000	10W
TY-63X	48 CT. (550 Ma. bal.)	16/8	5W
*TY-48X	100 CT. (40 Ma.)	8/4	500MW
TY-61X	100 (100 Ma.)	100 CT.	500MW
*TY-58X	125 CT. (15 Ma.)	8/4	200MW
*TY-57X	250 CT. (10 Ma.)	16/8/4	200MW
*TY-27XT	500 CT. (2 Ma.)	500 CT.	10DBM
*TY-28XT	500 CT. (2 Ma.)	200 CT.	10DBM
*TY-45X	500 CT. (5 Ma.)	16 8/4	200MW
JZ-26	1000 (5 Ma.)	50	—10DBM
TZ-26	1000 (5 Ma.)	50	—10DBM
T-41X	1000 (10 Ma.)	200 CT.	0DBM
TY-44X	1000 (10 Ma.)	16 8/4	200MW
TY-47X	2000 CT. (10 Ma.)	16 8/4	200MW
*TY-55X	2000 CT. (2 Ma.)	500 CT.	200MW
JAF-33	5000 CT.	5000 CT.	10DBM
T-33X	5000 CT.	5000 CT.	10DBM
*TY-59X	5000 CT. (1 Ma.)	50000 CT.	200MW
T-42X	9800 (2 Ma.)	16	20DBM
*TY-56X	10000 (1 Ma.)	2000 CT.	200MW
*TY-54X	15000 (1.5 Ma.)	200 CT.	200MW
JZ-15	20000 (.5 Ma.)	1200 600/100	—10DBM
TZ-15	20000 (.5 Ma.)	1200/600/100	—10DBM
*TY-52X	20000 CT. (1 Ma.)	2000 CT.	200MW
*TY-50X	125000	2000 CT.	200MW

\* New item.

### MINIATURE AUDIO — "Trijets"

Type No.	Primary Impedance	Secondary Impedance	Max. Level-DBM	Freq. Resp.
T-1X	600/250/50	50000	0	60-15000
T-2X	600 250 50	250000	0	100-5000
T-3X	600/250/50	60000 CT.	0	60-15000
T-5X	30/12/4	50000	0	60-15000
T-11X	15000	50000	10	60-15000
T-12X	15000	60000 CT.	10	60-15000
T-13X	15000	95000 CT.	10	350-7000
T-20X	15000	600/250/50	10	60-15000
T-21X	30000	50	10	60-15000
T-22X	15000	600 250 50	10	350-7000
T-23X	20000 CT.	600 250 50	10	60-15000
T-31X	600 250/50	600 250 50	10	60-15000
T-33X	5000 CT.	5000 CT.	10	60-15000
T-101X	50 henries @ .75 Ma.			

Low frequency loss will result from DC in windings other than where specified.

### JO SERIES — Hermetically Sealed

Type No.	Primary Impedance	Secondary Impedance	Max. Level-DBM	Freq. Resp.	Case
JO-1	600/250/50	50000	0	50-15000	JOA
JO-2	600 250/50	250000	0	150-7000	JOA
JO-3	600/250/50	250000	0	150-7000	JOA
JO-5	30/12/24	60000 CT.	0	50-15000	JOA
JO-11	15000	50000	0	50-12000	JOA
JO-12	15000	60000	10	50-15000	JOB
JO-13	15000	60000 CT.	10	50-15000	JOB
JO-21	15000	95000 CT.	10	300-7000	JOB
JO-22	15000	600 250 50	10	50-15000	JOB
JO-23	20000 CT.	600 250 50	10	300-7000	JOB
JO-31	600 250/50	600 250 50	10	50-15000	JOB
JO-101	50 h.-2 Ma.	600/250/50	10	50-15000	JOB

Low frequency loss will result from DC in windings other than where specified.

Note: Last Letter of Type No. denotes case style.

	JOA	JOB	JZ
A	1 3/4 dia.	1 3/4 dia.	3/4 dia.
B	Round	Round	Round
C	1 1/2	1 3/2	3/2
D	3/4	3/4	—
F	7/8	7/8	—
Unit Wt.	2 oz.	2 1/2 oz.	.5 oz.

Standard threaded studs, plus optional bracket supplied (1/4" mtg.), offers practically unlimited mounting variations.

# TRIAD TRANSFORMER CORP.

## POWER COMPONENTS

Combined PLATE and FILAMENT Transformers  
Primary 115V — 50 60 cycle

Type No.	Plate Supply		Filaments	F Dim. (Min.) Inches	Case
	AC Volts	DC Volts			
HSM-201	500 CT.	20	6.3 CT.-2A.	1 3/8	GA
HSM-203	600 CT.	50	6.3 CT.-2.5A. 5 -2A.	1 3/8	JB
HSM-205	700 CT.	70	6.3 CT.-3A. 5 -3A.	1 3/8	JA
HSM-207	700 CT.	120	6.3 CT.-5A. 5 -3A.	1 3/8	KA
HSM-211	700 CT.-70 V. bias tap.	150	6.3 CT.-6A. 2.5 CT.-5A. 5 -3A.	1 3/8	LA
HSM-212	1000/800 CT.	150 (ch. in.) 117 (cd. in.)	6.3 5.4A. 6.3 CT.-4A. 6.3-V-4A.	1 3/8	LA
HSM-215	800/700 CT. 70 V. bias tap.	200	6.3 CT.-6A. 2.5 CT.-10A. 5 -6A.	1 3/8	MA
HSM-216	1000/800 CT.	200 (ch. in.) 157 (cd. in.)	6.3/5-4A. 6.3 CT.-5A. 6.3-5A.	1 3/8	MA
HS-217	800/700 CT. 70 V. bias tap.	300	6.3 CT.-8A. 2.5 CT.-10A. 5 -6A.	1 3/8	GP-15
HSM-218	1000/800 CT.	300 (ch. in.) 235 (cd. in.)	6.3/5-6A. 6.3 CT.-6A.	1 3/8	GP-15
HSM-219	(115/230 pri.) 760/1600 CT.	40/230 (ch. input)	6.3-6A.		Spcl. GP-15

Low flux density—for pre-amplifier service. All types electrostatically shielded.  
To be removed from next catalog.  
GP-15 dims. 4 3/4" x 5 7/8" x 6 5/8" high. Wt. approx. 22 lbs. Mtg. centers 3 3/4" x 4 7/8".

Combined PLATE and FILAMENT Transformers  
Primary 115V—400 cycle to operate 380 to 1500 cycles

Type No.	Plate Supply		Filaments	Insul. Test Volt.	F Dim. (Min.) Inches	Case
	AC Volts	DC Volts				
HS-402	475 CT.	20				
HS-401	500 CT.	40	6.3 CT.-1A. 6.3-1A	1500	7/8	EB
HS-405	600 CT.	70	6.3 CT.-2A. 6.3-2A. *6.3/5-2A	1500	1 3/8	GA
HS-407	600 CT.	120	6.3 CT.-3.5A. 6.3-3.5A. *6.3/5-3A.	1500	1 3/8	JB
HS-409	700 CT.	150	6.3 CT.-4A. 6.3/5-3A.	1500	1 3/8	HA
HS-413	450 CT.	200	6.3 CT.-6A. 6.3 -6A. *6.3 5-4A.	1500	1 3/8	JA
HS-415	800/600 CT.	200	6.3 CT.-6A. 6.3-6A. *6.3/5-6A.	2500	1 3/8	KB
HS-417	800/600 CT.	300	6.3 CT.-6A. 6.3-6A. *6.3/5-6A.	2500	1 3/8	LA

\* Tapped for 5 volt rectifier use. All types electrostatically shielded. ‡ New item.

### ISOLATION Transformers

Primary 115V—400 cycle to operate 380 to 1500 cycles

Type No.	Volts	Secondary Amp.	V. A.	F Dim. (Min.) Inches	Case
HS-470	115	.35	40	7/8	EA
HS-472	115	1.4	160	7/8	GA
HS-474	115	2.6	300	7/8	KB

All isolation transformers electrostatically shielded.

AH	AJ	EA	EB	FA	FB	GA	GB	HA	HB	JA	JB	KA	KB	LA	LB	MA	MB	NA	NB			
A	1 1/8	1 5/8	1 13/16	1 13/16	2 1/16	2 1/16	2 3/8	A	2 3/8	2 5/8	2 5/8	3 1/16	3 1/8	3 3/8	3 3/8	A	3 11/16	3 11/16	4	4	4 3/16	4 3/16
B	1 3/8	1 5/8	1 13/16	1 11/16	2 3/16	2 3/16	2 3/4	B	2 3/4	3 1/8	3 1/8	3 1/8	3 1/8	3 1/8	3 1/8	B	4 3/16	4 3/16	4 11/16	4 11/16	5 1/16	5 1/16
C	1 3/4	2 3/8	2 3/4	2 1/4	3 1/8	2 1/2	3 11/16	C	2 13/16	4 1/4	3 3/4	4 7/8	3 7/8	5 1/4	4 3/8	C	5 3/16	4 1/2	6	4 13/16	6 13/16	5 1/2
D	1 11/32	1 5/8	1 3/8	1 3/8	1 11/16	1 11/16	2 1/8	D	2 1/8	2 1/4	2 1/4	2 5/8	2 5/8	3	3	D	3 3/16	3 3/16	3 1/16	3 1/16	4 1/16	4 1/16
E			1 1/4	1 1/4	1 3/8	1 3/8	1 3/8	E	1 3/4	1 3/4	1 3/4	2 1/8	2 1/8	2 1/8	2 1/8	E	2 11/16	2 11/16	3	3	3 3/16	3 3/16
G	7/8	7/8	3/8	3/8	3/8	3/8	3/8	G	3/8	3/8	3/8	3/8	1/2	1/2	1/2	G	1/2	1/2	5/8	5/8	5/8	5/8
I	6-32	6-32	6-32	6-32	6-32	6-32	6-32	I	6-32	8-32	8-32	8-32	8-32	10-32	10-32	I	10-32	10-32	1/4-20	1/4-20	1/4-20	1/4-20
Wt. lbs.	4 oz.	9 oz.	1	15 oz	1 3/4	1 1/2	2	Wt. lbs.	1 3/4	2 1/2	2 1/4	4 1/2	4	7 3/4	7	Wt. lbs.	9 1/4	8 1/2	13 1/2	12 1/2	18	16

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SEE TRADE PRICE LIST ON PAGE N-893

The MASTER — 22nd Edition

Page N-885

## LOW LEVEL AUDIO

HERMETICALLY SEALED  
AUDIO INPUT Transformers

Type No.	Primary Imped.	Turn Ratio	Freq. Resp.	Max. Level DBM	Shielding	Case
HS-1	600*/250*/150/62.5	1:11.3 overall	20-20000	10	P-5	GP-4
HS-11					P-1	GP-2
HS-3	600*/250*/160/62.5	1:14 overall	20-20000	10	P-5	GP-5
HS-4					P-3	GP-4
HS-14					P-1	GP-3
HS-15	600*/250*/105/62.5 (10 Ma.)	1:8 overall	30-20000	20	P-3	GP-5
HS-5	30-50	1:65.7	50-10000	0	P-5	GP-4
HS-8	600*/250*/150/62.5	1:14 overall	20-20000	20	P-1	GP-4

\* Balanced center tap.  
Low frequency loss will result from use of unbalanced DC in windings other than where specified.

### AUDIO INTERSTAGE Transformers

Type No.	Primary Imped.	Turn Ratio	Freq. Resp.	Max. Level Pri. Volts	Shielding	Case
HS-23	15000	1:2.7	20-20000	15	P-3	GP-4
HS-25	15000	1:2.72 overall	20-20000	25	P-1	GP-4
HS-35	15000	1:2.72 overall	20-20000	20	P-1	GP-2
HS-27	20000/5000	1:1.72 overall	20-20000	50	P-1	GP-4
HS-29	20000/5000	1:2 overall	20-20000	20	P-5	GP-4
HSM-31	20000/5000	1:1 or 2:1	20-20000	240		FA
HS-32	15000 (6 Ma.)	1:2 overall	20-15000	20	P-1	GP-5

Low frequency loss will result from use of unbalanced DC in windings other than where specified.

### AUDIO LOW LEVEL OUTPUT, MIXING, MATCHING, BRIDGING

Type No.	Primary Imped.	Secondary Impedance	Freq. Resp.	Max. Level DBM	Shielding	Case
HS-50	15000	600*/250*/150/62.5	20-20000	26	P-3	GP-4
HS-60	15000	600*/250*/150/62.5	20-20000	10	P-1	GP-2
HS-61	15000 (5 Ma.)	600*/250*/150/62.5	50-15000	20	P-1	GP-5
HS-52	20000/5000	600*/250*/150/62.5	10-20000	26	P-1	GP-4
HS-54	20000/5000	600*/250*/150/62.5	20-20000	10	P-5	GP-4
HS-56	600*/250*/150/62.5	600*/250*/150/62.5	10-30000	20	P-3	GP-4
HS-66	600*/250*/150/62.5	600*/250*/150/62.5	10-30000	20	P-1	GP-3
HS-58	600*/250*/150/62.5	600*/250*/150/62.5	20-30000	15	P-3H	GP-5

\* Balanced center tap.  
Low frequency loss will result from use of unbalanced DC in windings other than where specified.  
See table at right for shielding data.

### SHIELDING

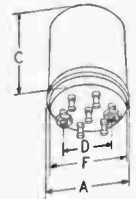
P-1—One nickel alloy high permeability shield — 45db. reduction in pickup.  
P-3—Two nickel alloy shields interleaved with one heavy copper shading ring — 70db. reduction in pickup.  
P-5—Three nickel alloy shields interleaved with two heavy copper shading rings — 95 db. reduction in pickup.



HS Series



JO Series



GP-1	GP-2	GP-3	GP-4	GP-5
A	1 1/8	1 1/4	1 3/8	1 5/8
B	1 1/8	1 1/4	1 3/4	2
Bw	1 1/8	1 1/2	1 3/4	2
C	1 1/16	2 1/4	2 3/8	2 1/2
D	1 3/32	1 3/8	1 1/2	1 1/2
F	3/4	3/4	1 1/8	1 1/8
Wt.	3 oz.	5 1/2 oz.	8 oz.	12 oz. 17 oz.



# TRIAD TRANSFORMER CORP.

## POWER COMPONENTS

HERMETICALLY SEALED

FILAMENT Transformers, 50/60 cycle

Type No.	Primary Volts	Secondary Volts	Secondary Amperes	Insulation Test Voltage	Case
HSM-223	115	6.3	0.6	1500	**AJ
HSM-225	105-115-125	6.3 CT.	2	1500	EA
HSM-226	105-115-125	6.3 CT.	3.6	1500	FA
†HSM-234	105-115-125	6.3 CT. 6.3	10 10	2500	KA
HSM-227	105-115-125	†6.3 CT. 6.3	3 3	2500	GA
HSM-229	105-115-125	6.3 CT.	8	2500	JB
†HSM-230	105-115-125	24 CT.	0.8	1500	FA
HSM-236	105-115-125	†12.6 CT. 12.6	2 2	2500	JB
HSM-228	105-115-125	†6.3 CT. 6.3	6 6	2500	JA
HSM-231	105-115-125	6.3 CT. 5 CT.	5 3	2500	JB
HSM-232	105-115-125	2.5 CT.	10	7500	HA
HSM-235	105-115-125	2.5 CT. 10 CT.	10 10	7500 2500	MA

† New item. † Series or parallel connections.  
\* See case chart page N-885.

## FILAMENT Transformers, 380/1500 cycle

Type No.	Primary Volts	Secondary Volts	Secondary Amperes	Insulation Test Voltage	Case
HS-436	115	6.3 CT.	1	1500	**AH
HS-425	105-115-125	6.3 CT.	2	1500	**AJ
HS-427	105-115-125	6.3 CT.	5	1500	EA
†HSM-438	105-115-125	24 CT.	1.5	1500	EA
HS-433	105-115-125	*6.3 CT. 6.3	5 5	2500	FA
HS-435	105-115-125	*6.3 CT. 6.3	3.5 3.5	2000	FA
HS-441	105-115-125	*5 CT. 5	10 10	2000	HA
HS-443	105-115-125	*12.6 CT. 12.6	0.8 0.8	1500	**AJ
HS-442	57.5-96-115-120 Single phase.	12.6 CT. 12.6	2 2	1500	EA

Two HS-442's can be used, 115 volt 3 phase to 26 volt 2 phase, Scott-connected.

† New item. \* Series or parallel connection.  
† 5 volt tap for filament type rectifiers.  
\* See case chart page N-885.

## FILTER REACTORS

Type No.	Current DC Ma.	Inductance Henries	Resistance Ohms	Insulation Test Voltage
HSM-301	20	30	1000	1500
†HSM-302	20	14	550	1500
HS-331	40	4	375	1500
HS-303	50	12	385	1500
HS-333	70	3	225	1500
HSM-305	70	15	300	2500
HS-335	120	3	150	1500
HSM-307	120	15	185	2500
HSM-309	150	9	115	2500
HS-339	200	3	105	2000
HSM-315	200	10	100	2500
HS-341	300	2	48	2000
HSM-319	300	10	85	2500

† New item

## HIGH FIDELITY OUTPUT

HIGH LEVEL OUTPUT — Hermetically Sealed

Type No.	Primary Impedance	Secondary Impedance	Freq. Resp.	Max. Level Watts	F. Di. Min. In.	Case
HSM-79	20000 CT. (20 Ma.) or 5000 (40 Ma.)	16/8/4	50-25000	5	1 3/8	FA
HSM-80	20000 CT. (20 Ma.) or 5000 (40 Ma.)	500/ 250 CT. or 125/62.5	50-25000	5	1 3/8	FA
HSM-81	8000 CT. Split primary.	16/8/4	7-50000	15	1 3/8	JB
HSM-82	8000 CT.	500/ 250/125	7-50000	15	1 3/8	JB
HSM-181	8000/ 2000 CT. Split primary.	16/8/4	7-50000	15	1 3/8	JB
†HSM-182	8000/ 2000 CT. Split primary.	500/ 250/125	7-50000	15	1 3/8	JB
HSM-84	5000 CT.	16/8/4	7-50000	20	1 3/8	JB
HSM-85	5000 CT.	500/ 250/125	7-50000	20	1 3/8	JB
†HSM-189	10000/ 2500 CT. Split primary.	16/8/4	7-50000	25	1 3/8	KB
†HSM-190	10000/ 2500 CT. Split primary.	500/ 250/125	7-50000	25	1 3/8	KB
†HSM-186	6600 CT. Split primary.	16/8/4	7-50000	25	1 3/8	KB
†HSM-187	6600 CT. Split primary.	500/ 250/125	7-50000	25	1 3/8	KB
HSM-91	2500 CT.	16/8/4	7-50000	50	1 3/8	LA
HSM-94	4500 CT.	16/8/4	7-50000	55	1 3/8	LA
HSM-94	4500 CT.	500/ 250/125	7-50000	55	1 3/8	LA
†HSM-192	4000 CT. Split primary.	16/8/4	7-50000	65	1 3/8	LA
†HSM-193	4000 CT. Split primary.	500/ 250/125	7-50000	65	1 3/8	LA
HS-97	6600 CT.	500/ 250/125	10-30000	125	Spcl.	Spcl.

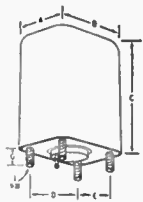
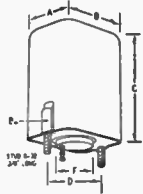
† Williamson type circuit.  
Proper taps on primary for screen operation.

## HIGH LEVEL OUTPUT

Type No.	Primary Impedance	Secondary Impedance	Output Watts
S-31A	8000 CT.	16/8/4	15
S-32A	8000 CT.	500/250/125	15
†S-142A	8000 CT.	16/8/4	15
S-33A	3000 CT.	16/8/4	15
S-35A	5000 CT.	16/8/4	20
S-36A	5000 CT.	500/250/125	20
†S-146A	6600 CT.	16/8/4	25
†S-148A	10000 CT.	16/8/4	25
S-38A	9000 CT.	16/8/4	25
S-39A	9000 CT.	500/250/125	25
S-40A	2500 CT.	16/8/4	30
S-42A	4500 CT.	16/8/4	50
†S-152A	4000 CT.	16/8/4	65
S-45Z	4000/2000/ 1000/500	8/4	10
S-46A	2000/1000/ 500/250	16/8/4	20

† Williamson type circuit. Proper taps on primary for screen operation, leads out both end bells.

Note: Last letter of Type No. denotes case style



Case A



PL-4

PL-5



PL-6



Case X



Case SC

# TRIAD TRANSFORMER CORP.

## PULSE

Type No.	Pulse Voltage per Winding	Pulse Duration— $\mu$ s	Load Impedance—Ohms	Ultrad or Utah Equiv.
PL-4	100-100	.35 to 1.2	500*	
PL-5	100-100-100	.35 to 1.2	2000*	
PL-6	100-100-100	.35 to 1.2	2000*	
PL-124E				X-124F
PL-124H	300-300-300	.6 to 5	150	X-124H-2
PL-124M				X-124H-6†
PL-143E				X-143F
PL-143H	100-100-100	.3 to 1.5	200	X-143-2
PL-143M				X-143H-6†
PL-140E				X-140F
PL-40H	100-400-100	.6 to 5	175	X-140H-2
PL-140M				X-140H-6†
PL-139E				X-139F
PL-139H	100-100	.3 to 1.5	250	X-139H-2
PL-139M				X-139H-6†
PL-146E				X-146F
PL-146H	300-300	.6 to 5	250	X-146H-2
PL-146M				X-146H-6†
PL-148E				X-148F
PL-148H	500-500	1 to 10	250	X-148H-2
PL-148M				
PL-138E				X-138F
PL-138H	300-600	.6 to 5	250	X-138H-2
PL-138M				X-138H-6†
PL-91E	750-1500-300	1 to 5	1500	X-91F
PL-91M				X-91H†
PL-92E	500-1500	1 to 5	500	X-92F
PL-92M				X-92H†

\*New Item.

† As blocking oscillator in Triad circuit. Can be used with lower impedances and higher peak power at lower duty cycle.

‡ Not identical dimensions or mounting.

## LINE POWER

### ISOLATION Transformers, 50/60 cycles

(See page 7 for 380/1500 cycle isolation transformers)

Type No.	V. A. Output	Input Volts	Output Volts
N-51X	35	115	115
N-68X	40	230 115	115
N-53M	85	115	115
N-54M	150	115	115
N-67A	150	230 115	115
N-55M	250	115	115
N-66A	250	230 115	115
N-57M	500	115	115
N-59M	1000	115	115
N-52M	350	95 to 130	115

With switch and meter for primary voltage control. Detachable cord.

### STEPDOWN Autoformers, 50/60 cycles

Type No.	V. A. Output	Input Volts	Output Volts
N-1X	50	230	115
N-3M	85	230	115
N-4M	150	230	115
N-5M	250	230	115
N-7M	600	230	115
N-9M	1250	230	115
N-11M	2000	230	115
N-34X	150	95 105 115 125/135	115
N-35M	350	95 to 130 (in 5V. steps)	115
N-50M	500	95 to 130 (in 5V. steps)	115

With switch and meter.

† M case with switch for primary voltage control and detachable cord.

## UNIVERSAL

### Isolation, Autoformer, Voltage Control

Type No.	V.A. (Isolation)	V.A. (Autoformer)
N-64AC	500	1000
N-62AC	1000	2000
N-60SC	2000	4000

## INSTRUMENT POWER

### Instrument POWER SUPPLY Transformers

Intelligent design and construction of measuring instruments involves consideration of many factors normally neglected in electronic circuits. Regulation of power supply voltages, limitation of external magnetic fields by minimum flux density, multiple static shields to limit capacitive coupling, multiple filaments where tubes must operate at different potentials, all become necessary to obtain peak performance. The transformers on this page are a series of special designs which have been developed for instrument design.

### For PREAMPLIFIERS, VTVM, etc.

Primary 115 volts — 60 cycles

Type No.	Plate Supply		Filament Windings Volts and Amperes
	AC Volts	DC Ma.	
R-68A	800 CT.	30	5V.-2A, 6.3-1.2A, 6.3-1.2A.
R-2C	135	15	6.3V.-.9A.
R-23B	250 CT.	22	6.3-.8A, 15.5/12.6-.6A.
R-3A	500 CT.	20	6.3 CT.-.2A.
R-29A	230 CT.	40	6.3V.-1.5A.
R-30X	135	50	6.3V.-1.5A.
R-54X	115	15	6.3V.-.6A.
R-56A	130	20	0/15/22.5/30-.6A.
R-73B	135	200	6.3 CT.-.5.5A.

### CATHODE RAY Tubes

Primary 115 volts — 60 cycles

Type No.	Plate Supply		Filament Windings Volts and Amperes
	AC Volts	DC Ma.	
R-41C	440-0. 440-1250.	125/5	*6.3V.-.6A. †2.5V.-1.75A. 5V.-.3A.
R-45C	400-0. 400-800.	30/5	*6.3V.-.6A. 6.3 CT.-.3A. 5V.-.2A.
R-43C	1600	3	*6.3/5/2.5V.-1A. †6.3/5/2.5V.-.3A.

\* Statistically shielded and insulated for full plate voltage.  
† Insulated for full plate voltage.

### For REGULATED POWER SUPPLIES

Primary 115 volts — 60 cycles

Type No.	Plate Supply		Filament Windings Volts and Amperes
	AC Volts	DC Ma.	
R-70A	880 CT.	75	6.3V.-.6A. 6.3V.-.3A. 6.3V.-.3A.
R-26A	880-720 CT.	200	6.3 CT.-.8A. 6.3V.-1A. 5V.-.3A.
R-26A	1250 CT.	300	6.3 CT.-.8A. 6.3V.-.3A. 5V.-.6A.
R-46A	1250 CT. 120 (Bias winding)	350 50	5V.-.4A. 6.3V.-.4A. 6.3V.-1A. 6.3V.-1A.
R-46A will supply 550 V. D.C. using 2 5R4G rectifier tubes, choke input. Will also supply 130 V. for bias using Selenium rectifier. Sufficient filament windings to regulate screen voltages. See page 10, HF-40 diagram.			
R-27A	1500 CT.	400	5V.-.6A. 6.3V.-.3A. 6.3V.-.8A.

Note: Last letter of Type No. denotes case style

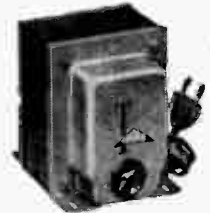
## PHOTO-FLASH TRANSFORMERS

Improved operation and reduced cost in flash photography can be attained through the use of electronic flash equipment. Triad V-30Z and PL-10 have been especially developed for use in these circuits.

Type No.	Application	Wt. Lbs.
V-30Z	From 115v-60 cycle line or 4 volt-180 cy. vibrator to 385 RMS @ 14 ma.	1½
PL-10	Trigger coil.	1½ oz.



Case AC



Case M



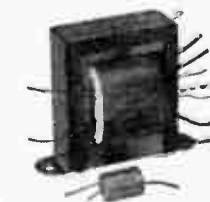
Case M with Meter



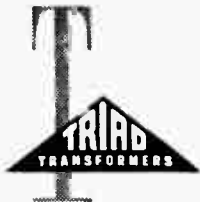
Case C



Case B



V-30Z and PL-10



# TRIAD TRANSFORMER CORP.

## RECTIFIER POWER

### SELENIUM RECTIFIER Transformers

#### Primary 60 cycles

These transformers are for use with Selenium rectifiers. Rectifiers not included.

Type No.	Primary Volts	Secondary		Rectifier Circuit	
		AC Volts	Amperes RMS	A Volts DC	B Volts DC
F-47U	115	17-18	3	6-7	13-14
F-48U	115	17-18	6	6-7	13-14
F-49U	115	36 36	3 3	13	26
F-60U	115	6.5-13- 19.5-26	3 (int.)	9	18
F-61U	115	24-27-30 33-36	3	13	26
‡F-67U	110-120	24-27-30- 33-36	8	13	26
F-63U	115	8-8 8-9	2		6-7
F-64U	115	7-8-9	7		6-7
F-62U	105-115- 125	9 9 9 9	10 10 10		6-7 ea. wdg.
‡F-68U	115	9 CT. 9 9 9	3.5 3.5 3.5		6-7 ea. wdg.
F-65U	110-120	140-150- 160	.75	60	115
F-66U	110-120	140-150 160	2.5	60	115



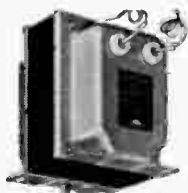
Case U



Case K



Case Z



Case AL



Case X

### Automobile Radio REPLACEMENT Transformers

K Cases have 7 Holes for Mtg. Purposes

Type No.	Primary Volts	Secondary		Rec. Buffer	Max. DC Ma.
		DC Volts Filter Input	AC Volts CT.		
V-21	6-8	140 or 170	365/430	.005	62
V-21B	6-8	140 or 170	365/430	.005	62
V-21K	6-8	140 or 170	365/430	.005	62
V-21Z	6-8	140 or 170	365/430	.005	62
V-23	6-8	215 or 250	530/605	.003	79
V-23B	6-8	215 or 250	530/605	.003	79
V-23K	6-8	215 or 250	530/605	.003	79
V-23Z	6-8	215 or 250	530/605	.003	79
V-31	12-16	240	575	.003	79
V-31K	12-16	240	575	.003	79

## CHOKES

### SWINGING Filter REACTORS

Type No.	Inductance Henries	Current Ma.	Resistance Ohms	Test Volts RMS
C-31A	25/5	20/200	150	2500
C-33A	25/5	30/300	105	3000
C-32AL	20/4	35/350	105	5000
3-35A	20/4	40/400	60	3000
C-39A	25/5	50/500	65	3000
C-38AL	25/5	50/500	65	5000

### SMOOTHING Filter REACTORS

Type No.	Inductance Henries	Current Ma.	Resistance Ohms	Test Volts RMS
C-30X	50	15	3500	1500
C-2X	2	15	70	1500
C-1X	15	20	1000	1500
C-3X	10	50	500	1500
C-4X	4	50	360	1500
C-6X	5	65	330	1500
C-5X	12	75	390	1500
C-8X	7	75	240	1500
C-7X	10	90	270	1500
C-9X	4	90	100	1500
C-11X	6	110	160	1500
C-10X	9	125	250	1500
C-12X	6	160	165	1500
C-12A	6	160	165	1500

Type No.	Inductance Henries	Current Ma.	Resistance Ohms	Test Volts RMS
C-13X	3	160	75	1500
C-14X	6	200	150	1500
C-14A	6	200	150	1500
C-16A	10	200	150	2500
C-21X	1.5	225	65	1500
C-15X	4	250	100	1500
C-15A	4	250	100	1500
C-23X	1.2	260	45	1500
‡C-24X	1	200	50	1500
C-17X	1.5	300	40	1500
C-18A	8	300	90	2500
C-19A	10	300	105	3000
C-25A	2.6	310	60	1500
C-42AL	8	350	105	5000
C-20A	6	400	60	3000
C-22A	10	500	65	3000
C-45AL	10	500	65	5000
C-40X	.32	600	10	1500
C-47	.3-075	1A-2A	3-.75	1500
C-48U	.08-.02	2.5A-5A	.57-.143	1500

‡ New item.

Triad designs incorporate the latest in techniques and materials

## FILAMENT

### FILAMENT Transformers, Single Secondary

Primary 115 volts — 60 cycles

Type No.	Secondary Volts	Secondary Amperes	Test Volts
F-1X	2.5 CT.	3	1500
F-72Z	2.5 CT.	5	7500
‡F-6X	2.5 CT.	6	2500
F-3X	2.5 CT.	10	3000
F-5U	2.5 CT.	10	7500
F-71U	2.5 CT.	10	10000
F-7X	5 CT.	3	1500
F-8X	5 CT.	6	1500
F-9A	5.2 CT.	13	1500
‡F-10U	5 CT.	14	10000
F-9U	5.2 CT.	13	1500
F-11U	5.2 CT.	24	1500
F-13X	6.3	.6	1500
F-14X	6.3 CT.	1.2	1500
‡F-52X	6.3	1.2	5000
‡F-51X	6.3/5	2	5000
‡F-53X	6.3	4	5000
F-16X	6.3 CT.	3	1500
F-18X	6.3 CT.	6	1500
F-18A	6.3 CT.	6	1500
F-21A	6.3 CT.	10	1500
F-22A	6.3 CT.	20	2000
F-23U	10 CT.	7	1500
F-25X	12.6 CT.	1.5	1500
‡F-26X	12.6 CT.	3	1500
F-40X	24 CT.	1	1500
‡F-41X	25.2 CT.	2	1500
‡F-50X	Filament line transformer Pri. 6.3V/5V Sec. 6.3/5V 2A		5000

‡ New item.

† Low capacity—High voltage for damper tube operation.

### FILAMENT Transformers, Multiple Secondary

Primary 115 volts — 60 cycles

Type No.	Secondary Volts and Amperes	Test Volts RMS
F-27U	10 CT.-10A. 2.5 CT.-10A.	1500 7500
F-30A	5 CT.-3A. 6.3 CT.-8A.	1500
F-32A	6.3 CT.-A.	6.3 CT.-3A. 1500
F-34A	6.3 CT.-1.75A. 6.3V.-1.75A.	6.3V.-1.75A. 6.3V.-3.5A. 1500
F-36A	6.3 CT.-3.5A. 6.3V.-3.5A.	6.3V.-3.5A. 6.3V.-3.5A. 1500
F-38A	6.3 CT.-5A. 6.3V.-1A. 5V.-4A.	6.3V.-5A. 5 CT.-2A. 1500
F-42A	12.6 CT.-2.5A. 12.6-2.5A.	1500



# TRIAD TRANSFORMER CORP.

## POWER

Combined **PLATE** and **FILAMENT** Transformers  
Primary 115 volts — 60 cycles

Type No.	Plate Supply		Rect. Fil.		Other Fil.	
	AC Volts	DC Ma.	Volts	Amp.	Volts	Amp.
R-22A	380/320 CT.	70	6.3	.6	6.3 CT.	3
R-22B	380/320 CT.	70	6.3	.6	6.3 CT.	3
R-44A	500 CT.	40			6.3 CT.	2
R-4B	500 CT.	40			6.3 CT.	2
R-5A	600 CT.	65			6.3 CT.	2.7
R-5B	600 CT.	65			6.3 CT.	2.7
R-6A	480 CT.	50	5	2	6.3 CT.	2
R-6B	480 CT.	50	5	2	6.3 CT.	2
R-7A	600 CT.	50	5	2	6.3 CT.	2
R-7B	600 CT.	50	5	2	6.3 CT.	2
R-8A	500 CT.	75	5	2	6.3 CT.	2.5
R-8B	500 CT.	75	5	2	6.3 CT.	2.5
R-9A	600 CT.	75	5	2	6.3 CT.	3
R-9B	600 CT.	75	5	2	6.3 CT.	3
R-10A	525 CT.	90	5	2	6.3 CT.	5
R-10B	525 CT.	90	5	2	6.3 CT.	5
R-11A	700 CT.	90	5	3	6.3 CT.	3.5
R-11B	700 CT.	90	5	3	6.3 CT.	3.5
R-12A	550 CT.	110	5	2	6.3 CT.	5
R-12B	550 CT.	110	5	2	6.3 CT.	5
R-14A	700 CT.	125	5	3	6.3 CT.	4.5
R-14B	700 CT.	125	5	3	6.3 CT.	4.5
R-16A	700 CT.	160	5	3	6.3 CT.	5
R-16B	700 CT.	160	5	3	6.3 CT.	5
R-17A	750 CT. 80 Tap	160	5	3	6.3 CT. 2.5 CT.	5
R-18A	750 CT.	175	5	3	6.3 CT.	8
R-18B	750 CT.	175	5	3	6.3 CT.	8
R-19A	750 CT. 80 Tap	200	5	3	6.3 CT. 2.5 CT.	6
R-20A	700 CT.	200	5	3	6.3 CT.	8
R-20B	700 CT.	200	5	3	6.3 CT.	8
†R-72A	800 CT.	140	5	3	6.3	4
R-21A	800 CT.	200	5	3	6.3 CT.	6
R-21B	800 CT.	200	5	3	6.3 CT.	6
R-24A	800 CT.	300	5	6	6.3 CT.	6
R-24B	800 CT.	300	5	6	6.3 CT.	6
R-25A	800 CT.	500	5	6	6.3 CT. 6.3	7
R-58A	875 CT.	185	5	3	6.3 6.3	4 3
‡R-71A	900 CT.	250	5 CT.	4	6.3 CT. 6.3	2 4

‡ New item.

### PLATE POWER Transformers Primary 115 volts — 60 cycles

Type No.	Secondary Volts		Sec. D.C. Ma.		Rect. Fil.
	AC	DC	CCS	ICAS	
P-1A	440/220 CT.	180/90	160	190	5V-3A
P-3A	600/300 CT.	250/125	300	360	5V-4A
P-5A	1100 CT.	400	300	360	5V-4A
P-7A	1235 CT.	500	250	310	5V-4A
P-9A	1235 CT.	500	500	600	5V-6A
P-11A	1455 CT.	600	250	310	
‡P-14A	1780 CT.	750/600	250	310	
†P-15A	2340 CT.	1000	250	310	
†P-16A	2880 CT.	1250	250	310	
†P-17A	2880 CT.	1250	250	310	
†P-18A	2800 CT.	1250	500	600	
†P-20A	3300 CT.	1500	350	425	

† Plate leads out side of case for 866 rectifiers.

‡ Tapped Pri. to produce the lower D.C. voltage.

Only Triad Transformers are "Climatite" treated

## TELEVISION COMPONENTS

Replacement **POWER** Transformers,  
Combined Plate and Filament  
Electrostatically shielded. Primary 115 volts 60 cycles.

Type No.	Plate Supply		Filaments —	
	AC Volts	DC Ma.	Volts	Amperes
R-31BC			5V.—6A. 5V.—2A.	12.6 C.T.—5A.
R-32A	760 V.C.T.	320	5V.—6A.	12.6 V.C.T.—5A 6.3V.—1.2A.
R-33A	775 V.C.T.	230	5V.—3A.	6.3V.—9A. 6.3V./5V.—2A.*
R-33BC				
R-34A	750 V.C.T.	230	5V.—3A.	6.3V.—8.5A. 6.3V.—1.2A.
R-35A	725/340 V.C.T.	250	5V.—3A. 5V.—2A.	6.3V.—8A. 6.3V.—2.5A.
R-35BC				
R-36A	775 V.C.T.	275	5V.—6A.	6.3V.—8.5A. 6.3V.—1.2A.*
R-36BC				
R-37BC	735 V.C.T.	275	5V.—6A.	6.3V.—8.5A. 6.3V./5V.—2A.*
R-38A	750 V.C.T.	225	5V.—3A.	6.3V.—10A. 6.3V.—1.2A.* 6.3V.—2.5A.
R-38BC				
R-39A	640 V.C.T.	225	5V.—3A.	6.3V.—10A. 6.3V.—1.2A.*
R-39BC				
R-40A	780/440 V.C.T.	300	5V.—3A. 5V.—3A. 5V.—2A.	6.3A.—8.5A. 6.3A.—3.5A.
R-40BC				
R-42A	675 V.C.T.	185	5V.—3A.	6.3V.—7A. 6.3V.—2A.*
R-42BC				
R-44BS	525 V.C.T.	240	5V.—3A.	6.3V.—8A. 6.3V.—1.2A.*
R-47BS	725 V.C.T.	225	5V.—3A.	6.3V.—10A. 6.3V.—2.7A.*
R-48BS	750 V.C.T.	180	5V.—3A.	6.3V.—9A. 6.3V.—2.7A.*
R-49BS	650 V.C.T.	240	5V.—3A.	6.3V.—9A. 6.3V.—1.2A.*
R-49BC				
R-50A	790/650 V.C.T.	310	5V.—3A. 5V.—3A. 5V.—2A.	6.3V.—5A. 6.3V.—5A. 6.3V.—2.6A.
R-50BC				
R-51BC	505 V.C.T.	320	5V.—3A.	6.3V.—5A. 6.3V.—5A. 6.3V.—1.2A.*
R-52BC	600 V.C.T.	270	5V.—3A.	6.3V.—5A. 6.3V.—5A. 6.3V.—1.2A.*
R-60BC	460 V.C.T.	300	5V.—6A.	6.3V.—8A. 6.3V.—1.2A.*
R-61BC	560 V.C.T.	275	5V.—6A.	6.3V.—6A. 6.3V.—6A. 6.3V.—1.2A.*
R-62BC	680 V.C.T.	290	5V.—6A.	6.3V.—10A. 6.3V.—2.5A. 6.3V.—1.2A.*
R-63BC	131 V.	900		6.3V.—9A. 6.3V.—6A. 6.3V.—1.2A.*
‡R-64BC	520 V.C.T.	270	5V.—3A.	6.3V.—10A.

‡ New item.

\* Less than 100 m.m.f.d. capacity to ground and insulated for high voltage damper tube.

Height of transformers in BC cases is measured from chassis line to top of case. Copper shading ring on all BC cases to reduce external magnetic field.

Note: Last letter of Type No. denotes case style.



Case A



Case B



Case BC



Case BS



# TRIAD TRANSFORMER CORP.

## TELEVISION COMPONENTS

### FLYBACKS (HORIZONTAL OUTPUT)

Type No.	Category	Application Notes
D-1	Transformer	Stepped up damper
D-2	Autoformer	Correct Hoffman 5143, 44, 45, 46, 48, 49, 55
D-11	Transformer	Correct RCA 211T1, 3 and others
D-14R	Transformer	Correct GE 77 J 1 and others
D-15	Transformer	Stepped up damper plus AGC, AFC winding
D-19	Autoformer	Correct 225T1 and equiv.
DA-20	Direct Drive Air Core	Correct Capehart, RCA-74951, Emerson, Packard Bell
D-22	Autoformer	Correct Packard Bell 89438, B
D-24	Autoformer	Hoffman and others
D-26	Autoformer	Correct Hoffman 5033-2 or where autoformer doubler req.
D-28	Autoformer	Correct Hoffman 5035, 5160
D-31	Transformer	Correct RCA 231T1, Univ.
D-32	Transformer	D 14 R (GE 77 J 1) plus Tapped AGC, AFC winding
D-33	Transformer	Stepped up damper plus Tapped AGC AFC winding
D-35	Autoformer	RCA 223T1, 224T1, 230T1, 232T1 plus isolated AGC AFC winding
DA-36	Autoformer	Zenith-coil only. Correct S18567, S18566, S18728, S19854, S20993 AGC, AFC winding
DA-37	Autoformer	Zenith-coil only. S19032, S19079, AGC AFC winding
D-40	Transformer	Admiral 79C30-2, 4, 79C38-1 AGC AFC winding
D-41	Transformer	Admiral 79C30-1, 3, AGC AFC winding
D-42	Autoformer	Admiral 79 D 41-1, -2, AFC AGC winding
D-43	Autoformer	Emerson 738068, 069, 073, 075, 082, 083, 085, 086.
D-44	Autoformer	Correct Emerson 738079, 084. Majestic 9.383-1
D-45	Transformer	Correct Zenith (kit) for S15911. 12, S16566, S17130, 40, S17233, 45, 65, S17435, S17646, S17767, S17811, S17927, S17930.
D-46	Autoformer	Correct Muntz T0-0031, 1, 2. Complete with bracket fuse clip.
D-47	Autoformer	Correct Muntz T0-0036, 1, 2 with bracket mtg. and fuse clip.
D-48	Autoformer	With 1X2 socket mtg. Crosley, Hallicrafters, Sentinel.
D-49	Autoformer	Small, compact for 90° use. Correct for Admiral 79C60-1, 2, 3, 4, 5, and many others
D-50	Autoformer	90° Universal, RCA 235T1, used in Packard Bell, Stewart War., Strom. Carl., CBS, Pac. Merc.
D-52	Direct Drive	Air core on plastic mtg. form. Correct RCA 75240, 519, 585, 76154, 381.
D-53	Direct Drive	Aircore on plastic mtg. form. Correct RCA 76501
D-54	Direct Drive	Aircore on plastic dowel. Correct RCA 77883
D-55	Transformer	Correct for RCA 211T5 and others doubler
D-56	Transformer	Correct Air King CBS, Silvertone 10104, 107, 108, 110, 126, 135.
D-57	Autoformer	Correct Traveler TV-X-107, 108, 110, 113, 114. Complete with 1X2 socket
D-58	Autoformer	Correct Zenith S-21219
D-59	Autoformer	Correct Zenith S-22154
D-60	Autoformer	Correct Zenith S-22130, S-22996
D-61	Autoformer	Correct Sylvania 241-0003 doubler (5642)
D-62	Transformer	Correct Sylvania 241-0005 doubler (5642)
D-63	Autoformer	Correct Sylvania 241-0007 doubler (1B3)
D-64	Autoformer	Coronado, Firestone, Truetone, Wells Gardner (See Guide)
D-65	Autoformer	Wells Gardner 53X326, 328, 329, 330, 346, 347.
D-66	Transformer	Airline and Sentinel (See Guide)
D-67	Autoformer	Correct Motorola 24C711265, A, 24C721290, 24K711266, 24K721290C, 24K730692.
D-68	Autoformer	Correct Motorola 24K721301, C, 24K722126
D-69	Autoformer	Correct Motorola (See Guide)
D-70	Autoformer	Correct Philco 32-8624, 8565, 8607.
D-71	Autoformer	Correct replacement for Airline, Firestone, Raytheon, Truetone, Bendix. (See Guide)
D-72	Autoformer	Correct Westinghouse V11548-1, -2, -3.
D-73	Transformer	Correct Westinghouse V9904-1, V-10213-1
D-74	Transformer	Correct Westinghouse V-10204-1, V-10214, -1
D-75	Autoformer	Correct Admiral 79D48-1
D-76	Autoformer	Correct GE RTO-131, 141, 146-3
D-77	Autoformer	Correct Crosley, similar to D48 plus AGC AFC winding
D-78	Autoformer	Correct Sylvania 241-0011
D-79	Transformer	Correct CBS A10137, Firestone PC10137-7
D-80	Autoformer	Correct CBS PC10147, G
D-81	Autoformer	Correct Emerson 738091, 096, 099, 100
D-82	Autoformer	Correct Philco 32-8555
D-83	Autoformer	Raytheon and Truetone, see guide
D-84	Autoformer	Correct Raytheon 201-22396-1 and C201-22396B
D-85	Transformer	Correct Airline MW 22E67 and Sentinel 22E67
D-86	Autoformer	Correct Airline MW 22E75 and Sentinel 22E75
D-87	Autoformer	Correct Airline 20E497 and Sentinel 20E497, -B.
D-88	Autoformer	Correct Westinghouse V-14627-1
D-89	Autoformer	Correct Westinghouse V-15234-2, -3, V-15650-2, -3.

‡ New item.

Replacement use of the flybacks listed above is not limited to the manufacturers part numbers shown. These numbers are listed for reference only. For full usage check the recommendations of the TRIAD TV-57 Television Replacement Guide and the new product sheets which are furnished to your distributor at frequent intervals.

# TRIAD TRANSFORMER CORP.

## TELEVISION COMPONENTS

### VERTICAL OUTPUT Transformers

Type No.	Application	Turns Ratio
†A-99X	Transformer type, 4 leads.	10:1
A-101U	Same as above, except upright universal mtg.	10:1
A-102X	Autoformer type, 3 leads.	11.4:1
A-103X	Transformer type, 4 leads. For low inductance yokes.	49:1
A-104X	Autoformer type, 3 leads.	18:1
A-105X	Transformer type, 4 leads.	35:1
A-107X	Transformer type, 4 leads. Heavy duty.	10:1
A-108X	Transformer type, 4 leads.	8:1
A-109X	Transformer type, 4 leads.	15:1
A-110X	Autoformer type, 3 leads.	44:1
A-111X	Transformer type, 4 leads. Small size.	10:1
‡A-118X	Autoformer type, 4 leads.	8:1/5.5:1
‡A-119X	Autoformer type, 3 leads.	15:1

‡ New item.

### HORIZONTAL BLOCKING OSCILLATOR

Type No.	Application
A-98X	Generates 15750 pulse.
A-98K	Generates 15750 pulse.

### VERTICAL BLOCKING OSCILLATOR

Type No.	Application	Ratio
A-96X	Dumont type. 3 windings.	1:0.5 1:1
A-97X	Blocking oscillator transformer for vertical sweep.	1:4.14
A-122X	Same	1:3.5
A-97K	Same—Case K.	1:4.14
A-97Y	Same—Case Y.	1:4.14
A-95X	Blocking oscillator transformer for vertical sweep.	1:4.14
A-120Z	Philco replacement	1:1.5

### Width and Linearity COILS

All WLC units feature dual mounting, for  $\frac{3}{16}$ " and  $\frac{1}{8}$ " mounting holes. Units are assembled with the  $\frac{3}{16}$ " mounting clip in place. To use the  $\frac{1}{8}$ " mounting remove the  $\frac{3}{16}$ " clip, cut off the tubing, thread the  $\frac{1}{8}$ " clip to the core and install.

Type No.	Inductance MH		Resist.	Application
	Min.	Max.		
‡WLC-4	.05	.5	.5	width 011 211T3 Color conv cont
‡WLC-5	1.00	8.5	6.5	wid or lin
‡WLC-6	2.00	17.00	21.00	wid or lin
‡WLC-9	.08 4.00	.8 30.00	.6 27.00	pri width Sec AFC AGC
‡WLC-11	4.00 .8	27.00 8.5	27.00	pri or sec Tapped pri or sec
WC-12	.8	15.50	9.1	wid or lin tapped
WC-13	.5	3.5	8.00	wid or lin Color conv cont

‡ New item.

## AUDIO

### OUTPUT Transformers

#### Line to Voice Coil

Type No.	Primary Impedance	Output Imped.	Output Watts	Freq. Resp.
S-23X	50 (autoformer).	3.2	3	300-3000
S-26X	500/50 (autoformer).	3.2	3	300-3000
S-66X	500 (autoformer).	16/8/4	3	100-5000
‡S-76Z	250/125/62.5/31	16/8/4	10	40-15000
‡S-77U	500 CT./125	32/16/8/ 4/2	30	40-15000

‡ New item.

### OUTPUT Transformers

#### Tube to Voice Coil and Line

Type No.	Tubes	Pri. Imped.	Sec. Imped.	DC Pri.	Audio Watts
S-27A	2A3, 6A3, 6B4, 6L6, 6U6, 6Y6, 12A5, 25B6, 35B5, 50A5.	2500	500/16/ 8/4	80	8
S-28X	2A5, 6AC5, 6B5, 6F6, 6K6, 7B5, 14A5, 25AC5.	7500	500/16/ 8/4	40	5
S-29X	6AQ5, 6AS5, 6V6, 7C5, 25A6, 25B5, 25L6, 25N6, 35A5, 35L6.	5000	500/16/ 8/4	45	5
S-22A	P.p. 2A3, 6B4, 6A5, 6L6, etc.	5000 CT.	500/16/ 8/4	100	15
S-24A	P.p. 6V6, 7C5, 6K6, 6F6, etc.	8000 CT.	500/16/ 8/4	80 (bal.)	15
S-60A	P.p. 6L6, 5881, 6600 CT.	500/250/	16/8/4	120 (bal.)	30

### OUTPUT Transformers

#### 70.7 volt Line to Voice Coil

Type No.	Primary Impedance	Sec. Imped.	Output Watts	Freq. Resp.
S-70Z	Autoformer 16000/8000/4000/2000/1000.	8/4	5	100-5000
S-71Z	Autoformer 4000/2000/1000/500.	16/8/4	10	100-5000
S-25Z	Autoformer 4000/2000/1000/500.	8/4	10	70-7000
S-45Z	Autoformer 4000/2000/1000/500.	8/4	10	20-20000
S-74K	Weatherproof autoformer 4000/2000/1000/500.	8/4	10	20-20000
S-72Z	Autoformer 2000/1000/500/250.	16/8/4	20	100-5000
S-46A	Autoformer 2000/1000/500/250.	16/8/4	20	20-20000
S-75K	Weatherproof autoformer 2000/1000/500/250.	16/8/4	20	20-20000
S-78Z	Isolation 4000/2000/1000/500.	16/8/4	10	100-5000
S-79Z	Isolation 2000/1000/500/250.	16/8/4	20	100-5000

Ask for the Triad publication "Sound distribution using the 70 volt line." Free from your distributor.

## AUDIO COMPONENTS

### INPUT Transformers

#### Line or Microphone to Grid

Type No.	Application	Frequency Response	Primary Impedance	Turn Ratio
A-1X	Line or single button mike to grid.	300-3000	100	31.4
A-3X	Line or D.B. mike to grid.	300-3000	400 CT.	15.8
‡A-4X	Line to grid.	300-3000	500/200/ 67.5 CT.	12 12
A-5X	Single button mike to p.p. grids—Hi-gain.	300-3000	100	84
‡A-6X	Speaker V.C. to grid.	300-3000	8/3.2	79
A-7J	Sprk. V.C. (3.2 ohms) to grid. 45 db. shldg.	300-3000	3.2	124
A-9J	Line or mike to grid. 45 db. shielding.	30-15000	600/250/ 50	12
A-10J	Line to grid. 45 db. shielding.	30-15000	600/150	10.1

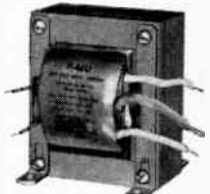
### Special TRANSCEIVER Transformers

#### (Voice Frequencies)

Type No.	Application	Primary Impedance	Secondary Impedance
A-21X	S.B. mike or plate to grid (2 primaries)	100 10000	100000
A-23X	Tube to line and hi-impedance phones.	10000	50 and 2000



Case X



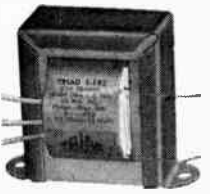
Case U



Case K



Case Z



WC



Case J

# TRIAD TRANSFORMER CORP.



Case X



Case Z



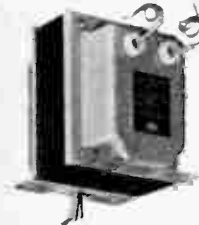
Case A



Case J



Case P



## AUDIO

### REPLACEMENT OUTPUT Transformers STANDARD OUTPUT Transformers Tube to Standard Voice Coil (3-4 ohms)

Type No.	Primary		DC-Ma.	Audio Watts
	Tubes Used	Impedance		
S-12X	25L6, 50L6, 35A5, 50B5, etc.	2500	50	2
S-1X	25L6, 50L6, 35A5, 50B5, 2A3, 6B4, etc.	2500	60	3
S-2X	2A3, 6A3, 6B4, 6Y6, 7A5, 25B6, 50L6.	2000	55	4
S-3X	6V6, 7C5, 6AQ5, 25A6, 71, etc.	5000	40	3
S-16X	25L6, 50L6, 35A5, 50B5, etc.	3000 (5% tap)	60	3
S-4X	2A3, 6B4, 6L6, 6U6, 12A5, 25L6, 50A5, 117N7.	3000	70	5
S-5Z	6V6, 7C5, 6AQ5, 25A6, 71, etc.	5000	50	5
S-5X	6V6, 7C5, 6AQ5, 25A6, 71, etc.	5000	50	5
S-6X	3B5, 6AQ5, 6AS5, 25A6, 25A7, 35L6, 43, 117L7.	5000	35	2
S-7X	6K6, 7B5, 6F6, 1Q5, 31, 33, 41, 42, etc.	7500	40	3
S-8X	1C5, 1H4, 1Q5, 1S4, 3Q5, 3S4, 14A5, 25AC5.	8000	30	2
S-9X	6K6, 7B5, 696, 1Q5, 31, 33, 41, 42, etc.	7500	50	5
S-9Z	6K6, 7B5, 6F6, 1Q5, 31, 33, 41, 42, etc.	7500	50	5
S-11X	1J6, 3Q4, 3V4, 6AK6, 6AG7, etc.	10000	30	3
S-11Z	1J6, 3Q4, 3V4, 6AK6, 6AG7, etc.	10000	30	3
S-17X	1J6, 3Q4, 3V4, 6AK6, 6AG7, etc.	10000	30	3
S-13X	1A5, 1N6, 1LA4.	25000	10	2
S-15X	P.p.—6V6, 7C5, 6K6, 6F6, etc.	10000 CT.	40	7
S-19Z	P.p.—6V6, 7C5, 6K6, 6F6, etc.	10000 CT.	50	10
S-21A	P.p.—6V6, 7C5, 45, 6L6, etc.	8000 CT.	50	15

### LOW LEVEL OUTPUT Transformers

Type No.	Application	Freq. Resp.	Pri. Imped.	Second. Imped.
A-51X	Tube to line.	300-3000	7000	50
A-53X	Single or p.p. tubes to line.	70-7000	18000 CT.	600/250/50
†A-54X	P.P. Tubes to V.C.		7700 CT.	8/4
A-55J	Parallel-fed 6J5 or 6SN7 to line. 45 db. shielding	30-15000	15000	600/250/50
A-65J	Parallel-fed 6J5 or 6SN7 to line. 45 db. shielding.	30-15000	15000	600/150 Split winding
S-58X	Line to line.	300-3000	500/125	500/125 —Split windings—
A-57J	Line to line. 45 db. shielding.	30-15000	600/250/50	600/250/50
A-67J	Line to line. 45 db. shielding.	30-15000	600/150	600/150 —Split windings—

‡ New item.

### "SPLATTER" Chokes

Type No.	Inductance Henries	Current Ma.	Res. Ohms	H
C-26X	Tapped .2 to 1.5	100	95	1 1/4
C-43X	Tapped .05 to 1	300	40	2 1/2

## UNIVERSAL OUTPUT Transformers Any Tube to Any Voice Coil

Type No.	Application	Pri. DC Ma.	Audio Watts
S-51X	Single or p.p. plates (4,000 to 14,000 ohms) to V.C.	35	5
S-53X	Single or p.p. plates (4,000 to 14,000 ohms) to V.C.	40	8
S-55Z	Push-pull plates (4,000 to 14,000 ohms) to V.C.	40 ea. side	10
S-55X	Push-pull plates (4,000 to 14,000 ohms) to V.C.	40 ea. side	10
S-57Z	Push-pull plates (4,000 to 14,000 ohms) to V.C.	50 ea. side	15

### PLUG-IN INPUT Transformers

Type No.	Application	Pri. Imped.	Second Imped.	Freq. Resp.	Shld'g
A-200P	Line or mike to grid. CT.	200/50	36,000	50-15000	70 db.
A-202P	Same as above.	200/50 CT.	36,000	30-15000	90 db.

### INTERSTAGE Transformers Plate to Grid

Type No.	Application	Freq. Resp.	Pri. Imped.	Second Imped.	Ratio
A-31X	Plate to single or p.p. grids	300-3000	10000	90000	1 : 3
A-33X	Plate to single or p.p. grids	70-7000	10000	90000	1 : 3
A-42Z	Multi-ratio single or p.p. plates to single or p.p. grids	70-7000	15000 CT.	135000 or 33750	1 : 1.5 1 : 3
A-35A	Plate to single or p.p. grids	50-10000	10000	90000	1 : 3
A-39A	P.p. plates to p.p. grids	50-10000 CT.	20000	45000	1 : 1.5
A-40J	Parallel-fed 6J5 or 6SN7. Plate to p.p. grid 45 db. shielding.	30-15000	15000	86000	1 : 2.76

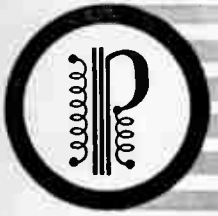
### MODULATION Transformers — Tube to RF Load

Type No.	Primary	Freq. Resp.	Secondary Impedance	Ma.	Aud. Wtts.
M-4Z	5000 (Auto-former).	300-3000	6750 4	100 (total)	10
M-5Z	5000 (Auto-former).	300-3000	6750 4	250 (total)	20
M-1X	100000 CT. for 19, 1J6, 6N7, 6A6, etc.	300-3000	5000-8000-10000	50	5
M-3X	100000 CT. for 6N7, 6N6, 6A6, 6F6's, etc.	300-3000	3000-5000-80000	100	20
†M-7AL	4250 CT. for 807's	300-3000	3000-5000-8000	200	60
M-15A	Multi-match	300-3000	4000 to 20000	150	30
M-16AL	Multi-match	300-3000	4000 to 20000	180	60
†M-8AL	Multi-match	300-3000	4000 to 20000	200	80
†M-12AL	Multi-match	300-3000	4000 to 20000	300	125

### DRIVER Transformers

Type No.	Driver Tubes	Output Tubes	Frequency Response	Ratio Primary 1/2 Sec.	Primary D.C. Ma.
A-81X	30, 1H4, etc.	P.p. 19, 30's, 1J6, etc.	300-3000	2.66:1	15
A-83X	6F6, 42, 45, etc.	P.p. 6L6, 6F6, 6V6, 807, etc.	70-7000	1.33:1	40
A-85X	6F6, 42, 45, etc.	P.p. 6L6, 6F6, 6V6, 807, etc.	50-10000	2.66:1	40
A-89A	P.p. plates to class B or AB grids—Universal 15 watt.	Any class B or AB tubes. 100-500 watts output	50-10000	3.1 or 1.8:1	100 per side
A-91A	P.p. plates to Class B or AB grids—Universal 30 watt.	Any class B or AB tubes. 400-1500 watts output	50-10000	3.1 or 1.8:1	160 per side





# PEERLESS

## ELECTRICAL PRODUCTS



\*\* All primaries are 117 V, 60 cycle.  
 † All transformers in this group are supplied with electro-static shield.

▼ Maximum operating level, 1 mw reference.  
 • Impedance is total of two separate windings.

◦ These units may also be used as bridging transformers. Complete application data in each packing box.

### COMBINATION PLATE AND FILAMENT TRANSFORMERS \*\* †

Type Number	High Voltage AC Volts	Secondary DC MA.	Filament Current, Amperes 5 V. 6.3 V.C.T.	Dimensions, Inches Height Depth Width	Weight Lbs.	List Price
R-340-F	325-0-325	100	3. 5.	4 $\frac{3}{8}$ 3 $\frac{1}{8}$ 2 $\frac{3}{4}$	4	\$28.00
R-490-F	350-0-350	200	3. 6.	5 $\frac{1}{8}$ 3 $\frac{1}{8}$ 3 $\frac{3}{8}$	8	\$35.00
R-562-F	400-0-400	220	3. 6.	5 $\frac{1}{8}$ 3 $\frac{1}{8}$ 3 $\frac{3}{8}$	9	\$45.00
R-631-F	500-435-0-435-500 (Has 100 V tap for C bias)	225 (Replaces the R-630-F in a larger case)	3. 6.	6 4 $\frac{3}{8}$ 4 $\frac{1}{8}$	11 $\frac{1}{2}$	\$55.00
R-800-A	400-0-400	300	4. 4.-5.	4 $\frac{3}{8}$ 5 $\frac{1}{8}$ 3 $\frac{1}{8}$	12	\$34.00
R-815-S	550-275-0-275-550	280 from 550-0-550 40 from 275-0-275	6. 4.-4.2-.9	6 $\frac{3}{8}$ 5 $\frac{1}{8}$ 5 $\frac{1}{8}$	18	\$72.00

### FILAMENT TRANSFORMERS

Type Number	Secondary Current, Amperes 6.3V. C.T.	Test Volts R.M.S.	Primary Volts 60 Cycle	Dimensions, Inches Height Depth Width	Weight Lbs.	List Price
F-012-X	1.	2000	117	1 $\frac{1}{8}$ 2 $\frac{7}{8}$ 1 $\frac{5}{8}$	$\frac{1}{2}$	\$6.75
F-139-E	8	2000	117	3 $\frac{1}{2}$ 3 $\frac{1}{4}$ 2 $\frac{7}{8}$	3 $\frac{1}{4}$	\$14.00

### SMOOTHING CHOKES

Type Number	Current D.C. MA.	Inductance Henrys	Resistance Ohms	Test Volts R.M.S.	Dimensions, Inches Height Depth Width	Weight Lbs.	List Price
C-325-F	120	10	240	1500	3 $\frac{7}{8}$ 2 $\frac{1}{8}$ 2 $\frac{1}{8}$	3	\$13.00
C-390-F	200	10	150	1500	4 $\frac{1}{8}$ 3 $\frac{1}{8}$ 3 $\frac{1}{8}$	6	\$23.50

### STANDARD INPUT TRANSFORMERS

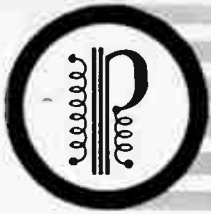
Type Number	Descriptive Data	Impedance, Ohms Primary Secondary	Freq. Range $\pm 1$ db	Dimensions, Inches Height Depth Width	Weight Lbs.	List Price
K-308-D	Line, Mixer or Microphone to Sglt. Grid. Max. Level: 0 dbm▼. 60 db magnetic shielding.	250 C.T. 50,000	30-20,000 when terminated	1 $\frac{1}{2}$ 1 $\frac{1}{8}$ round	$\frac{1}{4}$	\$15.00

### STANDARD IMPEDANCE MATCHING TRANSFORMERS

Type Number	Descriptive Data	Audio Watts Max. 70 V Line	Impedance, Ohms Primary Secondary	Freq. Range $\pm 1$ db	Dimensions, Inches Height Depth Width	Weight Lbs.	List Price
E-372-Q Repeat Coil	Electro-static Shield. 60 db Magnetic Shield.	+18 dbm▼	500 C.T.-333 250-200 C.T. 125-50 500 C.T.-333 250-200 C.T. 125-50	20-20,000	3 $\frac{1}{2}$ 2 $\frac{3}{8}$ 2 $\frac{1}{2}$	1 $\frac{1}{2}$	\$35.00

### STANDARD OUTPUT TRANSFORMERS

Type Number	Descriptive Data	Freq. Range $\pm 1$ db	Impedance, Ohms Primary Secondary	Pri. DC MA. Max. Unbal.	Audio Watts	Dimensions, Inches Height Depth Width	Weight Lbs.	List Price
S-448-Q	Single or P-P plates to line. 30 db hum bucking.	20-20,000	20,000 C.T. 12,500 C.T. 5000-3125 500 C.T. 200 C.T.-333 250-125-50	15 2	+18 dbm▼	3 $\frac{1}{2}$ 2 $\frac{3}{8}$ 2 $\frac{1}{2}$	1 $\frac{1}{4}$	\$32.00
S-510-F	P-P plates to speaker.	20-30,000	10,000 C.T. 8000 C.T.	40 4	10	2 $\frac{3}{8}$ 2 $\frac{3}{8}$ 2 $\frac{1}{2}$	2	\$23.00
S-526-F	P-P plates to speaker.	20-30,000	6800 C.T. 5000 C.T.	60 6	20	4 $\frac{3}{8}$ 3 $\frac{1}{8}$ 2 $\frac{3}{8}$	3 $\frac{3}{8}$	\$27.00
S-542-F	P-P plates to speaker.	20-30,000	5000 C.T. 4000 C.T.	140 14	40	5 $\frac{1}{8}$ 3 $\frac{1}{8}$ 3 $\frac{1}{8}$	6	\$32.00



# PEERLESS

## ELECTRICAL PRODUCTS



Frequency response is guaranteed on all 20-20 plus transformers

### INPUT TRANSFORMERS (20-20 PLUS)

Type Number	Descriptive Data	Max. Level ▼	Impedance, Ohms Primary Secondary	Primary Max.	DC MA. Unbal.	Dimensions, Inches Height Depth Width			Weight Lbs.	List Price
K-241-D°	Frequency response, ±1 db: 10-25,000 cps. Primary balanced to attenuate longitudinal currents in excess of 50 db. Sec. may be used single ended or in P-P. Has 2 sec. windings with bal. cap. to grd. Electrostatic shield is provided between pri. and sec. Has 90 db electromagnetic shielding. Insertion loss 1¼ db. Transformer will operate into open circuit or resistive load. Frequency resp. down less than 1 db at 15 KC. when operated into resistive load shunted with 120 MMFD, cap. High power rating makes transf. suitable for use as output transf.	+8 dbm	500-280- 125-31 70,000 • or 600-340- 84,000 • 150-37.5	0	—	2¾	1½	2	1	\$42.00

### OUTPUT TRANSFORMERS (20-20 PLUS)

S-217-D° Line Level	Frequency response: ±1 db: 5-65,000 cps. Pri. may be used single ended or P-P. Sec. windings have bal. cap. to grd. Has C.T. tertiary of 24.5 ohms which may be used for feedback or grded. for electrostatic shield. Parallel feed is required. Astatic balance and electromagnetic shield provide approx. 50 db of shielding. Insertion loss 0.5 db. Transf. may be used as excellent input. transf. to either single or P-P grids. When used this way balanced low impedance winding provides excellent line termination.	+20 dbm	12,500 600-300 3125 150-75 Tert—See Data	25	0	3¼	1½	2	1¼	\$64.00
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### MATCHING TRANSFORMERS (20-20 PLUS)

E-204-D Repeat Ccil	Frequency response: ±1 db: 5-80,000 cps. Electrostatic shield. Astatic balance and electromagnetic shield provide approx. 50 db magnetic shielding. Attenuates longitudinal currents 80 db in bal. circuit in freq. range up to 70,000 cps. Insertion loss 0.4 db.	+23 dbm	500 C.T. 500 C.T. 125 C.T. 125 C.T. or 600 C.T. 600 C.T. 150 C.T. 150 C.T.	100	0	3¼	1½	2	1¼	\$67.00
As a Hybrid Trans- former	This precise matching transf. is an excellent hybrid unit for operation from two 250/300 ohm sources. Balancing resistor of approx. 125/150 ohms required in pri. circuit. For max. attenuation between sources the exact value of resistor should be determined from measurements made in circuit where transf. is used. Correct value will yield average attenuation of 27 to 30 db with a max. attenuation of approx. 50 db at some point between 500 cps and 1,000 cps.				Total Pri.	Impedances, Ohms Pri. 1 Pri. 2 Sec.			Max. Level ▼	
					500 or 600	250 or 300	250 or 300	500-125 or 600-150	+23 dbm	

### HIGH LEVEL OUTPUT TRANSFORMERS (20-20 PLUS)

Type Number	Descriptive Data	Impedance, Ohms Primary Secondary		Pri. DC MA Per Winding Max. Unbal.		Max. Level ▼	Dimensions, Inches Height Depth Width			Weight Lbs.	List Price
S-232-Q	Frequency response, ±1 db: 10-100,000 cps. Insertion loss 0.6 db. (See descriptive data below)	6600 C.T. 1650 C.T.	16, 8, 4, 1.	70 140	7 14	+43 dbm (20 watts) See Data	4¾	3 7/8	3 7/8	3¾	\$44.00
S-238-Q	Frequency response, ±1 db: 10-75,000 cps. Insertion loss 0.6 db. (See descriptive data below)	10,000 C.T. 2500 C.T.	16, 8, 4, 1.	50 100	5 10	+43 dbm (20 watts) See Data	4¾	3 7/8	3 7/8	3¾	\$44.00
S-258-Q	Frequency response, ±1 db: 10-100,000 cps. Insertion loss 0.4 db. (See descriptive data below)	5000 C.T. 1250 C.T.	16, 8, 4, 1.	120 240	12 24	+46 dbm (40 watts) See Data	4¾	3¾	3½	6½	\$60.00
S-271-S	Frequency response, ±1 db: 10-100,000 cps. Insertion loss 0.3 db. (See descriptive data below)	5000 C.T. 1250 C.T.	16, 8, 4, 1.	200 400	20 40	+49 dbm (80 watts) See Data	6¾	5¾	5¾	18	\$90.00
S-273-S	Frequency response, ±1 db: 10-80,000 cps. Insertion loss 0.3 db. (See descriptive data below)	8000 C.T. 2000 C.T.	16, 8, 4, 1.	125 250	12 25	+49 dbm (80 watts) See Data	6¾	5¾	5¾	18	\$90.00

#### DESCRIPTIVE DATA, GENERAL

Maximum rated operating level ▼ applies to frequency range 20-20,000 cps. Power rating is ½ at 15 cps, ¼ at 10 cps. Full power (60 cps) primary open circuit inductance is approximately 100 Henrys for each 1000 ohms of primary impedance. Leakage inductance, secondary referred to total primary, is approximately 1 mh per 1000 ohms of primary impedance. Leakage inductance, half primary to half primary is approximately 1 mh per 1000 ohms of primary impedance. Can be used between half and double of rated impedances. For halved impedances, power ratings are doubled. For doubled impedances, power ratings are halved. Secondary may be operated with either end, or C.T. grounded.

### IMPEDANCE MATCHING AUTO TRANSFORMER (20-20 PLUS)

Type Number	Descriptive Data	Impedance, Ohms	Insertion Loss	Max. Level ▼	Dimensions, Inches Height Depth Width			Weight Lbs.	List Price
A-262-E	Frequency response, ±1 db: 10-100,000 cps. May be used in any combination of rated impedances, step-up or step-down.	16, 8, 4 or 8, 4, 2	5 db, or 1.0 db.	48.7 dbm (75 watts) or 44.7 dbm (30 watts)	4 3/8	3 7/8	3 7/8	5¾	\$31.00

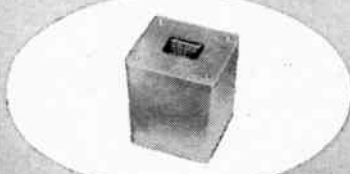
# ACRO PRODUCTS COMPANY

MANUFACTURERS OF THE WORLD FAMOUS ACROSOUND TRANSFORMERS

Case Type "A" furnished in silver grey hammerloid finish. 10-inch color coded wire leads are brought out through case bottom. Case mounts with base flange. Size — 3 3/4 x 3 1/4 x 4 1/4 high



Case Type "B" furnished in silver grey hammerloid finish. 10-inch color coded wire leads are brought out through case bottom. Case has provision for either top or bottom mounting. Size — 4 x 4 5/8 x 5 3/8 high



MODEL	IMPEDANCES*	POWER RATING	FREQUENCY RESPONSE	RATED PRIMARY CURRENT PER TUBE	PERMISSIBLE DC PRIMARY UNBALANCE	CASE TYPE	WEIGHT	NET PRICE	APPLICATION
T0-230	3000 plate-to-plate 4, 8, 16 secondary	20 watts— 20 cps to 20 kc 40 watts— 30 cps to 15 kc	±1 db 10 cps to 40 kc	150 ma	20%	A	7 lbs.	\$14.50	For use with 6B4's or 2A3's fixed bias pp par. 6L6's, etc.
T0-250	5000 plate-to-plate 4, 8, 16 secondary	10 watts— 20 cps to 20 kc 20 watts— 30 cps to 15 kc	±1 db 10 cps to 40 kc	75 ma	10%	A	6 lbs.	11.75	For use with 6B4's or 2A3's self bias, 6L6's, class A, etc.
T0-270	10,000 plate-to-plate 4, 8, 16 secondary	10 watts— 20 cps to 20 kc 20 watts— 30 cps to 15 kc	±1 db 10 cps to 40 kc	75 ma	10%	A	6 lbs.	11.75	For use with 6V6's, 6K6's, etc.
T0-280	9000 plate-to-plate 4, 8, 16 secondary	20 watts— 20 cps to 20 kc 40 watts— 30 cps to 15 kc	±1 db 10 cps to 40 kc	75 ma	10%	A	7 lbs.	14.50	For use with 6L6's, class AB1
T0-290	12,000 plate-to-plate 4, 8, 16 secondary	20 watts— 20 cps to 20 kc 40 watts— 30 cps to 15 kc	±1 db 10 cps to 40 kc	75 ma	10%	A	7 lbs.	15.75	For use with triode connected 807's or 5881's in Williamson type circuit
T0-300	6600 plate-to-plate 4, 8, 16 secondary	20 watts— 20 cps to 30 kc 40 watts— 30 cps to 20 kc	±1 db 10 cps to 100 kc	75 ma	15%	A	7 lbs.	24.75	For Ultra-Linear operation of KT-66's, 807's, 5881's, 1614's, 6L6's. Ultra-Linear conversion of Williamson type circuits
T0-310	8000 plate-to-plate 4, 8, 16 secondary	10 watts— 20 cps to 30 kc 20 watts— 30 cps to 20 kc	±1 db 10 cps to 100 kc	75 ma	10%	A	6 lbs.	18.75	For Ultra-Linear operation of 6V6's or EL-84's
T0-320	3500 plate-to-plate 4, 8, 16 secondary	10 watts— 20 cps to 30 kc 20 watts— 30 cps to 20 kc	±1 db 10 cps to 100 kc	75 ma	10%	A	6 lbs.	18.75	For Ultra-Linear operation of 6V6's
T0-330	3800 plate-to-plate 4, 8, 16 secondary	50 watts— 20 cps to 30 kc 100 watts— 30 cps to 20 kc	±1 db 10 cps to 100 kc	150 ma	15%	B	14 lbs.	39.75	For push pull Ultra-Linear 6550's, EL-34's, 6CA7's, or for push pull parallel operation of KT-66's, 807's, etc.
T0-350	6600 plate-to-plate 4, 8, 16 secondary	100 watts— 20 cps to 20 kc	±1 db 7 cps to 70 kc	175 ma	10%	B	14 lbs.	49.50	For Ultra-Linear operation of 6146 tubes using tertiary winding for screen connection.

### POWER TRANSFORMERS

MODEL	VOLTAGES	USE	NET PRICE
TP-520	285-0-285 - 175 ma, 6.3V - 5a, 5V - 2a	For 6Y6 Amplifiers	\$ 9.75
TP-550	825-290-0-100-290-825, 6.3V - 6a, 5V - 2a	For 6146 Amplifiers	33.75

\* All models available with additional line winding (125 and 500 ohms) at extra cost of \$6.00 net for models with numbers up to T0-320 and \$10.00 net for models T0-330 and T0-350. Models with line winding are designated by model numbers ending in "5." For example, Model T0-300 with additional line winding is specified as T0-305. All power transformers supplied in gray hammertone end bells with upright mounting.

**ACRO PRODUCTS COMPANY • PHILADELPHIA, PA.**

High Fidelity Output Transformers for every application.



# UNITED TRANSFORMER CORP.



## NET PRICE LIST

Type	Net	Type	Net	Type	Net	Type	Net	Type	Net	Type	Net	Type	Net
A-10	\$13.20	CVM-5	\$105.00	H-73	\$11.40	HQB-10	\$21.90	MQA-14	\$11.40	R-45	\$12.00	S-39	\$16.50
A-11	12.00	CVP-1	13.20	H-74	12.90	HQB-11	22.80	MQA-15	12.00	R-46	24.00	S-40	18.00
A-12	12.00	CVP-2	14.40	H-75	15.00	HQB-12	24.00	MQA-16	12.90	R-47	9.60	S-41	18.00
A-14	10.80	CVP-3	21.00	H-76	24.00	HQC-1	15.60	MQA-17	13.80	R-48	10.50	S-42	19.50
A-15	9.90	CVP-4	24.00	H-77	27.00	HQC-2	16.80	MQA-18	15.00	R-49	10.80	S-43	30.00
A-16	9.90	CVP-5	39.00	H-78	34.50	HQC-3	18.00	MQA-19	18.00	R-55	1.56	S-44	24.00
A-17	12.00	D1-1	42.00	H-79	90.00	HQC-4	19.80	MQB-1	12.90	R-58	2.70	S-45	21.00
A-18	12.00	D1-2	45.00	H-80	12.90	HQC-5	24.00	MQB-2	13.20	R-59	3.30	S-46	24.00
A-19	12.00	D1-3	51.00	H-81	18.00	HQD-1	15.60	MQB-3	13.50	R-60	3.90	S-47	33.00
A-20	14.40	D1-4	66.00	H-82	20.40	HQD-2	16.80	MQB-4	13.80	R-64	45.00	S-48	39.00
A-21	12.00	DD-T1	6.00	H-83	21.00	HQD-3	18.00	MQB-5	14.10	R-72	6.60	S-49	36.00
A-22	9.90	DD-T2	5.40	H-84	26.40	HQD-4	19.80	MQB-6	14.40	R-73	9.00	S-50	60.00
A-23	9.90	DD-T3	5.40	H-85	30.00	HQD-5	24.00	MQB-7	14.70	R-74	15.00	S-51	12.00
A-24	12.90	DD-T4	5.40	H-86	30.90	HQE-1	7.80	MQB-8	15.00	R-75	24.00	S-52	15.60
A-25	12.00	DD-T5	5.40	H-87	36.00	HQE-2	7.80	MQB-9	15.90	R-76	42.00	S-53	6.00
A-26	13.20	DD-T6	6.00	H-88	45.00	HQE-3	8.10	MQB-10	16.80	R-77	75.00	S-54	5.70
A-27	12.00	DD-T7	6.60	H-89	49.50	HQE-4	8.40	MQB-11	18.00	R-78	15.60	S-55	5.40
A-30	10.20	DD-T8	4.80	H-90	21.00	HQE-5	8.70	MQB-12	19.20	R-79	18.00	S-57	9.00
A-32	6.60	DD-T9	6.60	H-91	27.00	HVC-1	9.00	MQD-1	15.00	R-80	21.00	S-58	9.60
A-33	2.70	DD-T10	6.60	H-92	33.00	HVC-2	9.00	MQD-2	15.60	R-81	33.00	S-59	9.00
CG-1C	54.00	DD-T11	6.60	H-93	49.50	HVC-3	9.00	MQD-3	16.20	R-86	33.00	S-60	13.20
CG-1S	54.00	DD-T12	5.70	H-110	27.00	HVC-4	9.00	MQD-4	16.80	R-87	6.00	S-61	10.20
CG-2L6	13.80	DD-T13	5.70	H-111	33.00	HVC-5	9.00	MQD-5	18.00	R-88	17.40	S-62	9.30
CG-15	12.00	DD-T14	6.00	H-112	36.00	HVC-6	9.00	MQD-6	21.00	R-97	15.00	S-63	13.20
CG-16	12.00	DD-T15	6.00	H-113	54.00	HVC-7	9.60	MQE-1	7.20	R-101	6.30	S-64	10.20
CG-19	12.00	DD-T16	6.00	H-114	81.00	HVC-8	9.60	MQE-2	7.50	R-102	6.60	S-65	9.90
CG-20	15.00	DD-T17	6.00	H-115	81.00	HVC-9	9.60	MQE-3	7.80	R-103	7.20	S-67	9.90
CG-21	24.00	DD-T18	6.30	H-116	180.00	HVC-10	9.90	MQE-4	7.80	R-104	7.50	S-68	10.20
CG-33	9.00	DD-T19	6.00	H-117	291.00	HVC-11	10.80	MQE-5	8.10	R-105	8.40	S-70	10.20
CG-34	10.20	DD-T20	6.00	H-120	13.80	HVC-12	12.00	MQE-6	8.40	R-106	5.40	S-71	15.00
CG-40	8.10	DD-T21	6.00	H-121	18.00	LS-6L1	36.00	MQE-7	8.40	R-107	6.30	S-72	10.80
CG-44	6.90	DD-T22	6.00	H-122	21.00	LS-6L4	54.00	MQE-8	8.70	R-110	6.30	SC-3	7.50
CG-45	6.00	DD-T23	6.90	H-123	36.00	LS-6	24.00	MQE-9	8.70	R-111	6.60	SC-4	9.00
CG-48C	7.50	DD-T24	7.50	H-124	12.00	LS-10	21.00	MQE-10	9.00	R-112	7.50	SC-5	14.40
CG-51AX	9.00	DD-T25	7.20	H-125	21.00	LS-10X	21.00	MQE-11	9.00	R-113	10.80	V-1	20.00
CG-53AX	10.50	DD-T26	5.70	H-126	27.00	LS-12	25.20	MQE-12	9.30	SO-1	3.00	V-1-M	35.00
CG-58AX	10.80	DD-T27	4.80	H-127	45.00	LS-12X	24.00	MQE-13	9.90	SO-2	3.00	VIC-1	6.60
CG-100	9.00	FT-1	2.58	H-128	81.00	LS-14X	24.00	MQE-14	10.80	SO-3	3.00	VIC-2	6.60
CG-101	9.00	FT-2	2.70	H-129	81.00	LS-15X	24.00	MQE-15	12.00	SO-4	3.00	VIC-3	6.60
CG-102	13.20	FT-3	3.00	H-130	9.00	LS-18	18.00	MQL-0	21.00	SO-5	3.00	VIC-4	6.60
CG-103	13.20	FT-4	3.00	H-131	12.00	LS-19	18.00	MQL-1	21.00	SO-6	3.90	VIC-5	6.60
CG-104	15.00	FT-5	3.60	H-132	19.20	LS-21	18.00	MQL-2	21.00	SO-7	3.00	VIC-6	6.60
CG-105	15.00	FT-6	3.60	H-133	15.00	LS-25	27.00	MQL-3	21.00	SO-8	3.60	VIC-7	6.60
CG-108	27.00	FT-7	3.60	H-134	16.80	LS-26	24.00	MQL-4	22.80	SO-9	3.60	VIC-8	6.90
CG-109	27.00	FT-8	4.20	H-135	21.00	LS-27	24.00	MQL-5	24.00	SSO-1	3.60	VIC-9	6.90
CG-120	15.00	FT-10	4.50	H-136	27.00	LS-30	22.50	O-1	7.80	SSO-2	4.50	VIC-10	6.90
CG-121	18.00	H-1	9.00	HA-100	17.40	LS-30X	24.00	O-2	7.80	SSO-3	4.80	VIC-11	6.90
CG-122	15.00	H-2	9.90	HA-100X	17.40	LS-31	21.00	O-3	7.50	SSO-4	3.90	VIC-12	7.20
CG-124	15.00	H-3	7.80	HA-101	22.20	LS-32	30.00	O-4	6.60	SSO-5	3.90	VIC-13	7.20
CG-125	18.00	H-4	7.80	HA-101X	18.00	LS-33	30.00	O-5	6.60	SSO-6	3.90	VIC-14	7.20
CG-126	24.00	H-5	8.40	HA-103A	15.00	LS-32	21.00	O-6	7.50	SSO-7	3.00	VIC-15	7.50
CG-131	9.90	H-6	10.20	HA-104	15.00	LS-34	30.00	O-7	7.50	SSO-8	3.90	VIC-16	7.50
CG-132	9.90	H-7	9.60	HA-105	21.00	LS-35	24.00	O-8	7.80	SSO-9	3.00	VIC-17	7.50
CG-133	9.90	H-8	9.00	HA-106	18.90	LS-40	30.00	O-9	7.80	SSO-10	3.90	VIC-18	7.80
CG-134	9.00	H-9	9.00	HA-107	27.00	LS-47	24.00	O-10	8.40	SSO-11	3.00	VIC-19	7.80
CG-135	9.90	H-10	8.40	HA-108	19.80	LS-48	54.00	O-11	7.80	SSO-12	3.00	VIC-20	8.40
CG-136	13.20	H-11	7.50	HA-108X	19.80	LS-50	21.00	O-12	7.80	SSO-13	4.50	VIC-21	9.00
CG-137	8.40	H-12	9.60	HA-111	21.60	LS-51	27.00	O-13	6.30	SSO-14	3.00	VIC-22	12.00
CG-140	7.80	H-13	9.00	HA-113	18.00	LS-52	21.00	O-14	7.50	SSO-15	4.80		
CG-141	9.00	H-14	9.00	HA-114	21.60	LS-54	18.00	O-15	7.50				
CG-233	9.00	H-15	9.00	HA-133	24.00	LS-55	24.00	O-16	10.20				
CG-235	12.00	H-16	9.00	HA-134	16.90	LS-56	24.00	O-17	1.50				
CG-300	16.20	H-19A	16.50	HA-135	16.30	LS-57	18.00	O-18	8.40	S-1	4.80	FILTERS & EQUALIZERS	
CG-301	24.00	H-20	15.00	HA-136	18.00	LS-58	51.00	O-19	8.40	S-2	6.00	Type	Net
CG-302	30.00	H-21	18.00	HA-136	18.00	LS-58	51.00	O-20	8.40	S-3	4.20	3A	180.00
CG-303	36.00	H-22	15.90	HA-137	16.80	LS-61	24.00	O-21	7.80	S-4	4.80	3AX	270.00
CG-304	141.00	H-24	16.20	HC-115	9.00	LS-63	18.00			S-5	4.80	4C	240.00
CG-305	63.00	H-25	10.80	HC-116	9.00	LS-65	42.00	P-1	9.00	S-6	4.50		
CG-306	150.00	H-26	15.00	HC-117	9.00	LS-103	180.00	P-2	9.00	S-8	6.60		
CG-307	138.00	H-27	15.00	HP-122	12.00	LS-106	300.00	P-3	9.00	S-9	8.40		
CG-308	162.00	H-30	9.00	HP-123	12.00	LS-140	24.00	P-4	8.40	S-10	6.60		
CG-309	360.00	H-31	9.00	MQA-1	7.50	LS-141	21.00	P-6	8.40	S-11	5.10		
CG-310	309.00	H-32	9.00	MQA-2	7.80	LS-150	21.00	P-7	8.40	S-12	5.40		
CG-311	66.00	H-33	9.00	MQA-3	8.10	LS-151	21.00	P-8	9.00	S-13	7.80		
CG-312	66.00	H-35	7.80	MQA-4	8.40	LS-691	570.00	P-9	9.00	S-14	6.60		
CG-315	14.40	H-36	9.00	MQA-5	8.70	LS-692	900.00	P-10	9.00	S-15	7.20		
CG-316	21.00	H-37A	9.00	MQA-6	9.00	MAT-1	27.00	P-11	9.00	S-16	8.40		
CG-333	9.00	H-38	9.60	MQA-7	9.00	MAT-2	30.00	P-12	9.00	S-17	-9.90		
CG-422	21.00	H-39	9.60	MQA-8	9.60	MAT-3	36.00	P-15	9.00	S-18	7.20		
CG-428	24.90	H-40A	9.60	MQA-9	9.60	MAT-4	39.00	P-16	11.40	S-19	9.30		
CG-429	24.90	H-41A	9.60	MQA-10	9.90	MAT-5	10.80	PF-1	8.40	S-20	15.00		
CG-431	36.00	H-42	9.90	MQA-11	9.90	MAT-6	9.00	PF-2	8.40	S-21	21.00		
CG-433	9.90	H-45	6.90	MQA-12	10.80	MC-1	10.20	PF-3	6.00	S-22	33.00		
CG-710	12.00	H-46	6.90	MQA-13	11.40	MC-2	12.00	R-14	1.71	S-23	4.50		
CGE-1A	21.90	H-47	6.90	MQA-14	12.90	MLF-AMP	99.00	R-15	1.71	S-24	5.10		
CVA-1	12.00	H-48	6.90	MQA-15	13.80	MQA-1	7.50	R-16	1.71	S-25	3.90		
CVA-2	14.10	H-49	6.90	MQA-16	15.00	MQA-2	7.80	R-17	2.10	S-26	3.90		
CVA-3	18.00	H-50	6.90	MQA-17	15.90	MQA-3	8.10	R-18	2.28	S-27	5.10		
CVA-4	21.00	H-51	7.20	MQA-18	16.80	MQA-4	8.40	R-19	2.70	S-28	6.00		
CVA-5	36.00	H-52	7.20	HQB-1	15.00	MQA-5	8.70	R-20	3.30	S-29	5.10		
CVL-1	9.00	H-53	7.20	HQB-2	15.30	MQA-6	9.00	R-21	3.30	S-30	5.10		
CVL-2	10.50	H-54	7.50	HQB-3	15.90	MQA-7	9.30	R-34	3.00	S-31	6.90		
CVL-3	15.00	H-55	7.50	HQB-4	16.80	MQA-8	9.60	R-35	2.70	S-32	6.90		
CVL-10	9.90	H-56	8.40	HQB-5	17.40	MQA-9	9.90	R-38A	3.30	S-33	9.30		
CVM-0	10.50	H-57	8.4										



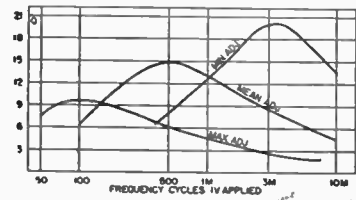
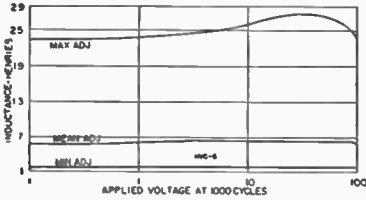
## UTC HERMETIC VARIDUCTORS

\*\*Hermetically sealed to MIL-T-27A spec., MIL Type TF4RX20YY

UTC variable inductors have served as the ideal solution to many filter, oscillator, equalizer, and tuned amplifier problems—for over a decade. Extended development has now made possible the new HVC series of inductors with improved characteristics. They are hermetically sealed to MIL-T-27 specs . . . extremely compact . . . wider inductance range . . . higher Q's . . . lower and higher frequencies . . . superior voltage and temperature stability.

Adjustment of set screw in top of case permits changing inductance + 200%, -70% of nominal value shown. Range is covered in 900° rotation. Setting is positive. Effective Q for a wide frequency range and variation of inductance with applied AC voltage are shown on the illustrated curves, for a typical HVC unit. Case dimensions are 1½" long, 2½" wide, 1½" high. The two terminals and two 4/40 mounting studs are on opposite diagonals — ¼" spacing. Wt. 2 oz.

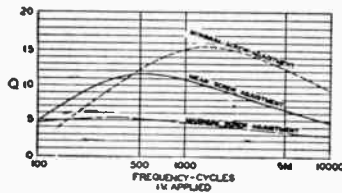
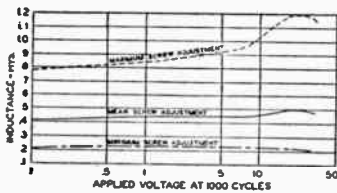
\*\*Pat. Pending



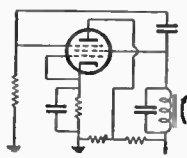
Type No.	Min. Hys.	Mean Hys.	Max. Hys.	DC* MA
HVC-1	.002	.006	.02	100
HVC-2	.005	.015	.05	60
HVC-3	.011	.040	.11	40
HVC-4	.03	.1	.3	30
HVC-5	.07	.25	.7	20
HVC-6	.2	.6	2	15
HVC-7	.5	1.5	5	10
HVC-8	1.1	4.0	11	7
HVC-9	3.0	10	30	5
HVC-10	7.0	25	70	3.5
HVC-11	20	60	200	2
HVC-12	50	150	500	1.5

\*DC MA shown is maximum recommended . . . will effect some reduction in inductance and Q.

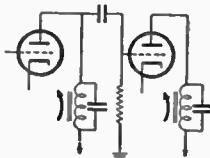
## VIC VARIABLE INDUCTORS



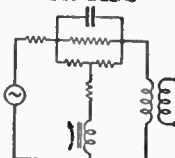
OSCILLATORS



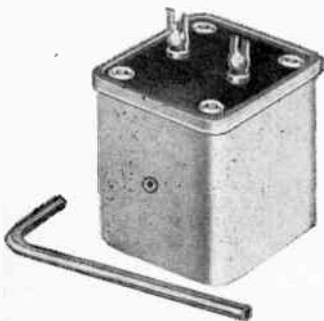
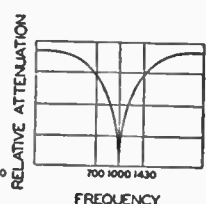
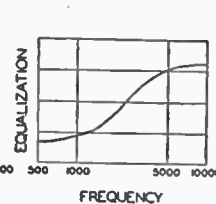
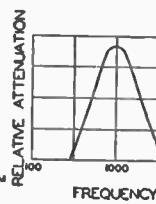
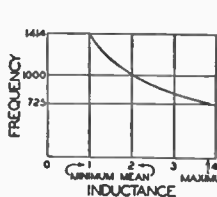
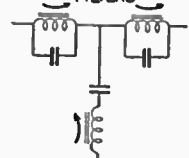
TUNED AMPLIFIERS



EQUALIZERS



FILTERS



Type	Mean Hys.	DC MA*	Type	Mean Hys.	DC MA*
VIC-1	.0085	75	VIC-12	1.3	10
VIC-2	.013	60	VIC-13	2.2	8
VIC-3	.021	50	VIC-14	3.4	7
VIC-4	.034	40	VIC-15	5.4	6
VIC-5	.053	35	VIC-16	8.5	5
VIC-6	.084	30	VIC-17	13.	4
VIC-7	.13	25	VIC-18	21.	3.5
VIC-8	.21	21	VIC-19	33.	3
VIC-9	.34	18	VIC-20	52.	2
VIC-10	.54	15	VIC-21	83.	1.5
VIC-11	.85	12	VIC-22	130.	1

UTC type VIC variable inductors offer a revolutionary approach to the problem of tuned audio circuits. By adjusting a set screw in the side of the case, an inductance value of +85%, -45% from mean value is obtainable. Range is covered in 600° rotation. Setting is positive. Effective Q for a wide frequency range and variation of inductance with applied AC voltage are shown on the illustrated curves, for a typical VIC unit.

The VIC inductor is housed in a rugged die cast case 1½" long, 1¼" wide and 1¼" high with mounting centers on terminal board side ¼" by 2½", tapped for 4-40 screw. Weight is 5½ oz.

\*DC MA shown is maximum recommended . . . will effect some reduction in inductance and Q.

# NEW "M" TYPE TOROIDS

Hermetically sealed to MIL-T-27A specs., MIL Type TF4RX20YY

**MAXIMUM Q**  
**MINIMUM SIZE**



UTC Permalloy Dust Toroids have been the standard of the industry for over 15 years. The MQ series of coils provide the highest Q factor in their class (see curves below), with miniaturized dimensions. All units are hermetically sealed to MIL-T-27 Specifications . . . laboratory adjusted to 1% tolerance—0 DC.

The stability is excellent. For the MQE-7 the inductance change is less than 1% for voltages from .1 to 3 volts. The MQA-13 change is less than 1% for applied voltages from .1 to 20 volts. The MQB-5 change is less than 1% for applied voltages from .1 to 50 volts. DC is permissible through the coil (values listed below). Inductance is virtually independent of frequency, temperature and vibration.

Hum pickup is extremely low due to the toroidal winding structure, with windings uniformly spread over the core. The case is of high permeability, affording additional shielding such that close spacing of units can be effected, the coupling attenuation being approximately 80 DB.



MQE CASE

Length ..... 1 1/16"  
Width ..... 1/2"  
Height ..... 1 1/32"  
Mounting ..... 3/16"  
Screws ..... 4/40"  
Cutout ..... 1/16" x 1/2"  
Unit Weight ..... 1.5 oz.



MQA, MQD CASE

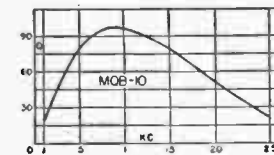
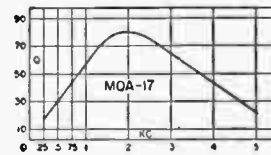
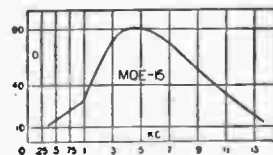
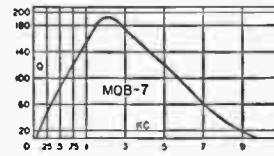
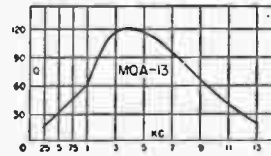
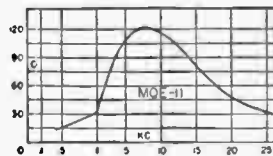
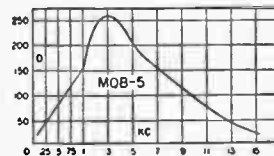
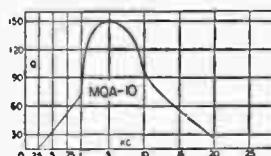
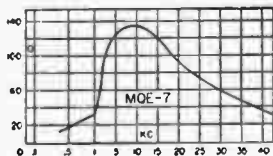
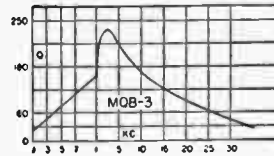
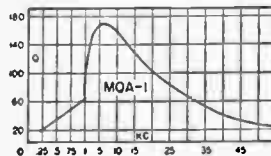
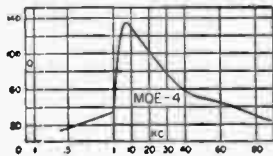
Length ..... 1 1/8"  
Width ..... 1/16"  
Height ..... 1 1/32"  
Mounting ..... 7/16" x 1/8"  
Screws ..... 4/40"  
Cutout ..... 1/16" x 1/2"  
Unit Weight ..... 4 oz.



MQB CASE

Length ..... 2 1/16"  
Width ..... 1 1/16"  
Height ..... 2 1/16"  
Mounting ..... 2 1/16" x 1/16"  
Screws ..... 6/32"  
Cutout ..... 7/16" x 1/2"  
Unit Weight ..... 14 oz.

## TYPICAL Q CURVES



MQE TYPES		
Type No.	Inductance (0 DC)	*DC MA Max.
MQE-1	7 mhy.	*135
MQE-2	12 mhy.	*100
MQE-3	20 mhy.	*80
MQE-4	30 mhy.	*65
MQE-5	50 mhy.	*50
MQE-6	70 mhy.	*40
MQE-7	100 mhy.	*35
MQE-8	150 mhy.	*30
MQE-9	.25 hy.	*22
MQE-10	.4 hy.	*17
MQE-11	.6 hy.	*14
MQE-12	.9 hy.	*12
MQE-13	1.5 hy.	*9
MQE-14	2 hy.	*8
MQE-15	2.8 hy.	*7.2

MQA TYPES		
Type No.	Inductance (0 DC)	DC MA Max.
MQA-1	7 mhy.	*250
MQA-2	12 mhy.	*200
MQA-3	20 mhy.	*150
MQA-4	30 mhy.	*125
MQA-5	50 mhy.	*100
MQA-6	70 mhy.	*80
MQA-7	120 mhy.	*60
MQA-8	.2 hy.	*50
MQA-9	.3 hy.	*40
MQA-10	.5 hy.	*30
MQA-11	.7 hy.	*25
MQA-12	1 hy.	*20
MQA-13	1.5 hy.	*17
MQA-14	2.5 hy.	*13
MQA-15	4 hy.	*10
MQA-16	6 hy.	*9
MQA-17	10 hy.	*7
MQA-18	15 hy.	*5
MQA-19	22 hy.	*4

MQB TYPES		
Type No.	Inductance (0 DC)	DC MA Max.
MQB-1	10 mhy.	*400
MQB-2	30 mhy.	*250
MQB-3	70 mhy.	*170
MQB-4	120 mhy.	*120
MQB-5	.5 hy.	*60
MQB-6	1 hy.	*40
MQB-7	2 hy.	*30
MQB-8	3.5 hy.	*22
MQB-9	7.5 hy.	*16
MQB-10	12 hy.	*11
MQB-11	18 hy.	*9
MQB-12	25 hy.	*8

**MQD TYPES**  
These high frequency coils are extremely stabilized type for temperature range from -40 to +85° C. Q is 170 @ 50 KC ranging down to approx. 80 at 12 and 130 KC (slightly lower for higher inductances).

Inductance (0 DC)	
Type No.	Inductance
MQD-1	2 mhy.
MQD-2	3 mhy.
MQD-3	5 mhy.
MQD-4	7 mhy.
MQD-5	12 mhy.
MQD-6	20 mhy.

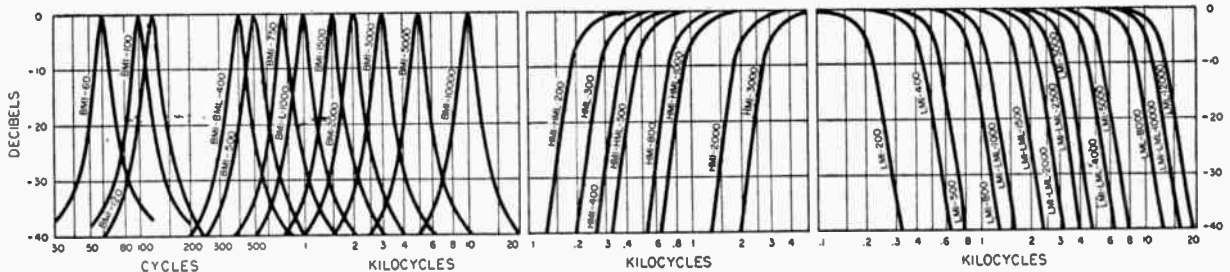
\*The DC MA Max. shown will drop the coil inductance slightly . . . this drop being proportionately smaller at lower DC currents



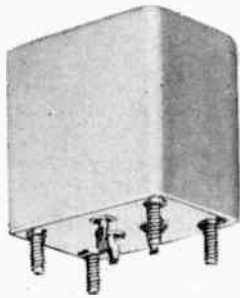
# UTC INTERSTAGE AND LINE FILTERS

(Hermetically sealed to MIL-T-27A specs.)

UTC makes a wide range of specialized filters covering bands ranging from .1 cycle to 400 megacycles. A group of standardized filters have been developed covering the more common mid-range frequencies, which take care of many filter requirements with stock units. All of these standard filters are in drawn hermetically sealed cases shielded to reduce hum pick-up. Special frequencies to order.



TYPICAL RESPONSE CURVES OF STANDARD FILTERS



FILTER CASE M

Base ..... 1 1/16" x 1 1/16"  
 Mtg. .... 3/4" x 1 1/4"  
 Mtg. Studs (stainless) ..... 6-32  
 Cutout ..... 7/8" dia.  
 Height, BMI, LMI, BML ..... 1 1/2"  
 Height, HMI, HML, LML ..... 2 1/2"  
 Weight ..... 6 oz. and 9 oz.

BMI units (Band Pass) have 2:1 gain. They are sharply peaked, having approximately 2 DB attenuation at plus or minus 3% from center frequency and attenuation of 40 DB per octave as shown. Input 10,000 ohms, output to grid.

HMI units (High Pass) have a loss of less than 6 DB at cutoff frequency, and an attenuation of 35 DB at .67 cutoff frequency. Input and output 10,000 ohms.

LMI units (Low Pass) have a loss of less than 6 DB at cutoff frequency, and an attenuation of 35 DB at 1.5 cutoff frequency. Input and output 10,000 ohms.

HML (High Pass) and LML (Low Pass) filters are similar to the interstage filters, in all characteristics, except that they are intended for an input and output impedance of 500/600 ohms.

BML (Band Pass) have input of 500/600 ohms, output to grid.

### STANDARD FILTERS . . . STOCK FREQUENCIES

BMI-60	LMI-1000
BMI-100	LMI-1500
BMI-120	LMI-2000
BMI-400	LMI-2500
BMI-500	LMI-3000
BMI-750	LMI-4000
BMI-1000	LMI-5000
BMI-1500	LMI-10000
BMI-2000	BML-400
BMI-3000	BML-1000
BMI-5000	HML-200
BMI-10000	HML-300
HMI-200	HML-500
HMI-400	HML-1000
HMI-500	LML-1000
HMI-800	LML-1500
HMI-1000	LML-2000
HMI-2000	LML-2500
HMI-3000	LML-4000
LMI-200	LML-8000
LMI-400	LML-10000
LMI-500	LML-12000
LMI-800	

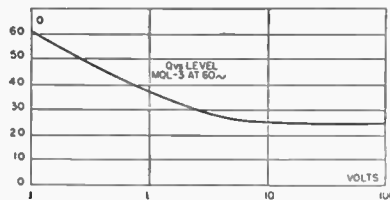
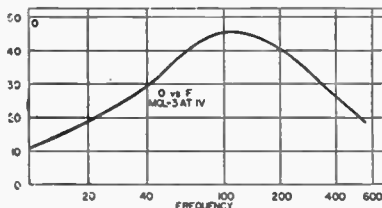
## UTC LOW FREQUENCY HIGH Q COILS

Hermetically sealed to MIL-T-27A specs., MIL Type TF4RX20YY

Permalloy dust toroids are not suited to providing high Q at low frequencies. The MQL series of laminated Hipermalloy coils were specifically designed for this class of service. The unique structure employed provides exceptional Q and stability. Inductance values are laboratory adjusted to 2% tolerance at 1 volt, 60 cycles. Stability with voltage is excellent, for MQL-3 inductance variation is less than 1% from .1 V. to 1 V. 60 cycles. Temperature stability is exceptional, total inductance swing being less than 3.5% for the wide range of -55°C to +85°C. A hum reducing lamination structure plus heavy Hipermalloy shielding provide very low hum pickup . . . 240 microvolts/gauss for MQL-3 series connected. Two identical windings brought out to four terminals permit series, parallel, center tapped, or transformer type connections. Drawn case 1 13/16 x 1 13/16 x 2 1/2 high, 1 lb.



MQL CASE



Type No.	Series Henries (0 DC)	Parallel Henries (0 DC)
MQL-0	1	.25
MQL-1	10	2.5
MQL-2	20	5
MQL-3	200	50
MQL-4	400	100
MQL-5	2500	625

(For 60 cycles and lower)

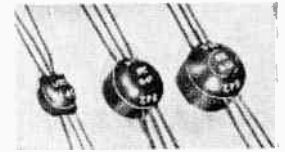
# MINIATURE WIDE APPLICATION PULSE TRANSFORMERS



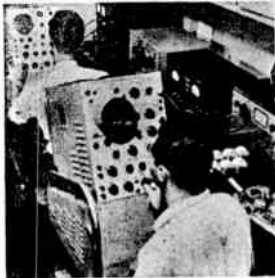
Hermetically sealed to MIL-T-27A spec., MIL Type TF5RX36ZZ

UTC miniature, wound core, pulse transformers are suited to a wide variety of blocking oscillator, interstage, and low level modulator applications. The high reliability design includes hermetic sealing by vacuum molding in a special epoxy . . . meets full MIL-T-27A specifications . . . is suitable for service from -70° C to +130° C.

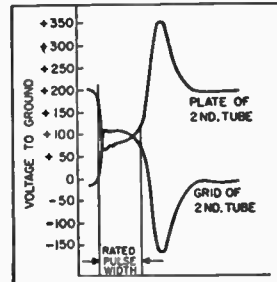
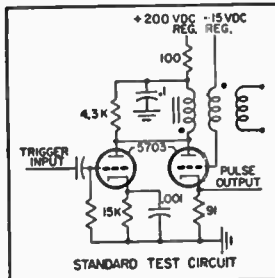
For most versatile use, all stock items provide 3 windings of equal (1:1:1) ratio. Two winding, tapped winding, other ratio types, and metal cased units are available on special order. The short rise time of these items is illustrated by the .05  $\mu$ sec. rise time of the H-50. Insulation test is at 1250 volts RMS.



1:1:1 PULSE TRANSFORMERS



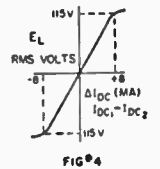
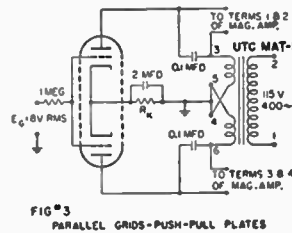
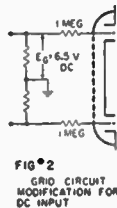
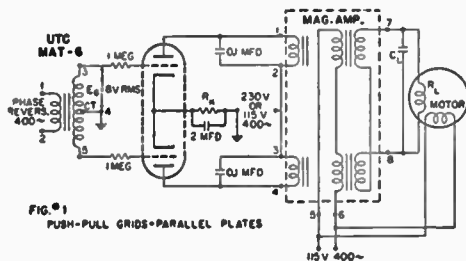
Testing small pulse transformers.



Type No.	Pulse Width $\mu$ sec.	Width In.	Length In.
H-45	.05	3/8	3/8
H-46	.1	3/8	3/8
H-47	.2	9/16	5/8
H-48	.5	9/16	5/8
H-49	1	9/16	5/8
H-50	2	9/16	5/8
H-51	3	9/16	5/8
H-52	5	9/16	5/8
H-53	7	5/8	5/8
H-54	10	5/8	5/8
H-55	16	5/8	5/8
H-56	20	5/8	5/8
H-57	25	5/8	5/8

# MAGNETIC AMPLIFIERS FOR SERVO MOTOR APPLICATIONS

Hermetically sealed to MIL-T-27A Specs., MIL Type TF4SY40YV



The MAT 1-4 Magnetic Amplifiers are exceptionally stable units designed for the control of 2 phase, 115V., 400 cycle servo motors. They are compact . . . hermetically sealed . . . magnetically shielded . . . and meet MIL-T-27 and MIL-E-5400 Specifications. The output is sinusoidal, amplitude variable, and phase reversible. Control is provided by a dual triode such as 12AU7 operating with a plate voltage of 115 volts, 400 cycles, or higher. The signal to the triode grids can be polarity reversible DC or phase reversible 400 cycles with or without suppressed carrier modulation. These units eliminate DC power requirements as well as temperature sensitive dry disc rectifiers. The high input impedance provides minimum loading on sensing elements and high power gain. Ringing at low load level has been reduced to a minimum through high internal damping factors. The power output figures are conservative . . . power gain of the MAGNETIC STRUCTURE is approximately 40 . . . response time approximately 7.5 milliseconds. The maximum null voltage is 3 volts RMS. For single phase supply voltage the load capacitor should effect 90° phase shift with motor load . . . for 3 phase, 30° phase shift. (The chart values shown are approximate.)

For AC signal control the circuit of Figure 1 is employed. For DC signal control Figure 2 applies. Figure 3 shows the use of a power transformer (MAT-5) which provides higher plate voltages and eliminates the input transformer (MAT-6). The typical response curve of Figure 4 applies to all units, the larger units feeding heavier loads.



TYPE NO.	MAT-1	MAT-2	MAT-3	MAT-4
<b>230 Volt Supply</b>				
Power output	4 W.	8 W.	11 W.	18 W.
RL, ohms	3300	1600	1200	720
CL, mfd.	2	.3	.5	.7
<b>115 Volt Supply</b>				
Power output	2 W.	4 W.	6 W.	9 W.
RL, ohms	6500	3300	2200	1450
CL, mfd.	.13	.2	.3	.45
Reson. Freq.	40 cyc.	35 cyc.	35 cyc.	20 cyc.
Log-Decr.	.18	.23	.03	.65
Cont. Wdg. Res.	6200 ohms	8450 ohms	4750 ohms	5650 ohms
<b>Case</b>				
Length, in.	1 1/4	1 1/2	1 3/4	2 1/4
Width, in.	1 1/16	2 1/4	2 1/2	3 3/8
Height, in.	2 3/16	2 3/8	2 1/2	3 3/8
Mtg. Dim., in.	1 1/16 x 1 1/2	1 x 1 3/8	1 1/8 x 1 1/2	1 1/2 x 2 1/2
Studs, stainless	4-40	6-32	8-32	8-32
Cutout, in.	1	1	1	1
Unit Weight, lbs.	.67	1.1	1.7	2.75
<b>MAT-5</b> 115V.-400 cyc. to 460 VCT; provides 230V. 48 MA DC or 460V. 24 MA DC. RC-37 Case . . . 1 1/8 x 1 3/8 x 1 3/8 . . . 1/8 mtg. holes 1 1/8 x 1 1/8 . . . 6 oz.				
<b>MAT-6</b> Input . . . 10,000 ohms pri. . . 1:15 C.T. ratio . . . phase shift under 1° . . . RC-25 case.				



# UTC HERMETIC SEALED POWER TRANSFORMERS

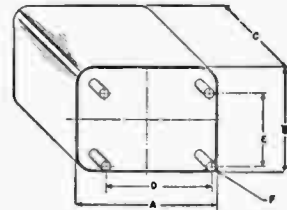
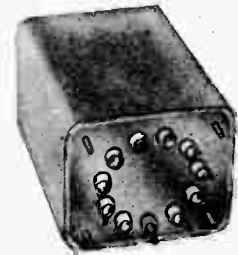
To MIL-T-27A Specs., MIL Type TF1RX03—Case Number.  
Primary 115 volts, 50/60 cycles . . . suited to 400 cycle service

MIL-T-27A RATINGS IN REGULAR TYPE, INDUSTRIAL RATINGS IN BOLD TYPE.

"L" ratings are for choke input filter, "C" for condenser input.

The "H" series of hermetic power transformers are suited to a wide variety of electronic applications in both military and industrial service. Conservative design provides maximum reliability through low temperature rise and high insulation safety factors. All units are in MIL cases with rugged internal construction, stainless steel studs.

The tapped high voltage winding provides either of two secondary voltages for greatest versatility. The listings indicate DC voltages and permissible currents for both choke and condenser input filters, as well as for military and industrial applications (see page 11).



Type No.	HV Sec. C.T.	Approx.* DC volts	DC MA	Fil. Wdg.	Approx.* DC volts	MA DC	Fil. Wdg.	Case A B C	Wgt. Lbs.
H-80	450	C 235	20	6.3VCT-2A	C 210	30	6.3VCT-2.5A	FA 2 1/2 2 1/2 3 1/2	1 1/2
H-81	500	L 180 C 265 L 200 C 300	65 55 60 50	6.3VCT-3A 5V-2A	L 170 C 240 L 190 C 280	75 65 70 60	6.3VCT-3A 5V-2A	HA 3 1/2 2 1/2 4 1/2	4
H-82	540	L 190 C 280 L 200 C 325	110 65 100 60	6.3VCT-4A 5V-2A	L 140 C 270 L 170 C 315	180 80 170 75	6.3VCT-4A 5V-2A	JB 3 1/2 3 1/2 3 1/2	5
H-83	600	L 180 C 320 L 210 C 370	140 85 130 80	6.3V-5A 5V-2A	L 160 C 270 L 190 C 340	190 115 180 105	6.3V-6A 5V-2A	JA 3 1/2 3 1/2 4 1/2	6
H-84	700	L 255 C 400 L 275 C 420	170 110 160 105	6.3V-5A 6.3V-1A 5V-3A	L 240 C 360 L 260 C 380	210 150 200 140	6.3V-6A 6.3V-1.5A 5V-3A	KA 3 1/2 3 1/2 5 1/2	8 1/2
H-85	700	L 250 C 400 L 270 C 410	220 150 210 140	6.3V-6A 6.3V-1.5A 5V-3A	L 235 C 355 L 255 C 375	260 195 250 185	6.3V-6A 6.3V-1.5A 5V-4A	LA 4 1/2 3 1/2 5 1/2	10
H-86	720	L 240 C 425 L 270 C 450	260 170 250 160	6.3V-6A 6.3V-2A 5V-3A	L 220 C 410 L 250 C 440	310 210 300 200	6.3V-7.5A 6.3V-2A 5V-4A	MB 4 1 1/2 4 4 1 1/2	12
H-87	730	L 245 C 390 L 275 C 340	320 210 300 200	6.3V-6A 6.3V-2A 5V-4A	L 210 C 350 L 245 C 400	420 310 400 300	6.3V-6A 6.3V-2A 5V-4A	NB 5 1/2 4 1/2 5 1/2	16
H-88	800	L 280 C 420 L 370 C 550	300 190 290 180	6.3V-6A 6.3V-2A 5V-4A	L 260 C 380 L 350 C 510	375 235 350 225	6.3V-7.5A 6.3V-2A 5V-4A	NA 5 1/2 4 1/2 6 1 1/2	18
H-89	850	L 320 C 510 L 400 C 650	320 280 300 250	6.3V-8A 6.3V-4A 5V-6A	L 300 C 460 L 380 C 600	400 270 375 300	6.3V-8A 6.3V-4A 5V-6A	OA 5 1/2 4 1/2 6 1/2	21 1/2
H-90	700	L 230 C 290	140 130	6.3V-5A 5V-2A	L 210 C 260	180 180	6.3V-6A 5V-3A	JA 3 1/2 3 1/2 4 1/2	6
H-91	900	L 320 L 360	190 180	6.3V-5A 6.3V-1A 5V-3A	L 290 L 320	270 250	6.3V-6A 6.3V-1.5A 5V-4A	KA 3 1/2 3 1/2 5 1/2	8 1/2
H-92	900	L 330 L 385	230 220	6.3V-6A 6.3V-2A 5V-4A	L 320 L 370	290 270	6.3V-8A 6.3V-2A 5V-4A	MB 4 1 1/2 4 4 1 1/2	12
H-93	1000	L 370 L 465	280 250	6.3V-8A 6.3V-4A 5V-6A	L 340 L 455	340 300	6.3V-10A 6.3V-5A 5V-6A	OA 5 1/2 4 1/2 6 1/2	21 1/2

\* After appropriate H series choke

# UTC HERMETIC SEALED PLATE TRANSFORMERS

To MIL-T-27A Specs., MIL Type TF1RX02—Case Number.  
Primary: 105/115/210/220 Volts . . . 50/60 cycles.

MIL-T-27A RATINGS IN REGULAR TYPE, INDUSTRIAL RATINGS IN BOLD TYPE.

All ratings are for choke input filter.

No. Type	Sec. V. C.T.	Approx.* DC volts	MA DC	Choke No.	MA DC	Choke No.	Case A B C	Wgt. Lbs.
H-110	1050 1200	365 430	275 250	H-75 H-75	385 350	H-77 H-77	MB 4 1 1/2 4 4 1 1/2	14
H-111	1050 1200	415 480	440 400	H-77 H-77	550 500	H-77 H-77	NA 5 1/2 4 1/2 6 1 1/2	19
H-112	1500 1900	615 790	290 250	H-77 H-76	350 300	H-77 H-76	NA 5 1/2 4 1/2 6 1 1/2	19
H-113	2500 3000	1050 1275	280 250	H-77 H-76	340 300	H-77 H-76	6 5 1/2 6 1/2	27
H-114	2500 3000	1050 1265	450 400	H-79 H-78	500 450	H-78 H-78	6 1/2 6 1/2 8	51
H-115	3500 4400	1500 1900	265 225	H-77 H-77	350 300	H-77 H-77	6 1/2 6 1/2 8	48 1/2
H-116	5000 6000	2125 2550	450 400	H-79 H-78	560 500	H-79 H-78	8 1/2 9 1/2 10 1/2	95
H-117	5000 6000	2125 2550	900 800	H-79 H-79	1100 1000	H-79 H-79	11 11 14 1/2	160

\* After filter choke.

The tapped high voltage winding on the "H" series hermetic plate transformers provides either of two secondary voltages for greatest versatility. The listing shows the DC voltage and permissible currents for a wide variety of applications in both military and industrial service. High insulation safety factor and low temperature rise provide a maximum in reliability. The first three types are in MIL cases. The others are in rectangular cases with terminals opposite mounting for greatest convenience in typical power supply application, stainless steel studs.

# UTC HERMETIC SEALED FILTER CHOKES

To MIL-T-27A Specs., MIL Type TF1RX04—Case Number.

MIL-T-27A RATINGS IN REGULAR TYPE, INDUSTRIAL RATINGS IN BOLD TYPE.

Type No.	Ind. Hys.	@ MA DC	Ind. Hys.	@ MA DC	Ind. Hys.	@ MA DC	Ind. Hys.	@ MA DC	Ind. Hys.	@ MA DC	Res. Ohms	Max. DCV* Ch. Input	Test V. RMS	Case
H-70	20	20	18	25	14.5	30	10	35	925	350	1000		AH	
H-71	20	40	18.5	50	15.5	60	10	70	350	500	2500		FB	
H-72	13	70	11.5	85	9.5	105	7	125	215	500	2500		GB	
H-73	11	100	9.5	125	7.5	150	5.5	175	150	700	2500		HB	
H-74	11	150	10	170	8.5	195	6.5	215	135	700	2500		JB	
H-75	11	200	10	230	8.5	250	<b>6.5</b>	<b>300</b>	90	700	2500		KB	
H-76	11	200	10	230	8.5	250	<b>6.5</b>	<b>300</b>	85	1500	4500		LB	
H-77	10	300	9	350	8	<b>390</b>	<b>6.5</b>	<b>435</b>	60	2000	5500		MB	
H-78	7	400	<b>6.5</b>	<b>430</b>	6	<b>465</b>	<b>5.5</b>	<b>500</b>	48	2500	7000		OA	
H-79	7	800	6.5	900	6	1000	<b>5.5</b>	<b>1250</b>	20	3000	9000	7x7x8		

Inductance test is performed at maximum military current rating.

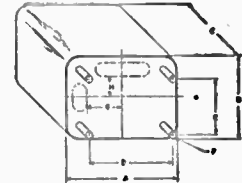
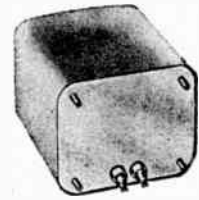
\* Based on maximum ripple voltage across choke in choke input filter circuit, in terms of DC output voltage. Does not apply to condenser input circuits.



The multiple ratings for the "H" series of filter chokes suit these units for the complete gamut of military and industrial applications. Conservative design provides maximum reliability through low temperature rise and high insulation safety factor. All units employ rugged internal construction and MIL cases (except H-79 which has mounting opposite terminals), stainless steel studs.

## DIMENSIONS "H" SERIES FILTER CHOKES, INCHES

Type No.	A	B	C	D	E	F	G	H	Cutout	Wt. Lbs.
H-70	1 1/8	1 1/8	1 3/4	1 1/4 diagonal		6-32(2)			3/8 x 3/8	.4
H-71	2 1/8	2 1/8	2 1/2	1 1/2	1 1/2	6-32			1/2 x 1 1/4	1 1/2
H-72	2 3/8	2 3/8	2 1/2	2 1/8	1 3/4	6-32			1/2 x 3/8	2 1/2
H-73	3 1/8	2 3/8	3 1/8	2 1/4	1 3/4	8-32			3/8 x 1 1/8	3 1/2
H-74	3 1/8	3 1/8	3 3/8	2 3/8	2 1/8	8-32			3/8 x 1 1/8	5
H-75	3 1/2	3 3/8	4 1/8	3	2 1/2	10-32	1 1/8		3/8 x 1 1/8	8
H-76	4 1/8	3 1/2	4 1/2	3 1/8	2 1/2	10-32	1 1/2		1/2 x 1 1/8	11
H-77	4 1/2	4	4 1/2	3 1/2	3	1/4-20	1 1/2		1/2 x 1 1/4	15
H-78	5 1/2	4 1/2	6 3/4	3 3/4	3	1/4-20			1 x 2	25
H-79	7	7	8	5 3/8	5 3/8	3/8-16(6)			term. opp. mtg.	60



# UTC HERMETIC SEALED FILAMENT TRANSFORMERS

To MIL-T-27A Specs., MIL Type TF1RX01—Case Number.

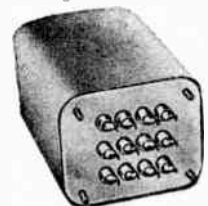
Primary: 105/115/210/220 volts . . . 50/60 cycles, except H-130 (115 v.) and H-131 (115/220 v.)

Suited to 400 cycle service

MIL-T-27A RATINGS IN REGULAR TYPE, INDUSTRIAL RATINGS IN BOLD TYPE.

Type No.	Sec. Volts	Amps. (MIL)	Amps. (Ind)	Test Volts RMS	Case	A	B	C	Wgt. Lbs.
H-120	2.5	10	12	4000	GB	2 3/8	2 3/8	2 3/8	2 1/2
H-121	2.5	10	12	10000	JB	3 1/8	3 1/8	3 3/8	4 1/2
H-122	2.5	20	26	10000	KB	3 1/8	3 3/8	4 1/8	6
H-123	2.5	5	7.5	10000	NB	5 1/8	4 3/8	5 1/2	13
	2.5	5	7.5						
	2.5	10	15						
H-124	5	3	3	2000	FB	2 3/8	2 1/8	2 1/2	2
H-125	5	10	12	10000	KB	3 1/8	3 3/8	4 1/8	6
H-126	5	20	25	10000	LA	4 3/8	3 1/8	5 1/8	10
H-127	5	20	30	21000	NA	5 1/8	4 3/8	5 1/2	17
H-128	5	60	75	21000		6 1/2	5 1/2	7 3/4	34
H-129	5	10	12	21000		6 1/2	5 1/2	7 3/4	28
	5	10	12						
	5	20	24						
H-130	6.3CT	.6	.75	1500	AJ	1 3/8	1 3/8	2 3/8	.65
H-131	6.3CT	2	2.5	2500	FB	2 3/8	2 3/8	2 1/2	1 1/2
H-132	6.3CT	6	7	2500	JA	3 1/8	3 1/8	4 3/8	6
	6.3CT	6	7						
H-133	6.3CT	7	8	2500	HB	3 1/8	2 3/8	3 3/8	3 1/2
H-134	6.3CT	10	12	2500	HA	3 1/8	2 3/8	4 1/8	4 1/2
H-135	10CT	10	13	2500	JB	3 1/8	3 1/8	3 3/8	6
H-136	14, 12, 11CT	10	14	2500	EA	4 3/8	3 1/8	5 3/8	11

The wide variety of "H" series filament transformers listed cover virtually every military and industrial need. Conservative design provides maximum reliability through low temperature rise and high insulation safety factor. Except for H-128 and H-129 which have terminals opposite mounting, all units are in MIL cases with rugged internal construction, stainless steel studs. Regulation has been a fundamental design consideration to provide for the diverse applications in which these units may be employed.





# HERMETIC AUDIO COMPONENTS

(To MIL-T-27A Specs.)

For twenty years UTC has been the largest supplier of transformer components for military applications, to customer specifications. Listed below are a number of types, to MIL-T-27A specifications, which are now catalogued as UTC stock items. All units employ glass bead headers or terminals. For printed circuit use, wire terminals on glass header units can be straightened out without injury. Straight wire terminals available on production orders as well as flat (7/8 x 3/32 x 3/16) case for SM units.

The frequency response ratings are based on military requirements. Actually, most of the units that do not carry DC are appreciably better in response than the range shown. For example, H-1, H-3, H-5, H-8 are within 2db from 30 to 20,000 cycles. The level ratings are maximum level for reasonable distortion at the lowest frequency specified. For higher frequencies considerably higher levels are permissible. For example, the H-3 will handle +21dbm at 400 cycles.

The impedance ratings are listed in standard manner. Transformers can be used for applications differing considerably from those shown, keeping in mind that impedance ratio is constant. Lower source impedance will improve response and level ratings... higher source impedance reduces them. Units may also be used reversed, input to secondary.

## MINIATURE AUDIO UNITS... RC-25 CASE



RC-25 CASE

Length ..... 1 1/2"  
 Width ..... 1 1/4"  
 Height ..... 1 1/4"  
 Mounting (slot centers) 1 1/2 to 1 3/4"  
 Screws ..... 4-40 Fil.  
 Cutout ..... 7/8 Dia.  
 Unit Weight ..... 1.5 oz.

Type No.	Application	MIL Type	Pri. Imp. Ohms	Sec. Imp. Ohms	Unbal. DC In Pri. MA	Response ± 2 db (Cyc.)	Max. level dbm
H-1	Mike, pickup, line to grid	TF4A10YY	50, 200 CT, 500 CT*	50,000	0	50-10,000	+ 5
H-2	Mike to grid	TF4A11YY	82	135,000	50	250-8,000	+18
H-3	Single plate to single grid	TF4A15YY	15,000	60,000	0	50-10,000	+ 6
H-4	Single plate to single grid, DC in Pri.	TF4A15YY	15,000	60,000	4	200-10,000	+14
H5	Single plate to P.P. grids	TF4A15YY	15,000	95,000 CT	0	50-10,000	+ 5
H-6	Single plate to P.P. grids, DC in Pri.	TF4A15YY	15,000	95,000 split	4	200-10,000	+11
H-7	Single or P.P. plates to line	TF4A13YY	20,000 CT	150/600	4	200-10,000	+21
H-8	Mixing and matching	TF4A16YY	150/600	600 CT	0	50-10,000	+ 8
H-9	82/41:1 input to grid	TF4A10YY	150/600	1 meg.	0	200-3,000 (4 db.)	+10
H-10	10:1 single plate to single grid	TF4A15YY	10,000	1 meg.	0	200-3,000 (4 db.)	+10
H-11	Reactor	TF4A20YY	300 Henries-0 DC, 50 Henries-3 Ma. DC,	6,000 ohms.			
H-12	Mike, line to PP grids	TF4RX10YY	50,200 CT, 500 CT*	50,000 CT	0	50-10,000	+ 5
H-13	Transistor Interstage	TF4RX13YY	10,000/2,500 (split)	2,000/500 split	4	100-10,000	+20
H-14	Transistor Interstage	TF4RX13YY	10,000/2,500 (split)	4,000/1,000 split	4	100-10,000	+20
H-15	Transistor to line	TF4RX13YY	1,500 CT	500/125 split	8	100-10,000	+20
H-16	Transistor to V.C.	TF4RX13YY	2,000 CT 4,000 CT	8 16	4	100-10,000	+20

## COMPACT AUDIO UNITS... RC-50 CASE



RC-50 CASE

Length ..... 1 3/4"  
 Width ..... 1 3/4"  
 Height ..... 2 1/4"  
 Mounting ..... 1 3/4"  
 Screws ..... #6-32  
 Cutout ..... 1 1/2 Dia.  
 Unit Weight ..... 8 oz.

Type No.	Application	MIL Type	Pri. Imp. Ohms	Sec. Imp. Ohms	Unbal. DC In Pri. MA	Response ± 2 db (Cyc.)	Max. level dbm
H-19A	Line to grid. Balanced, center tapped primary... 1:14 ratio. Multiple hi-permalloy (75 DB) shielding	TF1A10YY	250 CT 500 CT	50,000 100,000 CT	0	30-20,000	+ 6
H-20	Single plate to 2 grids, can also be used for P.P. plates	TF4A15YY	15,000 split	80,000 split	0	30-20,000	+12
H-21	Single plate to P.P. grids, DC in Pri.	TF4A15YY	15,000	80,000 split	8	100-20,000	+23
H-22	Single plate to multiple line	TF4A13YY	15,000	50/200, 125/500**	8	50-20,000	+23
H-23	P.P. plates to multiple line	TF4A13YY	30,000 split	50/200, 125/500**	8 BAL.	30-20,000	+19
H-24	Reactor	TF4A20YY	450 Hys.-0 DC, 250 Hys.-5 Ma. DC, 65 Hys.-10 Ma. DC, 1500 ohms	6,000 ohms			
H-25	Mixing of transistors to line	TF4RX17YY	500 CT	500/125 split	20	40-10,000	+30
H-26	Transistor Interstage	TF4RX13YY	10,000/2,500 (split)	2,000/500 split	8	40-10,000	+30
H-27	Transistor to V.C.	TF4RX17YY	500 CT	16/4 split	20	40-10,000	+30

## SUBMINIATURE AUDIO UNITS... SM CASE



SM CASE

Length ..... 1 1/16"  
 Width ..... 1/2"  
 Height ..... 7/12"  
 Screw ..... 4-40 Fil.  
 Unit Weight ..... 8 oz.

Type No.	Application	MIL Type	Pri. Imp. Ohms	Sec. Imp. Ohms	Unbal. DC In Pri. MA	Response ± 2 db (Cyc.)	Max. level dbm
H-30	Input to grid	TF1A10YY	50***	62,500	0	150-10,000	+13
H-31	Single plate to single grid, 3:1	TF1A15YY	10,000	90,000	0	300-10,000	+13
H-32	Single plate to line	TF1A13YY	10,000****	200	3	300-10,000	+13
H-33	Single plate to low impedance	TF1A13YY	30,000	50	1	300-10,000	+15
H-35	Reactor	TF1A20YY	100 Henries-0 DC, 50 Henries-1 Ma. DC,	4,400 ohms.			
H-36	Transistor Interstage	TF1A15YY	25,000 (DCR800)	1,000 (DCR110)	.5	300-10,000	+10
H-37A	Transistor output	TF1A15YY	500 (DCR50) CT	50 (DCR5)	3.5	300-10,000	+15
H-38	Transistor Interstage	TF4RX13YY	10,000 CT (DCR600)	1,200 CT	2	300-10,000	+15
H-39	Transistor Interstage	TF4RX13YY	10,000 CT (DCR600)	2,000 CT	2	300-10,000	+15
H-40A	Transistor output	TF4RX17YY	500 CT (DCR26)	600 CT	10	300-10,000	+15
H-41A	Transistor output	TF4RX13YY	1,500 CT (DCR71)	600 CT	7	300-10,000	+15

\*\* 200 ohm termination can be used for 150 ohms or 250 ohms, 500 ohm termination can be used for 600 ohms.  
 \*\*\* 200 ohm termination can be used for 150 ohms or 250 ohms, 125/500 ohm termination can be used for 150/600 ohms.

\*\*\*\* Can be used with higher source impedances, with corresponding reduction in frequency range. With 200 ohm source, secondary impedance becomes 250,000 ohms... loaded response is -4 db. at 300 cycles.

\*\*\*\*\* Can be used for 500 ohm load... 25,000 ohm primary impedance... 1.5 Ma. DC.



# DECI-OUNCER TRANSFORMERS

REVOLUTIONARY TRANSISTOR\* TRANSFORMERS, hermetically sealed to MIL-T-27A Specs.



UTC started a development program 2 years ago to evolve a new transistor transformer structure designed to provide full performance in extremely miniature size. The culmination of this development is found in the new DO-T series\*\*. Listed below are the standard types of units now being made and curves showing their general characteristics in typical transistor application. To fully appreciate the unprecedented performance of these revolutionary transistor transformers, the curves also show characteristics of similar size units now on the market. Available on production orders with drawn hipermalloy magnetic shield (25-30 db).

These transformers can be used for applications differing considerably from those shown, keeping in mind that impedance ratio is constant. Lower source impedance will improve response and level ratings . . . higher source impedance will reduce them. Units may also be used reversed, input to secondary.

Type No.	MIL Type	Application	Pri. Imp.	D.C. Ma.± in Pri.	Sec. Imp.	Pri. Res.	Level Mw.
DO-T1	TF4RX13YY	Interstage	20,000 30,000	.5 .5	800 1200	850	50
DO-T2	TF4RX17YY	Output	500 600	3 3	50 60	60	100
DO-T3	TF4RX13YY	Output	1000 1200	3 3	50 60	115	100
DO-T4	TF4RX17YY	Output	600	3	3.2	60	100
DO-T5	TF4RX13YY	Output	1200	2	3.2	115	100
DO-T6	TF4RX13YY	Output	10,000	1	3.2	1000	100
DO-T7	TF4RX16YY	Input	200,000	0	1000	8500	25
DO-T8	TF4RX20YY	Reactor 3.5 Hys. @ 2 Ma. DC. 1 Hy. at 5 Ma. DC					630
DO-T9	TF4RX13YY	Output or driver	10,000 12,500	1	500 CT 600 CT	800	100
DO-T10	TF4RX13YY	Driver	10,000 12,500	1	1200 CT 1500 CT	800	100
DO-T11	TF4RX13YY	Driver	10,000 12,000	1	2000 CT 2500 CT	800	100
DO-T12	TF4RX17YY	Single or PP output	150 CT 200 CT	10 10	12 16	11	500
DO-T13	TF4RX17YY	Single or PP output	300 CT 400 CT	7 7	12 16	20	500
DO-T14	TF4RX17YY	Single or PP output	600 CT 800 CT	5 5	12 16	43	500
DO-T15	TF4RX17YY	Single or PP output	800 CT 1070 CT	4 4	12 16	51	500
DO-T16	TF4RX13YY	Single or PP output	1000 CT 1330 CT	3.5 3.5	12 16	71	500
DO-T17	TF4RX13YY	Single or PP output	1500 CT 2000 CT	3 3	12 16	108	500
DO-T18	TF4RX13YY	Single or PP output	7500 CT 10,000 CT	1 1	12 16	505	500
DO-T19	TF4RX17YY	Output to line	300 CT	7	600	19	500
DO-T20	TF4RX17YY	Output or matching to line	500 CT	5.5	600	31	500
DO-T21	TF4RX17YY	Output to line	900 CT	4	600	53	500
DO-T22	TF4RX13YY	Output to line	1500 CT	3	600	86	500
DO-T23	TF4RX13YY	Interstage	20,000 CT 30,000 CT	.5 .5	800 CT 1200 CT	850	100
DO-T24	TF4RX16YY	Input (usable for chopper service)	200,000 CT	0	1000 CT	8500	25
DO-T25	TF4RX13YY	Interstage	10,000 CT 12,000 CT	1	1500 CT 1800 CT	800	100
DO-T26	TF4RX20YY	Reactor 6 Hy. at 2 Ma. DC. 1.5 Hy. at 5 Ma. DC					2100
DO-T27	TF4RX20YY	Reactor 1.25 Hy. at 2 Ma. DC. .5 Hy. at 11 Ma. DC					100

High Power Rating . . . up to 100 times greater.

Excellent Response . . . twice as good at low end.

Low Distortion . . . reduced 80%.

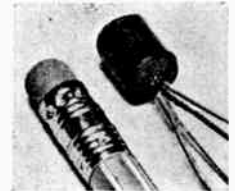
High Efficiency . . . up to 30% better.

Moisture Proof . . . hermetically sealed to MIL-T-27A.

Rugged . . . completely cased.

Anchored Leads . . . will withstand 10 pound pull test.

Printed Circuit Use . . . (solder melting) plastic insulated leads.



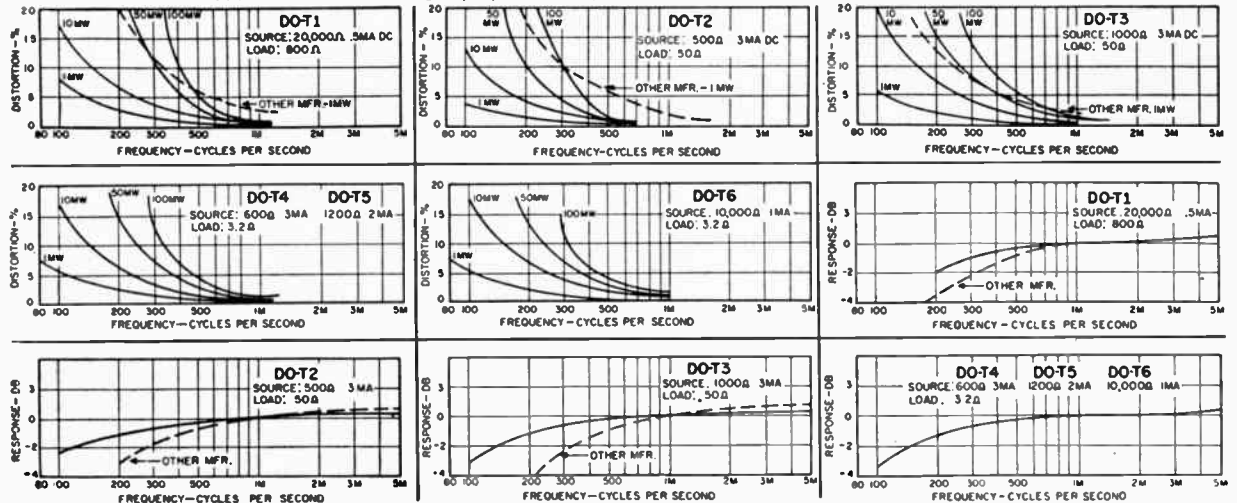
### DO-T CASE

Dia. . . 5/16"  
Length . . . 1 13/32"  
Weight . . . 1/10th oz.

±DCMA shown is for single ended usage (under 5% distortion—100MW—1KC) . . . for push pull, OCMA can be any balanced value taken by .5W transistors (under 5% distortion—500MW—1KC)

### TYPICAL DO-T PERFORMANCE CURVES

Power curves based on setting output power at 1 KC, then maintaining same input level over frequency range.



\*DO-T units have been designed for transistor application only . . . not for vacuum tube service.

\*\*Pats. Pending



# OUNCER AUDIO UNITS

## STANDARD AND PLUG-IN TYPES

UTC OUNCER components represent the acme in compact quality transformers. These units, which weigh one ounce, are fully impregnated and sealed in a drawn aluminum housing  $\frac{7}{8}$ " diameter . . . mounting opposite terminal board.

Ouncer items are ideal for portable broadcast, hearing aid, aircraft, concealed service, and similar applications. High fidelity characteristics are provided, uniform within approximately 1 DB from 30 to 20,000 cycles, except for O-14, O-15, and units carrying DC which are intended for voice frequencies. Maximum level +8 dbm.

"P" series units are identical to the UTC OUNCER units but are sealed in bakelite housings with plug-in base to fit standard octal socket. While of submersion proof design, these units weigh but two ounces. Oversize pins in the base make it impossible to dislodge these units from their sockets.

OUNCER Type No.	Application	Pri. Imp.	Sec. Imp.	PLUG-IN Type No.
O-1	Mike, pickup or line to 1 grid	50, 200/250, 500/600	50,000	P-1
O-2	Mike, pickup or line to 2 grids	50, 200/250, 500/600	50,000	P-2
O-3	Dynamic Mike to 1 grid	7.5/30	50,000	P-3
O-4	Single plate to 1 grid	15,000	60,000	
O-5	Single plate to 1 grid, D.C. in Pri.	15,000	60,300	
O-6	Single plate to 2 grids	15,000	95,000	P-6
O-7	Single plate to 2 grids, D.C. in Pri.	15,000	95,000	P-7
O-8	Single plate to line	15,000	50, 200/250, 500/600	P-8
O-9	Single plate to line, D.C. in Pri.	15,000	50, 200/250, 500/600	P-9
O-10	Push pull plates to line	30,000 ohms plate to plate	50, 200/250, 500/600	P-10
O-11	Crystal mike or pickup to line	50,000	50, 200/250, 500/600	P-11
O-12	Mixing and matching	50, 200/250	50, 200/250, 500/600	P-12
O-13	Reactor, 300 Hys.—no D.C.; 50 Hys.—3 MA. D.C., 6000 ohms			
O-14	50:1 mike or line to 1 grid	200	$\frac{1}{2}$ megohm	
O-15	10:1 single plate to 1 grid	15,000	1 megohm	P-15
O-16	Mike or line to grid	250 C.T.	50,000	
This transformer provides very low hum pickup . . . employs two heavy gauge hypermalloy shields plus orientable mounting. Primary center tap is balanced to 1%. Can be used for 150, 200, 250, 500, or 600 ohm sources . . . 200:1 impedance ratio.				
Same as O-16 but with nine pin plug in socket. $1\frac{3}{8}$ " Dia. x $2\frac{3}{4}$ " high, 4 oz. P-16				
O-17 Hypermalloy shield, slip fit over ouncer, 1" O.D., provides 25db shielding.				



**OUNCER CASE**  
 Dia. . . . .  $\frac{7}{8}$ "  
 Ht. . . . .  $1\frac{1}{16}$ "  
 Mtg. . . . .  $1\frac{1}{16}$ "  
 Scr. . . . . 2-56  
 Wt. . . . . 1 oz.



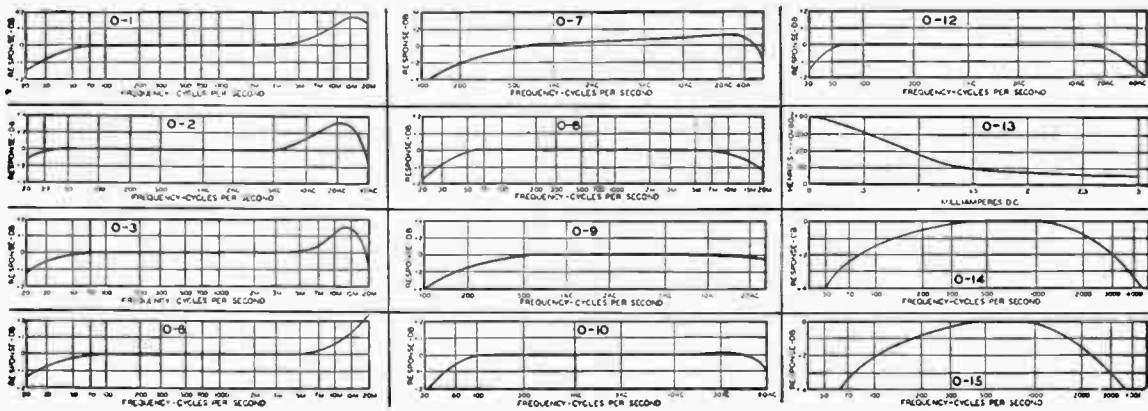
**PLUG-IN CASE**  
 Dia. . . . .  $1\frac{3}{32}$ "  
 Ht. . . . .  $1\frac{1}{32}$ "  
 Skt. . . . . St. Oct.  
 Wt. . . . . 2 oz.



Ouncer chassis mount bracket available on production orders



**O-16 CASE**  
 Dia. . . . .  $1\frac{1}{16}$ "  
 Ht. . . . .  $1\frac{1}{2}$ "  
 Mtg. . . . .  $1\frac{1}{2}$ "  
 Scr. . . . . 6-32  
 Wt. . . . . 3 oz.  
 Clamp  $1\frac{3}{8}$ " x  $1\frac{1}{8}$ "



### MICROPHONE CABLE TRANSFORMERS

UTC Cable transformers are designed to be inserted in the cable circuit, and are ruggedly constructed to withstand mechanical abuse. The cable connections (supplied less cable) are made through spring strain relief to terminal boards inside the end caps.  $1\frac{1}{2}$ " diameter . . .  $2\frac{1}{2}$ " long . . .  $\frac{1}{2}$  lb.

Type MC-1—primary tapped 30/50 and 200/250 ohms, secondary to grid, standard fidelity.  
 Type MC-2—primary tapped 30/50 and 200/250 ohms, secondary to grid, high fidelity.



# SUB-SUBOUNCER UNITS

## FOR HEARING AIDS AND ULTRA-MINIATURE EQUIPMENT



UTC-Sub-Sub-Ouncer units fulfill an essential requirement for ultra-miniaturized components having high efficiency and wide frequency response. Through the use of special nickel iron core materials and winding methods, these miniature units have superior performance and dependability characteristics. The coils employ automatic layer windings of double Formex wire . . . in a molded Nylon bobbin. All insulation is of cellulose acetate. Four inch color coded flexible leads are employed, securely anchored mechanically. No mounting facilities are provided, since this would preclude maximum flexibility in location. Units are vacuum processed and double (water proof) sealed. The curves below indicate the excellent frequency response available.

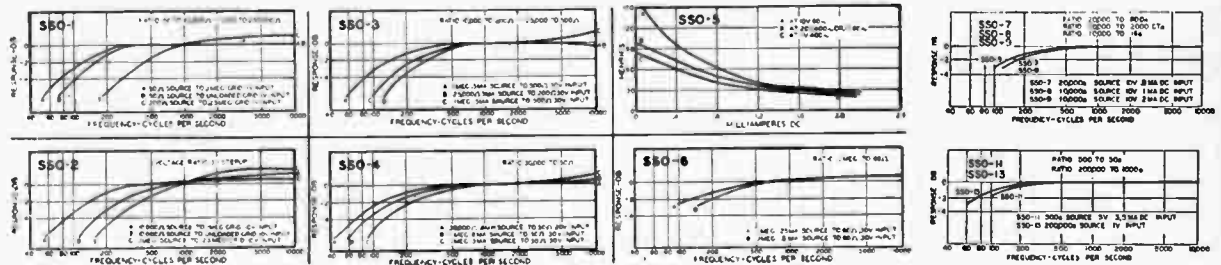
Type	Application	Max. Level dbm	Pri. Imp. ohms	Unbal. MA O.C. in Pri.	Sec. Imp. ohms	Pri. Res. ohms	Sec. Res. ohms
*SSO-1	Input	+ 7	200 50	0	250,000 62,500	13.5	3600
SSO-2	Interstage/3:1	+15	10,000	0.25	90,000	710	3150
*SSO-3	Plate to Line	+20	10,000 25,000	3 1.5	200 500	2500	34
SSO-4	Output	+20	30,000	1.0	50	2875	4.6
SSO-5	Reactor 50 HY at 1 mil. D.C. 4400 ohms D.C. Res.						
*SSO-6	Output	+20	100,000	.5	60	3500	3.3
*SSO-7	Transistor Interstage	+20	20,000 30,000	.5 .5	800 1,200	800	110
SSO-8	Transistor to PP Sec.	+20	10,000	1	2,000 ct.	1200	45
SSO-9	Transistor to V.C.	+20	10,000	2	16	800	2.7
SSO-10	Transistor to V.C.	+20	10,000	2	3.2	800	.65
*SSO-11	Transistor Output	+20	500 600	3.5 3.5	50 60	50	5
*SSO-12	Transistor Output	+20	1,000 1,200	3 3	50 60	90	5
SSO-13	Crystal to Transistor	+ 7	200,000	0	1,000	4000	190
*SSO-14	Transistor Interstage	+20	10,000 ct. 25,000 ct.	2 1	200 ct. 500 ct.	650	22
*SSO-15	Transistor Interstage	+20	20,000 ct. 30,000 ct.	1 1	800 ct. 1,200 ct.	800	110

\*Impedance ratio is fixed, 1:1250 for SSO-1, etc. Any impedance between the values shown may be employed.



**SUB-SUBOUNCER UNIT**

Dimensions..... $\frac{7}{16}$ " x  $\frac{3}{4}$ " x  $\frac{9}{16}$ "  
Weight......02 lb.

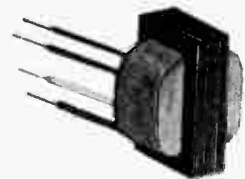


# SUBOUNCER UNITS

UTC Sub-Ouncer units have exceptionally high efficiency and frequency range in their miniature size, will handle somewhat higher level than SSO units above. The constructional details are identical to those of the Sub-Sub-Ouncer units. Available hermetically sealed on production orders (SOM case  $\frac{1}{8}$ " x  $\frac{1}{8}$ " x  $\frac{1}{8}$ " )

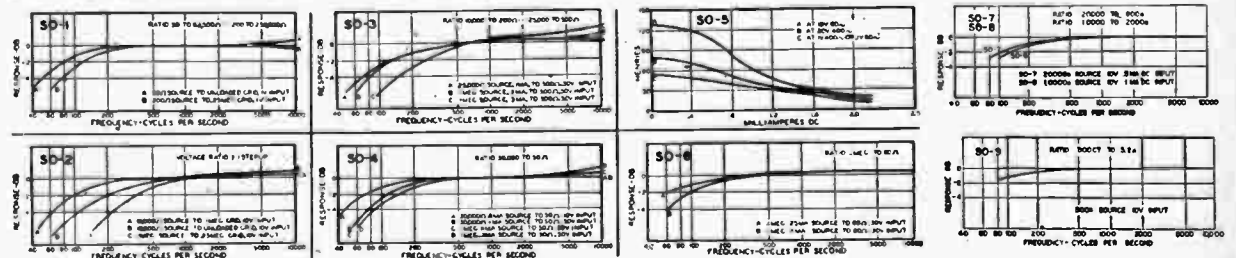
Type	Application	Max. Level dbm	Pri. Imp. ohms	Unbal. MA D.C. in Pri.	Sec. Imp. ohms	Pri. Res. ohms	Sec. Res. ohms
*SO-1	Input	+10	200 50	0	250,000 62,500	16	2500
SO-2	Interstage/3:1	+20	10,000	0.25	90,000	215	1850
*SO-3	Plate to Line	+23	10,000 25,000	3 1.5	200 500	1225	30
SO-4	Output	+23	30,000	1.0	50	1850	3.8
SO-5	Reactor 50 HY at 1 mil. D.C. 2675 ohms D.C. Res.						
*SO-6	Output	+23	100,000	.5	60	3400	3.7
*SO-7	Transistor Interstage	+23	20,000 30,000	.5 .5	800 1,200	450	32
SO-8	Transistor to PP Sec.	+23	10,000	1	2,000 ct.	1,000	40
SO-9	PP Transistor to V.C.	+24	500 ct.	0	3.2	15	.35
*SO-10	Transistor output to voice coil	+24	2,000 ct. 4,000 ct.	4 2	8 16	250	2

\*Impedance ratio is fixed, 1:1250 for SO-1, etc. Any impedance between the values shown may be employed.



**SUBOUNCER UNIT**

Dimensions..... $\frac{1}{2}$ " x  $\frac{3}{4}$ " x  $\frac{7}{16}$ "  
Weight......03 lb.

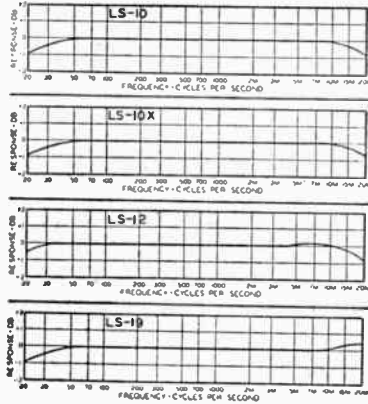




# LINEAR STANDARD AUDIO TRANSFORMERS

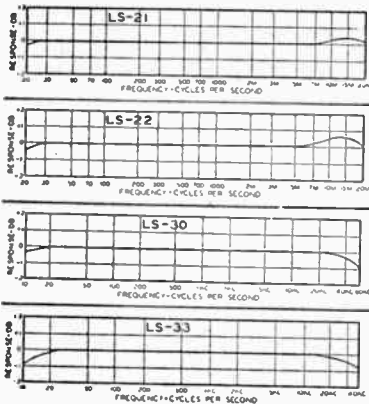
The ever increasing use of wide range equipment for broadcast service has reached the point where the major limiting factor is the frequency range of the transformers employed. UTC Linear Standard components represent the closest approach to the ideal transformer from the standpoint of uniform frequency response, low wave form distortion, high efficiency, thorough shielding, and dependability.

## LOW IMPEDANCE TO GRID TRANSFORMERS



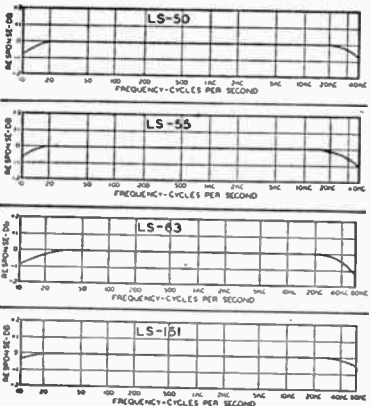
Type No.	Application	Primary Impedance	Secondary Impedance	± 1 db from	Max. Level dbm	Relative* hum	Unbal. DC in prim'y	Case No.
LS-10	Low impedance mike, pickup, or multiple line to grid	50, 125/150, 200, 250, 333, 500/600 ohms	60,000 ohms in two sections	20-20,000	+19	-74 DB	.5 MA	LS-1
LS-10X	As above	As above	50,000 ohms	20-20,000	+17	-92 DB-Q	.5 MA	LS-1
LS-12	Low impedance mike, pickup or multiple line to push pull grids	50, 125/150, 200, 250, 333, 500/600 ohms	120,000 ohms overall, in two sections	20-20,000	+19	-74 DB	.5 MA	LS-1
LS-12X	As above	As above	80,000 ohms overall, split	20-20,000	+17	-92 DB-Q	.5 MA	LS-1
LS-14X	As above	As above	50,000 ohms	20-20,000	+17	-92 DB-Q	.5 MA	LS-1
LS-15X	Three isolated lines or pads to one or two grids	30, 50, 200, 250 ohms each primary	60,000 ohms overall, in two sections	20-20,000	+17	-92 DB-Q	.5 MA	LS-1
LS-18	High level multiple line to push pull grids	50, 125/150, 200, 250, 333, 500/600 ohms	50,000 ohms overall, in two sections	20-20,000	+28	-50 DB	.5 MA	LS-2
LS-26	Bridging line to single or push pull grids	5,000 ohms	60,000 ohms in two sections	15-20,000	+23	-74 DB	0 MA	LS-1

## MIXING TRANSFORMERS



Type No.	Application	Primary Impedance	Secondary Impedance	± 1 db from	Max. Level dbm	Relative* hum	Unbal. DC in prim'y	Case No.
LS-30	Mixing, low impedance mike, pickup, or multiple line to multiple line	50, 125/150, 200, 250, 333, 500/600 ohms	50, 125/150, 200, 250, 333, 500/600 ohms	7-50,000	+23	-74 DB	.5 MA	LS-1
LS-30X	As above	As above	As above	20-20,000	+20	-92 DB-Q	.3 MA	LS-1
LS-31	Three isolated lines or pads to multiple line	30, 50, 200, 250 ohms each primary	50, 125/150, 200, 250, 333, 500/600 ohms	20-20,000	+23	-74 DB	.5 MA	LS-1
LS-32	Mixing, low impedance mike, pickup or parallel mixer to multiple line	2.5, 5.5, 10, 15, 22, 30, 38, 60 ohms	50, 125/150, 200, 250, 333, 500/600 ohms	20-20,000	+23	-74 DB	.5 MA	LS-1

## INTERSTAGE AUDIO TRANSFORMERS



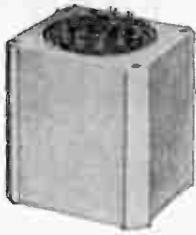
Type No.	Application	Primary Impedance	Secondary Impedance	± 1 db from	Max. Level dbm	Relative* hum	Unbal. DC in prim'y	Case No.
LS-19	Single plate to push pull grids like 2A3, 6L6, 5881 Split secondary	15,000 ohms	95,000 ohms 1.25:1 each side	20-20,000	+20	-50 DB	0 MA	LS-1
LS-21	Single plate to push pull grids. Split pri. and sec.	15,000 ohms	135,000 ohms; 3:1 overall	10-20,000	+20	-74 DB	0 MA	LS-1
LS-40	Single plate to push pull grids. Split secondary	15,000 ohms	135,000 ohms; 3:1 overall	30-20,000	+20	-74 DB	8 MA	LS-1
LS-25	Push pull plates to push pull grids. Medium level. Split primary and sec.	30,000 ohms plate to plate	50,000 ohms; turn ratio 1.3:1 overall	20-20,000	+23	-74 DB	1 MA	LS-1

## PLATE, CRYSTAL, PHOTOCCELL, AND BRIDGING TO LINE TRANSFORMERS

Type No.	Application	Primary Impedance	Secondary Impedance	± 1 db from	Max. Level dbm	Relative* hum	Unbal. DC in prim'y	Case No.
LS-27	Single plate to multiple line	15,000 ohms	50, 125/150, 200, 250, 333, 500/600 cycles	30-15,000	+23	-74 DB	8 MA	LS-1
LS-50	Single plate to multiple line	15,000 ohms	50, 125/150, 200, 250, 333, 500/600	10-40,000	+23	-74 DB	0 MA	LS-1
LS-51	Push pull low level plates to multiple line	30,000 ohms plate to plate	50, 125/150, 200, 250, 333, 500/600	10-40,000	+24	-74 DB	1 MA	LS-1
LS-150	Bridging from 50 to 500 ohm line to line	4,000 ohms, bridging	50, 125/150, 200, 250, 333, 500/600	7-50,000	+23	-74 DB	1 MA	LS-1
LS-151	Bridging from 50 to 500 ohm line to line	16,000 ohms, bridging	50, 125/150, 200, 250, 333, 500/600	7-50,000	+26	-74 DB	1 MA	LS-1

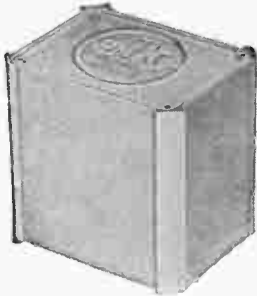
The values of unbalanced DC shown will effect approximately 1.5 DB loss at 30 cycles.  
 \* Comparison of hum balanced unit with shielding to normal uncast type.  
 Q Multiple alloy magnetic shield.

# LINEAR STANDARD



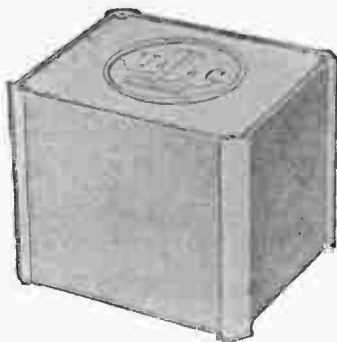
LS-1 CASE

Length ..... 3 1/8"  
 Width ..... 2 3/8"  
 Height ..... 3 1/4"  
 Mounting ..... 1 1/8" x 2 1/8"  
 Screws ..... 6-32  
 Cutout ..... 1 7/8" dia.  
 Unit Weight ..... 3 lbs.



LS-2 CASE

Length ..... 4 1/8"  
 Width ..... 3 1/2"  
 Height ..... 4 1/8"  
 Mounting ..... 2 1/8" x 3 1/8"  
 Screws ..... 8-32  
 Cutout ..... 2 3/4" dia.  
 Unit Weight ..... 7.5 lbs.



LS-3 CASE

Length ..... 5 1/8"  
 Width ..... 5"  
 Height ..... 4 1/8"  
 Mounting ..... 4 1/8" x 5 1/2"  
 Screws ..... 10-24  
 Cutout ..... 3 3/4" dia.  
 Unit Weight ..... 15 lbs.

## HYBRID AND REPEAT COILS

Type No.	Application	Pri. and Sec. Impedances	± 1 db from	Max. Level dbm	Relative hum	Max. Unbal. DC in Pri.	Case No.
LS-140	Line to line for Isolating balanced and unbalanced circuits; balanced for maximum reduction cross talk (70 DB)	500/600 ohms split 500/600 ohms split	30-20,000	+18	-92 DB-Q	0 MA	LS-1
LS-141	Three sets of balanced windings for hybrid service, centertapped	500/600 ohms 500/600 ohms	30-15,000	+18	-74 DB	0 MA	LS-1

## DRIVER TRANSFORMERS

Type No.	Application	Primary Impedance	Ref. Sec. Impedance	± 1 db from	Max. Level	Max. Unbal. DC in Pri.	Case No.
LS-6	Driver, push pull 2A3's, etc., to push pull 845 or 211D grids	5,000 ohms plate to plate	2:25 primary impedance; turns ratio 1.5:1 overall	20-20,000	15 watts	5 MA	LS-2
LS-47	Driver from push pull 2A3's, or similar to class B 838's, 805's, or ZB120's	5,000 ohms plate to plate	.1 pri. impedance turns ratio, Pri./1/2 Sec. 3:2:1	20-20,000	20 watts	5 MA	LS-2
LS-48	Driver transformer push pull 845's to 805 grids in class B	12,000 ohms plate to plate	.038 pri. impedance turns ratio, Pri./1/2 Sec. 5:1:1	20-20,000	40 watts	15 MA	LS-3

## HIGH LEVEL MATCHING TRANSFORMERS

Type No.	Application	Primary Impedance	Secondary Impedance	± 1 db from	Max. Level	Case No.
LS-33	High level line matching	50, 125, 200, 250, 333, 500/600 ohms	1.2, 2.5, 5, 7.5, 10, 15, 20, 30, 50, 125, 200, 250, 333, 500/600	10-40,000	20 watts	LS-2
LS-34	High level line matching	50, 125, 200, 250, 333, 500/600 ohms	1.2, 2.5, 5, 7.5, 10, 15, 20, 30, 50, 125, 200, 250, 333, 500/600	10-40,000	40 watts	LS-3

## OUTPUT TRANSFORMERS TO LINE AND VOICE COIL

Type No.	Primary will match following typical tubes	Primary Impedance	Secondary Impedance	± 1 db from	Max. Level	Case No.
LS-52	Push pull 6AQ5, 6V6, 6L6, 5881	8,000 ohms	500, 333, 250, 200, 125, 50, 30, 20, 15, 10, 7.5, 5, 2.5, 1.2	7-50,000	20 watts	LS-2
LS-54	Same as above	8,000 ohms	30, 20, 15, 10, 7.5, 5, 2.5, 1.2	7-50,000	20 watts	LS-2
LS-55	Push pull 2A3's, 300B, 6L6's, 6AS7G, 6080, 350B	5,000 ohms plate to plate and 3,000 ohms plate to plate	500, 333, 250, 200, 125, 50, 30, 20, 15, 10, 7.5, 5, 2.5, 1.2	7-50,000	20 watts	LS-2
LS-57	Same as above	5,000 ohms plate to plate and 3,000 ohms plate to plate	30, 20, 15, 10, 7.5, 5, 2.5, 1.2	7-50,000	20 watts	LS-2
LS-58	Push pull parallel as above.	2,500 ohms plate to plate and 1,500 ohms plate to plate	500, 333, 250, 200, 125, 50, 30, 20, 15, 10, 7.5, 5, 2.5, 1.2	10-50,000	40 watts	LS-3
LS-61	Push pull triode: 6AS7G, 6080, 6L6, 5881, KT-66, 807, 1614	10,000 ohms plate to plate and 6,000 ohms plate to plate	500, 333, 250, 200, 125, 50, 30, 20, 15, 10, 7.5, 5, 2.5, 1.2	7-50,000	20 watts	LS-2
LS-63	Same as above	10,000 ohms plate to plate and 6,000 ohms plate to plate	30, 20, 15, 10, 7.5, 5, 2.5, 1.2	7-50,000	20 watts	LS-2
LS-61-1	Self bias push pull 6L6's, 5881, KT-66, 6146 triode, 6159 triode	9,000 ohms plate to plate	500, 333, 250, 200, 125, 50, 30, 20, 15, 10, 7.5, 5, 2.5, 1.2	7-50,000	30 watts	LS-3
LS-61-4	Push pull 6146, 6159, 6L6's fixed bias or push pull parallel 6L6's self bias	4,500 ohms plate to plate and 3,800 ohms plate to plate	500, 333, 250, 200, 125, 50, 30, 20, 15, 10, 7.5, 5, 2.5, 1.2	12-50,000	55 watts	LS-3
LS-35	EL-34 in AB-feedback	5,000 ohms CT 43% screen taps	4, 8, 16	7-50,000	35 watts	LS-3
LS-65	6550's in AB, feedback	3,300 ohms CT 40% screen taps	4, 8, 16	7-50,000	60 watts	LS-3

The values of unbalanced DC shown will effect approximately 1.5 DB loss at 30 cycles.  
 \* Comparison of hum balanced unit with shielding to normal uncased type.

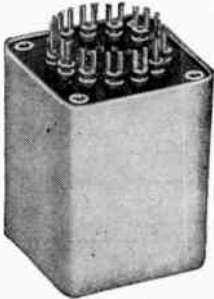
Q Multiple alloy magnetic shield.



# ULTRA COMPACT AUDIO UNITS

The UTC Ultra compact audio units are small and light in weight, ideally suited to remote amplifier and similar compact equipment. High fidelity is obtainable in all individual units, the frequency response being  $\pm 2$  DB from 30 to 20,000 cycles.

All units except those carrying DC in Primary employ a true hum balancing-coil structure, which combined with a high conductivity outer case, effects good inductive shielding. The die-cast case provides for top or bottom mounting. Maximum operating level  $+7$  DB.



TYPE A CASE

- Length ..... 1½"
- Width ..... 1½"
- Height ..... 2"
- Mounting ..... 1½" sq.
- Screws ..... 4-20
- Cutout ..... 1¾" dia.
- Unit Weight..... ½ lb.

## LOW IMPEDANCE TO GRID AND MIXING TRANSFORMERS

Type No.	Application	Primary Impedance	Secondary Impedance	$\pm 2$ db from
A-10	Low impedance mike, pickup, or multiple line to grid	50, 125/150, 200/250, 333, 500/600 ohms	50,000 ohms	20-20,000
A-11	Low impedance mike, pickup, or line to 1 or 2 grids	50, 200, 500	50,000 ohms	50-20,000 multiple alloy shield for extremely low hum pickup
A-12	Low impedance mike, pickup, or multiple line to push pull grids	50, 125/150, 200/250, 333, 500/600 ohms	80,000 ohms overall, in two sections	20-20,000
A-14	Dynamic microphone to one or two grids	30 ohms	50,000 ohms overall, in two sections	20-20,000
A-20	Mixing, low impedance mike, pickup, or multiple line to multiple line	50, 125/150, 200/250, 333, 500/600 ohms	50, 125/150, 200/250, 333, 500/600 ohms	10-50,000
A-21	Mixing, low impedance mike, pickup, or line to line	50, 200/250, 500/600	50, 200/250, 500/600	30-30,000 multiple alloy shield for extremely low hum pickup

## INTERSTAGE AUDIO TRANSFORMERS

Type No.	Application	Primary Impedance	Secondary Impedance	$\pm 2$ db from
A-15	Transistor interstage Max. level $+30$ dbm	10,000/2,500 (split)	2,000/500 (split)	40-10,000
A-16	Single plate to single grid	15,000 ohms	60,000 ohms, 2:1 turn ratio	20-20,000
A-17	Single plate to single grid 8 MA unbalanced D.C.	As above	As above	40-20,000
A-18	Single plate to two grids. Split primary, can also be used for P.P. plates	15,000 ohms (split)	80,000 ohms overall, 2.3:1 turn ratio overall	20-20,000
A-19	Single plate to two grids 8 MA unbalanced D.C.	15,000 ohms	80,000 ohms overall, 2.3:1 turn ratio overall	40-20,000

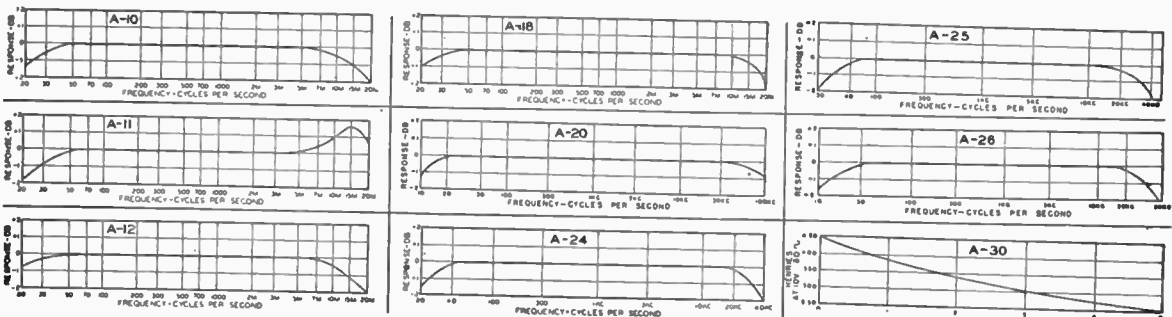
## PLATE AND CRYSTAL TO LINE TRANSFORMERS

Type	Application	Primary Impedance	Secondary Impedance	$\pm 2$ db from
A-22	Transistor to line Max. level $+30$ dbm	500 CT	500/125 (split)	40-10,000
A-23	Transistor to voice coil Max. level $+30$ dbm	500 CT	16/4 (split)	40-10,000
A-24	Single plate to multiple line	15,000 ohms (split)	50, 125/150, 200/250, 333, 500/600 ohms	20-40,000
A-25	Single plate to multiple line 8 MA unbalanced D.C.	15,000 ohms	50, 125/150, 200/250, 333, 500/600 ohms	40-20,000
A-26	Push pull low level plates to multiple line	30,000 ohms plate to plate	50, 125/150, 200/250, 333, 500/600 ohms	20-40,000
A-27	Crystal microphone to multiple line	100,000 ohms (split)	50, 125/150, 200/250, 333, 500/600 ohms	30-20,000 measured with non-inductive source
A-30	Audio choke, 250 henrys @ 5 MA 6000 ohms D.C., 65 henrys @ 10 MA 1500 ohms D.C. 450 henrys @ 0 MA			
A-32	Filter choke 60 henrys @ 15 MA 2000 ohms D.C., 15 henrys @ 30 MA 500 ohms D.C.			

A-33 Hyperalloy shield, slip fit over A case, provides approximately 20 db shielding . . . 1½" x 1½" x 2½"



A-33 SHIELD



# HIPERM ALLOY TRANSFORMERS



## LOW IMPEDANCE TO GRID AND MIXING TRANSFORMERS

Type No.	Application	Primary Imp. (ohms)	Secondary Impedance	± 1 db from	Max. Level dbm	Unbal. DC in Prim'y	Case No.
HA-100	Low impedance mike, pickup, or multiple line to grid	50, 125/150, 200, 250, 333, 500/600	60,000 ohms in two sections	30-20,000	+18	.5 MA	H-1
HA-100X	Same as above but with multiple alloy shield to effect very low hum pickup				+16		H-1
HA-101	Low impedance mike, pickup, or multiple line to P.P. grids	50, 125/150, 200, 250, 333, 500/600	120,000 ohms overall, split	30-20,000	+18	.5 MA	H-1
HA-101X	As above but with multiple alloy shield to effect very low hum pickup		80,000 ohms overall, split	30-20,000	+16	.5 MA	H-1
HA-103A	Low impedance mike, pickup, or parallel mixer to grid	2.5, 5.5, 10, 15, 22, 30, 38, 60	60,000 ohms in two sections	30-20,000	+18	.5 MA	H-1
HA-108	Mixing, low impedance mike, pickup, or multiple line	50, 125/150, 200, 250, 333, 500/600	50, 125, 150, 200, 250, 333, 500/600	20-50,000	+20	.5 MA	H-1
HA-108X	Same as above but with multiple alloy shield to effect very low hum pickup				+18		H-1
HA-130X	Three isolated lines or pads to one or two grids with tri-alloy internal shield	30, 50, 200, 250 each primary	60,000 ohms overall, in two sections	30-20,000	+18	.5 MA	H-1

## INTERSTAGE AUDIO TRANSFORMERS

Type No.	Application	Primary Imp.	Secondary Impedance	± 1 db from	Max. Level dbm	Unbal. DC in Prim'y	Case No.
HA-104	Single plate to P.P. grids like 2A3, 6L6 (split secondary)	15,000 ohms (split)	95,000 ohms 2.5:1	30-20,000	+20	0 MA	H-1
HA-105	Single plate to single grid (split secondary)	15,000 ohms	60,000 ohms 2:1 turn ratio	30-20,000	+20	0	H-1
HA-106	Single plate to push pull grids (split secondary)	15,000 ohms (split)	135,000 ohms 3:1 ratio overall	30-20,000	+20	0	H-1
HA-107	Push pull plates to push pull grids (split primary and secondary)	30,000 ohms plate to plate	80,000 ohms 1.6:1 turn ratio overall	30-20,000	+28	.25 MA	H-2
HA-137	Push pull plates to push pull grids (split Pri. and Sec.)	30,000 ohms plate to plate	68,000 ohms 1.5:1 turn ratio	30-20,000	+20	0	H-1

## PLATE AND CRYSTAL TO LINE TRANSFORMERS

Type No.	Application	Primary Imp.	Secondary Imp. ohms	± 1 db from	Max. Level dbm	Unbal. DC in Prim'y	Case No.
HA-111	Crystal microphone or pickup, to multiple line	100,000 ohms (split)	50, 125/150, 200, 250, 333, 500/600	30-20,000 measured with resistive source	+18	0	H-1
HA-113	Single plate to multiple line	15,000 ohms (split)	50, 125/150, 200, 250, 333, 500/600	30-40,000	+21	0 MA	H-1
HA-133	Single plate to multiple line (D.C. in Pri.)	15,000 ohms (split)	50, 125/150, 200, 250, 333, 500/600	30-40,000	+22	8 MA	H-1
HA-114	Push pull low level plates to multiple line	30,000 ohms plate to plate	50, 125/150, 200, 250, 333, 500/600	30-40,000	+23	1 MA	H-1

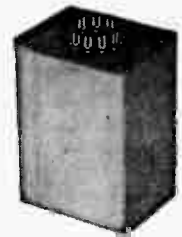
## OUTPUT TRANSFORMERS

HA-134	Push pull, 6L6, or 2A3's to line	5000/9400 ohms plate to plate	50, 125/150, 200, 250, 333, 500/600	10-50,000	15 watts		H-2
HA-135	Push pull 2A3's, etc. to voice coil	3000/5000 ohms plate to plate	30, 20, 15, 10, 7.5, 5, 2.5, 1.2	10-50,000	18 watts		H-2
HA-136	5881's (KT-66's) in AB-feed back	6,600 ohms CT 43% screen taps	4, 8, 16	10-50,000	20 watts		H-2

## POWER TRANSFORMERS AND CHOKES

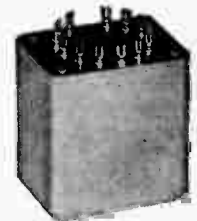
Type No.	Application	Primary Voltage 50/60 cycles	High Voltage	Filament Windings	Case No.	
HP-122	Pre-amp. power supply using 6X4, 6X5GT rectifier	115	220-0-220 15 MA	6.3 V.C.T.-.6A 6.3 V.C.T.-1.2A	H-1	
HP-123	Pre-amp. or tuner power supply using 6X4, 6X5GT rectifier	115	275-0-275 35 MA	6.3 V.C.T.-.6A 6.3 V.C.T.-2A	H-2	
Type No.	Application	Inductance	DC Current	DC Resistance	Test Voltage	Case No.
HC-115	Parallel feed and filter choke	Series-400 hy Parallel-100 hy	2.5 MA 5 MA	6000 ohms 1500 ohms	1500	H-1
HC-116	Parallel feed and filter choke	Series-600 hy Parallel-150 hy	8 MA 16 MA	3400 ohms 850 ohms	1500	H-2
HC-117	Parallel feed and filter choke	Series-200 hy Parallel-40 hy	15 MA 35 MA	3200 ohms 800 ohms	1500	H-1

The UTC Hiperm alloy audio and power transformers are specifically designed for portable and compact service. While light in weight, neither dependability nor fidelity has been sacrificed. The frequency characteristic of the Hiperm alloy audio units is uniform from 30 to 20,000 cycles. They incorporate a Hiperm-alloy nickel iron core and hum balanced coil structure. The rugged die cast case is of high conductivity alloy finished in grey, arranged for mounting with the terminals either up or down. DC in Prim'y shown is maximum unbalanced.



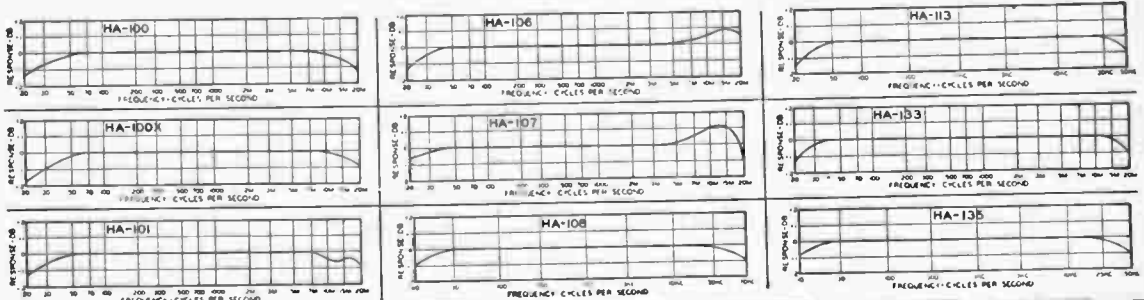
TYPE H-1 CASE

Length	2 3/8"
Width	1 1/2"
Height	3 1/2"
Mounting	1 3/8" x 1 3/8"
Screws	6-32
Cutout	1 3/8" dia.
Unit Weight	2 lbs.



TYPE H-2 CASE

Length	3 3/8"
Width	2 1/8"
Height	3 1/2"
Mounting	2" x 2 3/8"
Screws	8-32
Cutout	2 1/8" dia.
Unit Weight	5 lbs.

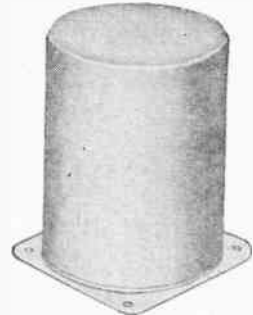
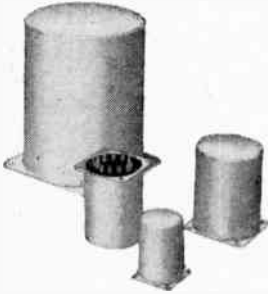




# COMMERCIAL GRADE COMPONENTS

The commercial grade series of transformers incorporate conservative design and rugged construction to assure dependability under continuous service operation in industrial and commercial grade communication equipment. These units are mounted in uniform drawn cases finished in light grey enamel, and intended for chassis mounting. All items are poured with special sealing compound in addition to vacuum impregnation of coil structures.

CG-134, 135 and 136 are of the hum-bucking type to assure low hum pick-up. All audio components are linear  $\pm 1\frac{1}{2}$  DB from 40 to 10,000 cycles (no unbalanced D.C.), except CVL and CVM units . . . 40 to 6000 cycles. Parallel feed low level interstage units with 50,000 ohms and .25 mfd. 200 ohm windings on input transformers are balanced and may be used for 150 to 250 ohm circuits.



## INPUT, INTERSTAGE, MIXING AND LOW LEVEL OUTPUT TRANSFORMERS

Type No.	Application	Primary Impedance Ohms	Max. Level dbm	Secondary Impedance Ohms	Case No.
CG-131	1 plate to 1 grid	15,000	+28	135,000 3:1 ratio	RC-50
CG-132	1 plate to 2 grids	15,000	+30	135,000 C.T., 3:1 ratio overall	RC-62
CG-133	2 plates to 2 grids	30,000 P to P	+32	80,000 overall 1.6:1 ratio overall	RC-75
CG-134	Line to 1 grid hum-bucking	50, 200, 500	+30	80,000	RC-50
CG-135	Line to 2 grids hum-bucking	50, 200, 500	+30	120,000 overall	RC-50
CG-235	Line to 1 or 2 grids, hum-bucking; multiple alloy shielded for low hum pickup	50, 200, 500 ohms	+28	80,000 overall	RC-75
CG-136	Single plate and low impedance mike or line to 1 or 2 grids hum-bucking	15,000, 50, 200	+30	80,000 overall	RC-62
CG-137	Mixing	50, 200, 500	+28	50, 200, 500	RC-50
CG-140	Triode plate to line	15,000	+30	50, 200, 500	RC-50
CG-141	PP triode plates to line	30,000 P to P	+32	50, 200, 500	RC-50
CG-233	PP 6CS, 12AU7, similar triodes to AB 45's, 2A3's, 6L6's, etc.	30,000 P to P	+35	25,000 overall .9:1 ratio overall	RC-67
CG-333	PP 6CS, 12AU7, similar triodes to fixed bias 6L6's	30,000 P to P	+35	5,000 overall .4:1 ratio overall	RC-67
CG-433	PP 45, 2A3, similar tubes to fixed bias 2 or 4 6L6's	5,000 P to P	10W.	1,250 overall .5:1 ratio overall	RC-100

## COMMERCIAL GRADE CASE

Case No.	Base Dim. (Sq.)	Mounting Dim. (Sq.)	Mounting Screw	Height $+\frac{1}{8}, -\frac{1}{16}$	Cutout Dia.	Unit Weight Lbs.
RC-37	1 $\frac{3}{8}$	1 $\frac{3}{8}$	4-40	1 $\frac{3}{8}$	1 $\frac{3}{8}$	.35
RC-50	1 $\frac{1}{2}$	1 $\frac{1}{2}$	6-32	2 $\frac{1}{4}$	1 $\frac{1}{2}$	$\frac{1}{2}$
RC-62	1 $\frac{1}{2}$	1 $\frac{1}{2}$	6-32	2 $\frac{1}{2}$	1 $\frac{1}{2}$	1
RC-75	2 $\frac{1}{8}$	1 $\frac{1}{2}$	8-32	2 $\frac{3}{8}$	1 $\frac{1}{2}$	1 $\frac{1}{2}$
RC-87	2 $\frac{1}{8}$	2 $\frac{1}{2}$	8-32	3 $\frac{1}{8}$	2	2 $\frac{1}{2}$
RC-100	3	2 $\frac{1}{2}$	8-32	3 $\frac{3}{8}$	2 $\frac{3}{8}$	3 $\frac{1}{2}$
RC-112	3 $\frac{1}{8}$	2 $\frac{1}{2}$	10-32	4 $\frac{1}{8}$	2 $\frac{3}{8}$	5
RC-125	3 $\frac{1}{8}$	3	10-32	4 $\frac{1}{2}$	3	6 $\frac{1}{2}$
RC-150	4 $\frac{1}{2}$	3 $\frac{1}{8}$	12-28	5 $\frac{1}{2}$	3 $\frac{3}{8}$	11
RC-152	5 $\frac{1}{8}$	4 $\frac{1}{8}$	12-28	5 $\frac{1}{2}$	4	15 $\frac{1}{2}$
RC-175	5 $\frac{1}{8}$	4 $\frac{1}{8}$	$\frac{3}{4}$ -20	7 $\frac{1}{8}$	4	22

## OUTPUT TRANSFORMERS

Secondary impedances: 500, 200, 16, 8, 5, 3, 1.5 ohms

Type No.	Imped. P. P. Ohms, Overall	Typical Tubes	Max. Watts	Case No.
CG-15	8,000	6F6 triode, 6V6, 6AQ5	20	RC-100
CG-16	3,000/5,000	2A3, 6AS7G, 6L6, 6080	20	RC-100
CG-19	6,000/10,000	6V6, Triode: 6L6, 5881	20	RC-100
CG-710	14,000/20,000	7B5, 6AK6, 6K6GT	20	RC-100
CG-216	9,000	6L6's, A81, 5881	30	RC-125

## FEEDBACK OUTPUT TRANSFORMERS

(See page 25 for typical circuit)

Secondary Impedances: 4, 8, 16 ohms and 70 Volt line.

Type No.	Primary Impedance	Typical Tubes	Audie Watts	Case No.
CG-20	5,000 CT, 43% screen taps	EL-34 in AB	25	RC-125
CG-21	3,300 CT, 40% screen taps	6550's in AB	50	RC-150

## CG VARIMATCH OUTPUTS FOR P. A.

Universal units designed to match any tubes within the rated output power, to line or voice coil. Output impedance 500, 200, 50, 16, 8, 5, 3, 1.5 ohms. Primary impedance 3000, 5000, 6000, 7000, 8000, 10,000, 14,000 ohms.

Type No.	Audie Watts	Typical Tubes	Case No.
CVP-1	12	2A3, 25L6, 6V6, 6AQ5	RC-100
CVP-2	30	2A3, 6L6, 6V6, 807, 5881	RC-125
CVP-3	60	300B's, 6L6's, 807, 1614, 5881, 1625	RC-150
CVP-4	125	807's, 4-6L6's, 845's, 4-1614's, 6146, 6159	RC-152
CVP-5	300	242A's, 838's, 4-845's, Z8-120's	RC-175

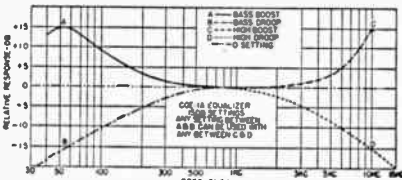
## CG VARIMATCH LINE TO VOICE COIL TRANSFORMERS

The UTC VARIMATCH line to voice coil transformers will match any voice coil or group of voice coils to a 500 ohm line. More than 50 voice coil combinations can be obtained, as follows:

.2, 4, .5, .62, 1, 1.25, 1.5, 2, 2.5, 3, 3.3, 3.8, 4, 4.5, 5, 5.5, 6, 6.25, 6.6, 7, 7.5, 8, 9, 10, 11, 12, 14, 15, 16, 18, 20, 25, 28, 30, 31, 40, 47, 50, 63, 69, 75.

Where speakers are to be connected in groups to a transformer, it is preferable that parallel connection be used to eliminate the possibility of multiple resonance. If two speakers of different impedances are connected in parallel, the lower impedance speaker will develop greater power. If connected in series, the higher impedance speaker will develop greater power.

Type No.	Audie Watts	Primary Impedance	Secondary Impedance	Case No.
CVL-1	15	500 ohms	.2 to 75 ohms	RC-67
CVL-2	40	500 ohms	.2 to 75 ohms	RC-125
CVL-3	75	500 ohms	.2 to 75 ohms	RC-150



UNIVERSAL INTERSTAGE EQUALIZER—CGE-1A

The UTC CGE-1A is the ideal device for any application where frequency response control is desired. This equalizer is not a simple R-C tone control, but employs resonant circuits in a unique arrangement providing equalization characteristics unobtainable by conventional circuits. Designed to work from a low or medium impedance source (10 to 20,000 ohms) to a high impedance (500,000 ohms or open grid), the CGE-1A affords continuously variable equalization over a 30 DB range at either end of the spectrum, while introducing only 18 DB total insertion loss. (See curve above). The mechanical construction permits mounting with case on panel directly behind controls, or with case separated from controls and panel. An etched, calibrated panel is provided.

CGE-1A Panel Dim. 2 $\frac{3}{8}$ " x 3 $\frac{1}{2}$ " x 2 $\frac{1}{2}$ " deep. Wt. 2 lbs.

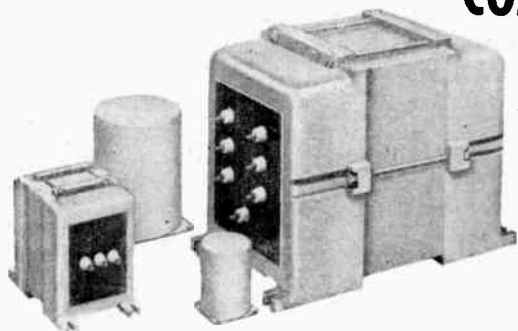
## CG VARIMATCH LINE AUTOFORMER

UTC Varimatch Line Autoformer will match one to ten 500 ohm lines or CVL windings to the 500 ohm output of an audio amplifier. The CVL-10 autoformer has impedances of 500, 250, 167, 125, 100, 83, 71, 62, 50 ohms.

Type No.	Audie Watts	Case No.
CVL-10	15	RC-67



# COMMERCIAL GRADE COMPONENTS



## CG VARIMATCH MODULATION UNITS

Will match any modulator tubes to any RF load. The ever increasing number of vacuum tubes available for audio and RF applications has increased the difficulty of obtaining transformers suitable for matching to the various correct tube loads. If a standard transformer having a limited impedance range is purchased and used for a specific purpose as the "nearest thing" available, comparatively high distortion is inevitable. While a 20% mismatch caused by such an occurrence does not represent a serious loss in power, it greatly reduces the undistorted power available from a class B modulator because optimum plate load is not reflected to the tubes. The UTC Varimatch transformer eliminates this difficulty through the use of a combination of tapped winding affording an extremely wide range in impedance matching. Designs provide that for any load impedance employed, full class C plate current can be carried by secondary winding.

Primary impedances from 500 to 20,000 ohms  
Secondary impedances from 30,000 to 300 ohms

Type No.	Max. Audio Watts	Max. Class C Input	Typical Modulator Tubes	Case No.
CVM-0	12	25	2A3	RC-100
CVM-1	30	60	6V6, 2A3, 6L6, 807, 5881	RC-125
CVM-2	60	125	801A, 6L6, 809, T-20, 1608, 6159	RC-150
CVM-3	125	250	800, 807, 845, T2-20, RK-30, 35-T	RC-192
CVM-4	300	600	50-T, 805, 838, T-55, ZB-120, 4-65A	RC-175
CVM-5	600	1200	805, HF-300, HK-354, 250TH, 810, 4-125A	7x12x9N 60 lbs.

## CG VARIMATCH DRIVER TRANSFORMERS

Type No.	Primary	Typical Output Tubes	Max. Level Watts	Case No.
CG-51AX	All signal tubes like: 6C5, 6C4, 12AU7, 2A3, 5814A Ratios 2:1, 3:1	2A3, 6L6	5	RC-87
CG-53AX	P. P. tube like: 2A3, 6L6, Ratios 2:1, 3:1, Pri. to 1/2 sec.	841, 801A, 800, 838, 805, 50T	20	RC-112
CG-59AX	50, 200, 500 ohm line Ratios 1:1, 1.4:1	805, 838, ZB-120, 100TH 800, 55T	20	RC-112

## VARIPOWER AUTO-FORMERS

Type No.	Watts Output	Case No.
CVA-1	150	RC-112
CVA-2	250	RC-125
CVA-3	500	RC-150
CVA-4	1000	RC-152
CVA-5	2000	RC-175

Designed for line voltage control, filament control and reduced power operation. Output voltage from 0 to 130 volts, 50/60 cycles. Varipower units permit control of filament voltage at the tube socket to within 2 1/2% of desired value simultaneously with line voltage control and plate voltage control. Can be used to reduce or increase voltages on filament transformers. Taps at 25, 55, 75, 95, 100, 105, 110, 115, 120, 125 and 130 volts permit output voltages from 0 to 130 volts in 5 volt steps.

## POWER AND BIAS TRANSFORMERS

Primary 115 volts 50/60 cycles  
(DC MA is for choke input. Reduce to 70% for condenser input.)

Type No.	High Voltage	DC MA	Fil. 1	Fil. 2	Fil. 3	Fil. 4	Case No.
CG-422	435-365-0-365-435 125-0-125	125	5V-3A	5V-2A	6.3 VCT-3A	2.5 VCT-5A	RC-150
CG-428	500-0-500 80-0-80	250	5V-3A	5V-2A	6.3 VCT-4A	6.3 VCT-3A, tapped 2.5 VCT-3A	RC-152
CG-429	600-525-0-525-600	250	5V-3A	6.3 VCT-3-A	7.5 VCT-3A, tapped 6.3 VCT-4A		RC-152
CG-431	500-400-0-400-500 80-0-80	500	5V-6A	5V-2A	6.3 VCT-5A	6.3 VCT-3A	RC-175
CG-315	Tapped for any DC voltage from 15 to 100 volts within 6%-250 MA						RC-125
CG-318	Tapped for any DC voltage from 75 to 400 volts within 6%-250 MA						RC-152

UTC CG power transformers, Varimatch units and chokes are designed to A.I.E.E. commercial standards. Ratings are conservative for continuous duty. Units are tested for breakdown at twice maximum working voltage plus 1000 volts and surge tested at 250% normal voltage. All items are vacuum impregnated and sealed with special insulating compound. The conservative design and manufacturing procedure of these units make them suitable for virtually all types of commercial equipment as well as ideally suited for quality amateur and public address service.

## CG PLATE TRANSFORMERS

Primaries for 105, 115, 220, 230 volts, 50/60 cycles. For reduced power, secondary voltages can be reduced to half by using 220V. Pri. on 110 volts. These transformers may be used on 25 to 43 cycles if 220V. Pri. is used on 110 volts. Secondary voltage is simultaneously halved.

Type No.	High Voltage	DC Voltage	DC MA	Case No.
CG-300	625-515-0-515-625	500/400	200	RC-150
CG-301	580-530-300-0-300-530-580	475/425/250	420	RC-152
CG-302	950-750-0-750-950	760/610	360	RC-175
CG-303	1500-1235-400-0-400-1235-1500	1250/1000 300	260* 175	RC-175

\* 300MA, if used without load on low voltage winding.

## TYPE EC CASE UNITS

Type No.	High Voltage	DC Voltage	DC MA	L	W	H	Mtg. Dim.	Wt. Lbs.
CG-304	1500-1235-0-1235-1500	1250/1000	800	15	8 1/2	10 3/4	7 1/4 x 13 3/8	100
CG-305	2400-1750-0-1750-2400	2000/1500	300	10 1/2	4 3/4	6 7/8	3 7/8 x 9 1/4	50
CG-306	2400-1750-0-1750-2400	2000/1500	500	15	8 1/2	10 3/4	7 1/4 x 13 3/8	100
CG-307	3500-3000-2400-0-2400-3000-3500	3000/2500 2000	300	14 1/2	8 1/2	10 3/4	7 1/4 x 12 3/8	90
CG-308	3500-3000-2400-0-2400-3000-3500	3000/2500 2000	500	16 1/2	8 1/2	10 3/4	7 1/4 x 14 1/8	125
CG-309	3500-3000-2400-0-2400-3000-3500	3000/2500 2000	1000	21	10	13 1/4	8 1/2 x 19	185
CG-310	4600-4050-3500-0-3500-4050-4600	4000/3500 3000	600	19	10	13 1/4	8 1/2 x 16 1/4	150
CG-311	1500-1235-0-1235-1500	1250/1000	500	10 1/2	4 3/4	6 7/8	3 7/8 x 9 1/4	50
CG-312	1800-1500-0-1500-1800	1500/1250	400	10 1/2	4 3/4	6 7/8	3 7/8 x 9 1/4	50

## FILTER CHOKES

INDUCTANCE SHOWN IS AT RATED DC MA

Type No.	Inductance Henrys	DC MA	DC Res. Ohms	Test Volts RMS	Case No.
CG-40	10	200	110	1750	RC-112
CG-44	30	100	400	1750	RC-100
CG-45	250	15	5000	1750	RC-87
CG-48C	75	50	2200	1750	RC-87
CG-100	12	150	110	2500	RC-125
CG-102	12	250	100	3000	RC-150
CG-104	10	350	90	5000	RC-152
CG-108	10	500	52	7000	RC-175
CG-15	10	1000	40	9000	1 1/2 x 4 3/4 x 6 7/8 H, 40 lb.

## SWINGING INPUT CHOKES

INDUCTANCE SHOWN IS FROM 100% TO 10% OF RATED DC MA

Type No.	Inductance Henrys	DC MA	DC Res. Ohms	Test Volts RMS	Case No.
CG-101	5-25	150	110	2500	RC-125
CG-103	5-25	250	100	3000	RC-150
CG-105	5-25	350	90	5000	RC-152
CG-109	5-25	500	52	7000	RC-175
CG-1C	5-25	1000	40	9000	1 1/2 x 4 3/4 x 6 7/8 H, 40 lb.

## FILAMENT TRANSFORMERS

Primary 105, 115, 210, 220, 230 volts, 50/60 cycles, except CG-34 . . . 105, 115, 220, 230. These transformers may be used on 25 to 43 cycles if 220 volt primary is used on 110 volts. Secondary voltage is simultaneously reduced to half.

Type No.	Sec. Volts C. T.	Sec. Amps.	Working Voltage	Test Volts RMS	Case No.
CG-33	6.3	4	500	2000	RC-75
CG-34	2 1/2	10	2500	6000	RC-112
CG-120	2 1/2	10	5000	11000	RC-125
CG-121	5	25	5000	11000	RC-150
CG-122	7.5/6.3	10	1500	4000	RC-125
CG-124	10	10	1500	4000	RC-150
CG-125	14/12/11	10	1500	4000	RC-150
CG-126	14/11/10 14/11/10	10	1500	4000	RC-152

Two Windings.

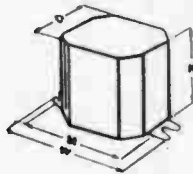


# SPECIAL SERIES AUDIO TRANSFORMERS



## CASE SIZES

Type No.	H	W	D	M	Wt. Lbs.
C-1	1 7/8	2 1/16	1 3/4	2 3/8	1
C-2	2 1/16	3 3/8	1 1/2	2 7/8	1 1/2
C-3	2 1/2	3 3/4	2 1/2	3 1/4	2
C-4	2 1/16	4 1/8	2 1/16	3 3/8	3



UTC Special Series audio units are specifically designed for amateur and popular-priced PA service. The Special units are finished in a rich, commercial type medium gray enamel. A recessed terminal strip is provided permitting above chassis or breadboard wiring in addition to standard chassis type wiring. The universal windings provided on driver, matching and output transformers assure a maximum of flexibility. Modulator output units will carry the DC current of the class C stage for any of the impedances available and will match practically any audio tubes to any RF load within the power rating of the transformer. Large components are housed in formed cases with top or bottom mounting. All units are vacuum impregnated—compound filled.

## TYPICAL MODULATOR COMBINATIONS

### S-18-12 WATTS MAX.

Typical driver tubes: 6C4, 12AU7, 6J5, 6J7-TR, 6CG7, 6SN7GT.

DRIVER	Sec. Term.	P. P. Tubes	MODULATOR STAGE	Watts Output	P. P. Load	Plate Volts	Bias Volts
S-2	G-G	6E6		1.6	14,000	250	27
S-2	G-G	25L6GT		4	4,000	110	7.5
S-2	G-G	6Y6G		7	4,000	135	13.5
S-8	G-G	6AC5G		8	10,000	250	0
S-2	G-G	2A3		10	5,000	325	750 ohms
S-2	G-G	6AS7G		10	5,000	250	1,250 ohms
S-1	F-G	6V6, 6AQ5			6,000		
S-1	F-G	6K6			10,000		

## CLASS A INPUT TRANSFORMERS

Type No.	Application	Ratio	Case
S-1	1 plate* to 1 grid	3 1/2:1	C-2
S-2	1 plate* to 2 grids	2:1	C-2
S-3	1 plate* to 1 or 2 grids compact type	2:1	C-1
S-5	Single or double button mike or line to 1 grid hum-bucking type	16:1	C-2
S-6	Single or double button mike or line to 1 grid, compact type	16:1	C-1

\* Will match tubes like 6J5, 6C4, 12AU7, etc. Can be used with high mu triodes with loss in low frequencies.

## UNIVERSAL DRIVER TRANSFORMERS

(See Modulator chart for tube types, ratios are Pri. to 1/2 sec.)

Type No.	Application	Max. Watts	Case
S-8	Single driver plate to pushpull grids, 2.66:1, 5:1 ratios	5	C-3
S-9	Pushpull driver plates to grids of class B tubes up to 400 watts output, 2.25:1, 3.6:1, 5:1 ratios	20	C-4
S-10	12AU7 or similar plates to 5881 or 6L6's, self or fixed bias, 2.25:1 ratio	5	C-3

### S-19-30 WATTS MAX.

DRIVER	Sec. Term.	P. P. Tubes	MODULATOR STAGE	Watts Output	P. P. Load	Plate Volts	Bias Volts
6C4	S-10	G-G	6V6	13	8,000	300	20
6C4	S-10	G-G	2A3, 6A3	15	3,000	325	68
6C4	S-10	G-G	6F6, 6AQ5 Pentode AB	10	10,000	375	340 ohms
6AQ5	S-8	G-G	6F6 triode AB	18	6,000	350	36
45	S-8	G-G	10, 1602	25	8,000	425	50
45	S-8	G-G	46	25	6,000	425	0
45	S-8	G-G	841	28	7,000	425	5
6C4	S-10	G-G	6L6 self bias	30	9,000	400	23

## MATCHING TRANSFORMERS

Type No.	Application	Pri. Ohms	Sec. Ohms	Case
S-11	Single 6J5, 6C4, 12AU7 or similar tube to line	15,000	200/500	C-2
S-12	Line to speaker 15 watts	500, 2000, 4000	2, 4, 8, 15	C-2
S-13	Line to speaker 30 watts	500, 2000, 4000	2, 4, 8, 15	C-4

### S-20-55 WATTS MAX.

DRIVER	Sec. Term.	P. P. Tubes	Watts Output	MODULATOR STAGE	P. P. Load	Plate Volts	Plate Tr'sf.	Bias Volts	Bias Tr'sf.
2A3	S-8	1-1	801A	45	10000	600	S-45	75	S-51
2A3	S-8	1-1	T-20	50	8000	600	S-45	30	S-51
12AU7	S-9	2-2	2E26	54	8000	500	S-41	15	S-51
12AU7	S-10	G-G	6L6, AB2	60	3800	400	S-39	25	S-51
12AU7	S-10	G-G	4-6L6	60	4500	400	S-40	23	S-51
2A3	S-8	3-3	809	60	5000	500	S-41	0	

## UNIVERSAL OUTPUT TRANSFORMERS TO LINE AND VOICE COIL

(Secondary impedances: 500, 15, 8, 2 ohms)

Type No.	Max. Watts	Primary Impedance	Typical Tubes	Class	Case
Single Tubes:					
S-14	2500 ohms	2A3, 6B4, 6L6, 6Y6, 25L6GT, 35L6GT	A		C-2
10 W.	4000 ohms	6V6, 12A6	A		
	7000 ohms	6AC5, 6F6, 7B5, 6K6CT	A		
	10,000 ohms	1G5, 3C5, 6A4, 6N7	A		
P. P. Tubes:					
S-15	4000 ohms	6Y6, 25L6GT	AB		C-2
12 W.	5000 ohms	2A3, 6AS7G	AB		
	10,000 ohms	6080	B		
S-16	3000 ohms	2A3, 25L6GT	AB		C-4
30-W.	6000 ohms	6F6 triodes, 6AS7G	AB		
	9000/10000 ohms	2A5, 6F6, 6L6, 6V6, 807-triode	AB		
S-17	3800 ohms	6L6's	AB2		C-5
55 W.	4500/5000 ohms	4-6L6's	AB1		
		809, 6146	B		

### S-21-115 WATTS MAX.

P. P.-2A3 Driver	Sec. Term.	P. P. Tubes	Watts Output	MODULATOR STAGE	Plate Volts	Plate Transf.	Bias Volts	Bias Tr'sf.
2-2	TZ-20	70	12000	800	S-46		0	
1-1	T-20	70	12000	800	S-46		40	S-51
*	845	75	4600	1000	S-47		175	S-51
1-1	807	80	6600	600	S-45		30	S-51
2-2	6146	95	6000	600	S-46		50	S-51
1-1	800, RK-30	100	12000	1000	S-47		55	S-51
3-3	809	100	8400	750	S-45		5	S-51
2-2	825	100	6600	850	S-46		30	S-51
2-2	TZ-40	100	6000	750	S-45		0	
2-2	T-756	100	7000	850	S-46		30	S-51
1-1	50-T	100	8000	1000	S-47		90	S-51
2-2	RK-18	100	12000	1000	S-47		50	S-51
1-1	HK-354	100	15000	1000	S-47		60	S-51
*	845	105	8800	1250	S-47		225	S-52
3-3	RK-31	110	14000	1000	S-47		0	
1-1	4-6L6	110	2000	400	S-44		25	S-51
2-2	35-T	115	11000	1000	S-47		30	S-51

\* Reverse S-9 transformer using terminals 1-1 for plates and P. P. for grids.

# SPECIAL SERIES POWER EQUIPMENT



UTC Special Series power supply components are designed specifically for amateur and popular-priced PA service. The ratings are based on such applications and recommended for ICAS intermittent use. For commercial application, CG or H grade components should be employed. Tapped coil structures on power and bias supply transformers afford maximum flexibility, permitting a given transformer to be used with many circuits and types of tubes. Stand by service should not be obtained by interrupting high voltage center tap.



## S-22-250 WATTS MAX.

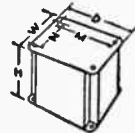
P. P. 2A3 Driver S-9 Transf. Sec. Term.	P. P. Tubes	Watts Output	MODULATOR P. P. Load	STAGE Plate Volts	Plate Transf.	Bias Volts	Bias Trsf.
3-3	HK-31	140	17000	1250	S-47	0	
*	50 T	250	20000	2000	S-50	180	S-52
*	50 T	160	17000	1500	S-49	140	S-52
2-2	TZ-40	175	6800	1000	S-47	0	
1-1	T-55	175	6900	1000	S-47	40	S-51
1-1	T-55	225	9400	1250	S-47	50	S-51
2-2	HF-100	250	12000	1500	S-49	52	S-51
2-2	100 TH	250	7200	1250	S-47	0	
¶	100 TL	230	7200	1250	S-47	112	S-52
2-2	ZB-120	150	4800	750	S-45	0	
2-2	ZB-120	245	9000	1250	S-47	0	
*	HK-154	225	11400	1250	S-47	210	S-52
1-1	203 A	250	9000	1250	S-47	45	S-51
3-3	203 Z	200	6900	1000	S-47	0	
1-1	211	200	6900	1000	S-47	77	S-51
1-1	211	250	9000	1250	S-47	100	S-51
1-1	HK-354	220	15000	1500	S-49	100	S-51
2-2	808	190	12700	1250	S-47	15	S-51
2-2	830 B	175	7600	1000	S-47	35	S-51
2-2	838	250	9000	1250	S-47	0	

\* Reverse S-9, using 2-2 for plates and P-P for grids.  
 ¶ Reverse S-9, using 1-1 for plates and P-P for grids.

## CASE SIZES

(Will take 12-28 Mtg. Screw)

Type No.	N	W	D	M	N	Wt. Lbs.
G-5	3 3/8	3 1/2	4 1/2	3 7/8	2 7/16	4 1/2
G-7	4 1/8	4 1/8	5 1/2	4 1/2	3 1/2	8
G-8	4 1/8	5 1/8	5 1/8	4 1/2	4 1/8	12
G-9	5 1/8	5 1/8	6 1/4	6 1/2	4 1/2	21
G-10	5 7/8	6 1/8	6 1/8	5 1/8	5 1/2	24
G-11	5 7/8	6 1/2	7 1/8	6 1/2	5 1/2	31
G-12	10 1/4	7 3/8	9 1/4	8 1/2	6 1/8	52



## PLATE TRANSFORMERS — BIAS TRANSFORMERS

Primary 115 V.—50/60 Cycles

Type No.	High Voltage	DC Voltages*	DC Current	Case No.
S-44	575-525-0-525-575	470/430	500 Ma.	G-9
S-45	900-750-0-750-900	750/620	200 Ma.	G-8
S-46	1000-750-0-750-1000	825/600	300 Ma.	G-9
S-47	1500-1250-1000-0-1000-1250-1500	1275/1050/825	300 Ma.	G-10
S-48	1500-1250-1000-0-1000-1250-1500	1300/1075/850	500 Ma.	G-11
S-49	2100-1800-1500-0-1500-1800-2100	1815/1540/1275	300 Ma.	G-11
S-50	3000-2500-0-2500-3000	2625/2175	300 Ma.	G-12
S-51	Will supply any bias voltage from 15 to 100 volts DC within approximately 6% of desired value.			
S-52	will supply any bias voltage from 75 to 400 volts DC within approximately 6% of desired value.			

\* Based on two section filter for 200 Ma. and 300 Ma. units, single section filter for 500 Ma. units, both choke input.  
 † 200 Ma. if used alone. ‡ 300 Ma. if used alone.

## FILTER, SWINGING, AND AUDIO CHOKES

Type No.	Service	Inductance	Current	Resistance	Test Volts Rms	Case No.
S-23	Audio	300 Hy.	5 Ma.	5000 ohms	1500 V.	G-2
S-24	P. P. Choke	500 Hy. C. T.	3 Ma.	6000 ohms	1500 V.	G-2
S-25	Filter	30 Hy.	30 Ma.	800 ohms	1500 V.	G-2
S-26	Filter	12 Hy.	60 Ma.	250 ohms	1500 V.	G-2
S-27	Filter	25 Hy.	75 Ma.	350 ohms	1500 V.	G-4
S-28	Filter	20 Hy.	100 Ma.	350 ohms	1500 V.	G-4
S-29	Filter	6 Hy.	175 Ma.	90 ohms	1500 V.	G-4
S-30	Swinging	4/20 Hy.	175 Ma.	90 ohms	1500 V.	G-4
S-31	Filter	6 Hy.	225 Ma.	100 ohms	2700 V.	G-5
S-32	Swinging	4/20 Hy.	225 Ma.	100 ohms	2700 V.	G-5
S-33	Filter	8 Hy.	300 Ma.	100 ohms	4000 V.	G-7
S-34	Swinging	4/20 Hy.	300 Ma.	100 ohms	4000 V.	G-7
S-35	Filter	8 Hy.	400 Ma.	60 ohms	5000 V.	G-8
S-36	Swinging	4/20 Hy.	400 Ma.	60 ohms	5000 V.	G-8
S-37	Filter	8 Hy.	550 Ma.	60 ohms	6000 V.	G-8
S-38	Swinging	4/20 Hy.	550 Ma.	60 ohms	6000 V.	G-8

## COMBINED PLATE AND FILAMENT UNITS

Primary 115 V.—50/60 Cycles

Type No.	Voltage	D. C. Voltages*	Rectifier Fil.	Fil. No. 1	Fil. No. 2	Case No.
S-39	450-400-0-400-490 175 Ma.	400/310	5 V.-3A	2.5 V.C.T. -6A	6.3 V.C.T. 4A	G-7
S-40	525-425-0-425-525 250 Ma.	400/310	5 V.-3A	6.3 V.C.T. -3A	6.3 V.C.T. 3A	G-7
S-41	600-0-600 200 Ma.	475	5 V.-3A	7.5 V. tapped 6.3 V.-3A	6.3 V.C.T. 2A	G-7
S-42	600-525-0-525-600 300 Ma.	480/400	5 V.-6A	7.5 V. tapped 6.3 V.-3A	6.3 V.C.T. 3A	G-8
S-43	525-0-525 450 Ma. 40-0-40 200 Ma.	400	5 V.-3A 5 V.-6A	6.3 V.-2A	6.3 V.C.T. 5A	G-9

\* Based on two section filter, choke input.

## FILAMENT TRANSFORMERS

Primary Tapped 105, 115 Volts—50/60 Cycles

Type No.	Secondary Volts	Secondary Current	Test Volts Rms	Case No.
S-53	2.5 VCT	10 A.	1500 V.	G-3
S-54	5 VCT	4 A.	2500 V.	G-3
S-55	6.3 VCT	3 A.	1500 V.	G-3
S-57	2.5 VCT	10 A.	10,000 V.	G-5
S-58	2.5 VCT	20 A.	10,000 V.	G-5
S-59	5 to 5.25 VCT	18 A.	5000 V.	G-5
S-60	5 to 5.25 VCT	22 A.	10,000 V.	G-7
S-61	7.5 VCT tapped 6.3 VCT	10 A.	3000 V.	G-5
S-62	10 VCT	10 A.	3000 V.	G-5
S-63	14 VCT tapped 12 VCT and 11 VCT	10 A.	5000 V.	G-7

Type No.	Fil. 1	Fil. 2	Fil. 3	Test Volts	Case No.
S-64	2.5 VCT-5A	2.5 VCT-5A	5 VCT-6A	3000 V.	G-5
S-65	2.5 VCT-5A	5 VCT-4A	6.3 VCT-3A	3000 V.	G-5
S-67	5 VCT-6A	6.3 VCT-5A		3000 V.	G-5
S-68	5 VCT-3A	6.3 VCT-4A	7.5 VCT-5A	3000 V.	G-5
S-70	6.3 VCT-5A	6.3 VCT-5A		3000 V.	G-5
S-71	2.5 VCT-6A	2.5 VCT-6A	2.5 VCT-12A	10000 V.	G-7
S-72	5 VCT-3A	5 VCT-3A	5 VCT-6A	5000 V.	G-5

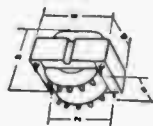


# REPLACEMENT TYPE COMPONENTS

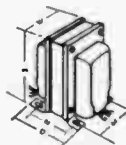
UTC replacement type transformers (Pri. 117 V. 50/60 cycles) represent the culmination of years of development in this field. All units are low temperature rise, vacuum sealed against humidity with special impregnating materials to prevent corrosion and electrolysis. Shells are finished in attractive high lustre black enamel.



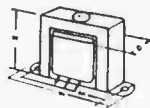
DOUBLE SHELL TYPE



SINGLE SHELL TYPE



VERTICAL SHELL TYPE



CHANNEL FRAME TYPE

## CHANNEL FRAME AUDIO TRANSFORMERS

Type No.	Application	Description	W	D	Dimen., Ins.		Lbs.
					H	M	
R-33	1 plate to 1 grid	4:1 ratio	2 $\frac{1}{2}$	1 $\frac{3}{8}$	1 $\frac{1}{16}$	2 $\frac{3}{8}$	$\frac{3}{4}$
R-34	1 plate to 2 grids	2:1 ratio	2 $\frac{1}{2}$	1 $\frac{3}{8}$	1 $\frac{1}{16}$	2 $\frac{3}{8}$	$\frac{3}{4}$
R-35	Mike to 1 grid	17:1 ratio to Pri. C.T	2 $\frac{1}{2}$	1 $\frac{3}{8}$	1 $\frac{1}{16}$	2 $\frac{3}{8}$	$\frac{3}{4}$
R-58	5 watt Universal output	Any single tube to any voice coil, .1 to 30 ohms	2 $\frac{1}{2}$	1 $\frac{3}{8}$	1 $\frac{1}{16}$	2 $\frac{1}{2}$	$\frac{1}{2}$
R-38A	6 watt Universal	Any tubes up to 6 watts to any voice coil, .1 to 30 ohms	2 $\frac{1}{2}$	1 $\frac{3}{8}$	1 $\frac{3}{8}$	2 $\frac{1}{2}$	$\frac{1}{2}$
R-59	10 watt Universal	Any tubes up to 10 watts to any voice coil, .1 to 30 ohms	2 $\frac{1}{2}$	1 $\frac{3}{8}$	1 $\frac{1}{16}$	2 $\frac{3}{8}$	$\frac{1}{2}$
R-60	15 watt Universal	Any tubes up to 15 watts to any voice coil, .1 to 30 ohms	3 $\frac{1}{16}$	1 $\frac{1}{2}$	2	2 $\frac{1}{16}$	1
R-39	10 watt line Matching Transformer	250, 500, 1,500 ohms to 2, 8, 15 ohms	2 $\frac{1}{2}$	1 $\frac{3}{8}$	1 $\frac{1}{16}$	2 $\frac{3}{8}$	$\frac{3}{4}$
R-40	25 watt line Matching Transformer	250, 500, 1,500 ohms to 2, 8, 15 ohms	4 $\frac{1}{2}$	2 $\frac{1}{2}$	2 $\frac{1}{2}$	3 $\frac{1}{16}$	2 $\frac{1}{2}$

## DOUBLE SHELL POWER TRANSFORMERS

Type No.	High V.	DC MA.	Rec. Fil.	Amp. Fil.	W	D	H	M	N	Wt. Lb.
R-101	275-0-275	50	5V-2A.	6.3V CT-2.7A	3	2 $\frac{1}{2}$	2 $\frac{7}{8}$	2 $\frac{1}{2}$	2 $\frac{3}{8}$	2 $\frac{1}{2}$
R-102	350-0-350	70	5V-3A.	6.3V CT-3A	3	2 $\frac{1}{2}$	1 $\frac{1}{2}$	2 $\frac{1}{2}$	2 $\frac{3}{8}$	3 $\frac{1}{2}$
R-103	350-0-350	90	5V-3A.	6.3V CT-3.5A	3 $\frac{1}{2}$	2 $\frac{7}{8}$	3 $\frac{3}{8}$	2 $\frac{1}{16}$	2 $\frac{1}{4}$	4 $\frac{1}{2}$
R-104	350-0-350	120	5V-3A.	6.3V CT-5A	3 $\frac{3}{4}$	3 $\frac{1}{8}$	3 $\frac{3}{8}$	3 $\frac{1}{8}$	2 $\frac{1}{2}$	5 $\frac{1}{2}$
R-105	385-0-385	160	5V-3A.	6.3V CT-5A	3 $\frac{3}{4}$	3 $\frac{1}{8}$	4 $\frac{1}{8}$	3 $\frac{1}{8}$	2 $\frac{1}{2}$	7

## SINGLE SHELL POWER TRANSFORMERS

Type No.	High V.	DC MA.	Rec. Fil.	Amp. Fil.	W	G	H	M	N	Wt. Lb.
R-106	300-0-300	50	5V-2A.	6.3V CT-2.7A	3	2 $\frac{1}{2}$	3	2 $\frac{1}{2}$	2 $\frac{1}{16}$	2 $\frac{1}{2}$
R-107	350-0-350	70	5V-3A.	6.3V CT-3A	3	2 $\frac{1}{2}$	3 $\frac{1}{8}$	2 $\frac{1}{2}$	2 $\frac{1}{16}$	3 $\frac{1}{2}$

## VERTICAL SHELL POWER TRANSFORMERS

Type No.	High V.	DC MA.	Rec. Fil.	Amp. Fil.	W	D	H	M	N	Wt. Lb.
R-110	300-0-300	50	5V-2A.	6.3V CT-2.7A	2 $\frac{1}{2}$	2 $\frac{1}{16}$	3 $\frac{3}{4}$	2	1 $\frac{3}{8}$	2 $\frac{1}{2}$
R-111	350-0-350	70	5V-3A.	6.3V CT-3A	2 $\frac{1}{2}$	3 $\frac{1}{8}$	3 $\frac{3}{4}$	2	2 $\frac{3}{8}$	3 $\frac{1}{2}$
R-112	350-0-350	120	5V-3A.	6.3V CT-5A	3 $\frac{1}{4}$	3 $\frac{1}{8}$	4	2 $\frac{1}{2}$	2 $\frac{3}{8}$	5 $\frac{1}{2}$
R-113	400-0-400	200	5V-3A.	6.3V CT-6A	3 $\frac{1}{2}$	4 $\frac{1}{4}$	4 $\frac{3}{8}$	3	3 $\frac{1}{8}$	8

## CHANNEL FRAME FILTER CHOKES

Inductance Shown is at Rated D.C.M.A.—Test Volts RMS: 1500

Type No.	Induct. Mhs.	Current	Resistance Ohms	W	D	H	M	Lbs.
R-55	6	40MA	300	2 $\frac{1}{2}$	1 $\frac{3}{8}$	1 $\frac{3}{8}$	2	$\frac{1}{2}$
R-14	8	40MA	250	2 $\frac{7}{8}$	1 $\frac{3}{8}$	1 $\frac{1}{16}$	2 $\frac{3}{8}$	$\frac{3}{4}$
R-15	12	30MA	450	2 $\frac{7}{8}$	1 $\frac{3}{8}$	1 $\frac{1}{16}$	2 $\frac{3}{8}$	$\frac{3}{4}$
R-16	15	30MA	630	2 $\frac{7}{8}$	1 $\frac{3}{8}$	1 $\frac{1}{16}$	2 $\frac{3}{8}$	$\frac{3}{4}$
R-17	20	40MA	850	3 $\frac{1}{16}$	1 $\frac{3}{8}$	2	2 $\frac{1}{16}$	1
R-18	8	20MA	250	3 $\frac{1}{16}$	1 $\frac{3}{8}$	2	2 $\frac{1}{16}$	1
R-19	14	100MA	450	3 $\frac{1}{16}$	1 $\frac{3}{8}$	2 $\frac{1}{16}$	3 $\frac{1}{8}$	1 $\frac{1}{2}$
R-20	5	200MA	90	4 $\frac{1}{8}$	2	2 $\frac{1}{8}$	3 $\frac{1}{8}$	2 $\frac{1}{2}$
R-21	3/15	200MA	90	4 $\frac{1}{8}$	2	2 $\frac{1}{8}$	3 $\frac{1}{8}$	2 $\frac{1}{2}$

## FILAMENT TRANSFORMERS

CHANNEL FRAME TYPE

Pri. 115 V. 50/60 Cycles—Test Volts RMS: 1500

Type No.	Secondary	Dimensions, Inches			Wt. Lbs.
		W	D	H	M
FT-1	2.5 V.C.T.-3A	2 $\frac{7}{8}$	1 $\frac{3}{8}$	1 $\frac{1}{16}$	2 $\frac{3}{8}$
FT-2	6.3 V.C.T.-1.2A	2 $\frac{7}{8}$	1 $\frac{3}{8}$	1 $\frac{1}{16}$	2 $\frac{3}{8}$
FT-3	2.5 V.C.T.-6A	3 $\frac{1}{16}$	1 $\frac{3}{8}$	2	2 $\frac{1}{16}$
FT-4	6.3 V.C.T.-2.5A	3 $\frac{1}{16}$	1 $\frac{3}{8}$	2	2 $\frac{1}{16}$
FT-5	2.5 V.C.T.-10A	3 $\frac{3}{8}$	1 $\frac{3}{8}$	2 $\frac{1}{16}$	3 $\frac{1}{8}$
FT-6	5 V.C.T.-3A	3 $\frac{3}{8}$	1 $\frac{3}{8}$	2 $\frac{1}{16}$	3 $\frac{1}{8}$
FT-7	7.5 V.C.T.-3A	3 $\frac{3}{8}$	1 $\frac{3}{8}$	2 $\frac{1}{16}$	3 $\frac{1}{8}$
FT-8	6.3 V.C.T.-8A	4 $\frac{1}{8}$	2 $\frac{1}{4}$	2 $\frac{1}{8}$	3 $\frac{1}{8}$
FT-10	24V CT-2A or 12V-4A	4 $\frac{1}{8}$	2 $\frac{1}{4}$	2 $\frac{1}{8}$	3 $\frac{1}{8}$

# REPLACEMENT TYPE COMPONENTS



## STEP DOWN AUTO-TRANSFORMERS

220/240 Volt to 110/120 Volts, 50/60 Cycles.  
All units have 6 foot cord and female receptacle, except R-64.

Type No.	Rating Watts	L	W	H	Mtg. Dim.	Wgt. Lbs.
R-41	85	3	2 3/4	3 1/2	2 x 1 1/2	4
R-42	125	3 3/4	3	3 1/2	2 1/4 x 2 1/4	5
R-43	175	3 3/4	3 3/4	3 3/4	2 1/2 x 2 1/4	5 1/2
R-44	250	4 3/4	3 3/4	3 3/4	2 1/2 x 2 7/8	6 1/2
R-45	500	4 3/4	3 3/4	4 3/4	3 x 3 1/4	12
R-46	1200	6 3/4	3 3/4	4 3/4	3 x 5 1/2	18
R-64	2500	10 1/2	4 3/4	6 3/4	3 3/4 x 9 3/4	30



## ISOLATION TRANSFORMERS

Ideal for isolating line noise, AC-DC sets, etc. Excellent electrostatic shielding. 1500 volt breakdown test. Six foot cord and female receptacle, except R-77.

Primary 110-120 volts, 50/60 cycles—Secondary 110-120 volts  
Except R-97 220 volt Primary—120 volt Sec.

Type No.	Rating Watts	L	W	H	Mtg. Dim.	Wgt. Lbs.
R-72	40	2 3/4	2 3/4	3 3/4	2 x 1 7/8	4
R-73	100	3 3/4	3 3/4	3 3/4	2 1/2 x 2 3/8	6
R-74	250	4 3/4	3 3/4	4 3/4	3 x 3 1/2	12
R-75	600	6 3/4	3 3/4	4 3/4	3 x 6	20
R-76	1200	8 3/4	4 1/2	5 7/8	3 3/4 x 6 3/4	30
R-77	2500	12	7	9	6 x 12	70
R-97	250	4 3/4	3 3/4	4 3/4	3 x 3 1/2	12



## EXPORT VOLTAGE ADAPTER

Complete with cord and plug and special locking switch providing for line voltages of 105, 115, 125, 135, 150, 210, 230, 250 volts; 42 to 60 cycles. Output voltage 115.

Type No.	Rating Watts	L	W	H	Mtg. Dim.	Wgt. Lbs.
R-47	85	4 3/4	3	3 1/2	2 1/4 x 2 1/4	4 1/2
R-48	150	4 3/4	3 3/4	4	2 3/4 x 2 1/4	5 1/2



## TV VOLTAGE REGULATOR

Complete with cord, plug, and special locking switch. Permits operation of 115 volt 50/60 cycle TV sets on line voltages of 85, 90, 95, 100, 105, 110, 120, 125 V.

Type No.	Rating Watts	L	W	H	Mtg. Dim.	Wgt. Lbs.
R-49	350	5	3 3/4	4	2 1/2 x 2 3/4	5



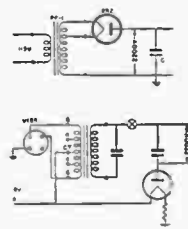
## PHOTO FLASH TRANSFORMERS

Can be used for either standard (Anglo type) or trigger (Sylvania type) multiple flash bulbs. Circuit details included with transformer.

PF-1 Primary for 115 volts, 50/60 cycles. Secondaries for power supply delivering 2200 volts DC to condenser up to 100 Mfd. Compound sealed in G-3\* case 2 1/2 x 2 3/4 (3 3/4 including flanges) x 2 1/2 inches high. Weight 2 lbs.

PF-2 For portable service. Primary tapped for 4 volt or 6 volt battery (full wave vibrator). Secondary for power supply delivering 2200 volts DC to condenser up to 60 Mfd. Compound sealed in G-3\* case. Weight 2 lbs.

PF-3 Trigger Transformer 15 KV peak. 7/8 0.0. x 3" long. Weight 2 Oz.



## VOLTAGE BOOSTERS

The constantly increasing appliance load in home and office presents a serious low line voltage problem to which the UTC voltage booster is a perfect answer. These autotransformers are designed to operate from a 95 to 110 V. 50/60 cycle line. They boost the voltage 10%. The two ratings shown are ideal for TV sets and air conditioners. Complete with line cord and receptacle.

Type No.	Rating Amp.	Rating Watts	L	W	H	Mtg. Dim.	Wgt. Lbs.
R-87	3	350	3 3/4	2	2 3/4	2 7/8	2
R-88	18	2000	3 3/4	4 3/4	4 3/4	3 x 3	12



## VARIETRAN VOLTAGE ADJUSTERS

Input 115 volts 50/60 cycles. Output continually adjustable from 0-130 Volts through roller contact on exposed autotransformer winding. Regulation and efficiency are excellent, no wave form distortion. Output voltage is independent of load. Complete with line cord, switch, and receptacle . . . for loads up to 570 Watts . . . 5 A.

Type	L	W	H	Wt. Lbs.
V-1-M with meter	4 3/4	x 9 3/4	x 3 3/4	14
V-1 without meter	4 3/4	x 8	x 3 3/4	12



## SIGNALLING AND CONTROL TRANSFORMERS

Primary 110-120 volts, 50/60 cycles—Secondary 4/8/12/16/20/24 volts

High power transformers suitable for operating relays, sirens, horns, gongs, etc. from 115 V. 50/60 cycle line. These units have four secondary terminals providing 4, 8, 12, 16, 20 and 24 volt output. The volt ampere rating is based on the 24 volt secondary tap with corresponding reduction at the lower voltages. Underwriters' approved primary leads are employed, and screw-type binding posts.

Type No.	Rating Watts	L	W	H	Mtg. Dim.	Wgt. Lbs.
SC-3	50	3	x 3 1/2	x 3 3/4	1 7/8 x 2 1/4	3
SC-4	100	3 3/4	x 4	x 4	2 1/8 x 2 1/2	5
SC-5	250	4	x 5	x 4 3/4	3 1/4 x 3	10



# THORDARSON MEISSNER

WORLD'S OLDEST and LARGEST  
TRANSFORMER and COIL  
MANUFACTURER  
Mt. Carmel, Illinois.  
Phone 1200

## INPUT - INTERSTAGE

TYPE	LIST		OHMS IMPEDANCE		TURNS RATIO	MTG CENTERS	DIMENSIONS		
	PRICE	MTG	PRIMARY	SECONDARY			W	D	H
20A00	\$ 5.55	BAH	600C1/200C1/50	60,000C1/20,000C1/20,000C1	1:10	2	2-3/8	1-1/4	1-11/32
20A01	7.25	FGV	600C1/200C1/50	240,000/80,000/80,000	1:20	2-3/8	2-7/8	2-5/16	1-1/4
20A02	8.00	FGV	600C1/200C1/50	240,000C1/80,000C1/80,000C1	1:20	2-3/8	2-7/8	1-7/8	1-1/4
20A03	6.65	BAH	5,000/10,000/200	100,000/250,000	1:3.25	2-3/8	2-13/16	1-5/8	1-5/8
20A04	3.10	BAH	3 to 6 / 50	38,400/320,000	1:80	2	2-3/8	1-1/4	1-11/32
20A05	18.60	RTV	600C1/200C1/50	60,000C1/20,000C1/20,000C1	1:10	1-5/16 x 1-5/16	1-9/16Diam.		2
20A06	14.45	RTV	600C1/200C1/50	600C1/200C1/50C1	1:1	1-5/16 x 1-5/16	1-9/16Diam.		2
20A40	30.50	Z	30 to 60	50,000	1:31.6		1 Diam.		2-11/16
20A41	31.80	Z	200 to 250	50,000	1:14.2		1 Diam.		2-11/16
20A29	4.00	BAV	10,000C1/15,000C1/20,000C1	10,000C1/15,000C1/20,000C1	1:1.1:1.1	2	2-3/8	1-3/8	2
20A16	3.00	BAH	10,000	40,000CT	1:2	2	2-3/8	1-1/4	1-11/32
20A17	8.90	RAV	10,000	40,000CT	1:2	1-7/16	1-9/16 Diam.		2
20A19	3.30	BAH	Universal		1:3	2-3/8	2-13/16	1-5/8	1-5/8
20A22	4.20	BAH	10,000	90,000CT	1:3	2-7/8	3-1/4	2-1/8	1-15/16
20A23	8.35	FGV	10,000	90,000CT	1:3	2-3/8	2-7/8	2-1/16	2-5/16
20A24	6.80	FGV	20,000CT	180,000CT	1:3	2-3/8	2-7/8	2-1/6	2-5/16
20A25	13.65	RTV	Universal		1:1.41	1-5/16 x 1 5/16	1-9/16 Diam.		2
20A27	22.20	RTV	10,000/2,500	40,000/20,000	1:2		2-7/8 Diam.		3-9/16

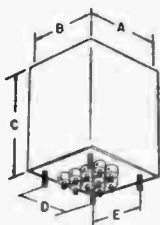
## DRIVER

TYPE	LIST		TURNS RATIO	PRI. M. A.	MTG CENTERS	W	D	H	LBS
	PRICE	MTG							
20D75	\$ 4.70	BAH	2:4:1	5	2	2-3/8	1-1/4	1-3/8	1/2
20D76	4.70	BAH	5:2:1	15	2	2-3/8	1-1/4	1-3/8	1/2
20D77	7.20	FGV	2:5:1	30	2-3/8	2-7/8	2-1/6	2-3/16	1-1/4
20D78	10.15	GGV	4:1	40	2 x 1-11/16	2-9/16	2-11/16	3-1/8	2-1/2
20D79	8.55	FGV	5:2:1	30	2-3/8	2-7/8	2-1/16	2-3/16	1-1/2
20D80	8.60	GGV	3:2:1	100	2 x 1-11/16	2-9/16	2-11/16	3-1/8	2-1/2
20D81	10.55	GGV	5:1	100	2-1/2 x 2-3/16	3-3/16	3-3/16	3-7/8	4-1/2
20D82	11.10	GGV	5:1	100	2 x 1-11/16	2-9/16	2-11/16	3-1/8	2-1/2
20D83	42.20	FUV	1:75, 1:85, 1:1 25		1-3/4 x 4-3/8	3-1/8	4-3/4	4	8
			1:1.4, 1:1.75, 1:2, 1:2.25						
			1:2.5, 1:2.75, 1:3						
20D84	24.45	GGV	1:75, 1:85, 1:1 25		2-1/4 x 2	3	3-1/2	3-5/8	3-1/2
			1:1.4, 1:1.75, 1:2, 1:2.25						
			1:2.5, 1:2.75, 1:3						

\* Terminal Board with Solder Lugs on Both Shields-20 Watts Capacity.

## 400-CYCLE MILITARY TRANSFORMERS

These transformers are designed to meet all of the specifications of MIL-T-27A Class S. They are "steel jacketed," in case sizes and dimensions, exactly as specified by MIL-T-27A standards.



### CASE DIMENSIONS

	A	B	C	D	E
AH	1 1/8	1 1/8	1 3/4	1 1/4	1 1/8
AJ	1 5/8	1 5/8	2 3/8	1 1/8	1 1/8
EA	1 1/8	1 1/8	2 3/4	1 3/8	1 1/4
EB	1 1/8	1 1/8	2 1/8	1 3/8	1 1/4
FA	2 1/8	2 1/8	3 3/8	1 1/8	1 1/8
FB	2 1/8	2 1/8	2 1/2	1 1/8	1 1/8
GA	2 3/4	2 3/4	3 1/8	2 1/8	1 3/4
HA	3 1/8	2 5/8	4 1/4	2 1/4	1 5/4
HB	3 1/8	2 5/8	3 7/8	2 1/4	1 5/4
JA	3 1/8	3 1/8	4 7/8	2 5/8	2 1/8
KA	3 1/8	3 3/8	5 1/4	3	2 1/8

### POWER PRIMARY 105/115/125 V. 380-1000 CYCLES

Part No.	Plate Supply		Rectifier Filament		Other Filaments		Case Type	Terminal Type	Wt. Lbs.
	Volts	M.A.D.C.	Volts	Amps.	Volts	Amps.			
27R94	270-0-270	55	5.0	2	6.3 CT	2	FA	A	1 1/2
27R95	335-0-335	70	5.0	2	6.3 CT	3	FA	A	1 3/4
27R96	375-0-375	120	5.0	3	6.3 CT	4	HA	B	2 1/2
27R97	440-0-440	165	5.0	3	6.3	7.5	JA	B	6
					6.3	3			
					6.3	0.6			
27R98	450-0-450	200	5.0	2	6.3	4	JA	B	5 3/4
					6.3	4			
					6.3	0.6			
27R99	550-370-75-0	300	5.0	6	6.3 CT	5	KA	B	6 1/2
	75-370-550				6.3 CT	1			

### FILAMENT TRANSFORMERS PRIMARY 105/115/125 V. 380-1000 CYCLES

Part No.	Secondary		Insulation Volts Rms.	Case Type	Terminal Type	Wt. Lbs.
	Volts	Amps.				
27F59	6.3 CT	3	2500	AJ	B	3/4
27F60	6.3 CT	5.5	2500	EA	B	1
27F61	6.3 CT	10	2500	FA	B	1 3/4
27F62	6.3 CT	20	2500	GA	B & C	2 1/2

### CROKES

Part No.	Inductance Ratings		D.C. Resistance (Ohms)	Insulation Volts Rms.	Case Type	Terminal Type	Wt. Lbs.
	Henrys	M.A.D.C.					
27C26	2.0	55	160	2500	AH	B	3/4
27C27	2.0	70	165	2500	AH	B	3/4
27C28	2.0	120	100	2500	EB	B	1
27C29	2.0	165	90	2500	EB	B	1 1/2
27C30	2.0	200	73	2500	FB	B	1 3/4
27C31	2.0	300	47	2500	HB	B	3 1/4

## AUDIO OUTPUT

### SINGLE PLATE to VOICE COIL (3.5 ohms)

PART NO.	LIST PRICE	PRIMARY IMPEDANCE	MADC	WATTS	MTG TYPE	MTG CENTERS	DIMENSIONS		WEIGHT
							H	W x D	lbs.
24S50	\$ 2.05	2000 ohms	55	5	BAH	2	1-3/8	2-3/8 x 1-1/4	0.5
22S45	4.15	1500-3000 ohms	55	5	BAH	2	1-3/8	2-3/8 x 1-1/4	0.5
26S58	2.00	2500 ohms	40	3	BAV	1-1/2	1-1/2	1-1/4 x 1-7/8	0.4
22S46	4.70	2000-3000 ohms	35	5	BAH	2	1-3/8	2-3/8 x 1-1/4	0.5
26S50	3.30	3500 ohms	60	8	BAH	2-3/8	1-5/8	2-7/8 x 1-5/8	0.75
24S48	2.20	4-5000 ohms	10	5	BAH	1-3/4	1-1/4	2-1/8 x 1	0.4
24S31	2.20	5000 ohms	40	5	BAH	2	1-3/8	2-3/8 x 1-1/4	0.5
26S49	3.30	5000 ohms	50	8	BAH	2-3/8	1-5/8	2-7/8 x 1-5/8	0.75
24S49	2.05	7-8000 ohms	10	5	BAH	1-3/4	1-1/4	2-1/8 x 1	0.4
24S52	2.15	7-10000 ohms	30	5	BAH	2	1-3/8	2-3/8 x 1-1/4	0.5
26S48	3.30	7000 ohms	40	8	BAH	2-3/8	1-5/8	2-7/8 x 1-5/8	0.75
26S47	3.75	14000 ohms	35	12	BAH	2-7/8	2	3-1/8 x 2	1.0

### PUSH-PULL PLATES to LINE or VOICE COIL

PART NO.	LIST PRICE	PRI - SEC IMP	MA DC	WATTS	MTG TYPE	MTG CENTERS	DIMENSIONS		WEIGHT
							H	W x D	lbs.
22S72	\$ 8.90	3000 CT to 3.5/8/16/250/500	90	25	GGV	1-3/4 x 2	3-1/8	2-5/8 x 2-5/8	2.5
22S95	13.10	3000/5000 CT to 3.5/8/16	60	15	GGV	1-3/4 x 2	3-1/8	2-5/8 x 2-5/8	2.5
22S96	17.50	3000/5000 CT to 3.5/8/16	60	15	WTV	2-3/4 x 2-3/8	4-3/8	3 x 3-3/8	7.25
22S78	16.70	3300 CT to 3.5/8/16/250/500	180	60	GGV	2-1/2 x 2-1/2	3-7/8	3-1/4 x 3-3/4	5.25
22S70	88.90	5000CT to 3.5/8/16/250/500	80	25	GGV	1-3/4 x 2	3-1/8	2-5/8 x 2-5/8	2.5
22S97	12.45	6000CT to 3.5/8/16/250/500	60	25	GGV	1-3/4 x 2	3-1/8	2-5/8 x 2-5/8	2.5
22S98	19.75	6000CT to 3.5/8/16/250/500	60	25	WTV	2-3/4 x 2-3/8	4-3/8	3 x 3-3/8	7.25
22S47	4.45	6000/7000CT to 3.5	30	5	BAH	2	1-3/8	2-3/8 x 1-1/4	0.5
22S93	11.95	10000CT to 3.5/8/16	50	10	GGV	1-3/4 x 2	3-1/8	2-5/8 x 2-5/8	2.5
22S94	16.10	10000CT to 3.5/8/16	50	10	WTV	2-3/4 x 2-3/8	4-3/8	3 x 3-3/8	7.25
26S39	4.80	10000CT to 3.5/8/16	30	10	EAH	2-7/8	2	2 x 3-1/8	1.0
22S64	10.00	10000CT to 3.5/8/16/250/500	50	25	GGV	1-3/4 x 2	3-1/8	2-5/8 x 2-5/8	2.5

### UNIVERSAL OUTPUT SINGLE or PUSH-PULL PLATES to VOICE COIL

PART NO.	LIST PRICE	PRI - SEC IMP	MA DC	WATTS	MTG TYPE	MTG CENTERS	DIMENSIONS		WEIGHT
							H	W x D	lbs.
24S60	\$ 3.20	4000/7000/8000/10000/14000CT to .1 to 30	10	3	BAH	2	1-3/8	2-3/8 x 1-1/4	0.5
24S61	3.75	4000/7000/8000/10000/14000CT to .1 to 30	40	8	BHH	2-3/8	1-5/8	2-7/8 x 2	1
22S58	3.75	5000/7000CT to 3.5/8	45	10	BAH	2-7/8	2	3-1/8 x 1-3/4	1.25
26S46	4.75	4000/7000/8000/10000/14000CT	40	18	BHV	2-3/8	2-3/8	2-7/8 x 2-1/4	1.5

### NUMBUCKING (3% and 5% taps) SINGLE PLATE to VOICE COIL (3.5 ohms)

PART NO.	LIST PRICE	PRIMARY IMPEDANCE	MADC	WATTS	MTG TYPE	MTG CENTERS	DIMENSIONS		WEIGHT
							H	W x D	lbs.
24S51	\$ 3.00	2000	55	5	BAH	2	1-3/8	2-3/8 x 1-1/4	0.5
24S14	3.80	5000	40	5	BAH	2	1-3/8	2-3/8 x 1-1/4	0.5

### TUBE to LINE MIXED

PART NO.	LIST PRICE	PRI - SEC IMP	MA DC	WATTS	MTG TYPE	MTG CENTERS	DIMENSIONS		WEIGHT
							H	W x D	lbs.
22S59	\$ 5.00	15000 to 500 CT	10	4	BGH	2-3/8	1-5/8	2-7/8 x 1-5/8	0.75
22S76	8.30	3000/5000/8000/10000/12000/14000CT to 500	60	25	BHH	3-5/8	2-1/2	4 x 2-5/8	2.5
22S90	6.40	2000CT to 125, 200, 500, 600	25	8	FGV	2-3/8	2-3/8	2-7/8 x 1-7/8	1
22S92	13.90	2000CT to 125, 200, 500, 600	10	3	RTV	1-3/8 x 1-3/8	2	1-5/8 Dia.	0.5
22S91	5.50	2000CT to 125, 200, 500, 600	25	8	BAH	2-7/8	2	3-1/8 x 2	1.0

### LINE to VOICE COIL

PART NO.	LIST PRICE	PRI - SEC IMP	WATTS	MTG TYPE	MTG CENTERS	DIMENSIONS		WEIGHT
						H	W x D	lbs.
22S81	\$ 3.30	45/30 ohm to 3.5/8	8	BAH	2-3/8	1-5/8	2-7/8 x 1-5/8	1.25
22S80	6.60	500/600 to 3.5/8/16	8	BHH	3-1/8	2-1/4	3-3/4 x 2-1/4	1.5
22S85	6.40	500/1000/1500/2000/ to 3.5/8/16	3	BAH	2-3/8	1-5/8	2-7/8 x 1-5/8	0.75
24S66	4.60	500/1000/1500/2000/ to 3.5/8	10	BAV	2	2	2-1/2 x 1-5/8	1
24S62	7.20	500 to 3.2/8	10	BAV	3	3	3-3/8 x 2-1/8	2

### REUMA 70.7 VOLT LINE to VOICE COIL

PART NO.	LIST PRICE	PRIMARY IMPEDANCE	WATTS	MTG TYPE	MTG CENTERS	DIMENSIONS		WEIGHT
						H	W x D	lbs.
24S70	\$16.70	312.5/625/1250/2500/5000/10000	16	TAV	3-1/8 x 2	3-9/16	2-3/4 x 3-1/2	2
24S71	4.85	625/1250/2500/5000/10000	8	BHV	2-1/8	2	1-5/8 x 2	.6
24S72	6.30	312.5/625/1250/2500/5000/10000	16	BHV	2-3/8	2-3/8	2-1/2 x 2-1/2	1
24S73	5.50	500/1000/2000/4000	10	BHV	2-3/8	2-3/8	2 x 2-1/8	.75
24S74	3.80	1000/2000/4000/8000/16000	5	BHH	2	1-3/8	2-3/8 x 1-1/4	0.5

\* TAP SWITCH FOR EXTREME FLEXIBILITY



BAH BAV  
BOH BOV



FGV



GGV GMV  
GTV



BAV RTV



TAV



WTV

# THORDARSON <sup>INC.</sup> MEISSNER

WORLD'S OLDEST and LARGEST  
TRANSFORMER and COIL  
MANUFACTURER  
Mt. Carmel, Illinois.  
Phone 1200

## FILAMENT

### SINGLE SECONDARY

PART NO	LIST PRICE	SECONDARY		RMS TEST	MTG TYPE	MTG CENTERS	DIMENSIONS		WEIGHT lbs.
		VOLTS	AMPS				H	W x D	
21F00	4.00	2.5CT	5	2500	BAV	2-3/8	2-3/8	2-7/8 x 1-3/4	1.0
21F01	7.00	2.5CT	10	2500	BAV	2-3/4	2-3/4	2 x 3-1/4	1.5
21F02	7.85	2.5CT	10	10000	CAV	2 x 1-3/4	3-1/8	2-1/4 x 2-1/2	2.75
21F02P	16.70	2.5CT	10	7500	WAV	2-3/8 x 2-3/4	4-1/4	3 x 3/8	8.5
21F03	5.55	5 CT	3	2500	BAV	2-3/8	2-3/8	1-3/4 x 2-7/8	1.0
21F04	9.45	5 CT	8	2500	CAV	2 x 1-3/4	3-1/8	2-1/4 x 2-1/2	2.5
21F05	9.70	5 CT	3	10000	CAV	2 x 1-3/4	3-1/8	2-1/4 x 2-1/2	2.5
21F06	8.20	5 CT	13	2500	CAV	2 x 2	3-1/8	2-1/2 x 2-1/2	3.25
26F66	11.65	5 CT	15	2500	LAV	2 x 2-1/4	3-1/8	2-1/2 x 2-7/8	3.5
21F20	13.60	5 CT	15	10000	CAV	2-1/2 x 3	4-5/8	3-1/4 x 3-3/4	6.75
21F20P	28.85	5 CT	15	10000	WAV	3-3/4 x 4-5/8	5-3/4	4-5/8 x 5-3/8	13
21F07	15.55	5 CT	21	2500	CAV	2-1/4 x 2-1/2	3-7/8	2-3/8 x 2-5/8	5
21F07A	17.75	5 CT	29	2500	CAV	2-1/2 x 2-1/2	3-7/8	3-1/8 x 3-1/8	5.5
21F08	3.20	6.3CT	1	2500	BAV	2	2	1-1/2 x 2-3/8	1.0
21F09	3.20	6.3CT	1.2	2500	BAH	2-3/8	1-5/8	1-5/8 x 2-7/8	1.0
26F60	4.15	6.3CT	1.2	5000	BAH	2-7/8	2	2 x 3-1/4	1.25
21F10	5.15	6.3CT	3	2500	BAH	2-7/8	2	1-3/4 x 3-1/4	1.25
21F11	6.90	6.3CT	6	2500	CAV	1-3/4 x 2	3-1/8	2-1/2 x 2-1/2	2.75
21F12	9.45	6.3CT	10	2500	CAV	2 x 2	3-1/8	2-1/2 x 2-1/2	3.25
21F15	6.95	7.5CT	4	2500	BAV	2-7/8	2-3/4	2-1/8 x 3-3/8	2
21F16	10.00	7.5CT	8	2500	CAV	2 x 2	3-1/8	2-1/2 x 2-3/4	3.25
21F17	12.75	7.5CT	12	2500	CAV	2-1/4 x 2-1/4	3-1/2	2-7/8 x 3-1/4	5
21F26	44.15	7.5CT	51	8500	CTH	3-5/8 x 4-1/16	4-1/8	4-3/8 x 4-7/8	15
21F18	10.00	10 CT	5	2500	CAV	1-3/4 x 2	3-1/8	2-1/4 x 2-1/2	2.25
26F67	5.70	12.6CT	2	2500	BAH	2-7/8	2	2 x 3-1/4	1.0
26F68	5.45	24	1	2500	BAH	2-7/8	2	2 x 3-1/4	1.0
21F27	5.55	26.5CT	.6	3000	BAH	2-7/8	2	1-3/4 x 3-1/4	1.25

### MULTIPLE SECONDARY

PART NO	LIST PRICE	SECONDARY		RMS TEST	MTG TYPE	MTG CENTERS	DIMENSIONS		WEIGHT lbs.
		VOLTS	AMPS				H	W x D	
21F14	\$ 6.10	2.5or5or6.3	2.5	2500	BAH	2-7/8	2	1-3/4 x 3-1/8	1.5
21F22	14.45	5, 7.5or6.3or5	3 - 6	2500	GGV	2 x 2-1/2	3-7/8	3-1/4 x 3-1/4	5.5
21F19	16.35	10CT or 11 CT	12 - 11	2500	CAV	2-1/4 x 2-1/2	3-7/8	2-7/8 x 3-1/8	6.0
26F61	7.90	5 CT - 6.3	3 - 3.6	2500	BAH	3-5/8	2-1/2	2-1/8 x 4	2.5
21F23	13.90	5CT, 6.3CT	6 - 6	2500	GGV	2-1/4 x 2-1/2	4	3-1/4 x 3-3/8	4.8
26F63	7.90	6.3 - 6.3	3 - 3	5000	BAV	3-1/8	3	2-1/4 x 3-5/8	2.0
21F24	19.45	6.3-6.3-6.3	3-3-3	2500	GGV	2-1/4 x 2-1/2	4	3-1/4 x 3-3/8	5.0
26F69	10.00	6.3-6.3	3 - 6	2500	HKF	2-1/4 x 2-13/16	3-1/4	2-7/8 x 3-3/8	3.0
26F64	11.95	25 - 6.3 - 6.3	3206-1.2	2500	GGV	2 x 1-3/4	3-1/8	2-5/8 x 2-3/4	3.5

## CONTROL

### ISOLATION CONTROL 1:1-1 MULTI-PURPOSE

PART NO	LIST PRICE	PRI VOLTS	SEC VOLTS	VA RATING	MTG TYPE	MTG CENTERS	DIMENSIONS		WEIGHT lbs.
							H	W x D	
23V34	\$11.40	115/230	115/230	50	CTH	2-1/2 x 2-1/8	2-5/8	3 x 2-1/2	2.75
23V35	19.45	115/230	115/230	100	CTH	3-1/8 x 2-1/8	3-1/4	3-3/4 x 2-7/8	5
23V36	24.45	115/230	115/230	200	CTH	3-3/4 x 2-3/4	2-7/8	4-1/2 x 3-5/8	9
23V37	37.50	115/230	115/230	300	CTH	4-1/8 x 2-7/8	4-1/8	4-7/8 x 3-3/4	11
23V38	44.50	115/230	115/230	500	CTH	4-1/8 x 4-1/8	4-1/8	4-7/8 x 5	17
23V39	61.05	115/230	115/230	1000	CTH	5-3/8 x 4-1/2	5-3/8	6-3/8 x 5-1/2	23

### CONTROL and POWER CIRCUIT TRANSFORMERS

PART NO	LIST PRICE	SECONDARY VOLTS	VA RATING	MTG TYPE	MTG CENTERS	DIMENSIONS		WEIGHT lbs.
						H	W x D	
23V40	\$11.10	4, 8, 12, 16, 24	50	GGV	1-7/8 x 2-1/4	3-9/16	3 x 3-1/2	3
23V41	14.70	4, 8, 12, 16, 24	100	GGV	2-1/8 x 2-1/2	4	3-1/4 x 4	5
23V42	23.90	4, 8, 12, 16, 24	250	GGV	3-1/4 x 3	4-5/8	4 x 5	10

### ISOLATION TRANSFORMERS

PART NO	LIST PRICE	PRI VOLTS	SEC VOLTS	VA RATING	MTG TYPE	MTG CENTERS	DIMENSIONS		WEIGHT lbs.
							H	W x D	
23V25	\$22.20	105, 115, 125	115	100	GMV	2-3/4 x 2-5/8	4-1/4	3-1/2 x 3-7/8	6.25
23V26	44.50	105, 115, 125	115	300	PUV	2-3/4 x 6-1/4	6	4-3/4 x 7-1/8	18
23V27	85.60	105, 115, 125	115	1000	JUV	4-5/8 x 5-3/4	9-7/8	6-3/4 x 6-1/4	38

### AUTOFORMERS

PART NO	LIST PRICE	PRI VOLTS	SEC VOLTS	VA RATING	MTG TYPE	MTG CENTERS	DIMENSIONS		WEIGHT lbs.
							H	W x D	
23V21	\$ 11.95	220/250	110/125	100	GMV	1-3/4 x 2-1/2	3-7/8	3-1/4 x 2-7/8	3
23V22	15.25	220/250	110/125	150	GMV	2 x 2-1/2	3-7/8	3-1/4 x 3-1/8	4
23V23	19.45	220/250	110/125	250	GMV	2-3/8 x 3	4-5/8	3-7/8 x 3-1/2	6.2
23V24	25.55	220/250	110/125	500	GMV	3-3/8 x 3	4-5/8	3-7/8 x 4-1/2	10.25
23V32	59.00	220/250	110/125	1000	JUV	4-1/4 x 3-1/2	6-5/8	5 x 6-5/8	20



BAH BGV  
BAV BGV



CAH LAH  
CAV LAV



CTH CTV



GGV GTV



JUV



PUV



WAV







# TRANSFORMERS

## REPLACEMENT TRANSFORMERS

### OUTPUT TRANSFORMERS Receiver Replacement Type

To couple the plate or plates of the output stage to the speaker voice coil. Sec. impedance—3.5 ohms.

Type No.	List Price	Tube	Class	Pri. Impedance	Pri. M.A.	Max. Watts	Mtg. Centers	Dimensions			Mtg.
								H.	W.	D.	
A-3025	\$2.10	7A5, 35A5, 35C5, 50C5, 321.7, 351.6, 50B5	A	2500	50	3	1 3/4	1 1/8	2 1/8	3/8	A
A-3026	2.10	6V6, 7C5, 25AC5, 35A5, 35B5, 351.6	A	5000	40	3	1 3/4	1 1/8	2 1/8	3/8	A
A-2927*	2.20	Single 1C5-G, 1G5-G, 1G5, 184, 3Q4, 3Q5, 384, 6A4	A	8000	20	3	1 1/2	1 1/8	1 1/2	1	B
A-2928	2.50	Single 2A3, 6A3, 6B4, 6Y6, 25AC5, 25B6, 25N6, 25L6, 35A5, 35L6, 50L6, 48, 50B5, 35B5, 50A5	A	2000	60	5	2	1 1/8	2 1/8	1 1/4	A
A-3018	3.35	Single 6A3, 6L6, 6Y6, 7A5, 12A5, 25A6, 25B6, 25C6, 25L6, 50, 50A5, 50B5, 50C5, 50L6	A	3500	60	8	2 1/8	1 1/8	2 11/16	1 1/2	A
A-2930	2.60	Single 6V6, 7C5, 12A, 12A5, 25A6, 25A7, 35A5, 35L6, 31, 45, 50, 59	A	5000	40	5	2	1 3/8	2 3/8	1 1/4	A
A-3019	3.35	Single 6L6, 6V6, 6AQ5, 6AS5, 7C5, 25A6, 35A5, 35L6, 50	A	5000	50	8	2 1/8	1 1/8	2 11/16	1 1/2	A
A-2935	4.30	PP 6L6	A	5000 c.t.	150	18	2 11/16	1 1/8	3 1/4	1 3/8	A
A-2931	2.60	Single 2A5, 6AC5, 6B5, 6F6, 6K6, 6N6, 7B5, 20, 31, 42, 47, 50, 6V5	A	7000	30	5	2	1 3/8	2 3/8	1 1/4	A
A-3020	3.35	Single 2A5, 6AC5, 6AD7, 6AR5, 6B5, 6F6, 6K6, 6N6, 6Y7, 7B5, 12A6, 14A5, 41, 47	A	7000	40	8	2 1/8	1 1/8	2 11/16	1 1/2	A
A-2932	2.60	Single 1C5, 1Q5, 3C5, 6A4, 6G6, 6N7, 6R7, 12A, 38, 41, 49, 3V4	A	10000	30	5	2	1 3/8	2 3/8	1 1/4	A
A-2938	3.20	Single 19, 1G6, 1J6	B	10000 c.t.	40	5	2	1 3/8	2 3/8	1 1/4	A
A-2936	3.60	PP 1H4, 30, 49 PP 6AC5	B AB1	10000 c.t.	75	10	2 3/8	1 1/8	2 11/16	1 1/2	A
A-2933	2.80	Single 1D8, 7B5, 6K6, 6G6	A	12000	10	5	2	1 3/8	2 3/8	1 1/4	A
A-3021	4.30	PP2A5, 6E6, 6K6 PP6AD7, 47, 49	A B	14000 c.t.	35	12	2 11/16	2	3 1/4	1 3/8	A
A-2934	2.65	Single 6Y7, 6Z7, 79	B								
A-2937	3.20	Single 1D8, 1F4, 1F5, 1J5, 1T5, 6V7, 12A7, 85	A	15000	10	5	2	1 3/8	2 3/8	1 1/4	A
A-3017	3.45	Single 1A5, 1N6, 6V7, 85 PP 1E7, 1J5, 6G6, 3A4, 3V4 PP1A5, 1AC5, 1N6, 1LA4	A	25000 c.t. 50000 c.t.	10	5	2	1 3/8	2 3/8	1 1/4	A

\*Type B. Mounting.

### FILTER TAPPED OUTPUT TRANSFORMERS Pri. has 3% and 6% Humbucking Taps Sec. Impedance 3-4 ohms

Type No.	List Price	Tube	Class	Pri. Impedance	Pri. M.A.	Max. Watts	Mtg. Centers	Dimensions			Mtg.
								H.	W.	D.	
A-3031	\$3.05	Single 2A3, 6A3, 7A5, 25L6, 35A5, 35B5, 35L6, 45, 50B5, 50L6	A	3000	50	5	2	1 1/8	2 3/8	1 1/4	A
A-3032	3.05	Single 6V6, 6B5, 7C5, 6F6	A	6000	40	5	2	1 1/8	2 3/8	1 1/4	A

### SPECIAL OUTPUT TRANSFORMERS To Couple Push Pull Plates to Line or Voice Coil Sec. Impedance 2-4-8-15-250-500 ohms

Type No.	List Price	Tube	Class	Pri. Impedance	Pri. M.A. per Side	Max. Watts	Mtg. Centers	Dimensions			Mtg.
								H.	W.	D.	
A-3027	\$7.35	PP2A5, 6V6, 7C5, 19, 6F6 PP1H4G, 1J6, 6AC5, 49	A AB1	10000 c.t.	45†	15	2 11/16	2	3 1/4	1 1/4	F
A-3028	8.35	PP6L6 PP2A3	B A1 AB1	5000 c.t.	70†	20	3 1/8	2 1/16	3 11/16	2	F

† Pri. M. A. Per Side.

### TRANSISTOR TRANSFORMERS Sub-Miniature Types—Open Mounting

Type No.	List Price	Function	Ohms Impedance		D.C. Resistance		Pri. Ma.	M. W. Level	Size		
			Pri.	Sec.	Pri.	Sec.			H.	W.	D.
A-2700 *	\$3.60	Output	10000	16	640	2.7	2	20	3 1/4	5/8	5/8
A-2720	10.00	Input	200000	1000	2800	145	0	1	1 1/2	3/8	3/8
A-2740	9.00	Interstage	20000	1000	1400	210	0.5	1	1 1/2	3/8	3/8
A-2741	7.00	Interstage	20000	1000	1100	109	0.5	1	1 1/2	3/8	3/8
A-2760	6.50	Output	1000	50/60	116	7	3	1	1 1/2	3/8	3/8

\* A Type Midget Mounting.



# TRANSFORMERS

## UNIVERSAL LINE TRANSFORMERS To Couple Various Line Impedances to a Voice Coil

Type No.	List Price	Ohms Impedance		Watts	Mtg. Centers	Dimensions			Mtg.
		Pri.	Sec.			H.	W.	D.	
A-2810	\$4.70	500-1000-1500-2000	3.2, 4.8, 6, 8	10	2 3/8	1 5/8	2 1/8	1 1/2	F
A-2811	5.40	500-1000-1500-2000	3.2, 4.8, 6, 8	18	2 3/8	2 1/8	2 1/8	1 1/2	F
A-2812	5.95	500-1000-1500-2000	3.2, 4.8, 6, 8	25	2 1/2	2 5/8	3 1/8	1 5/8	G
A-2813	4.15	2500-5000-7000-10,000	4.8, 6, 8	5	2	1 1/4	2 3/8	1 3/8	F
A-2814	5.00	31-62-125-250	4.8, 6, 8	20	2 3/8	2 1/4	2 1/8	1 5/8	F
A-2906	3.90	500-1000-1500-2000	3.2, 6-8	10	2 3/8	1 5/8	2 1/8	1 3/8	F
A-2907	5.85	500-1000-1500-2000	3.2, 6-8	18	2 3/8	2 1/8	2 7/8	1 7/8	F
A-2908	6.25	500-1000-1500-2000	6-8, 16	24	3 1/8	2 1/4	3 1/8	2 3/8	F
A-2909	3.35	15-50	3.2, 6-8	8	2	1 3/8	2 1/8	1 3/8	G
A-3005	3.05	500	3.2, 6-8	5	2	1 3/8	2 3/8	1 1/4	A

## CONSTANT VOLTAGE LINE TRANSFORMERS

For Use With Constant 70.7V. Line as Recommended by the RMA. Rated Power is Furnished on Lowest Tap. Other Taps Provide Reduction in Power in Steps of 3DB.

A-3013	\$4.25	1000-2000-4000-8000-16000	3.5, 7	5	2	1 5/8	2 3/8	1 1/4	F
A-3014	4.60	500-1000-2000-4000-8000	4-8-16	10	2 3/8	1 5/8	2 1/8	1 1/2	F
A-3015	6.40	275-550-1100-2200-4400-8800	4-8-16	18	2 3/8	2 1/8	2 3/4	1 5/8	F
A-3016	6.95	210-420-840-1680-3360-6720	4-8-16	24	3 1/8	2 1/4	3 1/8	2 3/8	F

For Use With Constant 70.7 V. Line. Full Power Furnished on Lowest Tap. Other Taps Provide Reduction in Steps of One Watt.

A-2800	\$4.45	1000-1250-1600-2500-5000	3.2, 8	1-5	2	1 3/8	2 3/8	1 3/8	F
A-2801	4.30	500-555-625-715-833	3.2, 8	6-10	2 3/8	1 5/8	2 13/16	1 1/2	F
A-2802	4.70	335-357-384-417-435	8, 16	11-15	2 13/16	2	3 1/4	1 5/8	F
A-2803	5.15	250-263-278-294-312	8, 16	16-20	2 3/8	2 1/4	2 13/16	2 7/8	G
A-2804	5.55	200-208-217-227-238	8, 16	21-25	2 5/8	2 5/8	3 1/16	1 7/8	G

## TUBE TO LINE TRANSFORMERS For Coupling Single or Push-Pull Plates to Line or Mixer

Type No.	List Price	Ohms Impedance		Pri. M.A.	Mtg. Centers	Dimensions			Mtg.
		Pri.	Sec.			H.	W.	D.	
A-2925	\$ 5.55	20000 c.t.	500/125	10	2 13/16	2	3 1/4	1 3/8	A
A-2926	5.55	20000 c.t.	200/50	10	2 13/16	2	3 1/4	1 5/8	A
†A-3023	5.55	5000-10000-20000 c.t.	500 333 /200 /125 /50	15	2 13/16	2	3 1/4	1 5/8	F
†A-3024	12.20	5000-10000-20000 c.t.	500 333 /200 /125 /50	50	2 x 1 13/16	3 3/4	2 3/8	2 3/4	DL

†20,000 ohm center tapped.

## INTERSTAGE TRANSFORMERS To Couple a Single Plate to a Single Grid

Type No.	List Price	Ohms Impedance		Turns Ratio	Pri. M.A.	Mtg. Centers	Dimensions			Mtg.
		Pri.	Sec.				H.	W.	D.	
A-2910	\$3.35	10000	90000	3:1	10	2	1 1/4	2 3/8	1 1/4	A
A-2911	3.75	10000	90000	3:1	10	2 3/8	1 3/8	2 1/8	1 1/2	A

### To Couple a Single Plate to Push-Pull Grids

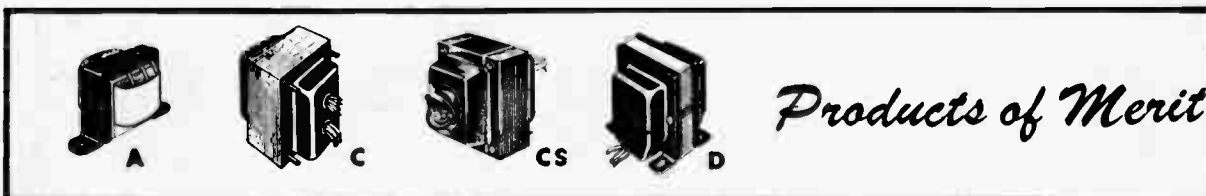
A-2914	\$3.45	10000	90000 c.t.	3:1	10	2	1 3/4	2 3/8	1 1/4	A
A-2915	3.75	10000	90000 c.t.	3:1	10	2 3/8	1 5/8	2 1/8	1 1/2	A
A-2916	4.85	10000	90000 c.t.	3:1	10	2 13/16	2	3 1/4	1 5/8	A

### To Couple Push-Pull Plates to Push-Pull Grids

A-2912	\$6.25	10000 c.t.	90000*	3:1	10 per side	2 13/16	2	3 1/2	1 3/8	A
A-2913	4.70	20000 c.t.	20000 c.t.	1:1	10 per side	2 5/8	1 5/8	2 13/16	1 1/2	A
A-2917	5.55	20000 c.t.	45000 c.t.	1.5:1	10 per side	2 13/16	2	3 1/4	1 5/8	A

\*Split secondary.

All prices subject to trade discount, and change without notice.



*Products of Merit*



# TRANSFORMERS

## VIBRATOR TRANSFORMERS For Operation from 6 V. Battery and Vibrator

Type No.	List Price	Sec. DC Volts to Filter	Sec. M.A.	Dimensions			Mtg.
				H.	W.	D.	
P-2969	\$5.25	150	40	2 1/4	2 7/8	1 3/4	B
P-2970	5.75	225	40	2 5/8	3 5/8	2 1/8	B
P-2971	6.00	250	50	2 3/8	3 1/8	2 1/4	B
P-2972	6.90	260	60	3	3 5/8	2 1/8	B
P-3068	5.00	260	60	2 1/2	2 5/8	1 7/8	B
P-4071	7.50	250	50	3	2 3/8	2 5/8	C
P-4076	7.00	265	55	3 1/4	2 5/8	2 5/8	JT
P-4077	7.50	280	65	3 1/8	2 1/4	2 5/8	JT
P-4078	6.90	270	60	2 3/8	2 5/8	2 5/8	JT
P-4079	8.90	270	75	3 1/8	2 5/8	2 1/2	JT

## For Use with AC-DC Battery Portable Receivers—Sec. Impedance

### DUAL PRIMARY OUTPUT TRANSFORMERS 3-4 ohms

Type No.	List Price	Tube	Class	Pri. Impedance	Pri. M.A.	Max. Watts	Mtg. Centers	Dimensions			Mtg.
								H.	W.	D.	
A-3029	\$3.05	Single 25A C5, 25B6, 25L6, 25N6, 35A5, 35B5, 35L6, 50A5, 50B5, 50L6 OR	A	2000 or	60 or	5	2	1 1/2	2 3/8	1 1/4	A
A-3030	3.05	Single 1S4, 1Q5, 3Q4, 3Q5, 3V4 Single 25A C5, 25B6, 25L6, 25N6, 35A5, 35L6, 50A5, 50B5, 50L6 OR Single 1S4, 1Q5, 3Q4, 3Q5, 3V4	A A A	6000 or 2000 or 10000	10 or 60 or 10	5	2	1 1/2	2 3/8	1 1/4	A

## To Provide Correct Coupling Between a Variety of Output Tubes and Any Speaker Voice Coil

### UNIVERSAL OUTPUT TRANSFORMERS

Type No.	List Price	Tube	Ohms Impedance Pri.	Sec.	Pri. M.A.	Max. Watts	Mtg. Centers	Dimensions			Mtg.
								H.	W.	D.	
A-2900	\$3.35	Single or Push-pull	4000-7000-8000-10000-14000 c.t.	.17 to 32	35	4	2	1 1/2	2 3/8	1 1/4	F
A-2901	3.75	Single or Push-pull	4000-7000-8000-10000-14000 c.t.	.17 to 32	40	8	2 3/8	1 1/2	2 3/8	1 1/4	F
A-2902	3.75	Single	1500-2000-4000-5000-7000-10000	.1 to 40	55	10	2 3/8	1 1/2	2 3/8	1 1/4	F
A-2903	3.35	Single	2000-4500-7000-10000	3.2	30	4	2	1 1/2	2 3/8	1 1/4	F
A-2904	4.70	Single or Push-pull	4000-7000-8000-10000-14000 c.t.	.17 to 32	40	18	2 3/8	2 1/4	2 3/8	1 1/4	G
A-2905	6.10	Single or Push-pull	3000-5000-7000-8000-10000 c.t.	.17 to 32	70	24	3 1/8	2 1/4	3 1/8	2 1/4	F
A-2998	2.90	Single	3500-5000-7000-10000	3.2	35	3	1 3/4	1 1/2	2 1/8	1 1/4	F
A-2999	3.05	Single	12000-15000-18000-25000	3.2	10	3	1 1/2	1 1/2	2 1/8	1 1/4	F

## High Level Type to Couple to Line or Speaker. Sec. Impedance:

### HEAVY DUTY OUTPUT TRANSFORMERS 4-8-15-250-500 ohms

Type No.	List Price	Tube	Class	Pri. Impedance	Pri. M.A. per Side	Max. Watts	Dimensions			Mtg.
							H.	W.	D.	
A-3127	\$ 9.05	Single 6L6, 2A3, 6A3, 6Y6	A	2500	80	8	3 1/2	2 3/8	2 1/2	D
A-3128	13.05	PP6V6, 6F6	AB1	8000 c.t.*	50	14	3 1/2	2 15/16	3 3/8	D
A-3129	12.50	PP6L6	AB1	4300 c.t.*	95	25	3 1/2	2 15/16	3 3/8	D
A-3130	13.35	PP6L6	AB1	6600 c.t.*	80	34	3 1/2	3 3/8	3 3/8	D
A-3131	11.10	PP6L6, 6Y6, PP2A3, 6A3, 6B4, 45, PP6N7, 46	AB A B	5000 c.t.	80	30	3 3/4	2 15/16	3 3/8	D
A-3132	11.95	PP6F6, 2A5, 7C5, Single 6N7, 6A6	AB2 B	10000 c.t.	40	25	3 1/2	2 15/16	3 3/8	D
A-3133	18.90	P.P. Par. 6L6, P.P. 807	AB1	3300 c.t.	240	55	4 3/4	3 15/16	4	D†

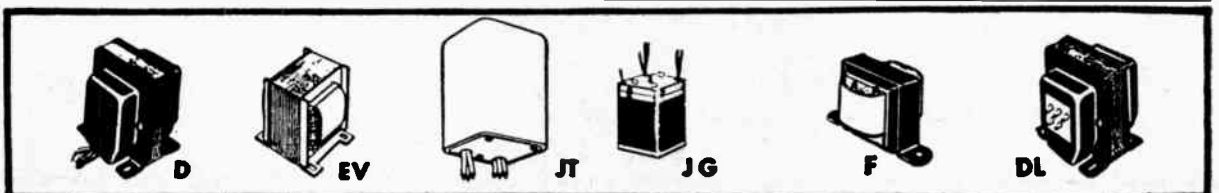
\* 10% Feedback Winding. † Mtg. Centers 3 x 2 15/16.

### OUTPUT TRANSFORMERS—HIGH FIDELITY TYPE Frequency Response ± 1 DB 20-20000 Cycles

Type No.	List Price	Tube	Sec.	Turns Ratio	Mtg. Centers	H.	W.	D.	Mtg.
A-3100	\$21.10	PP2A3, 6A5G, 275A, 6A3, 6L6, etc.	5000 and 3000 c.t.	4-8-16	20	3 3/8	3 3/8	3 3/8	D
A-3101	21.10	PP6F6, 6L6, 6V6, etc.	10000 and 6000 c.t.	4-8-16	20	4 1/4	3 1/2	3 3/8	D

### INPUT TRANSFORMERS For Coupling Microphone or Line to Single or Push-Pull Grids. Static Shielded.

Type No.	List Price	Ohms Impedance		Turns Ratio	Mtg. Centers	Dimensions			Mtg.
		Pri.	Sec.			H.	W.	D.	
A-2929	\$3.35	100	60000	1:24	1 1/4	1 1/8	2 1/8	7/8	A
A-2923	3.45	3.2	50000	1:125	2	1 3/8	2 3/8	1 1/4	A
A-2918	5.40	100	40000 c.t.	1:64	2 1/8	2	3 1/4	1 3/8	A
A-2919	5.30	200/50	100000 c.t.	1:22	2 1/8	2	3 1/4	1 3/8	A
A-2924	5.70	500/125	100000 c.t.	1:14	2 1/8	2	3 1/4	1 3/8	A





# TRANSFORMERS

## INDUSTRIAL—AMATEUR

**PLATE TRANSFORMERS** For Small Transmitters. DC Voltage Ratings are Approx. Values Obtained at Output of a 2 Section Choke Input Filter Using Mercury Vapor Rectifier Tubes. Pri. is for 115 V. 60 cy.

Type No.	List Price	Sec. Rms. Volts	Sec. DC Volts	DC Sec. M.A.	Dimensions			Mtg.
					H.	W.	D.	
P-3178	\$12.50	415-415	300	200	3 $\frac{7}{8}$	3 $\frac{1}{4}$	3 $\frac{5}{8}$	D
P-3175	12.50	550-550	400	150	3 $\frac{1}{4}$	3	3 $\frac{3}{8}$	D
P-3157	18.45	(660-660)†	500	250	4 $\frac{3}{8}$	3 $\frac{3}{8}$	4 $\frac{1}{2}$	D
P-3158	22.90	550-550	400	125	4 $\frac{3}{8}$	3 $\frac{1}{4}$	5	D
		(1080-1080)	1000 ‡					
P-3159	21.95	500-500	400	150	4 $\frac{3}{8}$	3 $\frac{1}{4}$	5 $\frac{1}{2}$	D
		(900-900)	750	225				
P-3167	47.75	800-800	600	300	5 $\frac{1}{4}$	6 $\frac{1}{2}$	5	EH
		(1150-1150)	1200					
P-3168	61.10	1175-1175	1000	300	5 $\frac{1}{4}$	6 $\frac{1}{2}$	6	EH
		(2100-2100)	1750					
P-4062	88.85	1800-1800	1500	300	8 $\frac{1}{4}$	6 $\frac{1}{2}$	6 $\frac{1}{4}$	H
		(2900-2900)	2500					
		(2385-2385)	2000					

†For dual operation with simultaneous use of both sec. ratings. ‡Has 40-volt bias tap.  
Max. one winding only 275 ma. All prices subject to trade discount, and change without notice.

### FILTER CHOKES For Small Transmitter and Amplifier Applications

Type No.	List Price	Inductance Henries	Current Rating M.A.	DC Res. Ohms	Volts Insul.	Dimensions			Mtg.
						H.	W.	D.	
C-3192	\$6.95	15	85	325	1500	3 $\frac{1}{4}$	2 $\frac{1}{4}$	2 $\frac{3}{8}$	D
C-3193	6.40	10	110	200	1500	3 $\frac{1}{2}$	2 $\frac{3}{8}$	2 $\frac{3}{8}$	D
C-3194	7.65	12	150	230	1500	3 $\frac{1}{2}$	2 $\frac{3}{8}$	3 $\frac{1}{4}$	D
C-3195	10.85	15	150	180	2000	3 $\frac{1}{2}$	3 $\frac{1}{4}$	3 $\frac{3}{8}$	D
C-3196	8.35	5	200	80	1500	3 $\frac{1}{2}$	2 $\frac{1}{4}$	3 $\frac{3}{8}$	D

### FILTER SMOOTHING CHOKES For Transmitter Power Supplies

C-3180	\$7.20	10	150	210	3000	3 $\frac{1}{4}$	2 $\frac{1}{4}$	2 $\frac{13}{16}$	D
C-3181	9.45	10	200	140	3000	3 $\frac{1}{2}$	2 $\frac{15}{16}$	3 $\frac{1}{2}$	D
C-3182	12.75	10	250	125	3000	3 $\frac{1}{2}$	3 $\frac{1}{4}$	3 $\frac{3}{8}$	D
C-3183	12.75	8	300	80	3000	3 $\frac{1}{2}$	3 $\frac{1}{4}$	3 $\frac{3}{8}$	D

### FILTER INPUT OR SWINGING CHOKES

C-3187	\$7.35	4-16	150	210	3000	3 $\frac{1}{4}$	2 $\frac{1}{4}$	2 $\frac{13}{16}$	D
C-3188	9.85	4-16	200	140	3000	3 $\frac{1}{2}$	2 $\frac{15}{16}$	3 $\frac{1}{2}$	D
C-3189	12.20	4-16	250	125	3000	3 $\frac{1}{2}$	3 $\frac{1}{4}$	3 $\frac{3}{8}$	D
C-3190	12.75	3-11	300	80	3000	3 $\frac{1}{2}$	3 $\frac{1}{4}$	3 $\frac{3}{8}$	D

### VIBRATOR TRANSFORMERS For Operation From 12 V. Battery and Vibrator

Type No.	List Price	Sec. Rms. Volts	Sec. D. C. Volts to Filter	Sec. D.C. M.A.	Mtg. Centers	Dimensions			Mtg. Type
						H.	W.	D.	
P-2860	\$6.10	235-235	225	50	2 $\frac{15}{16}$	2 $\frac{11}{16}$	1 $\frac{15}{16}$	B	
P-2861	7.10	260-260	250	60	1 $\frac{3}{4}$ x 2 $\frac{1}{8}$	2 $\frac{3}{8}$	2 $\frac{5}{8}$	CO	
P-2978	6.10	275-275	260	60	1 $\frac{3}{4}$ x 2 $\frac{1}{8}$	2 $\frac{3}{8}$	2 $\frac{5}{8}$	CO	
P-4051*	8.90	280-280	265	65	.....	3 $\frac{1}{2}$	2 $\frac{5}{8}$	JG	
P-4052*	9.60	290-290	280	65	.....	3 $\frac{3}{8}$	2 $\frac{1}{4}$	JT	

\* Built-in hash filter.

### AC-DC VIBRATOR TRANSFORMER For Operation from 6 V. Battery and Vibrator or 115 V. 60 cy. Line

Type No.	List Price	H.V. Secondary		Filament		Dimensions			Mtg.
		DC Volts	MA	Volts	Amps	H.	W.	D.	
P-3176	\$19.15	300	160	6.3 or 5	3	4 $\frac{3}{8}$	3 $\frac{15}{16}$	4 $\frac{1}{4}$	D
P-3075	13.45	330	100	6.3	4.5	3 $\frac{1}{8}$	3 $\frac{1}{8}$	3 $\frac{3}{8}$	D
				6.3	4				

Primary for 117 V. 60 Cy. Line or 4 V. Battery Vibrator (or Charger Winding)

Type No.	List Price	Secondary		Mtg. Centers	Dimensions			Mtg.
		AC Volts	DC M.A.		H.	W.	D.	
P-3065	\$8.90	1100	1.5	2 $\frac{11}{16}$	2 $\frac{5}{8}$	3 $\frac{1}{8}$	2	B

### STEP-DOWN AUTOTRANSFORMERS Input 220-250 V. 60 cy. Output 110-125 V. Pri. Cord and Plug. Sec. Receptacle.

Type No.	List Price	Output Watts	Dimensions			Mtg.
			H.	W.	D.	
P-3161	\$11.40	80	3 $\frac{1}{2}$	2 $\frac{15}{16}$	3	D
P-3162	15.25	150	3 $\frac{3}{8}$	3 $\frac{1}{4}$	3 $\frac{3}{8}$	D
P-3163	19.70	250	4 $\frac{3}{8}$	3 $\frac{15}{16}$	4	D
P-3164	25.00	500	4 $\frac{5}{8}$	3 $\frac{15}{16}$	4 $\frac{3}{8}$	D
P-4065	61.10	1000	7 $\frac{1}{4}$	6 $\frac{1}{4}$	5 $\frac{5}{8}$	H



# IF-RF COILS

## CHOKES

### SHIELDED IRON CORE\*

Type No.	List Price	Inductance MH	Current M.A.	Resistance Ohms	Mtg.
BC-538	\$1.40	.5	125	8.6	S
BC-539	1.50	1.0	125	11.5	S
BC-540	1.55	2.5	125	22.0	S
BC-541	1.70	5.0	125	31.0	S
BC-542	1.75	7.5	125	42.0	S
BC-543	1.80	10.0	125	47.0	S
BC-544	2.15	25.0	125	100.0	S
BC-545	2.30	50.0†	100	160.0	S
BC-546	2.60	75.0†	100	222.0	S
BC-547	2.85	100.0†	100	348.0	S
BC-548	3.15	150.0†	100	520.0	S

\* 1 1/4" Mtg. Centers Dimen. 1 1/4" Dia. x 1 1/8".

† 1 1/4" Mtg. Centers Dimen. 1 7/8" Dia. x 1 1/8".

### FILAMENT\*

Type No.	List Price	Inductance UH	Current Amps	Resistance Ohms	Mtg.
BC-537	\$0.75	10.0	8	.02	E

\* Mounted with leads. Dimen.—3/4" Dia. x 1 1/8".

## SHORT WAVE

### IF TRANSFORMERS

Type No.	List Price	Description	Freq.	Mtg. Center	Dimensions	Mtg.
SW-600	\$2.40	Input	1400-1600*	1 1/8"	1 3/8 x 1 3/8 x 2 5/8"	I
SW-601	2.40	Interstage	1400-1600*	1 1/8"	1 3/8 x 1 3/8 x 2 5/8"	I
SW-602	2.50	Interstage (Miniature)	1400-1600 †	3/8"	3/4 x 3/4 x 2"	K
SW-603	2.50	Output (Miniature)	1400-1600*	3/8"	3/4 x 3/4 x 2"	K
SW-604	2.65	Input Midget	1400-1600*	1 1/8"	1 3/8 x 1 3/8 x 2"	I
SW-605	2.65	Interstage Midget	1400-1600*	1 1/8"	1 3/8 x 1 3/8 x 2"	I
SW-606	2.65	Full Wave Output	1400-1600*	1 1/8"	1 3/8 x 1 3/8 x 2"	I
SW-607	2.65	Half Wave Output	1400-1600*	1 1/8"	1 3/8 x 1 3/8 x 2"	I

\* Capacity Tuned.

† Permeability Tuned.

### SW CHOKES

Type No.	List Price	Description	Ohms	Micro Henries	Dimensions	M.A.	Mtg.
SW-630	\$0.70	Choke	.07	2.5	3/4" Dia. x 1 1/4"	200	P
SW-631	.70	Choke	.25	5.0	3/4" Dia. x 1 1/2"	200	P

### RF—ANTENNA—OSCILLATORS—Miniature Type

Type No.	List Price	Description	Freq.	Mtg.	Dimensions	Mtg.
SW-620	\$1.75	Antenna	2.1-6.3 MC	Clip	3/4 x 3/4 x 2"	K
SW-621	1.75	RF	2.1-6.3 MC	Clip	3/4 x 3/4 x 2"	K
SW-622	1.75	Oscillator*	2.1-6.3 MC	Clip	3/4 x 3/4 x 2"	K

\*1600 MMF Series pad.

*Products of Merit*



# TRANSFORMERS

## TV AUTOTRANSFORMER Provides TV picture tube booster voltage.

Type No.	List Price	Input Volts	Output		Mtg. Centers	Dimensions			Mtg.
			Volts	Amps.		H	W	D	
P-3098	\$3.20	6.3	12.6 taps at 9.45-6.3		2 7/8	1 5/8	2 11/8	1 1/4	A

## INDUSTRIAL—AMATEUR

### OUTDOOR TYPE UNIVERSAL LINE TRANSFORMER To Couple Various Line Impedances to a Voice Coil Universal Mounting Bracket

Type No.	List Price	Ohms Impedance		Watts	Mtg. Center Case	Dimensions			Mtg. Type
		Primary	Sec.			H.	W.	D.	
A-4040	\$19.45	250-500-1000-1500-2000		8	2 3/4 x 3 3/8	4 1/2	4 1/8	3 5/8	JO
A-4041	19.45	250-500-1000-1500-2000		12		4 1/2	4 1/8	3 5/8	JO
A-4042	20.85	250-500-1000-1500-2000		25		4 1/2	4 1/8	3 5/8	JO

### DRIVER TRANSFORMERS To Couple Driver Plate to Amplifier Grids

Type No.	List Price	Driver	Output	Ratio, Pri. to 1/2 Sec.	Class	Pri. M.A.	Mtg. Centers	Dimensions			Mtg.
								H.	W.	D.	
A-2920	\$3.75	6C5, 1H4, 30, 49	Single 1J6, 19, Push-pull 30, 49	2.5:1	B	10	2 3/8	1 3/8	2 11/8	1 1/2	A
A-2921	5.15	6F6, 2A5, 42	PP6F6, 2A5, 6L6	1.7:1, 1.5:1, 1.3:1	AB	35	2 15/8	2	3 1/4	1 3/8	A
A-2922	5.85	6A6, 6C5, 6N7, 46	Single 6A6, 6N7, Push-pull 46	5:1, 4:1, 3:1, 2.5:1	B	20	2 15/8	2	3 1/4	1 3/8	A
A-3120	15.00	500 ohm line	Class B Grids 15 Watt Capacity	1:1.75, 1:1.85, 1:1.1, 1:1.25, 1:1.45, 1:1.75, 1:2, 1:2.25, 1:2.5, 1:2.75, 1:3	B	-----	2 3/4 x 2	3 3/8	2 3/8	3 3/8	DL
A-3121	16.95	500 ohm line	Class B Grids 30 Watt Capacity		B	-----	2 3/4 x 2 3/4	3 3/8	3	3 3/8	DL
A-3123	9.15	PP6A6, 53, PP6C5, 6N7, 6J5	PP6N7, 6A6, 53, PP6L6, T21	5:1*	B AB <sub>2</sub>	15	2 x 1 11/8	3 3/8	2 3/8	2 3/8	D
A-3124	8.05	6F6, 46, 59, 2A5, 42	PP46, 59, PP6L6, 807	2.2:1	B AB <sub>2</sub>	30	2 x 1 11/8	3 3/8	2 3/8	2 3/8	D
A-3125	10.25	6F6, 2A5, 47, 42, PP2A3, 6L6, 45, 6V6, 6F6	PP6L6	1.4:1*	AB <sub>2</sub>	40	2 3/4 x 2	3 1/2	2 15/8	3 1/2	D
A-3126	8.90		PP800, 203A, 811, 812, 812A, RK18, RK58, T20, TZ40, T55, 807, 809, 838, 845, 35, 100TH	2:1	B	40	2 x 1 11/8	3 3/8	2 3/8	2 3/8	D

\* Split secondary.

### MODULATION TRANSFORMERS For Specific Applications

Type No.	List Price	Output Tubes	Ohms Impedance		Max. M.A.		Watts	Dimensions			Mtg.
			Pri.	Sec.	Pri.	Sec.		H.	W.	D.	
A-3007	\$4.15	19, 1J6, 2E30, 6A6, 6N7, etc.	10,000 c.t.	10000	60	50	5	1 13/8	2 1/8	7/8	D
A-3008	6.10	PP6AV5, 6V6, 6F6, Single 6A6, 6N7, 53	10000 c.t.	18000-50000 4000-5000 7500-10000	70	60	10	2 1/4	2 3/8	2 1/8	B
A-3109	11.40	PP2A3, 6A3, 6B4, 6L6, 45, 46, 59	6000 c.t. 3800 c.t. 3000 c.t.	12000 5000-8000 10000	80	100	25	3 1/8	2 3/8	2 3/4	D
A-3110	16.65	PP6L6, 807, RK41, HY56, HY61, HK24	6600-3800 c.t.	4000-5000 7500-10000 12000	175	150	60	4 1/4	3 1/2	3 3/4	D
A-3113	28.60	PP 800, 809, TZ-40, T-55, HK-54, RK-31, HY-40, 811A, 807, 812A, 5514	15000-6900c.t.	3000-4000 5000-6000	250	300	175	4 3/8	3 13/8	5 3/8	D

### UNIVERSAL MODULATION TRANSFORMERS Tapped Series-Parallel Coils Provide a Wide Range of Modulation Ratios

Type No.	List Price	Pri. Impedance	Pri. M.A. per Side	Sec. Impedance	Max. Sec. M.A. †	Watts	Dimensions			Mtg.
							H.	W.	D.	
A-3104	\$12.75	2000-20000	50	2000-20000	50/100	15	3 3/8	2 1/2	2 5/8	DL
A-3105	19.85	2000-20000	150	2000-20000	150/300	60	3 7/8	3 1/2	4 1/8	DL
A-3106	25.00	2000-20000	220	2000-20000	220/440	125	4 5/8	3 3/4	4 3/8	DL

†Series/Parallel

*Products of Merit*

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TRADE DISCOUNT APPLIES TO LIST PRICES ONLY

The MASTER—22nd Edition

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# IF-RF COILS

## BROADCAST

### RF—ANTENNA—OSCILLATOR (Permeability Tuned) Univ. Replac.

Type No.	List Price	Description	Mtg.	Cond. Max.	Dimensions	Mtg.
BC-380	\$2.20	Antenna	L Bracket	250 450-MMF	$\frac{7}{8}$ " Dia. x 2	B
BC-381	2.20	Oscillator*	L Bracket	250-450-MMF	$\frac{7}{8}$ " Dia. x 2	B
BC-382	2.20	RF	L Bracket	250-450-MMF	$\frac{7}{8}$ " Dia. x 2	B
BC-383	2.75	Antenna (Shielded)	$1\frac{3}{8}$ " Centers	250-450-MMF	$1\frac{3}{8}$ " x $1\frac{3}{4}$ " x $2\frac{1}{2}$ "	A
BC-384	2.75	Oscillator* (Shielded)	$1\frac{3}{8}$ " Centers	250-450-MMF	$1\frac{3}{8}$ " x $1\frac{3}{4}$ " x $2\frac{1}{2}$ "	A
BC-385	2.75	RF (Shielded)	$1\frac{3}{8}$ " Centers	250-450-MMF	$1\frac{3}{8}$ " x $1\frac{3}{4}$ " x $2\frac{1}{2}$ "	A
BC-386	2.20	Antenna	$\frac{1}{2}$ " Hole	365 MMFD	$\frac{1}{2}$ " Dia. x $1\frac{1}{2}$ "	Q
BC-387	2.20	Oscillator†	$\frac{1}{2}$ " Hole	365 MMFD	$\frac{1}{2}$ " Dia. x $1\frac{1}{2}$ "	Q
BC-388	2.20	R.F.	$\frac{1}{2}$ " Hole	365 MMFD	$\frac{1}{2}$ " Dia. x $1\frac{1}{2}$ "	Q

\*Used with any "IF" (100 to 550 KC) Tapped Pri. and Sec. †Used with any "IF" (100 to 550 KC) Tapped Sec.

### MINIATURE (IRON CORE) TYPE K

Type No.	List Price	Description	Operating Freq. KC	Cond. Size	Dimensions	Mtg.
BC-390	\$1.75	Antenna†	540-1700	365 MMF	$\frac{3}{4}$ " x $\frac{3}{4}$ " x 2	Spring Clips
BC-391	1.75	RF	540-1700	365 MMF	$\frac{3}{4}$ " x $\frac{3}{4}$ " x 2	Spring Clips
BC-392	1.75	Oscillator†	540-1700	365 MMF	$\frac{3}{4}$ " x $\frac{3}{4}$ " x 2	Spring Clips

†Tapped Secondaries

### MIDGET—OSCILLATORS (Screw Mounting) (For use with 365 MMF Cond.)

Type No.	List Price	Description	Operating Freq.	Dimensions	Mtg.
BC-394	\$2.00	Oscillator♦	530-1720 KC	$\frac{3}{8}$ " Dia. x $1\frac{1}{4}$ " High	V
BC-395	1.15	Oscillator	175 KC	1" Dia. x 1" High	L
BC-396	1.15	Oscillator	262 KC	1" Dia. x 1" High	L
BC-397	1.15	Oscillator	435 KC	1" Dia. x 1" High	L
BC-398	1.15	Oscillator (Autoformer)	175 KC	1" Dia. x 1" High	L
BC-399	1.15	Oscillator (Autoformer)	262 KC	1" Dia. x 1" High	L
BC-400	1.15	Oscillator (Autoformer)	435 KC	1" Dia. x 1" High	L

♦ Used with any IF (100-550 KC) mounted with leads.

### BEAT FREQUENCY OSCILLATORS (Capacity Tuned) Type M

Type No.	List Price	Frequency Range	IF Freq.	Dimensions	Mtg. Centers
BC-430	\$2.65	165-185 KC	175 KC	$1\frac{3}{8}$ " x $1\frac{3}{8}$ " x $3\frac{1}{2}$ "	$\frac{3}{8}$ "
BC-431	2.50	250-275 KC	202 KC	$1\frac{3}{8}$ " x $1\frac{3}{8}$ " x $3\frac{1}{2}$ "	$\frac{3}{8}$ "
BC-432	2.50	450-475 KC	455 KC	$1\frac{3}{8}$ " x $1\frac{3}{8}$ " x $3\frac{1}{2}$ "	$\frac{3}{8}$ "
BC-433	2.50	500-550 KC	525 KC	$1\frac{3}{8}$ " x $1\frac{3}{8}$ " x $3\frac{1}{2}$ "	$\frac{3}{8}$ "
BC-434	2.50	1500-1600 KC	1500 KC	$1\frac{3}{8}$ " x $1\frac{3}{8}$ " x $3\frac{1}{2}$ "	$\frac{3}{8}$ "

### TRF UNITS

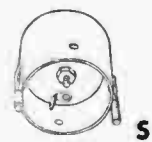
Type No.	List Price	Description	Freq. Range	Dimensions	Mtg.
BC-410	\$1.25	Antenna†	540-1700 KC	$1\frac{3}{8}$ " Dia. x 2	N
BC-411	1.25	RF†	540-1700 KC	$1\frac{3}{8}$ " Dia. x 2	N
BC-412	1.10	Antenna†	540-1700 KC	$\frac{3}{8}$ " Dia. x $2\frac{1}{2}$ "	N
BC-413	1.10	RF†	540-1700 KC	$\frac{3}{8}$ " Dia. x $2\frac{1}{2}$ "	N
BC-414	1.10	Band—Pass†	540-1700 KC	$\frac{3}{8}$ " Dia. x $2\frac{1}{2}$ "	N
BC-415	1.35	Antenna (Shielded)*	540-1700 KC	$1\frac{3}{8}$ " x $1\frac{3}{8}$ " x $2\frac{1}{2}$ "	A
BC-416	1.35	RF (Shielded)*	540-1700 KC	$1\frac{3}{8}$ " x $1\frac{3}{8}$ " x $2\frac{1}{2}$ "	A
BC-417	1.35	Band—Pass (Shielded)*	540-1700 KC	$1\frac{3}{8}$ " x $1\frac{3}{8}$ " x $2\frac{1}{2}$ "	A

† "L" Bracket Mtg. \* Mtg. centers  $1\frac{3}{8}$ ."

### OSCILLATOR—Special

Type No.	List Price	Description	Freq.	Mtg. Center	Dimensions	Mtg.
BC-460	\$3.30	Phono—Osc.	540-700 KC	1"	$1\frac{1}{2}$ " x $1\frac{1}{2}$ " x $2\frac{1}{2}$ "	A

*Products of Merit*







# IF-RF COILS

## BROADCAST

### IF TRANSFORMERS (Capacity Tuned)

Type No.	List Price	Function	Freq.	Mtg. Centers	Dimensions	Mtg.
BC-300	\$2.65	Input	175 KC	1 3/8	1 3/8 x 1 3/8 x 2 3/8	I
BC-301	2.65	Interstage	175 KC	1 3/8	1 3/8 x 1 3/8 x 2 3/8	I
BC-302	2.65	Full Wave Output	175 KC	1 3/8	1 3/8 x 1 3/8 x 2 3/8	I
BC-303	2.65	Half Wave Output	175 KC	1 3/8	1 3/8 x 1 3/8 x 2 3/8	I
BC-304	2.40	Input	262 KC	1 3/8	1 3/8 x 1 3/8 x 2 3/8	I
BC-305	2.40	Interstage	262 KC	1 3/8	1 3/8 x 1 3/8 x 2 3/8	I
BC-306	2.40	Full Wave Output	262 KC	1 3/8	1 3/8 x 1 3/8 x 2 3/8	I
BC-307	2.40	Half Wave Output	262 KC	1 3/8	1 3/8 x 1 3/8 x 2 3/8	I
BC-308	2.40	Input	455 KC	1 3/8	1 3/8 x 1 3/8 x 2 3/8	I
BC-309	2.40	Interstage	455 KC	1 3/8	1 3/8 x 1 3/8 x 2 3/8	I
BC-310	2.40	Full Wave Output	455 KC	1 3/8	1 3/8 x 1 3/8 x 2 3/8	I
BC-311	2.40	Half Wave Output	455 KC	1 3/8	1 3/8 x 1 3/8 x 2 3/8	I
BC-312	2.40	Input	1500 KC	1 3/8	1 3/8 x 1 3/8 x 2 3/8	I
BC-313	2.40	Interstage	1500 KC	1 3/8	1 3/8 x 1 3/8 x 2 3/8	I
BC-314	2.40	Full Wave Output	1500 KC	1 3/8	1 3/8 x 1 3/8 x 2 3/8	I
BC-315	2.40	Half Wave Output	1500 KC	1 3/8	1 3/8 x 1 3/8 x 2 3/8	I

### IF TRANSFORMERS (Iron Core—Capacity Tuned)

Type No.	List Price	Function	Freq.	Mtg. Centers	Dimensions	Mtg.
BC-330	\$3.50	Input	175 KC	1 3/8	1 3/8 x 1 3/8 x 3 1/4	I
BC-331	3.50	Interstage	175 KC	1 3/8	1 3/8 x 1 3/8 x 3 1/4	I
BC-332	3.50	Full Wave Output	175 KC	1 3/8	1 3/8 x 1 3/8 x 3 1/4	I
BC-333	3.50	Half Wave Output	175 KC	1 3/8	1 3/8 x 1 3/8 x 3 1/4	I
BC-334	2.90	Input	262 KC	1 3/8	1 3/8 x 1 3/8 x 3 1/4	I
BC-335	2.90	Interstage	262 KC	1 3/8	1 3/8 x 1 3/8 x 3 1/4	I
BC-336	2.90	Full Wave Output	262 KC	1 3/8	1 3/8 x 1 3/8 x 3 1/4	I
BC-337	2.90	Half Wave Output	262 KC	1 3/8	1 3/8 x 1 3/8 x 3 1/4	I
BC-338	2.90	Input	455 KC	1 3/8	1 3/8 x 1 3/8 x 3 1/4	I
BC-339	2.90	Interstage	455 KC	1 3/8	1 3/8 x 1 3/8 x 3 1/4	I
BC-340	2.90	Half Wave Output	455 KC	1 3/8	1 3/8 x 1 3/8 x 3 1/4	I
BC-341	2.90	Full Wave Output	455 KC	1 3/8	1 3/8 x 1 3/8 x 3 1/4	I

### IF TRANSFORMERS (Capacity Tuned)

Type No.	List Price	Description	Freq.	Mtg. Centers	Dimensions	Mtg.
BC-360	\$2.65	Input Midget	175 KC	1 3/8	1 3/8 x 1 3/8 x 2	I
BC-361	2.65	Interstage—Midget	175 KC	1 3/8	1 3/8 x 1 3/8 x 2	I
BC-362	2.65	Full Wave—Midget	175 KC	1 3/8	1 3/8 x 1 3/8 x 2	I
BC-363	2.65	Half Wave—Midget	175 KC	1 3/8	1 3/8 x 1 3/8 x 2	I
BC-364	2.40	Input—Midget	262 KC	1 3/8	1 3/8 x 1 3/8 x 2	I
BC-365	2.40	Interstage—Midget	262 KC	1 3/8	1 3/8 x 1 3/8 x 2	I
BC-366	2.40	Full Wave—Midget	262 KC	1 3/8	1 3/8 x 1 3/8 x 2	I
BC-367	2.40	Half Wave—Midget	262 KC	1 3/8	1 3/8 x 1 3/8 x 2	I
BC-368	2.40	Input—Midget	455 KC	1 3/8	1 3/8 x 1 3/8 x 2	I
BC-369	2.40	Interstage—Midget	455 KC	1 3/8	1 3/8 x 1 3/8 x 2	I
BC-370	2.40	Full Wave—Midget	455 KC	1 3/8	1 3/8 x 1 3/8 x 2	I
BC-371	2.40	Half Wave—Midget	455 KC	1 3/8	1 3/8 x 1 3/8 x 2	I
BC-372	2.60	Half Wave—Midget*	262 KC	1 3/8	1 3/8 x 1 3/8 x 2	I

\*Includes output filter

### IF TRANSFORMERS (Permeability Tuned)

Type No.	List Price	Description	Freq.	Mtg. Centers	Dimensions	Mtg.
BC-350	\$2.75	Input—Miniature	262 KC	Clip	3/4 x 3/4 x 2	K
BC-351	2.75	Output—Miniature	262 KC	Clip	3/4 x 3/4 x 2	K
BC-352	2.65	Input—Miniature	455 KC	Clip	3/4 x 3/4 x 2	K
BC-353	2.65	Output—Miniature	455 KC	Clip	3/4 x 3/4 x 2	K
BC-354	2.65	Output—Miniature*	262 KC	Clip	3/4 x 3/4 x 2	K
BC-355	2.65	Output—Miniature*	455 KC	Clip	3/4 x 3/4 x 2	K

\*Includes output filter

### IF TRANSFORMERS—Special

Type No.	List Price	Description	Freq.	Mtg.	Dimensions	Mtg.
BC-375	\$1.95	Cartwheel	455 KC	6-32 Screw	1 3/8 x 1 1/2	
BC-376	2.75	Std. IF (Tweeter Filter)	455 KC	1 3/8-Mtg. Center	1 3/8 x 1 3/8 x 2 1/2	A
BC-377	4.75	AM-FM	455 KC-10.7 MC	1 3/8-Mtg. Center	1 3/8 x 1 3/8 x 2 1/2	A

*Products of Merit*

A      B      I      K      L      M



# NEW PRODUCTS POWERS

## EXACT REPLACEMENT POWER TRANSFORMERS

Widely Used As Radio And TV Replacements, As Components In New Equipment, And In Many Industrial Applications. Designed For Reliable And Dependable Use. Vacuum Impregnated For Climatic Protection. All TV Types Have Magnetic And Static Shields. Others Electrostatic Shielded. RETMA Color Coded Leads. Double Half Shell Type Mounting. (Type C) Primary For 115V., 60 Cycle.

Type No.	List Price	H. V. Secondary		Rectifier		Fil. Wdgs.		Mtg. Centers	Dimensions			Shpg. Wt. Lbs.-Oz.	Exact Replacement For
		Volts	D.C. M.A.	Volts	Amps.	Volts	Amps.		H.	W.	D.		
P-2832	\$20.00	275-275	220	5	3	{ 7.0 ▲ 6.3	{ .475 8.5	3x3 3/8	3 3/4	4 1/8	3 1/2	11-0	GE-RTP-331
P-2841	30.50	265-265	320	5	6	12.6	4.9	Exact Replacement	3 3/4	4 1/8	3 1/2	10-0	GE-RTP-321
P-2842	22.50	286-286	210	5	3	6.3	8					7-0	GE-RTP-325
P-2844	24.95	292-292	285	5	3	6.3	8.5	Exact Replacement	3 3/4	4 1/8	3 1/2	8-14	GE-RTP-327
P-2847	21.85	306-306	460	5	6	{ 6.3 46.0	{ 11.4 .15					3 1/2 x 4 3/8	4 3/8
P-3044	14.00	96	145			6.3	6.45	2 1/8	2 1/2	3	2 3/4	3-0	RCA-102047
P-3049*	20.15	275-275	310	5	3	6.3	12.6	3x3 3/4	3 3/4	4 1/2	5	13-8	Motorola 25C737472
P-3056	23.75	282-282	240	5	3	6.3	8.7	3 1/8 x 4 1/8	3 3/4	4 1/2	4 1/8	10-0	RCA-79869
P-3057	30.65	350-350	290	5	6	{ 6.3 6.3	{ 9.5 2.4	3 1/8 x 4 1/8	3 3/4	4 1/2	6 1/4	15-0	RCA-76495
						{ 6.3 6.3	{ 1.5						
P-3058	27.00	280-290	315	5	6	6.3	11.5	3 1/8 x 4 1/8	3 3/4	4 1/2	5 1/2	12-0	RCA-78805
P-3060	12.25	265-265	260	5	3	6.3	4.4	2 1/8 x 3 1/8	3 3/4	3 3/4	4	11-0	Emerson-730060
P-3062	16.95	230-230	240	5	6	12.6	4.4	2 3/4 x 3 1/8	3 1/8	4 1/8	4 3/4	10-0	Emerson-730052
P-3064	34.00	290-290	340	5	6	12.6	6.1	3x3 3/4	3 3/4	4 1/2	5 1/4	13-0	GE-RTP-314
		or 275-275	310										
P-3083	33.50	265-265	300	5	6	12.6	4.7	3x3 3/4	3 3/4	4 1/2	4 3/8	11-14	GE-RTP-315
P-3084	24.50	278-278	220	5	3	6.3	8	2 3/4 x 3 1/8	3 1/8	4 1/8	4 1/8	9-8	GE-RTP-318

\*CS Type Mounting  
▲ Tapped

## POWER TRANSFORMERS

Similar In Characteristics To The Above Half Shell Types But For Vertical Chassis Mounting. (Mtg. Type D)

Type No.	List Price	H. V. Secondary		Rectifier		Fil. Wdgs.		Mtg. Centers	Dimensions			Shpg. Wt. Lbs.-Oz.	Exact Replacement For
		Volts	D.C. M.A.	Volts	Amps.	Amps.	Volts		H.	W.	D.		
P-2862	\$25.00	285-285	300	5	3	12.6	5.6	2 1/2 x 3 1/8	3 3/8	3 1/8	4 1/4	7-0	Philco 32-8732
P-3134	22.50	290-290	270	5	3	12.6 ct	4.8	Exact Replacement	3 3/8	3 1/8	4 1/4	8-4	Zenith 95-1298
P-3135	30.00	265-265	300	5	6	12.6 ct	5.5					Exact Replacement	
P-3136	22.75	270-270	270	5	3	12.6	4.4	Exact Replacement	8-0	Zenith 95-1311			

## FILAMENT TRANSFORMERS

Primary For 117 V, 60 Cycles. (Mtg. Type D)

Type No.	List Price	Sec. Volts	Sec. Amp.	Insulation Volts R.M.S.	Mtg. Centers	Dimensions			Shpg. Wt. Lbs.-Oz.	Exact Replacement For
						H.	W.	D.		
P-2845	\$ 9.55	6.3	13	1500	2 1/4 x 2 3/8	3 1/2	2 1/8	3 1/8	5-0	Motorola 24K734638B
P-2848	7.25	{ 25.8 6.3	{ .3 6.5	1500	2x 1 1/8	3 1/8	2 1/2	3	2-15	Motorola 25B791793
		{ 6.3 6.7	{ .9 4.1							
P-2863	10.00	{ 6.7 6.7	{ 4.1 6.6	1500	2 1/4 x 2 3/8	3 1/2	2 1/8	3 1/8	5-6	Philco 32-8575
		{ 6.7 6.7	{ 9.6 .005							
P-2864	7.50	6.7	9.6	2500	2 1/4 x 2 1/8	3 1/8	2 1/2	3 1/8	3-10	Philco 32-8574, 74-1
P-2865	13.50	{ 25V 6.3	{ .005 11.9	1500	2 1/2 x 2 3/8	3 3/8	3 3/4	3 1/2	4-4	Philco 32-8512
		{ 6.7 6.7	{ 6.4 6							
P-2866	18.75	{ 25.2 6.3	{ .003 8.8	2500	2 1/2 x 2 1/8	3 3/8	3 1/4	3 1/8	4-8	Philco 32-8519
		{ 6.7 6.7	{ 6.4 6							
P-3050	9.35	6.3	8.8	1500	2x 2 1/8	3 1/8	2 1/2	3	3-0	Crosley-155390
P-3082*	8.05	{ 6.3 6.3	{ 8 .3	{ 5000 2500	3 1/8	3 1/8	3 1/8	2 1/2	2-8	Silvertone-80-318
		{ 6.3 6.3	{ 10.3 .6	1500						
P-3141	8.05	6.3	10.3		1500	2x 2 1/8	3 1/8	2 1/2	3 1/8	3-5
P-3142	9.85	{ 12.6 6.3	{ .6 7.8	2500	2x 2 1/8	3 1/8	2 1/2	3 1/2	4-0	Motorola-25K712297
		{ 6.3 6.3	{ 1.2 .200							
P-3144*	10.40	● 123 6.3	{ .200 10.3	2500	2x 2 1/8	3 1/8	2 1/2	3 3/4	4-0	Motorola-25B730139

\*Type B Mtg.  
● Tapped Primary Voltage



# IF-RF COILS

## FM

### IF TRANSFORMERS (Permeability Tuned)

Type No.	List Price	Description	Freq.	Mtg. Centers	Dimensions	Mtg.
FM-250	\$3.30	Discriminator	10.7 MC.	1 1/8	1 1/8 x 1 1/8 x 2 1/8	A
FM-251	2.40	Amp. Interstage	10.7 MC.	1 1/8	1 1/8 x 1 1/8 x 2 1/8	A
FM-252	3.30	Ratio Detect.	10.7 MC.	1 1/8	1 1/8 x 1 1/8 x 2 1/8	A
FM-253	3.30	Disc — Min.	10.7 MC.	Clip	3/4 x 3/4 x 2	K
FM-254	3.30	Amp. — Min.	10.7 MC.	Clip	3/4 x 3/4 x 2	K
FM-255	3.30	Ratio Det. — Min.	10.7 MC.	Clip	3/4 x 3/4 x 2	K

### ANTENNA—OSCILLATORS—RF (Slug Tuned)

Type No.	List Price	Description	Freq. MC.	Mtg. Centers	Dimensions	Mtg.
FM-280	\$2.20	Antenna	88-108	3/8" Hole	1/2 x 1 3/8	A
FM-281	2.20	RF	88-108	3/8" Hole	1/2 x 1 3/8	A
FM-282	2.20	Osc.	88-108	3/8" Hole	1/2 x 1 3/8	A

## ATTENTION!

The MERIT LINE includes FLYBACKS, YOKES, WIDTH and LINEARITY COILS, VERTICAL OUTPUTS, VERTICAL BLOCKING OSCILLATORS, PEAKING COILS and many other TV and Radio Components not listed in this edition of the RADIO-ELECTRONIC MASTER.

The MERIT LINE is available at Leading Distributors. Contact your Favorite Distributor for any information about MERIT PRODUCTS not listed herein.



F



H



I



K

*Products of Merit*

**SNC** QUALITY TRANSFORMERS Give OUTSTANDING PERFORMANCE!

Style AL Mtg.    Style CL Mtg.    Style BL Mtg.  
Style DL Mtg.    Style ET Mtg.    Style FL Mtg.

Skillful Engineering, latest production techniques and highest quality materials . . . backed by careful workmanship, exacting step-by-step inspection and rigorous final testing . . . are combined in every SNC transformer to provide a quality product that gives MORE in dollar value.

**AUDIO TRANSFORMERS—THE "ONE" SERIES**

**AUDIO INPUT**

Type Number	Application	Impedance		Pri. Mils (D.C.)	Max. Turns Ratio	Frequency Characteristics—c. p. s.					Mtg. Style	Dimensions				Net Wt.	List Price
		Primary	Secondary			50	200	1M	5M	10M		A	B	C	D		
1P121	P.M. Speaker to Grid	4	100,000	0	1:150	-4.0	-1.0	0	0	0	BL	1-7/8	1-9/16	1-1/2	2	.5	3.50
1P124	S.D. Mic. to Sgl. or P.P. Grids	100	400,000 C.T.	50	1:63	-6.0	-6.0	0	-2.0	-6.0	BL	1-7/8	1-9/16	1-1/2	2	.5	3.70
1P125	Low Z to Sgl. or P.P. Grids	50	100,000 C.T.	0	1:45	-3.0	0	0	0	0	DL	1-7/8	1-9/16	1-1/2	2	.5	3.40
1P120	Sgl. or D.B. Mic. or Line to Sgl. or P.P. Grids	200*/50	100,000 C.T.	50	1:45	-2.0	-0.3	0	-0.7	-2.0	DL	2-5/8	2-3/16	2-1/8	2-13/16	1.3	5.40
1P136	Line to Sgl. or P.P. Grids	500*/125	100,000 C.T.	0	1:20	-3.0	-0.4	0	-0.4	-1.5	DL	2-5/8	2-3/16	2-1/8	2-13/16	1.4	5.40
1P145	Sgl. or P.P. Plates to Line	20,000 C.T.	500*/125	0	12:6:1	-3.5	-1.0	0	0	0	DL	2-1/4	1-7/8	1-13/16	2-3/8	.9	4.45
1P152	Sgl. or P.P. Plates to Line	20,000 C.T.	200*/50	0	20:1	-4.0	-1.0	0	0	0	DL	2-1/4	1-7/8	1-13/16	2-3/8	.9	4.45
1P161	Line to Line	500	500*/125	0	2:1	-0.4	-0.1	0	-0.4	-1.0	DL	2-1/4	1-7/8	1-13/16	2-3/8	.9	4.80

\*Indicates Balanced Center Tap

**AUDIO INTERSTAGE**

Type Number	Application	Primary Inductance	Secondary Inductance	Turns Ratio	Mounting Style	Mounting	Dimensions				Net Wt.	List Price					
							H	W	D	Ctrs.							
1P323	Sgl. Plate to Sgl. Grid	10,000	90,000	0	1:3	-5.0	-1.5	0	0	0	BL	1-7/8	1-9/16	1-1/2	2	.5	3.25
1P331	Sgl. Plate to P.P. Grids	10,000	90,000 C.T.	0	1:3	-6.0	-2.0	0	0	-1.0	BL	1-7/8	1-9/16	1-1/2	2	.5	3.50
1P339	Sgl. Plate to P.P. Grids	10,000	90,000 C.T.	0	1:3	-3.0	-0.5	0	+0.1	+0.5	BL	2-1/4	1-7/8	1-13/16	2-3/8	.9	3.90
1P342	Sgl. Plate to P.P. Grids	10,000	90,000 C.T.	0	1:3	-2.5	-0.5	0	0	0	DL	2-5/8	2-3/16	2-1/8	2-13/16	1.5	5.85
1P346	P.P. Plates to P.P. Grids	20,000 C.T.	45,000 C.T.	10	1:1.5	-1.0	-0.2	0	0	0	DL	2-5/8	2-3/16	2-1/8	2-13/16	1.5	5.20
1P351	Universal	Universal		0	1:3	-2.0	-0.4	0	0	0	BL	2-1/4	1-7/8	1-13/16	2-3/8	.9	4.15
3P363	Sgl. Type 30 to 1A, 1J5 or P.P. 30 Class B	10,000	7,000 C.T.	0	2.4:1	-0.5	0	0	-0.2	-1.0	BL	1-7/8	1-9/16	1-1/2	2	.5	2.00

**TELEVISION REPLACEMENT (VERTICAL BLOCKING OSCILLATOR)**

Type Number	Primary Inductance	Leakage Inductance	Turns Ratio	Mounting Style	Mounting	Dimensions				Net Wt.	List Price	
							H	W	D	Ctrs.		
1P412	1.15 My. ±20%	.088 My. ±25 -15%	1:42	Comp. Filled Case	Flange Studs	1-7/8	2-5/16	1-1/2	1-15/16		.5	3.60
1P416	1.15 My. ±20%	.088 My. ±25 -15%	1:42	Comp. Filled Case	Flange Studs	1-5/8	1-3/16	1-3/16	1-13/64		.4	3.35

**CHOKES AND REACTORS—THE "TWO" SERIES**

**AUDIO REACTORS**

Type Number	D.C. Mils		Inductance				Insul. Test Voltage	D.C. Res.	Mtg. Style	Dimensions					Net Weight	List Price
	Nom.	Max.	0-D.C.	50% Nom. D.C.	Nom. D.C.	Max. D.C.				A	B	C	D	E		
2P123	5-0.5	15	550	—	300-500	80	2000	5500	AL	1-7/8	2-1/4	1-5/8	2-13/16		.9	3.50
2P124	5-0.5	15	550	—	300-500	80	2000	5500	CL	1-7/8	2-1/4	1-3/4	2-13/16		.9	3.90
2P126	35-15	45	65	—	25-35	20	2000	800	AL	1-7/8	2-1/4	1-5/8	2-13/16		.9	2.75
2P127	35-15	45	65	—	25-35	20	2000	800	CL	1-7/8	2-1/4	1-3/4	2-13/16		.9	3.25

**FILTER AND SWINGING CHOKES**

Type Number	Primary Inductance	Leakage Inductance	Turns Ratio	Mounting Style	Mounting	Dimensions				Net Wt.	List Price						
							H	W	D	Ctrs.							
2P132	40	50	22	13-	0	6	2000	450	AL	1-5/16	1-5/8	1-1/8	2		.3	1.80	
2P135	65	80	18	11	0	7	2000	300	AL	1-9/16	1-7/8	1-3/8	2-3/8		.5	2.15	
2P138	85	100	30	16	0	7	2000	350	AL	1-7/8	2-1/4	1-7/8	2-13/16		1.2	2.80	
2P141	110	135	20	10.5	0	7	2000	200	BL	2-5/8	2-3/16	1-7/8	2-13/16		1.5	3.70	
2P142	110	135	20	10.5	0	7	2000	200	DL	2-5/8	2-3/16	2-1/8	2-13/16		1.5	3.90	
2P144	150	180	26	13	0	8	5.5	2000	190	BL	3	2-1/2	2-1/8	3-1/8		2.1	3.70
2P145	150	180	26	13	0	8	5.5	2000	190	GL	3-1/8	2-1/2	2-5/8	2	1-11/16	2.2	5.05
2P147	200	250	16	10	0	8	6.5	3500	110	GL	3-1/2	2-7/8	3-1/8	2-1/4	2	3.2	6.50
2P148	200-20	—	—	—	3-15	—	—	3500	110	GL	3-1/2	2-7/8	3-1/8	2-1/4	2	3.2	6.50
2P151	300	350	18	11	0	7	—	5000	75	GL	4-5/8	3-3/4	3-7/8	3	2-13/16	7.5	11.10
2P152	300-30	—	—	—	3-15	—	—	5000	75	GL	4-5/8	3-3/4	3-7/8	3	2-13/16	7.5	11.10
2P155	500	600	16	10	0	8	5.5	5000	55	HT	7-1/8	5-1/2	5-15/16	4-3/8	4-13/16	22.0	31.20
2P156	500-50	—	—	—	3-15	—	—	5000	55	HT	7-1/8	5-1/2	5-15/16	4-3/8	4-13/16	22.0	31.20

**DRIVER TRANSFORMERS—THE "THREE" SERIES**

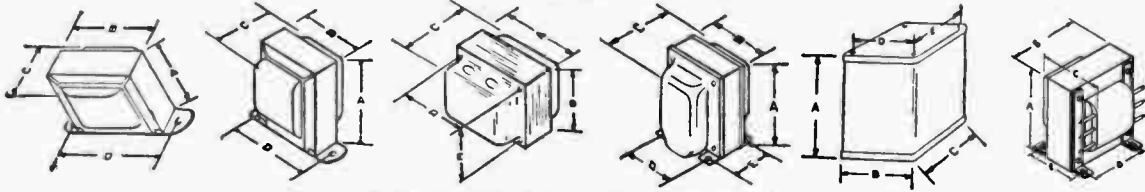
Type Number	Primary Impedance	Watts	Ratio, Pri. to 1/2 Sec. or Sec. Z	Pri. D.C. Mils	Frequency Characteristics—c. p. s.					Mtg. Style	Dimensions					Net Wt.	List Price
					50	200	1M	5M	10M		A	B	C	D	E		
3P323	6,000 C.T. to 10,000 C.T.	25	6, 5.5, 5.1	60	-0.5	0	0	0	-0.3	GL	3-1/8	2-1/2	2-5/8	2	1-11/16	2.3	11.30
3P328	3,000 C.T. to 5,000 C.T.	25	6, 5.5, 5.1	60	-0.4	0	0	0	-0.1	GL	3-1/8	2-1/2	2-5/8	2	1-11/16	2.3	11.30
3P334	6,000 C.T. to 10,000 C.T.	25	4.5, 4, 3.5:1	60	-1.0	-0.3	0	+0.1	+0.6	GL	3-1/8	2-1/2	2-5/8	2	1-11/16	2.3	11.35
3P338	3,000 C.T. to 5,000 C.T.	25	4.5, 4, 3.5:1	60	-1.7	-0.5	0	0	0	GL	3-1/8	2-1/2	2-5/8	2	1-11/16	2.3	11.35
3P342	6,000 C.T. to 10,000 C.T.	25	3, 2, 1:1	60	-0.7	-0.1	0	+0.1	+0.4	CL	3-1/8	2-1/2	2-5/8	2	1-11/16	2.3	11.60
3P347	3,000 C.T. to 5,000 C.T.	25	3, 2, 1:1	60	-0.8	0	0	0	-0.2	GL	3-1/8	2-1/2	2-5/8	2	1-11/16	2.3	11.40
3P353	6,000 C.T. to 10,000 C.T.	25	500 Dhms	60	-1.1	-0.3	0	0	-0.3	GL	3-1/8	2-1/2	2-5/8	2	1-11/16	2.3	11.40
3P358	3,000 C.T. to 5,000 C.T.	25	500 Dhms	60	-0.9	-0.1	0	-0.4	-1.0	GL	3-1/8	2-1/2	2-5/8	2	1-11/16	2.3	11.40
3P363	10,000	5	2.4:1	10	-0.5	0	0	-0.2	-1.0	BL	1-7/8	1-9/16	1-1/2	2	.5	2.00	

# SNC

**QUALITY TRANSFORMERS**  
Give  
**OUTSTANDING PERFORMANCE!**



### DIMENSIONAL ILLUSTRATIONS



### SPECIFIC DUTY REPLACEMENT TYPES—TUBE TO VOICE COIL

Type Number	Primary Imp.—Dhms	Pri. D.C. Mils	Sec. Z—Dhms	Watts	Mtg. Style	Dimensions				Net Wt.	List Price
						A	B	C	D		
6P300	Single 2,000 Plate	50	3-6	6		1-5/16	1-5/8	1-1/2	2	.3	1.80
6P306	Single 4,900 Plate	35	3-6	6	AL	1-5/16	1-5/8	1-1/2	2	.3	1.80
6P312	Single or P.P. 7,500 Plates	35	3-6	6	AL	1-5/16	1-5/8	1-1/2	2	.3	2.40
6P316	Single or P.P. 10,000 Plates	35	3-6	6	AL	1-5/16	1-5/8	1-1/2	2	.3	2.40
6P319	Push-Pull 15,000 Plates	35	3-6	6	AL	1-5/16	1-5/8	1-1/2	2	.3	2.45
6P321	Push-Pull 20,000 Plates	30	3-6	6	AL	1-5/16	1-5/8	1-1/2	2	.3	2.45
6P325	Push-Pull 25,000 Plates	20	3-6	6	AL	1-5/16	1-5/8	1-1/2	2	.3	2.45

### UNIVERSAL REPLACEMENT TYPES—TUBE TO VOICE COIL—TUBE TO LINE—LINE TO VOICE COIL

Type Number	Primary Imp.—Dhms	Pri. D.C. Mils	Sec. Z—Dhms	Watts	Mtg. Style	Dimensions				Net Wt.	List Price
						A	B	C	D		
6P185	Sgl. or P.P. 4M to 14M Plates	40	1.1 to 14	4	ATL	1-5/16	1-5/8	1-3/8	2	.3	2.80
6P186	Sgl. or P.P. 4M to 14M Plates	50	1.1 to 14	8	ATL	1-9/16	1-7/8	1-5/8	2-3/8	.5	2.80
6P187	Sgl. or P.P. 3M to 10M Plates	50	1.2 to 13	15	BTL	1-7/8	1-9/16	1-3/4	2	.5	3.50
6P189	Sgl. 1500 to 7M Plate	55	.8 to 19	10	ATL	1-9/16	1-7/8	1-5/8	2-3/8	.5	2.80
6P172	P.P. 3500 to 12M Plates	60	1.3 to 14	20	BTL	2-5/8	2-3/16	2-1/8	2-13/16	1.5	5.10
6P701	Single 2500 to 1500 Plate	45	165 to 1500	10	BTL	2-1/4	1-7/8	1-7/8	2-3/8	.9	4.45
6P710	P.P. 7500 to 7500 Plates	45	250 to 1000	10	BTL	2-1/4	1-7/8	1-7/8	2-3/8	.9	5.05
6P714	Sgl. or P.P. 2500 to 12M Plates	45	150 to 2400	10	BTL	2-1/4	1-7/8	1-7/8	2-3/8	.9	5.30
6P717	125 to 500 Line	0	1 to 32	35	BTL	2-5/8	2-3/16	2-1/8	2-13/16	1.5	5.40
6P722	500 to 3M Line in 500-Dhm Steps	0	1.3 to 48	10	BTL	2-1/4	1-7/8	1-7/8	2-3/8	.9	5.10

### AMPLIFIER AND EQUIPMENT TYPES—TUBE TO LINE AND VOICE COIL

Type Number	Primary Imp.—Dhms	Pri. D.C. Mils	Secondary Imp.—Dhms	Watts	Frequency Characteristics—c. p. s.					Mtg. Style	Dimensions					Net Wt.	List Price
					50	200	1M	5M	10M		A	B	C	D	E		
6P726	P.P. 3300 or 3800 Plates	90	4-8-16-250-500	60	-0.3	0	0	+0.1	+0.5	GL	3-3/4	3-1/16	3-3/8	2-1/2	2-3/16	4.4	10.70
6P731	P.P. 4500 or 6800 Plates	90	4-8-16-250-500	60	-0.3	0	0	+0.2	0	GL	3-3/4	3-1/16	3-3/8	2-1/2	2-3/16	4.4	10.70
6P736	P.P. 5000 Plates	70	4-8-16-250-500	25	-0.9	-0.2	0	+0.2	+0.5	DL	2-5/8	2-3/16	2-1/8	2-13/16		1.5	7.20
6P740	P.P. 4300 Plates	70	4-8-16-250-500	25	-0.9	-0.3	0	+0.3	+0.5	DL	2-5/8	2-3/16	2-1/8	2-13/16		1.5	7.20
6P743	P.P. 5600 Plates	70	4-8-16-250-500	25	-0.7	-0.1	0	+0.2	+0.5	DL	2-5/8	2-3/16	2-1/8	2-13/16		1.5	7.20
6P746	P.P. 8000 Plates	70	4-8-16-250-500	25	-0.7	-0.1	0	+0.1	+0.3	DL	2-5/8	2-3/16	2-1/8	2-13/16		1.5	7.20
6P748	P.P. 10,000 Plates	60	4-8-16-250-500	25	-0.4	-0.1	0	+0.2	+0.3	DL	2-5/8	2-3/16	2-1/8	2-13/16		1.5	7.55
6P752	Sgl. 2500 Plate	60	4-8-16-250-500	10	-3.0	-0.4	0	+0.3	+0.5	DL	2-1/4	1-7/8	2-1/8	2-3/8		1.0	5.70

### TELEVISION REPLACEMENT (VERTICAL DEFLECTION)

Type Number	Ratio Pri. to Sec.	Primary Imp.—Dhms	Leakage Inductance	Mounting Style	Dimensions					Net Wt.	List Price
					A	B	C	D	E		
6P860	10:1	19,000 Min.	0.33 Hy. Max.	B x L	3-3/16	2-3/4	2-9/16	1-19/32	2	2.2	6.70

### MODULATION TRANSFORMERS—THE "FIVE" SERIES

SNC universal modulation transformers are specifically designed to provide maximum application possibilities per type. All units are provided with two identical secondary windings, permitting series or parallel operation. Changes in the ratio can be readily accomplished, when desired, without removing the unit from the chassis. Most units available in either air cooled or compound filled cases.

#### UNIVERSAL TYPES

Type Number	Watts	Primary Current Mils	Secondary Characteristics				Primary Impedance Dhms	Mtg. Style	Dimensions					Net Weight	List Price
			Series Sec.		Parallel Sec.				A	B	C	D	E		
			Impedance	Mils	Impedance	Mils									
5P34	15	60		50		100	3M to 8M	DL	2-5/8	2-3/16	2-3/8	2-13/16		1.5	9.00
5P34s	50	80	2M to 18M	75	500 to 4500	150	3M to 15M	GTL	3-7/8	3-1/8	3-3/8	2-1/2	2-3/16	4	14.10
5P35?	100	120	2M to 18M	100	500 to 4500	200	3M to 15M	GTL	4-5/8	3-3/4	3-7/8	3	2-13/16	9.7	22.50
5P354															
5P35s	200	200	2M to 18M	150	500 to 4500	300	3M to 15M	HT JT	7-1/8	5-1/2	5-15/16	4-3/8	4-13/16	24	51.60
5P357														32	56.40
5P358	300	250	2M to 18M	250	500 to 4500	500	3M to 15M	HT JT	7-1/8	6-1/2	7-1/4	5-3/8	6-1/8	33	62.40
5P36s														41	67.20
5P364	800	300	2M to 18M	300	500 to 4500	600	3M to 15M	HT JT	10-3/4	6-1/2	7-1/4	5-3/8	6-1/8	51	126.00
														64	138.00



**NOTE**  
 Basic mounting types are classified as "A," "B," "C," "D," "E," "F," "G," "H," "J," and Bx.  
 Explanation of Suffix Symbols  
 L = Leads  
 T = Lugs  
 P = Cord and Plug  
 SP = Switch, Cord and Plug

**POWER TRANSFORMERS—THE "EIGHT" SERIES**

All units conservatively rated for operation on either 50 or 60 cycles and contain an electrostatic shield between primary and all other windings

**REPLACEMENT TYPES (6.3 Volt Heater Winding)**

Type Number	Primary Voltage	R.M.S.—High Volt. Secondary	Pri. D.C. Mils	Rectifier Filament	Heater Winding Center Tapped	Mtg. Style	Dimensions					Net WL	List Price
							A	B	C	D	E		
8P040	117	265-0-265	40	5V. @ 2A.	6.3V. @ 2A.	FL	3	2-1/2	2-3/4	2-1/2	2	2.3	5.48
8P055	117	300-0-300	55	5V. @ 2A.	6.3V. @ 2.5A.	FL	3	2-1/2	3-1/8	2-1/2	2	2.8	5.45
8P070	117	325-0-325	70	5V. @ 2A.	6.3V. @ 3A.	FL	3	2-1/2	3-1/2	2-1/2	2	3.2	6.90

**HEAVY DUTY REPLACEMENT AND NEW EQUIPMENT TYPES (6.3 Volt Heater Winding)**

Type Number	Primary Voltage	R.M.S.—High Volt. Secondary	Pri. D.C. Mils	Rectifier Filament	Heater Winding Center Tapped	Mtg. Style	Dimensions					Net WL	List Price
							A	B	C	D	E		
8P180	117	265-0-265	40	5V. @ 2A.	6.3V. @ 2A.	FL	3	2-1/2	3-1/4	2-1/2	2	3.2	7.40
8P180G						GL	3-1/16	2-7/32	3-1/8	2	2-3/16		
8P183	117	300-0-300	50	5V. @ 2A.	6.3V. @ 2A.	FL	3-3/8	2-13/16	3-7/16	2-13/16	2-1/4	3.5	7.80
8P183G						GL	3-7/16	2-27/32	3-1/4	2-1/4	2-1/8		
8P186	117	325-0-325	60	5V. @ 2A.	6.3V. @ 3A.	FL	3-3/8	2-13/16	3-11/16	2-13/16	2-1/4	4.0	8.20
8P186G						GL	3-7/16	2-27/32	3-1/2	2-1/4	2-3/8		
8P189	117	350-0-350	70	5V. @ 3A.	6.3V. @ 3.5A.	FL	3-3/4	3-1/8	3-3/4	3-1/8	2-1/2	5.0	9.80
8P189G						GL	3-13/16	3-5/32	3-5/8	2-1/2	2-7/16		
8P192	117	350-0-350	90	5V. @ 3A.	6.3V. @ 4A.	FL	3-3/4	3-1/8	4	3-1/8	2-1/2	5.7	9.90
8P192G						GL	3-13/16	3-5/32	3-7/8	2-1/2	2-11/16		
8P194	117	375-0-375	110	5V. @ 3A.	6.3V. @ 4A.	FL	3-3/4	3-1/8	4-1/8	3-1/8	2-1/2	6.0	11.10
8P194G						GL	3-13/16	3-5/32	4	2-1/2	2-13/16		
8P196	117	350-0-350	150	5V. @ 3A.	6.3V. @ 4.8A.	FL	4-1/8	3-7/16	4-3/8	3-7/16	2-3/4	7.7	11.70
8P196G						GL	4-3/16	3-15/32	4-3/8	2-3/4	3-5/16		
8P199	117	400-0-400	70	5V. @ 3A.	6.3V. @ 3.5A.	FL	3-3/4	3-1/8	4	3-1/8	2-1/2	5.8	10.50
8P199G						GL	3-13/16	3-5/32	3-7/8	2-1/2	2-11/16		
8P202	117	450-0-450	200	5V. @ 3A.	6.3V. @ 5A.	FL	4-1/2	3-3/4	4-3/4	3-3/4	3	10.7	15.00
8P202G						GL	4-9/16	3-25/32	4-3/8	3	3-11/16		
8P205	117	450-0-450	325	5V. @ 6A.	6.3V. @ 8A.	HT	7-1/8	5-1/2	5-15/16	4-3/8	4-13/16	22.3	40.80
8P208	117	550-0-550	275	5V. @ 6A.	6.3V. @ 6A.	HT	7-1/8	5-1/2	5-15/16	4-3/8	4-13/16	23.3	40.80

**REPLACEMENT TYPES (2.5 Volt Heater Winding)**

8P287	117	350-0-350	70	5V. @ 3A.	2.5V. @ 6A.	FL	3-3/4	3-1/8	3-3/4	3-1/8	2-1/2	5.0	9.80
8P293	117	350-0-350	90	5V. @ 3A.	2.5V. @ 8A.	FL	3-3/4	3-1/8	4	3-1/8	2-1/2	5.6	9.80
8P295	117	350-0-350	150	5V. @ 3A.	2.5V. @ 12A.	FL	4-1/8	3-7/16	4-3/8	3-7/16	2-3/4	7.8	11.70

**REPLACEMENT TYPES (Two 2.5 Volt Heater Windings)**

8P487	117	350-0-350	70	5V. @ 3A.	No. 1 = 2.5V. @ 3.5A.	FL	3-3/4	3-1/8	4	3-1/8	2-1/2	5.8	10.80
8P487G					No. 2 = 2.5V. @ 8A.	GL	3-13/16	3-5/32	3-7/8	2-1/2	2-11/16		
8P494	117	375-0-375	110	5V. @ 3A.	No. 1 = 2.5V. @ 3.5A.	FL	3-3/4	3-1/8	4-1/4	3-1/8	2-1/2	6.2	11.80
8P494G					No. 2 = 2.5V. @ 10A.	GL	3-13/16	3-5/32	4-1/8	2-1/2	2-15/16		

**GENERAL PURPOSE TYPES WITH CONVENIENT LUG TERMINALS (6.3 Volt Heater Winding)**

Type Number	Primary Voltage	R.M.S.—High Volt. Secondary	Pri. D.C. Mils	Rectifier Filament	Heater Winding Center Tapped	Mtg. Style	Dimensions					Net WL	List Price
							A	B	C	D	E		
8P387	117	300-0-300	50	5V. @ 2A.	6.3V. @ 2A.	ET	3-3/8	2-13/16	3-7/16	2-13/16	2-1/4	3.2	7.10
8P385	117	325-0-325	60	5V. @ 2A.	6.3V. @ 3A.	ET	3-3/8	2-13/16	3-11/16	2-13/16	2-1/4	4.0	7.60
8P388	117	350-0-350	70	5V. @ 3A.	6.3V. @ 3.5A.	ET	3-3/4	3-1/8	3-3/4	3-1/8	2-1/2	4.7	8.30

**BIAS TYPES**

8P510	117	40-0-40	25	5V. @ 2A.		CL	1-7/8	2-1/4	1-3/4	2-13/16		1.0	4.50
8P511	117	0-80-190-200-250	50	5V. @ 2A.		GL	3-1/16	2-7/32	2-5/8	2	1-11/16	2.0	6.55

**VIBRATOR TYPES**

8P610	6	225-0-225	40			AL	2-3/16	2-5/8	2	3-1/8		1.3	5.10
8P611	6	320-0-320	40			GL	3-1/16	2-7/32	2-1/2	2		2.1	6.10
8P612	6	390-0-390	60			GL	3-1/16	2-27/32	3-5/16	2-1/4		3.7	6.90

**TELEVISION REPLACEMENT TYPES**

8P883	117	375-0-375	210	5V. @ 3A.	No. 1-5V. @ 2A. No. 2-6.3V. @ 5.6A.	FL	4-1/2	3-3/4	4-3/4	3-3/4	3	10.7	17.75
8P885	117	235-0-235	90	5V. @ 2A.	6.3V. @ 5.5A.	FL	3-3/8	2-13/16	4	2-13/16	2-1/4	5.1	10.20
8P887	117	365-0-365	300	5V. @ 6A.	No. 1-12.6V. @ 5A. No. 2-5V. @ 2A.	FL	4-23/32	3-27/32	9-3/4	4-1/16	3-3/16	16.0	30.60



**NOTE**  
 Basic mounting types are classified as "A," "B," "C," "D," "E," "F," "G," "H," "J," and Bx.  
 Explanation of Suffix Symbols  
 L = Leads  
 T = Lugs  
 P = Card and Plug  
 SP = Switch, Card and Plug

**PLATE TRANSFORMERS—THE "SEVEN" SERIES**

All SNC plate transformers have dual secondary ratings. Most units available in either air cooled or compound filled cases. All units contain electrostatic shields between primary and high voltage windings.

Type Number	Primary Voltage	Pri. V.A.	Secondary R.M.S. Voltage	D.C. Voltage From Filter*	D.C. Current	Mtg. Style	Dimensions					Net Wt.	List Price
							A	B	C	D	E		
7F530	115-230	220	920-0-920 or 740-0-740	750 or 600	200MA	GL	4-3/4	3-3/4	5-1/8	3	4-1/16	12	18.00
7F535 7F536	115-230	320	930-0-930 or 750-0-750	750 or 600	300MA	HT JT	7-1/8	5-1/2	5-15/16	4-3/8	4-13/16	22 30	42.00 48.00
7F542 7F543	115-230	530	1470-0-1470 or 1220-0-1220	1250 or 1000	300MA	HT JT	7-1/8	6-1/2	7-1/4	5-3/8	6-1/8	33 41	50.40 55.20
7F551 7F552	115-230	750	2050-0-2050 or 1740-0-1740	1750 or 1500	300MA	HT JT	7-1/8	6-1/2	7-1/4	5-3/8	6-1/8	43 51	54.00 66.00
7F557 7F558	115-230	1050	2880-0-2880 or 2350-0-2350	2500 or 2000	300MA	HT JT	10-3/4	6-1/2	7-1/4	5-3/8	6-1/8	53 69	74.40 88.40
7F563 7F564	115-230	1760	2900-0-2900 or 2370-0-2370	2500 or 2000	500MA	HT JT	10-3/4	9	7-1/4	7	5-13/16	96 126	108.00 158.00

\*All units may be operated with simultaneous loads—provided the total D.C. current of the two loads does not exceed the rating listed.

**FILAMENT TRANSFORMERS—THE "FOUR" SERIES**

Most SNC Filament Transformers are constructed to provide two identical center tapped secondary windings and offer a minimum of three applications. They provide three-fold the number of possible applications of ordinary filament types. A few are single secondary units and are so designated. All have 117 V. 50/60 cycle primary.

Type Number	Applications			Test Voltage	Mtg. Style	Dimensions					Net Wt.	List Price
	Parallel Secondaries	Series Secondaries	Independent Identical Secondaries			A	B	C	D	E		
4P222	2.5V. C.T. @ 5 A.	5 V. C.T. @ 2.5 A.	Two of 2.5V. C.T. @ 2.5 A.	2000	BL	2-1/4	1-7/8	1-3/4	2-3/8		1.0	3.55
4P226*	2.5V. C.T. @ 10 A.*			7500	BL	3	2-1/2	2-3/8	3-1/8		2.0	5.50
4P227	2.5V. C.T. @ 10 A.	5 V. C.T. @ 5 A.	Two of 2.5V. C.T. @ 5 A.	2000	BL	2-5/8	2-3/16	2	2-13/16		1.5	4.00
4P234	2.5V. C.T. @ 15 A.	5 V. C.T. @ 7.5 A.	Two of 2.5V. C.T. @ 7.5 A.	2000	BL	3	2-1/2	2-1/4	3-1/8		2.2	5.70
4P239	5 V. C.T. @ 6.5A.	10 V. C.T. @ 3.25A.	Two of 5 V. C.T. @ 3.25A.	2000	BL	3	2-1/2	2-1/4	3-1/8		2.2	5.10
4P242*	5 V. C.T. @ 20 A.*			10000	BxL	4-1/8	3-7/16	2-3/4	2-3/4	2-1/8	4.6	10.20
4P243	5 V. C.T. @ 20 A.	10 V. C.T. @ 10 A.	Two of 5 V. C.T. @ 10 A.	2000	BxL	3-3/4	3-1/8	2-3/4	2-1/2	2-1/4	4.3	9.00
4P244*	6.3V. C.T. @ 0.6A.*			2000	BL	1-7/8	1-9/16	1-1/2	2		.8	3.50
4P245*	6.3V. C.T. @ 1.2A.*			2000	BL	1-7/8	1-9/16	1-5/8	2		.7	3.80
4P246	6.3V. C.T. @ 2 A.	12.6V. C.T. @ 1 A.	Two of 6.3V. C.T. @ 1 A.	2000	BL	2-1/4	1-7/8	1-3/4	2-3/8		1.0	4.20
4P251	6.3V. C.T. @ 6 A.	12.6V. C.T. @ 3 A.	Two of 6.3V. C.T. @ 3 A.	2000	BL	3	2-1/2	2-1/4	3-1/8		2.0	4.05
4P256	6.3V. C.T. @ 10 A.	12.6V. C.T. @ 5 A.	Two of 6.3V. C.T. @ 5 A.	2000	BxL	3-3/8	2-13/16	2-1/2	2-1/4	2-1/8	2.9	6.30
4P260	7.5V. C.T. @ 3 A.	15 V. C.T. @ 1.5 A.	Two of 7.5V. C.T. @ 1.5 A.	2000	BL	2-5/8	2-3/16	2	2-13/16		1.5	5.10
4P267	7.5V. C.T. @ 4.5A.	15 V. C.T. @ 2.3 A.	Two of 7.5V. C.T. @ 2.3 A.	2000	BL	3	2-1/2	2-1/4	3-1/8		2.0	6.30
4P272	11 V. C.T. @ 10 A.	22 V. C.T. @ 5 A.	Two of 11 V. C.T. @ 5 A.	2000	BxL	3-3/4	3-1/8	2-3/4	2-1/2	2-1/4	4.1	9.00

\*Single secondary units

**VOLTAGE CHANGER AND ISOLATION—THE "NINE" SERIES**

All Units Have Primary Cord and Secondary Plug and Are For 50/60 Cycle Operation

**VOLTAGE CHANGER (ISOLATION)**

Type Number	Primary Voltage	Secondary Voltage	Capacity in V. A.	Mtg. Style	Dimensions					Net Wt.	List Price
					A	B	C	D	E		
9P707	220-250	110-125	75	GP	3-13/16	3-5/32	3-1/8	2-1/2	1-15/16	3.9	9.30
9P713	220-250	110-125	150	GP	4-9/16	3-25/32	3-7/8	3	2-13/16	8.0	13.00
9P718	220-250	110-125	350	HP	7-1/8	5-1/2	5-15/16	4-3/8	4-13/16	23.3	36.00

**ISOLATION TYPES**

9P721	110-250	110-250	150	GP	4-9/16	3-25/32	4-5/8	3	3-9/16	12.1	18.00
9P725	110-250	110-250	250	HP	7-1/8	5-1/2	5-15/16	4-3/8	4-13/16	23.3	29.40
9P728	110-250	110-250	500	HP	7-1/8	6-1/2	7-1/4	5-3/8	6-1/8	34.8	41.40

**VOLTAGE ADJUSTMENT TYPES WITH TAP CHANGE SWITCH**

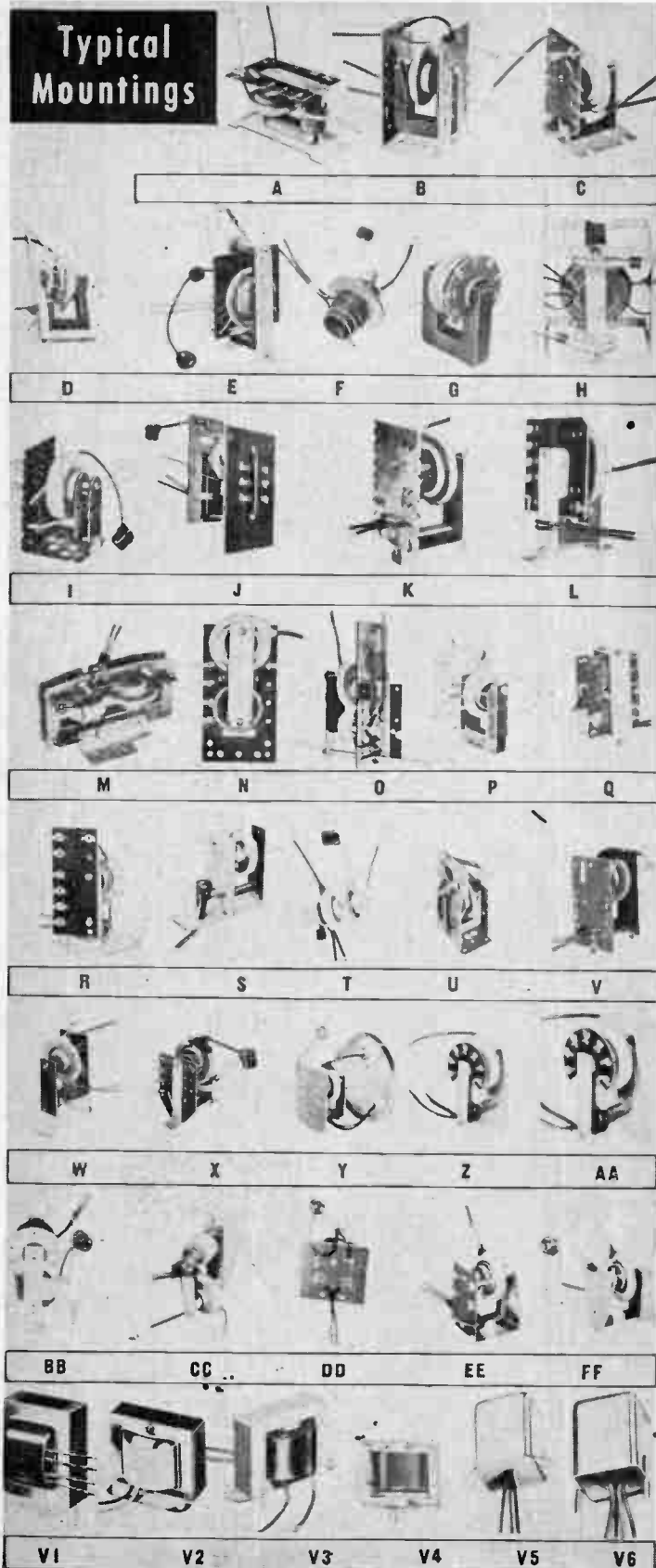
9P732	95-130 in 5V. Steps	115	150	HSP	4-7/8	3-7/8	3-7/8	3-1/8	3-1/8	4.7	25.80
9P737	95-130 in 5V. Steps	115	250	HSP	5-3/8	4-3/8	4-1/4	3-5/8	3-1/2	8.0	33.00
9P739	80-130 in 5V. Steps	115	500	HSP	7-1/8	5-1/2	5-15/16	4-3/8	4-13/16	23.3	49.20

All list prices given are subject to regular trade discounts and may be changed without notice.

**S N C MANUFACTURING CO., INC., OSHKOSH, WISCONSIN**

# HORIZONTAL OUTPUT TRANSFORMERS

## Typical Mountings



RAM	MOUNTING TYPE	KV	OPERATING CONDITION		DIRECT REPLACEMENT AND DESCRIPTION
			B + SUPPLY	BOOST	
X032	A	13.0	325	510	High efficiency - 630 circuits
X035	A	14.5	325	525	Similar to X032 - higher voltage
X036	A	10.5	320	420	RCA 211T1, 211T3
X045	B	14.0	320	450	GE771 and GE circuits
X047	C	13.0	325	510	DeWald, Jackson, Sentinel
X048	C	12.0	300	470	Dumont 20005021
X049	C	13.0	350	510	Sharton, Fada
X050	A or C	13.0	325	510	Philharmonic, Airline, Silvertone
X051	B	16.0	230	460	Majestic C9, 253, D9 259; GE RTO-101, RTO-104, 109, 114
X053	A	15.0	325	510	Regal 140-126, Jewel 91T3A
X054	A	13.0	250	515	CBS, Silvertone A 10126
X064	C	14.0	230	480	Emerson 736056, 60, 64; Hallicrafter
X065	C	16.0	230	480	Emerson 7308067, 68, 69, 73, 74
X066	A	14.0	325	510	Airline, Silvertone, CBS, Olivac
X068	F	10.0	270	350	RCA, Emerson, Magnavox, Packard Bell
X069	B	16.0	300	500	Stromberg Carlson 161042, Olympic
X070	D	13.0	325	510	Zenith
X071	E	14.5	360	460	Admiral 79C30-1, -3
X072	E	13.0	260	400	Admiral 79C30-2, -4
X074	I	16.0	280	475	RCA 225T1; Hallicrafter, Silvertone, Arvin, Hoffman, Dumont, Packard Bell
X075	A	14.0	325	510	CBS 10136, Firestone, Silvertone
X076	A	16.0	280	500	Muntz 70-0031
X077	A	13.0	325	500	RCA 211T5 Voltage Doubler
X079	G	13.0	325	500	Traveler TVX 137, 108, 109, 110-114, 130, 131
X080	I	16.0	280	475	RCA 76795, Hoffman 5035, 5049, 5155, 5160
X081	C	14.0	325	510	Westinghouse V9904-1
X082	C	15.0	325	510	Westinghouse V10214-1
X083	G	13.5	125	310	Sylvania 241-0003
X084	G	13.0	125	310	Sylvania 241-0005, 6
X085	G	13.0	125	310	Sylvania 241-0007
X086	M	13.0	310	510	Philco 32-8428-2
X087	H	13.0	310	510	Philco 32-8453-3
X088	H	13.0	310	510	Philco 32-R509, 8465-2, 8484-2
X089	H	13.0	310	510	Philco 32-R509-2
X090	K	13.0	240	410	Philco 32-8534, 8533
X091	K	15.0	230	350	Philco 32-8555
X092	K	14.0	250	320	Philco 32-8555
X093	C	20.0	260	530	Magnavox 360552, 360577
X094	I	19.0	320	675	RCA 235T1; CBS PC-10155; Stromberg-Carlson 161045; Packard Bell, Silvertone
X096	A	12.0	250	480	Magnavox 320061, -1, -3
X097	C	18.0	260	-	Magnavox 360561
X098	I	17.0	280	540	Magnavox 360580
X099	J	15.0	300	520	Farnsworth 850220, 850285
X100	K	16.5	230	350	Philco 32-8572
X102	L	17.5	230	450	Admiral 79D11-1, -2
X103	M	10.0	240	-	Motorola 24C790184, 24K791974
X104	M	14.0	240	530	Motorola 24C701134, 710636, 792596, 0, 24K700588, 701099, 792753
X105	M	16.0	265	660	Motorola 24C71552, 711652, 701636
X106	N	16.5	265	490	Motorola 24C711265, A, 721290, 730689; 24K702975, 711266, 711937, 712193, 720615, 721301, C, 721517, C, 722126, 722700, 730690, 91, 92, 93, 3, 4
X107	A	11.0	350	440	Airline, Raytheon, Coronado, Trans-Vue, Truetone 12M-17967, 12M-18285, 12M-18286
X108	E	11.0	350	520	Airline, Raytheon, Coronado, Truetone 12M-18530, 12M-18689, 1, 2, 201-18562, -1
X109	B	10.5-13.5	350	460	Airline, Raytheon, Coronado, Trans-Vue, Truetone 201-19817, 1, 2, 3, 201-19331, 12M-19407, 1, 2, 12M-19408, 12M-19190
X110	B	16.5-18.0	350	580	Airline, Truetone, Wells Gardner 53X326, 53X328, 53X329, 53X330
X111	B	12.5	240	480	Airline, Raytheon, Truetone 201-21025, -1
X112	B	15.0	240	450-480	Raytheon 201-22396, -1
X114	A	18.0	340	525	Muntz 70-0036, -1
X115	P	8.0-10.0	345-400	400-450	Crosley AC146756, 147552, 148161, 149146
X116	D	14.0	250	430	Zenith 518567, 18990, 19032, 19728
X117	Q	11.0-13.0	300-380	400-550	Crosley AD148258, 149567, 149661, 151155, 151802, 153619
X118	O	13.0	280-275	400-520	Crosley 154069-1, 154990-1, -2, -3, -4, 155514-1, 156330-1, Hallicrafter, Hoffman
X119	I	12.0	340	475	Hallicrafter, Silvertone, Truetone 55C133, 55C143, 55C144
X120	L	11.5	360	580	Hallicrafter, Silvertone 55C154, 55C155
X121	U	10 KV	440	285	Arvin, Silvertone 23089; Majestic C9, 251
X122	R	12-14	350	620	Hoffman 5144, 5145, 5146, 5147, 5148, 5149, 5155
X123	S	12-13	260	480-600	Crosley AD-157820, AD-158481; Hallicrafter 55D251, 55D253, 55D266, 55D270; Sentinel 20E995
X124	T	10-12	270-375	390-610	RCA 75519, 75585, 76154, 76381
X125	T	16.4	350	640	RCA 76501
X126	V	13-15	225-240	400-435	Airline, Bendix, Coronado, Raytheon, Truetone 12E-23939, 12E-24612, 265106-1
X127	C	15-19	240-310	375-530	Westinghouse V-11548, -1, -2, V-12073, -1; V-14627, -1; V-14346, V-15324-1, -2; V-15650
X128	W	13-17	270-300	475-500	RCA 78810, 78201, 79736, 79870, 79145, 100860
X129	X	13-17	270-300	475-500	Admiral 79C60-2, -3, -4, -5
X130	R	13.5-15	250-265	450-500	Traveler TVX130, A, 131, 141, A, 151





# RAM ELECTRONICS SALES CO. PARAMUS, NEW JERSEY

## HORIZONTAL OUTPUT TRANSFORMERS

RAM	Mag Type	KV	Operating Cond.		Direct Replacement and Description
			B+	Beam	
X131	G	16	290	510	Sylvania 241-0011
X132	I	16	300	600	Sylvania 241-0013
X133	Y	18	360	620	G.E. RTO-149, 149-1, 150, 151, 151-3, 161, 166, 166-5
X134	Z	14	175	410	G.E. RTO-165, 165-1, 173, 175, 175-3
X135	AA	17	275	580	G.E. RTO-179, 179-4, 183
X136	BB	17	250	590	Zenith 5-21219, 22130, 22154, 22720, 22996, 23049, 23984, 23989, 24978, 40019
X137	CC	14	235	435	Zenith 5-22451, 23438, 23995, 23998, 24109, 40124
X138	DD	15	125-260	350-640	Emerson 738091, 738096, 738099, 738100, 738103, 738106, 738107, 738109, 738111
X139	J	16	320	525	Radio Craftmen 195016
X140	B	16	310	540	Shromberg-Carlson 161048
X141	BE	16	300	640	Shromberg-Carlson 161282
X142	PF	15	260	480	CBS 12001051, 12001091, 12001131
X143	A	15.5	260	510	CBS 12000751, 12001101
X144	P	13-17	230-250	480-575	Silverstone 80-320, -326, -336, -361, -363, -368, -375, -376, -390, -411
X145	B	16	250	600	GE RTO-125, 126, 127
X146	B	16	250	600	GE RTO-129, 130
X147	S	13	260	480	Crosley 159947-1-2
X148	U	17	275	550	Philco 32-8753-1
X149	U				Philco 32-8642-1
X150	P	9	135	330	Philco 32-8746-1
X151	I	17.5	295	590	Olympic TR3599-1-2-3-4
X152	GG	15	280	560	Magnavox 360623, -1
X153	GG	12.5	130	345	Magnavox 360659, -1
X154	GG	12	135	340	Hallcrafters 55-307
X155	B	16	350	580	Airtone, Bendix, Fada, Spartan, Truetone, Wells Gardner

## VERTICAL SCANNING OUTPUT TRANSFORMERS

RAM NO.	TURNS RATIO PRI/SEC	MINIMUM PRIMARY IMPEDANCE	MOUNTING TYPE	MOUNTING CENTERS	DIMENSIONS			SHIPPING WEIGHT IN LBS.
					HEIGHT	WIDTH	DEPTH	
V301	10:1	19,000Ω @ 13 MADC	V1	1 19/32 x 2	3 1/16	2 1/2	2 1/2	2 1/2
V302	8:1	19,000Ω @ 13 MADC	V2	2 3/8 x 1 5/8	2 9/16	2 7/8	2 1/4	2 1/2
V303	10:1	19,000Ω @ 13 MADC	V1	1 19/32 x 2	3 1/16	2 1/2	2 1/2	2 1/2
V304	10:1	18,000Ω @ 10 MADC	V1	1 19/32 x 1 3/4	3 1/16	2 1/2	2 1/4	2
V305	10:1	14,000Ω @ 15 MADC	V3	3 1/8	2 1/4	3 9/16	1 3/16	1 3/4
V306	44:1	11,250Ω @ 15 MADC	V1	1 19/32 x 1 7/8	3 1/16	2 1/2	2 3/8	2 1/4
V307	9:1	11,000Ω @ 19 MADC	V3	3 1/8	2 1/4	3 3/4	3 1/4	1 1/2
V308	11:1	15,000Ω @ 18 MADC	V3	2 13/16	2	3 1/4	1 1/4	1
V309	10:1	13,000Ω @ 22 MADC	V3	2 13/16	2	3 1/4	2	1 1/4
V310	10:1	18,000Ω @ 18 MADC	V3	3 1/2	2 1/2	4	2 1/4	2 1/2
V311	10:1	18,000Ω @ 10 MADC	V1	1 19/32 x 1 5/8	3 1/16	2 1/2	2 1/8	2
V312	18:1	27,500Ω @ 10 MADC	V3	3 1/8	2 1/4	3 3/4	3 1/4	1 1/2
V313	11.4:1	17,000Ω @ 20 MADC	V3	2 13/16	2	3 1/4	1 5/8	1
V314	6:1	4,500Ω @ 38 MADC	V3	2 13/16	2	3 1/4	2	1
V315	16:1	23,000Ω @ 15 MADC	V3	2 13/16	1 15/16	3 3/16	1 3/4	1 1/4
V316	7:1	6,000Ω @ 15 MADC	V3	2 13/16	1 15/16	3 3/16	1 3/4	1 1/4
V317	9:1	14,000Ω @ 19 MADC	V4	3 5/16	2 1/4	2 5/8	1 3/4	1 1/4

## VERTICAL BLOCKING OSCILLATOR TRANSFORMERS

RAM #	TURNS RATIO PRI/SEC	MOUNTING TYPE	MOUNTING CENTER	DIMENSIONS			SHIPPING WEIGHT LBS.
				HEIGHT	WIDTH	DEPTH	
V401	1-4:2	V5	1 15/16	2 1/8	2 1/4	1 17/32	1
V402	1-4:2	V6	1 7/32	1 25/32	1 5/32	1 6/32	1/2
V403	1-4	V5	2	1 21/32	2 3/8	1 13/32	1
V404	1-1.5	V3	2	1 11/32	2 3/8	1 3/8	1/2
V405	1-4:2	V3	2	1 11/32	2 3/8	1 3/8	1/2
V406	1-3.5	V3	1 3/4	1 3/16	1 7/16	1 1/8	1 1/4

## DEFLECTION YOKES

RAM	INDUCTANCE		D.C. RESISTANCE	
	HORIZ.	VERT.	HORIZ.	VERT.
Y70 P08	8.3 MH	50.0 MH	9.5 Ohms	60.0 Ohms
Y70F08/43	8.3 MH	43.0 MH	9.5 Ohms	48.0 Ohms
Y70F10	10.0 MH	50.0 MH	10.0 Ohms	60.0 Ohms
Y70F10/43	10.0 MH	43.0 MH	10.0 Ohms	48.0 Ohms
Y70F12	12.0 MH	50.0 MH	12.0 Ohms	52.0 Ohms
Y70F14	14.0 MH	50.0 MH	14.5 Ohms	60.0 Ohms
Y70F14/43	14.0 MH	43.0 MH	14.5 Ohms	48.0 Ohms
Y70F14/3	14.0 MH	3.0 MH	14.5 Ohms	3.3 Ohms
Y70F17	17.0 MH	50.0 MH	20.0 Ohms	60.0 Ohms
Y70F18/43	18.0 MH	43.0 MH	21.0 Ohms	48.0 Ohms
Y70F20/43	20.0 MH	43.0 MH	22.0 Ohms	48.0 Ohms
Y70F25	25.0 MH	50.0 MH	27.0 Ohms	60.0 Ohms
Y70F25/3	25.0 MH	3.3 MH	27.0 Ohms	4.0 Ohms
Y70F30	30.0 MH	50.0 MH	35.0 Ohms	60.0 Ohms
Y70F30/3	30.0 MH	3.3 MH	35.0 Ohms	4.0 Ohms
Y90F12/47	12.0 MH	47.0 MH	15.0 Ohms	43.0 Ohms
Y90F19/43	19.0 MH	43.0 MH	30.0 Ohms	41.0 Ohms

## DEFLECTION YOKES

## MOTOROLA REPLACEMENTS

RAM	INDUCTANCE		D.C. RESISTANCE	
	HORIZ.	VERT.	HORIZ.	VERT.
M0-1	8.3	50	9.5	60.0
M0-2	10.0	50	10.0	60.0
M0-3	25.0	50	27.0	60.0
M0-4	25.0	3.3	27.0	4.0
M0-5	25.0	3.3	27.0	4.0
M0-6	25.0	3.3	27.0	4.0
M0-7	25.0	3.0	34.0	3.0

## LINEARITY AND WIDTH COILS

RAM	MILLIHENRIES		OHMS
	PRI.	SEC.	
201R1A	0.07 - 0.5	0.7	
201R3A	5.0 - 35	39.5	
201R4	0.18 - 1.5	1.2	
201R5A*	0.5 - 4.8	7.5	
201R10	3.2 - 28.2	21.5	
201R11	PRI. 0.18 - 1.4 SEC. 4.5 - 16.0	1.4 48.0	
201R12*	1.2 - 8.0	5.6	
201R13A	0.44 - 3.1	2.3	
201R14	PRI. 2.6 - 5.5 SEC. 5.0 - 22.0	24.0 36.5	
201R15	2.0 - 14.0	11.0	
201R16	2.8 - 18.8	12.3	
201R17	0.17 - 1.8 8.0 - 5.0	2.5 22.0	
201R19	2.8 (0.15' CAP.)	16.0	

\* Tapped Coil

## BROADCAST QUALITY COMPONENTS

Modern high fidelity broadcasting and transcription equipment requires the use of "Audio" — transformers of utmost quality and reliability in performance. Freed broadcast quality components have been designed to meet these requirements. They are wide band, high fidelity components with low distortion throughout the audio range and beyond. Frequency response for most units is in the order of  $\pm 1$  DB from 20 to 20,000 cps and for high level output transformers in the order of  $\pm 0.5$  DB from 20 to 30,000 cps.

These units feature astatic construction, longitudinal balance, high efficiency, uniform response, and constant impedance match throughout the audio frequency spectrum. Maximum neutralization of stray fields is accomplished through the use of hum balanced coil structures and multiple alloy shielding. Equal high fidelity response is assured on every tap of any universal impedance winding without line reflection of transverse coupling.

All broadcast quality components are thoroughly impregnated in a special non-hygroscopic varnish and fully encapsulated with a moisture proof, high melting compound.

All broadcast quality components are **hermetically sealed**.

All units are tested in accordance with and meet "RETMA" standards.

Almost all units are designed with universal impedance windings to insure greatest versatility.

A full line of high Q reactors complements this series of audio transformers.

# BROADCAST QUALITY COMPONENTS

## CASE DIMENSIONS

### DC-2B CASE



Height: 3½"  
 Width: 2¾"  
 Depth: 2¼"  
 Mtg. Cen.: 2"x1¾"  
 Studs: 4 8-32  
 Knockout: 1½" dia.

### DC-4A CASE



Height: 3¾"  
 Width: 3⅛"  
 Depth: 3"  
 Mtg. Cen.: 2½"x2½"  
 Studs: 4 8-32  
 Knockout: 2" dia.

## INPUT TRANSFORMERS

Frequency Response 20-20,000 C.P.S. ±1.0 DB

Catalog No.	Application	Impedance Level Ohms		Maximum Power Level DBM	Ratio	Equivalent Shielding D.B.	Maximum Pri. D.C. per Side Ma.	D.C. Unbalance Ma.	Case Number
		Primary	Secondary						
QGA 1	Universal 500 ohm line to push-pull grids	U-500	100,000 split	+10	1:14.1	70	0	0	DC-2B
QGA 2	Universal 500 ohm line to push-pull grids	U-500	100,000 split	+10	1:14.1	90	0	0	DC-2B
QGA 3	Universal 500 ohm line to single or push-pull grids	U-500	60,000 split	+10	1:11	70	0	0	DC-2B
QGA 4	Universal 500 ohm line to single or push-pull grids	U-500	60,000 split	+10	1:11	90	0	0	DC-2B
QGA 5	Universal low impedance microphone, pickup or line to single or push-pull grids	U-60	60,000 split	+10	1:31.6	70	0	0	DC-2B
QGA 6	Universal low impedance microphone, pickup or line to single or push-pull grids	U-60	60,000 split	+10	1:31.6	90	0	0	DC-2B

U-60 IMPEDANCES IN OHMS:  
 2.5, 5, 10, 15, 20, 30, 40, 60

U-500 IMPEDANCES IN OHMS:  
 50, 125, 200 CT, 250, 330, 500 CT.  
 125 and 500 ohms can be used for 150 and 600 ohms.

## HYBRID AND REPEAT COILS

Frequency Response 20-20,000 C.P.S. ±1.0 DB

Catalog No.	Application	Impedance Level Ohms		Maximum Power Level D.B.M.	Ratio	Equivalent Shielding D.B.	Maximum Pri. D.C. per Side Ma.	D.C. Unbalance Ma.	Case Number
		Primary	Secondary						
QGA 7	Hybrid. Unbalanced 500/600 ohm lines to 600 ohms.	Total Pri 1200/1000 split 300/250 300/250	600/150 or 500/125 split	+10	1.41:1	70	0	0	DC-2B
QGA 8	Hybrid. Balanced 500/600 ohm lines to 600 ohms. Longitudinal balance 70 DB	Total Pri 1200/1000 split 300/250 C.T. 300/250 C.T.	600/150 or 500/125 split	+10	1.41:1	70	0	0	DC-2B
QGA 9	Hybrid. Unbalanced 500/600 ohm lines to triode plate. No. D.C. in secondary.	Total Pri 1200/1000 split 300/250 300/250	15,000 or 12,500	+10	1:3.54	70	0	0	DC-2B
QGA 10	Hybrid. Balanced 500/600 ohm lines to triode plate. No. D.C. in secondary. Longitudinal balance 70 DB.	Total Pri 1200/1000 split 300/250 C.T. 300/250 C.T.	15,000 or 12,500	+10	1:3.54	70	0	0	DC-2B
QGA 11	Repeat coil for low frequency ringing. Longitudinal balance 70 DB.	600/500 split	600/500 split Balanced		1:1	90	0	0	DC-4A

## INTERSTAGE TRANSFORMERS

Frequency Response 20-20,000 C.P.S. ±1.0 D.B.  
 \*50-20,000 C.P.S. ±1.0 D.B.

Catalog No.	Application	Impedance Level Ohms		Maximum Power Level D.B.M.	Ratio	Equivalent Shielding D.B.	Maximum Pri. D.C. per Side Ma.	D.C. Unbalance Ma.	Case Number
		Primary	Secondary						
QGA 12	Bridging line to single or push-pull grids.	10,000	60,000 split	+10	1:2.45	70	0	0	DC-2B
QGA 13	Single 6C4, 6J5, ½ 6SN7 triode to push-pull grids. Shunt feed.	15,000	60,000 split	+18	1:2	45	0	0	DC-2B
QGA 14*	Single 6C4, 6J5, ½ 6SN7 triode to push-pull grids.	15,000	60,000 split	+18	1:2	45	8	8	DC-2B
QGA 15	Push-pull triode plates to push-pull class A grids.	20,000 split	45,000 split	+25	1:1.5	30	8	0.5	DC-4A

# FREED TRANSFORMER COMPANY, INC.

## BROADCAST QUALITY COMPONENTS

### LOW LEVEL OUTPUT, MIXING, MATCHING TRANSFORMERS

Frequency Response 20-20,000 C.P.S.  $\pm 1.0$  DB  
\*50-20,000 C.P.S.  $\pm 1.0$  DB

#### CASE DIMENSIONS



#### DC-2B CASE

Height:  $3\frac{1}{2}$ "  
Width:  $2\frac{5}{8}$ "  
Depth:  $2\frac{1}{4}$ "  
Mtg. Cen.:  $2\frac{1}{2} \times 1\frac{3}{4}$ "  
Studs: 4 8-32  
Knockout:  $1\frac{1}{2}$ " dia.

#### DC-4A CASE

Height:  $3\frac{3}{8}$ "  
Width:  $3\frac{1}{8}$ "  
Depth:  $3\frac{1}{8}$ "  
Mtg. Cen.:  $2\frac{1}{2} \times 2\frac{1}{2}$ "  
Studs: 4 8-32  
Knockout:  $2$ " dia.

#### DC-5B CASE

Height:  $4\frac{1}{2}$ "  
Width:  $4\frac{1}{8}$ "  
Depth:  $3\frac{1}{2}$ "  
Mtg. Cen.:  $3\frac{3}{8} \times 2\frac{3}{8}$ "  
Studs: 4 10-32  
Knockout:  $2\frac{1}{2}$ " dia.

#### DC-6A CASE

Height:  $4\frac{7}{8}$ "  
Width:  $5$ "  
Depth:  $4\frac{1}{8}$ "  
Mtg. Cen.:  $3\frac{3}{4} \times 3$ "  
Studs: 4 10-32  
Knockout:  $3$ " dia.

#### DC-6B CASE

Height:  $6$ "  
Width:  $5$ "  
Depth:  $4\frac{1}{8}$ "  
Mtg. Cen.:  $3\frac{3}{4} \times 3$ "  
Studs: 4 10-32  
Knockout:  $3$ " dia.

#### DC-7A CASE

Height:  $4\frac{7}{8}$ "  
Width:  $5\frac{1}{2}$ "  
Depth:  $5\frac{1}{2}$ "  
Mtg. Cen.:  $4\frac{3}{8} \times 3\frac{3}{8}$ "  
Studs: 4  $\frac{1}{4}$ "-20  
Knockout:  $3$ " dia.

Catalog No.	Application	Impedance Level Ohms		Maximum Power Level D.B.M.	Ratio	Equivalent Shielding D.B.	Max. Pri. D.C. per Side Ma.	D.C. Unbalance Ma.	Case Number
		Primary	Secondary						
QGA 16	Single plate or bridging line to Universal 500 ohm line. Shunt feed.	15,000	U-500	+18	5.5:1	70	0	0	DC-2B
QGA 17*	Single plate to Universal 500 ohm line.	15,000	U-500	+18	5.5:1	70	8	8	DC-2B
QGA 18	Push-pull triode plates to Universal 500 ohm line.	20,000 C.T.	U-500	+25	6.3:1	70	8	0.5	DC-2B
QGA 19	Mixing, low impedance microphone or line to Universal 500 ohm line.	U-500	U-500	+12	1:1	70	0	0	DC-2B
QGA 20	Line level mixing and matchings.	U-500	U-500	+30	1:1	70	0	0	DC-2B
QGA 21	High mu triode photo-cell to Universal 500 ohm line.	100,000	U-500	+12	14.1:1	70	0	0	DC-2B

### DRIVER TRANSFORMERS

Frequency Response 20-20,000 C.P.S.  $\pm 1.0$  DB

Catalog No.	Application	Primary Impedance Ohms	Maximum Power Level D.B.M.	Turn Ratio Pri.: $\frac{1}{2}$ Sec.	Max. Pri. D.C. per Side Ma.	D.C. Unbalance Ma.	Case Number
QGA 23	Push-pull 6J5, etc. to push-pull 2A3's, 6L6's, etc.	20,000 C.T.	+30	3.2:1	8	0.5	DC-2B
QGA 24	Push-pull 2A3, 6B4 to push-pull 809, 12-40, 4/125A.	5,000 C.T.	+40	3.1:1	50	5	DC-4A

### HIGH LEVEL OUTPUT TRANSFORMERS

Frequency Response 20-30,000 C.P.S.  $\pm 0.5$  DB

Catalog No.	Application	Impedance Level Ohms		Maximum Power Level DBM Watts		Ratio	Max. D.C. per Side Ma.	D.C. Unbalance Ma.	Case Number
		Primary	Secondary	DBM	Watts				
QGA 25	PP 5881, 6B4, 6L6, 300A, 275A to Universal 500 ohm line.	5,000 split	U-500	+42	15	3.16:1	70	7	DC-5B
QGA 26	A <sub>s</sub> above to Universal voice coil.	5,000 split	U-16	+42	15	17.7:1	70	7	DC-5B
QGA 27	Push-pull 6V6, 6AQ5, 7C5, 6N7 to Universal 500 ohm line.	8,000 split	U-500	+42	15	4:1	50	5	DC-5B
QGA 28	A <sub>s</sub> above to Universal voice coil.	8,000 split	U-16	+42	15	22.4:1	50	5	DC-5B
QGA 29	P.P. 6F6, 6V6, 6AQ5, 7C5, 7B5, 6AR5, 6K6, 6L6 to Universal 500 ohm line.	10,000 split	U-500	+42	15	4.47:1	40	4	DC-5B
QGA 30	A <sub>s</sub> above to Universal voice coil.	10,000 split	U-16	+42	15	25:1	40	4	DC-5B
QGA 31	PP. 807, 1614, KT-66, (Williamson Amplifier) to Universal 500 ohm line.	10,000 split	U-500	+45.5	36	4.47:1	60	6	DC-6A
QGA 32	A <sub>s</sub> above to Universal voice coil.	10,000 split	U-16	+45.5	36	25:1	60	6	DC-6A
QGA 33	P.P. Parallel, 6ASG, 300A to Universal 500 ohm line.	2,500 split	U-500	+45.5	36	2.24:1	100	10	DC-6A
QGA 34	A <sub>s</sub> above to Universal voice coil.	2,500 split	U-16	+45.5	36	12.5:1	100	10	DC-6A
QGA 35	P.P. 6L6 or P.P. Parallel 6L6 to Universal 500 ohm line.	3,800 split	U-500	+47	50	2.75:1	140	14	DC-6B
QGA 36	A <sub>s</sub> above to Universal voice coil.	3,800 split	U-16	+47	50	15.4:1	140	14	DC-6B
QGA 37	High level multiple line to Universal voice coil.	U-500	U-16	+42	15	5.6:1	0	0	DC-5B
QGA 38	High level multiple line to Universal voice coil.	U-500	U-16	+47	50	5.6:1	0	0	DC-6B
QGA 39	5881 or 6146 Class AB1 to Universal voice coil.	6,600 split	U-500	+47	50	3.64:1	70	7	DC-6A
QGA 40	5881 or 6146 Class AB1 to Universal voice coil.	6,600 split	U-16	+47	50	20:1	70	7	DC-6A
QGA 41	6550 AB1 or 6146 AB2 to Universal 500 ohm line.	5,000 split	U-500	+50	100	3.16:1	140	14	DC-7A
QGA 42	6550AB1 or 6146AB2 to Universal voice coil.	5,000 split	U-16	+50	100	17.7:1	140	14	DC-7A

‡These units supplied with taps for applying screen feedback. U-500 IMPEDANCES IN OHMS. 50, 125, 200 C.T., 250, 330, 500 C.T. U-16 IMPEDANCES IN OHMS: 2, 4, 8, 12, 16. 125 and 500 ohms can be used for 150 and 600 ohms.

# FREED TRANSFORMER COMPANY, INC.

## MINIATURE AUDIO TRANSFORMERS

These high quality, miniature transformers feature hermetic sealing for maximum protection from moisture penetration with subsequent electrolysis and corrosion of fine wires. While primarily intended for non-military equipment, these units are constructed in accordance with MIL-T-27A Specifications.

Frequency response:  $\pm 2$ DB 30-20,000 CPS.  
\* $\pm 2$ DB 200-10,000 CPS.

### CASE DIMENSIONS

#### DM-20 CASE



Height:  $1\frac{1}{16}$ "  
Dia.:  $1\frac{1}{16}$ "  
Mtg. Cen.:  $1\frac{1}{8}$ " to  $1\frac{13}{32}$ "  
Mtg. Holes:  $141$ " wide  
Flange Lgth.:  $1\frac{13}{32}$ "  
Flange Dia.:  $.975$ "

Catalog No.	Application	Impedance Level Ohms		Maximum Power Level DBM	Ratio	Equivalent Shielding D.B.	Max. Pri. D.C. per Side Me.	D.C. Unbalance Me.	Case Number
		Primary	Secondary						
PMA 1	Line or microphone to single or push-pull grids.	50 200/500	60,000 C.T.	+8	1:11		0	0	DM-20
PMA 2	Dynamic microphone or speaker voice coil to single or P.P. grid.	4/8	60,000 C.T.	+8	1:86.6		0	0	DM-20
PMA 3	Line or microphone to single or push-pull grids. Magnetically shielded.	50/200/500	60,000 C.T.	+8	1:11	30	0	0	DM-20
PMA 4	Single triode plate to single or push-pull grids.	15,000	60,000 C.T.	+8	1:2		0	0	DM-20
PMA 5*	Single triode plate to push-pull grids.	15,000	60,000 C.T.	+8	1:2		2	2	DM-20
PMA 6	Single triode plate to multiple line.	15,000	50/200/500	+8	5.48:1		0	0	DM-20
PMA 7*	Single triode plate to multiple line.	15,000	50/200/500	+8	5.48:1		2	2	DM-20
PMA 8	Push-pull triode plates to multiple line.	30,000 C.T.	50/200/500	+8	7.75:1		2	0.25	DM-20
PMA 9	Crystal mike or pickup to multiple line.	60,000 C.T.	50/200/500	+8	11:1		0	0	DM-20
PMA 10	Mixing or matching.	50/200	50/200/500	+8	1:1.50		0	0	DM-20
PMA 11	Parallel Feed Reactor.	40 hv, 3 ma dc, 3500 ohms d.c. resistance.							DM-20

## PROFESSIONAL GRADE COMPONENTS

This group of components has been designed for use in high fidelity and professional equipment and for public address service. Freed has developed this series of units employing the latest design techniques and the best commercially available materials. Except for units carrying unbalanced direct current the frequency response is  $\pm 1$  DB from 30 to 15,000 cps. All units feature excellent performance characteristics combined with minimum size and weight.

All units are vacuum varnished and then potted in compound to insure long life and trouble free performance.

Professional Grade components are supplied cased. Upon request these units can be supplied open or in shell type construction.

All cased Professional Grade Components supplied with terminals meet "RETMA" standards.

CASE DIMENSIONS

DM-01 CASE



Height: 2"  
 Width: 1 1/2"  
 Depth: 1 1/2"  
 Mtg. Cen.: 1 1/16" x 1 1/16"  
 Studs: 4 6-32  
 Knockout: 1 3/8" dia.

DM-01A

Height: 2 1/2"  
 Width: 1 1/2"  
 Depth: 1 1/2"  
 Mtg. Cen.: 1 1/16" x 1 1/16"  
 Studs: 4 6-32  
 Knockout: 1 3/8" dia.

DM-01B

Height: 2 1/4"  
 Width: 1 1/2"  
 Depth: 1 1/2"  
 Mtg. Cen.: 1 1/16" x 1 1/16"  
 Studs: 2 6-32  
 Knockouts: 1 3/8" dia.

DM-01C

Height: 2"  
 Width: 1 1/2"  
 Depth: 1 1/2"  
 Mtg. Cen.: 1 1/16" x 1 1/16"  
 Studs: 2 6-32  
 Knockouts: 1 3/8" dia.

DM-01D

Height: 2 1/2"  
 Width: 1 1/2"  
 Depth: 1 1/2"  
 Mtg. Cen.: 1 1/16" x 1 1/16"  
 Studs: 2 6-32  
 Knockouts: 1 3/8" dia.

DC-1A CASE



Height: 2 1/2"  
 Width: 2 1/16"  
 Depth: 1 3/16"  
 Mtg. Cen.: 1 1/2" x 1 1/4"  
 Studs: 4 8-32  
 Knockout: 1 1/4" dia.

DC-2A CASE



Height: 3"  
 Width: 2 5/8"  
 Depth: 2 1/4"  
 Mtg. Cen.: 2" x 1 3/4"  
 Studs: 4 8-32  
 Knockout: 1 1/2" x 1 3/8"

PROFESSIONAL GRADE COMPONENTS

INPUT TRANSFORMERS

Frequency Response 30-15,000 C.P.S. ±1.0 DB

Catalog No.	Application	Impedance Level Ohms		Maximum Power Level DBM	Ratio	Equivalent Shielding D.B.	Max. Pri. D.C. per Side Ma.	D.C. Unbalance Ma.	Case Number
		Primary	Secondary						
PGA 1	Universal 500 ohm line to single grid.	U-500	50,000	+12	1:10	50	0	0	DM-01A
PGA 2	Universal 500 ohm line to push-pull grids.	U-500	60,000 split	+12	1:11	50	0	0	DM-01B
PGA 3	Universal 500 ohm line to push-pull grids.	U-500	100,000 split	+12	1:14.1	50	0	0	DM-01C
PGA 4	Bridging line to single grid.	10,000	60,000	+12	1:2.45	50	0	0	DM-01
PGA 5	Bridging line to push-pull grids.	10,000	60,000 split	+12	1:2.45	50	0	0	DM-01
PGA 6	Low level line matching.	U-500	U-500	+18	1:1	50	0	0	DM-01

U-500 IMPEDANCES IN OHMS: 50, 125, 200 CT, 250, 330, 500 CT. 125 and 500 ohms can be used for 150 and 600 ohms.

LOW LEVEL OUTPUT AND MIXING TRANSFORMERS

Frequency Response 30-15,000 C.P.S. ±1.0 DB

Catalog No.	Application	Impedance Level Ohms		Maximum Power Level DBM	Ratio	Max. Pri. D.C. Per Side Ma.	D.C. Unbalance Ma.	Case Number
		Primary	Secondary					
PGA 7	Single triode plate to Universal 500 ohm line. Shunt feed.	15,000	U500	+18	5.48:1	0	0	DM-01D
PGA 8	Single triode plate to Universal 500 ohm line.	15,000	U500	+18	5.48:1	8	8	DM-01A
PGA 9	Push-pull triode plates to Universal 500 ohm	20,000 CT	U500	+30	6.32:1	8	0.5	DM-01A
PGA 10	Low level line matching.	U500	U500	+18	1:1	0	0	DM-01C

DRIVER TRANSFORMERS

Frequency Response 30-15,000 C.P.S. ±1.0 DB

Catalog No.	Application	Primary Impedance Ohms	Turn Ratio Pri: 1/2 Sec.	Max. Level DBM	Max. Pri. D.C. Per Side Ma.	Max. D.C. Unbalance Ma.	Case Number
PGA 11	Universal 500 ohm line to push-pull grids.	U500	1:1	+40	0	0	DC-2A
PGA 12	Push-pull 6C4, 6SN7 triodes to push-pull 2A3, 6L6 grids.	20,000 C.T.	3.0:1	+30	10	1	DC-1A
PGA 13	Push-pull 2A3, 6B4, 6A5G to push-pull 809, TZ-40, 4/125A	5,000 C.T.	3.2:1	+40	50	5	DC-2A

L after case number indicates leads.  
 T after case number indicates terminals.

PROFESSIONAL GRADE COMPONENTS

CASE DIMENSIONS



DC-2B CASE

Height: 3 1/2"  
 Width: 2 9/8"  
 Depth: 2 1/4"  
 Mtg. Cen.: 2" x 1 3/4"  
 Studs: 4 8-32  
 Knockout: 1 1/2" x 1 3/8"

DC-4A CASE

Height: 3 3/4"  
 Width: 3 3/8"  
 Depth: 3"  
 Mtg. Cen.: 2 1/2" x 2 1/2"  
 Studs: 4 8-32  
 Knockout: 2" x 1 3/4"

DC-5A CASE

Height: 3 7/8"  
 Width: 4 1/8"  
 Depth: 3 1/2"  
 Mtg. Cen.: 3 1/8" x 2 5/8"  
 Studs: 4 10-32  
 Knockout: 2 1/2" x 2"

DC-6A CASE

Height: 4 7/8"  
 Width: 5"  
 Depth: 4 1/8"  
 Mtg. Cen.: 3 3/4" x 3"  
 Studs: 4 10-32  
 Knockout: 3" x 2 1/2"

L after case number indicates leads

T after case number indicates terminals

HIGH LEVEL OUTPUT TRANSFORMERS

Frequency Response 30-15,000 C.P.S. ±1.0 DB

Catalog No	Application	Impedance Level		Maximum Power Level		Ratio	Max. Pri. D.C. Per Side Ma	DC Unbalance Ma	Case Number
		Primary Ohms	Secondary	DBM	Watts				
PGA 14	P.P. 6K6, 6AR5, 7B5 Class A to Universal voice coil.	12,000 C.T.	U16	+40	10	27.4:1	40	4	DC-2B
PGA 15	P.P. 6F6 Cl. AB <sub>1</sub> , P.P. 6V6, 6AQ5, 7C5, Cl. AB <sub>1</sub> , 6L6 or 5881 Triode to Universal voice coil.	10,000 C.T.	U16	+43	20	25:1	50	5	DC-4A
PGA 16	P.P. 6L6 Cl. AB <sub>1</sub> , self bias to Universal 500 ohm line.	9,000	U500	+44.8	30	4.23:1	50	5	DC-4A
PGA 17	As above to Universal voice coil.	9,000	U16	+44.8	30	23.7:1	50	5	DC-4A
PGA 18	P.P. 6N7 Cl. B, P.P. 6V6, 6AQ5, 7C5, Cl. AB <sub>1</sub> to Universal voice coil.	8,000 C.T.	U16	+41.8	15	22.3:1	45	5	DC-4A
PGA 19†	P.P. 6L6, fixed bias, Cl. AB <sub>1</sub> , to Universal 500 ohm line.	6,600 C.T.	U500	+44.8	30	3.63:1	70	7	DC-4A
PGA 20	As above to Universal voice coil.	6,600 C.T.	U16	+44.8	30	20.3:1	70	7	DC-4A
PGA 21	P.P. 6L6 Cl. A, P.P. 2A3, 6A5G, 6B4 self bias P.P. Par. 6V6 Cl. AB <sub>1</sub> to Universal voice coil.	5,000 C.T.	U16	+43	20	17.7:1	80	8	DC-4A
PGA 22	P.P. Par 6L6 Cl. AB <sub>1</sub> , self bias P. P. 6L6 Cl. AB <sub>1</sub> fixed bias PP807 Cl. AB <sub>1</sub> to Universal 500 ohm line.	4000 C.T.	U500	+47	50	2.83:1	100	10	DC-5A
PGA 23	As above to Universal voice coil.	4000 C.T.	U16	+47	50	15.8:1	100	10	DC-5A
PGA 24	P.P. 6A5G, 6B4, 2A3, fixed bias Universal voice coil.	3000 C.T.	U16	+41.8	15	13.7:1	75	7.5	DC-4A
PGA 25	P.P. Par. 807 Cl. AB <sub>1</sub> to Universal 500 ohm line.	2100 C.T.	U500	+51.8	150	2.05:1	240	12	DC-6A
PGA 26	P.P. Par 2A3, 6A5G, fixed bias 6B4, 300A Cl. AB <sub>1</sub> , P.P. Par 6L6 Cl. A to Universal 500 ohm line.	1500 C.T.	U500	+44.8	30	1.73:1	150	15	DC-4A
PGA 27	As above to Universal voice coil.	1500 C.T.	U16	+44.8	30	9.7:1	150	15	DC-4A
PGA 28	Matching line to Universal voice coil.	U500	U16	+44.8	30	5.6:1	0	0	DC-4A
PGA 29	Matching line to Universal voice coil.	U500	U16	+47	50	5.6:1	0	0	DC-5A
PGA 30	Matching line to Universal voice coil.	U500	U16	+50	100	5.6:1	0	0	DC-6A

† Available with taps to apply screen feedback.

U-16 IMPEDANCES IN OHMS:  
 2, 4, 8, 12, 16

U-500 IMPEDANCES IN OHMS:  
 50, 125, 200 C.T., 250, 330, 500 C.T., 125 and 500 ohms can be used for 150 and 600 ohms.

A 70 volts level can be obtained for the following impedances:

500 ohms — 10 watts + 40 DBM  
 330 ohms — 15 watts + 42 DBM  
 250 ohms — 20 watts + 43 DBM  
 200 ohms — 25 watts + 44 DBM  
 125 ohms — 40 watts + 46 DBM  
 50 ohms — 100 watts + 50 DBM

# FREED TRANSFORMER COMPANY, INC.

## CASE DIMENSIONS



### DM-01 CASE

Height: 2"  
Width: 1 1/2"  
Depth: 1 1/2"  
Mtg. Cen.: 1 1/16" x 1 1/16"  
Studs: 4 6-32  
Knockout: 1 3/8" dia.



### DC-1A

Height: 2 1/2"  
Width: 2 1/2"  
Depth: 1 1/16"  
Mtg. Cen.: 1 1/2" x 1 1/4"  
Studs: 4 8-32  
Knockout: 1 1/4" dia.

### DC-2A

Height: 3"  
Width: 2 5/8"  
Depth: 2 1/4"  
Mtg. Cen.: 2" x 1 3/4"  
Studs: 4 8-32  
Knockout: 1 1/2" x 1 3/8"

### DC-2B

Height: 3 1/2"  
Width: 2 5/8"  
Depth: 2 1/4"  
Mtg. Cen.: 2" x 1 3/4"  
Studs: 4 8-32  
Knockout: 1 1/2" x 1 3/8"

### DC-4A

Height: 3 3/4"  
Width: 3 1/8"  
Depth: 3"  
Mtg. Cen.: 2 1/2" x 2 1/2"  
Studs: 4 8-32  
Knockout: 2" x 1 3/4"

### DC-5A CASE

Height: 3 7/8"  
Width: 4 1/8"  
Depth: 3 1/8"  
Mtg. Cen.: 3 1/4" x 2 5/8"  
Studs: 4 10-32  
Knockout: 2 1/4" x 2"

### DC-5B

Height: 4 1/2"  
Width: 4 1/8"  
Depth: 3 1/8"  
Mtg. Cen.: 3 1/4" x 2 5/8"  
Studs: 4 10-32  
Knockout: 2 1/4" dia.

### DC-6A CASE

Height: 4 7/8"  
Width: 5"  
Depth: 4 1/8"  
Mtg. Cen.: 3 3/4" x 3"  
Studs: 4 10-32  
Knockout: 3" dia.

### 7B CASE

Height: 6 3/4"  
Width: 5 1/2"  
Depth: 5"  
Mtg. Cen.: 4 3/8" x 3 3/4"  
Studs: 4 1/4-20  
Knockout: 3" x 2 1/2"

## PROFESSIONAL GRADE COMPONENTS FILTER REACTORS

Inductance measured at 50V, 60 cycles with rated direct current in the winding.

Catalog No.	Inductance in Henries	Rated Current D.C. Ma.	D.C. Resistance Ohms	Test Voltage VRMS	Case Number
PGC 1	40	15	9000	1500	DM-01
PGC 2	12	40	400	1500	DC-1A
PGC 3	8	50	300	1500	DC-1A
PGC 4	20	50	425	1500	DC-2A
PGC 5	10	70	250	1500	DC-2A
PGC 6	6	100	160	1500	DC-2A
PGC 7	6	150	115	1500	DC-2B
PGC 8	10	150	160	1500	DC-4A
PGC 9	5.5	200	95	1500	DC-4A
PGC 10	10	200	150	1500	DC-4A
PGC 11	10	250	135	1500	DC-5B
PGC 12	8	300	95	1500	DC-5B
PGC 13	7	400	60	1500	DC-5B
			PARALLEL FEED	AUDIO CHOKES	
PGC 14	100	10	3500	1000	EM-u1
PGC 15	30	50	650	1500	DC-2A
PGC 16	400	1	6000	1000	DM-01

## SWINGING INPUT REACTORS

Catalog No.	Inductance in Henries *	Rated Current D.C. Ma.	D.C. Resistance Ohms	Dielectric Test Voltage VRMS	Case Number
PGC 17	5-20	150	160	1500	DC-4A
PGC 18	5-20	250	135	1500	DC-5B
PGC 19	3-15	300	95	1500	DC-5B
PGC 20	3-15	400	60	1500	DC-5B

\* Inductance values for 100% and 10% of rated Direct Current.

## POWER TRANSFORMERS

ALL PRIMARIES ARE FOR 115V., 50/60 c.p.s.

Temperature rises range from 45° to 50°C.

Catalog No.	Pv Va	Hi Volt	Choke Input D.C.V. D.C. Ma	Cond. Input D.C.V. D.C. Ma.	Bias Tap.	Rectifier	Fil. No. 1	Fil. No. 2	Fil. No. 3	Case No.
PGP 1	15	440V C.T.	Low flux density, hum-bucking. For Pre-amplifier service.	270 15		6X4	6.3VCT@0.6A	6.3V @ 0.3A		DC-2B
PGP 2	30	550V C.T.	Low flux density, hum-bucking. For Pre-amplifier service.	310 35		6X4	6.3VCT@0.6A	6.3VCT@0.9A		DC-1A
PGP 3	45	500V C.T.		270 40		6X4 5Y3	5/6.3V @ 2A	6.3V @ 2A		DC-1A
PGP 4	57	600V C.T.		330 50		6X4 5Y3	5/6.3V @ 2A	6.3V @ 2.5A		DC-1A
PGP 5	64	650V C.T.		370 50		6X4 5Y3	5/6.3V @ 2A	6.3V @ 3A		DC-1A
PGP 6	73	600V C.T.		320 70		6X4 5Y3	5/6.3V @ 2A	6.3V @ 3A		DC-1A
PGP 7	110	650V C.T.	225 140	330 100		5Y3, 5U4	5V @ 3A	6.3V @ 5A		DC-1A
PGP 8	76	700V C.T.	260 100	385 70		5Y3	5V @ 2A	6.3V @ 2.5A		DC-1A
PGP 9	108	700V C.T.	250 125	370 90		5Y3, 5U4	5V @ 3A	6.3V @ 5A		DC-1A
PGP 10	127	700V C.T.	260 170	350 120		5U4	5V @ 3A	6.3V @ 5A		DC-1A
PGP 11	146	700V C.T.	260 210	350 150		5U4	5V @ 3A	6.3V @ 5A	6	DC-1A
PGP 12	207	800V C.T.	295 280	400 200		5U4, 2-5Y3	5V @ 4A	6.3V @ 6A		DC-1A
PGP 13	225	800V C.T.	295 280	400 200	80	5U4, 2-5Y3	5V @ 4A	6.3V @ 6A	5/C	DC-1A
PGP 14	268	840V C.T.	330 350	450 250	80	2-5U4	5V @ 6A	6.3V @ 6A	5/E	DC-1A
PGP 15	320	900V C.T.	340 420	490 300	80	2-5U4	5V @ 6A	6.3V @ 6A	5/6	DC-1A
PGP 16	127	900V C.T.	350 150			5U4	5V @ 3A	6.3V @ 5A		DC-1A
PGP 17	150	900V C.T.	350 200			5UR	5V @ 3A	6.3V @ 5A		DC-1A
PGP 18	203	1100V C.T.	400 250			5R4GY	5V @ 3A	6.3V @ 5A		DC-1A
PGP 19	248	1100V C.T.	420 300			2-5R4GY	5V @ 4A	6.3V @ 7A		DC-1A
PGP 20	310	1280V C.T.	480 350			2-5R4GY	5V @ 4A	6.3V @ 7A		DC-1A

T following case number indicates Terminals.

L following case number indicates Leads.



# FREED TRANSFORMER COMPANY, INC.

## HIGH Q REACTORS

### PQC HIGH Q REACTORS

PQC-Reactors are low-priced High Q components designed for use in selective circuits such as wave filters, wave traps, and noise suppressors.

#### CASE DIMENSIONS

##### DM-02 CASE



Height: 1 21/32"  
 Width: 1 21/32"  
 Depth: 1 13/32"  
 Flange L: 2 3/8"  
 Mtg. Cen.: 2"

Catalog No.	Application	Rated Ind. in Henries	Q	Tuning Capacitor (MF)	Case Size
PQC 1	60 cps resonant trap	14.00	10	.5	DM-02
PQC 2	400 cps resonant trap	1.58	15	.1	DM-02
PQC 3	1000 cps resonant trap	1.00	20	.025	DM-02
PQC 4	Dynamic noise suppression inductor	2.40	20 @ 4 KC		DM-02
PQC 5	Dynamic noise suppression inductor	2.00	20 @ 4 KC		DM-02
PQC 6	Dynamic noise suppression inductor	1.30	20 @ 4 KC		DM-02
PQC 7	Dynamic noise suppression inductor	.80	20 @ 4 KC		DM-02
PQC 8	Dynamic noise suppression inductor	.60	20 @ 4 KC		DM-02
PQC 9	Dynamic noise suppression inductor	.40	20 @ 4 KC		DM-02

### QGC HIGH Q REACTORS

QGC-Reactors are designed for low audio frequency application requiring very high Q and inductance stability. These units are impregnated with a special compound and mounted in **hermetically sealed** cases. A hum reducing lamination structure used in these reactors results in an extremely low pickup of extraneous stray fields. A very low temperature coefficient is achieved by a specially developed impregnation and assembly process. All QGC High Q Reactors have an extremely low voltage coefficient.

All Resistance values are nominal and can vary by  $\pm 20\%$ .

Inductance values are given within  $\pm 2\%$ .

**Closer Tolerances and Inductances other than the standard Catalog items can be supplied on special orders.**

**Inductance Values up to 400 Henries can be supplied.**

The graphs showing the coil characteristics make use of the following formulas:

1. "Q" versus frequency was measured with voltages given by the expression:

$$V = K \sqrt{\frac{LH}{1H}} \times \frac{FKC}{1KC}$$

K — a constant listed in every chart

LH — inductance in Henries

FKC — frequency in kilocycles at which the measurements were made.

2. Variation of inductance versus normalized Direct Current.

The normalized DC is given by

$$I_n = I_{dc} \sqrt{LH}$$

where  $I_{dc}$  is the dc current in MA and LH the inductance in Henries.

3. Variation of Inductance versus normalized AC voltage.

The normalized AC voltage is given by

$$V_n = \frac{V}{\sqrt{LH}} \times \frac{60}{F_{cps}}$$

$V_n$  — normalized AC voltage

V — voltage across the coil

LH — inductance in Henries

F — frequency of measurement in cps.

# FREED TRANSFORMER COMPANY, INC.

## CASE DIMENSIONS

### DC-2A CASE



Height: 3"  
 Width: 2 5/8"  
 Depth: 2 1/4"  
 Mtg. Cen.: 2" x 1 3/4"  
 Studs: 4 8-32  
 Knockout: 1"

### AJ CASE



Height: 2 3/8"  
 Width: 1 5/8"  
 Depth: 1 5/8"  
 Mtg. Cen.: 1 1/16" x 1 1/16"  
 Studs: 4 6-32

### AH CASE



Height: 1 3/4"  
 Width: 1 5/16"  
 Depth: 1 5/16"  
 Mtg. Cen.: 1 1/4" dia.  
 Studs: 4 6-32

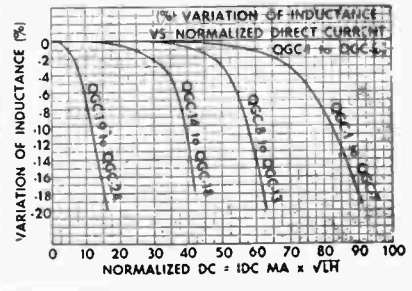
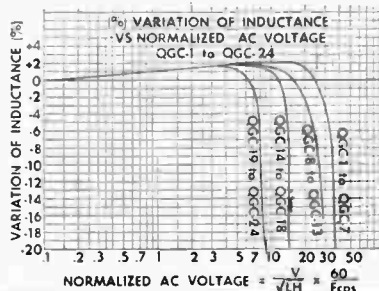
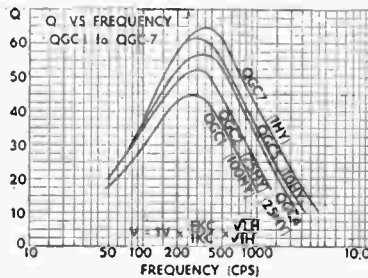
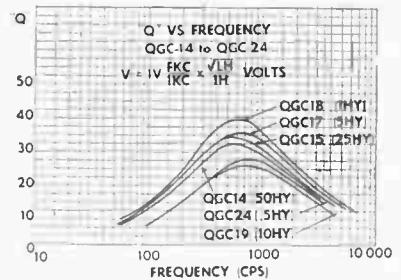
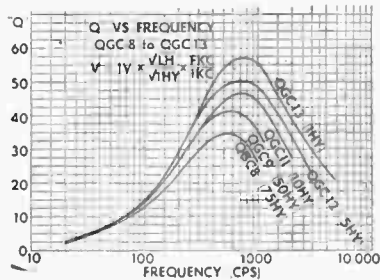
### DM-20 CASE



Height: 1 9/16"  
 Dia.: 1 5/16"  
 Flange L.: 1 13/32"  
 Flange D.: 0.975"  
 Mtg. Cen.: 1 1/8" to 1 1/32"  
 2 Holes: .147 wide  
 Knockout: .875

## QUALITY GRADE HIGH Q REACTORS

Catalog No.	Inductance Hy.	RDC Ohms Tolerance ± 20%	Self-resonant Frequency KC	Current Capacity MA	Case No.
QGC-1	100	1,611	2.2	40	DC-2A
QGC-2	75	1,054	2.6	50	DC-2A
QGC-3	50	878	3.2	50	DC-2A
QGC-4	25	378	4.5	80	DC-2A
QGC-5	10	117	7.2	160	DC-2A
QGC-6	5	78	10.2	160	DC-2A
QGC-7	1	15	22.6	400	DC-2A
QGC-8	75	3,400	.82	16	AJ
QGC-9	50	2,050	1.00	20	AJ
QGC-10	25	1,250	1.41	25	AJ
QGC-11	10	460	2.25	40	AJ
QGC-12	5	210	3.20	65	AJ
QGC-13	1	40	7.20	160	AJ
QGC-14	50	2,900	4.60	13	AH
QGC-15	25	1,300	6.60	20	AH
QGC-16	10	570	10.70	25	AH
QGC-17	5	280	15.20	40	AH
QGC-18	1	50	35.00	100	AH
QGC-19	10	760	10.70	20	DM-20
QGC-20	7.5	700	12.20	20	DM-20
QGC-21	5	450	15.20	25	DM-20
QGC-22	2.5	235	22.00	32	DM-20
QGC-23	1	90	35.00	63	DM-20
QGC-24	0.5	45	51.00	80	DM-20



# FREED TRANSFORMER COMPANY, INC.

## HERMETICALLY SEALED PULSE TRANSFORMERS

### CASE DIMENSIONS

#### DM-8 CASE

Height: 1 1/2"  
Width: 1 3/32"  
Flange D.: 1 1/4"

#### DM-01 CASE

Height: 2"  
Width: 1 1/2"  
Depth: 1 1/2"  
Mtg. Cen.: 1 1/16" x 1 1/16"  
Studs: 4 6-32  
Knockout: 1 3/8" dia.

#### DM-20 CASE

Height: 1 9/16"  
Diameter: 1 5/16"  
Flange L.: 1 13/32"  
Flange D.: 0.975"  
Mtg. Cen.: 1 1/8" to 1 1/32"  
2 Holes: .147 wide  
Knockout: .875

#### DM-18 CASE

Height: 1"  
Width: 2 1/4"  
Depth: 1 1/8"  
Mtg. Cen.: 9/16"  
Studs: 2 6-32

#### MM-1

Length: 3/4"  
Depth: 1/2"

#### MM-2

Length: 23/32"  
Width: 23/32"  
Height: 1/2"

#### MM-3

Length: 1 1/4"  
Width: 1 1/4"  
Height: 1 1/2"  
Mtg. Cen.: 1 1/2"  
Mtg. Flange: 1 11/16"

#### MM-4

Length: 1 13/16"  
Depth: 1 1/4"  
Height: 1 1/2"  
Mtg. Cen.: 2 1/8"  
Mtg. Flange: 2 1/2"

### MOLDED DIMENSIONS

#### MMO-1

D: 3/16"  
Th.: 3/16"

#### MMO-2

D: 3/4"  
Th.: 1/2"

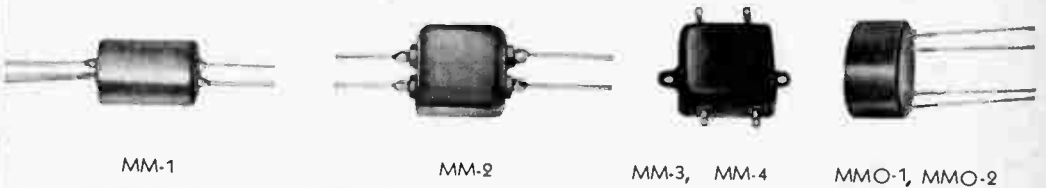
Hermetically sealed Pulse Transformers for use in blocking oscillator, low level interstage coupling, and modulator output circuits. These components meet MIL-T-27 A specifications. The pulse transformers are designed for maximum power, efficiency, and optimum pulse performance. Balanced coil structures permit series or parallel connection of windings for turn ratios other than unity. Pulse characteristics, voltages and impedance levels will depend upon the interconnections made.

### PULSE TRANSFORMERS

Cat. No.	Blocking Osc.	Interstage Coupling	Low Power Output	Pulse Voltage Kilovolts	Pulse Duration Microseconds	Duty Rate	No. of Windings	Test Voltage KV., RMS	Characteristic Impedance Ohms	Case No.
MPT-1	✓	✓		0.25/0.25/0.25	0.2-1.0	.004	3	0.7	250	DM-20
MPT-2	✓	✓		0.25/0.25	0.2-1.0	.004	2	0.7	250	DM-20
MPT-3	✓	✓		0.5/0.5/0.5	0.2-1.5	.002	3	1.0	250	DM-18
MPT-4	✓	✓		0.5/0.5	0.2-1.5	.002	2	1.0	250	DM-18
MPT-5	✓	✓		0.5/0.5/0.5	0.5-2.0	.002	3	1.0	500	DM-20
MPT-6	✓	✓		0.5/0.5	0.5-2.0	.002	2	1.0	500	DM-20
MPT-7	✓	✓	✓	0.7/0.7/0.7	0.5-1.5	.002	3	1.5	200	DM-18
MPT-8	✓	✓	✓	0.7/0.7	0.5-1.5	.002	2	1.5	200	DM-18
MPT-9	✓	✓	✓	1.0/1.0/1.0	0.7-3.5	.002	3	2.0	200	DM-18
MPT-10	✓	✓	✓	1.0/1.0	0.7-3.5	.002	2	2.0	200	DM-18
MPT-11	✓	✓	✓	1.0/1.0/1.0	1.0-5.0	.002	3	2.0	500	DM-01
MPT-12	✓	✓	✓	0.15/0.15/0.3/0.3	0.2-1.0	.004	4	0.7	700	DM-8

### ULTRA MINIATURE PULSE TRANSFORMERS

- Meet all requirements of MIL-T-27 A.
- Negligible weight.
- Exceedingly small size.
- Encapsulated or hermetically sealed.



Catalog No.	Application	Pulse Volts	Pulse Width $\mu$ sec	Rise time $\mu$ sec	Inductance		PPS, Mcs	Turns Ratio	Zo ohms	Case Des.
					Prim. $\mu$ hy	Leakage $\mu$ hy				
EPT-1	Impedance matching	20	.07	.03	125	12	2	1:1	200	MM-1
EPT-2		20	.07	.03	150	15	2	2:1	200	MM-1
EPT-3		20	.07	.03	160	15	2	3:1	100	MM-1
EPT-4		20	.07	.03	200	20	2	4:1	100	MM-1
EPT-5		17	.10	.04	200	6	2	4:1	100	MM-1
EPT-6		15	.10	.04	200	5	2	5:1	100	MM-1
EPT-7	Interstage coupling	25	.50	.05	1,200	20	1	7:1:1		MM-1
EPT-8		10	10	.04	12,000	70	.01	5:1		MM-2
EPT-9		10	5	.04	7,500	22	.01	3:1	100	MM-2
EPT-11	Blocking oscillator	100	.25	.02	200	2	.012	1:1		MM-1
EPT-12		50	.33	.07	240	2	.002	1:1		MM-1
EPT-13		40	.5	.07	6,000	15		2:1		MM-2
EPT-14		15	6	.1	16,000	15	.0004	1:1.4		MM-2
EPT-15		Memory core &	5	1.5	.25	4,000	300		5:5:1PP	10
EPT-16	Current driver	2.5	2.4	.2	2,800	200		3:3:3:1PP	6	MM-4
EPT-17	Current driver	21	1-4	.22	18,000	800	.250	6:1	200	MM-3
EPT-18	Current transformer	10	6	.2	90,000	200	.05	11:1	75	MM-3
EPT-19	Pulse Inversion	22	1-7	.25	55,000	300	.05	6:1:1	400	MM-3

When ordering encapsulated units add "M" to the catalog number.

# FREED TRANSFORMER COMPANY, INC.

## CASE DIMENSIONS



### AJ CASE

Height: 2 3/8"  
Width: 1 5/8"  
Depth: 1 5/8"  
Mtg. Cen.: 1 1/16" x 1 1/16"  
Studs: 4 6-32



### EB CASE

Height: 2 7/16"  
Width: 1 13/16"  
Depth: 1 13/16"  
Mtg. Cen.: 1 3/16" x 1 1/4"  
Studs: 4 6-32

### FB CASE

Height: 2 1/2"  
Width: 2 5/16"  
Depth: 2 1/16"  
Mtg. Cen.: 1 11/16" x 1 13/16"  
Studs: 4 6-32

### GB CASE

Height: 2 13/16"  
Width: 2 3/4"  
Depth: 2 3/8"  
Mtg. Cen.: 2 1/8" x 1 3/4"  
Studs: 4 6-32

### HA CASE

Height: 4 1/2"  
Width: 3 1/2"  
Depth: 2 5/8"  
Mtg. Cen.: 2 19/64" x 1 55/64"  
Studs: 4 8-32

### HB CASE

Height: 3 3/8"  
Width: 3 1/8"  
Depth: 2 5/8"  
Mtg. Cen.: 2 19/64" x 1 55/64"  
Studs: 4 8-32

### JB CASE

Height: 3 7/8"  
Width: 3 9/16"  
Depth: 3 1/8"  
Mtg. Cen.: 2 5/8" x 2 1/8"  
Studs: 4 8-32

### KB CASE

Height: 4 5/16"  
Width: 3 13/16"  
Depth: 3 3/8"  
Mtg. Cen.: 3 1/8" x 2 1/16"  
Studs: 4 10-32

### LB CASE

Height: 4 1/2"  
Width: 4 5/8"  
Depth: 3 11/16"  
Mtg. Cen.: 3 5/16" x 2 11/16"  
Studs: 4 10-32

### MB CASE

Height: 4 13/16"  
Width: 4 11/16"  
Depth: 4"  
Mtg. Cen.: 3 11/16" x 3"  
Studs: 4 1/4-20

### NB CASE

Height: 5 1/8"  
Width: 5 1/8"  
Depth: 4 5/8"  
Mtg. Cen.: 4 1/16" x 3 5/16"  
Studs: 4 1/4-20

## STANDARD MILITARY TRANSFORMERS

This group comprises audio and power units designed to meet MIL-T-27 A specifications. The functional characteristics of these transformers were established by the Armed Services Standardization Program.

These units are supplied in standard MIL cases.

Transformers meeting MIL-T-27A specifications Grade 1 through 6 with temperature characteristics of Class S, T, or U can be supplied on special order.

Encapsulated units using either Epoxy-Resins or Fosterite can be supplied for Grade 2 and 5. Class U components can be supplied molded in special high temperature Freed resin.

### STANDARD MILITARY AUDIO TRANSFORMERS

Frequency Response 300-10,000 C.P.S. ±2 DB

Catalog No.	Application	Type Designation	Impedance Level in Ohms		Ratio	Max. Power Level DBM	Pri. D.C. Per Side in Ma	Max. D.C. unbalance	Case
			Primary	Secondary					
MGA 1	Transformer; interstage, single or P.P. plates to single or P.P. grids.	TF1RX15AJ	10,000 C.T.	90,000 split and C.T.	1:3 overall	+15	10	10	AJ
MGA 2	Transformer; matching 600 ohm line to voice coil.	TF1RX16AJ	600 split	4, 8, 16	6.12:1 overall	+33	0	0	AJ
MGA 3	Transformer; input, 600 ohm line to single or P.P. grids.	TF1RX10AJ	600 split	135,000 C.T.	1:15	+15	0	0	AJ
MGA 4	Transformer; matching, 600 ohm line to 600 ohm line.	TF1RX16AJ	600 split	600 split	1:1	+15	0	0	AJ
MGA 5	Transformer; output, single plate 7,600 ohm, 4,800 ohm to 600 ohm line.	TF1RX13AJ	7,600 tap @ 4,800	600 split	3.56:1	+33	40	40	AJ
MGA 6	Transformer; output, single plate 7,600 ohm, 4,800 ohm to voice coil.	TF1RX13AJ	7,600 tap @ 4,800	4, 8, 16	21.8:1	+33	40	40	AJ
MGA 7	Transformer; output, single or P.P. plates to 600 ohm line.	TF1RX13AJ	15,000 C.T.	600 split	5:1	+33	10	10	AJ
MGA 8	Transformer; output, P.P. plates to 600 ohm line.	TF1RX13AJ	24,000 C.T.	600 split	6.32:1	+30	10	1	AJ
MGA 9	Transformer; output, P.P. plates to 600 ohm line.	TF1RX13AJ	60,000 C.T.	600 split	10:1	+27	10	1	AJ

### STANDARD MILITARY FILAMENT TRANSFORMERS

Primary 105/115/125V 60~

Single phase 400 cps. and three phase 60 and 400 cps. transformers can be supplied on special order.

Catalog No.	MIL-T-27 Type Designation	Hi Volt.	D.C. Volts	D.C. Amps.	Fil. No. 1	Fil. No. 2	Case
MGP 1	TF1RX03HA001	300/100/0/100/200	185	.070	5/6.3V @ 2A	6.3V @ 3A	HA
MGP 2	TF1RX03JB002	650 C.T.	260	.070	5/6.3V @ 2A	6.3V @ 4A	JB
MGP 3	TF1RX03KB006	650 C.T.	245	.150	6.3V @ 5A	5V @ 3A	KB
MGP 4	TF1RX03LB003	800 C.T.	318	.175	5V @ 3A	6.3V @ 8A	LB
MGP 5	TF1RX03MB004	900 C.T.	345	.250	5V @ 3A	6.3V @ 8A	MB
MGP 6	TF1RX02KB001	700 C.T.	255	.250			KB
MGP 7	TF1RX02LB002	1100 C.T.	419	.250			LB
MGP 8	TF1RX02NB003	1600 C.T.	640	.250			NB

### STANDARD MILITARY POWER TRANSFORMERS


Primary 105/115/125V 60~

Single phase 400 cps. and three phase 60 and 400 cps. transformers can be supplied on special order.

Catalog No.	MIL-T-27 Type Designation	Secondary Volts	Secondary Current Amps	Secondary Test Volts RMS	Case
MGF 1	TF1RX01EB002	2.5	3.0	2,500	EB
MGF 2	TF1RX01GB003	2.5	10.0	2,500	GB
MGF 3	TF1RX01FB004	5.0	3.0	2,500	FB
MGF 4	TF1RX01HB005	5.0	10.0	2,500	HB
MGF 5	TF1RX01FB006	6.3	2.0	2,500	FB
MGF 6	TF1RX01GB007	6.3	5.0	2,500	GB
MGF 7	TF1RX01JB008	6.3	10.0	2,500	JB
MGF 8	TF1RX01KB009	6.3	20.0	2,500	KB
MGF 9	TF1RX01JB012	2.5	10.0	10,000	JB
MGF 10	TF1RX01KB013	5.0	10.0	10,000	KB

HERMETICALLY SEALED FILTER REACTORS  
MEET MIL-T-27A SPECIFICATIONS

**CASE DIMENSIONS**



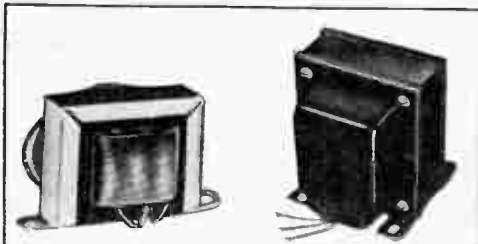
Case	Height	Depth	Width	Mtg. Centers	Studs
AJ	2 3/8	1 1/8	1 3/8	1 3/8 x 1 3/8	4 6-32
EB	2 3/8	1 1/8	1 1/4	1 1/8 x 1 1/4	4 6-32
FA	3 1/8	2 1/8	2 3/8	1 1/8 x 1 1/8	4 6-32
GA	3 3/8	2 3/8	2 3/8	2 1/8 x 2 3/8	4 6-32
HB	3 3/8	3 1/8	2 3/8	2 1/8 x 1 3/8	4 8-32
JA	3 3/8	3 1/8	4 1/8	2 3/8 x 2 1/8	4 8-32
JB	3 7/8	3 1/8	3 3/8	2 3/8 x 2 1/8	4 8-32
KB	4 3/8	3 1/8	3 1/4	3 x 2 7/8	4 10-32
LA	5 3/8	3 1/8	4 3/8	3 3/8 x 2 1/8	4 10-32
LB	4 1/2	3 1/8	4 3/8	3 3/8 x 2 1/8	4 10-32
MB	4 1/2	4	4 1/8	3 1/8 x 3	4 1/4-20

Cutout for AJ & EB 7/16 x 7/16  
 Cutout for FA & GA 1/2 x 1/2  
 Cutout for all others 1/8 x 1/8

Catalog No.	Inductance Henry	Rat. Current DC Ma.	DC Res. Ohms	Test Volt Kilovolts	Case No.
MGC 1	100	10	3,500	1.	AJ
MGC 2	4	50	230	1.	AJ
MGC 3	10	50	325	1.	EB
MGC 4	20	50	475	1.5	FA
MGC 5	30	50	650	1.5	FA
MGC 6	3	75	175	1.	AJ
MGC 7	6	75	235	1.5	EB
MGC 8	12	75	265	1.5	FA
MGC 9	3.5	100	145	1.	EB
MGC 10	8	100	180	1.5	FA
MGC 11	12	100	190	2.	GA
MGC 12	2	150	92	1.5	EB
MGC 13	4	150	115	1.5	FA
MGC 14	8	150	125	2.	GA
MGC 15	11	150	120	2.5	JB
MGC 16	2.5	200	70	1.5	FA
MGC 17	4	200	80	2.	GA
MGC 18	7	200	135	2.	HB
MGC 19	10	200	125	2.5	JA
MGC 20	2.5	300	50	2.	GA
MGC 21	4	300	62	2.5	HB
MGC 22	6	300	85	2.5	JB
MGC 23	8	300	65	2.5	KB
MGC 24	10	300	100	2.5	LA
MGC 25	2	400	37	2.5	HB
MGC 26	6	400	60	2.5	KB
MGC 27	2	500	35	2.5	JA
MGC 28	4	500	45	2.5	KB
MGC 29	7	500	50	2.5	MB
MGC 30	2	700	20	2.5	LB
MGC 31	1.75	1,000	12.5	2.5	MB

\*Not stocked, available on short delivery.

NEW CIRCUIT REVISES WILLIAMSON HI-FIDELITY  
AMPLIFIER FOR IMPROVED PERFORMANCE.



- Frequency response: .1DB from 20 to 30,000 cps. at 20W.
- Harmonic distortion: .4DB from 20 to 30,000 cps. at 20W.
- Two section L-C filter for improved stable performance.
- 20 Watt output connected as Williamson amplifier.
- 10 Watt output connected as ultra linear amplifier.

FREED supplies the following parts from stock.

Case No.	Height	Width	Depth	Mtg. Centers	Mtg. Holes
CH-40	1 1/8	2 3/8	1 3/8	2"	
VS-304	3 1/8	2 3/8	3 1/8	2 x 2 1/8	1/8 x 3/8
VS-506	3 3/8	3 1/8	4 1/8	2 1/2 x 2 1/8	1/8 x 3/8
VS-606	4 1/8	3 1/8	4 1/8	3 x 3 1/8	1/8 x 3/8
PCB	6	9			

Catalog No.	Application	Rating	Case No.
KA-10	output transf.	Prim: 10,000 Ω ct. Sec. 16/8 Ω	VS-508
KC-10	filter reactor	12Hy at 165MA, RDC 180 Ω	VS-304
KC-11	filter reactor	20Hy at 30MA, RDC 1,250 Ω	CH-40
YP-10	power transf.	Prim: 115V 60cps; Sec. 1: 1100 Vct at 150MA; Sec. 2: 6.3Vct at 4A; Sec. 3: 5V at 3A.	VS-606
PCB-10		Printed circuit board	

## TOROIDAL INDUCTORS

Using the latest developments in the field of magnetic materials and new impregnation techniques the Freed Transformer Co. makes available to the industry the most extensive line of toroidal inductors.

Freed Toroids are available in three types of construction. Open units coated with a special high temperature, extremely low loss compound, hermetically sealed or molded in special Freed epoxy resin. Both hermetically sealed and molded units meet the latest military specification.

Freed toroidal inductors are supplied with either molypermalloy cores or special powdered iron cores. The catalog items with the letter "S" added to the type designations are wound on temperature stabilized cores.

SB indicates temperature stability of  $\pm 0.1\%$  from  $+13^{\circ}\text{C}$  to  $+35^{\circ}\text{C}$   
SD indicates temperature stability of  $\pm 0.1\%$  from  $-1.5^{\circ}\text{C}$  to  $+54^{\circ}\text{C}$   
SW indicates temperature stability of  $\pm 0.25\%$  from  $-54^{\circ}\text{C}$  to  $+85^{\circ}\text{C}$

The "Q" values given in the individual graphs are accurate within  $\pm 10\%$  for hermetically sealed and molded units. For open units the "Q" tolerance is  $\pm 20\%$ .

All Toroids are adjusted at frequencies well below their self-resonant frequency,  $f_0$ .

The apparent inductance at any frequency  $f$  is given by the expression

$$L_{\text{app}} = \frac{L}{1 - \left(\frac{f}{f_0}\right)^2}$$

where  $L$  is the nominal inductance.

For frequencies well below the resonant  $f_0$  the fractional increase in inductance due to the distributed capacity  $C_0$  is approximately

$$\frac{\Delta L}{L} = \left(\frac{f}{f_0}\right)^2 = \omega^2 LC_0$$

The graphs showing the coil characteristics make use of the following formulas:

1. "Q" vs. frequency was measured with voltages given by the expression

$$V = K \sqrt{LH} \times \frac{FKC}{1KC}$$

where  $K$  is a constant listed on every chart  
 $LH$  is inductance in Henries  
 $FKC$  is the frequency in kilocycles at which the measurements were made.

2. Variation of inductance vs. normalized Direct Current. The normalized DC is given by:

$$I_{\text{norm.}} = I_{\text{dc}} \sqrt{LH}$$

where  $I_{\text{dc}}$  is the DC current in the coil in MA., and  $LH$  is the inductance in Henries.

3. Variation of Inductance vs. normalized AC voltage. The normalized AC voltage is given by

$$V_{\text{norm.}} = \frac{V}{\sqrt{LH}} \times \frac{60 \text{ cps.}}{F \text{ cps.}}$$

$V$  is the voltage across the coil  
 $LH$  is the inductance in Henries  
 $F$  is the frequency of measurements in cps.

For high frequency Toroids the above expression is changed to

$$V_{\text{norm.}} = \frac{V}{\sqrt{LH}} \times \frac{1KC}{FKC}$$

Toroids with special requirements, tapped Toroids and toroidal transformers can be supplied upon request. Our engineering and laboratory facilities are available for consultation, research and development.

# FREED TRANSFORMER COMPANY, INC.

## FREED TOROIDAL INDUCTORS STANDARD TOLERANCE $\pm 1\%$ OR 1 TURN (whichever is larger)

### CASE DIMENSIONS

#### DT-3 Case



Height: 2"  
Width:  $3\frac{5}{8}$ "  
Length:  $1\frac{25}{32}$ "  
Mounting: 2 6-32 studs  
Mtg. Centers:  $1\frac{1}{4}$ " x  $3\frac{3}{8}$ "  
Cutout:  $3\frac{3}{8}$ " x  $3\frac{3}{4}$ "

#### DT-5 Case



Height:  $1\frac{3}{16}$ "  
Diameter:  $1\frac{13}{16}$ "  
Mounting: 2 6-32 inserts  
Mtg. Centers:  $1\frac{1}{8}$ "  
Cutout:  $3\frac{3}{8}$ " x 1"

### UNCASED DIMENSIONS



Thickness:  $1\frac{1}{16}$ "  
O.D.:  $1\frac{7}{8}$ "

### MOLDED DIMENSIONS



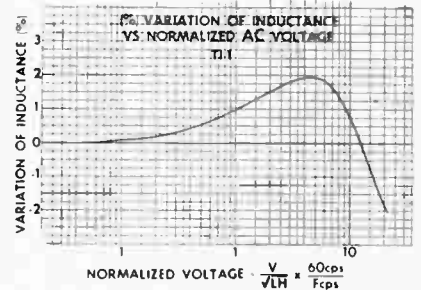
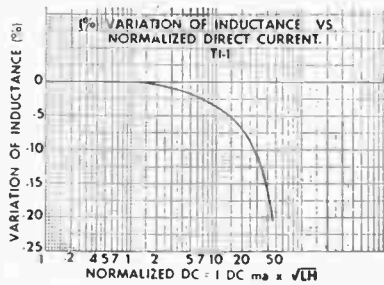
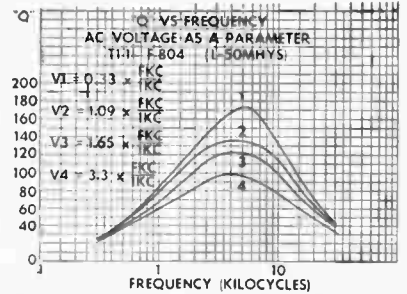
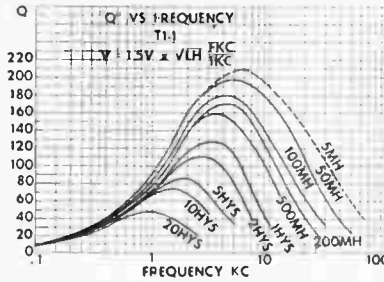
Diameter:  $2\frac{1}{8}$ "  
Thickness:  $\frac{7}{8}$ "  
Mounting: Center clearance hole for 8-32 screw

### TYPE T1-1 NOT STABILIZED

Freq. to 15KC.

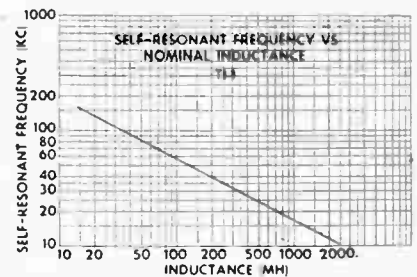
DCR/HY =  $68 \Omega \pm 20\%$

Cat. No. Uncased	Induct. Value MHY	Current Capacity Amp.	Cat. No. Uncased	Induct. Value HY	Current Capacity Amp.	Cat. No. Uncased	Induct. Value HY	Current Capacity Amp.
F800	5	2.000	F811	1.	.140	F822	4.5	.065
F801	10	1.400	F812	1.25	.120	F823	5.	.062
F802	15	1.150	F813	1.5	.110	F824	6.	.058
F803	30	.800	F814	1.75	.105	F825	7.	.053
F804	50	.600	F815	2.	.100	F826	8.	.050
F805	75	.500	F816	2.25	.095	F827	9.	.047
F806	100	.450	F817	2.5	.090	F828	10.	.045
F807	150	.350	F818	2.75	.085	F829	15.	.036
F808	200	.300	F819	3.	.082	F830	20.	.030
F809	500	.200	F820	3.5	.075			
F810	750	.160	F821	4.	.071			



#### NOTE:

When ordering Hermetically Sealed Units, add "H" to Freed Number.  
When ordering Encapsulated Units, add "M" to Freed Number.



# FREED TOROIDAL INDUCTORS, INC.

## FREED TOROIDAL INDUCTORS STANDARD TOLERANCE $\pm 1\%$ OR 1 TURN (whichever is larger)

### CASE DIMENSIONS

DT-4 Case



Height:  $3\frac{1}{8}$ "  
Width:  $1\frac{1}{8}$ "  
Length:  $2\frac{3}{4}$ "  
Mounting: 4 8-32 studs  
Mtg. Centers:  $2\frac{1}{8}$ " x  $\frac{1}{16}$ "  
Cutout:  $\frac{3}{8}$ " x  $\frac{3}{4}$ "

### UNCASED DIMENSIONS



Thickness:  
O. D.:  $2\frac{1}{8}$ "

### MOLDED DIMENSIONS



Diameter:  $2\frac{3}{8}$ "  
Thickness:  $1\frac{1}{8}$ "  
Center clearance hole for  
10-32 screw.

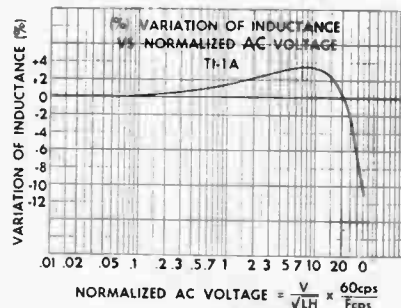
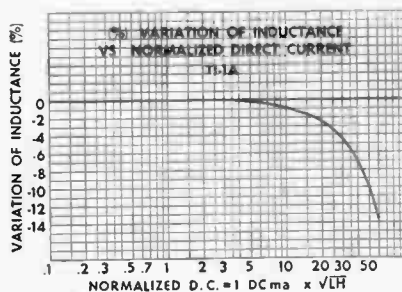
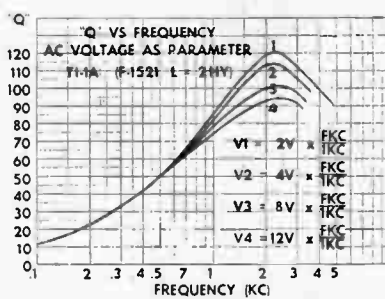
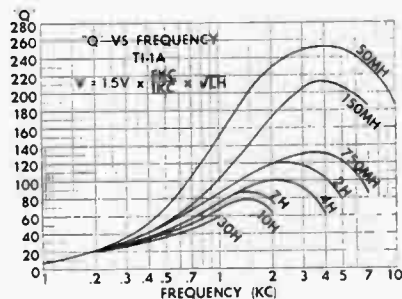
### TYPE TI-1A NOT STABILIZED

### TYPE TI-1AS<sup>D</sup> and TI-1AS<sup>W</sup> TEMPERATURE STABILIZED

Freq. to 15KC.

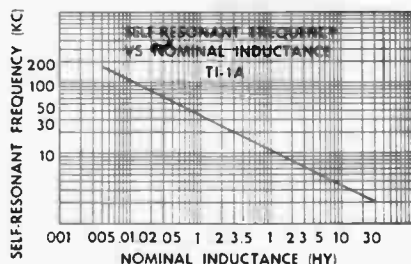
DCR/HY =  $68\Omega \pm 20\%$

Cat. No. Uncased	Induct. Value MHY	Current Capacity Amp.	Cat. No. Uncased	Induct. Value HY	Current Capacity Amp.	Cat. No. Uncased	Induct. Value HY	Current Capacity Amp.
F1500	1	9.6	F1513	.2	.32	F1526	4.5	.06
F1501	2	6.1	F1514	.3	.25	F1527	5.	.06
F1502	3	4.8	F1515	.4	.2	F1528	6.	.06
F1503	4	3.8	F1516	.5	.2	F1529	7.	.05
F1504	5	3.8	F1517	.6	.16	F1530	8.	.05
F1505	7.5	3.	F1518	.75	.13	F1531	9.	.05
F1506	10	3.	F1519	1.	.13	F1532	10.	.04
F1507	15	2.4	F1520	1.5	.1	F1533	12.	.04
F1508	30	1.6	F1521	2.	.1	F1534	15.	.04
F1509	50	1.25	F1522	2.5	.08	F1535	17.	.03
F1510	75	.5	F1523	3.	.08	F1536	20.	.03
F1511	100	.4	F1524	3.5	.08	F1537	25.	.03
F1512	150	.32	F1525	4.	.06	F1538	30.	.025



**NOTE:**  
When ordering Hermetically Sealed Units, add "H" to Freed Number.

When ordering Encapsulated Units, add "M" to Freed Number.





# FREED TRANSFORMER COMPANY, INC.

## FREED TOROIDAL INDUCTORS STANDARD TOLERANCE $\pm 1\%$ OR 1 TURN (whichever is larger)

### CASE DIMENSIONS

#### DT-3 Case



Height: 2"  
Width:  $\frac{1}{8}$ "  
Length:  $1\frac{3}{16}$ "  
Mounting: 2 6-32 studs  
Mtg. Centers:  $1\frac{1}{4}$ " x  $\frac{3}{8}$ "  
Cutout:  $\frac{3}{8}$ " x  $\frac{3}{8}$ "

#### DT-5 Case



Height:  $1\frac{1}{16}$ "  
Diameter:  $1\frac{1}{16}$ "  
Mounting: 2 6-32 inserts  
Mtg. Centers:  $1\frac{1}{8}$ "  
Cutout:  $\frac{3}{8}$ " x 1"

### UNCASED DIMENSIONS



Thickness:  $\frac{3}{4}$ "  
O. D.:  $1\frac{1}{16}$ "

### MOLDED DIMENSIONS



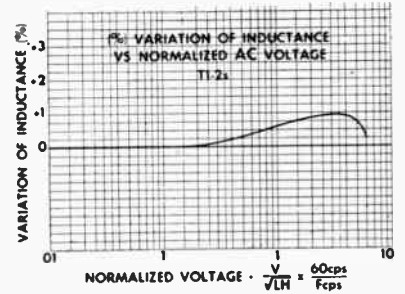
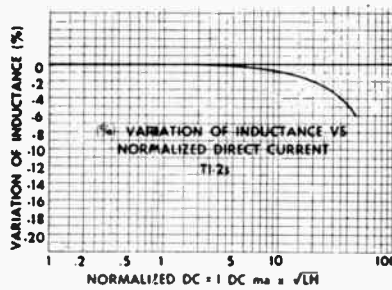
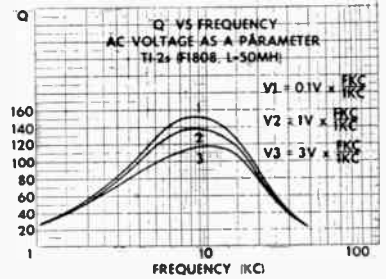
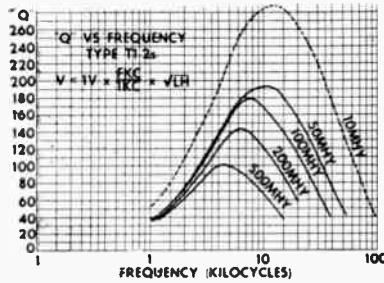
Diameter:  $1\frac{7}{8}$ "  
Thickness: 1"  
Mounting: Center clearance hole for 8-32 screw

### TYPE TI-2S<sup>o</sup> TEMPERATURE STABILIZED

Freq. 10 to 50KC.

DCR/MHY =  $.16 \Omega \pm 20\%$

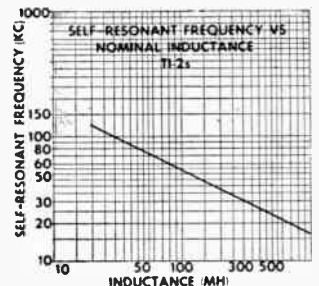
Cat. No. Uncased	Induct. Value MHY	Current Capacity Amp.	Cat. No. Uncased	Induct. Value MHY	Current Capacity Amp.
F1800	1	2.500	F1808	50	.350
F1801	2	1.750	F1809	75	.275
F1802	3	1.400	F1810	100	.250
F1803	4	1.250	F1811	150	.200
F1804	5	1.100	F1812	200	.175
F1805	10	.750	F1813	300	.140
F1806	15	.640	F1814	400	.125
F1807	30	.450	F1815	500	.110



#### NOTE:

When ordering Hermetically Sealed Units, add "H" to Freed Number.

When ordering Encapsulated Units, add "M" to Freed Number.



# FREED TRANSFORMER COMPANY, INC.

## FREED TOROIDAL INDUCTORS STANDARD TOLERANCE $\pm 1\%$ OR 1 TURN (whichever is larger)

### CASE DIMENSIONS

#### DT-3 Case



Height: 2"  
Width:  $\frac{3}{8}$ "  
Length:  $1\frac{25}{32}$ "  
Mounting: 2 6-32 studs  
Mtg. Centers:  $1\frac{1}{4} \times \frac{3}{8}$ "  
Cutout:  $\frac{3}{8} \times \frac{3}{4}$ "

#### DT-5 Case



Height:  $1\frac{3}{16}$ "  
Diameter:  $1\frac{13}{16}$ "  
Mounting: 2 6-32 inserts  
Mtg. Centers:  $1\frac{1}{8}$ "  
Cutout:  $\frac{3}{8} \times 1$ "

### UNCASED DIMENSIONS



Thickness:  $\frac{7}{8}$ "  
O. D.:  $1\frac{5}{8}$ "

### MOLDED DIMENSIONS



Diameter:  $1\frac{7}{8}$ "  
Thickness: 1"  
Mounting: Center clearance hole for 8-32 screw

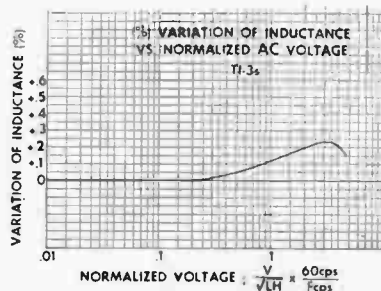
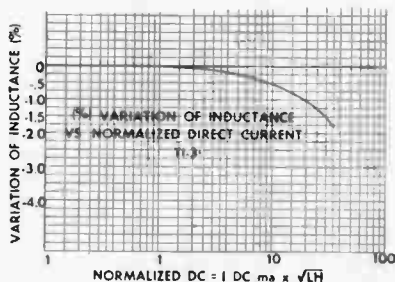
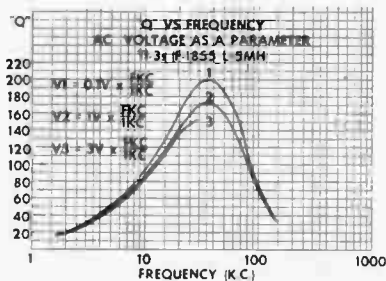
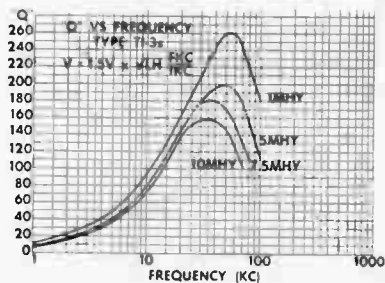
### TYPE TI-3<sup>D</sup>

TEMPERATURE STABILIZED

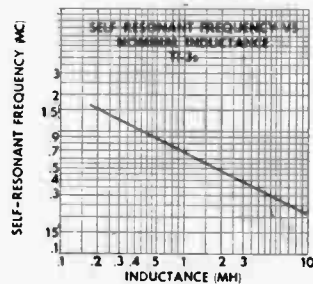
Freq. 50 to 200KC.

DCR/MHY =  $1 \Omega \pm 20\%$

Cat. No. Uncased	Induct. Value MHY	Current Capacity Amp.	Cat. No. Uncased	Induct. Value MHY	Current Capacity Amp.
F1846	0.1	4.00	F1852	.2	.90
F1847	0.2	2.75	F1853	3.	.75
F1848	0.3	2.35	F1854	4.	.65
F1849	0.4	2.00	F1855	5.	.57
F1850	0.5	1.80	F1844	10.	.40
F1851	1.	1.30	F1845	7.5	.47



**NOTE:**  
When ordering Hermetically Sealed Units, add "H" to Freed Number.  
When ordering Encapsulated Units, add "M" to Freed Number.



# FREED TRANSFORMER COMPANY, INC.

## FREED TOROIDAL INDUCTORS STANDARD TOLERANCE $\pm 1\%$ OR 1 TURN ) (whichever is larger)

### CASE DIMENSIONS

DT-4 Case



Height:  $3\frac{1}{8}"$   
 Width:  $1\frac{1}{16}"$   
 Length:  $2\frac{3}{4}"$   
 Mounting: 4 8-32 studs  
 Mtg. Centers:  $2\frac{1}{16}" \times 1\frac{1}{16}"$   
 Cutout:  $\frac{3}{8}" \times \frac{3}{4}"$

### UNCASED DIMENSIONS



Thickness:  $1\frac{3}{16}"$   
 O. D.:  $2\frac{1}{4}"$

### MOLDED DIMENSIONS



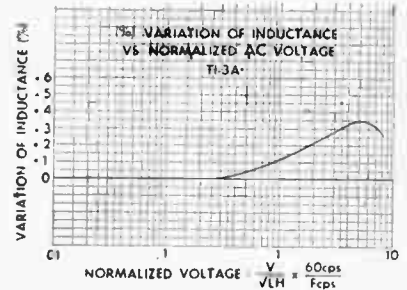
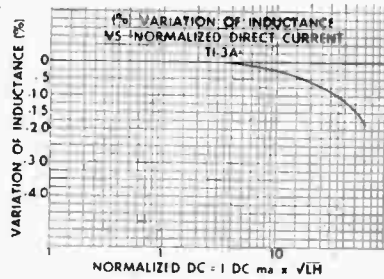
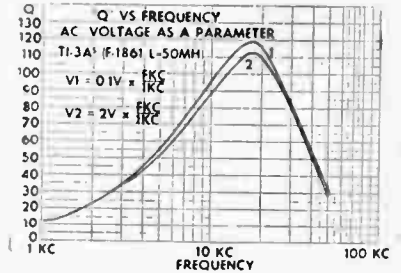
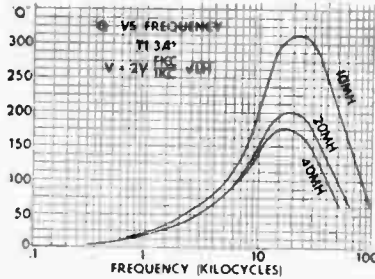
Diameter:  $2\frac{1}{2}"$   
 Thickness:  $1\frac{3}{8}"$   
 Mounting: Center clearance hole for 10-32 screw

### TYPE TI-3A<sup>8</sup> STABILIZED

Freq. 50 to 200KC.

DCR/MHY =  $.31 \Omega \pm 20\%$

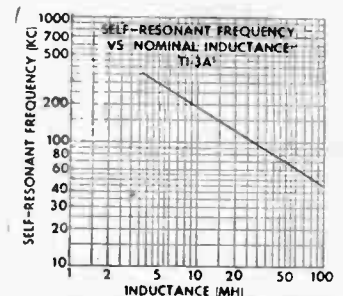
Cat. No. Uncased	Induct. Value MHY	Current Capacity Amp.	Cat. No. Uncased	Induct. Value MHY	Current Capacity Amp.
F1856	10	.750	F1860	40	.390
F1857	15	.625	F1861	50	.350
F1858	20	.550	F1862	75	.280
F1859	30	.450	F1863	100	.250



#### NOTE:

When ordering Hermetically Sealed Units, add "H" to Freed Number.

When ordering Encapsulated Units, add "M" to Freed Number.



# FREED TRANSFORMER COMPANY, INC.

## FREED TOROIDAL INDUCTORS STANDARD TOLERANCE $\pm 1\%$ OR 1 TURN (whichever is larger)

**TYPE TI-4**  
NOT STABILIZED

**TYPES TI-4S<sup>o</sup> and TI-4S<sup>h</sup>**  
TEMPERATURE STABILIZED

### CASE DIMENSIONS

#### DT-2 Case



Height:  $1\frac{3}{4}$ "  
Width:  $1\frac{1}{16}$ "  
Length:  $1\frac{1}{16}$ "  
Mounting: 2 6-32 studs  
Mtg. Centers:  $\frac{7}{8}$ " x  $\frac{9}{32}$ "  
Cutout:  $\frac{3}{8}$ " x  $1\frac{1}{16}$ "

#### DM-II Case



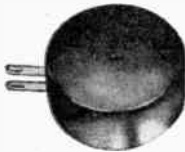
Height:  $1\frac{1}{2}$ "  
Diameter:  $1\frac{3}{8}$ "  
Mounting: 2 6-32 inserts  
Mtg. Centers:  $\frac{3}{8}$ "  
Cutout:  $\frac{3}{8}$ " x  $\frac{3}{8}$ "

### UNCASED DIMENSIONS



Thickness:  $\frac{5}{8}$ "  
O. D.:  $1\frac{1}{16}$ "

### MOLDED DIMENSIONS

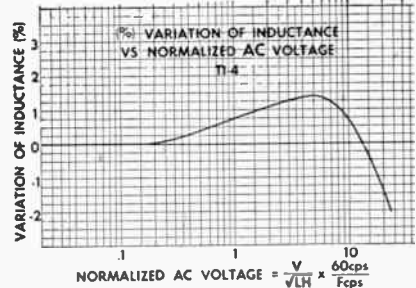
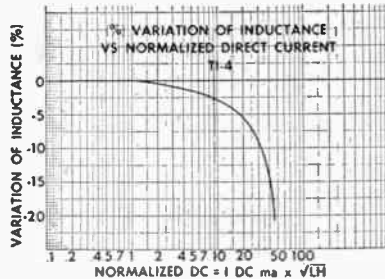
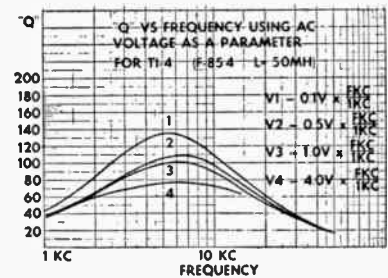
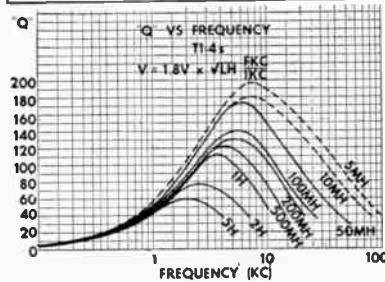


Diameter:  $1\frac{1}{2}$ "  
Thickness:  $\frac{3}{4}$ "  
Mounting: Center clearance hole for 8-32 screw

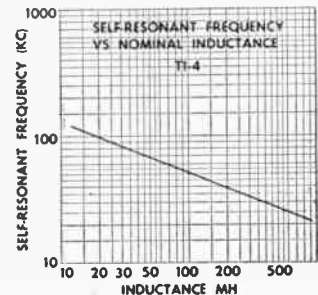
Freq. to 15 KC.

DCR/MHY =  $.11 \Omega \pm 20\%$

Cat. No. Uncased	Induct. Value MHY	Current Capacity Amp.	Cat. No. Uncased	Induct. Value HY	Current Capacity Amp.
F850	5	.850	F866	1.00	.062
F851	10	.600	F867	1.25	.056
F852	15	.500	F868	1.50	.051
F853	30	.350	F869	1.75	.047
F854	50	.275	F870	2.00	.044
F855	75	.225	F871	2.25	.042
F856	100	.200	F872	2.50	.040
F857	150	.160	F873	2.75	.038
F858	200	.140	F874	3.00	.036
F859	300	.110	F875	3.50	.033
F860	400	.100	F876	4.00	.031
F861	500	.090	F877	4.50	.029
F862	600	.080	F878	5.00	.027
F863	700	.075			
F864	800	.070			
F865	900	.066			



**NOTE:**  
When ordering Hermetically Sealed Units, add "H" to Freed Number.  
When ordering Encapsulated Units, add "M" to Freed Number.



# FREED TRANSFORMER COMPANY, INC.

## FREED TOROIDAL INDUCTORS STANDARD TOLERANCE $\pm 1\%$ OR 1 TURN (whichever is larger)

### CASE DIMENSIONS

DT-1 Case



Height:  $1\frac{1}{32}$ "  
Width:  $\frac{1}{2}$ "  
Length:  $1\frac{1}{16}$ "  
Mounting: 2 4-40 inserts  
Mtg. Centers:  $\frac{3}{4}$ "  
Cutout:  $\frac{5}{16}$ " x  $\frac{1}{2}$ "

DM-2 Case



Height: 1"  
Diameter:  $1\frac{1}{8}$ "  
Mounting: 2 4-40 inserts  
Mtg. Centers:  $\frac{5}{8}$ "  
Cutout:  $\frac{3}{8}$ " x  $\frac{1}{8}$ "

### UNCASED DIMENSIONS



Thickness:  $\frac{3}{8}$ "  
O. D.: 1"

### MOLDED DIMENSIONS



Diameter:  $1\frac{3}{16}$ "  
Thickness:  $\frac{1}{2}$ "  
Mounting: Center clearance hole for 6-32 screw

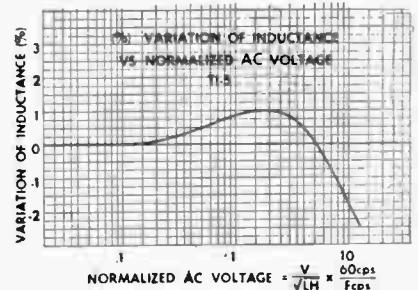
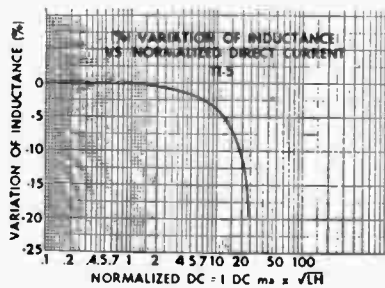
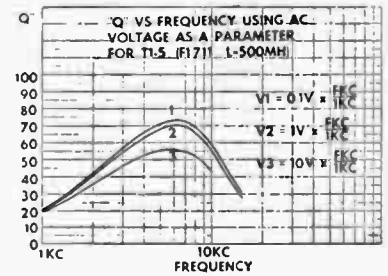
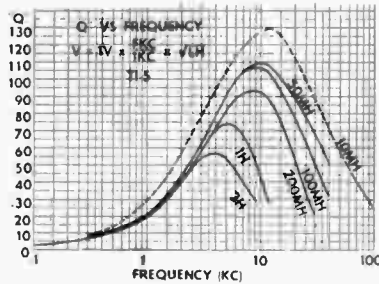
### TYPE TI-5 NOT STABILIZED

### TYPE TI-5SP TEMPERATURE STABILIZED

Freq. to 15KC.

DCR/HY =  $275 \Omega \pm 20\%$

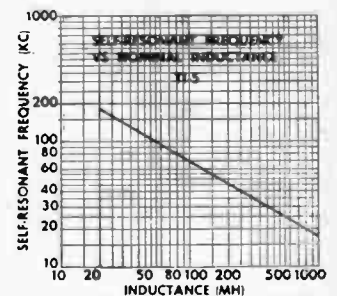
Cat. No. Uncased	Induct. Value MHY	Current Capacity Amp.	Cat. No. Uncased	Induct. Value MHY	Current Capacity Amp.	Cat. No. Uncased	Induct. Value HY	Current Capacity Amp.
F1700	5	.38	F1708	200	.06	F1716	1.	.026
F1701	10	.26	F1709	300	.049	F1717	1.25	.024
F1702	15	.21	F1710	400	.042	F1718	1.5	.021
F1703	30	.15	F1711	500	.038	F1719	1.75	.02
F1704	50	.12	F1712	600	.034	F1720	2.	.019
F1705	75	.098	F1713	700	.032			
F1706	100	.085	F1714	800	.03			
F1707	150	.069	F1715	900	.028			



### NOTE:

When ordering Hermetically Sealed Units, add "H" to Freed Number.

When ordering Encapsulated Units, add "M" to Freed Number.



# FREED TRANSFORMER COMPANY, INC.

## FREED TOROIDAL INDUCTORS STANDARD TOLERANCE $\pm 1\%$ OR 1 TURN (whichever is larger)

### CASE DIMENSIONS

#### DT-2 Case



Height:  $1\frac{3}{4}$ "  
Width:  $1\frac{3}{16}$ "  
Length:  $1\frac{1}{16}$ "  
Mounting: 2 6-32 studs  
Mtg. Centers:  $\frac{7}{8}$ " x  $\frac{3}{16}$ "  
Cutout:  $\frac{3}{8}$ " x  $1\frac{1}{16}$ "

#### DM-11 Case



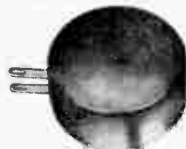
Height:  $1\frac{1}{2}$ "  
Diameter:  $1\frac{3}{8}$ "  
Mounting: 2 6-32 inserts  
Mtg. Centers:  $\frac{7}{8}$ "  
Cutout:  $\frac{3}{8}$ " x  $\frac{3}{8}$ "

### UNCASED DIMENSIONS



Thickness:  $\frac{5}{8}$ "  
O. D.:  $1\frac{5}{16}$ "

### MOLDED DIMENSIONS



Diameter:  $1\frac{1}{2}$ "  
Thickness:  $\frac{3}{4}$ "  
Mounting: Center clearance hole for 8-32 screw

### TYPE TI-6

NOT STABILIZED

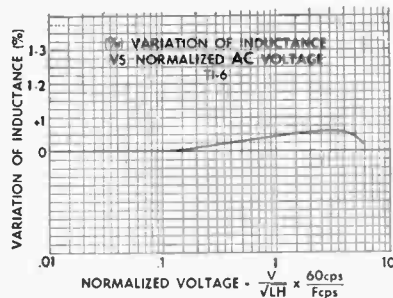
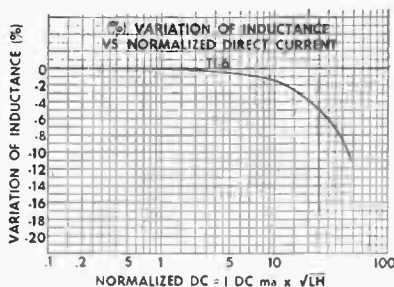
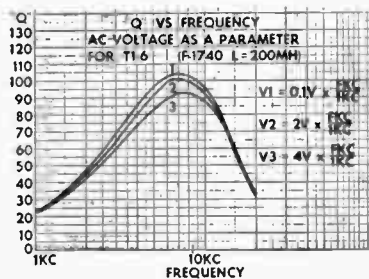
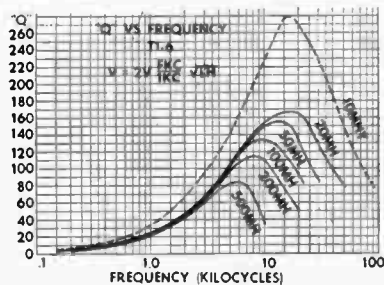
### TYPES TI-6S<sup>o</sup> and 6S<sup>w</sup>

TEMPERATURE STABILIZED

Freq. 10 to 50KC.

DCR/MHY =  $.23 \Omega \pm 20\%$

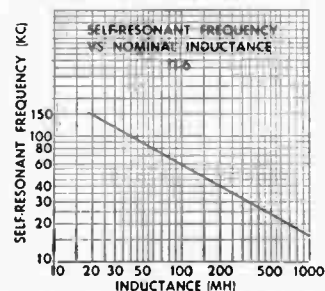
Cat. No. Uncased	Induct. Value MHY	Current Capacity Amp.	Cat. No. Uncased	Induct. Value MHY	Current Capacity Amp.
F1726	1	.2	F1735	30	.350
F1727	2	1.4	F1736	50	.275
F1728	3	1.1	F1737	75	.230
F1729	4	1.	F1738	100	.200
F1730	5	.880	F1739	150	.160
F1731	7.5	.700	F1740	200	.141
F1732	10	.600	F1741	250	.125
F1733	15	.500	F1742	300	.115
F1734	20	.450	F1743	500	.085



#### NOTE:

When ordering Hermetically Sealed Units, add "H" to Freed Number.

When ordering Encapsulated Units, add "M" to Freed Number.



# FREED TRANSFORMER COMPANY, INC.

## FREED TOROIDAL INDUCTORS STANDARD TOLERANCE $\pm 1\%$ OR 1 TURN (whichever is larger)

### CASE DIMENSIONS

#### DT-1 Case



Height:  $1\frac{1}{2}$ "  
Width:  $\frac{1}{2}$ "  
Length:  $1\frac{1}{16}$ "  
Mounting: 2 4-40 inserts  
Mtg. Centers:  $\frac{3}{4}$ "  
Cutout:  $\frac{5}{16}$ " x  $\frac{1}{2}$ "

#### DM-2 Case



Height: 1"  
Diameter:  $1\frac{1}{8}$ "  
Mounting: 2 4-40 inserts  
Mtg. Centers:  $\frac{5}{8}$ "  
Cutout:  $\frac{3}{8}$ " x  $\frac{7}{8}$ "

### UNCASED DIMENSIONS



Thickness:  $\frac{3}{8}$ "  
O. D.: 1"

### MOLDED DIMENSIONS



Diameter  $1\frac{1}{16}$ "  
Thickness:  $\frac{1}{2}$ "  
Mounting: Center clearance hole for 6-32 screw

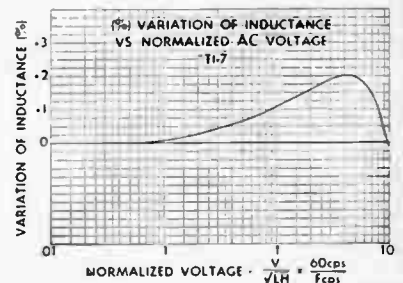
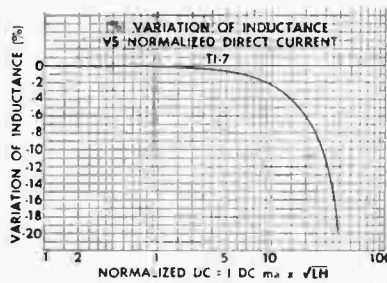
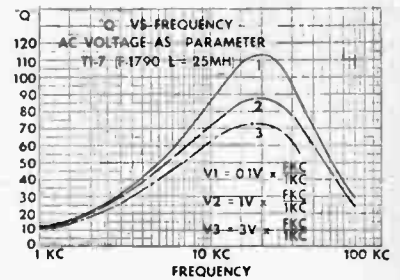
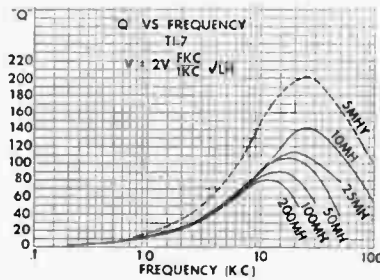
### TYPE TI-7

NOT STABILIZED

Freq. 10 to 50KC.

DCR/MHY =  $.48 \Omega \pm 20\%$

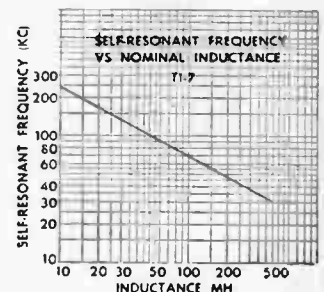
Cat. No. Uncased	Induct. Value MHY	Current Capacity Amp.	Cat. No. Uncased	Induct. Value MHY	Current Capacity Amp.
F1781	0.5	1.000	F1790	25	.130
F1782	1	.700	F1791	30	.125
F1783	2	.500	F1792	40	.110
F1784	3	.400	F1793	50	.098
F1785	5	.300	F1794	75	.080
F1786	7.5	.250	F1795	100	.070
F1787	10	.220	F1796	150	.055
F1788	15	.180	F1797	200	.048
F1789	20	.155			



#### NOTE:

When ordering Hermetically Sealed Units, add "H" to Freed Number.

When ordering Encapsulated Units add "M" to Freed Number.



# FREED TRANSFORMER COMPANY, INC.

## FREED TOROIDAL INDUCTORS STANDARD TOLERANCE $\pm 1\%$ OR 1 TURN (whichever is larger)

### CASE DIMENSIONS

#### DT-1 Case



Height:  $1\frac{1}{32}$ "  
Width:  $\frac{1}{2}$ "  
Length:  $1\frac{1}{16}$ "  
Mounting: 2 4-40 inserts  
Mtg. Centers:  $\frac{3}{4}$ "  
Cutout:  $\frac{5}{16}$ " x  $\frac{1}{2}$ "

#### DM-2 Case



Height: 1"  
Diameter:  $1\frac{1}{8}$ "  
Mounting: 2 4-40 inserts  
Mtg. Centers:  $\frac{5}{8}$ "  
Cutout:  $\frac{3}{8}$ " x  $\frac{3}{8}$ "

### UNCASED DIMENSIONS



Thickness:  $\frac{3}{8}$ "  
O. D.: 1"

### MOLDED DIMENSIONS



Diameter:  $1\frac{1}{16}$ "  
Thickness:  $\frac{1}{2}$ "  
Mounting: Center clearance hole for 6-32 screw

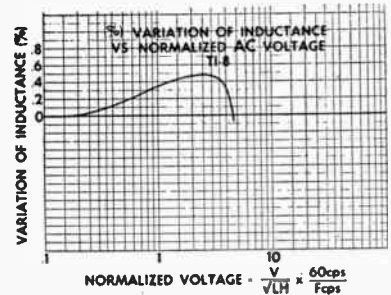
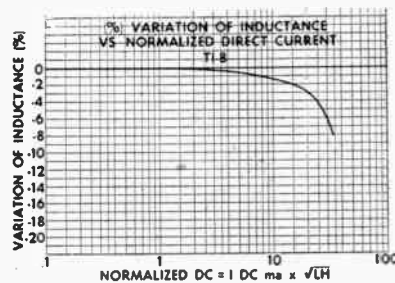
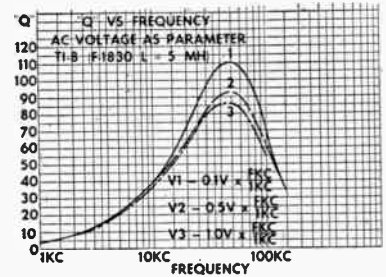
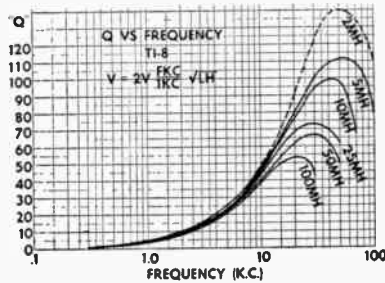
### TYPE TI-8 NOT STABILIZED

Freq. 30 to 75KC.

Cat. No. Uncased	Induct. Value MHY	Current Capacity Amp.	Cat. No. Uncased	Induct. Value MHY	Current Capacity Amp.	Cat. No. Uncased	Induct. Value MHY	Current Capacity Amp.
F1821	0.1	1.125	F1828	3.	.230	F1835	25.	.080
F1822	0.2	.900	F1829	4.	.200	F1836	30.	.070
F1823	0.3	.700	F1830	5.	.175	F1837	40.	.060
F1824	0.4	.660	F1831	7.5	.145	F1838	50.	.055
F1825	0.5	.550	F1832	10.	.125	F1839	75.	.045
F1826	1.	.400	F1833	15.	.100	F1840	100.	.040
F1827	2.	.280	F1834	20.	.090			

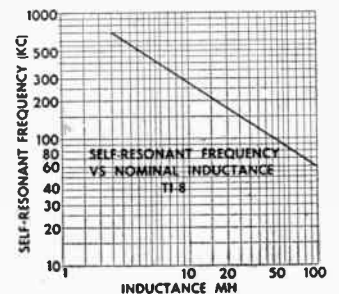
### TYPE TI-8S<sup>P</sup> STABILIZED

DCR/MHY =  $1.5 \Omega \pm 20\%$



#### NOTE:

When ordering Hermetically Sealed Units, add "H" to Freed Number.  
When ordering Encapsulated Units, add "M" to Freed Number.





# FREED TRANSFORMER COMPANY, INC

## FREED TOROIDAL INDUCTORS STANDARD TOLERANCE $\pm 1\%$ OR 1 TURN (whichever is larger)

### CASE DIMENSIONS

DT-4 Case



Height:  $3\frac{1}{8}"$   
 Width:  $1\frac{5}{16}"$   
 Length:  $2\frac{3}{4}"$   
 Mounting: 4 8-32 studs  
 Mtg. Centers:  $2\frac{1}{16}" \times 1\frac{1}{16}"$   
 Cutout:  $\frac{3}{4}" \times \frac{3}{8}"$

### UNCASED DIMENSIONS



Thickness:  $1\frac{1}{4}"$   
 O. D.:  $2\frac{3}{8}"$

### MOLDED DIMENSIONS



Diameter:  $2\frac{5}{8}"$   
 Thickness:  $1\frac{1}{8}"$   
 Mounting: Center clearance hole for 10-32 screw

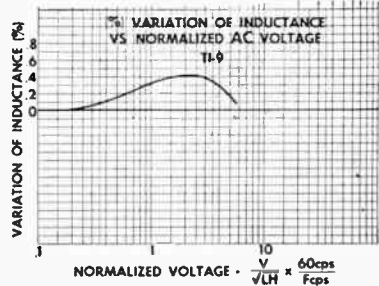
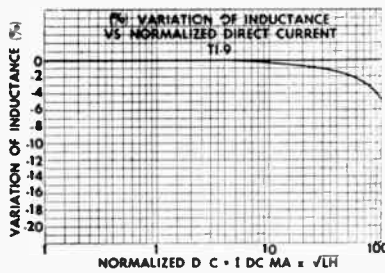
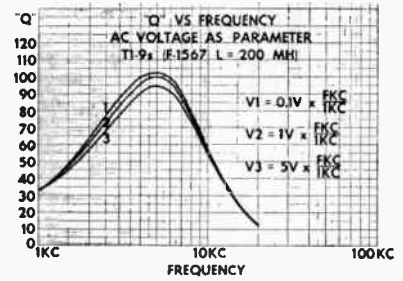
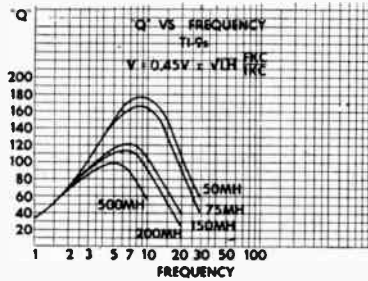
### TYPE TI-9S\*

TEMPERATURE STABILIZED

Freq. 30 to 75KC.

DCR/MHY =  $.15 \Omega \pm 20\%$

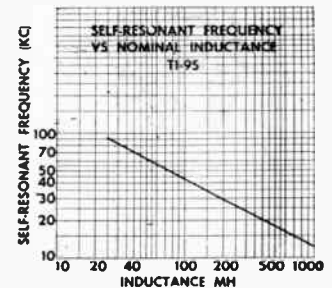
Cat. No. Uncased	Induct. Value MHY	Current Capacity Amp.	Cat. No. Uncased	Induct. Value MHY	Current Capacity Amp.
F1554	1	5.	F1562	30	.900
F1555	2	3.5	F1563	50	.700
F1556	3	2.75	F1564	75	.550
F1557	4	2.5	F1565	100	.500
F1558	5	2.2	F1566	150	.400
F1559	7.5	1.75	F1567	200	.350
F1560	10	1.5	F1568	300	.275
F1561	15	1.25	F1569	400	.250
			F1570	500	.210



#### NOTE:

When ordering Hermetically Sealed Units, add "H" to Freed Number.

When ordering Encapsulated Units, add "M" to Freed Number.



# FREED TRANSFORMER COMPANY, INC.

## FREED TOROIDAL INDUCTORS STANDARD TOLERANCE $\pm 1\%$ OR 1 TURN (whichever is larger)

### CASE DIMENSIONS

#### DT-3 Case



Height: 2"  
Width:  $\frac{7}{8}$ "  
Length:  $1\frac{25}{32}$ "  
Mounting: 2 6-32 studs  
Mtg. Centers:  $1\frac{1}{4}$ " x  $\frac{9}{32}$ "  
Cutout:  $\frac{3}{8}$ " x  $\frac{3}{4}$ "

#### DT-5 Case



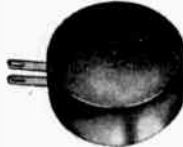
Height:  $1\frac{3}{16}$ "  
Diameter:  $1\frac{13}{16}$ "  
Mounting: 2 6-32 inserts  
Mtg. Centers:  $1\frac{1}{8}$ "  
Cutout:  $\frac{3}{8}$ " x 1"

### UNCASED DIMENSIONS



Thickness:  $\frac{5}{8}$ "  
O. D.:  $1\frac{11}{16}$ "

### MOLDED DIMENSIONS



Diameter:  $1\frac{7}{8}$ "  
Thickness:  $\frac{7}{8}$ "  
Mounting: Center clearance hole for 8-32 screw

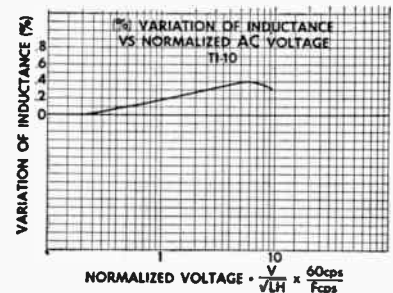
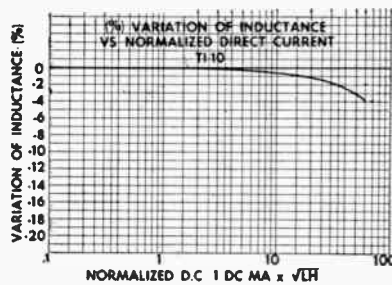
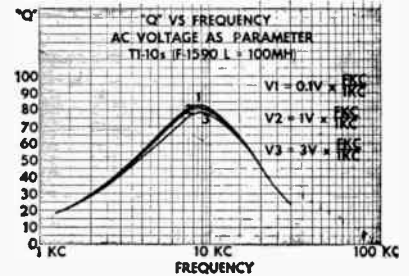
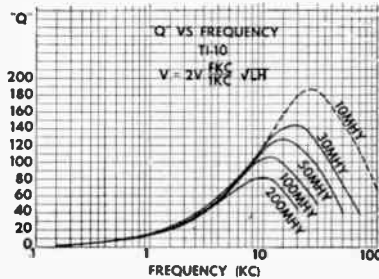
### TYPE TI-10S<sup>3</sup>

TEMPERATURE STABILIZED

Freq. 30 to 75KC.

DCR/MHY =  $.43 \Omega \pm 20\%$

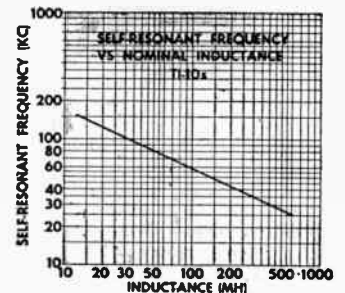
Cat. No. Uncased	Induct. Value MHY	Current Capacity Amp.	Cat. No. Uncased	Induct. Value MHY	Current Capacity Amp.
F1579	1	2.000	F1586	15	.500
F1580	2	1.400	F1587	30	.350
F1581	3	1.100	F1588	50	.275
F1582	4	1.000	F1589	75	.215
F1583	5	.875	F1590	100	.200
F1584	7.5	.700	F1591	150	.160
F1585	10	.625	F1592	200	.125



#### NOTE:

When ordering Hermetically Sealed Units, add "H" to Freed Number.

When ordering Encapsulated Units, add "M" to Freed Number.



# FREED TRANSFORMER COMPANY, INC.

## FREED TOROIDAL INDUCTORS STANDARD TOLERANCE $\pm 1\%$ OR 1 TURN (whichever is larger)

### CASE DIMENSIONS

#### DT-4 Case



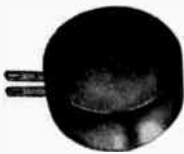
Height:  $3\frac{1}{8}"$   
 Width:  $1\frac{3}{16}"$   
 Length:  $2\frac{3}{4}"$   
 Mounting: 4 8-32 studs  
 Mtg. Centers:  $2\frac{1}{16}" \times 1\frac{1}{16}"$   
 Cutout:  $\frac{3}{4}" \times \frac{3}{8}"$

### UNCASED DIMENSIONS



Thickness:  $1\frac{5}{16}"$   
 O. D.:  $2\frac{5}{8}"$

### MOLDED DIMENSIONS



Diameter:  $2\frac{7}{8}"$   
 Thickness:  $1\frac{3}{8}"$   
 Mounting: Center clearance hole for 10-32 screw

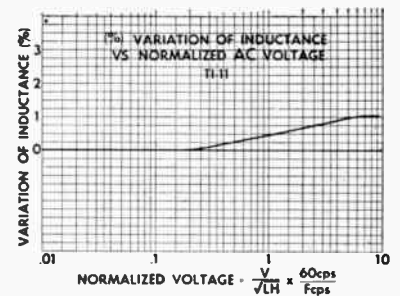
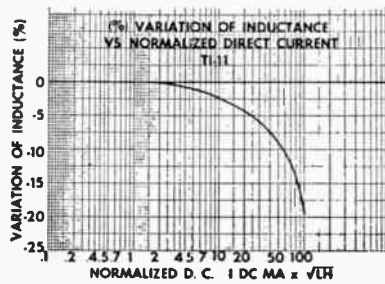
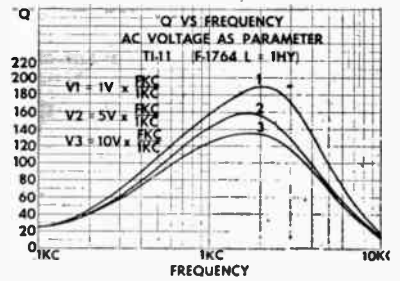
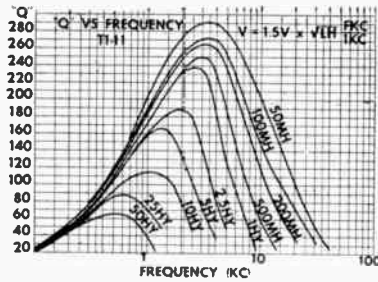
### TYPE TI-11 NOT STABILIZED

### TYPES TI-11S<sup>o</sup> and 11S<sup>w</sup> TEMPERATURE STABILIZED

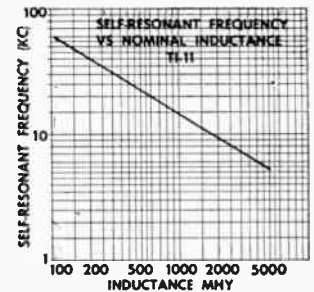
Freq. to 15KC.

DCR/HY =  $25 \Omega \pm 20\%$

Cat. No. Uncased	Induct. Value MHY	Current Capacity Amp.	Cat. No. Uncased	Induct. Value	Current Capacity Amp.	Cat. No. Uncased	Induct. Value HY	Current Capacity Amp.
F1747	1	10.	F1759	200MHY	.900	F1770	4.	.200
F1748	2	9.	F1760	300 "	.750	F1771	4.5	.190
F1749	3	7.5	F1761	400 "	.600	F1772	5.	.180
F1750	4	6.	F1762	500 "	.550	F1773	7.5	.150
F1751	5	5.5	F1763	750 "	.450	F1774	10.	.130
F1752	10	4.	F1764	1. HY	.400	F1775	15.	.100
F1753	15	3.	F1765	1.5 "	.320	F1776	20.	.090
F1754	30	2.	F1766	2. "	.290	F1777	25.	.080
F1755	50	1.75	F1767	2.5 "	.260	F1778	30.	.075
F1756	75	1.4	F1768	3. "	.230	F1779	40.	.065
F1757	100	1.3	F1769	3.5 "	.220	F1780	50.	.057
F1758	150	1.						



**NOTE:**  
 When ordering Hermetically Sealed Units, add "H" to Freed Number.  
 When ordering Encapsulated Units, add "M" to Freed Number.



# FREED TRANSFORMER COMPANY, INC.

## FREED TOROIDAL INDUCTORS STANDARD TOLERANCE $\pm 1\%$ OR 1 TURN (whichever is larger)

### CASE DIMENSIONS

DT-4 Case



Height:  $3\frac{3}{8}"$   
 Width:  $1\frac{5}{16}"$   
 Length:  $2\frac{3}{4}"$   
 Mounting: 4 8-32 studs  
 Mtg. Centers:  $2\frac{1}{16}" \times 1\frac{1}{16}"$   
 Cutout:  $\frac{3}{8}" \times \frac{3}{4}"$

### UNCASED DIMENSIONS



Thickness:  $1\frac{1}{8}"$   
 O. D.:  $2\frac{3}{4}"$

### MOLDED DIMENSIONS



Diameter:  $2\frac{1}{2}"$   
 Thickness:  $1\frac{1}{16}"$   
 Mounting: Center clearance hole for 10-32 screw

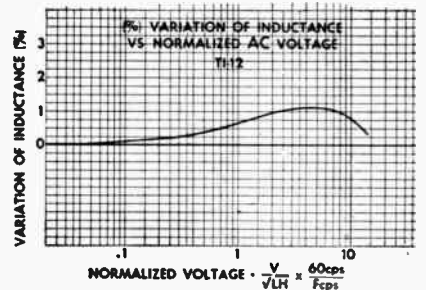
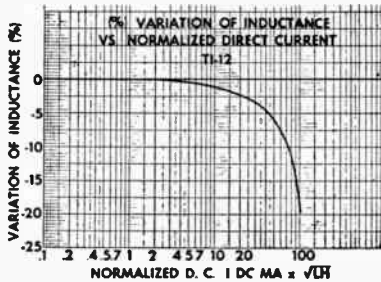
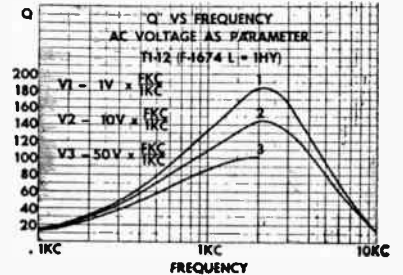
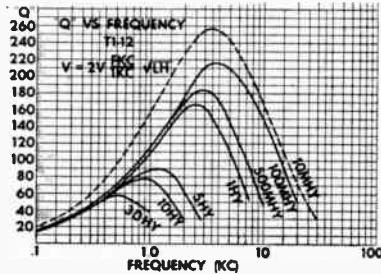
### TYPE TI-12 NOT STABILIZED

### TYPES TI-12S<sup>P</sup> and TI-12S<sup>Y</sup> TEMPERATURE STABILIZED

Freq. to 15KC.

DCR/HY =  $45 \Omega \pm 20\%$

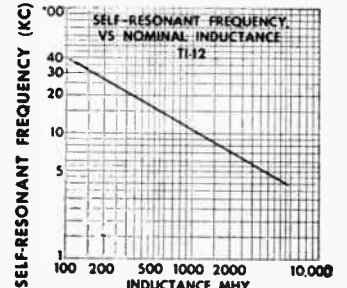
Cat. No. Uncased	Induct. Value MHY	Current Capacity Amp.	Cat. No. Uncased	Induct. Value MHY & HY	Current Capacity Amp.	Cat. No. Uncased	Induct. Value HY	Current Capacity Amp.
F1655	1.	8.	F1668	200MHY	.550	F1681	4.5	.110
F1656	2.	5.5	F1669	300 "	.450	F1682	5.	.100
F1657	3.	4.5	F1670	400 "	.400	F1683	6.	.095
F1658	4.	4.	F1671	500 "	.350	F1684	7.	.090
F1659	5.	3.5	F1672	600 "	.300	F1685	8.	.085
F1660	7.5	2.75	F1673	750 "	.290	F1686	9.	.083
F1661	10.	2.5	F1674	1. HY	.250	F1687	10.	.080
F1662	15.	2.	F1675	1.5 "	.200	F1688	12.	.070
F1663	30.	1.4	F1676	2. "	.175	F1689	15.	.065
F1664	50.	1.	F1677	2.5 "	.160	F1690	17.	.060
F1665	75.	.900	F1678	3. "	.140	F1691	20.	.055
F1666	100.	.800	F1679	3.5 "	.130	F1692	25.	.050
F1667	150.	.630	F1680	4. "	.120	F1693	30.	.045



#### NOTE:

When ordering Hermetically Sealed Units, add "H" to Freed Number.

When ordering Encapsulated Units, add "M" to Freed Number.



# FREED TRANSFORMER COMPANY, INC.

## FREED TOROIDAL INDUCTORS STANDARD TOLERANCE $\pm 1\%$ OR 1 TURN (whichever is larger)

### CASE DIMENSIONS

DT-4 Case



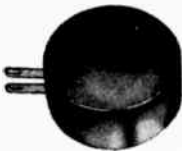
Height:  $3\frac{1}{8}"$   
 Width:  $1\frac{5}{16}"$   
 Length:  $2\frac{3}{4}"$   
 Mounting: 4 8-32 studs  
 Mtg. Centers:  $2\frac{1}{16}" \times 1\frac{1}{16}"$   
 Cutout:  $\frac{3}{8}" \times \frac{3}{4}"$

### UNCASED DIMENSIONS



Thickness:  $1\frac{1}{8}"$   
 O. D.:  $2\frac{1}{8}"$

### MOLDED DIMENSIONS



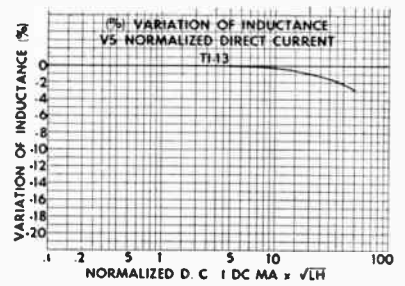
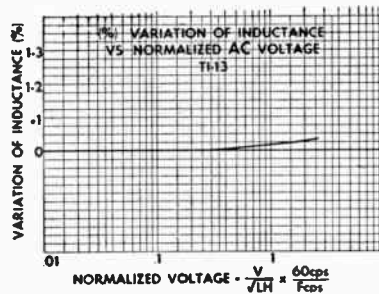
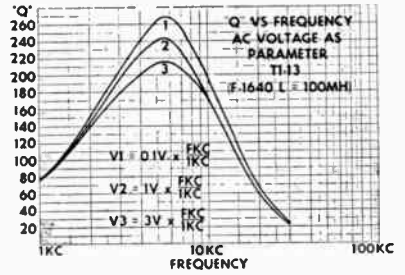
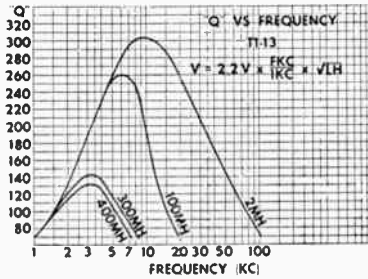
Diameter:  $2\frac{3}{8}"$   
 Thickness:  $1\frac{3}{16}"$   
 Mounting: Center clearance hole for 10-32 screw

### TYPE TI-13 NOT STABILIZED

Freq. 10 to 50KC.

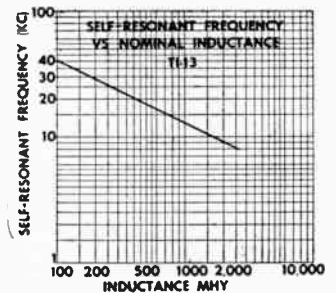
DCR/MHY =  $.055 \Omega \pm 20\%$

Cat. No. Uncased	Induct. Value MHY	Current Capacity Amp.	Cat. No. Uncased	Induct. Value MHY	Current Capacity Amp.
F1629	1.	5.5	F1638	50.	.800
F1630	2.	4.	F1639	75.	.650
F1631	3.	3.2	F1640	100.	.550
F1632	4.	2.75	F1641	150.	.450
F1633	5.	2.5	F1642	200.	.400
F1634	7.5	2.0	F1643	300.	.325
F1635	10.	1.75	F1644	400.	.275
F1636	15.	1.5	F1645	500.	.250
F1637	30.	1.			



#### NOTE:

When ordering Hermetically Sealed Units, add "H" to Freed Number.  
 When ordering Encapsulated Units, add "M" to Freed Number.



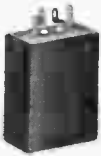
# FREED TRANSFORMER COMPANY, INC.

## FREED TOROIDAL INDUCTORS

STANDARD TOLERANCE  $\pm 1\%$  OR 1 TURN  
(whichever is larger)

### CASE DIMENSIONS

#### DT-2 Case



Height:  $1\frac{3}{4}$ "  
 Width:  $1\frac{5}{16}$ "  
 Length:  $1\frac{7}{16}$ "  
 Mounting: 2 6-32 studs  
 Mtg. Centers:  $\frac{7}{8}$ "  $\times$   $\frac{9}{32}$ "  
 Cutout:  $\frac{3}{8}$ "  $\times$   $1\frac{1}{16}$ "

#### DM-II Case



Height:  $1\frac{1}{2}$ "  
 Diameter:  $1\frac{3}{8}$ "  
 Mounting: 2 6-32 inserts  
 Mtg. Centers:  $\frac{7}{8}$ "  
 Cutout:  $\frac{3}{8}$ "  $\times$   $\frac{7}{8}$ "

### UNCASED DIMENSIONS



Thickness:  $\frac{5}{8}$ "  
 O. D.:  $1\frac{3}{16}$ "

### MOLDED DIMENSIONS



Diameter:  $1\frac{1}{2}$ "  
 Thickness:  $\frac{3}{4}$ "  
 Mounting: Center clearance hole for 8-32 screw

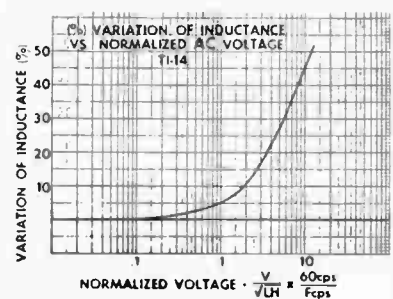
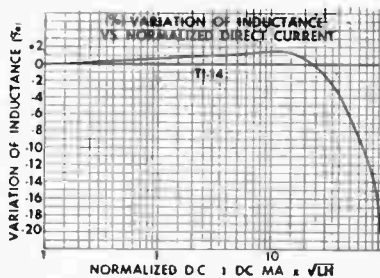
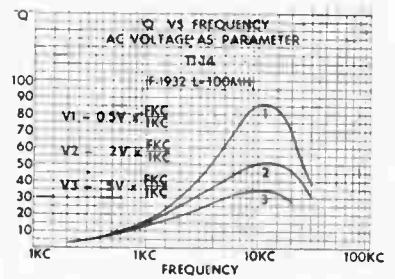
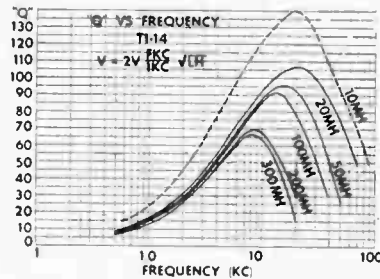
### TYPE TI-14

NOT STABILIZED

Freq. 10 to 100KC.

DCR/MHY =  $.3 \Omega \pm 20\%$

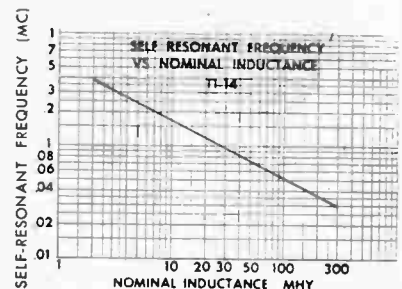
Cat. No. Uncased	Induct. Value MHY	Current Capacity Amp.	Cat. No. Uncased	Induct. Value MHY	Current Capacity Amp.
F1920	1.	1.3	F1929	30.	.225
F1921	2.	.900	F1930	50.	.175
F1922	3.	.750	F1931	75.	.150
F1923	4.	.650	F1932	100.	.125
F1924	5.	.500	F1933	150.	.100
F1925	7.5	.450	F1934	200.	.090
F1926	10.	.400	F1935	250.	.080
F1927	15.	.325	F1936	300.	.075
F1928	20.	.275			



#### NOTE:

When ordering Hermetically Sealed Units, add "H" to Freed Number.

When ordering Encapsulated Units, add "M" to Freed Number.



# FREED TRANSFORMER COMPANY, INC.

## FREED TOROIDAL INDUCTORS STANDARD TOLERANCE $\pm 1\%$ OR 1 TURN (whichever is larger)

### CASE DIMENSIONS

#### DT-1 Case



Height:  $1\frac{1}{32}$ "  
Width:  $\frac{1}{2}$ "  
Length:  $1\frac{1}{16}$ "  
Mounting:  $\varnothing$  4-40 inserts  
Mtg. Centers:  $\frac{3}{4}$ "  
Cutout:  $\frac{5}{16}$ " x  $\frac{1}{2}$ "

#### DM-2 Case



Height: 1"  
Diameter:  $1\frac{1}{8}$ "  
Mounting:  $\varnothing$  4-40 inserts  
Mtg. Centers:  $\frac{5}{8}$ "  
Cutout:  $\frac{3}{8}$ " x  $\frac{3}{8}$ "

### UNCASED DIMENSIONS



Thickness:  $\frac{3}{8}$ "  
O. D.: 1"

### MOLDED DIMENSIONS



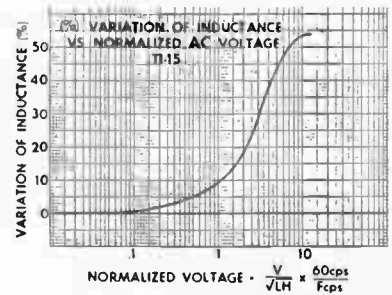
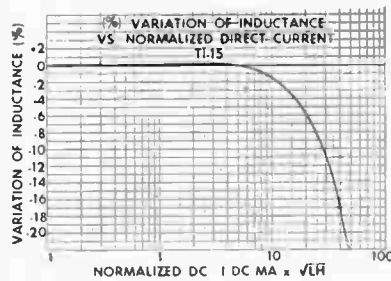
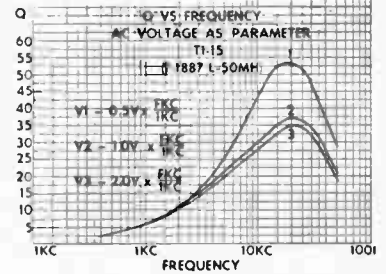
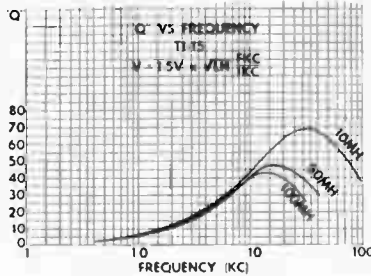
Diameter:  $1\frac{1}{16}$ "  
Thickness:  $\frac{1}{2}$ "  
Mounting: Center clearance hole for 6-32 screw

### TYPE TI-15 NOT STABILIZED

Freq. 10 to 100KC.

DCR/MHY =  $1.0 \Omega \pm 20\%$

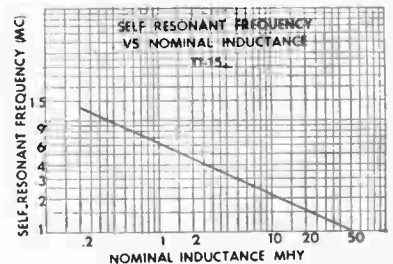
Cat. No. Uncased	Induct. Value MHY	Current Capacity Amp.	Cat. No. Uncased	Induct. Value MHY	Current Capacity Amp.
F1870	0.1	1.500	F1880	7.5	.180
F1871	0.2	1.100	F1881	10.0	.150
F1872	0.3	.900	F1882	15.0	.125
F1873	0.4	.750	F1883	20.0	.110
F1874	0.5	.700	F1884	25.0	.100
F1875	1.0	.500	F1885	30.0	.090
F1876	2.0	.350	F1886	40.0	.075
F1877	3.0	.275	F1887	50.0	.070
F1878	4.0	.250	F1888	75.0	.055
F1879	5.0	.225	F1889	100.0	.050



#### NOTE:

When ordering Hermetically Sealed Units, add "H" to Freed Number.

When ordering Encapsulated Units, add "M" to Freed Number.



# FREED TRANSFORMER COMPANY, INC.

## FREED SUB MINIATURE TOROIDAL INDUCTORS STANDARD TOLERANCE $\pm 1\%$ OR 1 TURN (whichever is larger)

### CASE DIMENSIONS

#### DST-I Case



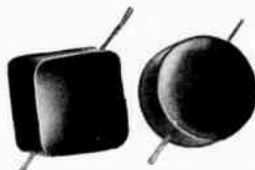
Height:  $\frac{25}{32}$ "  
Width:  $\frac{11}{32}$ "  
Length:  $\frac{3}{4}$ "  
Pins:  $\frac{1}{4}$ " long  
To fit:  $\frac{1}{2}$ " crystal socket

### UNCASED DIMENSIONS



Thickness:  $\frac{3}{16}$ "  
O. D.:  $\frac{5}{8}$ "

### MOLDED DIMENSIONS



#### M Round

Thickness:  $\frac{13}{32}$ "  
O. D.:  $\frac{7}{8}$ "

#### M Square

Height:  $\frac{13}{32}$ "  
Width:  $\frac{25}{32}$ "  
Length:  $\frac{25}{32}$ "

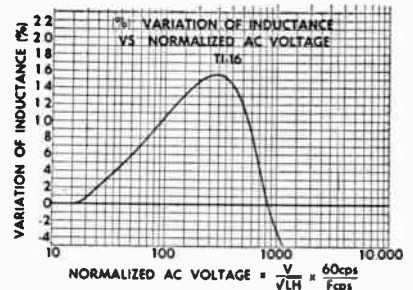
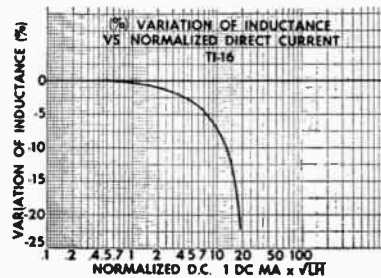
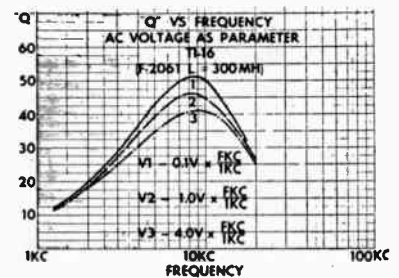
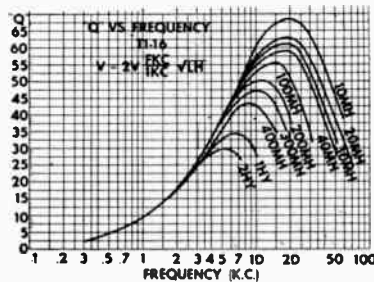
### TYPE TI-16

NOT STABILIZED

Freq. to 15KC.

DCR/MHY =  $.65 \Omega \pm 20\%$

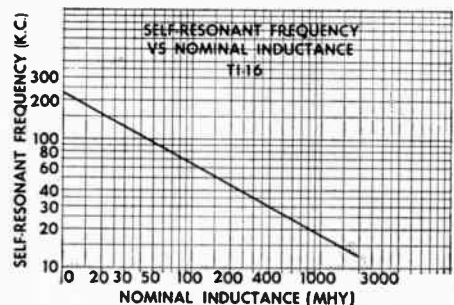
Cat. No. Uncased	Induct. Value MHY	Current Capacity Amp.	Cat. No. Uncased	Induct. Value	Current Capacity Amp.
F2050	1.	.320	F2060	200 MHY	.022
F2051	3.	.180	F2061	300 "	.018
F2052	5.	.130	F2062	400 "	.016
F2053	10.	.100	F2063	500 "	.014
F2054	15.	.080	F2064	750 "	.011
F2055	30.	.055	F2065	1.00 HY	.010
F2056	50.	.045	F2066	1.25 "	.009
F2057	75.	.035	F2067	1.50 "	.008
F2058	100.	.032	F2068	1.75 "	.007
F2059	150.	.025	F2069	2.00 "	.006



#### NOTE:

When ordering Hermetically Sealed Units, add "H" to Freed Number.

When ordering Encapsulated Units, add "MR" for Round, "MS" for Square Units






# FREED TRANSFORMER COMPANY, INC.

## FREED SUB MINIATURE TOROIDAL INDUCTORS STANDARD TOLERANCE $\pm 1\%$ OR 1 TURN (whichever is larger)


### CASE DIMENSIONS

**DST-I Case**



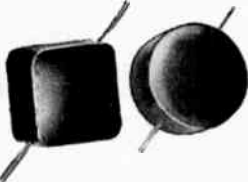
Height:  $\frac{25}{32}$ "  
Width:  $\frac{11}{32}$ "  
Length:  $\frac{3}{4}$ "  
Pins:  $\frac{1}{4}$ " long  
To fit:  $\frac{1}{2}$ " crystal socket

**UNCASED DIMENSIONS**



Thickness:  $\frac{7}{32}$ "  
O. D.:  $\frac{7}{8}$ "

**MOLDED DIMENSIONS**



**M Round**  
Thickness:  $\frac{15}{32}$ "  
O. D.:  $\frac{7}{8}$ "

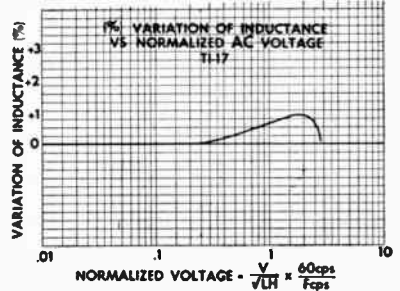
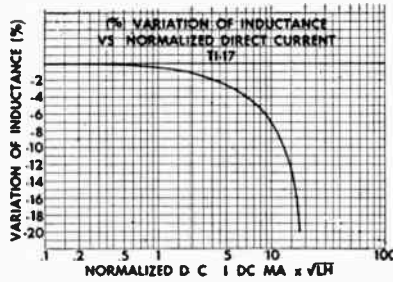
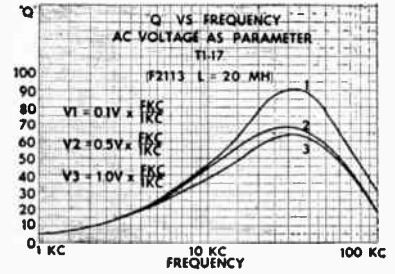
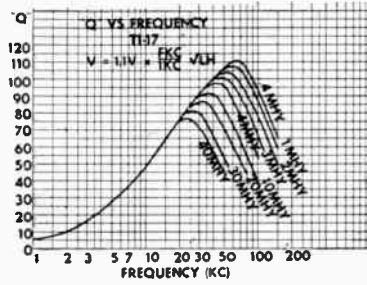
**M Square**  
Height:  $\frac{15}{32}$ "  
Width:  $\frac{25}{32}$ "  
Length:  $\frac{25}{32}$ "

### TYPE TI-17 NOT STABILIZED

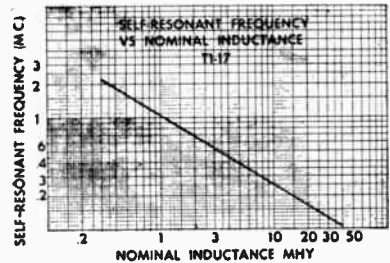
Freq. 10 to 50KC.

DCR/MHY =  $1.2\Omega \pm 20\%$

Cat. No. Uncased	Induct. Value MHY	Current Capacity Amp.	Cat. No. Uncased	Induct. Value MHY	Current Capacity Amp.
F2100	0.1	.750	F2109	5.	.110
F2101	0.2	.550	F2110	7.5	.090
F2102	0.3	.450	F2111	10.	.075
F2103	0.4	.380	F2112	15.	.061
F2104	0.5	.350	F2113	20.	.055
F2105	1.	.250	F2114	30.	.045
F2106	2.	.175	F2115	50.	.035
F2107	3.	.140	F2116	75.	.028
F2108	4.	.125	F2117	100.	.025



**NOTE:**  
When ordering Hermetically Sealed Units, add "H" to Freed Number.  
When ordering Encapsulated Units, add "MR" for Round, "MS" for Square Units

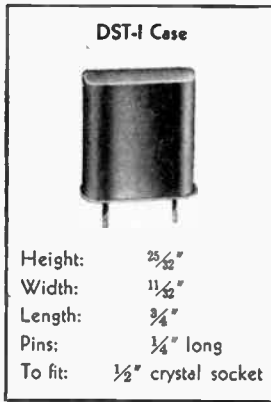


# FREED TRANSFORMER COMPANY, INC.

## FREED SUB MINIATURE TOROIDAL INDUCTORS

STANDARD TOLERANCE  $\pm 1\%$  OR 1 TURN  
(whichever is larger)

### CASE DIMENSIONS



### TYPE TI-18

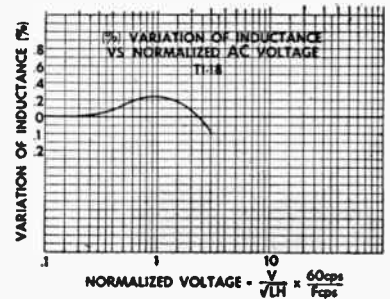
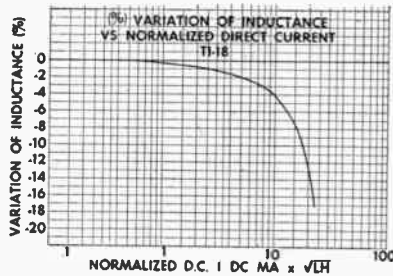
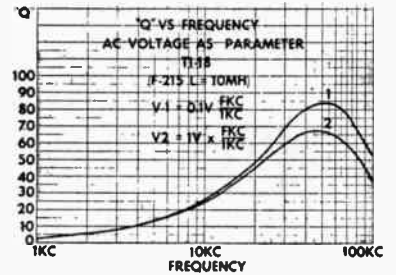
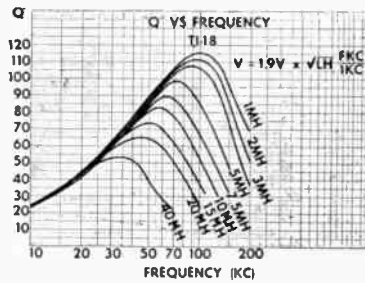
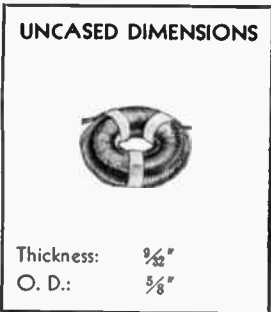
NOT STABILIZED

Freq. 30 to 75KC.

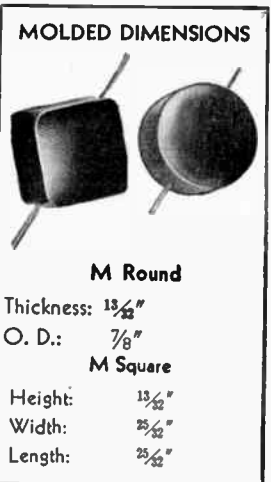
DCR/MHY =  $2.6 \Omega \pm 20\%$

Cat. No. Uncased	Induct. Value MHY	Current Capacity Amp.	Cat. No. Uncased	Induct. Value MHY	Current Capacity Amp.
F2140	0.1	.450	F2149	5.	.065
F2141	0.2	.325	F2150	7.5	.055
F2142	0.3	.275	F2151	10.	.047
F2143	0.4	.225	F2152	15.	.038
F2144	0.5	.200	F2153	20.	.033
F2145	1.	.150	F2154	30.	.025
F2146	2.	.100	F2155	50.	.020
F2147	3.	.082	F2156	75.	.017
F2148	4.	.075	F2157	100.	.015

### UNCASED DIMENSIONS



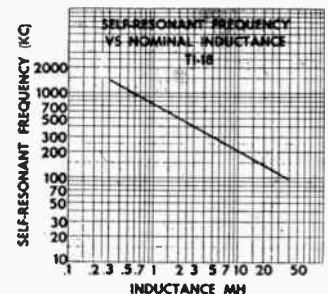
### MOLDED DIMENSIONS



#### NOTE:

When ordering Hermetically Sealed Units, add "H" to Freed Number.

When ordering Encapsulated Units, add "MR" for Round, "MS" for Square Units




# FREED TRANSFORMER COMPANY, INC.

## FREED SUB MINIATURE TOROIDAL INDUCTORS STANDARD TOLERANCE $\pm 1\%$ OR 1 TURN (whichever is larger)


### CASE DIMENSIONS

**DST-I Case**



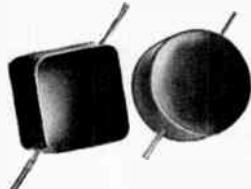
Height:  $\frac{25}{32}$ "  
 Width:  $\frac{11}{32}$ "  
 Length:  $\frac{3}{4}$ "  
 Pins:  $\frac{1}{4}$ " long  
 To fit:  $\frac{1}{2}$ " crystal socket

**UNCASED DIMENSIONS**



Thickness:  $\frac{9}{32}$ "  
 O. D.:  $\frac{5}{8}$ "

**MOLDED DIMENSIONS**



**M Round**  
 Thickness:  $\frac{13}{32}$ "  
 O. D.:  $\frac{7}{8}$ "

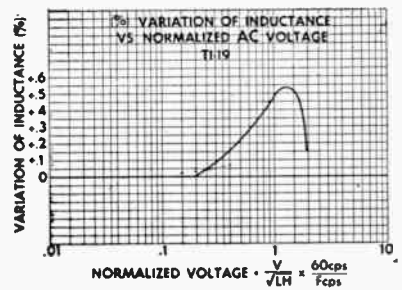
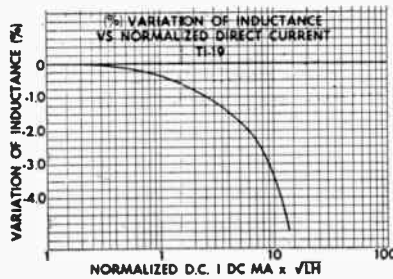
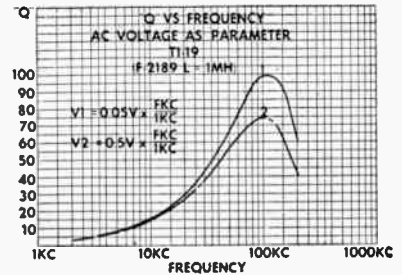
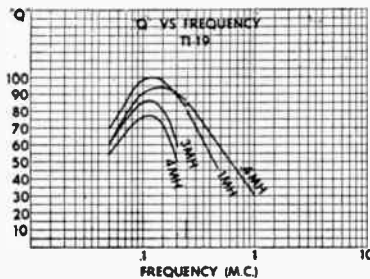
**M Square**  
 Height:  $\frac{13}{32}$ "  
 Width:  $\frac{25}{32}$ "  
 Length:  $\frac{25}{32}$ "

### TYPE TI-19 NOT STABILIZED

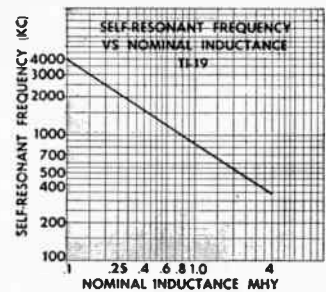
Freq. 50 to 200KC.

DCR/MHY =  $4.5 \Omega \pm 20\%$

Cat. No. Uncased	Induct. Value MHY	Current Capacity Amp.	Cat. No. Uncased	Induct. Value MHY	Current Capacity Amp.
F2180	0.1	.375	F2187	0.8	.130
F2181	0.2	.250	F2188	0.9	.125
F2182	0.3	.200	F2189	1.	.120
F2183	0.4	.180	F2190	2.	.085
F2184	0.5	.170	F2191	3.	.065
F2185	0.6	.150	F2192	4.	.060
F2186	0.7	.140	F2193	5.	.050



**NOTE:**  
 When ordering Hermetically Sealed Units, add "H" to Freed Number.  
 When ordering Encapsulated Units, add "M" to Freed Number.



# FREED TRANSFORMER COMPANY, INC.

## FREED HIGH FREQUENCY TOROIDAL INDUCTORS' STANDARD TOLERANCE ± 1% OR 1 TURN (whichever is larger)

### CASE DIMENSIONS

#### DT-2 Case



Height:  $1\frac{3}{4}$ "  
Width:  $1\frac{3}{16}$ "  
Length:  $1\frac{1}{16}$ "  
Mounting: 2 6-32 studs  
Mtg. Centers:  $\frac{7}{8}$ " x  $\frac{9}{16}$ "  
Cutout:  $\frac{3}{8}$ " x  $1\frac{1}{16}$ "

### UNCASED DIMENSIONS



Thickness:  $\frac{9}{16}$ "  
O. D.: 1"

### MOLDED DIMENSIONS



Diameter:  $1\frac{1}{16}$ "  
Thickness:  $\frac{1}{16}$ "  
Mounting: Center clearance hole for 6-32 screw

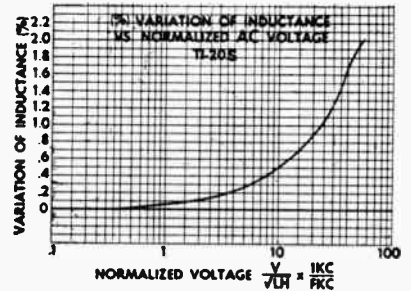
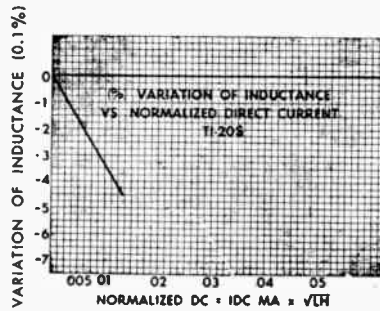
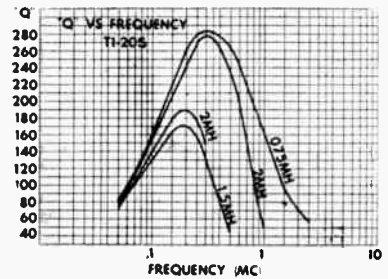
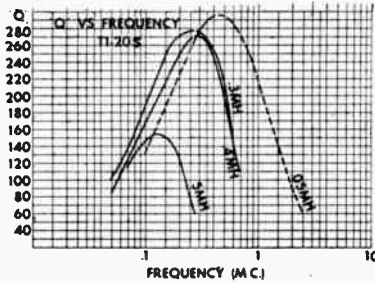
### TYPE TI-20S

TEMPERATURE STABILIZED

Freq. 20KC. to 2MC.

DCR/MHY =  $2.75 \Omega \pm 20\%$

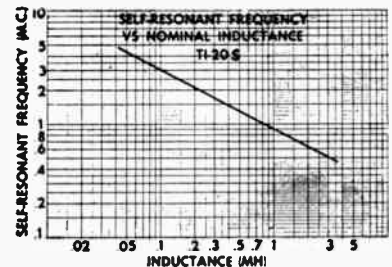
Cat. No. Uncased	Induct. Value MHY	Current Capacity Amp.	Cat. No. Uncased	Induct. Value MHY	Current Capacity Amp.
F2201	0.05	.900	F2208	1.5	.160
F2202	0.10	.600	F2209	2.0	.140
F2203	0.20	.450	F2210	2.5	.120
F2204	0.30	.350	F2211	3.0	.110
F2205	0.50	.275	F2212	3.5	.100
F2206	0.75	.225	F2213	4.0	.095
F2207	1.0	.200	F2214	4.5	.092
			F2215	5.0	.085



#### NOTE:

When ordering Hermetically Sealed Units, add "H" to Freed Number.

When ordering Encapsulated Units, add "M" to Freed Number.



# FREED TRANSFORMER COMPANY, INC.

## FREED HIGH FREQUENCY TOROIDAL INDUCTORS

STANDARD TOLERANCE  $\pm 1\%$  OR 1 TURN  
(whichever is larger)

### CASE DIMENSIONS

#### DT-I Case



Height:  $1\frac{7}{32}$ "  
Width:  $\frac{1}{2}$ "  
Length:  $1\frac{1}{16}$ "  
Mounting:  $\varnothing$  4-40 inserts  
Mtg. Centers:  $\frac{3}{4}$ "  
Cutout:  $\varnothing$   $\frac{5}{16}$ " x  $\frac{1}{2}$ "

### UNCASED DIMENSIONS



Thickness:  $\frac{5}{16}$ "  
O. D.:  $\frac{5}{8}$ "

### MOLDED DIMENSIONS



Thickness:  $1\frac{13}{32}$ "  
O. D.:  $\frac{7}{8}$ "

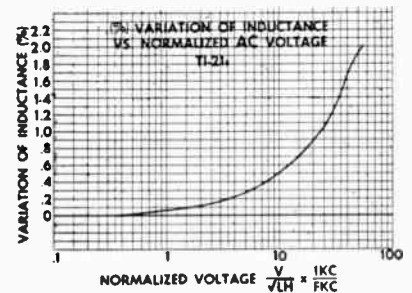
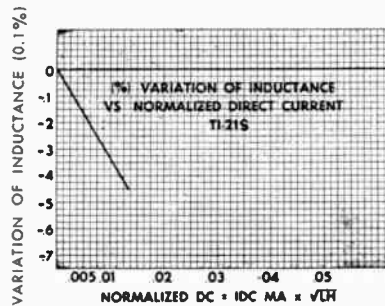
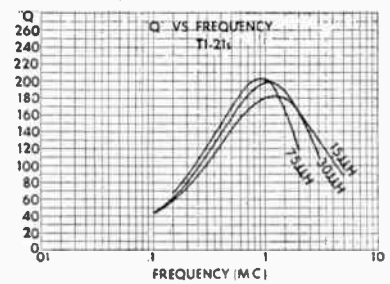
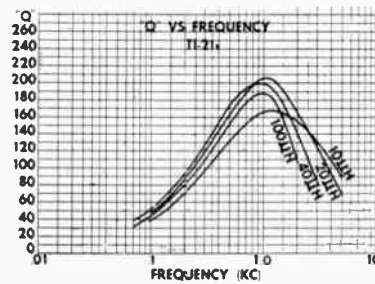
### TYPE TI-21S

TEMPERATURE STABILIZED

Freq. 100KC. to 10MC.

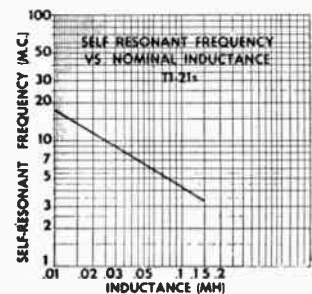
DCR/MHY =  $12.0\ \Omega \pm 20\%$

Cat. No. Uncased	Induct. Value MHY	Current Capacity Amp.	Cat. No. Uncased	Induct. Value MHY	Current Capacity Amp.
F2240	0.010	.500	F2245	0.050	.225
F2241	0.015	.400	F2246	0.075	.175
F2242	0.020	.335	F2247	0.100	.150
F2243	0.030	.275	F2248	0.125	.140
F2244	0.040	.250	F2249	0.150	.125



#### NOTE:

When ordering Hermetically Sealed Units, add "H" to Freed Number.  
When ordering Encapsulated Units, add "M" to Freed Number.



# FREED TRANSFORMER COMPANY, INC.

## FREED HIGH FREQUENCY TOROIDAL INDUCTORS

STANDARD TOLERANCE  $\pm 1\%$  OR 1 TURN  
(whichever is larger)

### CASE DIMENSIONS

DT-1 Case



Height:  $1\frac{1}{16}$ "  
Width:  $\frac{1}{2}$ "  
Length:  $1\frac{1}{16}$ "  
Mounting:  $\varnothing$  4-40 inserts  
Mtg. Centers:  $\frac{3}{4}$ "  
Cutout:  $\frac{1}{16}$ " x  $\frac{1}{2}$ "

### UNCASED DIMENSIONS



Thickness:  $\frac{3}{8}$ "  
O. D.:  $\frac{1}{8}$ "

### MOLDED DIMENSIONS



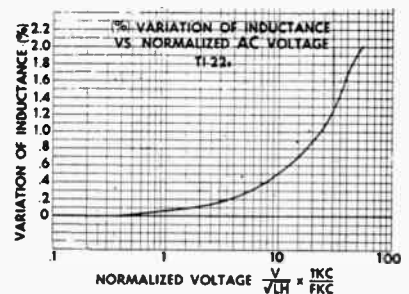
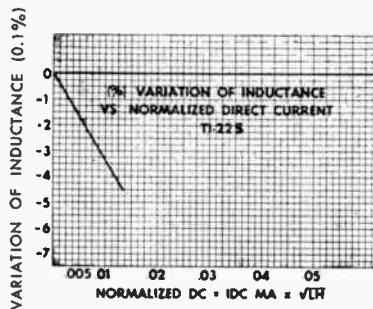
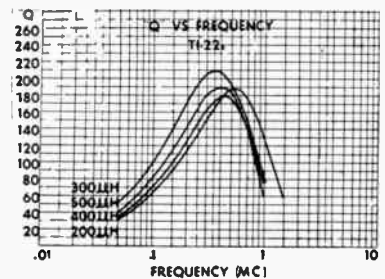
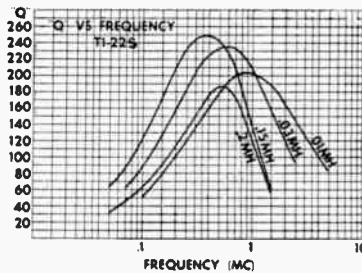
Thickness:  $\frac{1}{2}$ "  
O. D.:  $1\frac{1}{16}$ "  
Mounting: Center clearance hole for 4-40 screw

### TYPE TI-22S TEMPERATURE STABILIZED

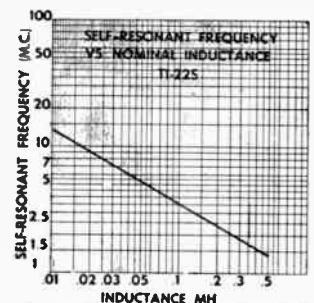
Freq. 50KC. to 5MC.

DCR/MHY =  $5.6 \Omega \pm 20\%$

Cat. No. Uncased	Induct. Value MHY	Current Capacity Amp.	Cat. No. Uncased	Induct. Value MHY	Current Capacity Amp.
F2270	0.010	1.100	F2278	0.150	.275
F2271	0.015	.900	F2279	0.200	.225
F2272	0.020	.775	F2280	0.300	.200
F2273	0.030	.625	F2281	0.400	.170
F2274	0.040	.550	F2282	0.500	.150
F2275	0.050	.475	F2283	0.600	.140
F2276	0.075	.400	F2284	0.700	.130
F2277	0.100	.350			



**NOTE:**  
When ordering Hermetically Sealed Units, add "H" to Freed Number.  
When ordering Encapsulated Units, add "M" to Freed Number.



# FREED TRANSFORMER COMPANY, INC.

## FREED HIGH FREQUENCY TOROIDAL INDUCTORS

STANDARD TOLERANCE  $\pm 1\%$  OR 1 TURN  
(whichever is larger)

### CASE DIMENSIONS

DT-1 Case



Height:  $1\frac{1}{16}"$   
Width:  $\frac{1}{2}"$   
Length:  $1\frac{1}{16}"$   
Mounting:  $\varnothing$  4-40 inserts  
Mtg. Centers:  $\frac{3}{4}"$   
Cutout:  $\frac{5}{16}" \times \frac{1}{2}"$

### UNCASED DIMENSIONS



Thickness:  $\frac{3}{8}"$   
O. D.:  $\frac{7}{8}"$

### MOLDED DIMENSIONS



Thickness:  $\frac{1}{2}"$   
O. D.:  $1\frac{1}{16}"$   
Mounting: Center clearance hole for 4-40 screw

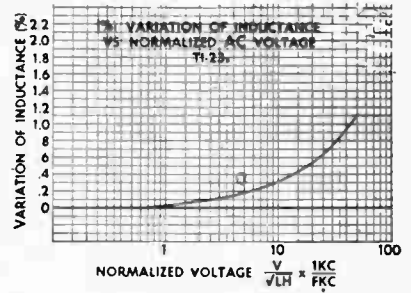
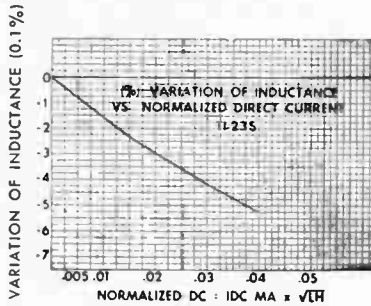
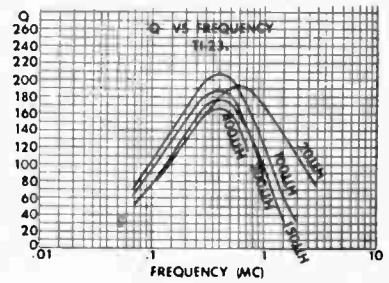
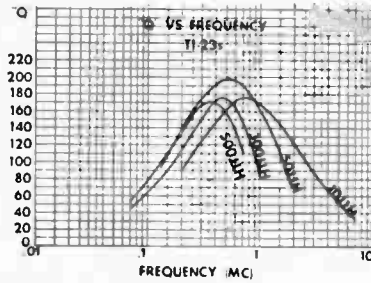
### TYPE TI-23S

TEMPERATURE STABILIZED

Freq. 50KC. to 5MC.

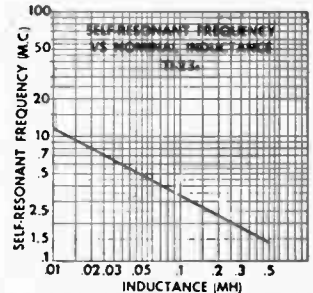
DCR/MHY =  $7.0 \Omega \pm 20\%$

Cat. No. Uncased	Induct. Value MHY	Current Capacity Amp.	Cat. No. Uncased	Induct. Value MHY	Current Capacity Amp.
F2301	0.010	1.100	F2308	0.100	.350
F2302	0.015	.900	F2309	0.150	.275
F2303	0.020	.775	F2310	0.200	.225
F2304	0.030	.625	F2311	0.300	.200
F2305	0.040	.550	F2312	0.400	.170
F2306	0.050	.475	F2313	0.500	.150
F2307	0.075	.400			



#### NOTE:

When ordering Hermetically Sealed Units, add "H" to Freed Number.  
When ordering Encapsulated Units, add "M" to Freed Number.



## MAGNETIC AMPLIFIERS AND SATURABLE TRANSFORMERS

The ever increasing demand for reliability, ruggedness, miniaturization and high performance has made the magnetic amplifier an indispensable component of many military and industrial automatic control and servo systems. Recent advances in materials and techniques permit an even greater utilization of the well-known inherent advantages of magnetic amplifiers such as direct operation from line voltage, no warm up time, long life components, ease of signal mixing, and hermetic sealing.

Freed Transformer Co. manufactures an extensive line of magnetic amplifiers, ranging from saturable transformers to half-wave type, fast response servo amplifiers. Choice of catalog amplifiers assures standardization, lowest possible cost and rapid delivery.

The MAO line of single ended magnetic amplifiers provides a single stage of DC controlled amplification, utilizing positive feedback to obtain a gain much higher than that of a saturable reactor.

The MAP line of push-pull magnetic amplifiers features high gain, polarity-sensitive amplification, and a phase reversible output.

The MAF type of fast response magnetic amplifiers combines high power gain, ruggedness, and reliability with a maximum 2 cycle response. All MAF units are phase-reversible.


The MAS line of saturable transformers, commonly controlled by dual-triodes or transistors, emphasizes low cost, small size, extreme reliability (no rectifiers), and phase-reversible output.

All standard units are designed for continuous operation and will operate in an ambient temperature range of -55°C to +75°C.

Vacuum tube and transistor preamplifiers can be supplied if very high impedance inputs are required.

In addition to standard items, Freed Transformer Co. has extensive facilities for the design and production of special amplifiers, saturable reactors, and magnetic components.

### SATURABLE TRANSFORMERS designed for 115V-AC operation

CASE DIMENSIONS						
						
Case No.	Height	Width	Depth	Mtg. Centers	Mounting Studs	Knockout
MA 202	5 1/2"	4 1/8"	3 1/2"	3 1/4" x 2 1/2"	(4) 10:32	(2) 2 1/4" x 3/4"
MA 203	2 3/8"	2 1/8"	1 3/4"	2 3/4" x 1 3/8"	(4) 6:32	1 3/8" D
MA 204	2 1/4"	2 1/4"	2 1/8"	1 3/8" x 1 3/8"	(4) 6:32	1 3/8" D
MA 205	4"	3 7/8"	3 3/8"	3 1/4" x 3 3/8"	(4) 8:32	1 3/8" D

Catalog No.	Supply Frequency C.P.S.	Rated Power Output—W.	Rated Voltage Output—V, AC	Signal Req'd for Full Output MA/DC	Total Res. of Control Wds. K Ω	Response Time		Typical Motor Load	Case No.
						On	Off		
MAS-1	60	15	115	6.0	27.	2	5	Diehl FPE 25-11	MA 202
MAS-2	400	6	115	4.0	4.	3	6	Kearfott R 110-2	MA 203
MAS-5	400	2.7	26	4.0	3.3	8	2	Kearfott R 118	MA 204
MAS-6	400	30.0	115	4.0	8.	11	9	D:hl FPE 49-13-1	MA 205
MAS-7	400	40.0	115	5.5	8.	12	9	Bendix CK 3000-1-A	MA 205

‡Response time measured in cycles supply frequency necessary to obtain 63% (On) or 37% (Off) of steady state output in response to a DC step input.  
†Coils connected in series.

**NOTE: ALL SATURABLE TRANSFORMERS ARE HERMETICALLY SEALED.**

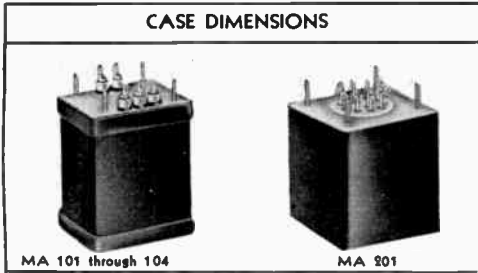


# FREED TRANSFORMER COMPANY, INC.

## MAGNETIC AMPLIFIERS AND SATURABLE TRANSFORMERS

DESIGNED FOR 115V-AC OPERATION

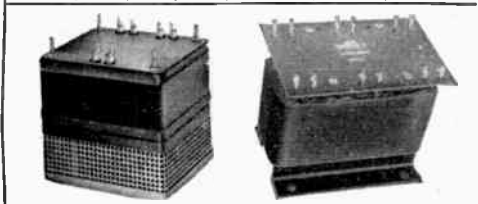
### CASE DIMENSIONS



MA 101 through 104

MA 201

Case No.	Height	Width	Depth	Mts. Centers	Mounting Studs	Knockout
MA 101	3"	2 3/8"	2 1/4"	1 3/4" x 1 1/8"	(4) 6:32	(2) 1 1/4" x 3/4"
MA 102	3 3/4"	2 3/4"	2 3/8"	2" x 1 3/4"	(4) 8:32	(2) 1 1/2" x 3/4"
MA 103	4 1/4"	3 3/8"	3 7/8"	3 1/8" x 2 1/4"	(4) 8:32	(2) 1 1/2" x 3/4"
MA 104	3 1/2"	4 1/2"	3 1/2"	3 1/8" x 2 5/8"	(4) 10:32	1 1/2" x 3/4"
MA 201	2 7/8"	4 3/8"	4 1/2"	3 5/8" x 3 1/8"	(4) 8:32	1 1/2" D



MA 301 through 310

MA 401 through 404

MA 301	7 1/2"	7"	5 1/4"	6 1/4" x 3 1/2"	(4) 1/4":20	(4) 1 5/8" x 7/8"
MA 302	5 7/8"	3 3/8"	3 1/4"	2 7/8" x 2 1/8"	(4) 8:32	(2) 2 1/4" x 3/4"
MA 303	7"	4 5/8"	3 1 1/8"	3 3/8" x 2 3/8"	(4) 10:32	(2) 2" x 3/4"
MA 304	8"	7"	5 1/4"	6" x 3 1/8"	(4) 1/4":20	(2) 2 1/4" x 3/4"
MA 305	8"	5"	5 1/2"	4 5/8" x 3 3/4"	(4) 1/4":20	(2) 2 5/8" x 3/4"
MA 306	7"	3 3/4"	3 1/4"	3" x 2 1/2"	(4) 10:32	(2) 2" x 3/4"
MA 307	7 7/8"	3 3/8"	3 3/8"	3" x 3"	(4) 10:32	2 7/8" D
MA 308	3 1/2"	4"	3 3/4"	2 1/8" x 3 3/8"	(4) 10:32†	(2) 2 1/2" x 1/2"
MA 309	6 3/8"	4 1/4"	3 1/2"	2 1/2" x 3 3/8"	(4) 10:32	(2) 2 1/2" x 3/4"
MA 310	5 1/4"	3 1/2"	4 1/8"	2 1/4" x 3 3/8"	(4) 10:32	(2) 2" x 1/2"

\*Mts. Dim. not centrally located around center line.

MA 401	8"	7 3/8"	5 1/4"	6 1/4" x 4 1/8"	1 1/2" x 1 1/8"	---
MA 402	6"	7 1/2"	5"	5 1/2" x 4"	1 1/8" D	---
MA 403	4 7/8"	3 3/8"	3 3/8"	5" x 3 1/2"	1/4" x 1/8"	---
MA 404	6"	5"	4 1/8"	3 3/4" x 3"	1/4" D	---



Case No.	Base	Height	Mounting Centers	Mounting Holes
MA 501	2 1/4" sq.	2 1/2"	1 11/16" sq.	(4) .187" dia.
MA 502	2 1/2" sq.	2 3/4"	2 1/2" sq.	(4) .213" dia.

### FAST RESPONSE MAGNETIC AMPLIFIERS

Catalog No.	Stages of Amplification	Supply Frequency C.P.S.	Rated Power Output—Watts	Rated Voltage Output—V.R.M.S.	Signal Req'd. for Full Output V-AC or V-DC	Typical Motor Load	Case No. Mag. Amp.	Case No. Supply Transf.
MAF-1	3	60	13	110	1—10K Ω	Diehl FPE 25-11	MA301	MA401
MAF-4	1	400	5	57.5	*	Kearfott R110-2	MA501	---
	1	400	10	57.5	*	Kearfott R111-2	MA501	---
MAF-5	1	400	13	54	*	Kearfott R112-2	MA502	---
	2	400	5	57.5	1.2—10K Ω 0.4—1K Ω	Kearfott R110-2	MA201	---
MAF-6	2	400	10	57.5	1.6—10K Ω 0.6—1K Ω	Kearfott R111-2	MA201	---
	2	400	15	57.5	2.5—10K Ω 1.0—1K Ω	Kearfott R112-2	MA201	---

\*Designed to be driven from vacuum tube or transistor preamplifier. Less than 30mv input signal required when operated with FREED MA1-1 silicon transistor preamplifier (case size 2 1/8" x 1 1/4" x 2 1/8", weight ap. 13 ounces.) Standard unit designed to work directly from 1P5V, 400cps line and 85°C.

### PUSH-PULL MAGNETIC AMPLIFIERS

Catalog No.	Supply Frequency C.P.S.	Rated Power Output—W.	Rated Voltage Output—V-AC	Signal Required for Full Output M.A.D.C.	Total Res. of Control Wds. K-Ω	Response Time (Ri=0)		Response Time (Ri=20K)		Typical Motor Load	Case No. Mag. Amp.	Case No. Supply Transf.
						On	Off	On	Off			
MAP-1	60	5	115	1.2	1.24	15	60	4	8	Kollman 951-0160	MA 302	MA 101
MAP-2	60	15	115	1.6	2.4	12	17	7	7	Diehl FPE-25-11	MA 303	MA 102
MAP-3	60	50	115	2.0	0.5	1-2 sec	3-4 sec	3	15	Diehl FPF-49-9	MA 304	MA 103
MAP-3A	60	50	115	7.0	2.9	1.3 sec	1.7 sec	5	20	Diehl FPF-49-9	MA 305	MA 103
MAP-4	60	175	115	8.0	6.0	17	66	5	40	Diehl FPF-85-18-1	MA 401	MA 404
MAP-7	400	15	115	0.6	2.8	.75 sec	2 sec	5	15	Kearfott R 112-2	MA 306	---
MAP-8	400	50	115	1.75	0.6	45	60	9	12	Bendix CK 3000-1-A	MA 307	MA 102
MAP-11	400	10	115	.7	6.6	6	1.2 sec	4	75	Kearfott R 111-2A	MA 310	---

### SINGLE-ENDED MAGNETIC AMPLIFIERS

Catalog No.	Supply Frequency C.P.S.	Rated Power Output—W.	Rated Voltage Output—V-AC	Load Resistance for Full Power Output—Ohms	Resist. of Control Wds. K-Ω	Resist. of Bias Wds. K-Ω	Response Time (Ri=5K)		Control Signal for Full Output M.A.-DC.	Bias Signal for Minimum Output M.A.-DC.	Case No. Mag. Amp.	Case No. Supply Transf.
							On	Off				
MAO-1	60	4.5	130	3,800	1.2	1.2	3	8	3.0	1.0	MA 308	---
MAO-2	60	20	120	700	1.3	1.35	3	19	1.8	0.7	MA 309	---
MAO-4	60	400	100	25	10.0	10.0	9	25	9.0	1.6	MA 402	---
MAO-5	60	575	120	25	10.0	10.0	15	90	6.0	2.7	MA 402	MA 403

† Ri = Forcing Resistor in series with control wdg.

Response time measured in cycles of supply frequency necessary to obtain 63% (On) or 37% (Off) of steady state output in response to a DC step input.

NOTE: MAF-6, MAF-7 ARE HERMETICALLY SEALED.

# FREED TRANSFORMER COMPANY, INC.

## CASE DIMENSIONS



### DM-20 CASE

Height:  $1\frac{9}{16}$ "  
 Width:  $1\frac{5}{8}$ "  
 Flange L.:  $1\frac{13}{32}$ "  
 Flange D.: 0.975  
 Mtg. Cen.:  $1\frac{1}{8}$ " to  $1\frac{7}{32}$ "  
 2 Holes: .147" wide  
 Knockout: 0.875"

### UNCASED DIMENSIONS TMO 1 TO 14



Height:  $1\frac{13}{16}$ "  
 Width:  $1\frac{1}{8}$ "  
 Depth:  $2\frac{1}{16}$ "  
 Mtg. Cen.:  $1\frac{3}{8}$ "  
 2 Mtg. Holes: .120 dia.  
 Flange Lght.:  $1\frac{5}{8}$ "

### TMO 15 TO 18

Height:  $2\frac{1}{16}$ "  
 Width:  $\frac{9}{16}$ "  
 Depth:  $1\frac{5}{8}$ "

### TMO-19

Height:  $1\frac{13}{16}$ "  
 Width:  $1\frac{13}{16}$ "  
 Depth:  $1\frac{1}{4}$ "  
 Mtg. Cen.:  $1\frac{3}{4}$ "  
 2 Mtg. Holes:  $\frac{9}{16}$ " dia.  
 Flange Lght.:  $2\frac{1}{16}$ "

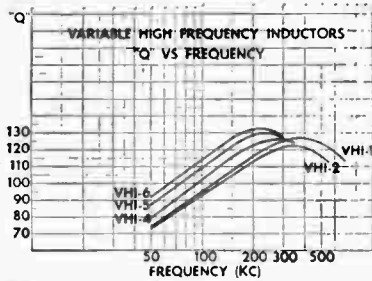
## MINIATURE TRANSISTOR TRANSFORMERS

These high quality miniature transformers are high efficiency audio components featuring hermetically sealing for maximum protection against electrolysis and subsequent corrosion of fine wires caused by moisture penetration. The units are constructed in accordance with MIL-T-27A Specifications. Transistor Transformers can also be supplied in an open or encapsulated type of construction.

Catalog No.	Impedance Ohms				Frequency Response		Unbalanced Primary Current M.A./D.C.	D.C. Resistance Ohms		Maximum Power Output M.W.	Case No.
	Pri.	Ct.	Sec.	Ct.	± D.B.	C.P.S.		Pri.	Sec.		
TMA 1*	500		500		1	200 to 15,000	0	18	24	250	DM-20
TMA 2*	50K		500		2	300 to 15,000	3	2,200	49	250	DM-20
TMA 3*	50K		6		2	300 to 15,000	3	2,200	.55	250	DM-20
TMA 4*	100K		1.2K	✓	3	300 to 15,000	1	2,790	95	100	DM-20
TMA 5*	25K		1.2K	✓	2	200 to 15,000	3	1,740	110	250	DM-20
TMA 6*	50K		1.2K	✓	2	300 to 15,000	3	2,200	106	250	DM-20
TMA 7*	600/150		1.2K	✓	1	200 to 15,000	4	30	95	250	DM-20
TMA 8*	25K		600		2	200 to 15,000	3	1,740	61	250	DM-20
TMA 9*	4K	✓	600/150		1	200 to 15,000	1	274	43	250	DM-20
TMA 10*	2K		3.2		2	200 to 15,000	10	160	.28	250	DM-20
TMA 11*	4K	✓	3.2		1	200 to 15,000	1	274	.26	250	DM-20
TMA 12*	20K		50		2	300 to 15,000	4	1,340	2.9	250	DM-20
TMA 13*	1K		50		2	300 to 15,000	8	42.6	2.5	250	DM-20
TMA 14*	100K		1K		2	300 to 15,000	0	1,550	16.8	100	DM-20
TMO 15	20K		50		2	300 to 15,000	1	2,215	7.25	40	open
TMO 16	20K		600		2	300 to 15,000	1	2,215	202	40	open
TMO 17	1K		50		2	300 to 15,000	3	93	5.6	60	open
TMO 18	100K		1K		2	300 to 15,000	0	3,000	57.5	100	open
TMA 19*	1K		3.2		2	200 to 15,000	20	38	.19	1000	DM-01

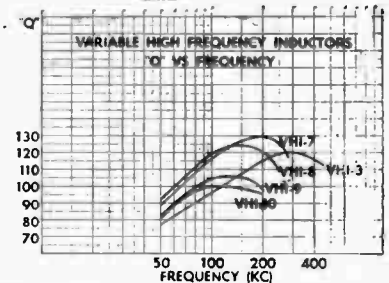
\*When ordering open units specify TMO — when ordering encapsulated units specify TMC.

## MINIATURE VARIABLE HIGH FREQUENCY INDUCTORS



- VARIABLE for  $\pm 20\%$  of its median inductance.
- FREQUENCY RANGE: 20 to 500 Kilocycles.
- Q practically constant over whole range of variation.
- Miniature size.
- Hermetically sealed.

Variable high frequency inductors with any inductance from 1 to 50 mhy with a variation of appr.  $\pm 20\%$  can be made on special order.



## CASE DIMENSIONS



Height:  $1\frac{3}{8}$ "  
 Dia:  $\frac{3}{4}$ "  
 2 Studs: 4-40  
 Mtg. Cen.:  $\frac{3}{8}$ "

Catalog No.	Nominal Inductance MHY		Variation of Q (Rotation of 160°)		RDC ohms $\pm 15\%$	Max. Current MA	Self-resonant Freq. MC	Case Des.
	Min.	Max.	Min.	Max.				
VHI-1	1.1	1.75	93.5	100.5	.75	250	2.2	VI-1
VHI-2	1.7	2.5	94.5	96.2	1.1	200	1.9	VI-1
VHI-3	2.3	3.7	94.5	97.2	1.4	200	1.6	VI-1
VHI-4	3.	4.5	100.75	101.75	1.9	160	1.4	VI-1
VHI-5	4.	5.7	107.	108.	2.2	160	1.3	VI-1
VHI-6	5.5	7.5	112.	119.	3.1	130	1.	VI-1
VHI-7	7.	10.5	116.	120.5	4.5	100	.9	VI-1
VHI-8	10.	15.	106.	109.	6.6	80	.85	VI-1
VHI-9	14.5	20.5	101.	101.5	9.2	60	.6	VI-1
VHI-10	20.	30.	105.	115.	13.7	50	.55	VI-1

## TELEMETERING COMPONENTS

### CASE DIMENSIONS

#### FA-5 CASE



Height: 4 1/2"  
 Width: 3 1/2"  
 Depth: 2 1/8"  
 Mtg. Cen.: 2 1/16" x 1 1/16"  
 Studs: 5—8-32 x 1/2"  
 Octal Header

#### FA-10 CASE



Height: 4 1/2"  
 Width: 3 1/2"  
 Depth: 2 1/8"  
 Mtg. Cen.: 1 11/16" x 1 9/16"  
 Studs: 4—8-32 x 1/2"  
 Knockout: 1 1/2" dia.

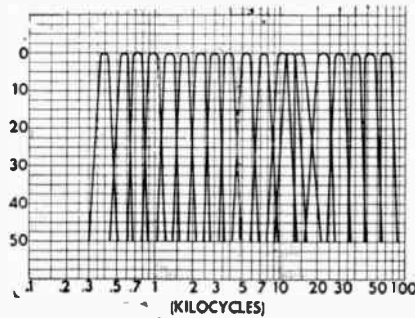


#### FA-15 CASE

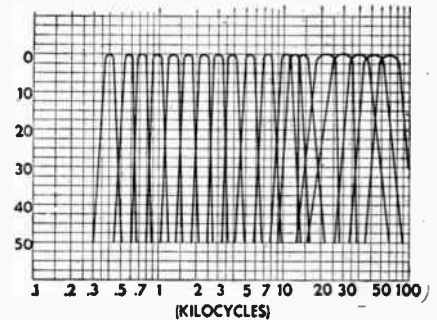
Height: 4 1/2"  
 Width: 2 7/8"  
 Depth: 2 1/8"  
 Mtg. Cen.: 1 11/16" x 1 1/16"  
 Studs: 4—8-32 x 1/2"  
 Knockout: 1 1/2" dia.

A complete line of Band Pass Filters, Low Pass Filters and Discriminators is available for multi-channel telemetering applications. These components cover the frequency range from 400 cps to 70,000 cps. The filters feature plug-in construction and excellent selectivity characteristics. The Discriminators, either fixed or slug tuned, have exceptional linearity, high amplification, and utmost stability.

### NARROW BAND PASS FILTERS



### WIDE BAND PASS FILTERS



## TELEMETERING BAND PASS FILTERS

These filters cover the frequencies from 400 c.p.s. to 70KC. Narrow frequency B.P.F. have a band width of  $\pm 9\frac{3}{4}\%$  of center frequency and 50 DB points at  $\pm 7\frac{1}{2}\%$  of center frequency of higher or lower adjacent channels. Wide frequency B.P.F. have a band width of  $\pm 19\frac{1}{2}\%$  of center frequency and 50 D.B. points at  $\pm 15\%$  of center frequencies of higher or lower second adjacent channels.

Catalog No.	Characteristic Impedance 500 $\Omega$		Case No.
	Center Frequency c.p.s.	3 DB Band Width % of C.F.	
FBP-10	400	$\pm 9\frac{3}{4}$	FA-10
FBP-11	560	$\pm 9\frac{3}{4}$	FA-10
FBP-12	730	$\pm 9\frac{3}{4}$	FA-10
FBP-13	960	$\pm 9\frac{3}{4}$	FA-10
FBP-14	1,300	$\pm 9\frac{3}{4}$	FA-10
FBP-15	1,700	$\pm 9\frac{3}{4}$	FA-10
FBP-16	2,300	$\pm 9\frac{3}{4}$	FA-10
FBP-17	3,000	$\pm 9\frac{3}{4}$	FA-15
FBP-18	3,900	$\pm 9\frac{3}{4}$	FA-15
FBP-19	5,400	$\pm 9\frac{3}{4}$	FA-15
FBP-20	7,350	$\pm 9\frac{3}{4}$	FA-15
FBP-21	10,500	$\pm 9\frac{3}{4}$	FA-15
FBP-22	12,300	$\pm 9\frac{3}{4}$	FA-15
FBP-23	14,500	$\pm 9\frac{3}{4}$	FA-15
FBP-24	22,000	$\pm 9\frac{3}{4}$	FA-15
FBP-25	22,000	$\pm 19\frac{1}{2}$	FA-15
FBP-26	30,000	$\pm 9\frac{3}{4}$	FA-15
FBP-27	30,000	$\pm 19\frac{1}{2}$	FA-15
FBP-28	40,000	$\pm 9\frac{3}{4}$	FA-15
FBP-29	40,000	$\pm 19\frac{1}{2}$	FA-15
FBP-30	52,500	$\pm 9\frac{3}{4}$	FA-15
FBP-31	52,500	$\pm 19\frac{1}{2}$	FA-15
FBP-32	70,000	$\pm 9\frac{3}{4}$	FA-15
FBP-33	70,000	$\pm 19\frac{1}{2}$	FA-15

Catalog No.	Characteristic Impedance 2,500 $\Omega$		Case No.
	Center Frequency c.p.s.	3 DB Band Width % of C.F.	
FBP-34	400	$\pm 9\frac{3}{4}$	FA-5
FBP-35	560	$\pm 9\frac{3}{4}$	FA-5
FBP-36	730	$\pm 9\frac{3}{4}$	FA-5
FBP-37	960	$\pm 9\frac{3}{4}$	FA-5
FBP-38	1,300	$\pm 9\frac{3}{4}$	FA-5
FBP-39	1,700	$\pm 9\frac{3}{4}$	FA-5
FBP-40	2,300	$\pm 9\frac{3}{4}$	FA-5
FBP-41	3,000	$\pm 9\frac{3}{4}$	FA-5
FBP-42	3,900	$\pm 9\frac{3}{4}$	FA-5
FBP-43	5,400	$\pm 9\frac{3}{4}$	FA-5
FBP-44	7,350	$\pm 9\frac{3}{4}$	FA-5
FBP-45	10,500	$\pm 9\frac{3}{4}$	FA-5
FBP-46	12,300	$\pm 9\frac{3}{4}$	FA-5
FBP-47	14,500	$\pm 9\frac{3}{4}$	FA-5
FBP-48	22,000	$\pm 9\frac{3}{4}$	FA-5
FBP-49	22,000	$\pm 19\frac{1}{2}$	FA-5
FBP-50	30,000	$\pm 9\frac{3}{4}$	FA-5
FBP-51	30,000	$\pm 19\frac{1}{2}$	FA-5
FBP-52	40,000	$\pm 9\frac{3}{4}$	FA-5
FBP-53	40,000	$\pm 19\frac{1}{2}$	FA-5
FBP-54	52,500	$\pm 9\frac{3}{4}$	FA-5
FBP-55	52,500	$\pm 19\frac{1}{2}$	FA-5
FBP-56	70,000	$\pm 9\frac{3}{4}$	FA-5
FBP-57	70,000	$\pm 19\frac{1}{2}$	FA-5

# FREED TRANSFORMER COMPANY, INC.

## CASE DIMENSIONS

### FA-1 CASE



Height:  $4\frac{1}{2}''$   
 Width:  $1\frac{1}{2}''$   
 Depth:  $1\frac{1}{2}''$   
 Mtg. Cen.:  $\frac{3}{16}''$  sq.  
 4 Inserts: 6-32  
 Knockout: 1"

### FA-185 CASE



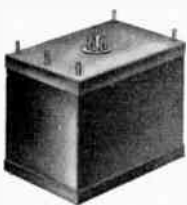
Height:  $4\frac{1}{2}''$   
 Width:  $1\frac{1}{2}''$   
 Depth:  $1\frac{1}{2}''$   
 Mtg. Cen.:  $1\frac{1}{8}'' \times 1\frac{1}{16}''$   
 4 Inserts: 6-32  
 Knockout:  $1\frac{1}{2}''$

### FA-190 CASE



Height:  $4\frac{1}{2}''$   
 Width:  $2\frac{1}{4}''$   
 Depth:  $1\frac{1}{2}''$   
 Mtg. Cen.:  $1\frac{1}{8}'' \times 1\frac{1}{16}''$   
 4 Inserts: 6-32  
 Knockout:  $1\frac{1}{2}''$

### FA-410 CASE



Height:  $4\frac{1}{2}''$   
 Width: 6"  
 Depth: 4"  
 Mtg. Cen.:  $5\frac{1}{4}'' \times 3\frac{1}{4}''$   
 5 Studs: 10-32  
 Octal Header

## DISCRIMINATOR INPUT LOW PASS FILTER

Catalog No.	F0 Center Frequency in CPS	Characteristic Impedance Ohms	Case No.
LPI-10	400	30,000	FA-1
LPI-11	560	30,000	FA-1
LPI-12	730	30,000	FA-1
LPI-13	960	30,000	FA-1
LPI-14	1,300	30,000	FA-1
LPI-15	1,700	30,000	FA-1
LPI-16	2,300	30,000	FA-1
LPI-17	3,000	30,000	FA-1
LPI-18	3,900	30,000	FA-1

Catalog No.	F0 Center Frequency in CPS	Characteristic Impedance Ohms	Case No.
LPI-19	5,400	30,000	FA-1
LPI-20	7,350	30,000	FA-1
LPI-21	10,500	30,000	FA-1
LPI-22	12,300	30,000	FA-1
LPI-23	14,500	30,000	FA-1
LPI-24	22,000	5,100	FA-1
LPI-25	30,000	5,100	FA-1
LPI-26	40,000	5,100	FA-1
LPI-27	52,500	5,100	FA-1
LPI-28	70,000	5,100	FA-1

Attenuation: 0.05 DB at  $\pm 9\frac{1}{4}\%$  of center frequency  
 30 DB at third harmonic of Pass Band frequencies  
 50 DB at fifth harmonic of Pass Band frequencies

## DISCRIMINATOR OUTPUT LOW PASS FILTER

Catalog No.	Fo(cps)	Characteristic Impedance Ohms	Case No.
LPO-10	6	330	FA-410
LPO-11	8	330	FA-410
LPO-12	11	330	FA-410
LPO-13	14	330	FA-410
LPO-14	20	330	FA-410
LPO-15	25	330	FA-410
LPO-16	35	330	FA-410
LPO-17	45	330	FA-410
LPO-18	60	330	FA-410
LPO-19	81	330	FA-410
LPO-20	110	330	FA-410
LPO-21	160	330	FA-410
LPO-22	185	330	FA-410

Catalog No.	Fo(cps)	Characteristic Impedance Ohms	Case No.
LPO-23	220	330	FA-410
LPO-24	330	330	FA-410
LPO-25	450	330	FA-410
LPO-26	600	330	FA-410
LPO-27	660	330	FA-410
LPO-28	790	330	FA-410
LPO-29	900	330	FA-410
LPO-30	1,050	330	FA-410
LPO-31	1,200	330	FA-410
LPO-32	1,600	330	FA-410
LPO-33	2,100	330	FA-410
LPO-34	2,200	330	FA-410
LPO-35	10,000	330	FA-410

Attenuation: < 0.2 DB up to 0.5 times Fo  
 < 0.7 DB from 0.5 to 1. times Fo  
 > 20 DB up to 2. times Fo  
 > 30 DB from 2.5 times Fo to 100 Kc.

## SLUG TUNED DISCRIMINATORS

Catalog No.	Center Frequency (Kc.)	% Deviation of Fo	Linearity	D.C. Output Volts	Case No.
DST-17	3.0	$\pm 8\frac{1}{2}$	$\pm 0.5\%$	32.5	FA-190
DST-18	3.9	$\pm 8\frac{1}{2}$	$\pm 0.5\%$	32.5	FA-190
DST-19	5.4	$\pm 8\frac{1}{2}$	$\pm 0.5\%$	32.5	FA-190
DST-20	7.35	$\pm 8\frac{1}{2}$	$\pm 0.5\%$	32.5	FA-190
DST-21	10.5	$\pm 8\frac{1}{2}$	$\pm 0.5\%$	32.5	FA-190
DST-22	12.3	$\pm 8\frac{1}{2}$	$\pm 0.5\%$	32.5	FA-190
DST-23	14.5	$\pm 8\frac{1}{2}$	$\pm 0.5\%$	32.5	FA-190
DST-24	22.0	$\pm 8\frac{1}{2}$	$\pm 0.5\%$	32.5	FA-190
DST-25	30.0	$\pm 8\frac{1}{2}$	$\pm 0.5\%$	32.5	FA-190

Catalog No.	Center Frequency (Kc.)	% Deviation of Fo	Linearity	D.C. Output Volts	Case No.
DST-26	40.0	$\pm 8\frac{1}{2}$	$\pm 0.5\%$	32.5	FA-190
DST-27	52.5	$\pm 8\frac{1}{2}$	$\pm 0.5\%$	32.5	FA-190
DST-28	70.0	$\pm 8\frac{1}{2}$	$\pm 0.5\%$	32.5	FA-190
DST-29	22.0	$\pm 15$	$\pm 1.0\%$	26.0	FA-190
DST-30	30.0	$\pm 15$	$\pm 1.0\%$	26.0	FA-190
DST-31	40.0	$\pm 15$	$\pm 1.0\%$	26.0	FA-190
DST-32	52.5	$\pm 15$	$\pm 1.0\%$	26.0	FA-190
DST-33	70.0	$\pm 15$	$\pm 1.0\%$	26.0	FA-190

## FIXED DISCRIMINATORS

Catalog No.	Center Frequency (cps)	% Deviation of Fo	Linearity	D.C. Output Volts	Case No.
DST-10	400	$\pm 8\frac{1}{2}$	$\pm 0.5\%$	32.5	FA-185
DST-11	560	$\pm 8\frac{1}{2}$	$\pm 0.5\%$	32.5	FA-185
DST-12	730	$\pm 8\frac{1}{2}$	$\pm 0.5\%$	32.5	FA-185
DST-13	960	$\pm 8\frac{1}{2}$	$\pm 0.5\%$	32.5	FA-185

Catalog No.	Center Frequency (cps)	% Deviation of Fo	Linearity	D.C. Output Volts	Case No.
DST-14	1,300	$\pm 8\frac{1}{2}$	$\pm 0.5\%$	32.5	FA-185
DST-15	1,700	$\pm 8\frac{1}{2}$	$\pm 0.5\%$	32.5	FA-185
DST-16	2,300	$\pm 8\frac{1}{2}$	$\pm 0.5\%$	32.5	FA-185

# FREED TRANSFORMER COMPANY, INC.

## MINIATURE FILTERS

Freed standard filters are hermetically sealed, miniature high performance components designed for production and laboratory applications in the electronics and communications industries.

To achieve attenuation characteristics not obtainable with one single filter several standard filters of different transmission characteristics can be combined. Wide band characteristics can be obtained by combining low and high pass units.

The astatic construction of inductive components together with special shielding reduces the hum pickup of standard filters to extremely low levels.

Standard filters with low pass, high pass and band pass characteristics are available.

The attenuation characteristics of these filters are:

- Low Pass Filters** 6 db at cut-off frequency.  
35 db at 1.5 times cut-off frequency.  
40 db at twice the cut-off frequency.
- High Pass Filters** 6 db at cut-off frequency.  
35 db at 67% of cut-off frequency.  
40 db at 50% of cut-off frequency.
- Band Pass Filters** 2 db at  $\pm 3\%$  of center frequency.  
40 db at one half and twice the center frequencies.

### CASE DIMENSIONS

#### DF-1 CASE



Height:  $2\frac{1}{8}''$   
 Width:  $1\frac{11}{16}''$   
 Depth:  $1\frac{3}{16}''$   
 Mtg. Cen.  $1\frac{1}{4}'' \times \frac{3}{4}''$   
 Studs:  $4 - 6-32 \times \frac{3}{8}''$   
 Knockout:  $\frac{7}{8}''$  dia.

Catalog No.	Cut-off Frequency c.p.s.	6 DB at c.p.s.	Response 40 DB at c.p.s.	Characteristic Impedance Ohms	Case No.	
<b>LOW PASS FILTERS</b>						
ILP - 500	500	500	1,000	10,000	DF-1	
ILP - 1,500	1,500	1,500	3,000	10,000	DF-1	
ILP - 1,600	1,600	1,600	3,200	10,000	DF-1	
ILP - 2,000	2,000	2,000	4,000	10,000	DF-1	
ILP - 2,500	2,500	2,500	5,000	10,000	DF-1	
ILP - 3,000	3,000	3,000	6,000	10,000	DF-1	
ILP - 15,000	15,000	15,000	30,000	10,000	DF-1	
ILP - 20,000	20,000	20,000	40,000	10,000	DF-1	
LLP - 1,500	1,500	1,500	3,000	500/600	DF-1	
LLP - 1,600	1,600	1,600	3,200	500/600	DF-1	
LLP - 2,000	2,000	2,000	4,000	500/600	DF-1	
LLP - 2,500	2,500	2,500	5,000	500/600	DF-1	
LLP - 3,000	3,000	3,000	6,000	500/600	DF-1	
<b>HIGH PASS FILTERS</b>						
IHP - 300	300	300	150	10,000	DF-1	
IHP - 400	400	400	200	10,000	DF-1	
IHP - 1,000	1,000	1,000	500	10,000	DF-1	
LHP - 300	300	300	150	500/600	DF-1	
LHP - 400	400	400	200	500/600	DF-1	
LHP - 1,000	1,000	1,000	500	500/600	DF-1	
<b>BAND PASS FILTERS</b>						
Catalog No.	Center Frequency	Band width $\pm 3\%$ of CF $< 2$ DB	40 DB att. at .5 and 2 times Fo	Input Impedance	Output Impedance	Case No.
IBP - 400	400	$\pm 3\%$	$\pm .5 \pm 2$	10,000	5 Meg $\Omega$	DF-1
IBP - 1,000	1,000	$\pm 3\%$	$\pm .5 \pm 2$	10,000	5 Meg $\Omega$	DF-1
IBP - 1,500	1,500	$\pm 3\%$	$\pm .5 \pm 2$	10,000	5 Meg $\Omega$	DF-1
IBP - 2,000	2,000	$\pm 3\%$	$\pm .5 \pm 2$	10,000	5 Meg $\Omega$	DF-1
IBP - 3,000	3,000	$\pm 3\%$	$\pm .5 \pm 2$	10,000	5 Meg $\Omega$	DF-1
IBP - 5,600	5,600	$\pm 3\%$	$\pm .5 \pm 2$	10,000	5 Meg $\Omega$	DF-1
IBP - 10,000	10,000	$\pm 3\%$	$\pm .5 \pm 2$	10,000	5 Meg $\Omega$	DF-1
IBP - 15,000	15,000	$\pm 3\%$	$\pm .5 \pm 2$	10,000	5 Meg $\Omega$	DF-1
LBP - 300	300	$\pm 3\%$	$\pm .5 \pm 2$	500/600	5 Meg $\Omega$	DF-1
LBP - 400	400	$\pm 3\%$	$\pm .5 \pm 2$	500/600	5 Meg $\Omega$	DF-1
LBP - 600	600	$\pm 3\%$	$\pm .5 \pm 2$	500/600	5 Meg $\Omega$	DF-1
LBP - 1,000	1,000	$\pm 3\%$	$\pm .5 \pm 2$	500/600	5 Meg $\Omega$	DF-1
LBP - 1,500	1,500	$\pm 3\%$	$\pm .5 \pm 2$	500/600	5 Meg $\Omega$	DF-1
LBP - 2,000	2,000	$\pm 3\%$	$\pm .5 \pm 2$	500/600	5 Meg $\Omega$	DF-1
LBP - 3,000	3,000	$\pm 3\%$	$\pm .5 \pm 2$	500/600	5 Meg $\Omega$	DF-1
LBP - 10,000	10,000	$\pm 3\%$	$\pm .5 \pm 2$	500/600	5 Meg $\Omega$	DF-1

## SERIES 1950 NULL "T" FILTERS

The Freed Series 1950 Null T networks consist of two resistance capacitance networks, whose outputs completely cancel each other at the balance frequency. They may be used as rejection networks particularly at low frequencies where LC filters become excessively large and unstable.

Standard models are available for 30, 60 and 120 cycles in a wide range of impedances. Each network will give a minimum of 50 db attenuation at the null frequency.

The null frequency is adjusted to a tolerance of  $\pm 2\%$ .

All Null T Filters are hermetically sealed.



# FREED TRANSFORMER COMPANY, INC.

## CASE DIMENSIONS

### DC-4B CASE



Height: 4 1/4"  
 Width: 3 1/8"  
 Length: 3"  
 Mounting: 4 8-32 Studs  
 Mtg. Cen.: 2 1/2" x 2 1/2"  
 Cutout: (2) 1 3/8" x 1/8"

### OL-MA-2 CASE



Height: 4"  
 Width: 4 5/8"  
 Length: 3 15/16"  
 Mounting: 4 10-32 Sds  
 Mtg. Cen.: 2 1/2" x 3 3/4"  
 Cutout: (2) 2 3/4" x 3/4"

### OL-112-1 CASE

Height: 6"  
 Width: 5 7/8"  
 Length: 4 5/4"  
 Mounting: (4) 1/4-20 Studs  
 Mtg. Cen.: 4 3/4" x 3 5/8"  
 Cutout: 3" Dia.

### DC-6B CASE

Height: 6"  
 Width: 5"  
 Length: 4 1/8"  
 Mounting: 4 10-32 Sds.  
 Mtg. Cen.: 3 3/4" x 3"  
 Cutout: 3" Dia.

### FH-EA CASE



Height: 2 11/16"  
 Width: 1 7/8"  
 Length: 1 3/4"  
 Mounting: 4 6-32 Studs  
 Mtg. Cen.: 1 3/8" x 1 1/4"  
 Cutout: 1 3/16"

### DM-03 CASE



Height: 2 1/2"  
 Width: 1 1/2"  
 Length: 1 1/2"  
 Mounting: 4 6-32 Studs  
 Mtg. Cen.: 1 1/16" x 1 1/16"  
 Cutout: 1 1/4" Dia.

## ULTRASONICS

New developments and applications of ultrasonics for industrial cleaning, soldering, welding, and mixing have created a demand for generators and components specifically designed for ultrasonic applications.

Using the latest developments in the field of special magnetic materials the FREED ultrasonic transformers are designed for greatest efficiency and maximum reliability. They feature small size, excellent performance and long life under continuous duty operation.

To save development time complete kits designed for ultrasonic electronic generators, amplifiers (from 100 watts to 1 KVA) and transducer bias supplies are available. These kits include all necessary reactive components and are supplied with a complete schematic.

A 250 VA ultrasonic amplifier is available from stock. (Completely wired).

Transformers with an extended frequency range (frequencies up to 2 MC) can be supplied upon request.

Extensive engineering and laboratory facilities are available for consulting, development and research in components for ultrasonic generators and amplifiers.

## ULTRASONIC DRIVER AND INPUT TRANSFORMERS

Frequency response: ± 1 DB 10 KC to 60 KC.

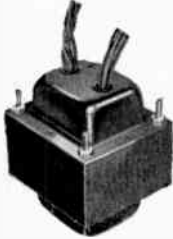
Catalog No.	Application	Primary Impedance Ohms	Voltage Ratio	Maximum Power Watts	Maximum Primary D.C. per Side Ma.	Case Size
ULI-20	Transducer to PP 811 A	1, 2, 4		5		DM-03
ULD-20	PP 6CM6 to PP 811 A		4.4:1	5	50	DM-03
ULD-50	PP 5881 to PP 8000		1.7:1	25	90	FH-EA

## ULTRASONIC OUTPUT TRANSFORMERS

Frequency response: ± 1 DB 20 KC to 60 KC.

Catalog No.	Application	Impedance in Ohms		Maximum Power Watts	Maximum Primary D.C. per Side Ma.	Case Size
		Primary	Secondary			
ULO-10	PP 6083 to transducer	7,600	1/4	100	120	DC-4B
ULO-11	Same	7,600	2/8	100	120	DC-4B
ULO-12	Same	7,600	4/16	100	120	DC-4B
ULO-13	Same	7,600	7.5/30	100	120	DC-4B
ULO-30	PP 811 A to transducer	12,400	1/4	300	170	DC-4B
ULO-31	Same	12,400	2/8	300	170	DC-4B
ULO-32	Same	12,400	4/16	300	170	DC-4B
ULO-33	Same	12,400	7.5/30	300	170	DC-4B
ULO-34	Same	12,400	25	300	170	DC-4B
ULO-35	Same	12,400	125/500	300	170	DC-4B
ULO-36	Same	12,400	250/1000	300	170	DC-4B
ULO-37	Same	12,400	75/300	300	170	DC-4B
ULO-52	PP 8000 to transducer	10,800	4/16	500	230	OL-MA-2
ULO-53	Same	10,800	7.5/30	500	230	OL-MA-2
ULO-54	Same	10,800	25/100	500	230	OL-MA-2
ULO-55	Same	10,800	125/500	500	230	OL-MA-2
ULO-56	Same	10,800	250/1000	500	230	OL-MA-2
ULO-101	PP. Par. 8000 to transducer	5,400	25/100	1000	430	DC-6B
ULO-104	Same	5,400	75/300	1000	430	DC-6B
ULO-110	Same	5,400	18.8/75/300	1000	430	OL-112-1

CASE DIMENSIONS



Case No.	Height	Width	Depth	Mis. Centers	Mis. Studs
HS300	2 3/8	3	2 1/2	2 1/2 x 2	(4) 1/8 x 3/8
HS303	2 3/8	3	2 1/2	2 1/2 x 2	(4) "
HS306	3 1/4	3	2 1/2	2 1/2 x 2	(4) "
HS307	3 3/8	3	2 1/2	2 1/2 x 2	(4) "
HS503	3 1/2	3 3/4	3 1/4	3 1/4 x 2 1/2	(4) "
HS505	3 3/4	3 3/4	3 1/4	3 1/4 x 2 1/2	(4) "
HS603	3 3/4	4 1/2	3 3/4	3 3/4 x 3	(4) "
HS605	4	4 1/2	3 3/4	3 3/4 x 3	(4) "
HS606	4 1/8	4 1/2	3 3/4	3 3/4 x 3	(4) "
HS610	4 1/8	4 1/2	3 3/4	3 3/4 x 3	(4) "
HS612	4 1/2	4 1/2	3 3/4	3 3/4 x 3	(4) "
HS708	5 1/2	5 1/2	4 3/4	4 3/4 x 3 3/4	(4) 1/4 x 3/8
HS709	6	5 1/2	4 3/4	4 3/4 x 3 3/4	(4) "



Case No.	Height	Width	Depth	Mis. Centers	Mis. Holes
VS300	3 3/8	2 3/4	2 3/4	2 x 1 1/2	(4) 1/8 x 3/8
VS303	3 3/8	2 3/4	3	2 x 1 1/2	(4) "
VS306	3 3/8	2 3/4	3 3/8	2 x 2 1/4	(4) "
VS307	3 3/8	2 3/4	3 3/8	2 x 2 1/4	(4) "
VS503	3 3/8	3 1/4	3 3/8	2 1/2 x 2 1/4	(4) "
VS505	3 3/8	3 3/4	3 3/8	2 1/2 x 2 1/4	(4) "
VS603	4 1/8	3 3/4	3 3/8	3 x 2 1/4	(4) "
VS605	4 1/8	3 3/4	4 1/4	3 x 2 1/4	(4) "
VS606	4 1/8	3 3/4	4 1/4	3 x 3 1/4	(4) "
VS610	4 1/8	3 3/4	4 1/4	3 x 3 1/4	(4) "
VS612	4 1/8	3 3/4	5	3 x 3 3/4	(4) "
VS708	5 1/2	4 3/4	5 1/2	3 3/4 x 4	(4) 1/4 x 3/8
VS709	5 1/2	4 3/4	5 1/2	3 3/4 x 4 1/4	(4) "

REPLACEMENT GRADE COMPONENTS

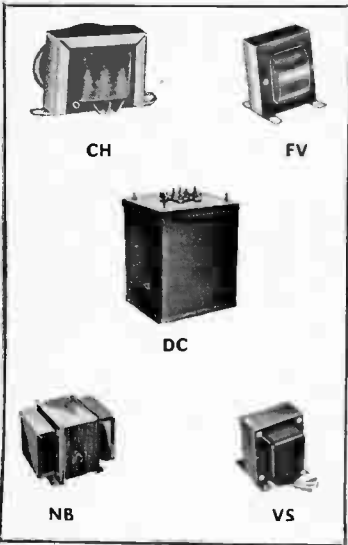
The replacement grade units are low-priced, high-reliability components. Vacuum impregnation and low temperature rise insure trouble-free performance and long life.

POWER TRANSFORMERS

All primaries designed for 115-volt, 50-60 cycle operation.

Catalog No.	Py	V <sub>o</sub>	Hi Volt	Choke Input		Cond. Input		Bias Tap	Rectifier	Fil. No. 1	Fil. No. 2	Fil. No. 3	Case No.
				D.C.V.	D.C.Ma.	D.C.V.	D.C.Ma.						
RGP 1	45		500V CT			270	40		6X4, 5Y3	5/6.3V @ 2A	6.3V @ 2A		VS300
RGP 2	"		"			"	"		"	"	"		HS300
RGP 3	57		600V CT			330	50		6X4, 5Y3	5/6.3V @ 2A	6.3V @ 2.5A		VS303
RGP 4	"		"			"	"		"	"	"		HS303
RGP 5	64		650V CT			370	50		6X4, 5Y3	5/6.3V @ 2A	6.3V @ 3A		VS303
RGP 6	"		"			"	"		"	"	"		HS303
RGP 7	73		600V CT			320	70		6X4, 5Y3	5/6.3V @ 2A	6.3V @ 3A		VS306
RGP 8	"		"			"	"		"	"	"		HS306
RGP 9	110		650V CT	225	140	330	100		5Y3, 5U4	5V @ 3A	6.3V @ 5A		VS503
RGP 10	"		"	"	"	"	"		"	"	"		HS503
RGP 11	76		700V CT	260	100	385	70		5Y3	5V @ 2A	6.3V @ 2.5A		VS307
RGP 12	"		"	"	"	"	"		"	"	"		HS307
RGP 13	108		700V CT	250	125	370	90		5Y3, 5U4	5V @ 3A	6.3V @ 5A		VS503
RGP 14	"		"	"	"	"	"		"	"	"		HS503
RGP 15	127		700V CT	260	170	350	120		5U4	5V @ 3A	6.3V @ 5A		VS505
RGP 16	"		"	"	"	"	"		"	"	"		HS505
RGP 17	146		700V CT	260	210	350	150		5U4	5V @ 3A	6.3V @ 5A	6.3V @ 1A	VS603
RGP 18	"		"	"	"	"	"		"	"	"	"	HS603
RGP 19	207		800V CT	295	280	400	200		5U4, 2-5Y3	5V @ 4A	6.3V @ 6A		VS606
RGP 20	"		"	"	"	"	"		"	"	"		HS606
RGP 21	225		800V CT	295	280	400	200	80	5U4, 2-5Y3	5V @ 4A	6.3V @ 6A	5/6.3V @ 2A	VS606
RGP 22	"		"	"	"	"	"	"	"	"	"	"	HS606
RGP 23	268		840V CT	330	350	450	250	80	2-5U4	5V @ 6A	6.3V @ 6A	5/6.3V @ 2A	VS612
RGP 24	"		"	"	"	"	"	"	"	"	"	"	HS612
RGP 25	320		900V CT	340	420	490	300	80	2-5U4	5V @ 6A	6.3V @ 6A	5/6.3V @ 2A	VS708
RGP 26	"		"	"	"	"	"	"	"	"	"	"	HS708
RGP 27	127		900V CT	360	150				5U4	5V @ 3A	6.3V @ 5A		VS603
RGP 28	"		"	"	"	"	"		"	"	"		HS603
RGP 29	150		900V CT	350	200				5U4	5V @ 3A	6.3V @ 5A		VS605
RGP 30	"		"	"	"	"	"		"	"	"		HS605
RGP 31	203		1100V CT	400	250				5R4GY	5V @ 3A	6.3V @ 5A		VS610
RGP 32	"		"	"	"	"	"		"	"	"		HS610
RGP 33	248		1100V CT	420	300				2-5R4GY	5V @ 4A	6.3V @ 7A		VS612
RGP 34	"		"	"	"	"	"		"	"	"		HS612
RGP 35	310		1280V CT	480	350				2-5R4GY	5V @ 4A	6.3V @ 7A		VS709
RGP 36	"		"	"	"	"	"		"	"	"		HS709

CASE DIMENSIONS



REPLACEMENT GRADE COMPONENTS

FILAMENT TRANSFORMERS

All primaries are for 115V, 50/60 c.p.s.

Catalog No.	Secondary Voltage	Secondary Current Amps.	Secondary Test Voltage RMS	Case Size
TF 1	2.5 (C.T.)	7.5	1500	CH60
TF 2	2.5 (C.T.)	10	1500	CH70
TF 3	2.5 (C.T.)	5	7500	DC2B
TF 4	2.5 (C.T.)	10	7500	DC4A
TF 5	5.0 (C.T.)	4	1500	CH60
TF 6	5.0 (C.T.)	6	1500	CH70
TF 7	5.0 (C.T.)	10	1500	CH80
TF 8	5.0 (C.T.)	10	1500	FV10
TF 9	5.0 (C.T.)	20	2500	FV30
TF 10	5.0 (C.T.)	20	10,000	DC6A
TF 11	6.3 (C.T.)	1.35	1500	CH50
TF 12	6.3 (C.T.)	3	1500	CH60
TF 13	6.3 (C.T.)	5	1500	CH70
TF 14	6.3 (C.T.)	7	1500	FV12
TF 15	6.3 (C.T.)	10	1500	FV22
TF 16	10 (C.T.)	5	2500	CH80
TF 17	10 (C.T.)	5	2500	FV10
TF 18	10 (C.T.) or 11 (C.T.) (lapped primary)	12 or 11	7500	DC-5C
TF 19	12.6 (C.T.)	2	1500	CH62

T following case number indicates Terminals.

L following case number indicates Leads.

AUTO TRANSFORMERS

To be used as step-down transformer. Equipped with standard receptacle and line cord.

Catalog No.	Transformation	VA Rating	Case Size
SDT 1*	230/115 V, 50/60 c.p.s.	25	CH-60
SDT 2*	230/115 V, 50/60 c.p.s.	50	CH-62
SDT 3	230/115 V, 50/60 c.p.s.	50	VS-300
SDT 4	230/115 V, 50/60 c.p.s.	100	VS-401
SDT 5	230/115 V, 50/60 c.p.s.	200	VS-501
SDT 6	230/115 V, 50/60 c.p.s.	300	VS-601
SDT 7	230/115 V, 50/60 c.p.s.	400	VS-604
SDT 8	230/115 V, 50/60 c.p.s.	500	VS-611
SDT 9	230/115 V, 50/60 c.p.s.	750	VS-706
SDT 10	230/115 V, 50/60 c.p.s.	1000	VS-718
SDT 11	230/115 V, 50/60 c.p.s.	1500	VS-788
SDT 12*	230/115 V, 50/60 c.p.s.	2000	HB-718
SDT 13*	230/115 V, 50/60 c.p.s.	2500	HB-788
SDT 14*	230/115 V, 50/60 c.p.s.	3000	HB-828
SDT 15*	230/115 V, 50/60 c.p.s.	5000	HB-920

\*Supplied with leads without line cord and receptacle.

ISOLATION TRANSFORMERS

Electrostatic shield between primary and secondary. Equipped with standard receptacle and line cord.

Catalog Number	Primary Voltage 50/60 c.p.s.	Secondary Voltage	VA Rating	Case Size
IT 1	115	115	50	VS-401
IT 2	115	115	100	VS-503
IT 3	115	115	300	VS-700
IT 4	115	115	500	VS-714
IT 5*	220/440	110/220	250	VS-612
IT 6*	220/440	110/220	500	VS-714

\*Supplied with leads without line cords and receptacle.

LINE BOOSTER TRANSFORMERS

Operates from 90 to 110 volts input to provide 10% step-up.

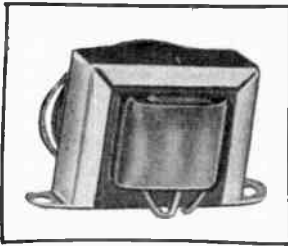
Catalog Number	Primary Voltage	Secondary Voltage	VA Rating	Case Size
LB-1	90-110	1.1 x input	350	VS-300
LB-2	90-110	1.1 x input	2000	VS-611

Case No.	Height	Width	Depth	Mts. Centers	Mts. Studs
DC2B	3 1/4	2 5/8	2 1/4	2 x 1 1/4	(4) 1/8-32
DC4A	3 3/4	3 1/4	3	2 1/2 x 2 1/2	(4) 1/8-32
DC5C	4 7/8	4 1/4	3 1/4	3 1/4 x 2 3/4	(4) 1/10-32
DC6A	4 7/8	5	4 1/4	3 1/4 x 3	(4) 1/10-32
CH50	1 1/2	2 5/8	1 3/4	2 1/4	(2) 1/8
CH60	2	3 1/4	2	2 1/4	(2) 1/8
CH62	2	3 1/4	2 1/4	2 1/4	(2) 1/8
CH70	2 1/2	3 11/16	2 1/4	3 1/8	(2) 1/8
CH80	2 1/2	4	2 1/2	3 3/8	(2) 1/8
FV10	3 1/4	2 1/4	2 1/2	2 x 2	(4)
FV12	3 1/4	2 1/4	2 1/2	2 x 2 1/2	(4)
FV22	3 3/4	2 3/4	2 1/2	2 1/4 x 2 1/4	(4)
FV30	4 1/4	3 3/4	3	2 1/4 x 2 1/4	(4)
HB718	6 1/4	6 1/4	8 1/2	4 1/4 x 4 1/4	(4) 1/8 x 1 1/4
HB728	6 1/4	6 1/4	9 3/4	4 3/4 x 5 3/4	(4) 1/8 x 1 1/4
HB828	6 3/4	7 1/4	9 7/8	5 3/8 x 5 3/8	(4) 1/8 x 1 1/4
HB920	6 3/4	7 1/4	10 1/4	6 1/2 x 7 3/8	(4) 1/8 x 1 1/4
VS300	3 3/4	2 3/4	3	2 x 2	(4) 1/8 x 3/8
VS401	3 3/4	2 3/4	3 1/4	2 1/4 x 1 3/4	(4) 1/8 x 3/8
VS501	3 3/4	3 1/4	3 3/4	2 1/4 x 2 3/4	(4) 1/8 x 3/8
VS503	3 3/4	3 1/4	3 3/4	2 1/4 x 2 3/4	(4) 1/8 x 3/8
VS601	4 1/4	3 3/4	3 3/4	3 x 2 3/4	(4) 1/8 x 3/8
VS604	4 1/4	3 3/4	4	3 x 2 3/4	(4) 1/8 x 3/8
VS611	4 1/4	3 3/4	4 3/4	3 x 3 1/4	(4) 1/8 x 3/8
VS612	4 1/4	3 3/4	5	3 x 3 3/4	(4) 1/8 x 3/8
VS700	5 1/4	3 3/4	5	3 1/2 x 3 1/4	(4) 1/8 x 3/8
VS706	5 3/4	4 3/4	5 3/4	3 1/2 x 3 3/4	(4) 1/8 x 3/8
VS714	5 1/4	4 3/4	6 1/4	3 1/2 x 4 3/4	(4) 1/8 x 3/8
VS718	5 1/4	4 3/4	7	3 1/2 x 5 1/4	(4) 1/8 x 1 1/4
VS728	5 1/4	4 3/4	8 1/4	3 1/2 x 6 1/4	(4) 1/8 x 1 1/4



# FREED TRANSFORMER COMPANY, INC.

## CASE DIMENSIONS



### CH-40 CASE

Height: 1 1/16"  
Width: 2 3/8"  
Depth: 1 3/8"  
Mtg. Cen.: 2"

### CH-50 CASE

Height: 1 1/16"  
Width: 2 1/8"  
Depth: 1 3/8"  
Mtg. Cen.: 2 3/8"

### CH-60 CASE

Height: 2"  
Width: 3 1/4"  
Depth: 2 1/8"  
Mtg. Cen.: 2 1/16"

### CH-80 CASE

Height: 2 3/8"  
Width: 4"  
Depth: 2 3/8"  
Mtg. Cen.: 3 3/8"



### VS-100 CASE

Height: 2 1/16"  
Width: 1 7/8"  
Depth: 2 1/8"  
Mtg. Cen.: 1 1/2" x 1 1/16"

### VS-300 CASE

Height: 3 3/8"  
Width: 2 5/8"  
Depth: 2 3/8"  
Mtg. Cen.: 2" x 1 1/16"

### VS-303 CASE

Height: 3 3/8"  
Width: 2 5/8"  
Depth: 3"  
Mtg. Cen.: 2" x 1 1/16"  
Mtg. Holes: (4) 3/16" x 3/8"

### VS-306 CASE

Height: 3 3/8"  
Width: 2 5/8"  
Depth: 3 3/8"  
Mtg. Cen.: 2" x 2 1/16"  
Mtg. Holes: (4) 3/16" x 3/8"

### VS-308 CASE

Height: 3 3/8"  
Width: 2 7/8"  
Depth: 3 3/8"  
Mtg. Cen.: 2" x 2 1/16"

## REPLACEMENT GRADE COMPONENTS

### AUDIO TRANSFORMERS

Catalog No.	Application	Impedance Level Ohms		Max. Power Level DBM or Power in Watts	Ratio	Max. Pri. D.C. per Side Ma.	D.C. Unbalance Ma.	Freq. Response C.P.S.	Case No.
		Primary	Secondary						
RGA 1	Input; multiple line or double button mike to single or push-pull grids.	500 CT 200 CT	100,000 CT	+20	1:14.1	50	5	±2DB 200-5000	CH-40
RGA 2	Input; single button mike to single or push-pull grids.	100	100,000 CT	+20	1:31.6	50		±2DB 200-5000	CH-40
RGA 3	Input; voice coil to grid. Intercom.	3.2	100,000	+20	1:179			±2DB 200-5000	CH-40
RGA 4	Mixing and matching line to line.	600 CT 500 CT 200 CT	600 CT 500 CT 200 CT 150/125/50	+20	1:1			±2DB 100-5000	CH-40
RGA 5	Interstage; single triode plate to single or P.P. grids.	10,000	90,000 CT	+30	1:3	10		±2DB 200-5000	CH-40
RGA 6	Output; single plate to line or mixer.	10,000	600 CT 500 CT 200 CT 150/125/50	+30	4.8:1	10		±2DB 200-5000	CH-40
RGA 7	Output; Push-pull plate to line or mixer.	20,000 CT	600 CT 500 CT 200 CT 150/125/50	+30	6.32:1	10	1	±2DB 200-5000	CH-40
RGA 8	Output; plate to V.C. 6AL6, 6L6, 6Y6, 25B6, 25C6, 35A5, 35B5, 35C5, 50B5, 50C5, 50C6, 50L6 117N7.	2500	3.2	5W		70		±3DB 200-10000	CH-40
RGA 9	Output; plate to V.C. 6V6, 6AQ5, 6AS5, 7C5.	5000	3.2	5W		50		±3DB 200-10000	CH-40
RGA 10	Output; plate to V.C. 6AR5, 6K6, 6V6, 7B5, 14A5, 354, 3U4, 3Q4, 3Q5, 3C5, 3A4.	10,000 or 7500	3.2	5W		30		±3DB 200-10000	CH-40
RGA 11	Output; P.P. plates to V.C. P.P. 6V6, 6P6K6.	12,000 CT or 8000 CT	3.2	15W		50	5	±2DB 200-8000	CH-60
RGA 12	Output; TP to V.C. 6V6, 6AQ5, 7C5, C1AB.	10,000 CT	3.2	10W	5.6:1	40	4	±3DB 200-10000	CH-60

### REPLACEMENT GRADE CHOKES

Catalog No.	Inductance in Henries	Rated Current D.C. Ma.	D.C. Resistance	Dielectric Test Voltage	Case Number
RGC 17	40	15	2000	1000	CH-40
RGC 1	4	40	200	1000	CH-40
RGC 2	9	40	400	1000	CH-40
RGC 3	6	50	400	1000	CH-40
RGC 18	20	50	425	1500	CH-60
RGC 4	10	55	400	1500	CH-50
RGC 19	3	75	200	1500	CH-40
RGC 5	10	75	250	1500	CH-60
RGC 6	10	75	250	1500	VS-100
RGC 7	6	100	150	1500	CH-60
RGC 8	6	100	150	1500	VS-100
RGC 9	3.5	150	100	1500	CH-60
RGC 10	3.5	150	100	1500	VS-100
RGC 20	12	160	180	2500	VS-306
RGC 11	2	200	60	1500	CH-60
RGC 12	2	200	60	1500	VS-100
RGC 13	3.7	200	65	1500	CH-80
RGC 21	7	200	100	2500	VS-303
RGC 14	3.7	200	65	1500	VS-300
RGC 15	2.8	300	65	1500	CH-80
RGC 16	2.8	300	65	1500	VS-300
RGC 22	5	300	65	2500	VS-308

# FREED TRANSFORMER COMPANY, INC.

Catalog No.	List Price
IT-1	11.00
IT-2	16.00
IT-3	40.00
IT-4	48.50
IT-5	40.00
IT-6	53.00

Catalog No.	List Price
KA 10	27.50
KA 11	15.10
KC 10	7.15
KC 11	2.40
Printed Circuit Board for HI F1 Kit	\$.495 Net

Catalog No.	List Price
LB-1	11.00
LB-2	32.00

Catalog No.	Net Price
MAF-1	209.00
MAF-4	78.00
MAF-5	80.00
MAF-6	180.00
MAF-7	180.00
MAO-1	70.00
MAO-2	102.00
MAO-4	155.00
MAO-5	175.00
MAP-1	90.00
MAP-2	150.00
MAP-3	225.00
MAP-3A	175.00
MAP-4	280.00
MAP-7	105.00
MAP-8	133.00
MAP-11	95.00
MAS-1	55.00
MAS-2	37.00
MAS-5	33.00
MAS-6	50.00
MAS-7	60.00

Catalog No.	Net Price
MAT-1	167.00
VHI-1	9.50
VHI-2	9.50
VHI-3	9.50
VHI-4	9.50
VHI-5	9.50
VHI-6	9.50
VHI-7	9.50
VHI-8	9.50
VHI-9	9.50
VHI-10	9.50

Catalog No.	Net Price
MGA-1	12.50
MGA-2	12.50
MGA-3	16.50
MGA-4	15.00
MGA-5	12.50
MGA-6	12.50
MGA-7	12.50
MGA-8	12.50
MGA-9	12.50

Catalog No.	Net Price
MGC-1	7.50
MGC-2	6.15
MGC-3	6.50
MGC-4	7.25
MGC-5	7.50
MGC-6	6.15
MGC-7	6.50
MGC-8	7.00
MGC-9	6.50
MGC-10	7.00
MGC-11	8.75
MGC-12	6.50
MGC-13	7.00
MGC-14	8.75
MGC-15	9.50
MGC-16	7.00
MGC-17	8.75
MGC-18	10.00
MGC-19	12.50

Catalog No.	Net Price
MGC-20	8.75
MGC-21	*
MGC-22	9.50
MGC-23	*
MGC-24	18.00
MGC-25	*
MGC-26	16.00
MGC-27	*
MGC-28	16.00
MGC-29	*
MGC-30	*
MGC-31	*

\*Not stocked, available on short delivery. Prices on request.

Catalog No.	List Price
MGF-1	14.75
MGF-2	23.50
MGF-3	16.25
MGF-4	25.50
MGF-5	15.50
MGF-6	21.50
MGF-7	29.50
MGF-8	36.50
MGF-9	27.50
MGF-10	35.00

Catalog No.	List Price
MGP-1	27.00
MGP-2	28.00
MGP-3	32.50
MGP-4	38.00
MGP-5	49.00
MGP-6	32.50
MGP-7	39.00
MGP-8	54.50

Catalog No.	Net Price
MPT-1	17.50
MPT-2	15.00
MPT-3	22.50
MPT-4	20.00
MPT-5	17.50
MPT-6	15.00
MPT-7	17.50
MPT-8	15.00
MPT-9	22.50
MPT-10	20.00
MPT-11	17.50
MPT-12	27.50

Catalog No.	Net Price
EPT-1	7.50
EPT-2	7.50
EPT-3	7.50
EPT-4	7.50
EPT-5	7.50
EPT-6	7.50
EPT-7	9.50
EPT-8	9.50
EPT-9	9.50
EPT-11	7.50
EPT-12	9.50
EPT-13	9.50
EPT-14	9.50
EPT-15	12.50
EPT-16	12.50
EPT-17	11.50
EPT-18	11.50
EPT-19	11.50

(Note—Molded Units \$1.00 additional)

Catalog No.	List Price
PGA-1	22.50
PGA-2	25.00
PGA-3	25.00
PGA-4	21.25
PGA-5	21.25
PGA-6	21.25
PGA-7	18.75
PGA-8	18.75
PGA-9	18.75
PGA-10	20.00
PGA-11	21.25
PGA-12	21.25
PGA-13	25.00
PGA-14	25.00

Catalog No.	List Price
PGA-15	31.25
PGA-16	31.25
PGA-17	31.25
PGA-18	28.75
PGA-19	31.25
PGA-20	31.25
PGA-21	31.25
PGA-22	34.25
PGA-23	34.25
PGA-24	31.25
PGA-25	55.00
PGA-26	31.25
PGA-27	31.25
PGA-28	31.25
PGA-29	31.25
PGA-30	55.00

Catalog No.	List Price
PGC-1	7.00
PGC-2	7.50
PGC-3	7.50
PGC-4	8.25
PGC-5	8.25
PGC-6	8.25
PGC-7	9.00
PGC-8	10.00
PGC-9	10.00
PGC-10	10.50
PGC-11	11.50
PGC-12	14.50
PGC-13	17.50
PGC-14	11.00
PGC-15	12.00
PGC-16	11.50
PGC-17	10.00
PGC-18	11.50
PGC-19	14.50
PGC-20	17.50

Catalog No.	List Price
PGP-1	14.00
PGP-2	20.50
PGP-3	10.00
PGP-4	10.50
PGP-5	11.00
PGP-6	12.00
PGP-7	14.00
PGP-8	13.00
PGP-9	14.00
PGP-10	15.50
PGP-11	21.00
PGP-12	25.00
PGP-13	27.50
PGP-14	33.00
PGP-15	38.50
PGP-16	17.50
PGP-17	20.50
PGP-18	27.50
PGP-19	33.00
PGP-20	41.00

Catalog No.	List Price
PMA-1	16.50
PMA-2	13.50
PMA-3	19.00
PMA-4	13.50
PMA-5	13.50
PMA-6	16.50
PMA-7	16.50
PMA-8	16.50
PMA-9	16.50
PMA-10	15.50
PMA-11	12.00

Catalog No.	List Price
PQC-1	10.00
PQC-2	10.00
PQC-3	10.00
PQC-4	10.00
PQC-5	10.00
PQC-6	10.00
PQC-7	10.00
PQC-8	10.00
PQC-9	10.00

Catalog No.	List Price
QGA-1	31.00
QGA-2	38.50
QGA-3	27.50

Catalog No.	List Price
QGA-4	38.50
QGA-5	35.00
QGA-6	40.50
QGA-7	27.50
QGA-8	38.50
QGA-9	38.50
QGA-10	44.00
QGA-11	33.00
QGA-12	33.00
QGA-13	27.50
QGA-14	28.50
QGA-15	35.00
QGA-16	28.50
QGA-17	28.50
QGA-18	30.50
QGA-19	28.50
QGA-20	36.50
QGA-21	33.00
QGA-22	55.00
QGA-23	38.50
QGA-24	38.50
QGA-25	38.50
QGA-26	38.50
QGA-27	38.50
QGA-28	38.50
QGA-29	38.50
QGA-30	38.50
QGA-31	49.50
QGA-32	49.50
QGA-33	49.50
QGA-34	49.50
QGA-35	54.50
QGA-36	54.50
QGA-37	33.00
QGA-38	54.50
QGA-39	38.50
QGA-40	38.50
QGA-41	54.50
QGA-42	54.50

Catalog No.	Net Price
QGC-1	22.50
QGC-2	22.50
QGC-3	22.50
QGC-4	22.50
QGC-5	22.50
QGC-6	22.50
QGC-7	22.50
QGC-8	15.00
QGC-9	15.00
QGC-10	15.00
QGC-11	15.00
QGC-12	15.00
QGC-13	15.00
QGC-14	13.50
QGC-15	13.50
QGC-16	13.50
QGC-17	13.50
QGC-18	13.50
QGC-19	11.50
QGC-20	11.50
QGC-21	11.50
QGC-22	11.50
QGC-23	11.50
QGC-24	11.50

Catalog No.	List Price
RGA-1	5.50
RGA-2	4.40
RGA-3	4.40
RGA-4	7.75
RGA-5	4.40
RGA-6	5.25
RGA-7	5.50
RGA-8	2.50
RGA-9	2.50
RGA-10	3.00
RGA-11	5.50
RGA-12	4.40

Catalog No.	List Price
RGC-1	2.20
RGC-2	2.20
RGC-3	2.20
RGC-4	2.50
RGC-5	3.00
RGC-6	4.50
RGC-7	3.00
RGC-8	4.50
RGC-9	3.00
RGC-10	4.50
RGC-11	3.00
RGC-12	4.50
RGC-13	4.75



# FREED TRANSFORMER COMPANY, INC.

Catalog No.	Net Price
F-1674	16.05
F-1675	16.05
F-1676	16.50
F-1677	16.50
F-1678	17.00
F-1679	17.00
F-1680	17.50
F-1681	17.50
F-1682	17.50
F-1683	17.95
F-1684	17.95
F-1685	17.95
F-1686	18.45
F-1687	18.90
F-1688	19.50
F-1689	19.95
F-1690	20.40
F-1691	20.90
F-1692	21.40
F-1693	21.85

Type TI - 5	
Catalog No.	Net Price
F-1700	5.70
F-1701	5.70
F-1702	5.70
F-1703	6.20
F-1704	6.65
F-1705	6.90
F-1706	7.10
F-1707	7.35
F-1708	7.60
F-1709	7.85
F-1710	8.05
F-1711	8.30
F-1712	9.00
F-1713	9.60
F-1714	9.80
F-1715	10.25
F-1716	10.60
F-1717	10.95
F-1718	11.20
F-1719	11.50
F-1720	11.90

Type TI - 5s	
Catalog No.	Net Price
F-1700S	7.90
F-1701S	7.90
F-1702S	7.90
F-1703S	7.90
F-1704S	7.90
F-1705S	8.15
F-1706S	8.25
F-1707S	8.50
F-1708S	8.80
F-1709S	8.95
F-1710S	9.05
F-1711S	9.20
F-1712S	9.30
F-1713S	9.60
F-1714S	9.80
F-1715S	10.25
F-1716S	10.95
F-1717S	10.95
F-1718S	11.20
F-1719S	11.50
F-1720S	11.90

Type TI - 6 and 6s	
Catalog No.	Net Price
F-1726	8.15
F-1727	8.15
F-1728	8.15
F-1729	8.15
F-1730	8.15
F-1731	8.15
F-1732	8.45
F-1733	8.45
F-1734	8.55

Catalog No.	Net Price
F-1735	8.55
F-1737	9.00
F-1738	10.00
F-1739	10.00
F-1740	10.00
F-1741	10.00
F-1742	10.45
F-1743	11.90

Type TI - 11s	
Catalog No.	Net Price
F-1747S	14.20
F-1748S	14.20
F-1749S	14.20
F-1750S	14.20
F-1751S	14.20
F-1752S	15.20
F-1753S	15.20
F-1754S	15.20
F-1755S	15.20
F-1756S	15.20
F-1757S	14.20
F-1758S	14.20
F-1759S	14.65
F-1760S	14.65
F-1761S	15.20
F-1762S	15.85
F-1763S	16.15
F-1764S	16.60
F-1765S	17.10
F-1766S	17.60
F-1767S	17.80
F-1768S	18.05
F-1769S	18.45
F-1770S	18.45
F-1771S	18.45
F-1772S	19.00
F-1773S	19.50
F-1774S	19.95
F-1775S	20.40
F-1776S	20.90
F-1777S	21.85
F-1778S	22.80
F-1779S	23.75
F-1780S	24.70

Type TI - 7	
Catalog No.	Net Price
F-1781	7.90
F-1782	7.90
F-1783	7.90
F-1784	7.90
F-1785	7.90
F-1786	7.90
F-1787	8.05
F-1788	8.05
F-1789	8.25
F-1790	8.25
F-1791	8.45
F-1792	8.65
F-1793	8.65
F-1794	8.65
F-1795	9.00
F-1796	9.45
F-1797	10.00

Type TI - 2s	
Catalog No.	Net Price
F-1800S	14.20
F-1801S	14.20
F-1802S	14.20
F-1803S	14.20
F-1804S	14.20
F-1805S	14.65
F-1806S	14.65
F-1807S	14.65
F-1808S	14.65
F-1809S	14.65
F-1810S	14.65
F-1811S	14.90
F-1812S	14.90

Catalog No.	Net Price
F-1813S	14.90
F-1814S	14.90
F-1815S	14.90

Type TI - 8 and 8s		
Catalog No.	Net Price	
F-1821	8.65	
F-1822	8.65	
F-1823	8.65	
F-1824	8.65	
F-1825	8.65	
F-1826	8.65	
F-1827	8.65	
F-1828	8.65	
F-1829	8.65	
F-1830	8.65	
F-1831	8.65	
F-1832	8.75	
F-1833	8.85	
F-1834	9.00	
F-1835	9.00	
F-1836	9.00	
F-1837	9.10	
F-1838	9.40	
F-1839	9.50	
F-1840	9.90	

Type TI - 3s	
Catalog No.	Net Price
F-1844S	14.25
F-1845S	14.25
F-1846S	14.25
F-1847S	14.25
F-1848S	14.25
F-1849S	14.25
F-1850S	14.25
F-1851S	14.25
F-1852S	14.25
F-1853S	14.25
F-1854S	14.25
F-1855S	14.25

Type TI - 3As	
Catalog No.	Net Price
F-1856S	20.00
F-1857S	20.50
F-1858S	20.50
F-1859S	22.30
F-1860S	22.80
F-1861S	22.80
F-1862S	23.30
F-1863S	23.30

Type TI - 15	
Catalog No.	Net Price
F-1870	7.25
F-1871	7.25
F-1872	7.25
F-1873	7.25
F-1874	7.25
F-1875	7.25
F-1876	7.25
F-1877	7.25
F-1878	7.25
F-1879	7.25
F-1880	7.25
F-1881	7.45
F-1882	7.45
F-1883	7.65
F-1884	7.65
F-1885	7.85
F-1886	8.05
F-1887	8.05
F-1888	8.05
F-1889	8.45

Type TI - 14	
Catalog No.	Net Price
F-1920	7.40
F-1921	7.40
F-1922	7.40
F-1923	7.40
F-1924	7.40
F-1925	7.40
F-1926	7.85
F-1927	7.85
F-1928	7.95
F-1929	7.95
F-1930	7.95
F-1931	8.40
F-1932	8.75
F-1933	8.75
F-1934	9.00
F-1935	9.25
F-1936	9.75

Type TI - 16	
Catalog No.	Net Price
F-2050	6.05
F-2051	6.05
F-2052	6.05
F-2053	5.85
F-2054	5.85
F-2055	6.30
F-2056	6.80
F-2057	7.05
F-2058	7.25
F-2059	7.35
F-2060	7.70
F-2061	8.00
F-2062	8.20
F-2063	8.45
F-2064	9.75
F-2065	10.80
F-2066	11.00
F-2067	11.40
F-2068	11.65
F-2069	12.00

Type TI - 17	
Catalog No.	Net Price
F-2100	7.90
F-2101	7.90
F-2102	7.90
F-2103	7.90
F-2104	7.90
F-2105	7.90
F-2106	7.90
F-2107	7.90
F-2108	7.90
F-2109	7.90
F-2110	7.90
F-2111	8.05
F-2112	8.05
F-2113	8.25
F-2114	8.25
F-2115	8.65
F-2116	8.65
F-2117	9.05

Type TI - 18	
Catalog No.	Net Price
F-2140	8.65
F-2141	8.65
F-2142	8.65
F-2143	8.65
F-2144	8.65
F-2145	8.65
F-2146	8.65
F-2147	8.65
F-2148	8.65
F-2149	8.65
F-2150	8.65
F-2151	8.75
F-2152	8.85
F-2153	9.00
F-2154	9.00
F-2155	9.20
F-2156	9.50
F-2157	9.70

Type TI - 19	
Catalog No.	Net Price
F-2180	7.90
F-2181	7.90
F-2182	7.90
F-2183	7.90
F-2184	7.90
F-2185	7.90
F-2186	7.90
F-2187	7.90
F-2188	7.90
F-2189	7.90
F-2190	7.90
F-2191	7.90
F-2192	7.90
F-2193	7.90

Type TI - 20s	
Catalog No.	Net Price
F-2201S	6.40
F-2202S	6.40
F-2203S	6.95
F-2204S	6.95
F-2205S	6.95
F-2206S	7.15
F-2207S	7.45
F-2208S	8.10
F-2209S	8.10
F-2210S	8.10
F-2211S	8.10
F-2212S	8.10
F-2213S	8.10
F-2214S	8.10
F-2215S	8.10

Type TI - 21s	
Catalog No.	Net Price
F-2240S	6.00
F-2241S	6.00
F-2242S	6.00
F-2243S	6.00
F-2244S	6.00
F-2245S	6.00
F-2246S	6.40
F-2247S	6.40
F-2248S	6.40
F-2249S	6.40

Type TI - 22s	
Catalog No.	Net Price
F-2270S	6.00
F-2271S	6.00
F-2272S	6.00
F-2273S	6.00
F-2274S	6.00
F-2275S	6.00
F-2276S	6.40
F-2277S	6.40
F-2278S	6.40
F-2279S	6.40
F-2280S	7.15
F-2281S	7.15
F-2282S	7.15
F-2283S	7.15
F-2284S	7.15

Type TI - 23s	
Catalog No.	Net Price
F-2301S	6.25
F-2302S	6.25
F-2303S	6.25
F-2304S	6.25
F-2305S	6.25
F-2306S	6.25
F-2307S	6.75
F-2308S	6.75
F-2309S	6.75
F-2310S	6.75
F-2311S	7.50
F-2312S	7.50
F-2313S	7.50

# NORTH HILLS ELECTRIC CO., INC.

MINEOLA, LONG ISLAND, NEW YORK



## ADJUSTABLE COILS and COIL FORMS

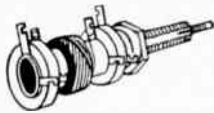
Cover Every Frequency Range from Audio to 200mc

These high quality coils enable engineers and experimenters to save valuable development time by filling a vast number of requirements with standard components from stock. All coils have the following features:

- All metal parts plated to MIL specifications.
- Built-in "perma-tune" tension for smooth "stay-put" tuning.
- Litz wound higher inductance ranges.
- Two extra terminals for tie points or additional winding.
- Moisture and fungus resistant impregnant per MIL-V-173-A.
- Color coded ranges.

### COILS ON CERAMIC FORM PER JAN-I-10

#### Subminiature 1100 Series



- 5/8" above mounting surface
- Mounting — 1/4" hole
- For R.F. and I.F. applications

Part No.	Nominal Microhenries	Average Q
1100-A	0.9- 1.4	45 @ 7.9 mc
1100-B	1.4- 1.9	50 @ 7.9 mc
1100-C	1.9- 2.6	55 @ 7.9 mc
1100-D	2.6- 3.7	65 @ 7.9 mc
1100-E	3.7- 5.5	65 @ 7.9 mc
1100-F	5.5- 7.4	70 @ 7.9 mc
1100-G	7.4-12.5	64 @ 5.0 mc
1100-H	12.5-18.0	72 @ 5.0 mc
1100-I	18.0-28.0	74 @ 5.0 mc
1100-J	28.0-38.0	72 @ 5.0 mc
1100-K	38.0-55.0	75 @ 2.5 mc

#### Miniature 1000 Series



- 3/8" above mounting surface
- Mounting — #10 hole
- For R.F. and I.F. applications

Part No.	Nominal Microhenries	Average Q
1000-A	1.0- 1.6	70 @ 7.9 mc
1000-B	1.6- 2.7	80 @ 7.9 mc
1000-C	2.7- 4.5	85 @ 7.9 mc
1000-D	4.5- 8.5	85 @ 7.9 mc
1000-E	8.5-14.5	75 @ 2.5 mc
1000-F	14.5-22	65 @ 2.5 mc
1000-G	22-29	65 @ 2.5 mc
1000-H	29-55	85 @ 2.5 mc
1000-I	55-110	80 @ 2.5 mc
1000-J	110-185	85 @ .79 mc
1000-K	185-305	85 @ .79 mc
1000-L	305-515	85 @ .79 mc
1000-M	515-820	85 @ .79 mc
1000-N	820-1100	75 @ .79 mc

#### Transmitter 1300 Series



- 1 1/4" above mounting surface
- Mounting — 1/4" hole
- For low power transmitters and high Q receiver circuits

Part No.	Nominal Microhenries	Average Q
1300-A		For use from 90-200 mc
1300-B		For use from 40-90 mc
1300-C		For use from 20-40 mc
1300-D	0.7- 1.1	130 @ 20 mc
1300-E	1.1- 1.7	150 @ 18 mc
1300-F	1.7- 2.7	150 @ 16 mc
1300-G	2.7- 4.5	150 @ 14 mc
1300-H	4.5- 6.8	150 @ 12 mc
1300-I	6.8-10.8	150 @ 10 mc
1300-J	10.8-17.0	150 @ 7 mc
1300-K	17.0-29.0	125 @ 5 mc
1300-L	29.0-45.0	125 @ 4 mc
1300-M	45.0-75.0	125 @ 3 mc

### COILS ON MICA FILLED FORMS PER MIL-P-14-D

#### Standard 120 Series



- 1 1/4" above mounting surface
- Mounting #10 hole
- For R.F. and I.F. applications

Part No.	Nominal Microhenries	Average Q
120-A	2-3	75 @ 7.9 mc
120-B	3-5	85 @ 7.9 mc
120-C	5-9	90 @ 7.9 mc
120-D	9-18	75 @ 7.9 mc
120-E	18-36	75 @ 2.5 mc
120-F	36-64	75 @ 2.5 mc
120-G	64-105	90 @ 2.5 mc
120-H	105-200	90 @ 2.5 mc
120-I	200-500	90 @ .79 mc
120-J	500-1000	90 @ .79 mc
120-K	1000-2000	70 @ .79 mc

#### Printed Circuit P-120 Series



- Snaps into single 0.4" hole for dip soldering
- 1 1/4" long

Part No.	Nominal Microhenries	Average Q
P-120-A	2-3	75 @ 7.9 mc
P-120-B	3-5	85 @ 7.9 mc
P-120-C	5-9	90 @ 7.9 mc
P-120-D	9-18	75 @ 7.9 mc
P-120-E	18-36	75 @ 2.5 mc
P-120-F	36-64	75 @ 2.5 mc
P-120-G	64-105	90 @ 2.5 mc
P-120-H	105-200	90 @ 2.5 mc
P-120-I	200-500	90 @ .79 mc
P-120-J	500-1000	90 @ .79 mc
P-120-K	1000-2000	70 @ .79 mc

#### Shielded, Encapsulated SE-120



- Magnetic shielding cup
- Ruggedized construction
- 1 1/4" long

Part No.	Nominal Microhenries	Average Q
SE-120-A	2-3	75 @ 7.9 mc
SE-120-B	3-5	85 @ 7.9 mc
SE-120-C	5-9	90 @ 7.9 mc
SE-120-D	9-18	75 @ 7.9 mc
SE-120-E	18-36	75 @ 2.5 mc
SE-120-F	36-64	75 @ 2.5 mc
SE-120-G	64-105	90 @ 2.5 mc
SE-120-H	105-200	90 @ 2.5 mc
SE-120-I	200-500	90 @ .79 mc
SE-120-J	500-1000	90 @ .79 mc

### ENCAPSULATED CUP-CORE COILS

#### Audio and Ultrasonic 700 Series

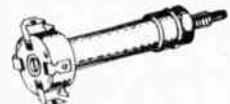


- 1 1/2" above mounting surface
- Mounting Centers — Two #6 holes spaced 1 1/4"
- Magnetically shielded—High Q
- For standard or printed circuits

Part No.	Nominal Millihenries	Average Q
700-A	1.5-3	120 @ 200 kc
700-B	3-7	120 @ 150 kc
700-C	7-13	110 @ 100 kc
700-D	13-25	110 @ 60 kc
700-E	25-50	110 @ 40 kc
700-F	50-100	125 @ 20 kc
700-G	100-250	125 @ 20 kc
700-H	250-500	125 @ 5 kc
700-I	500-1000	125 @ 5 kc

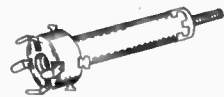
### COIL FORMS

#### F-120



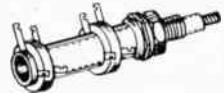
- Mica filled MIL-P-14-D forms
- All metal parts MIL spec. plated
- For use at .2 mc to 30 mc
- 1 1/4" above mounting surface

#### PF-120



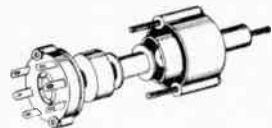
- Similar to above except for printed circuitry

#### F-1000



- Ceramic form JAN-I-10
- 3/8" above mounting surface
- All metal parts MIL spec. plated

#### F-700



- Cup-core construction
- For audio and ultrasonic use
- 1 1/2" above mounting surface

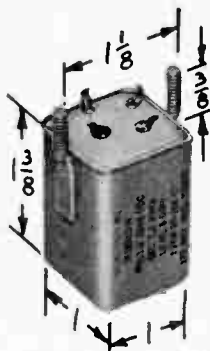
DISTRIBUTOR INQUIRIES INVITED • SPECIAL COILS WOUND TO SPECIFICATIONS



### MIL CASE M-AG

Grey Enamel Finish. Weight 2 3/8 oz. Supplied with compression sealed ceramic terminals in MIL-T-27 AG case.

To order add -AG to Part No. i.e. M2-AG, MT3-AG



### HERMETIC M-H

Grey Enamel Finish. Weight 1 1/4 oz. High Compression Glass Terminals. 120 holes instead of slots available on special order.

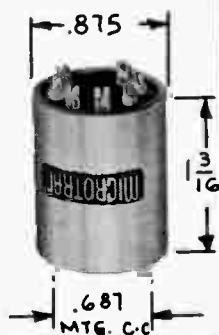
To order add -H to Part No. i.e. M2-H, MT3-H



### ALUMINUM CASED M-A

Supplied with 2-56 Screws. Weight 1.25 oz.

To order add -A to Part No. i.e. M2-A, MT3-A



### OCTAL PLUG-IN M-P

Sealed Plastic Housing. Weight 2 oz.

To order add -P to Part No. i.e. MT3-P, M1-P



### MOLDED M-M

Designed for plug-in printed circuit applications. Cast Epoxy resin provides highest resistance to extremes of ambient. Wt. 1 3/4 oz.

To order add -M to Part No. i.e. M2-M, MT3-M



## MINIATURE TRANSFORMERS

The ruggedized units shown on this and the accompanying page were developed to meet the demands of a growing miniaturization program. The various types shown are available from stock for immediate delivery. For use in miniaturized vacuum tube and Transistor circuitry.

### MINIATURE AUDIO TRANSFORMERS ("M" SERIES)

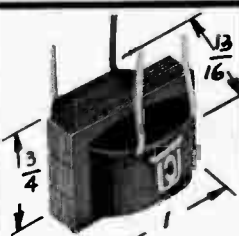
Part No.	Application	Primary Impedance	Secondary Impedance	Pri. DC. Unbalance MA.	Operating Level DBM	Freq. Response ±2 db.
M1*	Mike or line to 1 grid	50/250/600 C.T.	50,000	0	5	20-20,000
M2*	Mike or line to 2 grids	50/250/600 C.T.	50,000 C.T.	0	5	20-10,000
M3*	Dynamic mike to 1 grid	7.5/30	50,000	0	5	20-20,000
M4*	Single plate to 1 grid	15,000	60,000	0	6	20-15,000
M5*	Single plate to 1 grid	15,000	60,000	4	14	200-20,000
M6*	Single plate to 2 grids	15,000	95,000 C.T.	0	5	20-15,000
M7*	Single plate to 2 grids	15,000	95,000 C.T.	4	11	200-20,000
M8*	Single plate to line	15,000	50/250/600 C.T.	0	8	20-20,000
M9*	Single plate to line	15,000	50/250/600 C.T.	4	21	150-20,000
M10*	Push pull plates to line	30,000 P.-P.	50/250/600 C.T.	0	8	30-50,000
M11*	Crystal mike to line	50,000	50/250/600 C.T.	0	5	20-20,000
M12*	Mixing and matching	50/250 C.T.	50/250/600 C.T.	0	8	20-20,000
M13*	Reactor	300 hy. 0 d.c.	50 hy. @ 3 ma.			6000 Ω D.C.R.
M14*	50: 1 mike or line to 1 grid	200	1/2 Megohm	0	9	80-3,000
M15*	10: 1 single plate to 1 grid	10,000	1 Megohm	0	11	100-2,500

### MINIATURE TRANSISTOR TRANSFORMERS ("MT" SERIES)

MT1*	Line to emitter	600	600	10	23	200-15,000
MT3*	Collector to emitter or line	50,000	600	3	20	300-15,000
MT5*	Collector to speaker	50,000	6	3	20	300-15,000
MT6*	Collector to P.P. emitter	100,000	1200 C.T.	1.4	17	200-15,000
MT7*	Collector to P.P. emitter	25,000	1200 C.T.	3	22	200-15,000
MT8*	P.P. Collector to P.P. emitter	50,000 C.T.	1200 C.T.	3	20	300-15,000
MT9*	Line to P.P. emitter	600 C.T.	1200 C.T.	4	23	200-15,000
MT10*	Collector to emitter	25,000	600	3	22	200-15,000
MT11*	P.P. Collector to P.P. emitter or line	4,000 C.T.	600 C.T.	3	32	200-15,000
MT12*	Output collector to speaker	2,000	3.4	10	32	200-15,000
MT13*	Output P.P. collector to speaker	4,000 C.T.	3.4	3	32	200-15,000

\* Add either -AG, or -H, or -M or -A, or -P, or -F, or -FB, or -FPB to part No. to designate construction. See Photos.

4" color coded leads supplied on -F, -FB, -FPB units.

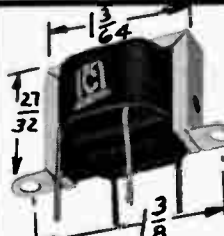


### OPEN FRAME

M-F

Weight 1 oz.

To order add -F to Part No. i.e. MT3-F, M1-F

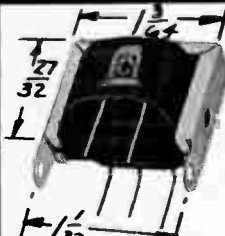


### OPEN FRAME WITH CHANNEL

M-FB

Weight 1.13 oz.

To order add -FB to Part No. i.e. MT3-FB, M1-FB



### PLUG-IN TAB MOUNTED

M-FPB

Designed for Printed Circuit Applications.

Weight 1.13 oz.

To order add -FPB to Part No. i.e. MT3-FPB, M1-FPB



COMPANY INC., Valley Stream, N. Y.



### SUB and MICRO-MINIATURE TRANSFORMERS

The units shown on this page are suitable for rigid sub-miniaturization applications where the highest resistance to extremes of ambients must still be maintained. Available from stock for immediate delivery. 4" color coded leads supplied on open units.

#### SUB-MINIATURE AUDIO TRANSFORMERS ("SM" SERIES)

Part No.	Application	Primary Impedance	Secondary Impedance	Pri. DC Unbalance	Operating Level DBM	Frequency Response $\pm 2$ db.
SM1*	Input	200/50	250,000/62,500	0	6	80-10,000
SM2*	Interstage 3:1	10,000	90,000	0	8	100-10,000
SM3*	Plate to line	10,000	200	3	21	150-10,000
SM4*	Output	30,000	50	1	21	150-10,000
SM5*	Reactor 50 HY at 1 MIL. D.C.	3,000 ohms D.C. Res.				
SM6*	Output	100,000	60	0.5	21	150-10,000

#### SUB-MINIATURE TRANSISTOR TRANSFORMERS ("SMT" SERIES)

SMT1*	Line to emitter	600	600	9	23	200-15,000
SMT3*	Collector to emitter or line	50,000	600	1	20	300-15,000
SMT5*	Collector to spkr.	50,000	6	1	20	300-15,000
SMT7*	Collector to P.P. emitter	25,000	1200 C.T.	1.5	20	200-15,000
SMT10*	Collector to emitter	25,000	600	2	20	200-15,000
SMT12*	Output collector to speaker	2,000	3.4	5	30	200-15,000
SMT13*	Output P.P. collector to spkr.	4,000 C.T.	3.4	5	30	200-15,000

#### MICRO-MINIATURE AUDIO TRANSFORMERS ("MM" SERIES)

MM1*	Input	200/50	250,000/62,500	0	4	200-10,000
MM2*	Interstage 3:1	10,000	90,000	0	4	150-10,000
MM3*	Plate to line	10,000	200	3	20	150-10,000
MM4*	Output	30,000	50	1	20	150-10,000
MM5*	Reactor 1 MIL. D.C.	4,300 ohms D.C. Res.				
MM6*	Output	100,000	60	0.5	20	250-10,000
MM7*	Output	30,000	1200	0.5	20	200-10,000

#### MICRO-MINIATURE TRANSISTOR SERIES ("MMT" SERIES)

MMT1*	Line to emitter	600	600	8	22	200-15,000
MMT3*	Collector to emitter or line	50,000	600	0.7	20	200-15,000
MMT4*	P.P. collector to P.P. emitter	50,000 C.T.	600 C.T.	1.4	20	200-15,000
MMT5*	Collector to spkr.	50,000	6	1	20	200-15,000
MMT7*	Col. to P.P. emit.	25,000	1200 C.T.	1	20	200-15,000
MMT8*	P.P. Col. to P.P. Emit.	50,000 C.T.	1200 C.T.	14	20	200-15,000
MMT9*	Line to P.P. Emit.	600 C.T.	1200 C.T.	16	22	200-15,000
MMT10*	Collector to emitter	25,000	600	1	20	200-15,000
MMT11*	P.P. Col. to P.P. Emit.	4,000 C.T.	600 C.T.	5	28	200-15,000
MMT13*	P.P. Col. to spkr.	4,000 C.T.	3.4	5	28	200-15,000

\* Add either -AF, or -H, or -F, or -FB, or -FPB to Part No. to designate construction.

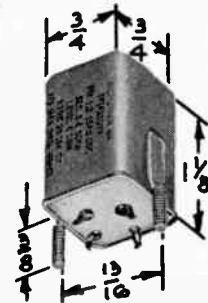
#### MIL CASE

##### SM-AF

SUB-MINIATURE SIZE

Grey Enamel Finish. Weight  $1 \frac{1}{8}$  oz. Supplied with compression sealed ceramic terminals in MIL-T-27 AF case.

To order add -AF to Part No. i.e. SM2-AF, SMT3-AF



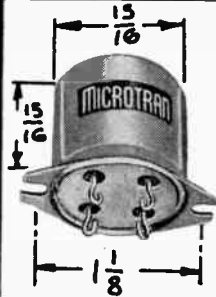
#### HERMETIC

##### SM-H

SUB-MINIATURE SIZE

Grey Enamel Finish. Weight 1 oz. High Compression Glass Terminals.

To order add -H to Part No. i.e. SM2-H, SMT3-H



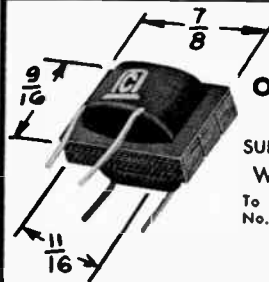
#### OPEN FRAME

##### SM-F

SUB-MINIATURE SIZE

Weight .665 oz.

To order add -F to Part No. i.e. SMT3-F, SM1-F



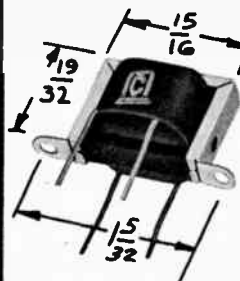
#### OPEN FRAME WITH CHANNEL

##### SM-FB

SUB-MINIATURE SIZE

Weight .710 oz.

To order add -FB to Part No. i.e. SMT3-FB, SM1-FB



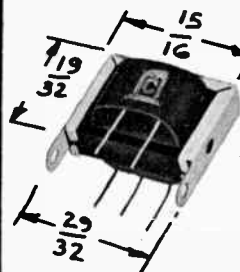
#### PLUG-IN TAB MOUNTED CHANNEL

##### SM-FPB

SUB-MINIATURE SIZE

Weight .710 oz.

To order add -FPB to Part No. i.e. SMT3-FPB, SM1-FPB



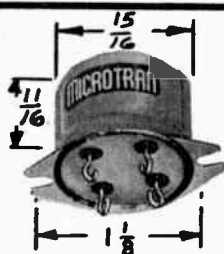
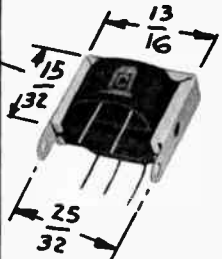
#### PLUG-IN TAB MOUNTED CHANNEL

##### MM-FPB

MICRO-MINIATURE SIZE

Weight .415 oz.

To order add -FPB to Part No. i.e. MMT3-FPB, MM1-FPB

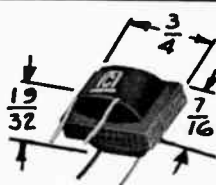


#### HERMETIC MM-H

MICRO-MINIATURE SIZE

Grey Enamel Finish. High Compression Glass Terminals. Wt.  $\frac{3}{4}$  oz.

To order add -H to Part No. i.e. MM2-H, MMT3-H

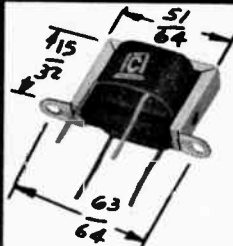


#### OPEN FRAME MM-F

MICRO-MINIATURE SIZE

Weight .375 oz.

To order add -F to Part No. i.e. MMT3-F, MM1-F



#### OPEN FRAME WITH CHANNEL MM-FB

MICRO-MINIATURE SIZE

Weight .415 oz.

To order add -FPB to Part Number. i.e. MMT3-FPB, MM1-FPB

# MICROTRAN

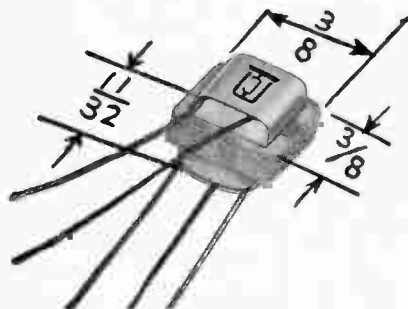
COMPANY, INC.  
VALLEY STREAM, N. Y.

Cable: CRESTLABS



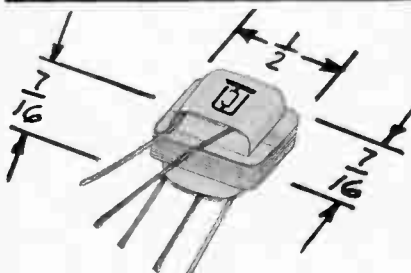
## OPEN FRAME ULTRA AND VERI-MINIATURE TRANSFORMERS

On this page are listed units designed for the extremes in miniaturization. The 4 inch #27 color coded leads supplied are suitable for dip soldering in printed circuits. Thorough baking and resin impregnation assure reliable life. Insulating materials used are compatible for later epoxy potting of complete assemblies. Highest efficiency—space factor obtained by use of high permeability Nickel-Alloy Cores, Nylon Bobbins, Formvar Wire. Available from stock.



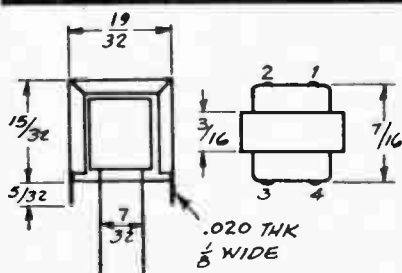
### OPEN FRAME UM-F

ULTRA MINIATURE SIZE  
Weight .08 oz.



### OPEN FRAME VM-F

VERI-MINIATURE SIZE  
Weight .16 oz.



### PLUG-IN TAB MOUNTED CHANNEL VM-FPB

VERI-MINIATURE SIZE  
Weight .2 oz.

### ULTRA-MINIATURE TRANSISTOR TRANSFORMERS ("UM" SERIES)

Frequency Response  $\pm 2$  db. 300 to 10,000 Cycles

Part No.	Application	Primary Impedance	Secondary Impedance	Unbal. Pri. D.C. ma.	Pri. D.C.R.	Sec. D.C.R.	Level MW.
UM21-F	Input	100,000	1,000	0	1,700	135	8
UM22-F	Driver	20,000	1,000	.5	1,000	90	2.5
UM23-F	Driver	20,000	1,200 C.T.	.5	1,000	100	2.5
UM24-F	Output	1,000	50	3	60	8.5	3
UM25-F	Output	400	50	3	30	4.5	4
UM26-F	Output	400	11	3	30	1.5	4
UM27-F	Output	400 C.T.	11	5	30	1.5	4
UM28-F	Choke	10 hy. (0 dc)		8 hy. (.5ma)	650		

### VERI-MINIATURE TRANSISTOR TRANSFORMERS ("VM" SERIES)

Frequency Response  $\pm 2$  db. 200 to 10,000 Cycles

Part No.	Application	Primary Impedance	Secondary Impedance	Pri. D.C.R.	Sec. D.C.R.	Level MW.
VM1-F	Input	50	600 (1.5ma)	6	70	15
VM2-F	Input or Interstage	200,000	600 (1.0ma)	2650	80	5
VM4-F	Input or Interstage	200,000	1200 (.72ma)	2650	160	5
VM5-F	Interstage	50,000	600 (1.0ma)	1500	60	5
VM7-F	Output	500 (3.5ma)	3.4	60	.5	15
VM8-F	Output	1250 (2.0ma)	3.4	115	.5	15
VM9-F	Output	1250 (2.0ma)	50	115	.6	15
VM11-F	Choke	20 hy. (0ma)	12 hy. (.5ma)	1000	—	—
VM1-FPB	Input	50	600 (1.5ma)	6	70	15
VM2-FPB	Input or Interstage	200,000	600 (1.0ma)	2650	80	5
VM4-FPB	Input or Interstage	200,000	1200 (.72ma)	2650	160	5
VM5-FPB	Interstage	50,000	600 (1.0 ma)	1500	60	5
VM7-FPB	Output	500 (3.5ma)	3.4	60	.5	15
VM8-FPB	Output	1250 (2.0ma)	3.4	115	.5	15
VM9-FPB	Output	1250 (2.0ma)	50	115	.6	15
VM11-FPB	Choke	20 hy. (0ma)	12 hy. (.5ma)	1000	—	—

### SPECIAL STOCK UNITS

On special order, Catalog items listed on Pages N990-3 are available with modified electrical characteristics such as extra taps, impedance changes, or High Temperature construction. Shown below are the typical special mechanical constructions that are available on special order.



Epoxy Encapsulation  
with solder lug terminals  
(on special order only)



Hermetic Construction  
with terminals opposite  
from mounting surface  
(on special order only)



# MICROTRAN

company

VALLEY STREAM, N. Y.



## TRANSISTOR DRIVER AND POWER OUTPUT TRANSFORMERS

For Servo and Audio Applications. These units represent the most complete listing in the industry of Transistor Power Driver, and Output Transformers. All units shown are available from stock. Units similar to these catalogue items are available on special order with modified electrical or mechanical specifications. Bi-Filar and interleaved windings are used where required to minimize switching transients and to assure adequate frequency response.

### TRANSISTOR DRIVER TRANSFORMERS

Part Number	Typical Application	Primary Impedance	Secondary Impedance	Pri. D.C. Unbal. Ma	Level	Frequency Response $\pm 2$ db.	Size			Mounting Centers	Case Type
							L	W	H		
M2314	Col. to P.P. Emit. 2N95, 2N68, 2N57	100	10 CT/40 CT	100	500 mw.	200-20,000	1 11/16	13/16	27/32	1 3/8	FB
M8126*	Collector to P.P. Emitter. 2N57	560	400 CT	18	150 mw.	200-20,000	2 3/8	1 1/2	1 3/8	2	FB
M2181*	Collector to P.P. Emitter.	625	100 CT	10	1.5 w.	200-20,000	2 3/8	1 1/2	1 3/8	2	FB
MT9-( )	Line to P.P. Emitter RR106	600 CT	1200 CT	4	200 mw.	200-15,000	See page N-990 for ordering information				
MT11-( )	P.P. Collector to P.P. Emitter	4000 CT	600 CT	3	1 w.	200-15,000	See page N-990 for ordering information				
M2505	Collector to P.P. Emitter. 2N43, 951	5400	600 CT	15	75 mw.	200-15,000	1 1/2	1 1/16	27/32	1 3/8	FB
M2429	Collector to P.P. Emitter. 953	7000	320 CT	7	40 mw.	70-20,000	2 1/16	1 1/4	1 3/16	1 3/4	FB
M2581	Col. to P.P. Emit. 2N190, 2N109, 2N44	10,000	6500 CT	.75	5 mw.	200-15,000	51/64	17/32	11/16	25/64	FPB
UM22-( )	Collector to Emitter	20,000	1000	.5	2.5 mw.	300-20,000	See page N-992 for ordering information				
UM23-( )	Col. to P.P. Emit.	20,000	1200 CT	.5	2.5 mw.	300-20,000	See page N-992 for ordering information				
MT10-( )	Collector to Emitter. 2N107	25,000	600	3	150 mw.	200-15,000	See page N-990 for ordering information				
MT7-( )	Col. to P.P. Emit. 4JD1A17, 2N107	25,000	1200 CT	3	150 mw.	200-15,000	See page N-990 for ordering information				
VM5-( )	Collector to Emitter	50,000	600	1	5 mw.	200-10,000	See page N-992 for ordering information				
MT3-( )	Col. to Emit. or line 2N107	50,000	600	3	100 mw.	300-15,000	See page N-990 for ordering information				
MMT4-( )	P.P. Col. to P.P. Emit. 953	50K CT	600 CT	1.4	100 mw.	300-15,000	See page N-991 for ordering information				
MT8-( )	P.P. Col. to P.P. Emit. 2N107	50K CT	1200 CT	3	100 mw.	300-15,000	See page N-990 for ordering information				
MT6-( )	Collector to P.P. Emitter. 2N108	100,000	1200 CT	1.4	50 mw.	200-15,000	See page N-990 for ordering information				

### TRANSISTOR OUTPUT TRANSFORMERS

M2182*	P.P. Output. Auto-Transf. 2N156	9 CT	4	200	2 w.	100-20,000	2 3/8	1 1/2	1 3/8	2	FB
M2576	Output. 2N156, 2N176	25	3-4	600	3 w.	70-20,000	2 3/8	1 1/2	1 3/8	2	FB
M2313	P.P. Output. 2N156, 2N68, 2N95	48 CT	3.2/8	50	5 w.	70-20,000	2 3/8	1 1/2	1 3/8	2	FB
M2577	P.P. Output. 2N188A	125 CT	3-4	20	1.5 w.	200-20,000	2 1/8	1	1 3/16	1 3/4	FB
M2578*	P.P. Servo Output. 2N57	140 CT	500	50	6 w.	380-420	2 3/8	1 1/2	1 3/8	2	FB
M2251*	P.P. Audio Output. 2N43, TS161	250 CT	3-4	20	250 mw.	70-20,000	2 1/16	1 1/4	1 3/16	1 3/4	FB
M2158	P.P. Servo Output. 2N43, TS161	250 CT	1000	10	1 w.	380-420	1	13/16	3/4	—	F
M2579	Collector to Speaker. 2N179	400	10	50	300 mw.	200-20,000	1 11/16	13/16	27/32	1 3/8	FB
UM25-( )	Col. to Transducer	400	50	3	4 mw.	300-20,000	See page N-992 for ordering information				
M2326	P.P. Audio Output. 2N180, 2N108	400 CT	11	2	300 mw.	300-15,000	3/4	9/16	5/8	—	F
VM7-( )	Collector to Spkr.	500	3-4	3.5	15 mw.	200-10,000	See page N-992 for ordering information				
M8127*	P.P. Servo Output. 2N57	500 CT	210	30	2.5 w.	380-420	1 11/16	13/16	27/32	1 3/8	FB
UM24-( )	Col. to Transducer	1000	50	3	3 mw.	300-20,000	See page N-992 for ordering information				
VM8-( )	Collector to Spkr.	1250	3-4	2	15 mw.	200-10,000	See page N-992 for ordering information				
M2430	P.P. Servo Output. 970	1600 CT	800	5	2.5 w.	50-20,000	2 3/8	1 1/2	1 3/8	2	FB
SMT12-( )	Collector to Spkr.	2000	3-4	5	1 w.	200-15,000	See page N-991 for ordering information				
M2580	P.P. Audio Output. 350, 2N241, 2N44, 2N109	2550 CT	12	2	100 mw.	300-15,000	3/4	9/16	5/8	—	F
MMT13-( )	P.P. Audio Output. to Speaker. 2N186	4000 CT	3-4	.7	500 mw.	200-15,000	See page N-991 for ordering information				
MT5-( )	Audio Output. to Speaker. 2N107	50,000	4-6	3	100 mw.	300-15,000	See page N-990 for ordering information				

\*Bi-Filar Wound

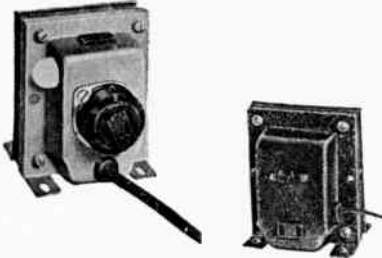


### LVS-153 line voltage stabilizer

A popularly priced quality automatic voltage regulator. Stabilizes line for TV, radio or industrial use where load is constant. Input may vary between 95-130 volts, 60 cycles, nominal output voltage regulated  $\pm 3\%$ . One model covers 125 to 300 watt range. Built-in automatic relay turns stabilizer on with equipment.

Waveshape is free from distortions and frequency sensitivity of resonant type regulators. 50 cycle units available on special order.

Size: 10" x 5" x 9½" Weight: 10 lbs. Finish: Baked Enamel



### LVB-117 line voltage booster

Multi-tap selector switch restores line voltages of 90 thru 135 volts to 117 volts output. Calibrated neon indicator permits exact voltage adjustment. Automatic — turns on and off with set. Overload fuse protects against unsafe line increases.

Watts: 350 Weight: 4 lbs. Mtg. Centers: 2¼" x 2½"  
Size: 4¾" x 3¼" x 3⅞" Finish: Baked Enamel

### LVB "Jr" up-down voltage booster

Reliable, budget-priced unit. Single switch provides 10 volt boost or drop, or straight-through line.

Watts: 350 Weight: 3 lbs. Mtg. Centers: 1½" x 2½"  
Size: 2⅞" x 3¼" x 3⅞" Finish: Baked Enamel



### LVB-10 voltage booster

Miniaturized plug-in unit with 4 position switch that provides an "off" position not previously obtainable. Insures maximum performance of TV set when low or high line voltages distort picture or cause sync or oscillator drift.

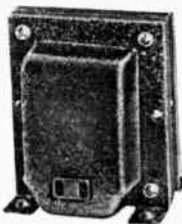
Input: 100 to 130 volts Size: 2¼" x 3¼" x 3¼"  
Output: 10 v. boost, 10 v. drop, line, off. Finish: Baked Enamel  
Watts: 250 w. 50/60 cycles Weight: 2 lbs.



### cathode ray tube rejuvenator

Boosts CRT brightness. Units are resin treated; new design insures cool and buzz-free operation; 5 lead units for magnetic focus tubes only. 6 lead for both magnetic and electrostatic. Weight 8 oz.

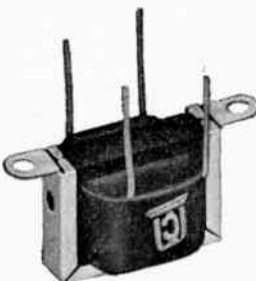
#48B: Parallel sets, 6 leads #51E: Parallel, isolation, 6 leads  
#49C: Parallel sets, 5 leads #52: Parallel, 2-step boost, 6 leads  
#50D: Series sets, 6 leads #53: Universal, isolation and boost



### step down auto transformers

240/220V. to 120/110V. 50/60 cycle. Equipped with secondary standard receptacle and primary 6' U.L. approved line cord. Baked enamel finish.

Part No.	Application	DIMENSIONS			Mtg. Ctrs.	Weight
		L	W	H		
M1552	65 Watt capacity	3 <sup>2</sup> / <sub>2</sub>	2½	2½	3¼	3.5 lbs.
M1556	100 Watt capacity	3¼	2⅞	3½	1¾ x 2¼	4 lbs.
M1553	150 Watt capacity	3¼	2⅞	3½	2¼ x 2⅞	5 lbs.
M1555	250 Watt capacity	3⅞	3¼	3⅞	2¼ x 2½	6 lbs.
M1559	300 Watt capacity	3¾	3⅞	4⅞	2¼ x 3	7 lbs.
M1558	500 Watt capacity	4⅞	3⅞	4⅞	3¼ x 3	12 lbs.
M1551	750 Watt capacity	5½	4½	5⅞	3¼ x 3½	16 lbs.
M1557	1000 Watt capacity	7	4½	5⅞	5¼ x 3½	29 lbs.
M1554	1500 Watt capacity	8	4½	5⅞	6¼ x 3½	36 lbs.



### replacement receiver transformers

Part No.	Application	Impedance	Pri. Ma. Watts	Max. Watts	Mtg. Ctrs.	L	W	H
OP811	32L7, 50C5, 35C5, 70L7, 70A7, 50C6, 7A5, 35A5, 50B5	2,500 to voice coil	50	3	1¾	2½	1	1¾
OP812	50L6, 35L6, 25L6	3,500 to V.C.	45	3	1¾	2½	1	1¾
OP813	6W6, 6V6, 7C5, 3S4, 1S4, 6AQ5, 35A5, 25AC5	50,000 to voice coil	40	3	1¾	2½	1	1¾
OP814	3V4, 3C5, 3Q4, 1C5, 1Q5, 3Q5, 1AC5	10,000 to voice coil	10	3	1¾	2½	1	1¾
OP815	6F6, 6K6, 7B5, 6N6, 6B5, 12A6	7,5000 to voice coil	35	5	2	2¾	1½	1¾
A8111	Vert. Block Oscillator Equiv. RCA 208T2-T9	1:4.2 Ratio			2	2¾	1½	1¾



## PRECISION HI-FI ACCESSORIES

### • UNIVERSAL IMPEDANCE MATCHING AND LEVEL ADJUSTING TRANSFORMER — Model HM-80

This precision transformer has been designed for the audiophile who is modifying or enlarging his sound system by the addition of auxiliary speakers, equalizers, crossover networks, etc. The HM-80 permits these system changes to be made without unbalancing the present hi fi system by maintaining required impedance matches and power levels.

Eliminates power wasting resistance pads; preserves amplifier dynamic power range.

- Power: 50 watts. Peak power 100 watts.
- Frequency Response: 15 to 30,000 cycles.
- Impedance Range: Amplifier or Crossover Network: 16, 8, 4 Ω  
1 to 3 speaker systems (in any combination): 16, 8, 4 Ω.
- Power Level Adjusting Range: 3 db steps.
- Guide Chart: Easy to follow hookup chart provided.
- Size: 3½" x 3¾" x 4¾" high. Mounting Centers: 2¾" x 3⅞".
- Finish: Baked Enamel.
- Weight: 4.0 lbs.



### • TELEPHONE PICK-UP COIL — Model HP-61

For transcribing telephone conversations with recorder or making messages audible on amplifier. May also be used as probe for locating sources of hum.

- Equalized Level: Local and distant conversations recorded with more constant signal level than base mounted units.
- Suction Cup: Mounting on telephone receiver.
- Universal Model: One unit suitable for all types of telephones.
- Plug-in Use: Supplied with 68" shielded cable, terminated with standard phone plug for mike input of recorder or amplifier.
- Finish: Optical Black.
- Compact: Size only ⅝" diameter x 2¾" long.
- Weight: 1½ ounces.



### • MAGNETIC TAPE ERASER — Model HD-11

A bulk tape demagnetizer that develops a high intensity magnetic field. Erases recorded signals and noise from magnetic tape without rewinding. Saves unnecessary wear on heads and tape. Noise level reduced below level of standard erase heads. Restores tape to like new condition or better.

- Spindle Mounting of reel permits rapid through coverage without missed spots.
- Reel Size Range: 5", 7", 10½". Spindle removable for use with other reel sizes.
- Adapter Hub: Available on order for use with 10½" reels.
- Universal Use: May also be used for demagnetizing record — playback — erase heads, watches and other metal objects.
- Rating: 117 volts AC, 5 amps.
- Finish: Baked Enamel.
- Size: 3" x 5" x 8".
- Weight: 8½ lbs.



### • UNIVERSAL COIL KIT

Saves valuable service and development time . . . minimizes inventory problems, eliminates difficulty in obtaining hard-to-get exact replacements. For Video Peaking . . . IF Circuits. Eight coils cover a range from 1 to 590 uh. Q-Max impregnation. Extra terminal for tiepoint convenience. Spring clip mounting: designed for ⅝" chassis hole. Full data enclosed on L min., L max., Q's, R, C distrib., Freq. self-res.

#### Single Coil Replacements Available

Coils	L. min.	L. max.
#200-1	1	2.7 uh
#220-2	2.4	7.6 uh
#200-3	6.6	20.0 uh
#200-4	16.0	55.0 uh
#200-5	33	110 uh
#200-6	74	225 uh
#200-7	100	310 uh
#200-8	200	590 uh



INDIVIDUAL CALIBRATION CHARTS permit approximate adjustment to required inductance value without test equipment. Individually packaged in 8 labeled plastic containers.

Complete Kit Model 200K.

Shipping weight per kit: 6 oz.



## price list

Part No.	List Price	Part No.	List Price	Part No.	List Price	Part No.	List Price
<b>miniature</b>							
M1-H	\$15.00	M14-M	\$ 17.00	MM2-H	\$ 12.50	<b>veri-miniature</b>	
M1-A	11.75	M14-P	14.25	MM2-F	7.50	VM1-F	\$ 6.50
M1-AG	16.50	M15-H	12.50	MM3-H	11.75	VM2-F	9.00
M1-F	5.75	M15-A	11.75	MM3-F	6.25	VM4-F	9.00
M1-M	17.00	M15-AG	14.00	MM4-H	11.75	VM5-F	7.75
M1-P	14.25	M15-F	5.50	MM4-F	6.25	VM7-F	6.50
M2-H	15.25	M15-M	14.50	MM5-H	11.50	VM8-F	6.75
M2-A	11.75	M15-P	14.25	MM5-F	6.25	VM9-F	6.75
M2-AG	16.75	M-FB Channel	.50	MM6-H	11.75	VM11-F	6.25
M2-F	6.00	<b>miniature transistor</b>		MM6-F	6.25	VM-FPB Channel	.50
M2-M	17.25	MT1-H	13.00	MM7-H	10.75	<b>ultra-miniature</b>	
M2-P	14.25	MT1-A	12.00	MM7-F	5.00	UM21-F	10.00
M3-H	14.25	MT1-AG	14.50	MM-FB Channel	.50	UM22-F	7.25
M3-A	10.75	MT1-F	5.50	<b>micro-miniature transistor</b>		UM23-F	7.75
M3-AG	15.75	MT1-M	15.00	MMT1-H	12.25	UM24-F	6.50
M3-F	5.50	MT1-P	12.25	MMT1-F	6.00	UM25-F	6.50
M3-M	16.25	MT3-H	14.00	MMT3-H	12.50	UM26-F	6.50
M3-P	13.25	MT3-A	13.00	MMT3-F	6.25	UM27-F	7.00
M4-H	11.75	MT3-AG	15.50	MMT4-H	14.25	UM28-F	6.25
M4-A	10.00	MT3-F	6.00	MMT4-F	7.50	<b>transistor driver and output</b>	
M4-AG	13.25	MT3-M	16.00	MMT5-H	13.25	M2158	7.50
M4-F	5.25	MT3-P	13.25	MMT5-F	6.75	M2181	7.50
M4-M	13.75	MT5-H	14.00	MMT7-H	14.00	M2182	7.75
M4-P	12.50	MT5-A	13.00	MMT7-F	7.00	M2251	7.75
M5-H	11.75	MT5-AG	15.50	MMT8-F	7.25	M2313	4.00
M5-A	10.00	MT5-F	6.00	MMT8-H	14.25	M2314	7.50
M5-AG	13.25	MT5-M	16.00	MMT9-F	6.50	M2326	7.50
M5-F	5.25	MT5-P	13.25	MMT9-H	12.75	M2429	7.75
M5-M	13.75	MT6-H	14.25	MMT10-H	12.00	M2430	9.75
M5-P	12.50	MT6-A	13.25	MMT10-F	5.25	M2505	9.75
M6-H	14.25	MT6-AG	15.75	MMT11-F	6.75	M2576	4.50
M6-A	10.75	MT6-F	6.25	MMT11-H	13.00	M2577	3.75
M6-AG	15.75	MT6-M	16.25	MMT13-H	12.50	M2578	7.75
M6-F	5.50	MT6-P	13.50	MMT13-F	6.25	M2579	7.25
M6-M	16.25	MT7-H	14.25	MM-FB Channel	.50	M2580	7.50
M6-P	13.25	MT7-A	13.25	<b>sub-miniature</b>		M2581	7.50
M7-H	15.75	MT7-AG	15.75	SM1-H	12.00	M8126	7.50
M7-A	10.75	MT7-F	6.25	SM1-AF	15.00	M8127	7.75
M7-AG	17.25	MT7-M	16.25	SM1-F	6.75	<b>replacement transformer</b>	
M7-F	5.75	MT7-P	13.50	SM2-H	11.50	A8111	2.50
M7-M	17.75	MT8-H	14.50	SM2-AF	14.50	OP811	1.50
M7-P	13.25	MT8-A	13.50	SM2-F	6.00	OP812	1.75
M8-H	15.00	MT8-AG	16.00	SM3-H	11.50	OP813	1.75
M8-A	11.75	MT8-F	6.50	SM3-AF	14.50	OP814	1.75
M8-AG	16.50	MT8-M	16.50	SM3-F	6.00	OP815	2.00
M8-F	5.75	MT8-P	13.75	SM4-H	11.50	<b>step down transformer</b>	
M8-M	17.00	MT9-H	14.50	SM4-AF	14.50	M1551	26.75
M8-P	14.25	MT9-A	13.50	SM4-F	6.00	M1552	9.75
M9-H	15.00	MT9-AG	16.00	SM5-H	10.50	M1553	12.50
M9-A	11.75	MT9-F	6.50	SM5-AF	13.50	M1554	55.00
M9-AG	16.50	MT9-M	16.50	SM5-F	5.00	M1555	13.25
M9-F	5.75	MT9-P	13.00	SM6-H	11.75	M1556	10.50
M9-M	17.00	MT10-H	14.00	SM6-AF	14.50	M1557	40.00
M9-P	14.25	MT10-A	13.00	SM6-F	6.75	M1558	21.00
M10-H	15.50	MT10-AG	15.50	SM-FB Channel	.50	M1559	14.25
M10-A	12.50	MT10-F	6.00	<b>sub-miniature transistor</b>		<b>ert rejuvenator</b>	
M10-AG	17.00	MT10-M	16.00	SMT1-H	10.00	48-B	1.75
M10-F	6.00	MT10-P	13.25	SMT1-AF	11.25	49-C	1.50
M10-M	17.50	MT11-H	14.50	SMT1-F	6.00	50-D	2.00
M10-P	15.00	MT11-A	13.50	SMT3-H	11.00	51-E	2.25
M11-H	15.00	MT-11AG	16.00	SMT3-AF	12.25	52	3.75
M11-A	11.75	MT11-F	6.50	SMT3-F	7.00	53	4.25
M11-AG	16.50	MT11-M	16.50	SMT5-H	10.75	<b>variable inductances</b>	
M11-F	5.75	MT12-H	14.00	SMT5-AF	12.00	200K	7.75
M11-M	17.00	MT12-A	13.00	SMT5-F	6.75	200-1 Thru 200-8	1.00
M11-P	14.25	MT12-AG	15.50	SMT7-H	11.25	<b>line voltage boosters</b>	
M12-H	15.50	MT12-F	6.00	SMT7-AF	12.50	LVB-10	7.50
M12-A	12.50	MT12-M	16.00	SMT7-F	7.25	LVB-117	17.95
M12-AG	17.00	MT12-P	13.25	SMT10-H	10.50	LVB-Jr.	7.95
M12-F	5.75	MT13-H	14.25	SMT10-AF	11.75	LVS-153	34.95
M12-M	17.50	MT13-A	13.25	SMT10-F	6.50	<b>hi-fi accessories</b>	
M12-P	15.00	MT13-AG	15.75	SMT12-H	10.00	HD-11	27.50
M13-H	10.75	MT13-F	6.25	SMT12-AF	11.25	HM-80	14.95
M13-A	9.25	MT13-M	16.25	SMT12-F	6.00	HP-61	7.95
M13-AG	12.25	MT13-P	13.50	SMT13-H	10.25		
M13-F	5.00	M-FB Channel	.50	SMT13-AF	11.50		
M13-M	12.75	<b>micro-miniature</b>		SMT13-F	6.25		
M13-P	11.75	MM1-H	12.25	SM-FB Channel	.50		
M14-H	15.00	MM1-F	7.00				
M14-A	11.75						
M14-AG	16.50						
M14-F	6.00						

EFFECTIVE 7/1/57

NOTE: Add \$.50 to list price for Part Nos. with -FB or -FPB suffix — i.e., SMT3-FB, SMT3-FPB

Prices, Mechanical Construction, or Electrical Characteristics Subject to Modification without Notice.

# Adjust-A-Volt

VARIABLE TRANSFORMER

## AUTO-TRANSFORMERS BENCH AND PANEL MOUNTINGS GANGED ASSEMBLIES

FOR CONTROL OF AC LINES  
POWER, HEAT, SPEED AND LIGHT  
SPECIFICATIONS FOR THESE  
MODELS ON FOLLOWING PAGE



100BU



300BU



500BU

Type	Input Voltage	Load Rating, Maximum	Output Voltage		Output Current, Maximum	Driving Torque in.-02
			Over-Voltage	Line Voltage		
100BU	120V	.165KVA	0-132V	0-120V	1.25A	8-20
300BU	115V	0.4KVA	0-135V	0-115V	3.0A	15-30
500BU	115V	1.0KVA	0-135V	0-115V	7.5A	15-30



500B



3000B

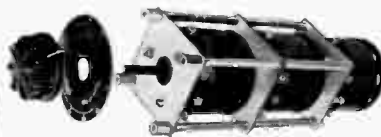


1500B

Type	Input Voltage	Load Rating, Maximum	Output Voltage		Output Current, Maximum	Driving Torque in.-02
			Over-Voltage	Line Voltage		
500B	115V	1.0KVA	0-135V	0-115V	7.5A	15-30
1500B	115V	2.0KVA	0-135V	0-115V	15.0A	30-60
3000B	115V	4.0KVA	0-135V	0-115V	30.0A	55-110



3PF 1500B



300BU-3

### ADJUST-A-VOLT FEATURES

- Smooth, continuous control
- No Waveform distortion
- High efficiency
- Excellent regulation
- 50/60 cycle operation
- Standard mountings
- LoRes Commutator surface on all models

Type	Input Voltage	Load Rating, Maximum	Output Voltage		Output Current, Maximum	Driving Torque in.-02
			Over-Voltage	Line Voltage		
3PF1500B	115V	2.0KVA	0-135V	0-115V	15.0A	30-60
300BU-3	See Next Page					

**STANDARD ELECTRICAL PRODUCTS CO. • DAYTON, OHIO**

SEE NEXT PAGE FOR ALL STACKED MODELS AND THEIR APPLICATIONS

# ADJUST-A-VOLT SPECIFICATIONS AND APPLICATION INDEX

SINGLE PHASE

THREE PHASE

Input Volts	OUTPUT			Type	Description	Code Word	Approx. Wt. Lbs.		Net Price
	Volts	Amp. Max.	KVA Max.				Net	Ship.	
120	0-115	1.25A	.165	100BU	Uncased with terminal strip.	YOOBU	2	3	\$ 8.50
115	0-115 0-135	3.0 3.0	0.34 0.40	300BU	Uncased with terminal strip.	TREED	4	6	\$ 12.50
115	0-115 0-135	7.5 7.5	0.86 1.0	500B 500BU 3PF500B 3TF500B	With case, line cord-plug, input receptacle, switch and fuse. Uncased with terminal box. With case, 3 prong plug-cord, output receptacle, switch and fuse. With case, 3 prong twist blade plug-cord, output receptacle and fuse.	FEDEN FIVED PLEAD TEFE	11 10 11 11	12 11 12 12	\$ 23.00 18.00 30.00 30.00
115	0-115* 0-135	15.0 15.0	1.7 2.0	1500B F1500B 2PF1500B 3PF1500B 3TF1500B	With case and terminal board. With case, fuse and terminal cover. With case, 2 prong plug-line cord, output receptacle and fuse. With case, 3 prong straight blade plug-cord, output receptacle and fuse. With case, 3 prong twist blade plug-cord, output receptacle and fuse.	TOODE FOODE POODE MOODE LOODE	21 21 22 22 22	25 25 26 26 26	\$ 46.00 50.00 56.00 56.00 56.00
115	0-115* 0-135	30.0 30.0	3.4 4.0	1500B-2 3000B 3000BU	2-gang, Parallel Circuit. With case and terminal cover. Without case and terminal cover.	DOUBE THIRT UTAMA	43 23 22	50 27 26	\$ 96.00 55.00 49.00
115	0-115 0-135	60.0 60.0	6.9 8.0	3000B-2	2-gang, Parallel Circuit, requires paralleling Choke, Type 30L-1.	TOUBE	52	62	\$126.00
115	0-115 0-135	90.0 90.0	10.3 12.1	3000B-3	3-gang, Parallel Circuit, requires paralleling Chokes, 1 ea., Types 30L-1 and 30L-2.	MOUBE	79	83	\$182.00
230	0-230 0-270	3.0 3.0	0.69 0.81	520B 520BU	With case, line cord-plug, output receptacle, switch and fuse. Uncased with terminal box.	CRANY BRANY	11 10	12 11	\$ 26.00 20.00
115	0-270	3.0†	0.35	3PF520B 3TF520B	With case, 3 prong straight blade plug-cord, output receptacle and fuse. With case, 3 prong twist blade plug-cord, output receptacle and fuse.	PANNY TANNY	11 11	12 12	33.00 33.00
230	0-230 0-270	7.5 7.5	1.7 2.0	500B-2 500BU-2	2-gang, Series Circuit, cased. 2-gang, Series Circuit, uncased.	DEBEN UBBEN	22 21	25 25	\$ 49.00 44.00
230	0-230* 0-270	9.0 9.0	2.1 2.4	1520B F1520B	With case and terminal board. With case, fuse and terminal cover.	DANNY FANNY	21 21	25 25	\$ 46.00 50.00
115	0-270	9.0‡	1.05	2PF1520B 3PF1520B 3TF1520B	With case, 2 prong plug-line cord, output receptacle and fuse—No switch. With case, 3 prong straight blade plug-cord, output receptacle and fuse—No switch. With case, 3 prong twist blade plug-cord, output receptacle and fuse—No switch.	MANNY CANNY JANNY	21 21 21	25 25 25	56.00 56.00 56.00
230	0-230* 0-270	15.0 15.0	3.4 4.0	1500B-2 F1500B-2	2-gang, Series Circuit. 2-gang, Series Circuit, fused output.	DOUBE JOOBE	43 43	50 50	\$ 96.00 104.00
230	0-230* 0-270	18.0 18.0	4.1 4.8	1520B-2	2-gang, Parallel Circuit.	TWOBE	43	50	\$ 96.00
115	0-270	18.0‡	2.1						
230	0-230 0-270	12.0 12.0	2.8 3.2	3020B 3020BU	With case and terminal cover. Without case and terminal cover.	RANNY VOLTA	23 22	26 26	\$ 55.00 49.00
115	0-270	12.0‡	1.4						
230	0-230 0-270	24.0 24.0	5.5 6.5	3020B-2	2-gang, Parallel Circuit, requires one paralleling choke, Type 30L-1.	ZOODE	50	61	\$126.00
115	0-270	24.0‡	2.8						
230	0-230 0-270	36.0 36.0	8.3 9.7	3020B-3	3-gang, Parallel Circuit, requires paralleling Chokes, 1 ea., Types 30L-1 and 30L-2.	ZOODE	75	88	\$182.00
115	0-270	36.0‡	4.2						
460	0-460 0-540	3.0 3.0	1.4 1.6	520B-2 520BU-2	2-gang, Series Circuit. 2-gang, Series Circuit.	ZANNY YANNY	22 21	25 25	\$ 53.50 48.50
230	0-540	3.0‡	0.7						
460	0-460* 0-540	9.0 9.0	4.1 4.9	1520B-2	2-gang, Series Circuit.	TWOBE	43	50	\$ 96.00
230	0-540	9.0‡	2.1						
460	0-460 0-540	12.0 12.0	5.5 6.5	3020B-2	2-gang, Series Circuit.	ZOODE	50	61	\$126.00
230	0-540	12.0‡	2.8						
115	0-115 0-135	3.0 3.0	0.6 0.7	300BU-2	2-gang, Open Delta Circuit, uncased.	WREED	10	14	\$ 36.50
115	0-115 0-135	7.5 7.5	1.5 1.8	500B-2 500BU-2	2-gang, Open Delta Circuit, cased. 2-gang, Open Delta Circuit, uncased.	DEBEN UBBEN	22 21	25 25	\$ 49.00 44.00
115	0-115* 0-135	15.0 15.0	3.0 3.5	1500B-2	2-gang, Open Delta Circuit.	DOUBE	43	50	\$ 96.00
115	0-115 0-135	30.0 30.0	6.0 7.0	3000B-2	2-gang, Open Delta Circuit.	TOUBE	50	61	\$126.00
230	0-230†	3.0	1.2	300BU-3	3-gang, Wye Circuit, uncased.	MEADE	14	20	\$ 58.75
230	0-230 0-270	3.0 3.0	1.2 1.4	520B-2 520BU-2	2-gang, Open Delta Circuit, cased. 2-gang, Open Delta Circuit, uncased.	ZANNY YANNY	22 21	25 25	\$ 53.50 48.50
115	0-270	3.0‡	0.6						
230	0-230 0-270†	7.5 7.5	3.0 3.5	500B-3 500BU-3	3-gang, Wye Circuit, cased. 3-gang, Wye Circuit, uncased.	MEBEN ZUBEN	35 34	45 45	\$ 67.25 60.75
230	0-230* 0-270	9.0 9.0	3.6 4.2	1520B-2	2-gang, Open Delta Circuit.	TWOBE	43	50	\$ 96.00
115	0-270	9.0‡	1.8						
230	0-230* 0-270†	15.0 15.0	6.0 7.0	1500B-3	3-gang, Wye Circuit.	DOODE	65	75	\$147.00
230	0-230 0-270	12.0 12.0	4.8 5.6	3020B-2	2-gang, Open Delta Circuit.	ZOODE	50	61	\$126.00
115	0-270	12.0‡	2.4						
230	0-230 0-270†	30.0 30.0	12.0 14.0	3000B-3	3-gang, Wye Circuit.	MOUBE	50	61	\$182.00
460	0-460 0-540†	3.0 3.0	2.4 2.8	520B-3 520BU-3	3-gang, Wye Circuit, cased. 3-gang, Wye Circuit, uncased.	TURN YURNE	35 34	45 45	\$ 75.25 68.25
230	0-540†	3.0‡	1.2						
460	0-460* 0-540†	9.0 9.0	7.2 8.4	1520B-3	3-gang, Wye Circuit.	MORKE	65	75	\$147.00
230	0-540†	9.0‡	3.6						
460	0-460 0-540†	12.0 12.0	9.6 11.2	3020B-3	3-gang, Wye Circuit.	ZOODE	70	82	\$182.00
230	0-540†	12.0‡	4.8						

Over-voltage connection (0 to 17% above line voltage) or line voltage connection is available to the user by the type of connections made, however, line voltage connection on Types 1500B and 1520B must be specified.

† Ganged units of these types when connected for over-voltage operate from 60 cycle service only.

‡ Output current reduces to approx. 44% at full voltage.

# Adjust-A-Volt

VARIABLE TRANSFORMER

VARIABLE ISOLATION  
ELECTROSTATICALLY SHIELDED  
METERED • CASED

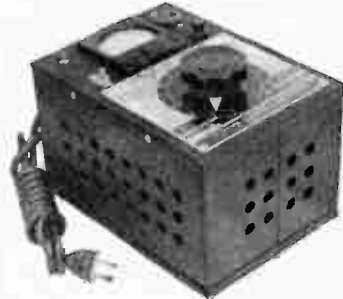


LR/NA



LRL

1500BD/1520BD



PAL-7/MAL-7

UNMETERED ISOLATION TRANSFORMER MODELS								
Type	Code	Input Voltage	Output Voltage	Amp Max.	Max. (V.A.)	Overall Dimensions	Shipping Weight (1 Unit)	Net Price
LR-5	LARKE	115	70-140	5.0	500	6 3/4" x 9 1/8" x 5"	27 lbs.	\$29.50
LR-10	LAMBE	115	70-140	10.0	1000	6 3/4" x 9 1/8" x 9"	40 lbs.	57.50
LR-24	LOOKE	230	70-140	10.0	1000	6 3/4" x 9 1/8" x 9"	40 lbs.	61.50

METERED ISOLATION TRANSFORMER MODELS								
Type	Code	Input Voltage	Output Voltage	Amp Max.	Max. (V.A.)	Overall Dimensions	Shipping Weight (1 Unit)	Net Price
LRL-5	BARKE	115	0-140	5.0	500	6 3/4" x 9 1/8" x 6 3/8"	29 lbs.	\$41.50
LRL-10	BAMBE	115	0-140	10.0	1000	6 3/4" x 9 1/8" x 9 5/8"	42 lbs.	69.50

UNMETERED AUTO-TRANSFORMER MODELS								
Type	Code	Input Voltage	Output Voltage	Amp Max.	Max. (V.A.)	Overall Dimensions	Shipping Weight (1 Unit)	Net Price
PA-3	NANNE	115	0-135	3.0	400	6 1/2" x 6 1/8" x 5 1/2"	10 lbs.	\$18.75
PA-1	PANNE	120	0-132	1.25	165	3 7/8" x 3 7/8" x 3 1/2"	3 lbs.	13.50
NA-10	NAMMY	230	0-140	15.0	1500	6 3/4" x 9 1/8" x 9"	40 lbs.	55.50
MA-10	MAMMY	230	0-280	7.5	1500	6 3/4" x 9 1/4" x 6 1/2"	40 lbs.	52.50
PAL-7	PADDE	115	0-135	7.5	1000	6 3/4" x 9 1/4" x 6 1/2"	40.50	15 lbs.

METERED AUTO-TRANSFORMER MODELS								
Type	Code	Input Voltage	Output Voltage	Amp Max.	Max. (V.A.)	Overall Dimensions	Shipping Weight (1 Unit)	Net Price
MAL-7	QUALM	230	0-270	3.0	810	6 3/4" x 9 1/4" x 6 1/2"	15 lbs.	\$49.50
PAL-10	LALLE	115	0-140	15.0	2000	6 3/4" x 9 1/8" x 9 5/8"	39 lbs.	57.50
1500BD	LATTE	115	0-135	15.0	2000	8" x 10 3/8" x 8 3/8"	35 lbs.	64.00
1520BD	RALEN	230	0-270	9.0	2400	8" x 10 3/8" x 8 3/8"	35 lbs.	64.00



PA-3



PA-1

**STANDARD ELECTRICAL PRODUCTS CO. • DAYTON, OHIO**

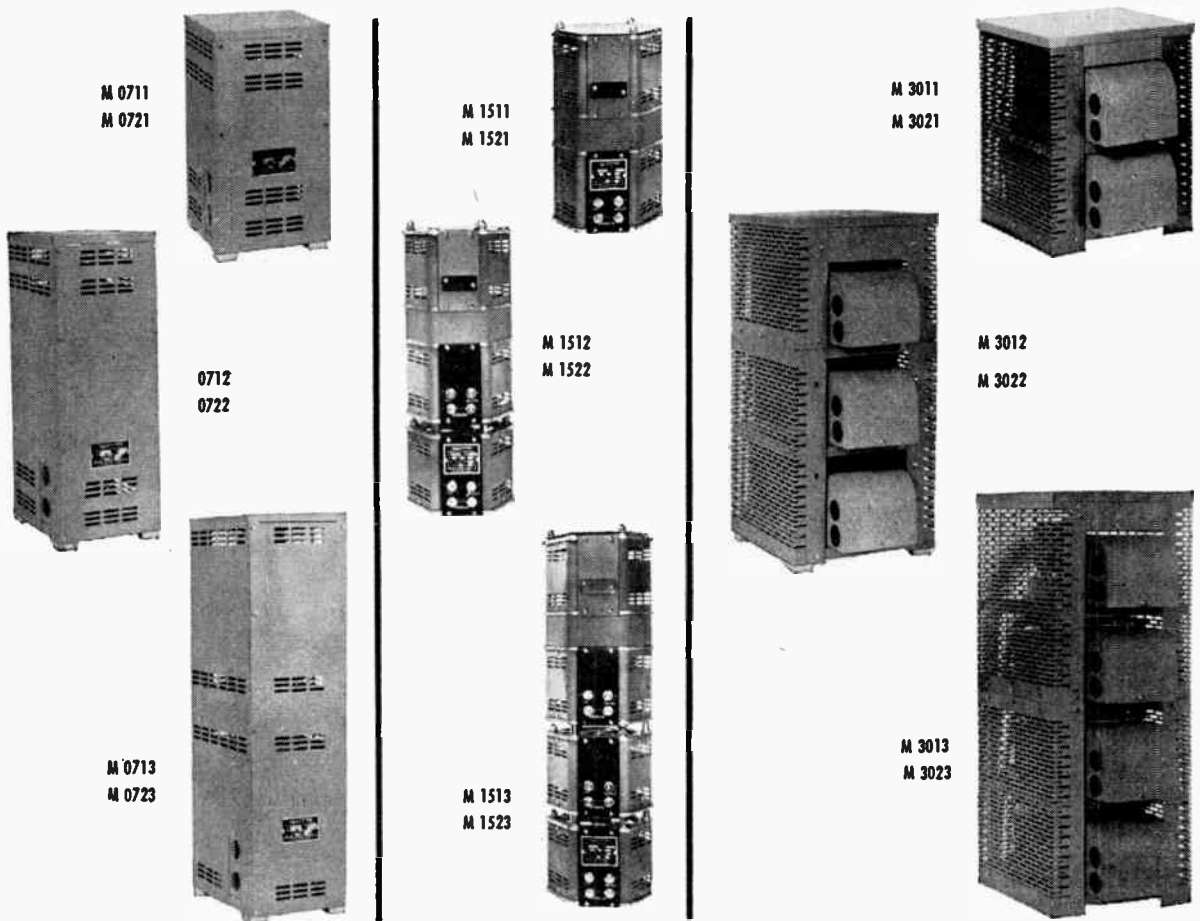
WRITE FOR COMPLETE ADJUST-A-VOLT CATALOG

# Adjust-A-Volt

VARIABLE TRANSFORMER

## MOTORIZED FOR REMOTE CONTROL OPERATION

ELECTRICAL SPECIFICATIONS EQUIVALENT TO TYPES LISTED ON SPECIFICATION INDEX PAGE



TYPE	ELECTRICAL EQUIVALENT OF	OVERALL DIMENSIONS (INCHES)	SHIPPING WTS.	NET PRICE
M 0711-*	500B	7 5/16 x 6 5/16 x 12 11/16	22	143.00
M 0712-*	500B-2	7 5/16 x 6 5/16 x 17 15/16	33	169.00
M 0713-*	500B-3	7 5/16 x 6 5/16 x 22 15/16	43	187.25
M 0721-*	520B	7 5/16 x 6 5/16 x 12 11/16	22	146.00
M 0722-*	520B-2	7 5/16 x 6 5/16 x 17 15/16	33	173.50
M 0723-*	520B-3	7 5/16 x 6 5/16 x 22 15/16	43	195.25
M 1511-*	1500B	8 1/8 x 8 x 11 1/4	35	166.00
M 1512-*	1500B-2	8 1/8 x 8 x 16 3/4	55	216.00
M 1513-*	1500B-3	8 1/8 x 8 x 21 3/4	74	267.00
M 1521-*	1520B	8 1/8 x 8 x 11 1/4	39	166.00
M 1522-*	1520B-2	8 1/8 x 8 x 16 3/4	61	216.00
M 1523-*	1520B-3	8 1/8 x 8 x 21 3/4	83	267.00
M 3011-*	3000B	9 7/8 x 6 7/8 x 14	48	175.00
M 3012-*	3000B-2	9 7/8 x 6 7/8 x 20 1/8	79	246.00
M 3013-*	3000B-3	9 7/8 x 6 7/8 x 26 1/4	104	302.00
M 3021-*	3020B	9 7/8 x 6 7/8 x 14	48	175.00
M 3022-*	3020B-2	9 7/8 x 6 7/8 x 20 1/8	79	246.00
M 3023-*	3020B-3	9 7/8 x 6 7/8 x 26 1/4	104	302.00

\* Motor Speeds for Full Range Travel are available as follows: 6, 13, 26 and 45 seconds. A speed must be designated after the type number such as M 0711-06 for a 6 second speed, M 1521-45 for a 45 second speed etc.

## STANDARD ELECTRICAL PRODUCTS CO. • DAYTON, OHIO

WRITE FOR COMPLETE ADJUST-A-VOLT CATALOG





# TRANSFORMERS

STEP DOWN STEP UP

## ISOLATION AND LINE CORRECTION



FIG. 1



FIG. 2

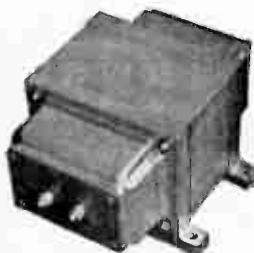


FIG. 3



FIG. 4

### STEP-DOWN AUTOTRANSFORMERS

Input 220-240 V. 60 cy. Output 115 V. Pri. Cord and Plug Sec. Receptacle

Cat. No.	Code	Mount Fig. No.	Cap. in Watts	Input, Volts	Output, Volts	Cycles	Dimensions in Inches			Net Wt. in Lbs.	Net Price	Cat. No.
							H.	W.	D.			
SB-0075	STEB A	1	75	200/240	115	50/60	3 1/8"	2 3/8"	3 3/4"	3 1/2	\$ 5.40	SB-0075
SB-0150	STEC A	1	150	200/240	115	50/60	3 3/8"	3 1/4"	3 5/8"	4 1/2	7.35	SB-0150
SB-0250	STED A	1	250	200/240*	115	50/60	4 3/4"	3 3/8"	4 3/8"	8 1/2	9.60	SB-0250
SB-0500	STEF A	1	500	200/240*	115	50/60	1 3/4"	3 3/8"	6 1/2"	12 1/2	15.60	SB-0500
SB-1000	STEG A	3	1000	200/240*	115	50/60	4 7/8"	7 1/4"	9"	22 1/2	28.50	SB-1000
SB-2000	STEL A	3	2000	200/240*	115	50/60	5 1/2"	8 5/8"	11 1/4"	40 1/4	47.40	SB-2000

\* These models have primary taps of 200-220-240 Volts. Simply remove cover plate (see Figure 2) and connect to required taps

### TELEVISION LINE CORRECTION STEP-UP AUTOTRANSFORMERS

Models SU 100/105 Volt. Input. Models RU 200/210 Volt Input

All SU Models Boost Input 10 Volts. All RU Models Boost Input 20 Volts

SU-0100	SUBAT	1	100	100/110	110/120	50/60	3 1/8"	2 5/8"	2 7/8"	2 3/4	\$ 5.15	SU-0100
SU-0250	SUCAT	1	250	100/110	110/120	50/60	3 1/8"	2 5/8"	3 3/4"	3 1/2	7.35	SU-0250
SU-0500	SUDAT	1	500	100/110	110/120	50/60	3 3/8"	3 1/4"	3 1/2"	4 1/2	8.85	SU-0500
SU-1000	SUFAT	1	1000	100/110	110/120	50/60	4 3/8"	3 3/8"	4 3/8"	8 1/2	17.65	SU-1000
SU-2000	SUGAT	1	2000	100/110	110/120	50/60	4 5/8"	3 3/8"	5 3/8"	14 1/2	35.40	SU-2000
RU-0100	SREBA	1	100	200/210	220/230	50/60	3 1/8"	2 5/8"	2 7/8"	2 3/4	5.15	RU-0100
RU-0250	SRECA	1	250	200/210	220/230	50/60	3 1/8"	2 5/8"	3 3/4"	3 1/2	7.35	RU-0250
RU-0500	SREDA	1	500	200/210	220/230	50/60	3 3/8"	3 1/4"	3 3/4"	4 1/2	8.85	RU-0500
RU-1000	SREFA	1	1000	200/210	220/230	50/60	4 5/8"	3 3/8"	4 3/8"	8 1/2	17.65	RU-1000
RU-2000	SREGA	1	2000	200/210	220/230	50/60	4 5/8"	3 3/8"	5 5/8"	14 1/2	35.40	RU-2000

### RADIO — ISOLATION TRANSFORMERS — TELEVISION

All Models 115 V. Input. 115 V. Output. Electrostatically Shielded.

SI-050	SICAR	1	50	115	115	50/60	3 1/2"	2 1/2"	3"	4 1/2	\$ 6.00	SI-050
SI-100	SICER	1	100	115	115	50/60	3 3/4"	3 1/2"	3 3/8"	7 1/2	11.70	SI-100
SI-250	SICOR	1	250	115	115	50/60	4 3/4"	3 3/4"	5 1/2"	14 1/2	21.00	SI-250

### TELEVISION LINE VOLTAGE ADJUSTORS, METERED

8 Position Rotary Switch Corrects Low or High Line to 115 V. from 85-95-105-115-125-135 V-AUTOTRANSFORMER

LC-150	LABAD	4	150	85-135	115	50/60	6 1/2"	4 3/4"	5"	7 3/4	\$17.40	LC-150
LC-350	LAFAD	4	350	85-135	115	50/60	6 1/2"	4 3/4"	5"	10 3/4	21.00	LC-350
LC-500	LAJAD	4	500	85-135	115	50/60	6 1/2"	4 3/4"	5"	11 3/4	25.50	LC-500

STACO Transformers are compact and modern in design. Only the highest quality silicon lamination steel is used which assures cool operating transformers. Each coil is layer wound with the best quality enameled wires, each layer is insulated with heavy insulating material, each coil is varnished impregnated and high temperature baked. High Voltage Breakdown Test is performed on each coil and transformer in accordance with existing RMA Specs. This combination of high quality materials plus the finest workmanship is assurance of better and lasting performance at highest operating efficiency, yet costs no more than average.

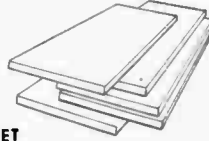
Finishes: Mount type #1, Black baked enamel, Mount type #2, Black baked enamel, Mount type #3, Natural Buffed Aluminum, Mount type #4, Black Wrinkle baked enamel.

# PLASTICS

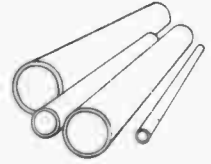
Plastic sheets, rods, and tubing in Phenolic, Acrylic, Polystyrene, and Polyethylene plastics. Highly recommended for use in radio and electronic equipment for coil forms, circuit boards, bushings, terminal blocks, etc. Excellent electrical and mechanical properties. All parts are easy to fabricate.



ROD



SHEET



TUBING

PHENOLIC ROD — 1 ft.					POLYSTYRENE TUBING — 1 ft.					PHENOLIC SHEET — CANVAS BASE (Cont.)				
Cat. No.	Diameter	Pack/Bax	Wt/Pack	Net Ea.	Cat. No.	OD - ID	Pack/Bax	Wt/Pack	Net Ea.	Cat. No.	Thickness	Size*	Wt/Sheet	Net
202-2P	1/8	10	1/2	.69	187-4A	1/4x1/8	60	1 1/4	.09	201-3A	1/8	6x12	1	2.19
202-3P	1/8	10	1/2	.71	187-6A	3/8x1/4	40	1 1/4	.15	201-3C	1/8	12x12	2	4.25
202-4P	1/4	10	1/2	.72	187-8A	1/2x3/8	24	1 1/4	.21	201-3E	1/8	24x24	7	17.10
202-5P	5/16	10	3/4	.80	187-10A	5/8x1/2	18	1 1/4	.24	201-3K	1/8	36x42	16	43.95
202-6P	3/8	8	3/4	.92	187-12A	3/4x5/8	8	3/4	.30	201-4A	1/4	6x12	1	2.82
202-8P	1/2	6	1	1.38	187-14A	7/8x3/4	6	3/4	.38	201-4C	1/4	12x12	2 1/4	5.46
202-10P	5/8	6	1 1/4	2.12	187-16A	1x7/8	6	3/4	.42	201-4E	1/4	24x24	8 3/4	21.72
202-12P	3/4	4	1 1/4	2.76	187-16AX	1x3/4	6	1	.81	201-4K	1/4	36x42	21	55.73
202-14P	7/8	4	1 1/2	3.43	187-20A	1 1/4x1	4	1	1.05	201-6A	3/8	6x12	1 1/2	4.20
202-16P	1	4	1 3/4	4.16	187-24A	1 1/2x1 1/4	4	1	1.20	201-6C	3/8	12x12	3	8.18
203-2C	1/8	10	1/2	.99	187-28A	1 3/4x1 1/2	3	1	1.50	201-6E	3/8	24x24	12	32.72
203-3C	1/8	10	1/2	1.00	187-32A	2x1 3/4	3	1 1/4	1.65	201-6K	3/8	36x42	31	84.35
203-4C	1/4	10	1/2	1.01	<b>POLYETHYLENE TUBING — 1 ft.</b> 189-4AX 1/4x1/8 60 1 1/4 .24 189-6AX 3/8x1/4 40 1 1/4 .28 189-8AX 1/2x3/8 24 1 1/4 .32 189-10AX 5/8x1/2 18 1 .40 189-12AX 3/4x5/8 8 3/4 .46 189-16AX 1x7/8 6 3/4 .59 Langer lengths available on special order.					201-8A	1/2	6x12	2	5.58
203-5C	5/16	10	3/4	1.10						201-8C	1/2	12x12	4 1/4	10.95
203-6C	3/8	8	3/4	1.28	<b>ACRYLIC SHEET</b> 182-1A 1/8 6x12 1/4 1.35 182-1C 1/8 12x12 1/2 2.40 182-1E 1/8 24x24 1 1/2 9.48 182-2A 1/8 6x12 1/2 1.41 182-2C 1/8 12x12 1 2.49 182-2E 1/8 24x24 4 9.97 182-3A 1/8 6x12 3/4 1.65 182-3C 1/8 12x12 1 1/2 2.97 182-3E 1/8 24x24 6 11.88 182-4A 1/4 6x12 1 1.95 182-4C 1/4 12x12 2 3.67 182-4E 1/4 24x24 4 14.02 182-6A 3/8 6x12 1 1/4 3.00 182-6C 3/8 12x12 2 1/2 5.62 182-6E 3/8 24x24 5 1/2 22.27 182-8A 1/2 6x12 1 1/2 3.94 182-8C 1/2 12x12 3 7.42 182-8E 1/2 24x24 12 29.52					201-8E	1/2	24x24	17	43.65
203-8C	1/2	6	1	1.97						<b>POLYSTYRENE TUBING — 1 ft.</b> 167-2A 1/8 60 1/2 .03 167-3A 1/8 60 1 .06 167-4A 1/4 60 1 1/2 .08 167-5A 1/8 40 1 1/2 .12 167-6A 3/8 40 2 1/4 .18 167-8A 1/2 24 2 1/4 .33 167-10A 5/8 18 3 .54 167-12A 3/4 8 2 .75 167-14A 7/8 6 2 1.05 167-16A 1 6 2 1/2 1.26 167-18A 1 5 2 1/2 1.86 167-20A 1 1/4 4 2 1/2 2.25 167-22A 1 3/8 4 3 2.70 167-24A 1 1/2 4 3 1/2 3.21 167-26A 1 5/8 3 3 4.17 167-28A 1 3/4 3 3 1/2 4.47 167-30A 1 7/8 3 4 5.40 167-32A 2 3 4 1/2 5.61				
203-10C	5/8	6	1 1/4	2.74	<b>PHENOLIC SHEET — PAPER BASE</b> 200-1A 1/8 6x12 3/8 .55 200-1C 1/8 12x12 3/4 .95 200-1E 1/8 24x24 2 3/4 3.77 200-1K 1/8 36x42 6 8.85 200-2A 1/8 6x12 1/2 .90 200-2C 1/8 12x12 1 1.65 200-2E 1/8 24x24 4 1/4 6.54 200-2K 1/8 36x42 10 1/2 16.20 200-3A 1/8 6x12 1 1.31 200-3C 1/8 12x12 2 2.45 200-3E 1/8 24x24 7 9.86 200-3K 1/8 36x42 16 25.02 200-4A 1/4 6x12 1 1.70 200-4C 1/4 12x12 2 1/4 3.15 200-4E 1/4 24x24 8 3/4 12.48 200-4K 1/4 36x42 21 31.62 200-6A 3/8 6x12 1 1/2 2.45 200-6C 3/8 12x12 3 4.68 200-6E 3/8 24x24 12 18.64 200-6K 3/8 36x42 31 47.94 200-8A 1/2 6x12 2 3.24 200-8C 1/2 12x12 4 1/4 6.23 200-8E 1/2 24x24 17 24.75 200-8K 1/2 36x42 40 63.12									
203-12C	3/4	4	1 1/4	3.55						<b>PHENOLIC SHEET — CANVAS BASE</b> 201-1A 1/8 6x12 3/8 .87 201-1C 1/8 12x12 3/4 1.53 201-1E 1/8 24x24 2 3/4 6.15 201-1K 1/8 36x42 6 14.85 201-2A 1/8 6x12 1/2 1.47 201-2C 1/8 12x12 1 2.79 201-2E 1/8 24x24 4 1/4 11.18 201-2K 1/8 36x42 10 1/2 27.98				
203-14C	7/8	4	1 1/2	4.42	<b>POLYSTYRENE SHEET</b> 181-1A 1/8 6x12 1/4 1.65 181-1C 1/8 12x12 1/2 3.07 181-1E 1/8 24x24 1 1/2 12.15 181-2A 1/8 6x12 1/2 2.14 181-2C 1/8 12x12 1 4.11 181-2E 1/8 24x24 4 16.35 181-3A 1/8 6x12 3/4 2.73 181-3C 1/8 12x12 1 1/2 5.32 181-3E 1/8 24x24 6 20.70 181-4A 1/4 6x12 1 3.15 181-4C 1/4 12x12 2 6.07 181-4E 1/4 24x24 4 24.30 181-6A 3/8 6x12 1 1/4 4.38 181-6C 3/8 12x12 2 1/2 8.47 181-6E 3/8 24x24 5 1/2 33.75 181-8A 1/2 6x12 1 1/2 5.40 181-8C 1/2 12x12 3 10.45 181-8E 1/2 24x24 12 41.40									
203-16C	1	4	1 3/4	5.37						<b>PHENOLIC TUBING — 1 ft.</b> 204-4P 1/4x1/8 15 1/2 .60 204-6P 3/8x1/4 15 3/4 .65 204-8P 1/2x3/8 15 1 .74 204-10P 5/8x1/2 12 1 .81 204-12P 3/4x5/8 8 1 .89 204-14P 7/8x3/4 6 1 .95 204-16P 1x7/8 6 1 1.04 204-16PX 1x3/4 6 1 1.42 205-4C 1/4x1/8 15 1/2 .83 205-6C 3/8x1/4 15 3/4 .89 205-8C 1/2x3/8 15 1 .98 205-10C 5/8x1/2 12 1 1.05 205-12C 3/4x5/8 8 1 1.20 205-14C 7/8x3/4 6 1 1.31 205-16C 1x7/8 6 1 1.40 205-16CX 1x3/4 6 1 1/2 2.22				

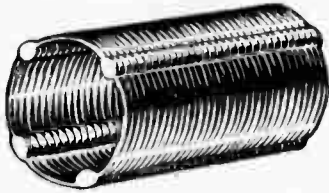
illumitronic engineering



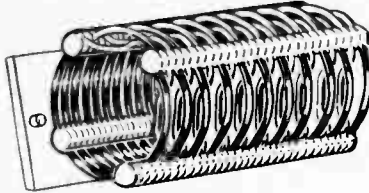
sunnyvale, california

# air dux<sup>®</sup>

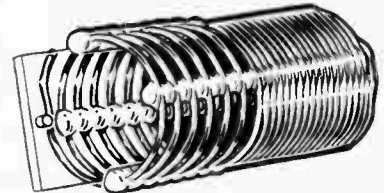
Illumitronic Engineering has developed a complete, versatile series of air core inductors designed especially for the amateur rig, or for prototypes of RF transmission equipment. These coils may be used for pi output circuits, conventional LC output circuits, interstage and oscillator circuits. The series consists of a standard coil type, a variable pitch type, and an indented type, in a range of diameters from 1/2 inch to 3 inches. All Air Dux<sup>®</sup> coils are constructed of tinned (silver or formvar) copper wire wound on large low loss polystyrene rods for the highest mechanical strength and lowest electrical losses.



air dux<sup>®</sup>



indented air dux<sup>®</sup>



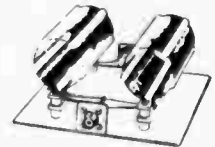
vari-pitch air dux<sup>®</sup>

air dux coils						
Cat. No. "T" or "F"	Diameter in Inches	Turns per Inch	Length of Coil	Wire Size	Weight Approx.	Net Price
404	1/2	4	2	18	2 Oz.	.35
406		6				
408		8				
410		10				
416		16				
432	32					
504	5/8	4	2	16	2 Oz.	.40
506		6				
508		8				
510		10				
516		16				
532	32					
604	3/4	4	2	16	3 Oz.	.45
606		6				
608		8				
610		10				
616		16				
632	32					
804	1	4	3	16	3 Oz.	.60
806		6				
808		8				
810		10				
816		16				
832	32					
1004	1 1/4	4	10	14	4 Oz.	1.45
1006		6				
1008		8				
1010		10				
1016		16				
1204	1 1/2	4	10	14	4 Oz.	1.55
1206		6				
1208		8				
1210		10				
1216		16				
1404	1 3/4	4	10	14	4 Oz.	1.65
1406		6				
1408		8				
1410		10				
1416		16				
1604	2	4	10	12	8 Oz.	1.75
1606		6				
1608		8				
1610		10				
1616		16				
2004	2 1/2	4	10	12	12 Oz.	1.90
2006		6				
2008		8				
2010		10				
2404	3	4	10	10	16 Oz.	2.85
2406		6				
2408		8				
2410		10				

Silver and formvar available at additional cost

pi air dux coils						
indented air dux <sup>®</sup>						
Cat. No.	Dia. in"	Wire Size	Length of Coil	Mtg. Centers	L uh.	Net
816A	1	18	3 3/6	3 3/4	18	.98
1014A	1 1/4	18	2 25/32	3 3/8	18.3	1.25
1212A	1 1/2	16	2 3/4	3 3/8	18.3	1.50
1411A	1 3/4	14	2 5/8	3 3/8	18.0	1.70
1609A	2	14	3	3 3/8	18.1	1.85
2007A	2 1/2	12	3 1/4	4	18.6	2.25
2406A	3	10	3 3/16	4 1/4	18.7	2.85
vari-pitch air dux <sup>®</sup>						
Cat. No.	Dia. in"	Wire Size	Length of Coil	Mtg. Centers	L uh.	Net
820D10	1	18	3 1/4	3 3/4	18	1.05
1212D6	1 1/2	14	3 1/6	4 3/8	18.6	1.75
1608D5	2	12	4 1/8	4 7/8	18.1	2.45
2008D5	2 1/2	12	3 3/4	4 3/8	18.2	2.80
2408D4	3	10	3 3/4	4 5/8	18.6	3.50

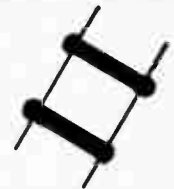
air dux balun		
No.	Description	Net Ea.
B2009	Coil with hardware	3.36
MB2009	Mounting Plate	1.95



spiral wrap	
SPIRAL WRAP	
Spirally cut polyethylene tubing for cabling loose wires into neat cables for production or prototypes. Available in 1/4" and 3/8" O.D. in four colors: white, black, red and blue.	



ladder line	
LADDER LINE <sup>®</sup>	
Extremely low loss transmission line for TV, amateur, and commercial use. Formvar copper wire molded by exclusive process in polystyrene spacers for maximum strength. In individual self-reeling cartons in lengths from 30 ft. to 250 ft.	



illumitronic engineering



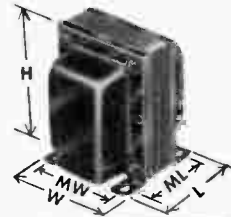
sunnyvale, california

STERLING—THE MARK OF QUALITY

# STERLING TRANSFORMER CORPORATION

## TRANSFORMERS

FOR ELECTRONICALLY  
REGULATED  
POWER SUPPLIES



Brooklyn 11, N. Y.

- ONE UNIT PROVIDES PLATE AND FILAMENT POWER FOR ENTIRE SUPPLY.
- RATINGS BASED ON D.C. OUTPUT OF SUPPLY.
- APPLICATION BULLETIN WITH EACH UNIT.

### 2K SERIES

Cat. No.	Supply Rating	High Voltage Secondary AC Volts	DC MA	Rectifier Fil.		Pass Tube Fil.		Regulator Fil.		Auxiliary Fil.		Overall			Mtg. Dim.		Rec. Mtg. Screw	Weight Lbs.	List Price	
				V	A	V	A	V	A	V	A	L	W	H	ML	MW				
PLATE AND FILAMENT TRANSFORMERS	2K6	300 / 250VDC 400MADC	550-480-0 480-550V	440			Use with 2K20			Use with 2K20		6	4 1/2	5 1/2	4 1/2	3 1/2	#10	19	\$28.00	
	2K8	300 / 250VDC 300MADC	540-475-0 475-540V	340	5	6	6.3	6	6.3	1.2	6.3CT	6	6 1/4	4 1/2	5 1/2	4 1/4	3 1/2	#10	20	32.75
	2K10	300 / 250VDC 200MADC	500-440-0 440-500V	240	5	3	6.3	3	6.3	1.2	6.3CT	6	5	4 1/2	5 1/2	3 1/2	3 1/2	#10	14	26.75
	2K12	300 / 250VDC 100MADC	540-465-0 465-540V	140	5	3	6.3	3	6.3	1.2	6.3CT	3	4 1/4	4 1/2	5 1/2	3 1/4	3 1/2	#10	12	23.00
2K13	150 / 100VDC 400MADC	370-310-0 310-370V	440			Use with 2K20			Use with 2K20		4 1/4	4 1/2	5 1/2	3 1/4	3 1/2	#10	12	23.00		
2K14	150 / 100VDC 300MADC	375-320-0 320-375V	340	5	6	6.3	6	6.3	1.2	6.3CT	6	5 1/2	4 1/2	5 1/2	4	3 1/2	#10	16	27.00	
2K15	150 / 100VDC 200MADC	355-300-0 300-355V	240	5	3	6.3	3	6.3	1.2	6.3CT	6	4 1/4	4 1/2	5 1/2	3 1/4	3 1/2	#10	12	23.00	
2K16	150 / 100VDC 100MADC	350-310-0 310-350V	140	5	3	6.3	3	6.3	1.2	6.3CT	3	4 3/8	3 1/2	4 1/2	3 1/4	3	#8	10	20.00	
2K17	300 / 250VDC 600MDC	565-500-0 500-565V	640			Use with 2K20			Use with 2K20		6 1/4	4 1/2	6	4 1/4	3 1/4	#10	22	41.20		
2K18	300 / 250VDC 800MADC	580-520-0 520-580V	840			Use with 2K21			Use with 2K21		6	6 1/4	7 1/4	4	4 1/2	1/4	33	54.00		
2K19	300 / 250VDC 1.0 Amp	590-525-0 525-590V	1040			Use with 2K21			Use with 2K21		7 1/2	6 1/4	7 1/4	5 1/2	4 1/2	1/4	48	76.00		
2K20	(Filament Transformer for 400MA and 600MA Supplies)				5	6	6.3	6	6.3	1.2	6.3CT	6	3 1/4	3 1/4	4 1/4	2 1/4	3	#8	7.5	17.00
2K21	(Filament Transformer for 800MA and 1 Amp. Supplies)				5	10	6.3	10	6.3	2	6.3CT	10	4 1/4	3 1/4	4 1/4	3 1/4	3	#8	12	23.50
Standard Color Code										NOTES										
Primary: Black High Voltage: Center Top: Red-Yellow High Voltage: High Top: Red High Voltage: Low Top: Blue				Rectifier Filaments: Yellow Pass Tube Filaments: Brown Regulator Filaments: Green Auxiliary Filaments: Slate				1. All Primaries 115 Volts 50/60 Cps. 2. Ratings Based On Capacitor Input Filters				3. Dielectric Test Voltages: Primaries: 1500 V. RMS All Secondaries: 2500 V. RMS								

Cat. No.	Inductance	Rated Current MADC	DC Resist.	Dielectric Test Volt.	Overall			Mtg. Dim.		Rec. Mtg. Screw	Weight Lbs.	List Price
					L	W	H	ML	MW			
2K5	4 hys. min.	440	50	2500V RMS	3 1/4	3 1/4	4 1/4	2 1/4	2 1/4	#8	6	\$11.60
2K7	4 hys. min.	340	60	2500V RMS	3 1/4	2 1/4	3 1/2	2	2 1/4	#8	3.3	7.80
2K9	4 hys. min.	240	90	2500V RMS	2 1/4	2 1/4	3 1/4	1 1/4	2	#8	2.3	5.90
2K11	4 hys. min.	140	185	2500V RMS	3 1/4	2 1/4	2 1/4	3 1/4	Chan.	#8	1.5	4.00
2K22	4 hys. min.	.64A	52	2500V RMS	4 1/4	4 1/4	5 1/2	3 1/4	3 1/2	#10	12	20.00
2K23	4 hys. min.	.84A	25	2500V RMS	5 1/2	4 1/4	5 1/2	4	3 1/2	#10	17	25.70
2K24	4 hys. min.	1.04A	20	2500V RMS	7	4 1/4	5 1/2	5 1/2	3 1/2	#10	25	35.70

Cat. No.	Secondary Volts	Secondary Amperes	RMS Volts Insulation	Primary Volts	Overall Dim.			Mtg. Dim.		Rec. Mtg. Screw	Weight Lbs.	List Price
					L	W	H	ML	MW			
6K1	6.3	4	1000	115/230	3 1/16	2 1/2	2 1/16	3 1/8	Chan.	8	1 3/4	8.50
6K2	6.3	12	1500	115/230	3 3/4	3 1/4	4	2 1/16	2 1/2	8	6	15.60
6K3	6.3 CT	16	3000	115	3 3/8	3 1/4	4	2 1/16	2 1/2	8	6 1/2	16.60
6K4	5	3	2000	115/230	3 1/2	3 1/4	4	1 1/16	2 1/2	8	5	16.50
	6.3 CT	4	2000									
	6.3 CT	4	2000									
6K5	6.3	1.5	1000	115/230	4	2 1/2	2 5/8	3 1/16	Chan.	8	2 1/4	9.30
	6.3	1.5	1000									
6K6	800 CT	.036 DC	4000	115/230	3 1/2	2 3/8	3 1/16	2 1/16	2	8	4	10.50
6K7	28 CT	7 DC	1000	115	4 1/4	3 1/4	4	2 1/16	2 1/2	8	8	15.80
6K8	660 CT	.25 DC	1500	115/230	3 3/8	3 3/8	4 5/8	2 1/16	3	8	8	19.20
	5	4.5	1500									
6K9	1130 CT	.062 DC	3300	115/230	3 3/8	3 3/8	4 5/8	2 1/16	3	8	8	19.20
	5	2	3300									

Prices subject to change without notice

STERLING—THE MARK OF QUALITY



Brooklyn 11, N. Y.

- Contour Molded
- Hipersil Cores

# ENCAPSULATED 400 CPS TRANSFORMERS CLIPPER SERIES



FOR MINIMUM SIZE  
AND MINIMUM WEIGHT

FILAMENT

Cat. No.	Secondary Volts	Secondary Amps.	Rms. V Insulation	Primary Volts	Mold Size	Maximum Operating Ambient	List Price
4C1	6.3	.8	1500	115	SM3	100°C	16.50
4C2	6.3	1.2	1500	115	SM2	100°C	16.50
4C3	6.3 CT	6.75	1500	110/115/120	2	100°C	26.50
4C4	6.3 6.3	4.9 2.7	1500 1500	115	3	90°C	23.70
4C5	6.3	7.2	1500	115	35	120°C	27.50
4C6	6.3 6.3 6.3	7 7 1.5	1500 1500 1500	120	35	80°C	26.80
4C7	6.3 CT 6.3 CT	7 7	1500 1500	120	4	100°C	31.90
4C8	6.3 6.3 6.3	13.7 2.93 0.3	1500 1500 1500	115	4	90°C	31.90
4C9	6.3 CT	12.3	1500	115	5	100°C	29.50
4C10	20 CT	0.6	1500	115	SM1	100°C	21.00
4C11	6.3 6.3 6.3	2.4 2.5 2.7	1500 1500 1500	115	3	100°C	29.50

POWER

4C12	14.1	3	1500	115	3	100°C	22.50
4C13	21	9	1500	115	4	65°C	25.00
4C14	26	0.5	1500	115	SM1	55°C	20.50
4C15	26	1.5	1500	115	3	65°C	21.20
4C16	28 CT 6.3 CT	0.75 7A	1500 1500	115	2	65°C	31.80
4C17	52	.192	1500	115	SM1	100°C	22.75
4C18	90	4.5	1500	115	9	100°C	43.00
4C19	115	.05	1500	115	SM2	100°C	16.80
4C20	105/115/125	0.4	1500	105/115/125	2	90°C	24.30
4C21	115	2.83	1500	115	8	100°C	35.00
4C22	334	.025	1500	115	SM1	120°C	19.30

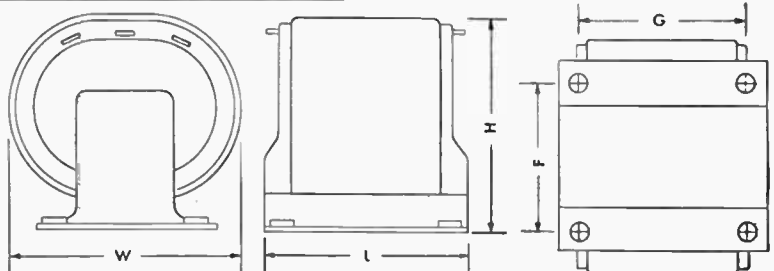
SIZE NUMBER	OVERALL DIMENSIONS			WTS DIMENSIONS			APPROX Wt (LBS)	WTS METHOD
	L	W	H	T	G	Ø		
5A7	1	1 1/2	1 1/2	1	Note 1	Ø 10	Note 1	
5A7	1 1/2	1 1/2	1 1/2	1	Note 1	Ø 10	Note 1	
5A7	1 1/2	1 1/2	1 1/2	1 1/2	Note 1	Ø 10	Note 1	
1	1 1/2	1 1/2	1 1/2	1 1/2	Note 2	Ø 10	Note 2	
14	1 1/2	1 1/2	1 1/2	1 1/2	Note 2	Ø 10	Note 2	
2	2	1 1/2	2 1/2	1 1/2	Note 2	Ø 10	Note 2	
3	2 1/2	1 1/2	2 1/2	1 1/2	Note 2	Ø 10	Note 2	
10	2 1/2	2 1/2	2 1/2	1 1/2	Note 2	Ø 10	Note 2	
4	2 1/2	2 1/2	2 1/2	1 1/2	Note 2	Ø 10	Note 2	
5	2 1/2	2 1/2	2 1/2	1 1/2	Note 2	Ø 10	Note 2	
6	2 1/2	2 1/2	2 1/2	1 1/2	Note 2	Ø 10	Note 2	
7	3	2 1/2	2 1/2	1 1/2	Note 2	Ø 10	Note 2	
8	3 1/2	2 1/2	2 1/2	1 1/2	Note 2	Ø 10	Note 2	
10	3 1/2	2 1/2	2 1/2	1 1/2	Note 2	Ø 10	Note 2	
16	3 1/2	2 1/2	2 1/2	1 1/2	Note 2	Ø 10	Note 2	
9	4 1/2	3 1/2	2 1/2	1 1/2	Note 2	Ø 10	Note 2	
10	4 1/2	3 1/2	2 1/2	1 1/2	Note 2	Ø 10	Note 2	

Note 1—SM series are two hole mounting with holes on center line. #4-40 Pem nuts are fastened to the bracket.

Note 2—#6-32 Pem nuts on bracket are standard.

Note 3—#8-32 Pem nuts on bracket are standard.

- All primaries 380-1000 cps
- Dielectric test voltages: PRIMARIES 1000 Volts RMS  
SECONDARIES 1500 Volts RMS
- Epoxy resin used as encapsulant
- Prices subject to change without notice



**GRAMER***Halldorson*

ORIGINATORS OF MINIFORMERS® AND TINYFORMERS®

## MASTER TECHNICIANS IN MINIATURE TRANSFORMERS

Manufacture a complete standard line of 138 items available for shipment from stock.

**GRAMER-HALLDORSON** miniature transformer lines featuring *Miniformer* line and the *Tinyformer* line are designed by miniaturization specialists for the complete range of civilian and military applications.

Hearing aid manufacturers began specifying Gramer-Halldorson products several years ago—today all audio applications, particularly in connection with transistorized circuits, are admirably served by Gramer-Halldorson stock lines as are many other miniaturized electronic devices.

**How Wide is the Range?** In addition to the *Miniformers* and *Tinyformers* Gramer-Halldorson makes a complete range of miniature transformers—*Super Tinyformers*, *Sub-Miniatures*, *Miniatures*, *Midgets*, *Small Transformers*, ranging upwards from 3/8" x 11/32" x 3/8" to 1-1/16" x 25/64" x 13/16" for open frame construction and weighing from .005 pounds to .069 pounds each.

**WHAT about MILITARY SPECIFICATIONS?** Gramer-Halldorson miniature transformers are manufactured to MIL-T-27 specifications. Other applicable specs can be met on special request.

**What is the Availability?** Gramer-Halldorson is dedicated to keeping available from stock 138 separate items covering most requirements. These include standard interstage, input, output, choke, microphone input and microphone to line transformers listed in the *Miniature Transformer Catalog*—open frame, shielded and hermetic sealed types.

**What about further data?** Simply write: Technical Information Department, Gramer-Halldorson—full specifications including frequency response curves will be forwarded immediately at absolutely no charge.

**What if Requirements are Special?** Gramer-Halldorson has a Special Products Research Division that exists for the sole purpose of assisting in solving the problems of special applications and developing units to customers' individual specifications.

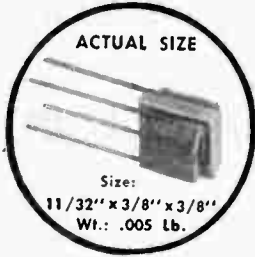
*For your convenience in replacing transformers in commercial equipment*

**GRAMER-HALLDORSON IS LISTED IN  
HOWARD SAMS PHOTOFAC FOLDERS**

**GRAMER***Halldorson*TRANSFORMER  
CORPORATION

CHICAGO 39, ILLINOIS

# GRAMER-HALLDORSON TINYFORMERS®



## OPEN TYPE TRANSFORMERS

Part numbers M1 thru M10

Preferred and specified as standard equipment by leading manufacturers of miniature electronic devices. Available in 7 types, each heat sealed in a cellulose acetate envelope, contained in fibreglass box with Chart Sheet that gives frequency in cycles, response in decibels and complete details.



## MU-METAL SHIELDED TINYFORMERS

Part numbers M1-S thru M7-S

Mu-Metal Shielded Tinyformers are for use in closely coupled or high gain circuits. Hum level can be reduced 18 to 20 db. Tiny size, extreme lightweight (104 per pound) are made possible by fine wire, precise nylon coil forms and high-nickel alloy high-Q cores. Supplied in satin finish with flexible color coded leads. The Mu-Metal Shielded Tinyformer is potted in a non-hydroscopic compound for excellent moisture and humidity-proof construction.

## HERMETICALLY SEALED TINYFORMERS

Part numbers M1-H thru M7-H

Hermetically sealed to Mil-T-27, Grade 1, Class A. Glass sealed 1/8" high terminal construction.

Tinyformer is encased and sealed in metal container with a black satin finish. Mounts with one #3-48 stud, 3/16" long and is supplied with lock washer and nickel plated hex nut.



## ALL TINYFORMER

transformers are designed for highest efficiency in transistor circuits. Tiny size and extreme lightweight are made possible by fine wires, precise nylon coil forms and high-nickel alloy high-Q cores. They are attractively packaged for quick sales.

OPEN TYPE PART NO.	MU-METAL SHIELDED PART NO.	HERMETICALLY SHIELDED PART NO.	TYPE	MATCH. IMPEDANCE		D.C. RESISTANCE	
				PRI.	SEC.	PRI.	SEC.
M 1	M 1-S	M 1-H	Interstage	20,000	1,000	1,150	175
M 2	M 2-S	M 2-H	Interstage	20,000	1,000	930	95
M 4	M 4-S	M 4-H	Output	600	50	66	7.7
M 5	M 5-S	M 5-H	Output	400	50	70	9.3
M 6	M 6-S	M 6-H	Input	200,000	1,000	2,600	135
M 7	M 7-S	M 7-H	Output	1,000	50/60	160	9
M 10	—	—	Choke	12 Hy. O.D.C.		830	

## MINIFORMERS®



The MINIFORMER® has been designed for a wide range of electronic applications where space and weight limitations are of prime importance.

This unit provides maximum adaptability for diversified usage such as: transistorized circuits, miniature radios, hearing-aids, pocket recorders, computers, Geiger counters, and air-borne equipment.

A smaller, lighter transformer measuring only 1/4" x 5/16" x 3/8" and weighing but .004 lbs (242 per lb).

The use of precise nylon coil forms and high-nickel laminations, together with the configuration of the laminations, result in an extremely flat response with a wider control range.

Current production includes a full line of MINIFORMER audio transformers: driver, interstage, input, output, chokes and small pulse transformers. All are conservatively rated at 2.5 milliwatts for primary inputs from 1 volt to 7 volts.

Write to our factory for complete technical data on miniature transformers or send us your individual specifications. We manufacture hundreds of different types or styles of miniature audio transformers.

**GRAMER** *Halldorson* TRANSFORMER CORPORATION • CHICAGO 39, ILL.



## MINIATURE AUDIO TRANSFORMERS for TRANSISTORIZED CIRCUITS

A new and complete line of miniature audio transformers designed for transistor-powered applications. Used as original equipment, standard or printed circuits, or as replacements. You can easily choose your needed requirements from the charts shown below, and order the desired transformer from the listings.



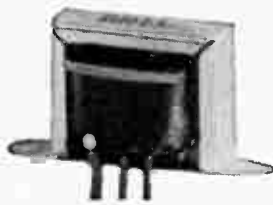
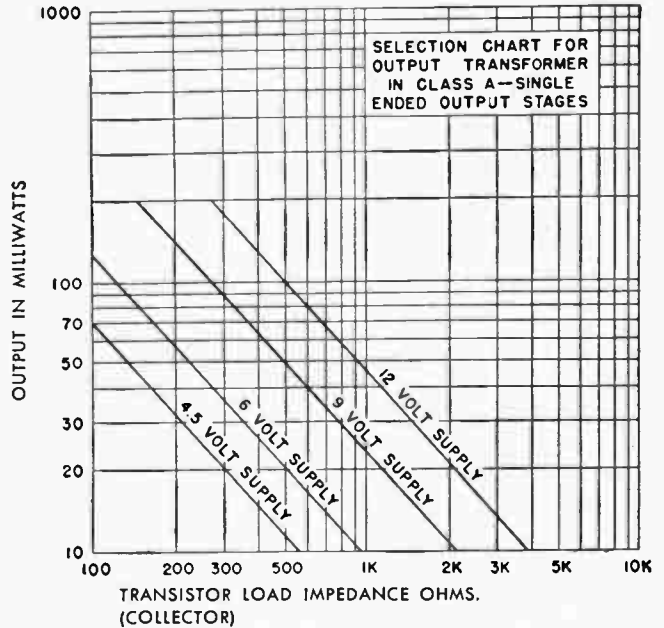
### 150 Milliwatt Series

Size: 21/32" H x 13/16" W x 5/8" D  
 Mounting tab centers: 13/16" - 3/16" W.  
 Insulated color coded 4" leads.  
 Weight: 0.6 oz.

LIST PRICE . . . \$5.55

Part No.	Use	Turns Ratio Pri. to Sec.	Pri. Imped. in ohms.	Sec. Imped. in ohms.
GH100	Input	1.00:45.5	30ct	50,000
GH101	Interstage	3.08:1	100ct	10ct
GH102	Output	5.22:1	350ct	4,12
GH103	Output	5.53:1	500ct	4,8,16
GH104	Interstage	3.16:1	500ct	50
GH105	Output	5.65:1	600ct	4,8,16
GH106	Interstage	10.0:1	500ct	50,000
GH107	Output	6.75:1	825ct	4,8,16
GH108	Output	9.80:1	1,250	4,12
GH109	Interstage	4.08:1	1,200	20,000ct
GH110	Interstage	1.65:1	1,500	500ct
GH111	Output	11.8:1	2,500	4,16
GH112	Interstage	1.00:1.22	5,000ct	7,500ct
GH113	Interstage	1.00:1.41	5,000ct	10,000ct
GH114	Interstage	1.00:4	5,000ct	80,000ct
GH115	Output	24.6:1	10,000ct	4,8,16
GH116	Interstage	14.0:1	10,000	200ct
GH117	Interstage	2.24:1	10,000	2,000ct
GH118	Interstage	1.83:1	10,000	3,000ct
GH119	Output	5.55:1	400ct	11
GH120	Interstage	3.44:1	500ct	150ct

TO SELECT the proper transformer for a medium-powered transistor, first locate the required output in milliwatts (MW) and trace its line across to the point intersecting with the intended voltage supply. Then read directly below for the load impedance. EXAMPLES: A Class A single-ended audio amplifier with a required output of 40 MW at 12 volts the load impedance is 1250 ohms (Part No. GH108). A Class B push-pull audio amplifier with an output of 100 MW at 6 volts the load impedance is 700 ohms (Part No. GH6).

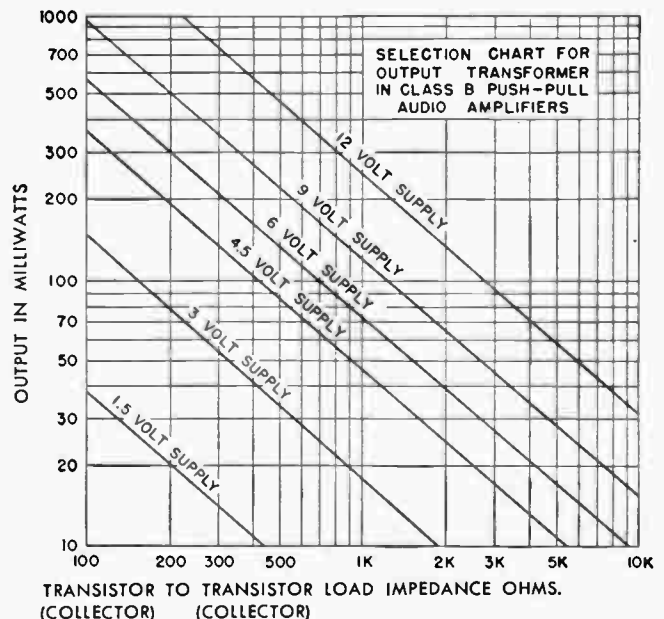


### 300 Milliwatt Series

Size: 13/16" H x 1-5/8" W x 13/16" D.  
 Mounting centers: 1-3/8" - .120" dia. holes.  
 Insulated color coded 4" leads.  
 Weight: 1.1 oz.

LIST PRICE . . . \$5.55

Part No.	Use	Turns Ratio Pri. to Sec.	Pri. Imped. in ohms.	Sec. Imped. in ohms.
GH1	Output	1.70:1	48ct	4,8,16
GH2	Output	3.08:1	100ct	4,8,16
GH3	Output	3.27:1	160	4,8,16
GH4	Output	5.00:1	400ct	4,8,16
GH5	Output	5.60:1	500ct	4,8,16
GH6	Output	6.63:1	700ct	4,8,16
GH7	Output	7.90:1	1,000	4,8,16
GH8	Output	12.5:1	2,500	4,8,16
GH9	Output	13.7:1	3,000	4,8,16
GH10	Interstage	8.17:1	100,000	1,500ct
GH11	Input	1.00:14.1	1,000ct	200,000ct



Also available in a laboratory assortment consisting of one each of the 32 lines listed above and packed in an attractive box.

ORDER No. K-150-300.



**AUDIO OUTPUT**


HC3 to 8



VC3 to 8



HT3 to 8



VT3 to 8



PC11



US

**SINGLE PLATE TO VOICE COIL AND LINE**

Item Number	Typical Output Tubes	Primary Impedance	Secondary Impedance	Primary Ma. Watts.	Dimensions H W D			Mtg. Ctrs.	Mtg. Type	Shipping Wt. Lbs.	List Price
Z1100	50L6, 25L6, 25B6, 48	1500	2/4/6	55	5 1/8	2 3/8	1 3/8	2	HC4	1/2	\$ 3.22
Z1101	50L6, 35A5, 25B6	2000	3.2	50	3 13/16	2 1/8	1	1 3/4	HC3	1/2	1.78
Z1102	50L6, 35A6, 25L6, 2A3 (5% Tap)	2000	4	50	5 1/8	2 3/8	1 1/4	2	HC4	1/2	2.11
Z1103	25L6 (5% Tap)	2500	4	50	5 1/8	2 3/8	1 1/4	2	HC4	1/2	2.44
Z1105	50L6, 35B5, 7A5 (3% & 6% Taps)	3000	4	50	5 1/8	2 3/8	1 1/4	2	HC4	1/2	2.89
Z1107	43, 25A6, 2A5	4500	4	35	5 1/8	2 3/8	1 3/8	2	HC4	1/2	2.22
Z1108	45, 25A6, 6L6, 6V6	5000	4/8/15/500	55	20 3 1/8	2 3/8	2 3/8	2 x 1 11/16	US	2 1/2	8.88
Z1109	50, 31, 25A7G, 6V6	5000	4/8/16	50	8 1 1/8	3 1/4	1 3/4	2 13/16	HC6	1	3.89
Z1110	1S4, 3S4	6000	4	10	3 1 1/8	2 1/8	7/8	1 3/4	HC3	1/3	2.22
Z1111	50B5, 50L6, 35A5	2000 or 6000	3.2	60 or 10	5 1/8	2 3/8	1 1/4	2	HC4	1/2	2.94
Z1112	6AC5, 6B5, 6F6, 6N7	7000	4/8/16	40	10 1 1/8	3 1/4	1 3/4	2 13/16	HC6	1	3.77
Z1113	7B5, 6K6, 6F6, 42	7000	4	30	5 1/8	2 3/8	1 1/4	2	HC4	1/2	2.16
Z1114	2500/4000/5000/6000/7000	500	500	60	10 2 3/4	3 1/8	2 1/4	2 13/16	VT7	1 1/2	8.33
Z1115	6F6, 6K6, 6N6, 7B5	7600	3.2	35	5 1/8	2 3/8	1 3/8	2	HC4	1/2	2.94
Z1116	3Q4 (bat.) and 35L6 (A.C.)	9000 and 2500	3.2	10/40	4 1 1/8	2 3/8	1 1/4	2	HC4	1/2	3.05
Z1117	6N7, 3C5, 1J6	10,000	4	30	5 1/8	2 3/8	1 1/4	2	HC4	1/2	2.11
Z1119	1N6, 1LA4, 1D8, 1A5	25,000	4	5	5 1/8	2 3/8	1 1/4	2	HC4	1/2	2.72

**PUSH-PULL PLATES TO VOICE COIL AND LINE**

Z1401	P.P. 6L6 (10% F.B. Winding)	4400	4/8/16/250/500	140	30 3 3/8	3	3 1/4	2 1/4 x 2	US	3 1/2	11.93
Z1402	P.P. 2A3, 6A3 (Fixed Bias)	5000	4/8/16	80	15 2 3/8	2 3/8	1 3/4	2 3/8	VC6	1	4.33
Z1403	P.P. 6L6 (F.B. Winding)	6600	4/8/16/500	150	35 3 3/8	3 1/4	3 3/8	2 1/2 x 2 13/16	US	4 3/4	12.77
Z1404	P.P. 6V6, 6F6, 2A5	10,000	4/8/16	60	12 2 3/8	2 3/8	1 3/4	2 3/8	VC6	1	3.89
Z1405	P.P. 45, 6V6, 6AC5	10,000/7,000	4/8/16/500	120	25 3 1/8	2 3/8	2 3/8	2 x 1 11/16	US	2 1/2	10.55
Z1406	P.P. 89, 47, 7B5, 6K6	14,000	4/8/16	60	15 2 3/8	2 3/8	1 3/4	2 3/8	VC6	1	3.89
Z1409	Single 5000/10,000—P.P. 20,000	50/125/333/500	15	10 2	3 1/4	1 3/4	2 13/16	HT6	1	5.49	

**UNIVERSAL OUTPUT**

Z1000	Single or P.P. Plates 4,000-14,000	0.1 to 50	35	4	1 3/8	2 3/8	1 1/4	2	HT4	1/2	3.33
Z1001	Single or P.P. Plates 2,000-13,000	0.1 to 50	50	4	1 3/8	2 3/8	1 3/8	2	HT4	3/8	3.61
Z1002	Single or P.P. Plates 4,000-14,000	0.1 to 50	40	8	1 5/8	2 3/8	1 1/2	2 3/8	HT5	3/4	3.77
Z1003	Single Plate 4000/7000/10,000	3 to 8	40	8	1 5/8	2 3/8	1 1/2	2 3/8	HT5	3/4	4.16
Z1004	Single or P.P. Plates 4,000-20,000	0.5 to 50	50	8	2	2 3/8	1 1/2	2	VT5	3/4	4.33
Z1005	Single or P.P. Plates 2,500-13,000	0.1 to 50	70	8	2	2 1/2	2 3/8	2	VT5	3/4	4.55
Z1006	Single Plate 1500-10,000	0.1 to 30	55	10	1 5/8	2 3/8	1 1/2	2 3/8	HT5	3/4	3.72
Z1007	Single or P.P. Plates 2,500-14,000	0.1 to 30	50	10	2 3/8	2 3/8	1 1/2	2 3/8	VT6	1	4.83
Z1009	Single or P.P. Plates 3,500-14,000	0.1 to 50	40	15	2 3/8	2 3/8	2	2 3/8	VT6	1 1/3	4.83
Z1010	Single or P.P. Plates 2,500-13,000	0.1 to 50	70	15	2 3/8	2 3/8	2 3/8	2 3/8	VT6	1 1/2	5.55
Z1011	Single or P.P. Plates 4,000-14,000	0.1 to 50	50	18	2	3 1/4	2	2 13/16	HT6	1 1/4	5.49

**HI-FI AUDIO OUTPUT TRANSFORMERS FOR POPULAR AMPLIFIER CIRCUITS**

Item Number	Pri. Imped.	Sec. Imped.	Freq. Response at 25 Watts	Max. Watts	Max. Pri. D.C./Half	Dimensions H W D			Mtg. Ctrs.	Mtg. Type	Shipping Wt. Lbs.	List Price
H4101	5000	8/16	± 1 DB 20-20,000 Cps	50	150 Ma.	4 1/4	3 1/2	4 1/4	2 3/4 x 3 3/8	US	7 1/2	21.92
H4102	9000	8/16	± 1 DB 20-20,000 Cps	50	100 Ma.	4 1/4	3 1/2	4 1/4	2 3/4 x 3 3/8	US	7 1/2	21.92
H4103	7400*	4/8/16	± 1 DB 10-100,000 Cps	40	100 Ma.	3 3/8	3 1/4	3 3/8	2 1/2 x 2 3/8	US	6	24.98
H4111†	7400*	4/8/16	± 1/2 DB 10-100,000 Cps	40	100 Ma.	4 1/4	4 1/8	3 3/8	2 3/4 x 3 3/8	PC11	7 1/2	41.25

†Golden Fidelity Output Transformer for Ultra-linear applications. Each Gramer-Halldorson Golden Fidelity output transformer is registered by serial number and a specific response curve throughout the range (10 to 100,000 cps) is provided with every unit.

\*Primary has screen taps for triode-tetrode operation.

See Your Distributor or write to the Factory for a complete Catalog.

## INPUT AND LINE



### LINE, MICROPHONE, INTERCOM., TRANSCEIVER INPUT TO GRID

Item Number	Application	Primary Impedance	Secondary Impedance	Dimensions H W D			Mtg. Ctrs.	Mtg. Type	Shipping Wt. Lbs.	List Price
G2000	S.B. Mic. or Line to S. Grid	100	60,000	1 3/8	2 3/8	1 1/2	2	HC4	1/2	\$3.55
G2001	S.B. Mic. or Line to P.P. Grids	100	400,000	2 1/8	2 7/8	1 3/4	2 3/8	VC6	1 1/4	5.00
G2002	S.B. Mic. or Line to S. Grid	200/70	80,000	1 3/8	2 3/8	1 3/8	2	HC4	1/2	3.55
G2005	S./D.B. Mic. or Line to P.P. Grids	500/333/200/125/50	100,000	2 3/8	2 7/8	2 1/4	2 3/8	VS6	1 1/4	6.55
G2008	Intercommunicator Input	4	25,000	1 3/8	2 3/8	1 1/2	2	HS4	1/2	3.11

### LINE TO LINE

L2400	Line to Line 10 Watts	500/333/200/ 125/50	500/333/200/ 125/50	2	3 1/4	1 3/4	2 13/16	HT6	1	7.22
L2401	Line to Line or Line to V.C. 15 Watts	†500 C.T./†200 C.T./ 250/50	4/8/15/500	3 3/8	2 5/8	2 3/4	2 x 1 13/16	US	2 1/2	10.99

### SPEAKER MATCHING

Item Number	Primary Impedance	Secondary Impedance	Watts	Dimensions H W D			Mtg. Ctrs.	Mtg. Type	Shipping Wt. Lbs.	List Price
S3500	500	3.2/6-8	5	1 3/8	2 3/8	1 3/8	2	HT4	1/2	\$2.61
S3501	2000/1500/1000/500	3.2/6-8	8	1 3/8	2 3/4	1 3/8	2 3/8	HT5	3/4	3.55
S3502	2000/1500/1000/500	3.2/6-8	12	2 3/8	2 7/8	1 3/4	2 3/8	VT6	1 1/8	4.72
S3504	2000/1500/1000/500	3.2/6-8	18	2 3/8	2 7/8	1 3/4	2 3/8	VT6	1 3/4	5.82
S3506	1500/1000/500	4/8/16	25	3 1/8	3 3/8	2 1/4	3 3/8	VT8	2 1/2	6.05
S3507*	10,000/5000/2500/1250/625	4/8/16	8	2	2 1/2	1 5/8	2	VT5	3/4	5.00
S3508*	10,000/5000/2500/1250/625/312.5	4/8/16	16	2 3/4	3 1/4	2 1/4	2 13/16	VT7	1 1/2	6.99

\*Inductive and capacitive balance to center tap.

\*70.7 volt line-to-voice coil application. Power level adjustable in 3 db steps.

## AUDIO INTERSTAGE

### SINGLE PLATE TO SINGLE GRID

Item Number	Nominal Primary	Secondary	Turns Ratio	Primary D.C. MA.	H	Dimensions W D		Mtg. Ctrs.	Mtg. Type	Shipping Wt. Lbs.	List Price
A2500	10,000	90,000	1:3	10	2 1/8	2 3/4	2 3/8	2 13/16	HC6	1 1/2	\$4.27
A2501	10,000	90,000	1:3	10	1 3/8	2 3/8	1 1/2	2	HC4	1/2	2.94

### SINGLE PLATE TO PUSH-PULL GRIDS

A2601	10,000	160,000	1:4	10	2	3 1/4	1 3/4	2 13/16	HC6	1	4.55
A2603	10,000	90,000	1:3	10	1 3/8	2 7/8	1 1/2	2 3/8	HC5	3/4	3.39

### P.P. PLATES TO P.P. GRIDS—SPLIT SECONDARIES

A2710	10,000	90,000	1:3	10	2 3/8	2 7/8	1 3/4	2 13/16	HC6	1	5.83
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## DRIVER

### SINGLE PLATE TO PUSH-PULL GRIDS

Item Number	Plate Load Impedance	Ratio Primary 1/2 Sec.	Primary D.C. MA	Max. Watts	Dimensions H W D			Mtg. Ctrs.	Mtg. Type	Shipping Wt. Lbs.	List Price
D6000	6,000-10,000	2.5:1	15	1.5	1 3/8	2 7/8	1 1/2	2 3/8	HC5	3/4	\$3.50
D6001	8,000-12,000	2:1	15	2.0	1 3/8	2 7/8	1 1/2	2 3/8	HC5	3/4	3.61
D6005	8,000-12,000	3:1	20	3.0	2 1/2	2 7/8	1 7/8	2 13/16	HS6	1	5.44

### PUSH-PULL PLATES TO PUSH-PULL GRIDS

D6100	16,000-24,000	3:1	12/12	2.0	1 5/8	2 7/8	1 1/2	2 3/8	HC5	3/4	3.89
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See Your Distributor or write to the Factory for a complete Catalog.



HS



US



HC3 to 8



VC3 to 8



VS3 to 8

**PLATE AND FILAMENT**

Item Number	Plate A.C. Load Volts	D.C. Ma.	Fil. No. 1		Fil. No. 2		Dimensions			Mtg. Ctrs.	Mtg. Type	Shpg. Wt. Lbs.	List Price
			Volts	Amp.	Volts	Amp.	H	W	D				
P9200	235-0-235	40	5	2	6.3 C.T.	2	3 1/8	2 5/8	2 5/8	2 x 1 1/16	US	2 1/4	\$7.49
P9201	235-0-235	40	5	2	6.3 C.T.	2	2 5/8	2 1/2	3	2 x 2 1/2	HS	2 1/4	7.49
P9202	240-0-240	55	5	2	6.3 C.T.	2	3 1/8	2 5/8	2 3/4	2 x 1 1/16	US	2 1/2	8.33
P9203	240-0-240	55	5	2	6.3 C.T.	2	2 3/4	2 1/2	3	2 x 2 1/2	HS	2 1/2	8.33
P9204	250-0-250	70	5	2	6.3 C.T.	2.5	3 1/8	2 5/8	3 1/8	2 x 2 1/16	US	3 1/4	9.32
P9205	250-0-250	70	5	2	6.3 C.T.	2.5	3 1/8	2 1/2	3	2 x 2 1/2	HS	3 1/4	9.32
P9206	260-0-260	90	5	2	6.3 C.T.	3	3 5/8	3	3 1/2	2 1/4 x 2 1/4	US	4	10.49
P9207	260-0-260	90	5	2	6.3 C.T.	3	3 5/8	2 13/16	3 3/8	2 1/4 x 2 13/16	HS	4	10.49
P9208	270-0-270	120	5	3	6.3 C.T.	3.5	3 7/8	3 1/4	3 1/2	2 1/2 x 2 3/16	US	5	11.60
P9209	270-0-270	120	5	3	6.3 C.T.	3.5	3 1/2	3 1/8	3 3/4	2 1/2 x 3 1/8	HS	5	11.60
P9301	325-0-325	40	5	2	6.3 C.T.	2	2 3/4	2 1/2	3	2 x 2 1/2	HS	2 1/2	8.05
P9302	325-0-325	55	5	2	6.3 C.T.	2	3 1/8	2 5/8	3 1/8	2 x 2 1/16	US	3 1/4	8.44
P9304	300-0-300	70	5	3	6.3 C.T.	3	3 5/8	3	3 1/4	2 1/4 x 2 3/8	US	4	9.55
P9305	300-0-300	70	5	3	6.3 C.T.	3	3 1/4	2 13/16	3 3/8	2 1/4 x 2 3/16	HS	4	9.55
P9307	340-0-340	70	5	2	6.3 C.T.	2.5	3 1/2	2 13/16	3 3/8	2 1/4 x 2 13/16	HS	3 3/8	9.55
P9310	350-0-350	90	5	2	6.3 C.T.	3	3 5/8	3	3 5/8	2 1/4 x 2 3/8	US	4 1/2	10.66
P9311	350-0-350	90	5	2	6.3 C.T.	3	3 3/4	2 13/16	3 3/8	2 1/4 x 2 13/16	HS	4 1/2	10.66
P9312	300-0-300	120	5	3	6.3 C.T.	5	3 7/8	3 1/4	3 3/4	2 1/2 x 2 3/8	US	5 1/2	12.15
P9314	360-0-360	120	5	3	6.3 C.T.	3.5	3 7/8	3 1/4	3 3/4	2 1/2 x 2 1/16	US	5 1/2	12.15
P9316	375-0-375	150	5	3	6.3 C.T.	4.5	4 1/4	3 1/2	4	2 3/4 x 2 13/16	US	6	14.26
P9600	600-0-600	200	5	3	6.3 6.3	3 3	4 3/4	4	4 3/4	3 x 3 1/16	US	8 1/2	19.98

PRIMARIES FOR 117 VOLT, 60 CYCLE OPERATION

**FOR USE WITH 6AX5, 6X4, 6X5 OR SELENIUM RECTIFIERS**

Item Number	Plate A.C. Load Volts	D.C. Ma.	Filament No. 1 Volts	Amp.	H	W	D	Mtg. Ctrs.	Mtg. Type	Shipping Wt. Lbs.	Price List
P9100	125 half wave	15	6.3	0.6	2	2 3/8	1 3/8	2	VC5	3/4	\$3.50
P9101	125-0-125	25	6.3	1.0	2 3/8	2 7/8	1 3/4	2 3/8	VC6	1	4.38
P9103	150 half wave	25	6.3	0.5	2	2 7/8	1 3/4	2	VS5	1	4.83
P9102	125 half wave	50	6.3	2.0	2 1/4	3 3/4	2 1/8	3 1/8	HC7	1 1/2	5.72
P9210	230-0-230	50	6.3	2.5	3 1/8	2 5/8	2 5/8	2 x 1 1/16	US	2 1/4	7.22
P9211	230-0-230	50	6.3	2.5	2 5/8	2 1/2	3	2 x 2 1/2	HS	2 1/4	7.27
P9214	260-0-260	90	6.3	4.0	3 1/8	2 5/8	3 1/2	2 x 2 1/4	US	3 1/2	8.88

**SPECIAL PURPOSE POWER UNITS**

Item Number	Plate A.C. Load Volts	D.C. Ma.	Fil. No. 1 Volts	Amp.	Fil. No. 2 Volts	Amp.	Fil. No. 3 Volts	Amp.	Dimensions			Mtg. Ctrs.	Mtg. Type	Shpg. Wt. Lbs.	List Price
									H	W	D				
P9908	320-0-320	150	5.0	3.0	6.3	3.0	6.3	8.0	4 3/4	4	4	3 x 3 3/16	US	9 1/2	\$24.97
P9912	2700	2.0	1.25 Tap	1.75	6.3	0.3	6.3	0.3	3 7/8	3 1/4	3 1/4	2 1/2 x 2 1/16	US	3	20.26
P9914	1600	2.0	1.25 Tap	1.75	6.3	0.3	6.3	0.3	3 7/8	3 1/4	3 1/2	2 1/2 x 2 1/4	US	3	24.98
P9918	1500	10	2.5	1.75	2.5	2.1			3 7/8	3 1/4	3 1/4	2 1/2 x 2 1/16	US	4 1/2	15.82

PRIMARIES FOR 117 VOLT, 60 CYCLE OPERATION

See Your Distributor or write to the Factory for a complete Catalog.



*Haldorson*  
**TRANSFORMER CORP.**  
 • CHICAGO 39, ILL.

## FILTER CHOKES



HC3 to 8



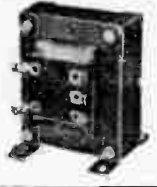
VC3 to 8



US



UBL



UBT

### SMOOTHING

Item Number	Inductance Hys.	D.C. Mo.	D.C. Res.	Insulation	Dimensions			Mtg. Ctrs.	Mtg. Type	Shipping Wt. Lbs.	List Price
					H	W	D				
C5001	20	15	900	1500	1 5/8	2 7/8	1 1/2	2 3/8	HC5	3/4	\$2.44
C5002	12	30	400	2000	1 3/8	2 3/8	1 3/8	2	HC4	1/2	2.55
C5003	30	35	700	2000	2	3 1/4	1 3/4	2 13/16	HC6	1	3.89
C5005	15	40	400	2000	2	3 1/4	1 3/4	2 13/16	HC6	1	4.00
C5007	4.5	50	300	1500	1 3/8	2 3/8	1 3/8	2	HC4	1/2	2.05
C5010	8.5	50	400	1500	1 5/8	2 7/8	1 1/2	2 3/8	HC5	3/4	2.44
C5011	16	50	575	1500	2	3 1/4	1 3/4	2 13/16	HC6	1 1/8	2.94
C5013	10	60	300	2000	2	3 1/4	1 3/4	2 13/16	HC6	1	3.33
C5014	13	65	500	1500	2	3 1/4	1 3/4	2 13/16	HC6	1	3.44
C5016	15	75	400	1500	2 1/4	3 3/4	2 1/4	3 1/8	HC7	1 3/4	3.66
C5017	16	80	350	1500	3 1/8	2 5/8	2 5/8	2 x 1 11/16	US	2 1/2	5.99
C5019	8	85	250	2000	2 1/4	3 3/4	2 1/4	3 3/8	HC7	1 1/2	3.77
C5020	5	100	300	3000	2	3 1/4	1 3/4	2 13/16	HC6	1	3.77
C5026	2.3	150	60	1500	2	3 1/4	1 3/4	2 13/16	HC6	1	3.55
C5040	1.5	200	85	1500	1 5/8	2 7/8	1 1/2	2 3/8	HC5	3/4	2.61
C5030	2	200	60	1500	2 1/4	3 3/4	2 1/4	3 3/8	HC7	1 3/4	4.27
C5034	15	200	150	5000	4 3/4	4	3 3/4	3 x 2 5/16	US	5 1/2	13.88
C5037	1	300	45	1500	2 1/4	3 3/4	2 1/4	3 3/8	HC7	1 3/4	4.27
C5041	0.8	375	25	1500	2 1/4	3 3/4	2	3 3/8	HC7	1 3/4	4.83

### SWINGING

C5400	4-14	150	130	2000	3 7/8	2 5/8	2 1/2	2 x 1 1/16	US	2 1/2	\$7.05
C5403	2-12	250	60	3000	3 5/8	3	3 1/2	2 1/4 x 2 3/8	US	4 1/4	11.60
C5404	4-20	300	80	3000	4 3/4	4	3 3/8	3 x 2 13/16	US	8	14.99
C5405	5-15	350	100	5000	4 3/4	4	4	3 x 2 5/16	US	9 1/2	19.43

## FILAMENT

### SINGLE SECONDARY

Item Number	Primary	Secondary			Dimensions			Mtg. Ctrs.	Mtg. Type	Shipping Wt. Lbs.	List Price
		Volts	Amp.	Insulation	H	W	D				
F5502	117	2.5 C.T.	5	7500	2 5/8	3 1/8	2 1/4	2 13/16	VC7	1 1/2	\$6.33
F5511	117	6.3 C.T.	1.2	3000	1 5/8	2 7/8	1 5/8	2 3/8	HC5	3/4	3.22
F5529	117	6.3	1.2	5000	2	3 1/4	1 3/4	2 13/16	HC6	1	4.44
F5530	6.3	6.3	1.2	5000	2	3 1/4	1 3/4	2 13/16	HC6	1	5.00
F5512	117	6.3 C.T.	3	2000	2 3/8	2 7/8	1 3/4	2 3/8	VC6	1	5.00
F5513	107-117	6.3 C.T.	4	2500	3 1/8	2 5/8	2 5/8	2 x 1 11/16	US	2 3/4	7.99
F5514	117	6.3 C.T.	6	2500	3 1/8	2 1/2	2 7/8	2 x 2	UBT	2 1/2	6.83
F5515	107-117	6.3 C.T.	6	2500	3 5/8	3	3 1/8	2 1/4 x 2	US	3 1/2	9.71
F5516	107-117	6.3 C.T.	10	2500	3 1/2	2 7/8	2 3/4	2 1/4 x 2 1/8	UBL	3 1/2	8.33
F5523	107-117	10.0 C.T.	8	2500	3 7/8	3 1/4	3 5/8	2 1/2 x 2 5/16	US	5 1/4	11.21
F5526	117	12.6 C.T.	3	2000	3	2 1/2	2 7/8	2 x 2 1/8	UBL	3 1/2	7.71
F5527	117	25.2	1	1500	2	3 1/4	2	2 13/16	HC6	1 1/2	5.27
F5528	117	12.6 or 25.2	7 3.5	2500	3 5/8	3	3 1/2	2 1/4 x 2 5/8	US	5	12.10

### MULTIPLE SECONDARY—2000 VOLT INSULATION

Item Number	Primary	Fil. No. 1		Fil. No. 2		Dimensions			Mtg. Ctrs.	Mtg. Type	Shipping Wt. Lbs.	List Price
		Volts	Amp.	Volts	Amp.	H	W	D				
F5902	117	5.0 C.T.	3	6.3 C.T.	6	3 7/8	3 1/4	3 3/8	2 1/2 x 2 1/8	US	3 1/2	\$12.49
F5905	117	6.3 C.T.	3	6.3 C.T.	3	3	3 5/8	2 1/4	3 1/8	VC8	2 1/4	8.88

See Your Distributor or write to the Factory for a complete Catalog.

# VARIVOLT, AUTOFORMER, ISOLATION



N-202



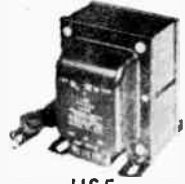
N-303



US2



US4



US5

### VARIVOLT ISOLATION UNITS GIVING FINE (42 STEP) METERED ADJUSTMENT

Item Number	Output Range on 117 Volt Line	Nominal Wattage (Pure Resist. Load)	H	Dimensions Overall			Shipping Wt. Lbs.	List Price
				W	D			
N-202	95-145	500*	7 <sup>1</sup> / <sub>4</sub>	5 <sup>7</sup> / <sub>8</sub>	8		25	\$69.38
N-303	95-145	150*	5 <sup>1</sup> / <sub>4</sub>	6	4 <sup>1</sup> / <sub>16</sub>		12	39.68

\*At 90 volts in or aut. wattage rating reduced 30%.

### VARIVOLT AUTOFORMERS

SEVEN STEPS—65/75/90/100/115/130/145 VOLTS INPUT TO 115 VOLTS OUTPUT, 50-60 CYCLES

Item Number	Wattage Resis. Load	H	Dimensions Overall			Mtg. Centers	Mtg. Type	Shipping Wt. Lbs.	List Price
			W	D					
J4401	350	5 <sup>1</sup> / <sub>8</sub>	3 <sup>1</sup> / <sub>2</sub>	6 <sup>1</sup> / <sub>8</sub>	2 <sup>3</sup> / <sub>4</sub> x 5	US4	8	\$30.97	
J4402	500	5 <sup>1</sup> / <sub>2</sub>	3 <sup>7</sup> / <sub>8</sub>	6 <sup>7</sup> / <sub>8</sub>	3 x 5 <sup>1</sup> / <sub>16</sub>	US4	13 <sup>1</sup> / <sub>2</sub>	38.30	

### STEP-DOWN AUTOFORMERS

Item Number	Primary Voltage	Secondary Voltage	Watts	Dimensions Overall			Mtg. Centers	Mtg. Type	Shipping Wt. Lbs.	List Price
				H	W	D				
J4300	230	115	65	3 <sup>1</sup> / <sub>16</sub>	2 <sup>1</sup> / <sub>2</sub>	2 <sup>3</sup> / <sub>4</sub>	2 x 1 <sup>1</sup> / <sub>16</sub>	US2	2 <sup>3</sup> / <sub>4</sub>	\$10.55
J4301	230	115	100	3 <sup>1</sup> / <sub>2</sub>	2	3 <sup>1</sup> / <sub>8</sub>	2 <sup>1</sup> / <sub>4</sub> x 2	US2	3 <sup>3</sup> / <sub>4</sub>	12.77
J4302	230	115	160	4	3 <sup>1</sup> / <sub>4</sub>	3 <sup>1</sup> / <sub>2</sub>	2 <sup>1</sup> / <sub>2</sub> x 2 <sup>3</sup> / <sub>16</sub>	US2	5 <sup>1</sup> / <sub>4</sub>	15.26
J4304	230	115	500	4 <sup>3</sup> / <sub>4</sub>	3 <sup>7</sup> / <sub>8</sub>	5 <sup>1</sup> / <sub>4</sub>	3 x 4 <sup>1</sup> / <sub>16</sub>	US2	13 <sup>3</sup> / <sub>4</sub>	24.98

### ISOLATION TRANSFORMERS

Item Number	Primary Voltage	Secondary Voltage	Watts	H	W	D	Mtg. Centers	Mtg. Type	Shipping Wt. Lbs.	List Price
K4600	115	115	50	4	3 <sup>1</sup> / <sub>4</sub>	3 <sup>1</sup> / <sub>4</sub>	2 <sup>1</sup> / <sub>2</sub> x 1 <sup>1</sup> / <sub>16</sub>	US2	4 <sup>1</sup> / <sub>4</sub>	\$13.32
K4601	115	115	100	4 <sup>3</sup> / <sub>4</sub>	3 <sup>7</sup> / <sub>8</sub>	3 <sup>1</sup> / <sub>2</sub>	3 x 2 <sup>1</sup> / <sub>16</sub>	US2	6 <sup>1</sup> / <sub>2</sub>	20.54
K4602	115	115	150	4 <sup>3</sup> / <sub>4</sub>	3 <sup>7</sup> / <sub>8</sub>	3 <sup>3</sup> / <sub>4</sub>	3 x 2 <sup>1</sup> / <sub>16</sub>	US2	7	22.14
K4603	115	115	250	4 <sup>3</sup> / <sub>4</sub>	3 <sup>7</sup> / <sub>8</sub>	5 <sup>3</sup> / <sub>4</sub>	3 x 3 <sup>1</sup> / <sub>16</sub>	US2	12 <sup>1</sup> / <sub>2</sub>	36.08
K4610	115	105, 115, 125	350	5 <sup>1</sup> / <sub>16</sub>	4 <sup>1</sup> / <sub>16</sub>	5 <sup>3</sup> / <sub>4</sub>	3 <sup>1</sup> / <sub>2</sub> x 3 <sup>7</sup> / <sub>8</sub>	US5	16	33.30

## VIBRATOR



VC3 to 8



WB



HS



PC1



PC5



PC6

### VIBRATOR TRANSFORMERS—6 VOLTS D.C.

Item Number	D.D. Volts	A.C. Volts	Ma.	Dimensions Overall			Mtg. Centers	Mtg. Type	Shipping Wt. Lbs.	List Price
				H	W	D				
V3800	165	330 CT	40	2 <sup>3</sup> / <sub>4</sub>	3 <sup>3</sup> / <sub>16</sub>	2 <sup>1</sup> / <sub>8</sub>	2 <sup>1</sup> / <sub>16</sub>	VC7	1 <sup>3</sup> / <sub>4</sub>	\$5.83
V3801	250	510 CT	40	2 <sup>3</sup> / <sub>4</sub>	3 <sup>3</sup> / <sub>16</sub>	2 <sup>1</sup> / <sub>8</sub>	2 <sup>1</sup> / <sub>16</sub>	VC7	1 <sup>3</sup> / <sub>4</sub>	6.66
V3802	265	520 CT	50	3 <sup>1</sup> / <sub>16</sub>	2 <sup>1</sup> / <sub>2</sub>	2 <sup>3</sup> / <sub>16</sub>	1 <sup>10</sup> / <sub>32</sub> x 2 <sup>1</sup> / <sub>16</sub>	WB	2 <sup>1</sup> / <sub>2</sub>	7.22
V3803	255	510 CT	50	3 <sup>1</sup> / <sub>32</sub>	2 <sup>1</sup> / <sub>2</sub>	2 <sup>3</sup> / <sub>8</sub>	3 topped holes	PC1	2 <sup>1</sup> / <sub>2</sub>	8.60
V3805	245	500 CT	60	3 <sup>1</sup> / <sub>16</sub>	2 <sup>1</sup> / <sub>2</sub>	2 <sup>1</sup> / <sub>2</sub>	1 <sup>10</sup> / <sub>32</sub> x 2	WB	2 <sup>1</sup> / <sub>8</sub>	7.77
V3806	235	480 CT	60	2 <sup>1</sup> / <sub>16</sub>	2 <sup>1</sup> / <sub>16</sub>	2 <sup>1</sup> / <sub>4</sub>	3 topped holes	PC5	2 <sup>1</sup> / <sub>8</sub>	8.33
V3807	235	500 CT	70	3 <sup>1</sup> / <sub>32</sub>	2 <sup>1</sup> / <sub>2</sub>	2 <sup>3</sup> / <sub>8</sub>	3 topped holes	PC1	2 <sup>1</sup> / <sub>2</sub>	9.44

### VIBRATOR TRANSFORMERS—12 VOLTS D.C.

V3900	150	170-0-170	40	2 <sup>3</sup> / <sub>8</sub>	2 <sup>7</sup> / <sub>8</sub>	2 <sup>3</sup> / <sub>8</sub>	2 <sup>3</sup> / <sub>8</sub>	VC6	1 <sup>1</sup> / <sub>2</sub>	\$5.83
V3901*	265	260-0-260	55	3 <sup>1</sup> / <sub>4</sub>	2 <sup>9</sup> / <sub>8</sub>	2 <sup>1</sup> / <sub>2</sub>	1 Stud Screw	PC6	2 <sup>3</sup> / <sub>4</sub>	10.99
V3902	225	245-0-245	60	2 <sup>1</sup> / <sub>4</sub>	2 <sup>3</sup> / <sub>16</sub>	2 <sup>5</sup> / <sub>8</sub>	1 <sup>3</sup> / <sub>4</sub> x 2 <sup>3</sup> / <sub>16</sub>	HS	2	6.66
V3903	260	270-0-270	60	2 <sup>1</sup> / <sub>4</sub>	2 <sup>3</sup> / <sub>16</sub>	2 <sup>5</sup> / <sub>8</sub>	1 <sup>3</sup> / <sub>4</sub> x 2 <sup>3</sup> / <sub>16</sub>	HS	2	6.99
V3904	275	285-0-285	70	3 <sup>1</sup> / <sub>4</sub>	2 <sup>1</sup> / <sub>4</sub>	2 <sup>3</sup> / <sub>8</sub>	3 topped holes	PC1	2 <sup>1</sup> / <sub>2</sub>	9.71

\*Has Internal Hash Filter.

See Your Distributor or write to the Factory for a complete Catalog.

# ACROSOUND

## ULTRA - LINEAR II 60 WATT POWER AMPLIFIER KIT



The Acrosound Ultra-Linear II is a 60 watt power amplifier which combines the inherently superior qualities of Ultra-Linear\* circuitry with new feedback circuit design to provide a new standard of stability in feedback amplifier performance.

This combination of features makes possible a power amplifier of distinctly superior listening qualities which is unusually well suited to meet the difficult requirements imposed by complex speaker systems as, for example, those embodying electrostatic tweeters and electrodynamic woofers.

A secondary feature of the amplifier is the provision of an effective damping control which is adjustable over a range of damping factors between 0.5 and 10 for optimum speaker match. This control does not change volume (i.e. overall feedback), nor increase distortion, and is not frequency discriminating.

The amplifier is supplied in kit form with all critical wiring preassembled on a rugged printed circuit board. Components used are of the finest grade, and no economies are made that will adversely affect performance or cause a deterioration in performance over the life of the amplifier. A full choke, condenser power supply is used, transformers are supplied fully potted in drawn steel containers, and tubes are operated well within ratings.

The heart of the amplifier is the new Acrosound TO-600 Output Transformer which combines extremely low leakage reactances between windings with a novel feedback winding\*\* providing a degree of feedback relatively unaffected by the reflected impedance of the speaker system. The speaker system may therefore have any degree of complexity or reflect either highly inductive or capacitive impedances with little effect on amplifier performance.

The amplifier is attractively styled and presents a professionally finished appearance that is both functional and pleasing.

\* Patent pending

**Rated output power:**

60 watts, 120 peak.

**IM Distortion:**

Less than 1% at 60 watts for any standard combination of test frequencies.

**Harmonic Distortion:**

Less than 1% at any frequency between 20 CPS and 20 KC at power output within 1 DB of 60 watts.

**Frequency Response:**

At 1 watt 1 DB from 5 CPS to 100 KC. At 60 watts 1 DB from 18 CPS to 30 KC. Note: There is no peaking at any frequency; the rolloff is gradual and controlled above 100 KC for best transient response.

**Square wave response:**

Undistorted squarewave response from 20 CPS to 20 KC with no overshoot or ringing. Capacity loads will not cause ringing or any other type of instability. Rise time of wave 1.5 microseconds.

**Sensitivity:**

1.8 Volts RMS for 60 watts output.

**Output Impedances:**

4, 8, and 16 ohms.

**Damping Factor:**

Variable from 0.5 to 10. Damping control may be switched out to provide a fixed damping factor of 15.

**Hum:**

90 DB below rated output.

**Size:**

7" by 15 1/8" by 8" high.

**Weight:**

30 lbs.

**Tubes:**

1-ECC83/12AX7, 1-ECC82/12AU7  
1-GZ 34, 2-EL 34/6CA7

**Color:**

Amplifier attractively finished in two-tone metallic Brown.

**Net Price:**

\$79.50 complete with all components. \$109.50 wired and assembled. Slightly higher in the west.

\*U.S. pat. #2,710,312 licensed by Kerco Enterprises

**ACRO PRODUCTS COMPANY, PHILA. 28, PA.**





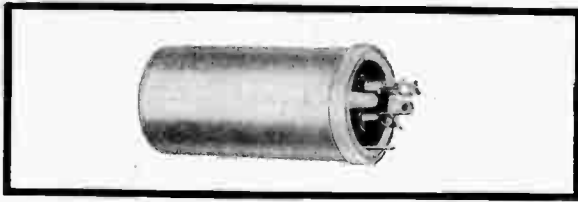


# CORNELL



# DUBILIER

## TWIST-PRONG BASE ELECTROLYTICS



Small round-can TWIST-PRONG electrolytic units. Each is furnished with a bakelite and a metal mounting washer.

X types are especially designed for SELENIUM RECTIFIER circuit applications. ONLY THIS TYPE SHOULD BE USED FOR THIS SERVICE.

TEMP. RANGE: to 475 V.D.C.W. +85°C.  
over 475 V.D.C.W. +65°C.

### ★ PREFERRED TYPE SINGLE SECTION

Single Section Cap./Volts	Rotational Stock No.	Size—Ins. Dia. x Lgth.	List Price	Net Price
10 Ohms 30 CPS.	A0010	3/4 x 2	\$2.50	\$1.50
.5 Ohms 15,750 CPS.	A0020	1 x 2	2.75	1.65
1 Ohms 60 CPS.	A0030	1 3/8 x 3	3.50	2.10
★ 2000/6	A0040	1 3/8 x 2	2.55	1.53
3000/10	A0050	1 3/8 x 2 1/2	3.65	2.19
★ 225/13	A0053	3/4 x 2	1.75	1.05
★ 1000/15	A0060	1 x 2 1/2	2.55	1.53
★ 2000/15	A0070	1 3/8 x 2 1/2	3.45	2.07
★ 3000/15	A0080	1 3/8 x 3	3.50	2.10
★ 40/25	A0090	3/4 x 2	1.35	.81
100/25	A0100	3/4 x 2	2.00	1.20
500/25	A0110	1 x 2 1/2	3.20	1.92
★ 500/25	A0120	1 x 2	2.55	1.53
★ 1000/25	A0130	1 3/8 x 2	3.55	2.13
★ 100/50	A0140	3/4 x 2	1.65	.99
★ 150/50	A0150	1 x 2	1.80	1.08
★ 500/50	A0160	1 3/8 x 2	2.65	1.59
★ 1000/50	A0170	1 3/8 x 3 3/8	3.75	2.25
★ 1500/50	A0174	1 3/8 x 4 1/8	3.85	2.31
★ 30/150	A0180	3/4 x 2	1.55	.93
40/150	A0190	1 x 2	2.00	1.20
40/150	XA0191	3/4 x 2	2.00	1.20
★ 50/150	A0200	1 x 2	1.65	.99
60/150	A0220	1 x 2	2.20	1.32
80/150	A0230	1 x 2	2.30	1.38
★ 80/150	XA0231	1 x 2	1.85	1.11
100/150	A0240	1 x 2 1/2	2.50	1.50
★ 100/150	XA0241	1 x 2 1/2	2.00	1.20
★ 120/150	XA0248	1 x 2 1/2	2.05	1.23
★ 120/150	A0250	1 3/8 x 2	2.05	1.23
150/150	A0260	1 x 3	2.70	1.62
★ 150/150	XA0261	1 x 3	2.15	1.29
★ 200/150	XA0262	1 3/8 x 2 1/2	2.45	1.47
★ 200/150	XA0262.1	1 x 3 3/8	2.45	1.47
★ 300/150	XA0263	1 3/8 x 3	2.80	1.68
80/200	XA0265	1 3/8 x 2	2.45	1.47
★ 120/200	XA0265.3	1 3/8 x 2	2.80	1.68
150/200	XA0266	1 3/8 x 2 1/2	3.50	2.10
★ 20/250	A0270	3/4 x 2	1.60	.96
30/250	A0280	1 x 2	2.15	1.29
40/250	A0290	1 x 2	2.25	1.35
★ 40/250	XA0291	1 x 2	1.80	1.08
60/250	A0300	1 x 2 1/2	2.55	1.53
80/250	A0310	1 x 3	2.70	1.62
★ 100/250	XA0312	1 x 3	2.70	1.62
★ 150/250	XA0315	1 3/8 x 2 1/2	3.10	1.86
★ 200/250	XA0318	1 3/8 x 3	3.95	2.37
50/300	A0320	1 x 2 1/2	2.55	1.53
60/300	XA0324	1 x 2 1/2	2.65	1.59
80/300	A0330	1 x 3	3.20	1.92
★ 80/300	XA0331	1 x 3	2.55	1.53
★ 100/300	A0340	1 3/8 x 3	2.90	1.74
★ 100/300	A0350	1 x 3 3/8	2.90	1.74
★ 150/300	XA0355	1 3/8 x 3	3.50	2.10

### SINGLE SECTION

Single Section Cap./Volts	Rotational Stock No.	Size—Ins. Dia. x Lgth.	List Price	Net Price
15/350	A0360	1 x 2	\$2.05	\$1.23
★ 30/350	A0370	1 x 2	1.90	1.14
★ 40/350	A0380	1 x 2 1/2	2.00	1.20
★ 50/350	A0390	1 x 3	2.10	1.26
80/350	A0400	1 3/8 x 2 1/2	3.55	2.13
★ 80/350	XA0401	1 3/8 x 2 1/2	2.80	1.68
125/350	A0410	1 3/8 x 3	4.55	2.73
★ 125/350	XA0411	1 3/8 x 3	3.65	2.19
★ 150/350	XA0415	1 3/8 x 3 3/8	3.95	2.37
80/400	A0420	1 3/8 x 3	3.70	2.22
★ 10/450	A0430	1 x 2	1.55	.93
10/450	A0440	3/4 x 2	1.95	1.17
15/450	A0450	1 x 2	2.15	1.29
★ 20/450	A0460	1 x 2	1.80	1.08
★ 30/450	A0470	1 x 2 1/2	1.95	1.17
★ 40/450	A0480	1 x 3	2.05	1.23
★ 50/450	A0490	1 x 3 3/8	2.35	1.41
★ 60/450	A0500	1 3/8 x 2 1/2	2.60	1.56
★ 80/450	A0510	1 3/8 x 3	3.05	1.83
★ 100/450	A0512	1 3/8 x 3	3.45	2.07
★ 125/450	A0514	1 3/8 x 4 1/8	3.75	2.25
★ 40/475	A0516	1 3/8 x 2	2.50	1.50
★ 10/500	A0520	1 x 2	1.60	.96
★ 20/500	A0530	1 x 2 1/2	1.85	1.11
25/500	A0532	1 x 2 1/2	2.45	1.47
30/500	A0540	1 x 3	2.50	1.50
★ 30/500	XA0541	1 x 3	2.00	1.20
★ 40/500	A0550	1 x 3 3/8	2.50	1.50
★ 80/500	A0560	1 3/8 x 3 3/8	3.20	1.92
★ 90/500	A0570	1 3/8 x 3 3/8	3.50	2.10

### DUAL SECTION

Single Section Cap./Volts	Rotational Stock No.	Size—Ins. Dia. x Lgth.	List Price	Net Price
.5 Ohms 15,750 CPS.	B0010	1 3/8 x 2	4.90	2.94
2.5 Ohms 60 CPS.	B0020	1 3/8 x 2	4.80	2.88
1000-500/6 VNP	B0030	1 x 3 3/8	4.40	2.64
★ 1000-1000/15	B0040	1 3/8 x 2 1/2	4.40	2.64
★ 1000-1000/15	B0045	1 x 2	3.15	1.89
★ 500-100/20	B0050	1 x 2	1.80	1.08
20-20/25	B0060	1 x 2	2.00	1.20
40-40/25	B0070	1 x 2	2.40	1.44
150-50/25	B0080	1 x 2	1.70	1.02
★ 50-50/50	B0085	1 x 2	2.10	1.26
★ 100-100/50	B0090	1 x 2	2.15	1.29
20-20/150	XB0091	1 x 2	1.70	1.02
★ 30-20/150	B0100	1 x 2	2.20	1.32
★ 30-30/150	B0110	1 x 2	1.85	1.11
★ 40-20/150	B0120	1 x 2	1.80	1.08
★ 40-30/150	B0130	1 x 2	1.85	1.11
40-40/150	B0140	1 x 2	2.40	1.44
★ 40-40/150	XB0141	1 x 2	1.90	1.14
★ 50-30/150	B0150	1 x 2	2.00	1.20
50-50/150	B0160	1 x 2 1/2	2.70	1.62
★ 50-50/150	XB0161	1 x 2 1/2	2.15	1.29
★ 60-60/150	XB0165	1 x 3	2.35	1.41
★ 75-75/150	B0170	1 x 3	2.60	1.56
80-40/150	B0180	1 x 2 1/2	2.90	1.74
★ 80-40/150	XB0181	1 x 2 1/2	2.30	1.38
★ 80-80/150	XB0183	1 3/8 x 2	2.65	1.59
100-100/150	XB0184	1 3/8 x 2 1/2	4.05	2.43
★ 125-100/150	XB0184.5	1 3/8 x 2 1/2	3.50	2.10
150-150/150	XB0185	1 3/8 x 3	4.40	2.64
200-5/150	B0186	1 3/8 x 2 1/2	3.40	2.04
★ 200-125/150	XB0187	1 3/8 x 3 3/8	3.75	2.25
★ 200-150/150	XB0188	1 3/8 x 3 3/8	3.75	2.25
★ 200-200/150	XB0189	1 3/8 x 3 3/8	4.00	2.40
★ 60-60/200	B0190	1 3/8 x 2	2.55	1.53
★ 100-100/200	XB0194	1 3/8 x 3	3.50	2.10
★ 200-5/200	XB0196	1 3/8 x 2 1/2	2.70	1.62
10-10/250	B0200	1 x 2	2.15	1.29
★ 20-20/250	B0210	1 x 2	1.90	1.14
30-30/280	B0220	1 x 2 1/2	2.90	1.74

# CORNELL



# DUBILIER

## TWIST-PRONG BASE ELECTROLYTICS

### ★ PREFERRED TYPE DUAL SECTION

Single Section Cap./Volts	Rotational Stock No.	Size—Ins. Dia. x Lgth.	List Price	Net Price
40-20/250	B0230	1 x 2½	\$2.75	\$1.65
40-40/250	B0240	1 x 3	3.20	1.92
★ 40-40/250	XB0241	1 x 3	2.50	1.50
80-40/250	XB0243	1½ x 2½	3.75	2.25
★ 150-150/250	B0250	1½ x 4½	5.15	3.09
★ 200-200/250	XB0252	1½ x 4½	6.10	3.66
40-40/300	XB0254	1 x 3	3.75	2.25
50-50/300	B0260	1½ x 2½	4.20	2.52
80-40/300	XB0264	1½ x 2½	4.45	2.67
★ 80-80/300	B0270	1½ x 3	4.05	2.43
★ 120-20/300	B0280	1½ x 3	4.00	2.40
120-40/300	B0282	1½ x 3½	5.45	3.27
★ 200-80/300	B0286	1½ x 3½	5.25	3.13
★ 15-15/350	B0290	1 x 2	2.25	1.35
20-20/350	B0300	1 x 2½	2.90	1.74
★ 30-30/350	B0310	1 x 3	2.90	1.74
★ 50-30/350	B0320	1½ x 2½	3.15	1.89
★ 80-20/350	B0322	1 x 3½	3.50	2.10
★ 80-20/350	B0324	1½ x 2½	3.50	2.10
★ 80-40/350	B0326	1½ x 3	3.95	2.37
★ 80-80/350	B0330	1½ x 3½	4.70	2.82
★ 90-40/350	B0331	1½ x 3	4.30	2.58
★ 100-100/350	B0332	1½ x 4½	6.15	3.69
★ 160-10/350	B0334	1½ x 3½	4.30	2.58
★ 40-120/400	B0336	1½ x 4½	5.25	3.15
60-60/400	B0340	1½ x 3½	5.50	3.30
80-10/400	B0350	1½ x 3	4.25	2.55
★ 80-60/400	B0354	1½ x 3½	4.85	2.91
★ 80-80/400	B0356	1½ x 4½	4.95	2.97
4-4/450	B0360	1 x 2	2.05	1.23
★ 5-5/450	B0362	1 x 2	1.60	.96
★ 10-10/450	B0370	1 x 2	1.90	1.14
15-10/450	B0374	1 x 2½	2.55	1.53
★ 15-15/450	B0380	1 x 2½	2.25	1.35
★ 20-10/450	B0390	1 x 2½	2.25	1.35
★ 20-20/450	B0400	1 x 3	2.55	1.53
★ 30-10/450	B0410	1 x 3	2.50	1.50
30-10/450	B0420	1½ x 2	3.00	1.80
★ 30-30/450	B0430	1½ x 2½	3.05	1.83
40-5/450	B0436	1 x 3	3.20	1.92
★ 40-20/450	B0440	1½ x 2½	3.00	1.80
★ 40-40/450	B0450	1½ x 3	3.45	2.07
★ 50-50/450	XB0455	1½ x 3	3.85	2.31
★ 60-20/450	B0460	1½ x 3	3.55	2.13
★ 60-40/450	B0462	1½ x 3½	3.95	2.37
60-60/450	B0464	1½ x 3½	5.65	3.39
★ 80-10/450	B0470	1½ x 3	3.60	2.16
★ 80-20/450	B0473	1½ x 3½	3.90	2.34
★ 80-40/450	B0480	1½ x 3½	4.35	2.61
★ 100-40/450	B0483	1½ x 4½	4.85	2.91
★ 15-15/475	B0485	1 x 2½	2.35	1.41
★ 30-10/475	B0486	1½ x 2	2.60	1.56
★ 40-10/475	B0487	1½ x 2½	3.10	1.86
★ 80-50/475	B0489	1½ x 4½	5.20	3.12
★ 10-10/500	B0490	1 x 2½	1.95	1.17
★ 20-20/500	B0500	1½ x 2½	2.85	1.71
25-40/500	B0510	1½ x 3	4.55	2.73
★ 30-10/500	B0520	1½ x 2½	2.60	1.56
★ 40-40/500	B0530	1½ x 3½	4.40	2.64
★ 60-40/500	B0540	1½ x 3½	4.60	2.76
★ 250/10 1000/6	B0550	1½ x 2	2.85	1.71
40/150 20/50	B0560	1 x 2	2.15	1.29
40/150 150/25	B0570	1 x 2	2.55	1.53
★ 50/150 500/5	B0574	1 x 2½	2.45	1.47
★ 150/150 100/25	B0575	1½ x 2½	2.70	1.62
60/200 125/25	B0576	1 x 3	3.00	1.80
40/250 20/25	B0580	1 x 2	2.50	1.50
50/250 100/50	B0590	1½ x 2	3.25	1.95
★ 100/250 150/50	B0600	1½ x 3	3.65	2.19
★ 35/300 500/6	XB0603	1 x 2½	2.80	1.68
80/300 100/50	B0606	1½ x 2½	3.95	2.37
★ 150/300 100/150	B0608	1½ x 3½	4.50	2.70
20/350 20/25	B0610	1 x 2	2.40	1.44
20/350 100/75	B0612	1 x 2½	2.80	1.68

### DUAL SECTION

Single Section Cap./Volts	Rotational Stock No.	Size—Ins. Dia. x Lgth.	List Price	Net Price
40/350 20/25	B0620	1 x 2½	\$2.95	\$1.77
★ 35/400 100/50	B0623	1 x 3	2.60	1.56
★ 100/400 30/50	B0626	1½ x 3	3.90	2.34
★ 10/450 20/25	B0630	1 x 2	1.70	1.02
20/450 20/25	B0640	1 x 2	2.50	1.50
20/450 100/25	B0646	1 x 2½	2.75	1.65
40/450 20/25	B0650	1 x 3	3.05	1.83
40/450 50/50	B0652	1 x 3½	3.75	2.25
80/450 20/25	B0660	1½ x 3	4.25	2.55
10/450 100/50	B0670	1½ x 2	2.55	1.53
★ 20/450 50/250	B0674	1 x 3	2.80	1.68
★ 20/450 80/350	B0680	1½ x 3	3.65	2.19
20/450 100/100	B0690	1½ x 2	3.30	1.98
30/450 40/150	B0700	1½ x 2	3.15	1.89
★ 30/450 200/150	B0705	1½ x 3	3.50	2.10
★ 40/450 10/350	B0710	1½ x 2	2.60	1.56
★ 50/450 100/50	B0713	1½ x 2½	3.00	1.80
★ 80/450 50/50	B0720	1½ x 3	3.50	2.10
★ 80/450 100/50	B0722	1½ x 3½	3.75	2.25
★ 20/475 100/400	B0726	1½ x 4½	4.50	2.70
15/500 20/300	B0730	1 x 2½	2.90	1.74
20/500 100/300	B0740	1½ x 3	4.95	2.97
40/500 50/200	B0750	1½ x 2½	4.20	2.52
60/500 80/150	B0760	1½ x 3½	4.70	2.82
80/500 50/50	B0770	1½ x 3½	4.75	2.85

### TRIPLE SECTION

Single Section Cap./Volts	Rotational Stock No.	Size—Ins. Dia. x Lgth.	List Price	Net Price
★ 20-20-20/25	C0010	1 x 2	1.95	1.17
★ 40-40-40/25	C0020	1 x 2	2.15	1.29
30-30-30/50	C0030	1 x 2	3.25	1.95
20-20-20/150	C0040	1 x 2	3.55	2.13
★ 20-20-20/150	XC0041	1 x 2	2.30	1.38
30-30-10/150	C0050	1 x 2	3.55	2.13
★ 40-20-10/150	C0060	1 x 2	2.35	1.41
40-20-20/150	C0070	1 x 2	3.60	2.16
★ 40-20-20/150	XC0071	1 x 2	2.40	1.44
★ 40-30-20/150	C0080	1 x 2	2.50	1.50
★ 40-40-40/150	C0090	1 x 2½	2.60	1.56
★ 40-70-40/150	C0100	1 x 3	2.95	1.77
★ 50-40-10/150	C0103	1 x 2½	2.55	1.53
★ 50-50-50/150	XC0105	1 x 3	3.00	1.80
★ 60-40-20/150	C0110	1 x 2½	2.75	1.65
★ 70-15-15/150	C0113	1 x 2½	2.70	1.62
★ 80-40-20/150	C0120	1 x 3	2.90	1.74
80-80-80/150	XC0123	1½ x 3	5.65	3.39
★ 120-80-40/150	XC0125	1½ x 3	3.80	2.28
★ 120-120-40/150	XC0126	1½ x 3	4.05	2.43
★ 200-100-60/150	XC0127	1½ x 3½	4.55	2.73
★ 200-150-150/150	XC0128	1½ x 4½	7.50	4.50
★ 250-200-10/150	XC0129	1½ x 4½	5.60	3.36
20-20-10/250	C0130	1 x 2	3.75	2.25
★ 20-20-20/250	C0132	1 x 2	2.60	1.56
30-20-10/250	C0140	1 x 2½	4.05	2.43
40-20-10/250	C0150	1½ x 2	4.30	2.58
★ 40-20-20/250	C0160	1 x 3	2.90	1.74
★ 80-80-60/250	C0170	1½ x 3½	4.90	2.94
20-80-10/300	C0180	1½ x 2½	5.70	3.42
★ 60-20-10/300	C0190	1½ x 2½	3.45	2.07
★ 80-40-40/300	C0194	1½ x 3	4.75	2.85
★ 120-50-40/300	C0200	1½ x 4½	5.65	3.39
★ 10-10-10/350	C0210	1 x 2	2.40	1.44
20-20-10/350	C0220	1 x 3	4.45	2.67
★ 30-20-10/350	C0225	1 x 3	3.25	1.95
★ 60-40-20/350	C0230	1½ x 3	4.25	2.55
60-40-40/350	C0232	1½ x 3½	7.05	4.23
★ 60-50-50/350	C0234	1½ x 3½	4.90	2.94
★ 80-60-60/350	C0236	1½ x 4½	5.55	3.33
★ 90-40-20/350	C0237	1½ x 3½	5.25	3.15
★ 100-100-10/350	C0238	1½ x 4½	5.50	3.30
★ 80-20-10/400	C0239	1½ x 3	4.30	2.58
★ 90-10-5/400	C0239.2	1½ x 3	4.40	2.64
★ 10-10-10/450	C0240	1 x 2½	2.60	1.56
15-15-10/450	C0250	1 x 3	4.45	2.67
★ 15-15-15/450	C0254	1 x 3	3.10	1.86

# CORNELL DUBILIER

## TWIST-PRONG BASE ELECTROLYTICS

★ PREFERRED TYPE **TRIPLE SECTION**

TRIPLE SECTION

Single Section Cap./Volts	Rotational Stock No.	Size—Ins. Dia. x Lgth.	List Price	Net Price	Single Section Cap./Volts	Rotational Stock No.	Size—Ins. Dia. x Lgth.	List Price	Net Price
★ 20-10-10/450	C0260	1 x 3	\$2.95	\$1.77	★ 200-20/300 10/100	C0733	1 3/4 x 4 1/4	\$4.90	\$2.94
★ 20-20-20/430	C0270	1 1/2 x 2 1/2	3.60	2.16	10-5/350 30/30	C0739	1 x 2 1/2	3.85	2.31
★ 30-20-20/430	C0280	1 3/4 x 3	3.85	2.31	10-5/350 150/30	C0740	1 x 3	4.05	2.43
30-30-20/450	C0290	1 3/4 x 3	6.15	3.69	10-10/350 20/23	C0730	1 x 2	3.40	2.04
★ 30-30-30/430	C0300	1 3/4 x 3	4.35	2.61	10-15/350 20/23	C0760	1 x 2	3.75	2.23
★ 30-60-10/430	C0310	1 3/4 x 3 1/2	4.50	2.70	★ 15-10/350 20/23	C0770	1 x 2	2.50	1.50
★ 40-10-10/430	C0320	1 3/4 x 3	3.35	2.01	★ 20-4/350 100/23	C0773	1 x 2 1/2	2.60	1.36
★ 40-30-20/430	C0330	1 3/4 x 3	4.30	2.58	★ 20-5/350 150/30	C0775	1 x 3	2.95	1.77
★ 40-40-10/430	C0340	1 3/4 x 3	4.20	2.52	★ 20-10/350 20/23	C0780	1 x 2	2.55	1.33
★ 40-40-20/450	C0344	1 3/4 x 3 1/2	4.45	2.67	★ 20-10/350 5/250	C0790	1 x 2	2.55	1.33
★ 40-40-40/430	C0350	1 3/4 x 3 1/2	4.90	2.94	★ 20-20/350 20/23	C0800	1 x 2 1/2	2.80	1.68
★ 50-40-30/450	C0353	1 3/4 x 3 1/2	4.90	2.94	★ 30-5/350 100/200	C0806	1 3/4 x 2 1/2	6.00	3.60
★ 60-20-20/450	C0360	1 3/4 x 3 1/2	4.60	2.76	30-10/350 20/23	C0810	1 x 2 1/2	4.30	2.38
★ 60-40-20/430	C0365	1 3/4 x 3 1/2	5.00	3.00	30-10/350 20/230	C0820	1 x 3	4.60	2.76
★ 80-40-20/430	C0370	1 3/4 x 4 1/4	5.40	3.26	★ 30-20/350 20/23	C0830	1 x 3	3.10	1.86
★ 30-30-20/473	C0371	1 3/4 x 3	4.75	2.83	★ 30-20/350 100/130	C0833	1 3/4 x 2 1/2	4.00	2.40
★ 40-20-20/473	C0372	1 3/4 x 3	4.75	2.83	★ 30-30/350 20/23	C0840	1 3/4 x 2	3.40	2.04
★ 40-30-10/473	C0373	1 3/4 x 3	4.50	2.70	★ 40-20/350 10/100	C0850	1 3/4 x 2	4.30	2.58
★ 40-30-30/473	C0374	1 3/4 x 3 1/2	5.15	3.09	20-40/350 10/130	C0860	1 x 3	4.80	2.88
★ 10-10-10/500	C0380	1 x 3	2.70	1.62	40-40/350 50/23	C0870	1 3/4 x 2 1/2	5.65	3.39
★ 30-20-20/500	C0390	1 3/4 x 3	4.20	2.52	★ 80-40/350 400/30	XC0874	1 3/4 x 4 1/4	5.65	3.39
★ 40-10-10/500	C0400	1 3/4 x 3	3.90	2.34	★ 100-60/350 20/250	C0873	1 3/4 x 4 1/4	5.50	3.30
★ 40-40-10/500	C0410	1 3/4 x 3 1/2	5.05	3.03	★ 20-20/400 10/330	C0876	1 x 3	3.00	1.80
★ 15-15/150 1208/1.5	C0420	1 x 2	3.00	1.80	★ 30-10/400 150/30	C0880	1 3/4 x 2 1/2	5.10	3.06
20-20/150 20/23	C0430	1 x 2	3.30	1.98	★ 60-30/400 20/330	C0883	1 3/4 x 3	4.55	2.73
20-20/150 20/25	KC0431	1 x 2	3.30	1.98	★ 80-40/400 150/30	C0890	1 3/4 x 3 1/2	5.15	3.09
20-20/150 100/10	C0440	1 x 2	3.55	2.13	★ 100-10/400 20/30	C0894	1 3/4 x 3 1/2	4.50	2.70
20-20/150 250/10	C0450	1 x 2	3.90	2.34	★ 100-10/400 80/350	C0896	1 3/4 x 4 1/4	6.10	3.66
30-30/150 20/23	C0460	1 x 2	3.55	2.13	15-5/450 15/350	C0900	1 x 3	4.30	2.38
30-30/150 200/10	C0470	1 x 2	3.75	2.25	★ 10-10/450 20/23	C0910	1 x 2	2.40	1.44
40-20/150 20/23	C0480	1 x 2	3.45	2.07	★ 10-10/450 40/30	C0920	1 x 2 1/2	2.50	1.50
★ 40-20/150 20/23	KC0481	1 x 2	2.30	1.38	10-10/450 50/100	C0930	1 3/4 x 2	4.00	2.40
40-20/150 100/23	C0490	1 x 2	3.75	2.25	15-15/450 20/23	C0940	1 x 2 1/2	4.15	2.49
40-20/150 100/10	C0500	1 x 2	3.60	2.16	★ 15-15/450 40/23	C0943	1 x 2 1/2	2.75	1.63
★ 40-20/150 200/23	C0510	1 x 2 1/2	2.70	1.62	15-15/450 10/300	C0950	1 x 3	4.35	2.61
★ 40-20/150 200/10	C0520	1 x 2	2.40	1.44	★ 20-10/450 20/23	C0960	1 x 2 1/2	2.70	1.62
40-20/150 250/10	C0530	1 x 2	4.05	2.43	★ 20-10/450 50/50	C0970	1 x 3	2.85	1.71
40-30/150 20/23	C0540	1 x 2	3.55	2.13	20-15/450 20/23	C0980	1 x 3	4.35	2.61
40-40/150 20/23	C0550	1 x 2	3.60	2.16	★ 20-20/450 20/23	C0990	1 x 3	3.05	1.83
★ 40-40/150 20/23	KC0551	1 x 2	2.40	1.44	20-20/450 100/30	C0992	1 3/4 x 2 1/2	5.25	3.15
★ 40-40/150 250/23	KC0553	1 x 3	3.15	1.89	20-20/450 60/350	C1000	1 3/4 x 3	6.10	3.66
★ 50-30/150 20/23	C0560	1 x 2	2.50	1.50	★ 30-10/450 150/30	C1003	1 3/4 x 2 1/2	3.50	2.10
★ 50-30/150 100/23	C0570	1 x 2 1/2	2.70	1.62	30-20/450 30/130	C1010	1 3/4 x 2 1/2	5.25	3.15
★ 50-50/150 20/23	C0580	1 x 2 1/2	2.65	1.59	★ 30-30/450 20/23	C1020	1 3/4 x 2 1/2	3.55	2.13
60-20/150 20/23	C0590	1 x 2	3.85	2.31	30-30/450 40/50	C1030	1 3/4 x 3	5.50	3.30
60-40/150 20/23	C0600	1 x 2 1/2	4.00	2.40	★ 30-30/450 125/23	C1034	1 3/4 x 3	3.95	2.37
★ 80-30/150 300/10	KC0602	1 3/4 x 2	3.15	1.89	★ 35-25/450 100/30	C1036	1 3/4 x 3	3.95	2.37
80-30/150 300/23	KC0604	1 3/4 x 2 1/2	5.50	3.30	★ 40-10/450 100/50	C1040	1 3/4 x 3	4.30	2.58
★ 80-40/150 20/23	C0610	1 x 2 1/2	2.80	1.68	★ 40-10/450 80/200	C1030	1 3/4 x 3	3.90	2.34
★ 80-40/150 300/23	KC0613	1 3/4 x 2 1/2	3.70	2.22	★ 40-20/450 20/23	C1060	1 3/4 x 2 1/2	3.50	2.10
★ 80-60/150 250/10	KC0615	1 3/4 x 2 1/2	3.40	2.04	★ 40-40/450 20/23	C1070	1 3/4 x 3	3.95	2.37
★ 100-80/150 200/10	KC0618	1 3/4 x 2 1/2	3.60	2.16	★ 40-40/450 40/23	C1080	1 3/4 x 3	3.95	2.37
120-60/150 20/23	C0620	1 3/4 x 2 1/2	5.05	3.03	★ 40-40/450 100/30	C1090	1 3/4 x 3 1/2	4.30	2.58
★ 300-80/150 200/50	C0626	1 3/4 x 4 1/4	4.95	2.97	★ 40-40/450 40/150	C1100	1 3/4 x 3 1/2	4.10	2.46
30-20/200 20/23	C0630	1 x 2	3.85	2.31	★ 40-40/450 60/200	C1102	1 3/4 x 3 1/2	4.45	2.67
★ 30-20/200 40/150	C0632	1 x 2 1/2	2.70	1.62	★ 40-40/450 80/350	C1103	1 3/4 x 4 1/4	5.55	3.33
40-80/200 100/50	C0634	1 3/4 x 3	5.25	3.15	★ 50-5/450 50/350	C1103.5	1 3/4 x 3 1/2	4.25	2.55
★ 60-5/200 20/50	C0636	1 x 2 1/2	2.50	1.50	★ 60-40/450 75/50	C1104	1 3/4 x 3 1/2	4.60	2.76
100-10/200 40/50	C0640	1 3/4 x 2	4.75	2.85	★ 80-10/450 125/23	C1106	1 3/4 x 3 1/2	4.40	2.64
★ 15-15/250 20/23	C0650	1 x 2	2.35	1.41	★ 80-20/450 100/50	C1108	1 3/4 x 4 1/4	4.80	2.88
20-15/250 20/23	C0660	1 x 2	3.55	2.13	★ 80-40/450 100/23	C1110	1 3/4 x 4 1/4	5.10	3.06
★ 30-30/250 20/23	C0670	1 x 2 1/2	2.80	1.68	★ 20-10/475 100/400	C1114	1 3/4 x 4 1/4	5.25	3.13
40-40/250 10/200	C0674	1 x 3	4.45	2.67	10-10/500 100/50	C1120	1 x 2	4.30	2.58
70-70/250 20/50	C0680	1 3/4 x 3	5.85	3.51	10-10/500 4/350	C1130	1 x 2 1/2	3.75	2.23
80-80/250 10/430	C0690	1 3/4 x 3 1/2	6.30	3.78	★ 20-10/500 100/50	C1150	1 x 3 1/2	3.30	1.98
★ 90-90/250 20/50	C0695	1 3/4 x 3	4.60	2.76	20-20/500 60/400	C1160	1 3/4 x 3 1/2	7.20	4.32
10-10/300 15/250	C0700	1 x 2	3.70	2.22	★ 20-20/500 60/430	C1162	1 3/4 x 3 1/2	4.85	2.91
20-20/300 20/23	C0710	1 x 2	4.15	2.49	★ 40/473 80-10/450	C1167	1 3/4 x 4 1/4	5.50	3.30
30-30/300 25/50	C0720	1 x 3	4.35	2.61	30-10/500 20/30	C1170	1 3/4 x 2 1/2	4.65	2.79
40-15/300 20/23	C0730	1 x 3	4.45	2.67	★ 40-40/500 100/200	C1180	1 3/4 x 4 1/4	5.85	3.51
40-20/300 20/23	KC732	1 x 2 1/2	4.65	2.79	100/100 50-25/23	C1190	1 x 3	4.00	2.40
★ 100-10/300 60/50	C0733	1 3/4 x 2 1/2	4.05	2.43	20/150 250-100/15	C1200	1 3/4 x 2	4.35	2.61
★ 140-10/300 200/150	C0734	1 3/4 x 4 1/4	5.50	3.30	★ 60/200 200-140/130	KC1202	1 3/4 x 4 1/4	4.80	2.88
★ 140-100/300 60/50	C0734.3	1 3/4 x 4 1/4	6.05	3.63	★ 10/300 500-500/15	KC1204	1 3/4 x 2 1/2	3.90	2.34







## MOUNTING HARDWARE



UNIVERSAL CLIPS



MOUNTING CLIPS



H

MOUNTING RINGS



"C" CLAMPS



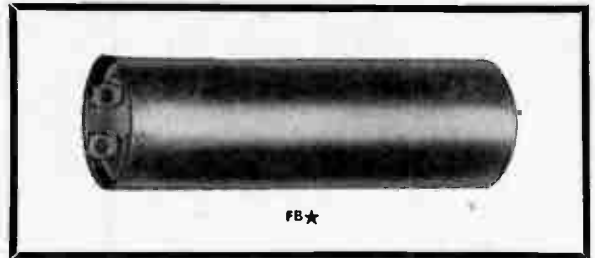
MOUNTING STRAPS



L

Part No.	Description	List Price	Sug- gested Resale
12125	Mounting Ring for 1 3/8" dio. Cons. . . . . L . . .	\$.20	\$.12
13590	Mounting Ring for 2 1/2" dio. Cons. . . . . L . . .	.50	.30
13591	Mounting Ring for 3" dio. Cons. . . . . L . . .	.50	.30
14464	Mounting Ring for 2" dio. Cons. . . . . L . . .	.50	.30
14582	Mounting Ring for 1" dio. Cons. . . . . L . . .	.20	.12
15266	Mounting Ring for 3 1/2" dio. Cons. . . . . L . . .	.50	.30
15591	Mounting Ring for 1 1/2" dio. Cons. . . . . L . . .	.30	.18
16279	Tubular Mounting Straps, 3/8" ID. . . . .	.15	.09
16280	Tubular Mounting Straps, 1/2" ID. . . . .	.15	.09
16285	Tubular Mounting Straps, 1 1/8" ID. . . . .	.15	.09
16693	Mounting Ring for 1 3/4" dio. Cons. . . . . L . . .	.40	.24
17203	Tubular Mounting Straps, 5/8" ID. . . . .	.15	.09
17516	Tubular Mounting Straps, 3/4" ID. . . . .	.15	.09
17517	Tubular Mounting Straps, 3/4" ID. . . . .	.15	.09
17842	Mounting Ring for 1" dio. Cons. . . . . H . . .	.20	.12
17843	Mounting Ring for 1 3/4" dio. Cons. . . . . H . . .	.20	.12
17844	Mounting Ring for 1 1/2" dio. Cons. . . . . H . . .	.30	.18
17920	"C" Clamp for 3/8"-3/4" Cons or Tubulars. . . . .	.30	.18
17921	"C" Clamp for 3/8"-1" Cons or Tubulars. . . . .	.30	.18
18573	Mounting Ring for 1 1/4" dio. Cons. . . . . H . . .	.20	.12
19213	Mounting Ring for 1 1/8" dio. Cons. . . . . H . . .	.20	.12
19883	Metal Washer for 1" . . . . .	.14	.08
19884	Bakelite Washer for 1" . . . . .	.14	.08
19887	Metal Washer for 1 3/8" . . . . .	.14	.08
19888	Bakelite Washer for 1 3/8" . . . . .	.14	.08
19890	Metal Washer for 3/4" . . . . .	.14	.08
19891	Bakelite Washer for 3/4" . . . . .	.14	.08
21368-1	Mounting Clip for 3/4" . . . . .	.30	.18
21368-2	Mounting Clip for 1" . . . . .	.30	.18
21368-3	Mounting Clip for 1 3/4" . . . . .	.30	.18
2272	Wrench for Mounting Units . . . . .	2.48	1.49
27886	Tubular Mounting Straps, 3/8" ID. . . . .	.15	.09
28521-1	Insulating Tube for 3/4" x 2" . . . . .	.14	.08
28521-4	Insulating Tube for 1" x 2" . . . . .	.14	.08
28521-5	Insulating Tube for 1" x 2 1/2" . . . . .	.14	.08
28521-6	Insulating Tube for 1" x 3" . . . . .	.14	.08
28521-7	Insulating Tube for 1 3/8" x 2" . . . . .	.14	.08
28521-8	Insulating Tube for 1 3/8" x 2 1/2" . . . . .	.14	.08
28521-9	Insulating Tube for 1 3/8" x 3" . . . . .	.14	.08
28521-12	Insulating Tube for 1 3/8" x 3 3/8" . . . . .	.14	.08
28521-13	Insulating Tube for 1 3/8" x 4 1/8" . . . . .	.14	.08
28521-19	Insulating Tube for 1" x 3 3/4" . . . . .	.14	.08
30010-1	Universal Clips, 3/8"-1 1/8" Cons or Tubulars. . . . .	.30	.18
30010-2	Universal Clips, 1/2"-3/8" Cons or Tubulars. . . . .	.30	.18
30010-3	Universal Clips, 3/8"-1 1/8" Cons or Tubulars. . . . .	.30	.18
30010-4	Universal Clips, 3/8"-1 1/8" Cons or Tubulars. . . . .	.30	.18
30010-5	Universal Clips, 3/8"-1 1/8" Cons or Tubulars. . . . .	.30	.18
30010-6	Universal Clips, 1" -1 1/8" Cons or Tubulars. . . . .	.30	.18
30010-7	Universal Clips, 1 3/8"-1 3/8" Cons or Tubulars. . . . .	.30	.18
30035	Bakelite Washer for 1" in 1 3/8" Hole Mounting. . . . .	.14	.08
30036	Metal Washer for 1" in 1 3/8" Hole Mounting. . . . .	.14	.08

## HIGH-CAPACITY LOW-VOLTAGE ELECTROLYTICS



Type FB capacitors in round cardboard sleeved aluminum cans are designed for high capacity, low voltage applications, and are especially popular as replacements in motion picture sound equipment, and other low voltage circuits.

TEMPERATURE RANGE to +85°C.

FB Cat. No.	Cap. Mfd.	D.C. W. Volts	Can†† Size—Inches Dia. x Lgth.	List Price	Net Price
FB 1005	500	10	1 3/4 x 2 3/8	\$3.10	\$1.86
FB 1010	1000	10	1 3/4 x 2 3/8	3.55	2.13
FB 1015	1500	10	1 3/4 x 2 3/8	3.75	2.25
FB 1020	2000	10	1 3/4 x 2 3/8	3.95	2.37
FB 1030	3000	10	1 3/4 x 3 3/8	4.35	2.61
FB 1040	4000	10	1 3/4 x 4 1/8	4.75	2.85
FB 1050	5000	10	1 1/2 x 4 1/8	5.15	3.09
FB 1060	6000	10	1 3/4 x 4 1/8	7.50	4.50
FB 1205	500	12	1 3/4 x 2 3/8	3.20	1.92
FB 1210	1000	12	1 3/4 x 2 3/8	3.75	2.25
FB 1215	1500	12	1 3/4 x 2 3/8	3.95	2.37
FB 1220	2000	12	1 3/4 x 3 3/8	4.15	2.49
FB 1225	2500	12	1 3/4 x 3 3/8	4.85	2.91
FB 1230	3000	12	1 3/4 x 4 1/8	5.05	3.03
FB 1240	4000	12	1 1/2 x 4 1/8	5.25	3.15
FB 1260	6000	12	2 x 4 1/8	9.35	5.61
FB 1505	500	15	1 3/4 x 2 3/8	3.25	1.95
FB 1510	1000	15	1 3/4 x 2 3/8	3.80	2.28
FB 1515	1500	15	1 3/4 x 2 3/8	4.00	2.40
FB 1520	2000	15	1 3/4 x 3 3/8	4.70	2.82
FB 1530	3000	15	1 3/4 x 4 1/8	5.15	3.09
FB 1540	4000	15	1 1/2 x 4 1/8	8.10	4.86
FB 1560	6000	15	2 x 4 1/8	10.00	6.00
FB 1805	500	18	1 3/4 x 2 3/8	3.00	1.80
FB 1810	1000	18	1 3/4 x 2 3/8	3.90	2.34
FB 1820	2000	18	1 3/4 x 3 3/8	4.90	2.94
FB 1840	4000	18	1 1/2 x 4 1/8	8.45	5.07
FB 2005	500	20	1 3/4 x 2 3/8	3.40	2.04
FB 2010	1000	20	1 3/4 x 3 3/8	4.10	2.46
FB 2020	2000	20	1 3/4 x 4 1/8	5.20	3.12
FB 2040	4000	20	2 x 4 1/8	8.75	5.25
FB 2505	500	25	1 3/4 x 2 3/8	3.55	2.13
FB 2510	1000	25	1 3/4 x 3 3/8	4.80	2.88
FB 2520	2000	25	1 3/4 x 4 1/8	5.75	3.45
FB 2530	3000	25	1 3/4 x 4 1/8	8.00	4.80
FB 2540	4000	25	2 x 4 1/8	9.50	5.70
FB 2550	5000	25	2 1/2 x 4 1/8	11.00	6.60
FB 3005	500	30	1 3/4 x 3 3/8	3.60	2.16
FB 3010	1000	30	1 3/4 x 4 1/8	4.90	2.94
FB 3020	2000	30	1 3/4 x 4 1/8	7.40	4.44
FB 3030	3000	30	2 x 4 1/8	8.95	5.37
FB 3040	4000	30	2 1/2 x 4 1/8	10.50	6.30
FB 3505	500	35	1 3/4 x 3 3/8	3.70	2.22
FB 3510	1000	35	1 3/4 x 4 1/8	5.00	3.00
FB 3520	2000	35	1 3/4 x 4 1/8	8.00	4.80
FB 3530	3000	35	2 x 4 1/8	9.50	5.70
FB 3540	4000	35	2 1/2 x 4 1/8	11.00	6.60
FB 4005	500	40	1 3/4 x 3 3/8	3.80	2.28
FB 4010	1000	40	1 3/4 x 4 1/8	6.50	3.90
FB 4020	2000	40	1 3/4 x 4 1/8	9.00	5.40
FB 4030	3000	40	2 x 4 1/8	10.50	6.30
FB 4040	4000	40	2 1/2 x 4 1/8	11.50	6.90
FB 5005	500	50	1 3/4 x 3 3/8	3.90	2.34
FB 5010	1000	50	1 3/4 x 4 1/8	7.00	4.20
FB 5020	2000	50	1 3/4 x 4 1/8	9.10	5.46
FB 5030	3000	50	2 x 4 1/8	11.50	6.90
FB 5040	4000	50	2 1/2 x 4 1/8	12.50	7.50

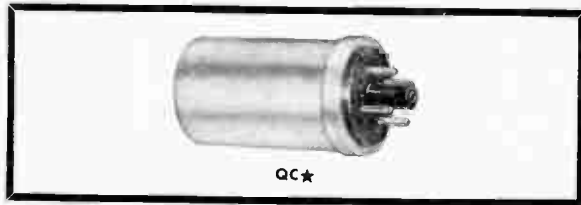
\*When JAN-C-62 units must be supplied, order according to specific CE type designations. ††For Overall Size add 1/16" to Diam. and 3/8" to Length.

# CORNELL



# DUBILIER

## PLUG-IN ELECTROLYTIC



Type QC Capacitors are hermetically sealed in round aluminum containers with a four-pin octal base. Ideally suited for experimental, testing, juke box, government communication receiver uses and applications where quick capacitor changes are required. Ground lugs are furnished with all multiple-section units for cathode connection.

TEMPERATURE RANGE: to +85°C; except,  
+65°C at 500 V.D.C.W.  
SINGLES

QC Cat. No.	Cap. Mfd.	D.C. W. Volts	Size—Inches Dia. x Lgth.	List Price	Net Price
QC 1045	10	450	1 1/32 x 2 1/2	\$4.05	\$2.43
QC 2045	20	450	1 1/32 x 2 1/2	4.30	2.58
QC 4045	40	450	1 3/8 x 2 1/2	4.55	2.73
QC 8045	80	450	1 3/8 x 3 1/2	5.55	3.33
QC 4030	40	500	1 3/8 x 2 1/2	5.00	3.00

### DUALS

QC 2215	20-20	150	1 1/32 x 2 1/2	4.20	2.52
QC 4415	40-40	150	1 1/32 x 2 1/2	4.40	2.64
QC 5515	50-50	150	1 1/32 x 2 1/2	4.65	2.79
QC 8815	80-80	150	1 3/8 x 2 1/2	5.15	3.09
QC 1145	10-10	450	1 1/32 x 2 1/2	4.40	2.64
QC 2245	20-20	450	1 3/8 x 2 1/2	5.05	3.03
QC 3345	30-30	450	1 3/8 x 3	5.55	3.33
QC 4445	40-40	450	1 3/8 x 3 1/2	5.90	3.54
QC 2250	20-20	500	1 3/8 x 2 1/2	5.30	3.18

### TRIPLES

QC 22215	20-20-20	150	1 1/32 x 2 1/2	4.85	2.91
QC 44415	40-40-40	150	1 3/8 x 2 1/2	5.10	3.06
QC 11145	10-10-10	450	1 1/32 x 2 1/2	5.10	3.06
QC 22245	20-20-20	450	1 3/8 x 3	6.10	3.65
QC 4245C	40-20-20	450/25	1 3/8 x 3	6.00	3.60
QC 11150	10-10-10	500	1 3/8 x 2 1/2	5.30	3.18

### QUADRUPLES

QC 11145C	10-10-10/20	450/25	1 3/8 x 2 1/2	5.65	3.39
QC 33145C	30-30-10/20	450/50	1 3/8 x 4 1/4	6.85	4.11

## Ultra Small Aluminum-Cased Electrolytics



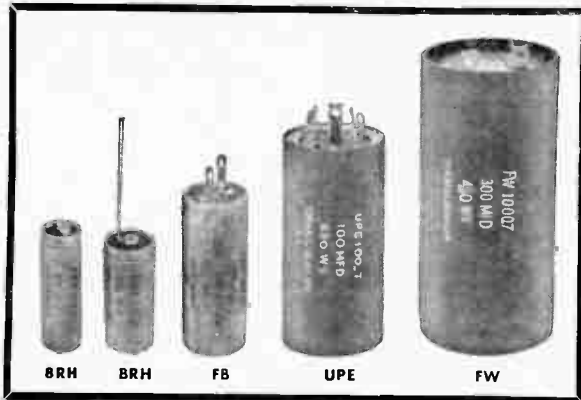
Type NL capacitors are ultra-small, compression sealed, aluminum foil units. They are housed in aluminum containers which in turn are covered by a skin-tight, clear plastic insulating sleeve. The tinned copper pigtails are securely anchored in crimped stud terminals.

They are especially recommended for use in printed circuit assemblies, miniature radios, recorders, hearing aids, portable TV cameras and similar compact equipments.

TEMPERATURE RANGE: -20°C. to +65°C.

NL Cat. No.	Cap. Mfd.	WVDC	Can Size—Inches Diam. x Length	List Price	Net Price
NL 5-1	5	1	5/16 x 1/2	\$1.25	.75
NL 2-3	2	3	3/16 x 1/2	1.25	.75
NL 10-3	10	3	1/4 x 3/8	1.25	.75
NL 25-3	25	3	1/4 x 3/8	1.25	.75
NL 40-3	40	3	1/4 x 3/8	1.25	.75
NL 50-3	50	3	1/4 x 3/8	1.25	.75
NL 110-3	110	3	3/8 x 3/4	1.40	.84
NL 200-3	200	3	3/8 x 1	1.50	.90
NL 1-6	1	6	5/16 x 1/2	1.25	.75

## H. V. PHOTOFLASH



Cat. No.	Cap. Mfd.	D.C. W. Volts	OVERALL Size—Inches Dia. x Length	Watt Seconds	List Price	Net Price
UPE 100T*	100	450	1 1/16 x 3 1/4	10	\$5.50	\$3.30
FB 10063*	200	450	2 3/16 x 4 1/2	20	6.85	4.11
FW 10005†	200	500	2 3/16 x 4 3/8	25	10.50	6.30
FW 10007†	300	450	2 3/16 x 4 3/8	30	10.50	6.30
FWS 10000†	300	450	2 3/16 x 4 3/8	30	11.50	6.90
FA 10300*	400	450	2 3/16 x 4 1/2	40	17.95	10.77
FWSN 10001†	525	450	2 3/16 x 4 3/8	53	22.60	13.56

\*Aluminum can with cardboard sleeve.

## L. V. PHOTOFLASH

Cat. No.	Cap. Mfd.	D.C. W. Volts	OVERALL Size—Inches Dia. x Length	List Price	Net Price
BR 10001♦	40	150	3/4 x 1 1/16	\$1.35	\$.81
FB 10077♦	100	30	1 x 2 11/16	3.35	2.01
BRH 10062♦	125	25	3/4 x 1 15/16	1.35	.81
BRH 10067♦	150	50	3/4 x 1 11/16	1.35	.81
BRH 2525*	250	25	1 1/8 x 1 1/8	1.70	1.02

\*Aluminum can with cardboard sleeve. †Bakelite Case—Screw Terminals.  
♦Aluminum can—no sleeve. ‡Bakelite Case—Solder Lug Terminals.

NL Cat. No.	Cap. Mfd.	WVDC	Can Size—Inches Diam. x Length	List Price	Net Price
NL 2-6	2	6	3/16 x 1/2	\$1.25	.75
NL 3-6	3	6	3/16 x 1/2	1.25	.75
NL 4-6	4	6	3/16 x 3/8	1.25	.75
NL 5-6	5	6	3/16 x 3/8	1.25	.75
NL 8-6	8	6	1/4 x 3/8	1.35	.81
NL 10-6	10	6	1/4 x 3/8	1.35	.81
NL 15-6	15	6	1/4 x 3/8	1.35	.81
NL 20-6	20	6	1/4 x 3/8	1.35	.81
NL 25-6	25	6	1/4 x 3/8	1.35	.81
NL 30-6	30	6	3/8 x 3/8	1.40	.84
NL 40-6	40	6	3/8 x 3/8	1.40	.84
NL 50-6	50	6	3/8 x 3/8	1.40	.84
NL 60-6	60	6	3/8 x 3/8	1.40	.84
NL 100-6	100	6	3/8 x 7/8	1.50	.90
NL 10-10	10	10	1/4 x 3/8	1.35	.81
NL 15-10	15	10	1/4 x 3/8	1.35	.81
NL 25-10	25	10	3/8 x 3/8	1.35	.81
NL 50-10	50	10	3/8 x 3/4	1.45	.87
NL 100-10	100	10	3/8 x 1	1.60	.96
NL 5-15	5	15	1/4 x 3/8	1.40	.84
NL 10-15	10	15	1/4 x 3/8	1.40	.84
NL 20-15	20	15	3/8 x 3/8	1.45	.87
NL 30-15	30	15	3/8 x 3/4	1.50	.90
NL 5-25	5	25	1/4 x 3/8	1.40	.84
NL 6-25	6	25	1/4 x 3/8	1.40	.84
NL 10-25	10	25	3/8 x 3/8	1.45	.87
NL 15-25	15	25	3/8 x 3/8	1.45	.87
NL 20-25	20	25	3/8 x 3/4	1.50	.90
NL 5-50	5	50	1/4 x 3/8	1.45	.87
NL 10-50	10	50	3/8 x 3/8	1.50	.90
NL 20-50	20	50	3/8 x 3/4	1.50	.90

★When JAN-C-62 units must be supplied, order according to specific CE type designations.



## MOLDED TUBULAR "The CUB"



### A New Champion!

tops in the  
field of  
molded tubular  
capacitors

## C-D's Cub

The Cornell-Dubilier "CUB" is an *outstandingly superior* molded capacitor unequalled by any molded tubular heretofore developed. The "CUB" possesses characteristics that will meet the wide and demanding applications found in critical industrial, military and experimental electronic equipment.

This is the unit recommended for general replacement service. Sold exclusively through C-D electronic parts Distributors.

- ◆ Extra Hard, Non-Inflammable Bakelite Case
- ◆ Dry Assembly — Sealed After Impregnation
- ◆ Survives 30 Cycles JAN And MIL Temperature & Immersion Tests
- ◆ 50% Greater Resistance To Humidity
- ◆ 15%-25% Greater Voltage Breakdown
- ◆ Extra Strong Copper-weld Leads Eliminate Breakage

TEMP. RANGE: HT Compound —40°C to +90°C  
Dykanol "C" —55°C to +100°C

### THE CUB

CUB	Cat. No.	Cap. Mfd.	Size—Inches Dia. x Length	List Price	Net Price
<b>200 V. D.C.</b>					
CUB 252		.02	3/8 x 1	\$.25	\$.15
CUB 2547		.047	3/16 x 1 1/4	.25	.15
CUB 255		.05	3/16 x 1 1/4	.25	.15
CUB 2P1		.1	3/16 x 1 1/4	.35	.21
CUB 2P15		.15	9/16 x 1 1/2	.35	.21
CUB 2P22		.22	1 1/16 x 1 3/8	.40	.24
CUB 2P25		.25	1 1/16 x 1 3/8	.40	.24
CUB 2P47		.47	1 1/16 x 1 3/8	.60	.36
CUB 2P5		.5	1 1/16 x 1 3/8	.60	.36
CUB 2W1		1.0	3/4 x 2 1/4	.90	.54
<b>400 V. D.C.</b>					
CUB 451		.01	3/8 x 1	.25	.15
CUB 452		.02	3/16 x 1 1/4	.25	.15
CUB 4522		.022	3/16 x 1 1/4	.25	.15
CUB 4547		.047	3/16 x 1 1/4	.30	.18
CUB 455		.05	3/16 x 1 1/4	.30	.18
CUB 4568		.068	3/16 x 1 1/2	.35	.21
CUB 4P1		.1	9/16 x 1 1/2	.35	.21
CUB 4P15		.15	9/16 x 1 1/2	.35	.21
CUB 4P22		.22	1 1/16 x 1 3/8	.40	.24
CUB 4P25		.25	1 1/16 x 1 3/8	.40	.24
CUB 4P47		.47	3/4 x 2 1/4	.60	.36
CUB 4P5		.5	3/4 x 2 1/4	.60	.36
*ST 4W1		1.0	1 x 2 1/2	.90	.54

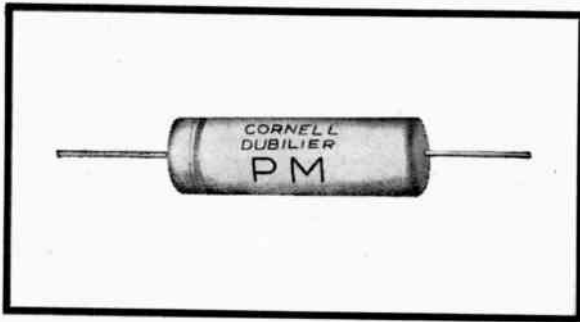
### THE CUB

CUB	Cat. No.	Cap. Mfd.	Size—Inches Dia. x Length	List Price	Net Price
<b>600 V. D.C.</b>					
CUB 6T1		.0001	3/8 x 1	\$.25	\$.15
CUB 6T25		.00025	3/8 x 1	.25	.15
CUB 6T4		.0004	3/8 x 1	.25	.15
CUB 6T5		.0005	3/8 x 1	.25	.15
CUB 6D1		.001	3/8 x 1	.25	.15
CUB 6D15		.0015	3/8 x 1	.25	.15
CUB 6D2		.002	3/8 x 1	.25	.15
CUB 6D22		.0022	3/8 x 1	.25	.15
CUB 6D3		.003	3/8 x 1	.25	.15
CUB 6D33		.0033	3/8 x 1	.25	.15
CUB 6D4		.004	3/8 x 1	.25	.15
CUB 6D47		.0047	3/8 x 1	.25	.15
CUB 6D5		.005	3/8 x 1	.25	.15
CUB 6D6		.006	3/16 x 1 1/4	.25	.15
CUB 6D68		.0068	3/16 x 1 1/4	.30	.18
CUB 651		.01	3/16 x 1 1/4	.30	.18
CUB 6515		.015	3/16 x 1 1/4	.30	.18
CUB 652		.02	3/16 x 1 1/4	.30	.18
CUB 6522		.022	3/16 x 1 1/4	.30	.18
CUB 653		.03	3/16 x 1 1/4	.35	.21
CUB 6533		.033	9/16 x 1 1/2	.35	.21
CUB 654		.04	9/16 x 1 1/2	.35	.21
CUB 6547		.047	9/16 x 1 1/2	.40	.24
CUB 655		.05	9/16 x 1 1/2	.40	.24
CUB 656		.06	1 1/16 x 1 3/8	.40	.24
CUB 6568		.068	1 1/16 x 1 3/8	.40	.24
CUB 6P1		.1	1 1/16 x 1 3/8	.45	.27
CUB 6P2		.2	3/4 x 2 1/4	.55	.33
CUB 6P22		.22	3/4 x 2 1/4	.55	.33
CUB 6P25		.25	3/4 x 2 1/4	.55	.33
*ST 6P5		.5	1 x 2 1/2	.80	.48
<b>1000 V. D.C.</b>					
CUB 10T5		.0005	3/8 x 1	.50	.30
CUB 10D1		.001	3/8 x 1	.50	.30
CUB 10D15		.0015	3/8 x 1	.50	.30
CUB 10D2		.002	3/8 x 1	.50	.30
CUB 10D22		.0022	3/8 x 1	.50	.30
CUB 10D3		.003	3/8 x 1	.50	.30
CUB 10D4		.004	7/16 x 1 1/4	.50	.30
CUB 10D47		.0047	7/16 x 1 1/4	.50	.30
CUB 10D5		.005	7/16 x 1 1/4	.50	.30
CUB 10D68		.0068	7/16 x 1 1/4	.50	.30
CUB 10S1		.01	9/16 x 1 1/2	.50	.30
CUB 10S15		.015	9/16 x 1 1/2	.50	.30
CUB 10S2		.02	9/16 x 1 1/2	.50	.30
CUB 10S22		.022	9/16 x 1 1/2	.50	.30
CUB 10S3		.03	9/16 x 1 1/2	.50	.30
CUB 10S33		.035	1 1/16 x 1 3/8	.60	.36
CUB 10S47		.047	1 1/16 x 1 3/8	.60	.36
CUB 10S5		.05	1 1/16 x 1 3/8	.60	.36
CUB 10S68		.068	1 1/16 x 1 3/8	.65	.39
CUB 10P1		.1	3/4 x 2 1/4	.75	.45
<b>1600 V. D.C.</b>					
CUB 16T5		.0005	3/16 x 1 1/4	.65	.39
CUB 16D1		.001	3/16 x 1 1/4	.65	.39
CUB 16D15		.0015	3/16 x 1 1/4	.65	.39
CUB 16D2		.002	3/16 x 1 1/4	.65	.39
CUB 16D22		.0022	3/16 x 1 1/4	.65	.39
CUB 16D3		.003	3/16 x 1 1/4	.65	.39
CUB 16D33		.0033	3/16 x 1 1/4	.65	.39
CUB 16D4		.004	3/16 x 1 1/4	.65	.39
CUB 16D47		.0047	3/16 x 1 1/4	.65	.39
CUB 16D5		.005	3/16 x 1 1/4	.65	.39
CUB 16D6		.006	9/16 x 1 1/2	.65	.39
CUB 16D68		.0068	9/16 x 1 1/2	.65	.39
CUB 16D7		.007	9/16 x 1 1/2	.65	.39
CUB 16D75		.0075	9/16 x 1 1/2	.65	.39
CUB 16D8		.008	9/16 x 1 1/2	.65	.39
CUB 16S1		.01	9/16 x 1 1/2	.70	.42
CUB 16S15		.015	9/16 x 1 1/2	.70	.42
CUB 16S2		.02	1 1/16 x 1 3/8	.70	.42
CUB 16S22		.022	1 1/16 x 1 3/8	.70	.42
CUB 16S3		.03	1 1/16 x 1 3/8	.70	.42
CUB 16S4		.04	3/4 x 2 1/4	.70	.42
CUB 16S5		.05	3/4 x 2 1/4	.70	.42
<b>6000 V. D.C.</b>					
CUB 60T5		.0005	9/16 x 1 1/2	1.35	.81
CUB 60D1		.001	9/16 x 1 1/2	1.35	.81
CUB 60D5		.005	1 1/16 x 1 3/8	1.35	.81
<b>10,000 V. D.C.</b>					
CUB 100T5		.0005	1 1/16 x 1 3/8	1.50	.90
<b>12,500 V. D.C.</b>					
CUB 125T25		.00025	1 1/16 x 1 3/8	1.70	1.02

\*Furnished as a "BUDROC" unit.



# MOLDED MYLAR\* TUBULARS



Cornell-Dubilier NEW PM SERIES of molded† tubular capacitors are designed to meet the need for a rugged, high-temperature MOLDED unit. These fine capacitors are fabricated with the Du Pont Company's latest new dielectric material, "MYLAR" which maintains excellent electrical characteristics at temperatures up to +130°C.

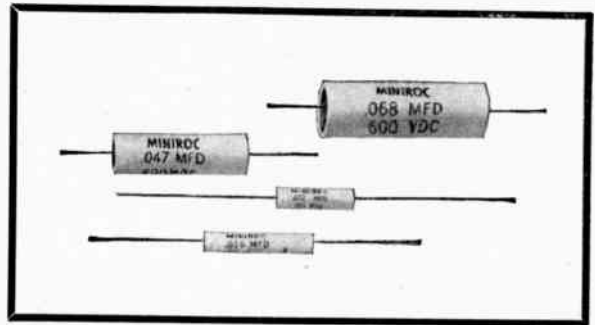
- ◆ **TEMPERATURE RANGE:** -55°C to +130°C. No voltage derating required to +100°C; to 130°C derate only to 75%.
- ◆ **NON-INDUCTIVE:** Construction insures low resistance connections and low RF impedance
- ◆ **MOISTURE RESISTANT:** Exceeds JAN-C-91 requirements.
- ◆ **THERMOSET:** Firmly secures leads and sections to withstand extremes of handling, vibration, shock and soldering temperatures.

\*DU PONT trade mark.

†For metal-cased Mylar tubulars—See Type TWM Bul. No. 151.

PM Cat. No.	Cap. Mfd.	Dimensions—Inches Diameter x Length	List Price	Net Price
<b>400 V. D.C.W.</b>				
PM 451	.010	5/16 x 1	\$.45	\$.27
PM 4515	.015	3/8 x 1 1/4	.45	.27
PM 4522	.022	1/2 x 1 1/4	.45	.27
PM 4533	.033	3/8 x 1 1/4	.50	.30
PM 4547	.047	1/2 x 1 1/4	.55	.33
PM 4568	.068	1/2 x 1 1/2	.65	.39
PM 4P1	.10	1/2 x 1 1/2	.65	.39
PM 4P15	.15	9/16 x 1 9/16	.75	.45
PM 4P22	.22	3/4 x 1 7/8	.90	.54
PM 4P33	.33	11/16 x 1 13/16	1.05	.63
PM 4P47	.47	3/4 x 2 1/4	1.45	.87
PM 4P68	.68	1 x 2 1/2	2.05	1.23
PM 4W1	1.00	1 x 2 1/2	2.40	1.44
<b>600 V. D.C.W.</b>				
PM 6T5	.0005	5/16 x 1	.45	.27
PM 6D1	.0010	5/16 x 1	.45	.27
PM 6D15	.0015	5/16 x 1	.45	.27
PM 6D22	.0022	5/16 x 1	.45	.27
PM 6D33	.0033	5/16 x 1	.45	.27
PM 6D47	.0047	3/8 x 1 1/4	.45	.27
PM 6D68	.0068	3/8 x 1 1/4	.55	.33
PM 6S1	.010	3/8 x 1 1/4	.55	.33
PM 6S15	.015	3/8 x 1 1/4	.55	.33
PM 6S22	.022	1/2 x 1 1/4	.55	.33
PM 6S33	.033	1/2 x 1 1/2	.65	.39
PM 6S47	.047	1/2 x 1 1/2	.70	.42
PM 6S68	.068	9/16 x 1 9/16	.70	.42
PM 6P1	.10	3/4 x 1 7/8	.80	.48
PM 6P15	.15	11/16 x 1 13/16	1.00	.60
PM 6P22	.22	3/4 x 2 1/4	1.15	.69
PM 6P33	.33	1 x 2 1/2	1.45	.87
PM 6P47	.47	1 x 2 1/2	1.85	1.11
<b>1600 V. D.C.W.</b>				
PM 16D1	.0010	3/8 x 1 1/4	1.15	.69
PM 16D15	.0015	3/8 x 1 1/4	1.15	.69
PM 16D22	.0022	3/8 x 1 1/4	1.15	.69
PM 16D33	.0033	3/8 x 1 1/4	1.15	.69
PM 16D47	.0047	1/2 x 1 1/4	1.15	.69
PM 16D68	.0068	1/2 x 1 1/2	1.15	.69
PM 16S1	.010	1/2 x 1 1/2	1.25	.75
PM 16S15	.015	1/2 x 1 1/2	1.25	.75
PM 16S22	.022	3/8 x 1 7/8	1.25	.75
PM 16S33	.033	3/8 x 1 7/8	1.25	.75
PM 16S47	.047	11/16 x 1 13/16	1.35	.81
PM 16S68	.068	3/4 x 2 1/4	1.65	.99
PM 16P1	.10	1 x 2 1/2	2.30	1.38

# STEATITE-CASED MYLAR\*



Cornell-Dubilier "MINIROC" tubular capacitors are high quality, sub-miniature, high temperature components in non-metallic (Steatite) cases. Fabricated from DuPont "Mylar" polyester film dielectric material.

- ◆ **STEATITE CASES:** Conform to JAN-1-10. Carefully processed for maximum protection against moisture.
- ◆ **POLYKANE END FILL:** Anchors lead wires and sections securely, will not crack, soften, or flow.
- ◆ **MOISTURE RESISTANT:** Exceeds MIL-C-91 requirements.
- ◆ **NON-INDUCTIVE:** Extended foil construction insures low resistance connections and low RF impedance.
- ◆ **STRONG CONSTRUCTION:** Withstands extremes of soldering temperature without damage to the case material, moisture seal, lead connections, or electrical performance.
- ◆ **WIDE TEMPERATURE RANGE:** Rated from -55°C to +130°C.

\*DU PONT trade mark.

STM Cat. No.	Cap. Mfd.	Dimensions—Inches Diameter x Length	List Price	Net Price
<b>100 V. D.C.W.</b>				
STM 1D1	.001	.170 x 3/4	\$.80	\$.48
STM 1D15	.0015	.170 x 3/4	.80	.48
STM 1D22	.0022	.170 x 3/4	.80	.48
STM 1D33	.0033	.170 x 3/4	.85	.51
STM 1D47	.0047	.170 x 3/4	.85	.51
STM 1D68	.0068	.170 x 3/4	.85	.51
STM 1S1	.01	.170 x 3/4	.90	.54
STM 1S15	.015	.190 x 3/4	.90	.54
STM 1S22	.022	.190 x 1 1/16	.90	.54
STM 1S33	.033	1/4 x 1 1/16	.95	.57
STM 1S47	.047	1/4 x 1 1/16	.95	.57
STM 1S68	.068	5/16 x 1 1/16	1.00	.60
STM 1P1	.10	5/16 x 1 1/16	1.00	.60
<b>400 V. D.C.W.</b>				
STM 4D1	.001	.170 x 3/4	.80	.48
STM 4D15	.0015	.170 x 3/4	.80	.48
STM 4D22	.0022	.190 x 3/4	.85	.51
STM 4D33	.0033	.170 x 1 1/16	.85	.51
STM 4D47	.0047	.170 x 1 1/16	.85	.51
STM 4D68	.0068	.190 x 1 1/16	.90	.54
STM 4S1	.01	1/4 x 1 1/16	.90	.54
STM 4S15	.015	1/4 x 1 1/16	.90	.54
STM 4S22	.022	5/16 x 1 1/16	.95	.57
STM 4S33	.033	3/8 x 1 1/16	.95	.57
STM 4S47	.047	3/8 x 1 1/4	1.00	.60
STM 4S68	.068	7/16 x 1 1/4	1.00	.60
STM 4P1	.10	1/2 x 1 1/4	1.00	.60
<b>600 V. D.C.W.</b>				
STM 6D1	.001	.170 x 3/4	.80	\$.48
STM 6D15	.0015	.190 x 3/4	.85	.51
STM 6D22	.0022	.190 x 1 1/16	.85	.51
STM 6D33	.0033	.190 x 1 1/16	.85	.51
STM 6D47	.0047	1/4 x 1 1/16	.85	.51
STM 6D68	.0068	1/4 x 1 1/16	.90	.54
STM 6S1	.01	5/16 x 1 1/16	.90	.54
STM 6S15	.015	5/16 x 1 1/16	.95	.57
STM 6S22	.022	3/8 x 1 1/16	.95	.57
STM 6S33	.033	3/8 x 1 1/4	1.00	.60
STM 6S47	.047	7/16 x 1 1/4	1.10	.66
STM 6S68	.068	1/2 x 1 1/2	1.20	.72
STM 6P1	.10	9/16 x 1 1/2	1.50	.90



## STEATITE-CASED TUBULARS



C-D "BUDROC" capacitors are made with non-inductive paper and extended foil elements housed in the finest grade ceramic (steatite) tubes with Polykane end-seals. "BUDROCS" are designed and especially recommended for manufacturing applications.

- ◆ HIGH TEMPERATURE: Vikane-impregnated units (rated 600 VDCW and over) —55°C to +100°C. Units rated up to 400 VDCW impregnated with HT compound —40°C to +90°C.
- ◆ POLYKANE END-FILL
- ◆ MOISTURE RESISTANT
- ◆ STURDY CONSTRUCTION
- ◆ STURDY CONNECTIONS
- ◆ LONG LIFE

ST Cat. No.	Capacity Mfd.	Size—Inches Dia x L	List Price	Net Price
<b>200 VDCW</b>				
ST 252	.02	3/8 x 1 1/4	\$.25	\$.15
ST 253	.05	3/8 x 1 1/4	.25	.15
ST 2P1	.10	7/16 x 1 1/4	.35	.21
ST 2P25	.25	11/16 x 1 1/4	.40	.24
ST 2P5	.50	11/16 x 1 1/4	.60	.36
ST 2W1	1.00	1 x 2 1/4	.90	.54
<b>400 VDCW</b>				
ST 451	.01	5/16 x 1	.25	.15
ST 452	.02	3/8 x 1 1/4	.25	.15
ST 4522	.022	3/8 x 1 1/4	.25	.15
ST 4547	.047	7/16 x 1 1/4	.30	.18
ST 455	.05	7/16 x 1 1/4	.30	.18
ST 4568	.068	7/16 x 1 1/2	.35	.21
ST 4P1	.10	1/2 x 1 1/2	.35	.21
ST 4P15	.15	7/16 x 1 1/2	.40	.24
ST 4P22	.22	11/16 x 1 1/2	.40	.24
ST 4P25	.25	11/16 x 1 1/2	.40	.24
ST 4P5	.50	11/16 x 2 1/4	.60	.36
ST 4W1	1.00	1 x 2 1/4	.90	.54
<b>600 VDCW</b>				
ST 6T5	.0005	5/16 x 1	.25	.15
ST 6D1	.001	5/16 x 1	.25	.15
ST 6D15	.0015	5/16 x 1	.25	.15
ST 6D2	.002	5/16 x 1	.25	.15
ST 6D22	.0022	5/16 x 1	.25	.15
ST 6D3	.003	5/16 x 1	.25	.15
ST 6D33	.0033	5/16 x 1	.25	.15
ST 6D4	.004	5/16 x 1	.25	.15
ST 6D47	.0047	5/16 x 1	.25	.15
ST 6D5	.005	5/16 x 1	.25	.15
ST 6D68	.0068	3/8 x 1 1/4	.30	.18
ST 6S1	.01	3/8 x 1 1/4	.30	.18
ST 6S15	.015	3/8 x 1 1/4	.30	.18
ST 6S2	.02	7/16 x 1 1/4	.30	.18
ST 6S22	.022	7/16 x 1 1/4	.30	.18
ST 6S25	.025	7/16 x 1 1/4	.35	.21
ST 6S3	.03	7/16 x 1 1/2	.35	.21
ST 6S4	.04	1/2 x 1 1/2	.35	.21
ST 6S47	.047	1/2 x 1 1/2	.40	.24
ST 6S5	.05	1/2 x 1 1/2	.40	.24
ST 6S68	.068	9/16 x 1 3/4	.45	.27
ST 6P1	.10	11/16 x 1 3/4	.45	.27
ST 6P25	.25	13/16 x 2 1/4	.55	.33
ST 6P5	.50	1 x 2 1/4	.80	.48
<b>1600 VDCW</b>				
ST 16D1	.001	3/8 x 1 1/4	.65	.39
ST 16D15	.0015	3/8 x 1 1/4	.65	.39
ST 16D2	.002	3/8 x 1 1/4	.65	.39
ST 16D22	.0022	3/8 x 1 1/4	.65	.39
ST 16D3	.003	7/16 x 1 1/4	.65	.39
ST 16D33	.0033	7/16 x 1 1/4	.65	.39
ST 16D4	.004	7/16 x 1 1/4	.65	.39
ST 16D47	.0047	7/16 x 1 1/4	.65	.39
ST 16D5	.005	7/16 x 1 1/4	.65	.39
ST 16D56	.0056	7/16 x 1 1/4	.65	.39
ST 16D68	.0068	1/2 x 1 1/2	.65	.39
ST 16D82	.0082	1/2 x 1 1/2	.65	.39
ST 16S1	.01	1/2 x 1 1/2	.70	.42
ST 16S15	.015	1/2 x 1 1/2	.70	.42
ST 16S2	.02	9/16 x 1 3/4	.70	.42
ST 16S25	.025	11/16 x 1 3/4	.70	.42
ST 16S3	.03	11/16 x 1 3/4	.70	.42
ST 16S4	.04	3/4 x 2	.70	.42

## MOLDED PLASTIC TUBULARS



Cornell-Dubilier "TINY-CHIEFS" are one of the toughest little capacitors ever offered servicemen for all types of television, auto radios, and other compact electronic equipment.

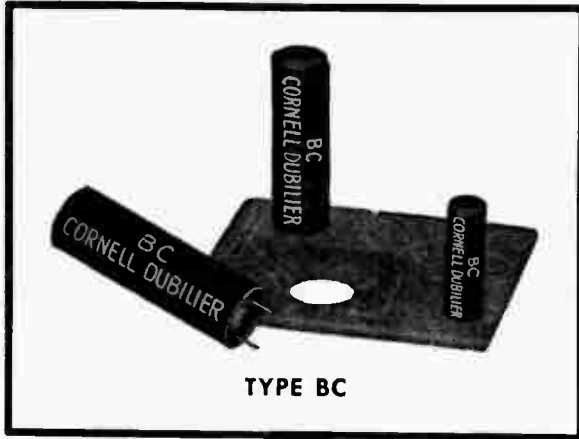
- ◆ Molded In Extra Hard Plastic
- ◆ Tested At Twice Rated Voltage
- ◆ Excellent Capacitance Stability
- ◆ Solidly Anchored Leads

TEMPERATURE RANGE: —40°C to +85°C.

PJ Cat. No.	Cap. Mfd.	Size—Inches Dia. & Length	List Price	Net Price
<b>200 V. D.C.</b>				
PJ 252	.02	3/8 x 1 1/4	\$.25	\$.15
PJ 253	.05	3/8 x 1 1/4	.25	.15
PJ 2P1	.1	7/16 x 1 1/4	.35	.21
PJ 2P25	.25	7/16 x 1 1/4	.45	.27
PJ 2P5	.5	7/16 x 1 1/4	.60	.36
PJ 2W1	1.0	3/4 x 2 1/4	.90	.54
<b>400 V. D.C.</b>				
PJ 451	.01	5/16 x 1	.25	.15
PJ 452	.02	3/8 x 1 1/4	.25	.15
PJ 4522	.022	3/8 x 1 1/4	.25	.15
PJ 4547	.047	7/16 x 1 1/4	.30	.18
PJ 455	.05	7/16 x 1 1/4	.30	.18
PJ 4568	.068	7/16 x 1 1/2	.35	.21
PJ 4P1	.1	1/2 x 1 1/2	.35	.21
PJ 4P15	.15	7/16 x 1 1/2	.40	.24
PJ 4P22	.22	11/16 x 1 1/2	.40	.24
PJ 4P25	.25	11/16 x 1 1/2	.40	.24
PJ 4P5	.5	11/16 x 2 1/4	.60	.36
PJ 4W1	1.0	1 x 2 1/4	.90	.54
<b>600 V. D.C.</b>				
PJ 6T5	.00025	5/16 x 1	.25	.15
PJ 6T5	.0005	5/16 x 1	.25	.15
PJ 6D1	.001	5/16 x 1	.25	.15
PJ 6D15	.0015	5/16 x 1	.25	.15
PJ 6D2	.002	5/16 x 1	.25	.15
PJ 6D22	.0022	5/16 x 1	.25	.15
PJ 6D3	.003	5/16 x 1	.25	.15
PJ 6D33	.0033	5/16 x 1	.25	.15
PJ 6D4	.004	5/16 x 1	.25	.15
PJ 6D47	.0047	5/16 x 1	.25	.15
PJ 6D5	.005	5/16 x 1	.25	.15
PJ 6D6	.006	3/8 x 1 1/4	.25	.15
PJ 6D68	.0068	3/8 x 1 1/4	.30	.18
PJ 6S1	.01	3/8 x 1 1/4	.30	.18
PJ 6S15	.015	3/8 x 1 1/4	.30	.18
PJ 6S2	.02	7/16 x 1 1/4	.30	.18
PJ 6S22	.022	7/16 x 1 1/4	.30	.18
PJ 6S25	.025	7/16 x 1 1/4	.35	.21
PJ 6S3	.03	7/16 x 1 1/2	.35	.21
PJ 6S4	.04	1/2 x 1 1/2	.35	.21
PJ 6S47	.047	1/2 x 1 1/2	.40	.24
PJ 6S5	.05	1/2 x 1 1/2	.40	.24
PJ 6S68	.068	9/16 x 1 3/4	.40	.24
PJ 6P1	.1	11/16 x 1 3/4	.45	.27
PJ 6P25	.25	13/16 x 2 1/4	.55	.33
PJ 6P5	.5	1 x 2 1/4	.80	.48
<b>1600 V. D.C.</b>				
PJ 16D1	.001	3/8 x 1 1/4	.65	.39
PJ 16D15	.0015	3/8 x 1 1/4	.65	.39
PJ 16D2	.002	3/8 x 1 1/4	.65	.39
PJ 16D22	.0022	3/8 x 1 1/4	.65	.39
PJ 16D3	.003	7/16 x 1 1/4	.65	.39
PJ 16D33	.0033	7/16 x 1 1/4	.65	.39
PJ 16D4	.004	7/16 x 1 1/4	.65	.39
PJ 16D47	.0047	7/16 x 1 1/4	.65	.39
PJ 16D5	.005	7/16 x 1 1/4	.65	.39
PJ 16D55	.0055	7/16 x 1 1/4	.65	.39
PJ 16D6	.006	7/16 x 1 1/4	.65	.39
PJ 16D68	.0068	7/16 x 1 1/4	.65	.39
PJ 16D7	.007	7/16 x 1 1/4	.65	.39
PJ 16D75	.0075	7/16 x 1 1/4	.65	.39
PJ 16D8	.008	7/16 x 1 1/4	.65	.39
PJ 16S1	.01	1/2 x 1 1/2	.70	.42
PJ 16S15	.015	1/2 x 1 1/2	.70	.42
PJ 16S2	.02	9/16 x 1 3/4	.70	.42
PJ 16S25	.025	11/16 x 1 3/4	.70	.42
PJ 16S3	.03	11/16 x 1 3/4	.70	.42
PJ 16S4	.04	3/4 x 1 1/2	.70	.42



## PHENOLIC-CASED PAPER TUBULAR FOR PRINTED CIRCUITS



TYPE BC

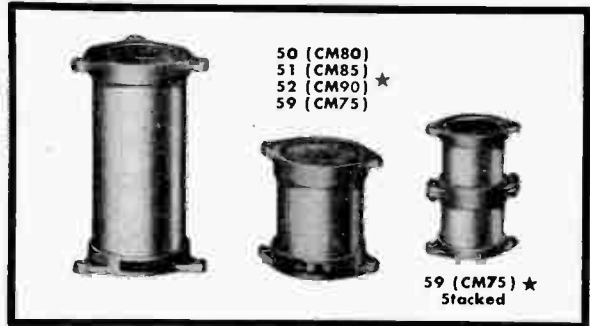
- ◆ **PARALLEL LEAD WIRES:** May be plugged directly into printed circuit.
- ◆ **PRE-MOLDED PHENOLIC SHELL:** No distortion and no stresses are set up because capacitor section is not subjected to molding pressures.
- ◆ **WIDE TEMPERATURE RANGE:** Vikane impregnated units (rated at 600 WVDC) will withstand operating temperature from  $-55^{\circ}\text{C}$  to  $+100^{\circ}\text{C}$ . Units impregnated with HT compound (rated at 400 WVDC and 200 WVDC) will with-
- stand operating temperatures from  $-40^{\circ}\text{C}$  to  $+90^{\circ}\text{C}$ .
- ◆ **POLYKANE FILL:** Securely anchors leads, locks section in place and provides a barrier to moisture.
- ◆ **SOLID CONNECTIONS:** Leads are soldered directly to the extended tails for low resistance connections.
- ◆ **STRONG CONSTRUCTION:** Will withstand the extremes of soldering temperatures without damage to case material, moisture seal, lead connections or electrical performance.

Type	Cap. Mfd.	Size	List Price	Net Price
<b>200 V. D.C.</b>				
BC 2D68J	.0068	$\frac{3}{8} \times 1$	\$.30	\$.18
BC 2S1J	.01	$\frac{3}{8} \times 1$	.30	.18
BC 2S15J	.015	$\frac{3}{8} \times 1\frac{1}{4}$	.30	.18
BC 2S22J	.022	$\frac{3}{8} \times 1\frac{1}{4}$	.35	.21
BC 2S33J	.033	$\frac{1}{2} \times 1\frac{1}{4}$	.35	.21
BC 2S47J	.047	$\frac{1}{2} \times 1\frac{1}{4}$	.35	.21
BC 2S68J	.068	$\frac{1}{2} \times 1\frac{1}{4}$	.35	.21
BC 2P1J	.10	$\frac{1}{2} \times 1\frac{1}{2}$	.40	.24
BC 2P15J	.15	$\frac{1}{2} \times 1\frac{1}{2}$	.45	.27
BC 2P22J	.22	$\frac{3}{4} \times 1\frac{3}{4}$	.50	.30
BC 2P33J	.33	$\frac{3}{4} \times 1\frac{3}{4}$	.55	.33
BC 2P47J	.47	$\frac{3}{4} \times 2\frac{1}{2}$	.65	.39
BC 2P68J	.68	$\frac{3}{4} \times 2\frac{1}{2}$	.70	.42
<b>600 V. D.C.</b>				
BC 6D1J	.001	$\frac{3}{8} \times 1$	.30	.18
BC 6D15J	.0015	$\frac{3}{8} \times 1$	.30	.18
BC 6D22J	.0022	$\frac{3}{8} \times 1$	.30	.18
BC 6D33J	.0033	$\frac{3}{8} \times 1$	.30	.18
BC 6D47J	.0047	$\frac{3}{8} \times 1$	.30	.18
BC 6D68J	.0068	$\frac{3}{8} \times 1$	.30	.18
BC 6S1J	.01	$\frac{3}{8} \times 1\frac{1}{4}$	.35	.21
BC 6S15J	.015	$\frac{3}{8} \times 1\frac{1}{4}$	.35	.21
BC 6S22J	.022	$\frac{1}{2} \times 1\frac{1}{4}$	.40	.24
BC 6S33J	.033	$\frac{1}{2} \times 1\frac{1}{4}$	.40	.24
BC 6S47J	.047	$\frac{1}{2} \times 1\frac{1}{2}$	.45	.27
BC 6S68J	.068	$\frac{3}{4} \times 1\frac{1}{2}$	.50	.30
BC 6P1J	.10	$\frac{3}{8} \times 1\frac{1}{4}$	.55	.33
BC 6P15J	.15	$\frac{3}{8} \times 2\frac{1}{2}$	.60	.36
BC 6P22J	.22	$\frac{3}{8} \times 2\frac{1}{2}$	.65	.39
BC 6P33J	.33	$\frac{3}{8} \times 2\frac{1}{2}$	.70	.42
*BC 6P47J	.47	$\frac{3}{8} \times 2\frac{1}{2}$	.70	.42

\*Rated at 400 V. D.C.

★ When JAN-C-5 units must be supplied, order according to specific CM type designations listed in C-D Mica Capacitor Catalog No. 420.

## HIGH-POWER MICA CERAMIC-CASED



### \*SIZE DATA

Type 50 — 5" x 3 1/2" x 3" high    Type 51 — 6 1/2" x 5" x 4" high  
Type 52 — 6 1/2" x 5" x 5 3/4" high  
Type 59 — 3 1/16" x 2 1/16" x 2 1/2" high

### BROADCAST TRANSMITTING TYPES

Cat. No.	Cap. Mfd.	Peak Working Voltage	List Price	Net Price
<b>BROADCAST TYPE 50</b>				
2210-50	.0001	10,000	\$65.55	\$39.33
2220-50	.00015	10,000	65.55	39.33
2230-50	.0002	10,000	65.55	39.33
2251-50	.00051	10,000	65.55	39.33
2271-50	.00082	10,000	65.55	39.33
2280-50	.001	10,000	65.55	39.33
2300-50	.0015	10,000	65.55	39.33
2310-50	.002	10,000	65.55	39.33
2333-50	.0043	8,000	65.55	39.33
2341-50	.0051	6,000	65.55	39.33
2360-50	.01	5,000	69.15	41.49
2370-50	.015	4,000	69.15	41.49
2380-50	.02	3,000	69.15	41.49

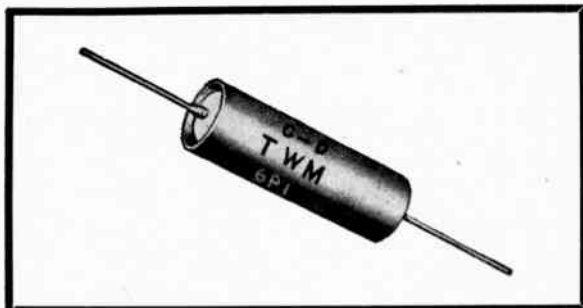
Cat. No.	Cap. Mfd.	Peak Working Voltage	List Price	Net Price
<b>BROADCAST TYPE 51</b>				
2411-51	.000051	20,000	\$111.90	\$67.14
2420-51	.0001	20,000	121.00	72.60
2430-51	.00015	20,000	126.00	75.60
2440-51	.0002	20,000	131.10	78.66
2483-51	.00051	20,000	137.15	82.29
2501-51	.00082	20,000	137.15	82.29
2510-51	.001	20,000	141.15	84.69
2530-51	.0015	15,000	143.20	85.92
2550-51	.002	15,000	143.20	85.92
2583-51	.0043	12,000	151.25	90.75
2591-51	.0051	10,000	151.25	90.75
2610-51	.01	8,000	147.20	88.32
2620-51	.02	5,000	151.25	90.75

Cat. No.	Cap. Mfd.	Peak Working Voltage	List Price	Net Price
<b>BROADCAST TYPE 52</b>				
2710-52	.0001	30,000	\$210.30	\$126.18
2720-52	.00015	30,000	210.30	126.18
2740-52	.0003	30,000	221.16	132.70
2763-52	.00043	30,000	221.16	132.70
2773-52	.00051	30,000	221.16	132.70
2791-52	.00082	30,000	221.16	132.70
2800-52	.001	30,000	229.10	137.46
2820-52	.002	20,000	229.10	137.46
2853-52	.0043	15,000	234.30	140.58
2861-52	.0051	15,000	242.00	145.20
2882-52	.0082	12,000	260.00	156.00
2890-52	.01	10,000	272.44	163.46
2911-52	.043	5,000	272.44	163.46

Cat. No.	Cap. Mfd.	Peak Working Voltage	List Price	Net Price
<b>BROADCAST TYPE 59</b>				
2011-59	.000051	6,000	\$38.20	\$22.92
2020-59	.0001	6,000	40.60	24.36
2040-59	.0002	6,000	40.60	24.36
2060-59	.0003	6,000	42.60	25.56
2083-59	.00051	6,000	46.65	27.99
2100-59	.001	6,000	46.65	27.99
2120-59	.002	6,000	48.90	29.34
2140-59	.003	6,000	50.60	30.36
2161-59	.0051	4,000	50.60	30.36
2170-59	.01	4,000	51.45	30.87
2180-59	.02	2,000	51.45	30.87

# CORNELL DUBILIER

## MINIATURE METAL-CASED TUBULARS "DEMICONs"



Cornell-Dubilier DEMICONs are hermetically sealed in metal cases, with glass-to-metal seal terminals and are available in a wide variety of mounting styles, impregnants, tolerances, and internal construction. See Bulletins NB-147 and NB-151.

**STANDARD TOLERANCE:** ± 20%.

**TEMPERATURE RANGE:**

TWH	High Temperature wax	- 40°C to + 85°C.
TWC	"Dykanal C"	- 55°C to + 85°C.
TWU	"Dykanal U"	- 55°C to + 125°C.
TWM	"Mylar" polyester film	- 55°C to + 160°C.

PRICES shown below are for BASIC STYLE—UNGROUND.

\*Registered Cornell-Dubilier trade mark. \*\*Registered Dupont trade mark.

### "BASIC" STYLE UNGROUNDED

#### DEMICONs

TWH	Cat. No.	Cap. Mfd.	V.D.C.W.	Size—Inches Dia. x Length	List Price	Net Price
TWH 1D1	.001	100	.175 x 3/4	\$2.25	<b>\$1.35</b>	
TWH 1D47	.0047	100	.175 x 3/4	2.30	<b>1.38</b>	
TWH 1S1	.01	100	.175 x 3/4	2.30	<b>1.38</b>	
TWH 1S22	.022	100	.175 x 3/4	2.30	<b>1.38</b>	
TWH 1S47	.047	100	.235 x 3/4	2.35	<b>1.41</b>	
TWH 1P1	.1	100	.312 x 7/8	2.50	<b>1.50</b>	
TWH 1P22	.22	100	.400 x 1 1/8	2.55	<b>1.53</b>	
TWH 1P47	.47	100	.400 x 1 1/8	2.70	<b>1.62</b>	
TWH 1W1	1.0	100	.562 x 1 1/8	3.20	<b>1.92</b>	
TWH 2D1	.001	200	.235 x 3/4	2.35	<b>1.41</b>	
TWH 2D47	.0047	200	.235 x 3/4	2.40	<b>1.44</b>	
TWH 2S1	.01	200	.235 x 3/4	2.40	<b>1.44</b>	
TWH 2S22	.022	200	.235 x 3/4	2.40	<b>1.44</b>	
TWH 2S47	.047	200	.312 x 7/8	2.50	<b>1.50</b>	
TWH 2P1	.1	200	.312 x 7/8	2.60	<b>1.56</b>	
TWH 2P47	.47	200	.562 x 1 1/8	2.95	<b>1.77</b>	
TWH 2W1	1.0	200	.562 x 1 1/8	3.30	<b>1.98</b>	
TWH 4D1	.001	400	.235 x 3/4	2.40	<b>1.44</b>	
TWH 4D47	.0047	400	.235 x 3/4	2.45	<b>1.47</b>	
TWH 4S1	.01	400	.235 x 3/4	2.50	<b>1.50</b>	
TWH 4S22	.022	400	.312 x 7/8	2.55	<b>1.53</b>	
TWH 4S47	.047	400	.312 x 7/8	2.55	<b>1.53</b>	
TWH 4P1	.1	400	.400 x 1 1/8	2.70	<b>1.62</b>	
TWH 4P47	.47	400	.562 x 1 1/8	3.35	<b>2.01</b>	
TWH 4W1	1.0	400	.750 x 2 1/8	3.90	<b>2.34</b>	

TWC	Cat. No.	Cap. Mfd.	V.D.C.W.	Size—Inches Dia. x Length	List Price	Net Price
TWC 1D1	.001	100	.175 x 3/4	\$2.30	<b>\$1.38</b>	
TWC 1D47	.0047	100	.175 x 3/4	2.35	<b>1.41</b>	
TWC 1S1	.01	100	.175 x 3/4	2.40	<b>1.44</b>	
TWC 1S22	.022	100	.195 x 3/4	2.40	<b>1.44</b>	
TWC 1S47	.047	100	.312 x 7/8	2.50	<b>1.50</b>	
TWC 1P1	.1	100	.312 x 7/8	2.60	<b>1.56</b>	
TWC 1P47	.47	100	.562 x 1 1/8	3.00	<b>1.80</b>	
TWC 1W1	1.0	100	.562 x 1 1/8	3.40	<b>2.04</b>	
TWC 2D1	.001	200	.235 x 3/4	2.40	<b>1.44</b>	
TWC 2D47	.0047	200	.235 x 3/4	2.45	<b>1.47</b>	
TWC 2S1	.01	200	.235 x 3/4	2.50	<b>1.50</b>	
TWC 2S22	.022	200	.235 x 3/4	2.50	<b>1.50</b>	
TWC 2S47	.047	200	.312 x 7/8	2.60	<b>1.56</b>	
TWC 2P1	.1	200	.400 x 1 1/8	2.70	<b>1.62</b>	
TWC 2P22	.22	200	.400 x 1 1/8	2.90	<b>1.74</b>	
TWC 2P47	.47	200	.562 x 1 1/8	3.25	<b>1.95</b>	

### TWC (cont'd)

TWC	Cat. No.	Cap. Mfd.	V.D.C.W.	Size—Inches Dia. x Length	List Price	Net Price
TWC 2W1	1.0	200	.670 x 1 7/8	\$3.80	<b>\$2.28</b>	
TWC 4D1	.001	400	.235 x 3/4	2.50	<b>1.50</b>	
TWC 4D47	.0047	400	.235 x 3/4	2.50	<b>1.50</b>	
TWC 4S1	.01	400	.235 x 3/4	2.55	<b>1.53</b>	
TWC 4S22	.022	400	.312 x 7/8	2.65	<b>1.59</b>	
TWC 4S47	.047	400	.400 x 7/8	2.75	<b>1.65</b>	
TWC 4P1	.1	400	.400 x 1 1/8	2.90	<b>1.74</b>	
TWC 4P22	.22	400	.562 x 1 1/8	3.25	<b>1.95</b>	
TWC 4P47	.47	400	.670 x 1 7/8	3.75	<b>2.25</b>	
TWC 6D1	.001	600	.235 x 3/4	2.50	<b>1.50</b>	
TWC 6D47	.0047	600	.235 x 3/4	2.55	<b>1.53</b>	
TWC 6S1	.01	600	.312 x 7/8	2.65	<b>1.59</b>	
TWC 6S22	.022	600	.312 x 7/8	2.70	<b>1.62</b>	
TWC 6S47	.047	600	.400 x 1 1/8	2.80	<b>1.68</b>	
TWC 6P1	.1	600	.562 x 1 1/8	3.10	<b>1.86</b>	
TWC 6P22	.22	600	.562 x 1 1/8	3.45	<b>2.07</b>	
TWC 6P47	.47	600	.750 x 2 1/8	4.05	<b>2.43</b>	

TWU	Cat. No.	Cap. Mfd.	V.D.C.W.	Size—Inches Dia. x Length	List Price	Net Price
TWU 1D1	.001	100	.175 x 3/4	\$2.60	<b>\$1.56</b>	
TWU 1D47	.0047	100	.175 x 3/4	2.60	<b>1.56</b>	
TWU 1S1	.01	100	.175 x 3/4	2.65	<b>1.59</b>	
TWU 1S22	.022	100	.195 x 3/4	2.65	<b>1.59</b>	
TWU 1S47	.047	100	.312 x 7/8	2.80	<b>1.68</b>	
TWU 1P1	.1	100	.312 x 7/8	2.90	<b>1.74</b>	
TWU 1P47	.47	100	.562 x 1 1/8	3.35	<b>2.01</b>	
TWU 1W1	1.0	100	.562 x 1 1/8	3.80	<b>2.28</b>	
TWU 2D1	.001	200	.235 x 3/4	2.70	<b>1.62</b>	
TWU 2D47	.0047	200	.235 x 3/4	2.75	<b>1.65</b>	
TWU 2S1	.01	200	.235 x 3/4	2.80	<b>1.68</b>	
TWU 2S22	.022	200	.235 x 3/4	2.80	<b>1.68</b>	
TWU 2S47	.047	200	.312 x 7/8	2.90	<b>1.74</b>	
TWU 2P1	.1	200	.400 x 7/8	3.00	<b>1.80</b>	
TWU 2P22	.22	200	.400 x 1 1/8	3.20	<b>1.92</b>	
TWU 2P47	.47	200	.562 x 1 1/8	3.60	<b>2.16</b>	
TWU 2W1	1.0	200	.670 x 1 7/8	4.25	<b>2.55</b>	
TWU 4D1	.001	400	.235 x 3/4	2.80	<b>1.68</b>	
TWU 4D47	.0047	400	.235 x 3/4	2.80	<b>1.68</b>	
TWU 4S1	.01	400	.235 x 3/4	2.85	<b>1.71</b>	
TWU 4S22	.022	400	.312 x 7/8	2.95	<b>1.77</b>	
TWU 4S47	.047	400	.400 x 7/8	3.05	<b>1.83</b>	
TWU 4P1	.1	400	.400 x 1 1/8	3.25	<b>1.95</b>	
TWU 4P22	.22	400	.562 x 1 1/8	3.60	<b>2.16</b>	
TWU 4P47	.47	400	.670 x 1 7/8	4.20	<b>2.52</b>	
TWU 6D1	.001	600	.235 x 3/4	2.80	<b>1.68</b>	
TWU 6D47	.0047	600	.235 x 3/4	2.85	<b>1.71</b>	
TWU 6S1	.01	600	.312 x 7/8	2.95	<b>1.77</b>	
TWU 6S22	.022	600	.312 x 7/8	3.00	<b>1.80</b>	
TWU 6S47	.047	600	.400 x 1 1/8	3.15	<b>1.89</b>	
TWU 6P1	.1	600	.562 x 1 1/8	3.50	<b>2.10</b>	
TWU 6P22	.22	600	.562 x 1 1/8	3.90	<b>2.34</b>	
TWU 6P47	.47	600	.750 x 2 1/8	4.55	<b>2.73</b>	

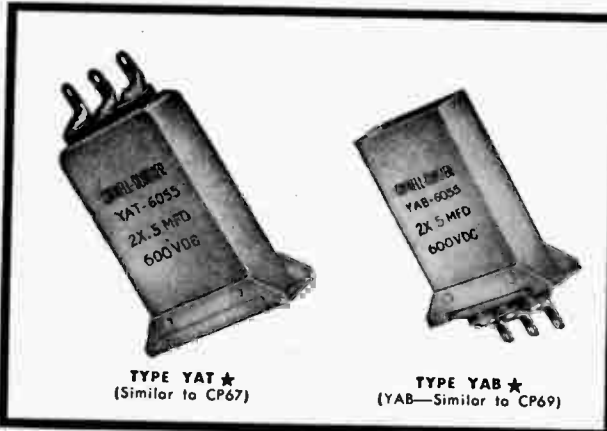
TWM	Cat. No.	Cap. Mfd.	V.D.C.W.	Size—Inches Dia. x Length	List Price	Net Price
TWM 1S1	.01	100	.235 x 7/8	\$3.10	<b>\$1.86</b>	
TWM 1S22	.022	100	.312 x 7/8	3.10	<b>1.86</b>	
TWM 1S47	.047	100	.312 x 7/8	3.25	<b>1.95</b>	
TWM 1P1	.1	100	.400 x 7/8	3.35	<b>2.01</b>	
TWM 4D47	.0047	400	.235 x 7/8	3.25	<b>1.95</b>	
TWM 4S1	.01	400	.312 x 7/8	3.30	<b>1.98</b>	
TWM 4S22	.022	400	.400 x 7/8	3.40	<b>2.04</b>	
TWM 4S47	.047	400	.400 x 1	3.55	<b>2.13</b>	
TWM 4P1	.1	400	.562 x 1	3.75	<b>2.25</b>	
TWM 4P22	.22	400	.562 x 1 1/8	4.20	<b>2.52</b>	
TWM 4P47	.47	400	.670 x 1 7/8	4.85	<b>2.91</b>	
TWM 4W1	1.0	400	.750 x 2 1/8	5.85	<b>3.51</b>	
TWM 6D47	.0047	600	.312 x 1	3.30	<b>1.98</b>	
TWM 6S1	.01	600	.312 x 1	3.40	<b>2.04</b>	
TWM 6S22	.022	600	.400 x 1	3.50	<b>2.10</b>	
TWM 6S47	.047	600	.400 x 1 1/8	3.65	<b>2.19</b>	
TWM 6P1	.1	600	.562 x 1 1/8	4.05	<b>2.43</b>	
TWM 6P22	.22	600	.670 x 1 7/8	4.50	<b>2.70</b>	
TWM 6P47	.47	600	.750 x 2 1/8	5.30	<b>3.18</b>	
TWM 6W1	1.0	600	1 x 2 1/8	7.00	<b>4.20</b>	

# CORNELL



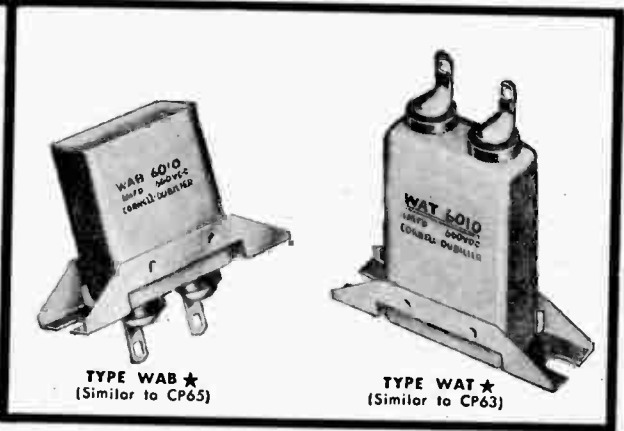
# DUBILIER

## METAL CASED DYKANOL PAPER CAPACITORS



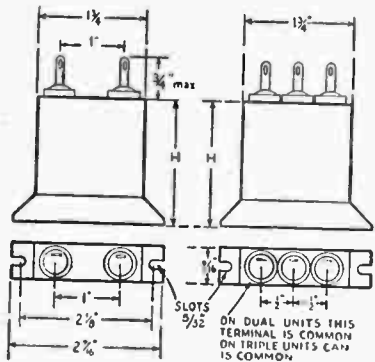
**TYPE YAT ★**  
(Similar to CP67)

**TYPE YAB ★**  
(YAB—Similar to CP69)



**TYPE WAB ★**  
(Similar to CP65)

**TYPE WAT ★**  
(Similar to CP63)



**TYPE YAT**

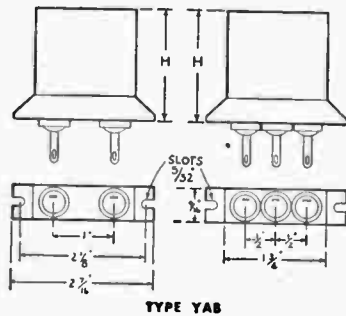
Types YAT and YAB are impregnated and filled with Dykanol "G" (chlorinated diphenyl) a synthetic, non-inflammable, non-oxidizable liquid compound. They are especially suited for use in bypass, audio frequency coupling circuits and other applications. Units are sealed in drawn metal shell containers and provided with leakproof terminals either on top or bottom of the can containers, designated as Types YAT and YAB. They will meet MIL-C-25A performance and test requirements.

**TEMPERATURE RANGE:** -55°C to +85°C.

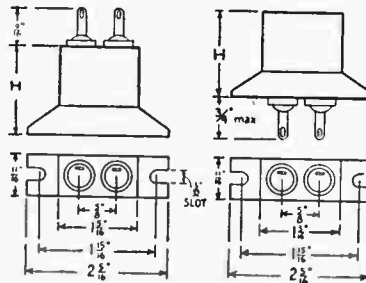
**STANDARD TOLERANCE:** +20%, -10%.

YAT-YAB	Cat. No.	Cap. Mfd.	Size—Inches L. x W. x H.	List Price	Net Price
<b>600 V. D.C. Work.</b>					
YAT or YAB 6005		.05	1 3/4 x 3/8 x 1 1/8	\$3.60	\$2.16
YAT or YAB 6010		.1	1 3/4 x 3/8 x 1 1/8	3.85	2.31
YAT or YAB 6025		.25	1 3/4 x 3/8 x 1 1/2	4.15	2.49
YAT or YAB 6030X		.5	1 3/4 x 3/8 x 2	4.70	2.82
YAT or YAB 6100		1.0	1 3/4 x 3/8 x 2 1/2	5.25	3.15
YAT or YAB 60035		.05-.05	1 3/4 x 3/8 x 1 1/8	4.40	2.64
YAT or YAB 6011		.1-.1	1 3/4 x 3/8 x 1 1/2	4.95	2.97
YAT or YAB 6022X		.25-.25	1 3/4 x 3/8 x 1 1/2	5.25	3.15
YAT or YAB 6035		.5-.5	1 3/4 x 3/8 x 2	5.80	3.48
YAT or YAB 60355		.05-.05-.05	1 3/4 x 3/8 x 1 1/2	6.35	3.81
YAT or YAB 6111		.1-.1-.1	1 3/4 x 3/8 x 1 1/2		
YAT or YAB 6222		.25-.25-.25	1 3/4 x 3/8 x 2 1/2		
<b>1000 V. D.C. Work.</b>					
YAT or YAB 10005		.05	1 3/4 x 3/8 x 1 1/8	3.70	2.22
YAT or YAB 10010		.1	1 3/4 x 3/8 x 1 1/8	4.00	2.40
YAT or YAB 10025X		.25	1 3/4 x 3/8 x 1 1/2	4.15	2.49
YAT or YAB 10030		.5	1 3/4 x 3/8 x 2	4.40	2.64
YAT or YAB 10035		.05-.05	1 3/4 x 3/8 x 1 1/8	4.40	2.64
YAT or YAB 10011		.1-.1	1 3/4 x 3/8 x 1 1/2	4.95	2.97
YAT or YAB 10022		.25-.25	1 3/4 x 3/8 x 1 1/2	5.25	3.15
YAT or YAB 100355		.05-.05-.05	1 3/4 x 3/8 x 1 1/2	5.80	3.48
YAT or YAB 10111		.1-.1-.1	1 3/4 x 3/8 x 2 1/2	6.35	3.81

\*When JAN-C-25 units must be supplied, order according to specific CP type designations listed in C-O Paper Capacitor Catalog No. 400.



**TYPE YAB**



**TYPE WAT**

**TYPE WAB**

Types WAT and WAB Capacitors are smaller size units of similar construction and electrical characteristics but only supplied in single section units with two terminals. These units are ideally suited for use in assemblies where space is limited and multiple units may be mounted close together. They will meet MIL-C-25A performance and test requirements.

**TEMPERATURE RANGE:** -55°C to +85°C.

**STANDARD TOLERANCE:** +20%, -10%.

WAT-WAB	Cat. No.	Cap. Mfd.	Size—Inches L. x W. x H.	List Price	Net Price
<b>600 V. D.C. Work.</b>					
WAT or WAB 6005X		.05	1 3/4 x 3/8 x 1 1/8	\$3.85	\$2.31
WAT or WAB 6010		.1	1 3/4 x 3/8 x 1 1/8	4.15	2.49
WAT or WAB 6025		.25	1 3/4 x 3/8 x 1 1/2	4.40	2.64
WAT or WAB 6030		.5	1 3/4 x 3/8 x 2	4.70	2.82
WAT or WAB 6100		1.0	1 3/4 x 3/8 x 2 1/2	5.25	3.15
<b>1000 V. D.C. Work.</b>					
WAT or WAB 10005		.05	1 3/4 x 3/8 x 1 1/8	4.15	2.49
WAT or WAB 10010		.1	1 3/4 x 3/8 x 1 1/8	4.15	2.49
WAT or WAB 10025		.25	1 3/4 x 3/8 x 1 1/2	4.40	2.64
WAT or WAB 10030		.5	1 3/4 x 3/8 x 2	4.40	2.64

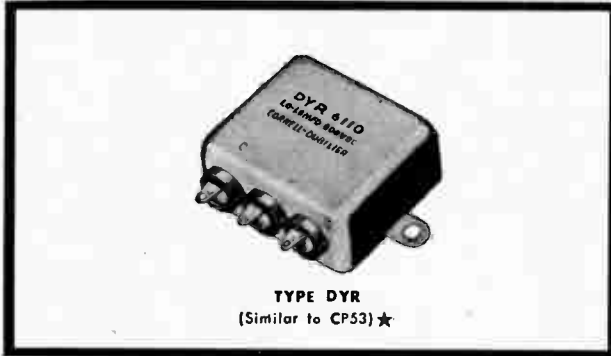
# CORNELL



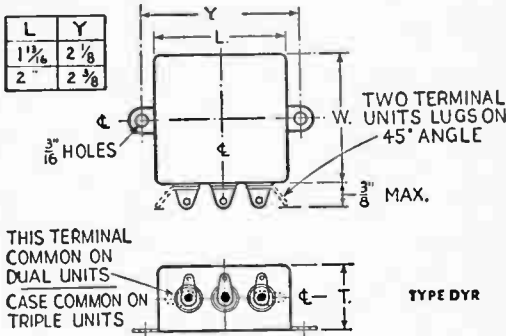
# DUBILIER

## METAL CASED DYKANOL PAPER CAPACITORS

## DYKANOL THREADED NECK CAPACITORS



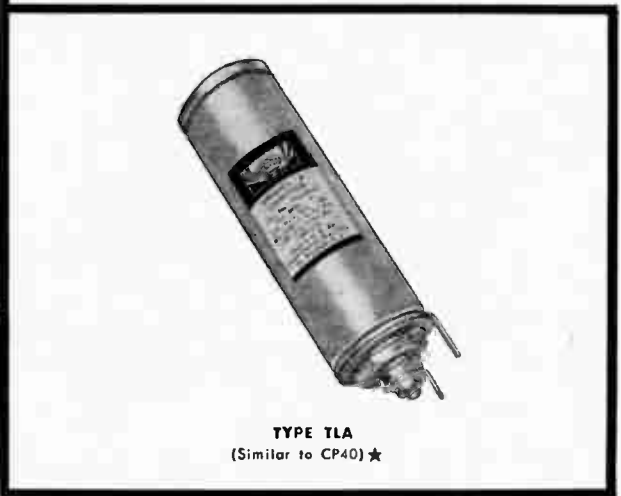
**TYPE DYR**  
(Similar to CP53) ★



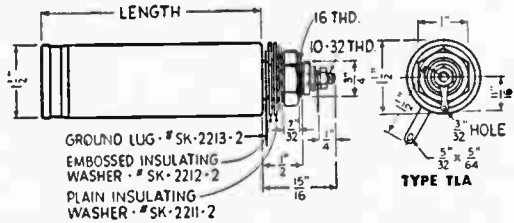
Type Dyr Dykanol Bypass Capacitors are non-inductively wound and meet the need for dependable capacitors of fractional capacities that will operate efficiently in R.F. and A.F. bypass, audio frequency coupling under all humidity conditions. They are built to meet MIL-C25A performance and test requirements and have been specially designed to fill the severe requirements of aircraft, submarine, marine and tropical applications.

**TEMPERATURE RANGE:** -55°C to +85°C.  
**STANDARD TOLERANCE:** +20%, -10%.

DYR Cat. No.	Cap. Mfd.	Size—Inches Lth. x Wid. x Thick.	List Price	Net Price
<b>600 V. D.C. Work.</b>				
DYR 6005	.05	1 13/16 x 1 x 3/4	\$2.90	\$1.74
DYR 6010	.1	1 13/16 x 1 x 3/4	2.95	1.77
DYR 6025	.25	1 13/16 x 1 x 3/4	3.10	1.86
DYR 6050	.5	1 13/16 x 1 x 3/4	3.30	1.98
DYR 6100	1	2 x 1 3/4 x 3/4	3.75	2.25
DYR 6200	2	2 x 2 x 1 1/4	5.00	3.00
DYR 60055	.05-.05	1 13/16 x 1 x 3/4	3.65	2.19
DYR 6011	.1-.1	1 13/16 x 1 x 3/4	3.70	2.22
DYR 6022X	.25-.25	1 13/16 x 1 x 3/4	3.75	2.25
DYR 6055	.5-.5	2 x 1 3/4 x 3/4	4.30	2.58
DYR 6110	1-.1	2 x 2 x 1 1/4	5.30	3.18
DYR 6111	1-.1-.1	1 13/16 x 1 x 3/4	4.20	2.52
DYR 6222	.25-.25-.25	2 x 1 3/4 x 1 13/16	4.75	2.85
DYR 6555	.5-.5-.5	2 x 2 x 1 1/4	5.75	3.45
<b>1000 V. D.C. Work.</b>				
DYR 10005	.05	1 13/16 x 1 x 3/4	3.05	1.83
DYR 10010	.1	1 13/16 x 1 x 3/4	3.15	1.89
DYR 10025	.25	1 13/16 x 1 x 3/4	3.25	1.95
DYR 10050	.5	2 x 1 3/4 x 1 13/16	3.55	2.13
DYR 10100	1	2 x 2 x 1 1/4	4.40	2.64
DYR 100055	.05-.05	1 13/16 x 1 x 3/4	3.85	2.31
DYR 10011	.1-.1	1 13/16 x 1 x 3/4	4.00	2.40
DYR 10022	.25-.25	2 x 1 3/4 x 1 13/16	4.20	2.52
DYR 10055	.5-.5	2 x 2 x 1 1/4	5.45	3.27
DYR 10111X	1-.1-.1	2 x 1 3/4 x 3/4	4.60	2.76
DYR 10222	.25-.25-.25	2 x 2 x 1 1/4	5.50	3.30



**TYPE TLA**  
(Similar to CP40) ★



Type TLA Capacitors are thoroughly impregnated and filled with Dykanol "G" (chlorinated diphenyl), a non-inflammable, fire-proof, non-oxidizable liquid compound which provides a high factor of safety and exceptionally long life. They will meet MIL-C25A performance and test requirements.  
**TEMPERATURE RANGE:** -55°C to +85°C.  
**STANDARD TOLERANCE:** +20%, -10%.

TLA Cat. No.	Cap. Mfd.	D.C. W. Volts	Size—Inches Lgh. x Diam.	List Price	Net Price
TLA 6020	2	600	2 3/8 x 1 1/2	\$4.60	\$2.76
TLA 6040	4	600	4 1/2 x 1 1/2	6.30	3.78
TLA 10010	1	1000	2 3/8 x 1 1/2	4.20	2.52
TLA 10020	2	1000	4 1/2 x 1 1/2	5.45	3.27
TLA 15005	.5	1500	2 3/8 x 1 1/2	5.00	3.00
TLA 15010	1	1500	4 1/2 x 1 1/2	5.45	3.27

**TEMPERATURE RANGE:** -55°C to +85°C.  
**STANDARD TOLERANCE:** +20%, -10%.

TNAD Cat. No.	Cap. Mfd.	D.C. W. Volts	Size—Inches Lgh. x Diam.	List Price	Net Price
*TNAD 6020	2	600	2 3/8 x 1 1/2	\$5.40	\$3.24
*TNAD 6040	4	600	4 1/2 x 1 1/2	7.10	4.26
*TNAD 10010	1	1000	2 3/8 x 1 1/2	5.00	3.00
*TNAD 10020	2	1000	4 1/2 x 1 1/2	6.30	3.78
*TNAD 15005	.5	1500	2 3/8 x 1 1/2	5.85	3.51
*TNAD 15010	1	1500	4 1/2 x 1 1/2	6.30	3.78

\*Type TNAD formerly TLAD—two solder lug terminals insulated from case. This type similar to CP41.

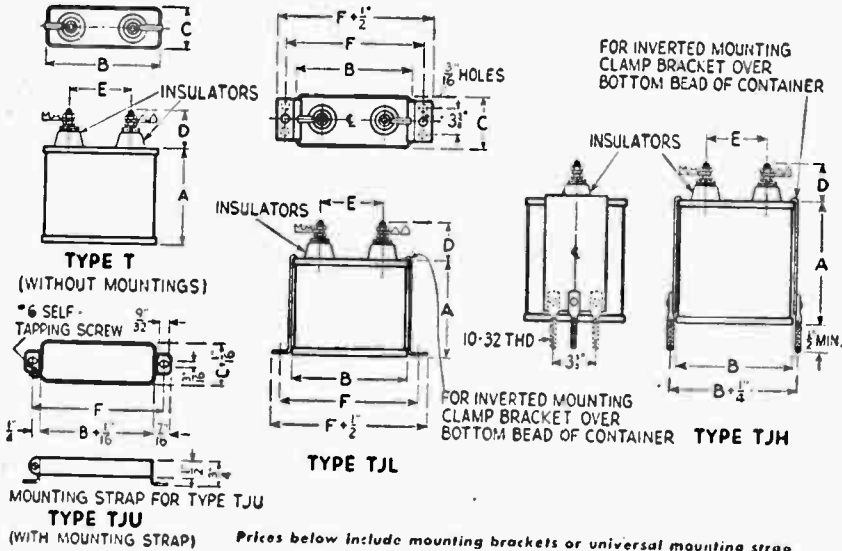
★ When JAN-C-25 units must be supplied, order according to specific CP type designations listed in C-D Paper Capacitor Catalog No. 400.

# CORNELL



# DUBILIER

## DYKANOL TRANSMITTING CAPACITORS



**TYPE T**  
(Similar to CP70)  
Provided with mounting brackets designated upon ordering as explained below.

Prices below include mounting brackets or universal mounting strap when ordered according to these type numbers.

TYPE DESIGNATIONS—Type T (basic units) are without mountings. To order Types TJH, TJL or TJU with mountings as shown above, add letter symbols of type mountings desired to Cat. No. as follows:

TYPE T—(Basic unit) without mountings.

TYPE TJH—With screw spade-lug brackets.

TYPE TJL—With mounting foot brackets.

TYPE TJU—With universal mounting strap.

Prices below include mounting brackets or universal mounting strap when ordered according to these type numbers.

TEMPERATURE RANGE: -55°C to +85°C. STANDARD-TOLERANCE: ±10%.

Y Cat. No.	Cap. Mfd.	Dimensions—Inches						List Price	Net Price
		A	B	C	D	E	F		
<b>600 V. D.C. Working</b>									
T 6003	.5	2 1/2	1 1/2	1 1/2	3/8	1 1/2	2 1/4	\$4.70	\$2.82
T 6010	1	2 1/2	1 1/2	1 1/2	3/8	1 1/2	2 1/4	5.80	3.48
T 6030	2	2 1/2	1 1/2	1 1/2	3/8	1 1/2	2 1/4	7.15	4.29
T 6043	3	3 1/2	1 1/2	1 1/2	3/8	1 1/2	2 1/4	8.25	4.95
T 6030	5	3 1/2	2 1/2	1 1/2	3/8	1 1/2	3	9.10	5.46
T 6060	6	4 1/2	2 1/2	1 1/2	3/8	1 1/2	3	10.45	6.27
T 6080	8	3 1/2	3 1/2	1 1/2	3/8	1 1/2	4 1/2	11.30	6.74
T 6100	10	4 1/2	3 1/2	1 1/2	3/8	1 1/2	4 1/2	13.50	8.10
	8	4 1/2	3 1/2	1 1/2	3/8	1 1/2	4 1/2	15.15	9.09
<b>1000 V. D.C. Working</b>									
T 10001	.1	2	1 1/2	1 1/2	3/8	1 1/2	2 1/4	4.15	2.49
T 10023	.25	2 1/2	1 1/2	1 1/2	3/8	1 1/2	2 1/4	4.70	2.82
T 10003	.5	2 1/2	1 1/2	1 1/2	3/8	1 1/2	2 1/4	4.95	2.97
T 10010	1	2 1/2	1 1/2	1 1/2	3/8	1 1/2	2 1/4	6.35	3.81
T 10020	2	2 1/2	1 1/2	1 1/2	3/8	1 1/2	2 1/4	8.25	4.93
T 10030	3	3 1/2	2 1/2	1 1/2	3/8	1 1/2	3	9.65	5.79
T 10040	4	4 1/2	2 1/2	1 1/2	3/8	1 1/2	3	10.45	6.27
T 10030	5	3 1/2	3 1/2	1 1/2	3/8	1 1/2	4 1/2	12.65	7.39
T 10060	6	4 1/2	3 1/2	1 1/2	3/8	1 1/2	4 1/2	14.05	8.43
T 10080	8	4 1/2	3 1/2	1 1/2	3/8	1 1/2	4 1/2	15.15	9.09
T 10100	10	4 1/2	3 1/2	1 1/2	3/8	1 1/2	4 1/2	16.80	10.08
T 10120	12	4 1/2	3 1/2	1 1/2	3/8	1 1/2	4 1/2	18.15	10.89
T 10130	15	4 1/2	3 1/2	2 1/2	3/8	1 1/2	4 1/2	20.10	12.06
<b>1500 V. D.C. Working</b>									
T 15003	.5	2 1/2	1 1/2	1 1/2	3/8	1 1/2	2 1/4	6.35	3.81
T 15010	1	4	1 1/2	1 1/2	3/8	1 1/2	2 1/4	7.45	4.47
T 15020	2	4 1/2	2 1/2	1 1/2	3/8	1 1/2	3	10.20	6.12
T 15030	3	4 1/2	2 1/2	1 1/2	3/8	1 1/2	3	12.40	7.44
T 15040	4	4 1/2	3 1/2	1 1/2	3/8	1 1/2	3	14.05	8.43
T 15030	5	4 1/2	3 1/2	1 1/2	3/8	1 1/2	4 1/2	15.15	9.09
T 15060	6	4 1/2	3 1/2	1 1/2	3/8	1 1/2	4 1/2	17.05	10.23
T 15080	8	4 1/2	3 1/2	1 1/2	3/8	1 1/2	4 1/2	20.90	12.34
T 15100	10	4 1/2	3 1/2	1 1/2	3/8	1 1/2	4 1/2	25.05	15.03
T 15120	12	4 1/2	3 1/2	1 1/2	3/8	1 1/2	4 1/2	27.25	16.33
T 15130	15	4 1/2	3 1/2	2 1/2	3/8	1 1/2	4 1/2	30.00	18.00

Y Cat. No.	Cap. Mfd.	Dimensions—Inches						List Price	Net Price
		A	B	C	D	E	F		
<b>2000 V. D.C. Working</b>									
T 20001	.1	2 1/2	1 1/2	1 1/2	3/8	1 1/2	2 1/4	\$6.60	\$3.96
T 20023	.25	2 1/2	1 1/2	1 1/2	3/8	1 1/2	2 1/4	7.15	4.29
T 20010	1	2 1/2	1 1/2	1 1/2	3/8	1 1/2	2 1/4	9.10	5.46
T 20020	2	4	3 1/2	1 1/2	3/8	1 1/2	3	10.75	6.43
T 20030	3	4 1/2	3 1/2	1 1/2	3/8	1 1/2	4 1/2	13.20	7.92
T 20040	4	4 1/2	3 1/2	1 1/2	3/8	1 1/2	4 1/2	15.15	9.09
T 20030	5	4 1/2	3 1/2	1 1/2	3/8	1 1/2	4 1/2	16.80	10.08
T 20060	6	4 1/2	3 1/2	1 1/2	3/8	1 1/2	4 1/2	20.10	12.06
T 20080	8	4 1/2	3 1/2	1 1/2	3/8	1 1/2	4 1/2	25.05	15.03
T 20100	10	4 1/2	3 1/2	1 1/2	3/8	1 1/2	4 1/2	30.55	18.33
T 20120	12	4 1/2	3 1/2	2 1/2	3/8	1 1/2	4 1/2	33.30	19.98
<b>2500 V. D.C. Working</b>									
T 25003	.5	3 1/2	3 1/2	1 1/2	3/8	1 1/2	4 1/2	11.55	6.93
T 25010	1	4 1/2	3 1/2	1 1/2	3/8	1 1/2	4 1/2	13.20	7.92
T 25020	2	4 1/2	3 1/2	1 1/2	3/8	1 1/2	4 1/2	21.45	12.87
T 25040	4	4 1/2	3 1/2	1 1/2	3/8	1 1/2	4 1/2	30.00	18.00
T 25100A	10	6 1/2	3 1/2	4 1/2	3/8	1 1/2	4 1/2	75.10	43.06
<b>3000 V. D.C. Working</b>									
T 30001	.1	2	2 1/2	1 1/2	3/8	1 1/2	1	14.05	8.43
T 30023	.25	2 1/2	2 1/2	1 1/2	3/8	1 1/2	3	16.80	9.91
T 30003	.5	3 1/2	2 1/2	1 1/2	3/8	1 1/2	3	16.80	10.08
T 30010	1	3 1/2	3 1/2	1 1/2	3/8	1 1/2	4 1/2	20.10	12.06
T 30020	2	4 1/2	3 1/2	1 1/2	3/8	1 1/2	4 1/2	25.05	15.03
T 30040	4	4 1/2	3 1/2	1 1/2	3/8	1 1/2	4 1/2	36.85	22.11
<b>4000 V. D.C. Working</b>									
T 40001	.1	2 1/2	3 1/2	2 1/2	3/8	1 1/2	4 1/2	18.00	10.80
T 40023	.25	2 1/2	3 1/2	2 1/2	3/8	1 1/2	4 1/2	20.00	12.00
T 40003	.5	4	3 1/2	2 1/2	3/8	1 1/2	4 1/2	23.00	13.80
T 40010	1	5	3 1/2	2 1/2	3/8	1 1/2	4 1/2	29.00	17.40
T 40020	2	5	3 1/2	2 1/2	3/8	1 1/2	4 1/2	39.00	23.40
T 40040A	4	8	3 1/2	4 1/2	3/8	1 1/2	4 1/2	66.85	40.11
<b>5000 V. D.C. Working</b>									
T 50003	.5	4 1/2	3 1/2	2 1/2	3/8	1 1/2	4 1/2	25.00	15.00
T 50010	1	4 1/2	3 1/2	2 1/2	3/8	1 1/2	4 1/2	34.00	20.40
T 50020	2	6	3 1/2	4 1/2	3/8	1 1/2	4 1/2	52.00	31.20
<b>6000 V. D.C. Working</b>									
T 60001	.1	2 1/2	3 1/2	2 1/2	3/8	1 1/2	4 1/2	27.00	16.20
T 60010A	1	8	3 1/2	4 1/2	3/8	1 1/2	4 1/2	49.00	29.40

For higher voltage units, from 6,000 to 25,000 v.d.c., write for data and prices on Type TK capacitors.

NOTES—\* Type TJU units are not furnished in these larger sizes.  
† Types TJL and TJH units furnished with two mounting holes or spade lugs 3/8" apart. All other units furnished with a single mounting hole or spade lug centered on each bracket.

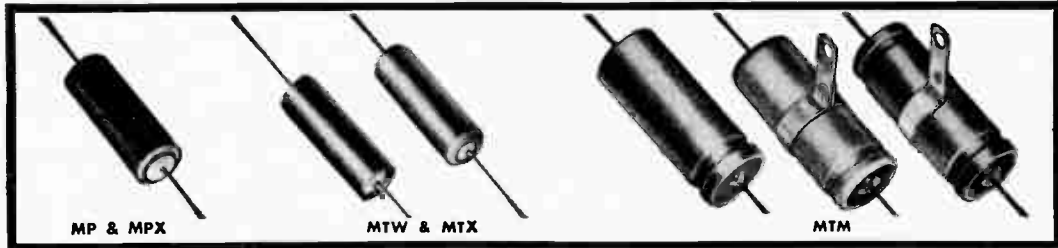
★ When JAN-C-25 units must be supplied, order according to specific CP type designations listed in C-D Paper Capacitor Catalog No. 400.

# CORNELL



# DUBILIER

## COMPACT METALIZED-PAPER CAPACITORS



Cornell-Dubilier self-healing, metalized paper capacitors have better electrical characteristics and extra long service life. Units are light and compact.

"PUP" units have bare wire leads securely anchored in metal end-caps, wax-impregnated and dip-sealed against humidity. All units are extended foil—non-inductive wound for low impedance at high frequencies, have high insulation resistance, low power factor and small capacity change with temperature and life.

"METAPUPS" are one piece metal tubular cased, pressure sealed by spin-over on synthetic rubber gaskets.

"SEALPUPS" are a high quality metalized paper capacitor, designed for smallest size and positive seal against moisture. They are hermetically sealed in metal cases with solder—seal glass terminals. Especially recommended in military and commercial equipment where miniature size and light weight are paramount.

For further data on C-D metalized capacitors, write for Bulletins 142-3-4 and NB-152.

TEMPERATURE RANGE:  $-40^{\circ}\text{C}$  to  $+60^{\circ}\text{C}$ .

### "PUP" METAL END-CAP CARDBOARD TUBULARS

MP	Cat. No.	Cap. Mfd.	Voltage DCW	Size—Inches Diam. x Length	List Price	Net Price
MP 2S5		.05	200	$\frac{3}{8} \times \frac{3}{8}$	\$.65	<b>\$3.39</b>
MP 2P1		.1	200	$\frac{3}{8} \times \frac{3}{8}$	.70	<b>.42</b>
MP 2P25		.25	200	$\frac{1}{2} \times \frac{3}{8}$	.90	<b>.54</b>
MP 2P5		.5	200	$\frac{1}{2} \times 1\frac{1}{8}$	1.05	<b>.63</b>
MP 2W1		1.0	200	$\frac{3}{8} \times 1\frac{1}{8}$	1.30	<b>.78</b>
MP 2W2		2.0	200	$\frac{3}{8} \times 1\frac{1}{8}$	1.80	<b>1.08</b>
MP 4S5		.05	400	$\frac{1}{2} \times \frac{3}{8}$	.70	<b>.42</b>
MP 4P1		.1	400	$\frac{1}{2} \times 1\frac{1}{8}$	.80	<b>.48</b>
MP 4P25		.25	400	$\frac{3}{8} \times 1\frac{1}{8}$	1.00	<b>.60</b>
MP 4P5		.5	400	$\frac{3}{8} \times 1\frac{1}{8}$	1.15	<b>.69</b>
MP 4W1		1.0	400	$2\frac{3}{16} \times 2\frac{1}{8}$	1.60	<b>.96</b>
MP 6S1		.01	600	$\frac{3}{8} \times \frac{3}{8}$	.70	<b>.42</b>
MP 6P1		.1	600	$\frac{1}{2} \times 1\frac{1}{8}$	.90	<b>.54</b>
MP 6P25		.25	600	$\frac{3}{8} \times 1\frac{1}{8}$	1.10	<b>.66</b>
MP 6P5		.5	600	$2\frac{3}{16} \times 1\frac{1}{8}$	1.45	<b>.87</b>
MP 6W1		1.0	600	$2\frac{3}{16} \times 2\frac{1}{8}$	1.80	<b>1.08</b>

TEMPERATURE RANGE:  $-55^{\circ}\text{C}$  to  $+95^{\circ}\text{C}$ .

### "METAPUP" ONE-PIECE METAL TUBULARS STYLE A (Ungrounded)

MTM	Cat. No.	Cap. Mfd.	Voltage DCW	Size—Inches Diam. x Length	List Price	Net Price
MTM 2S5		.05	200	$\frac{3}{8} \times 1\frac{1}{8}$	\$1.40	<b>\$.84</b>
MTM 2P1		.1	200	$\frac{3}{8} \times 1\frac{1}{8}$	1.45	<b>.87</b>
MTM 2P25		.25	200	$\frac{1}{2} \times 1\frac{1}{8}$	1.60	<b>.96</b>
MTM 2P5		.5	200	$\frac{1}{2} \times 1\frac{1}{8}$	1.70	<b>1.02</b>
MTM 2W1		1.0	200	$\frac{3}{8} \times 1\frac{1}{8}$	2.10	<b>1.26</b>
MTM 2W2		2.0	200	$\frac{3}{8} \times 1\frac{1}{8}$	2.60	<b>1.56</b>
MTM 4S5		.05	400	$\frac{3}{8} \times 1\frac{1}{8}$	1.45	<b>.87</b>
MTM 4P1		.1	400	$\frac{3}{8} \times 1\frac{1}{8}$	1.60	<b>.96</b>
MTM 4P25		.25	400	$\frac{3}{8} \times 1\frac{1}{8}$	1.80	<b>1.08</b>
MTM 4P5		.5	400	$\frac{3}{8} \times 1\frac{1}{8}$	2.00	<b>1.20</b>
MTM 4W1		1.0	400	$\frac{3}{4} \times 2\frac{3}{16}$	2.50	<b>1.50</b>
MTM 4W2		2.0	400	$1 \times 2\frac{3}{16}$	3.60	<b>2.16</b>
MTM 6S1		.01	600	$\frac{3}{8} \times 1\frac{1}{8}$	1.40	<b>.84</b>
MTM 6P1		.1	600	$\frac{1}{2} \times 1\frac{1}{8}$	1.70	<b>1.02</b>
MTM 6P25		.25	600	$\frac{3}{8} \times 1\frac{1}{8}$	2.00	<b>1.20</b>
MTM 6P5		.5	600	$\frac{3}{8} \times 1\frac{1}{8}$	2.40	<b>1.44</b>
MTM 6W1		1.0	600	$1\frac{1}{8} \times 2\frac{3}{16}$	3.00	<b>1.80</b>
MTM 6W2		2.0	600	$1\frac{1}{8} \times 2\frac{3}{16}$	4.00	<b>2.40</b>

\* DEDUCT 50¢ from List Price for Basic GROUNDED style.

TEMPERATURE RANGE:  $-55^{\circ}\text{C}$  to  $+95^{\circ}\text{C}$ .

### "SEALPUP" GLASS-METAL END-SEALED TUBULARS STYLE A (Ungrounded)

MTW	Cat. No.	Cap. Mfd.	Voltage DCW	Size—Inches Diam. x Length	List Price	Net Price
MTW 2S5		.05	200	.235 x $\frac{3}{8}$	\$2.60	<b>\$1.56</b>
MTW 2P1		.1	200	.312 x $\frac{3}{8}$	2.65	<b>1.59</b>
MTW 2P25		.25	200	.312 x $1\frac{1}{8}$	2.85	<b>1.71</b>
MTW 2P5		.5	200	.400 x $1\frac{1}{8}$	2.90	<b>1.74</b>
MTW 2W1		1.0	200	.562 x $1\frac{1}{8}$	3.15	<b>1.89</b>
MTW 2W15		1.5	200	.562 x $1\frac{3}{8}$	3.35	<b>2.01</b>
MTW 2W2		2.0	200	.562 x $1\frac{3}{8}$	4.45	<b>2.67</b>
MTW 4S5		.05	400	.400 x $\frac{3}{8}$	2.75	<b>1.65</b>
MTW 4P1		.1	400	.400 x $1\frac{1}{8}$	2.95	<b>1.77</b>
MTW 4P25		.25	400	.562 x $1\frac{1}{8}$	3.25	<b>1.95</b>
MTW 4P5		.5	400	.562 x $1\frac{1}{8}$	3.55	<b>2.13</b>
MTW 4W1		1.0	400	.670 x $2\frac{1}{8}$	3.55	<b>2.13</b>
MTW 6S1		.01	600	.312 x $\frac{3}{8}$	2.65	<b>1.59</b>
MTW 6P1		.1	600	.500 x $1\frac{1}{8}$	2.80	<b>1.68</b>
MTW 6P25		.25	600	.670 x $1\frac{1}{8}$	3.20	<b>1.92</b>
MTW 6P5		.5	600	.750 x $1\frac{1}{8}$	3.50	<b>2.10</b>
MTW 6W1		1.0	600	.750 x $2\frac{1}{8}$	4.15	<b>2.49</b>

\* DEDUCT 50¢ from List Price for Basic GROUNDED style.





## HIGH TEMPERATURE Metalized-Paper CAPACITORS

- **POLYKANE-IMPREGNATED:** This impregnant insures excellent electrical properties over long service life.
- **MOISTURE RESISTANT:** MTX tubulars have the finest glass-to-metal solder seal terminals for maximum protection against moisture. MPX tubulars have POLYKANE-impregnated paper tubes, bonded securely to the POLYKANE fill. An external flash wax dip provides an increased moisture seal for extra long storage and service conditions under extremes of humidity.
- **NON-LEAKING:** "POLYKANE" is a solid thermosetting plastic that will not soften, crack, or leak at the maximum temperature. No oil or wax is used internally with these units.

### MPX†—HIGH TEMPERATURE Paper-Cased TUBULARS

**STANDARD TOLERANCE:** +40 —20% to 1 mfd.  
+30 —20% over 1 mfd.  
**TEMP. RANGE:** —55°C to +130°C

MPX Cat. No.	Cap. Mfd.	Voltage DCW	Size—Inches Dia. x Length	List Price	Net Price
MPX 2S5	.05	200	1/4 x 1 3/16	\$.65	\$.39
MPX 2P1	.10	200	5/16 x 1 3/16	.70	.42
MPX 2P23	.25	200	1 3/32 x 1 3/16	.90	.54
MPX 2P3	.50	200	1 3/32 x 1 1/4	1.05	.63
MPX 2W1	1.0	200	3/8 x 1 5/8	1.30	.78
MPX 2W2	2.0	200	3/8 x 1 1/2	1.80	1.08
MPX 4S3	.05	400	3/8 x 1 3/8	.70	.42
MPX 4P1	.10	400	3/8 x 1 1/4	.80	.48
MPX 4P23	.25	400	5/16 x 1 3/8	1.00	.60
MPX 4P3	.50	400	3/8 x 1 3/8	1.15	.69
MPX 4W1	1.0	400	1 1/16 x 1 1/4	1.60	.96
MPX 4W2	2.0	400	7/8 x 2 3/8	2.20	1.32
MPX 6S1	.01	600	1/4 x 1 3/8	.70	.42
MPX 6P1	.10	600	1/4 x 1 1/4	.90	.54
MPX 6P23	.25	600	3/8 x 1 3/8	1.10	.66
MPX 6P3	.50	600	1 1/8 x 1 1/2	1.45	.87
MPX 6W1	1.0	600	1 3/8 x 1 7/8	1.80	1.08
MPX 6W2	2.0	600	1 x 2 3/8	2.50	1.50

†For High Temperature Metalized Paper Capacitors in "BATHTUB" TYPE cases (Type SBX)—See Bulletin NB-152.

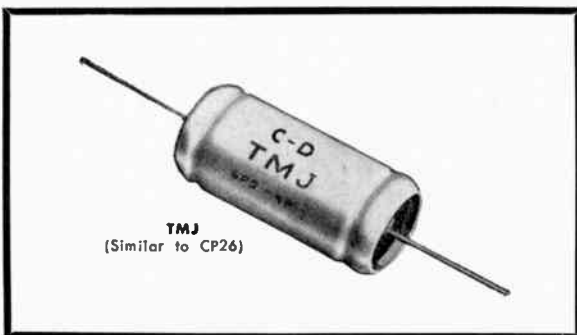
### MTX†—HIGH TEMPERATURE Metal-Cased TUBULARS STYLE BASIC (Ungrounded)

**STANDARD TOLERANCE:** +40 —20% to 1 mfd.  
+30 —20% over 1 mfd.  
**TEMP. RANGE:** —55°C to +130°C

MTX Cat. No.	Cap. Mfd.	Voltage DCW	Size—Inches Diam. x Length	List Price	Net Price
MTX 2S5	.05	200	.235 x 1 3/16	\$3.65	\$2.19
MTX 2P1	.10	200	.312 x 1 3/16	3.75	2.25
MTX 2P23	.25	200	.312 x 1 3/8	4.05	2.43
MTX 2P3	.50	200	.400 x 1 3/8	4.10	2.46
MTX 2W1	1.0	200	.562 x 1 3/8	4.50	2.70
MTX 2W15	1.5	200	.562 x 1 13/16	6.45	3.87
MTX 2W2	2.0	200	.562 x 1 13/16	6.45	3.87
MTX 4S3	.05	400	.312 x 1 3/8	3.80	2.28
MTX 4P1	.10	400	.400 x 1 3/8	3.90	2.34
MTX 4P23	.25	400	.500 x 1 3/8	4.20	2.52
MTX 4P3	.50	400	.562 x 1 3/8	4.65	2.79
MTX 4W1	1.0	400	.670 x 2 1/8	5.10	3.06
MTX 6S1	.01	600	.312 x 1 3/8	3.75	2.25
MTX 6P1	.10	600	.400 x 1 3/8	3.95	2.37
MTX 6P23	.25	600	.562 x 1 3/8	4.55	2.73
MTX 6P3	.50	600	.670 x 1 13/16	5.00	3.00
MTX 6W1	1.0	600	.750 x 2 3/8	6.00	3.60

‡Other Styles available—See Bulletins NB-142, 3, 4 and NB-152.  
\*DEDUCT 50¢ from List for Basic GROUNDED style.

## METAL CASED DYKANOL PAPER CAPACITORS



### TYPE TMJ...4P

C-D type TMJ-4P is a non-magnetic metal-cased, ungrounded section, tubular paper capacitor, the body of which is covered with a non-hygroscopic plastic insulating tube. The unit is also available with a mounting strap\* on request.

The TMJ is impregnated with Dykanol "C" (oil) and meets MIL-C-25A temperature Characteristic "E".

**STANDARD TOLERANCE:** ±20%

**TEMPERATURE RANGE:** —55°C to +85°C

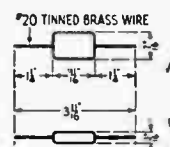
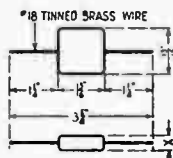
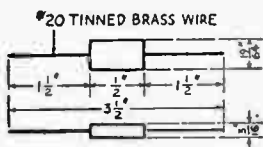
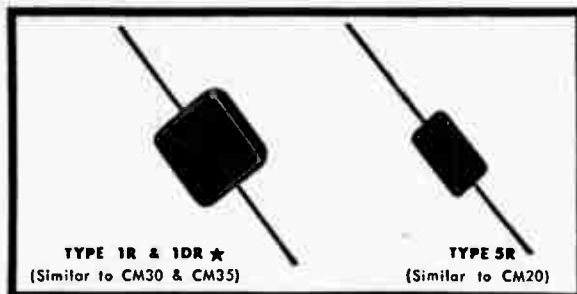
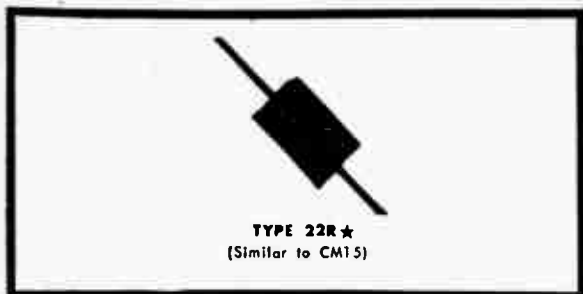
TMJ Cat. No.	Cap. Mfd.	Body Dimensions Overall Dia. x Length	List Price	Net Price
<b>600 VDCW</b>				
TMJ 6D3-4P	.003	1/2 x 1 3/16	\$1.30	\$.78
TMJ 6D6-4P	.006	1/2 x 1 3/16	1.30	.78
TMJ 6S1-4P	.01	1/2 x 1 3/16	1.30	.78
TMJ 6S2-4P	.02	1/2 x 1 3/16	1.45	.87
TMJ 6S3-4P	.05	1 1/16 x 1 13/16	1.55	.93
TMJ 6P1-4P	.10	1 1/16 x 2 1/16	1.75	1.05
TMJ 6P23-4P	.25	1 1/16 x 2 3/16	2.40	1.44
TMJ 6P3-4P	.50	1 3/16 x 2 13/16	3.05	1.83
<b>1000 VDCW</b>				
TMJ 10D3-4P	.003	1 1/16 x 1 3/16	1.55	.93
TMJ 10D6-4P	.006	1 1/16 x 1 3/16	1.55	.93
TMJ 10S1-4P	.01	1 1/16 x 1 3/16	1.55	.93
TMJ 10S2-4P	.02	1 1/16 x 1 13/16	1.70	1.02
TMJ 10S3-4P	.05	1 3/16 x 1 13/16	1.80	1.08
TMJ 10P1-4P	.10	1 1/16 x 2 1/16	2.05	1.23
TMJ 10P23-4P	.25	1 3/16 x 2 13/16	2.70	1.62
<b>1600 VDCW</b>				
TMJ 16D3-4P	.003	1 1/16 x 1 7/16	1.70	1.02
TMJ 16D6-4P	.006	1 1/16 x 1 7/16	1.70	1.02
TMJ 16S1-4P	.01	1 1/16 x 1 7/16	1.70	1.02
TMJ 16S2-4P	.02	1 1/16 x 1 13/16	1.80	1.08
TMJ 16S3-4P	.05	1 3/16 x 2 1/16	1.95	1.17
TMJ 16P1-4P	.10	1 3/16 x 2 3/16	2.55	1.53

\*For unit with mounting strap, specify type as TMJ-6P (Ex. TMJ-6S1-6P).

# CORNELL DUBILIER



## MOLDED MIDGET "SILVER-MIKE" CAPACITORS



### HIGH-STABILITY "SILVER-MIKE" UNITS

Type 22R miniature "Silver-Mike" capacitors are especially adapted for use in circuits where accuracy and stability of capacity is of prime importance. They are rated at 500 volts D.C.W. and tested at 1,000 volts D.C., molded in low-loss red plastic and fully protected against physical damage or changes in characteristics due to varying atmospheric conditions.

**STANDARD TOLERANCE**  $\pm 5\%$ , but in no instance less than  $\pm 1$ mmf. For capacity Tolerance of: 20% deduct 10% from List; 10% deduct 5% from List; 3% add 10% to List; 2% add 15% to List; 1% add 25% to List.

TYPE 1R - X-1 THICK  
TYPE 1DR - X-1 THICK  
**TYPE 1R & 1DR**

**TYPE 5R**

Types 1R, 1DR, and 5R "Silver-Mike" silvered mica capacitors are designed for use in high Q electronic circuits where frequency stability and minimum loss must be maintained. They are ideally suited for use in circuits where the LC product must be maintained constant, and particularly adapted for use in tuning IF transformers, push-button tuning circuits and other similar applications. Standard units are molded in low-loss red plastic.

TYPE 22R			
22R Cat. No.	Cap. Mfd.	List Price	Net Price
22R 3V2	.000002	\$ .40	\$ .24
22R 3V3	.000005	.40	.24
22R 3Q1	.00001	.40	.24
22R 3Q12	.000012	.40	.24
22R 3Q13	.000015	.40	.24
22R 3Q18	.000018	.40	.24
22R 3Q19	.00002	.40	.24
22R 3Q22	.000022	.40	.24
22R 3Q24	.000024	.40	.24
22R 3Q23	.000025	.40	.24
22R 3Q27	.000027	.40	.24
22R 3Q3	.00003	.40	.24
22R 3Q33	.000033	.40	.24
22R 3Q36	.000036	.40	.24
22R 3Q39	.000039	.40	.24
22R 3Q4	.00004	.40	.24
22R 3Q43	.000043	.40	.24
22R 3Q47	.000047	.40	.24
22R 3Q5	.00005	.40	.24
22R 3Q51	.000051	.40	.24
22R 3Q56	.000056	.40	.24
22R 3Q62	.000062	.40	.24
22R 3Q68	.000068	.40	.24
22R 3Q7	.00007	.40	.24
22R 3Q73	.000075	.40	.24
22R 3Q82	.000082	.40	.24
22R 3Q91	.000091	.40	.24
22R 3T1	.0001	.45	.27
22R 3T11	.00011	.45	.27
22R 3T12	.00012	.45	.27
22R 3T13	.00013	.45	.27
22R 3T15	.00015	.45	.27
22R 3T16	.00016	.45	.27
22R 3T18	.00018	.45	.27
22R 3T2	.0002	.45	.27
22R 3T22	.00022	.45	.27
22R 3T24	.00024	.45	.27
22R 3T23	.00025	.45	.27

### Notes On Ordering 5R, 1R, 1DR Units

Standard capacity tolerance is 5%. Also available, on special order, in tolerance ratings of plus or minus 3%, add 10% to list prices, 2% add 15% to list prices and 1% add 25% to list prices, (or within 1 mmfd.—whichever is greater). All types can also be supplied in plus or minus 10% and 20% tolerances at lower prices.

\*Reg. U.S. Pat. Off.

Cap. Mfd.	500 V. D.C. W.—1000 V. D.C. T.			List Price	Net Price
	Type 5R Cat. No.	Type 1R Cat. No.	Type 1DR Cat. No.		
.00027	5R 3T27			\$ .55	\$ .33
.0003	5R 3T3			.55	.33
.00033	5R 3T33			.55	.33
.00036	5R 3T36			.65	.39
.00039	5R 3T39			.65	.39
.0004	5R 3T4			.65	.39
.00043	5R 3T43			.65	.39
.00047	5R 3T47			.70	.42
.0005	5R 3T5			.70	.42
.00051	5R 3T51			.70	.42
.00056		1R 3T56		.85	.51
.0006		1R 3T6		.85	.51
.00062		1R 3T62		.85	.51
.00068		1R 3T68		.85	.51
.0007		1R 3T7		.85	.51
.00075		1R 3T73		.95	.57
.0008		1R 3T8		.95	.57
.00082		1R 3T82		.95	.57
.0009		1R 3T9		1.00	.60
.00091		1R 3T91		1.00	.60
.001		1R 3D1		1.10	.66
.0011		1R 3D11		1.10	.66
.0012		1R 3D12		1.35	.81
.0013		1R 3D13		1.35	.81
.0015		1R 3D15		1.35	.81
.0016		1R 3D16		1.35	.81
.0018		1R 3D18		1.35	.81
.002		1R 3D2		1.35	.81
.0022		1R 3D22		1.80	1.08
.0024		1R 3D24		1.80	1.08
.0025		1R 3D25		2.05	1.23
.0027		1R 3D27		2.05	1.23
.003		1R 3D3		2.05	1.23
.0033		1R 3D33		2.05	1.23
.0036		1R 3D36		2.15	1.29
.0039		1R 3D39		2.15	1.29
.004		1R 3D4		2.15	1.29
.0043		1R 3D43		2.15	1.29
.0047		1R 3D47		2.25	1.35
.005		1DR 3D5		2.25	1.35
.0051		1DR 3D51		2.25	1.35
.0056		1DR 3D56		2.25	1.35
.0062		1DR 3D62		2.25	1.35
.0068			1DR 3D68	2.50	1.50
.007			1DR 3D7	2.50	1.50
.0075			1DR 3D73	2.50	1.50
.008			1DR 3D8	2.50	1.50
.0082			1DR 3D82	2.50	1.50
.009			1DR 3D9	2.50	1.50
.0091			1DR 3D91	2.50	1.50
.01			1DR 3D1	2.50	1.50

(300 V. D.C. W.—600 V. D.C. T.)

\*When JAN-C-5 units must be supplied, order according to specific CM type designations listed in C-O Mico Bulletin—Series 422.

# CORNELL



# DUBILIER

## "Super" ENCAPSULATED Molded-Case MIDGET MICA CAPACITORS



Cornell-Dubilier "SUPER MICADONS" represent an entirely new conception in Midget Mica Capacitor construction. The vastly improved design and construction of the new "C-D SUPER MICADONS" now makes it possible to produce miniature units of greatly increased capacitance and superior quality over conventional units of the same case size. Every characteristic desirable in a mica capacitor has been incorporated into one compact, miniature sized unit. No mica capacitor of conventional design has achieved this comprehensive quality.

SEE ENG. BUL. 160 FOR DETAILED DATA AND COMPLETE LISTINGS.

Type	1A	Long	Wide	Thick
<b>SIZES:</b>	1AD	53/64 x 53/64 x 9/32		
<b>in</b>	5A	53/64 x 53/64 x 11/32		
<b>Inches</b>	22A	51/64 x 15/32 x 7/32		
		35/64 x 5/16 x 7/32		

TEMPERATURE RANGE: -55°C to +130°C.

STANDARD TOLERANCE: ±5%; ±2% can also be supplied from stock when specified; ±½% and ±1% available on special order.

- For ±2% Tol. add 15% to List.
- For ±1% Tol. add 25% to List.
- For ±½% Tol. add 50% to List.

CHARACTERISTICS\*: All types are supplied from stock as follows:

- From 1 to 24 mmfd. in Char. "C".
- From 24 to 51 mmfd. in Char. "E".
- From 51 to 41,000 mmfd. in Char. "E".
- From 51 to 41,000 mmfd. ALSO AVAILABLE in Char. "F" on special order.\*

### 22A - 5A - 1A - 1AD

All units 500 VDCW, except as noted.

Type 22A	Cap. Mfd.	List* Price	Net* Price
22A5V5	.000005	\$.40	\$.24
22A5Q1	.00001	.40	.24
22A5Q12	.000012	.40	.24
22A5Q15	.000015	.40	.24
22A5Q18	.000018	.40	.24
22A5Q2	.00002	.40	.24
22A5Q22	.000022	.40	.24
22A5Q24	.000024	.40	.24
22A5Q27	.000027	.40	.24
22A5Q3	.000030	.40	.24
22A5Q33	.000033	.40	.24
22A5Q36	.000036	.40	.24
22A5Q39	.000039	.40	.24
22A5Q43	.000043	.40	.24
22A5Q47	.000047	.40	.24
22A5Q51	.000051	.40	.24
22A5Q56	.000056	.40	.24
22A5Q62	.000062	.40	.24
22A5Q68	.000068	.40	.24

TYPE 22A	Cap. Mfd.	List* Price	Net* Price
22A5Q75	.000075	.40	.24
22A5Q82	.000082	.40	.24
22A5Q91	.000091	.40	.24
22A5T1	.0001	.40	.24
22A5T11	.00011	.45	.27
22A5T12	.00012	.45	.27
22A5T13	.00013	.45	.27
22A5T15	.00015	.45	.27
22A5T16	.00016	.45	.27
22A5T18	.00018	.45	.27
22A5T2	.0002	.45	.27
22A5T22	.00022	.45	.27
22A5T24	.00024	.45	.27
22A5T27	.00027	.55	.33
22A5T3	.0003	.55	.33
22A5T33	.00033	.55	.33
22A5T36	.00036	.65	.39
22A5T39	.00039	.65	.39
22A5T43	.00043	.65	.39
22A5T47	.00047	.70	.42
22A5T51	.00051	.70	.42
22A5T56	.00056	.85	.51
22A5T62	.00062	.85	.51
22A5T68	.00068	.85	.51
22A5T75	.00075	.95	.57
22A5T82	.00082	.95	.57
22A5T91	.00091	1.00	.60
22ASD1	.001	1.10	.66

### Type 5A

Type 5A	Cap. Mfd.	List* Price	Net* Price
5ASD11	.0011	1.10	.66
5ASD12	.0012	1.35	.81
5ASD13	.0013	1.35	.81
5ASD15	.0015	1.35	.81
5ASD16	.0016	1.35	.81
5ASD18	.0018	1.35	.81
5ASD2	.002	1.35	.81
5ASD22	.0022	1.80	1.08
5ASD24	.0024	1.80	1.08
5ASD27	.0027	2.05	1.23
5ASD3	.003	2.05	1.23
5ASD33	.0033	2.05	1.23
5ASD36	.0036	2.15	1.29

### Type 1A

Type 1A	Cap. Mfd.	List* Price	Net* Price
1ASD39	.0039	2.15	1.29
1ASD43	.0043	2.15	1.29
1ASD47	.0047	2.25	1.35
1ASD51	.0051	2.25	1.35
1ASD56	.0056	2.25	1.35
1ASD62	.0062	2.25	1.35
1ASD68	.0068	2.50	1.50
1ASD75	.0075	2.50	1.50
1ASD82	.0082	2.50	1.50
1ASD91	.0091	2.50	1.50
1AS51	.01	2.50	1.50
1AS511	.011	2.80	1.68
1AS512	.012	3.05	1.83
1AS513	.013	3.05	1.83
1AS515	.015	3.05	1.83

### Type 1AD

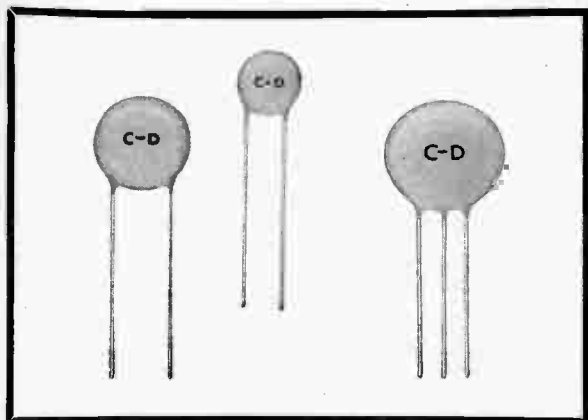
Type 1AD	Cap. Mfd.	List* Price	Net* Price
1AD3516	.016	3.55	2.13
1AD3518	.018	3.55	2.13
1AD352	.02	3.55	2.13
1AD3522	.022	4.35	2.61
1AD3524	.024	4.35	2.61
1AD3527	.027	4.55	2.73
1AD353	.03	4.55	2.73
†1AD3533	.033	5.85	3.51
†1AD3536	.036	5.85	3.51
†1AD3539	.039	5.85	3.51
†1AD354	.040	5.85	3.51

\*PRICES cover CHARACTERISTICS "C" or "E"; for CHAR. "F" add 25¢ each to List Price.

†Rated at 300 VDCW.



## "TINYMIKE" CERAMIC CAPACITORS



### THE CERAMIC WITH THE MILLION DOLLAR BODY

- Small, space-saving and lightweight.
- Available in all popular capacities.
- Guaranteed minimum capacity tolerance.
- Adapted for wide variety of applications.
- Minimized eddy current losses due to construction.
- Low inductance, stable, dependable performance.
- Available with temperature compensating characteristics.

### General Purpose DISC HIGH K

TYPE: **BYA — BYB**

VOLTAGE: 1000 VDCW, except as noted.

TOLERANCE: GMC, except as noted.

TEMPERATURE RANGE: -55°C to +85°C.

#### SINGLES

Cap. Mmfd.	Cat. No.	Dia. Max. (Inches)	Thick. Max. (Inches)	List Price	Net Price
470	<b>BYA10T47</b>	$\frac{9}{32}$	$\frac{3}{32}$	\$.20	<b>\$.12</b>
500	<b>BYA10T5</b>	$\frac{9}{32}$	$\frac{3}{32}$	.20	<b>.12</b>
680	<b>BYA10T68</b>	$\frac{9}{32}$	$\frac{3}{32}$	.20	<b>.12</b>
820	<b>BYA10T82</b>	$\frac{9}{32}$	$\frac{3}{32}$	.20	<b>.12</b>
*1000	<b>BYA6D1</b>	$\frac{9}{32}$	$\frac{3}{32}$	.20	<b>.12</b>
†1000	<b>BYA10D1M</b>	$\frac{3}{8}$	$\frac{3}{32}$	.20	<b>.12</b>
1500	<b>BYA10D15</b>	$\frac{3}{8}$	$\frac{3}{32}$	.20	<b>.12</b>
2000	<b>BYA10D2</b>	$\frac{3}{8}$	$\frac{3}{32}$	.20	<b>.12</b>
2200	<b>BYA10D22</b>	$\frac{3}{8}$	$\frac{3}{32}$	.20	<b>.12</b>
2500	<b>BYA10D25</b>	$\frac{19}{32}$	$\frac{3}{32}$	.20	<b>.12</b>
2700	<b>BYA10D27</b>	$\frac{19}{32}$	$\frac{3}{32}$	.20	<b>.12</b>
3000	<b>BYA10D3</b>	$\frac{19}{32}$	$\frac{3}{32}$	.20	<b>.12</b>
3300	<b>BYA10D33</b>	$\frac{19}{32}$	$\frac{3}{32}$	.20	<b>.12</b>
4000	<b>BYA10D4</b>	$\frac{19}{32}$	$\frac{3}{32}$	.20	<b>.12</b>
†4700	<b>BYA10D47M</b>	$\frac{19}{32}$	$\frac{3}{32}$	.20	<b>.12</b>
5000	<b>BYA10D5</b>	$\frac{5}{8}$	$\frac{3}{32}$	.20	<b>.12</b>
†5000	<b>BYA10D5M</b>	$\frac{5}{8}$	$\frac{3}{32}$	.30	<b>.18</b>
6800	<b>BYA10D68</b>	$\frac{19}{32}$	$\frac{3}{32}$	.20	<b>.12</b>
*10000	<b>BYA6S1</b>	$\frac{5}{8}$	$\frac{3}{32}$	.20	<b>.12</b>
10000	<b>BYA10S1</b>	$\frac{3}{4}$	$\frac{3}{32}$	.20	<b>.12</b>
†10000	<b>BYA10S1M</b>	$\frac{5}{8}$	$\frac{3}{32}$	.30	<b>.18</b>
15000	<b>BYA10S15</b>	$\frac{5}{8}$	$\frac{3}{32}$	.30	<b>.18</b>
*20000	<b>BYB6S2</b>	$\frac{7}{8}$	$\frac{3}{32}$	.30	<b>.18</b>
*30000	<b>BYB6S3</b>	$\frac{7}{8}$	$\frac{3}{32}$	.45	<b>.27</b>
*40000	<b>BYB6S4</b>	$\frac{7}{8}$	$\frac{3}{32}$	.50	<b>.30</b>

\*Rated at 600 VDCW.

†Tolerance  $\pm 20\%$ .

### General Purpose DISC UNSHIELDED

TYPE: **BYC**

VOLTAGE: 600 VDCW

TOLERANCE: GMC

TEMPERATURE RANGE: -55°C to +85°C.

#### DUALS

Cap. Mmfd.	Cat. No.	Dia. Max. (Inches)	Thick. Max. (Inches)	List Price	Net Price
2 x 1000	<b>BYC6DD1</b>	$\frac{3}{8}$	$\frac{7}{32}$	\$1.40	<b>\$.24</b>
2 x 1500	<b>BYC6DD15</b>	$\frac{19}{32}$	$\frac{7}{32}$	.40	<b>.24</b>
2 x 2000	<b>BYC6DD2</b>	$\frac{19}{32}$	$\frac{7}{32}$	.40	<b>.24</b>
2 x 2200	<b>BYC6DD22</b>	$\frac{19}{32}$	$\frac{7}{32}$	.40	<b>.24</b>
2 x 2500	<b>BYC6DD25</b>	$\frac{19}{32}$	$\frac{7}{32}$	.40	<b>.24</b>
2 x 3000	<b>BYC6DD3</b>	$\frac{3}{4}$	$\frac{5}{32}$	.45	<b>.27</b>
2 x 4000	<b>BYC6DD4</b>	$\frac{3}{4}$	$\frac{5}{32}$	.45	<b>.27</b>
2 x 4700	<b>BYC6DD47</b>	$\frac{3}{4}$	$\frac{5}{32}$	.45	<b>.27</b>
2 x 5000	<b>BYC6DD5</b>	$\frac{3}{4}$	$\frac{5}{32}$	.45	<b>.27</b>

### General Purpose DISC SHIELDED

TYPE: **BYD**

VOLTAGE: 600 VDCW

TOLERANCE: GMC

TEMPERATURE RANGE: -55°C to +85°C.

#### DUALS

Cap. Mmfd.	Cat. No.	Dia. Max. (Inches)	Thick. Max. (Inches)	List Price	Net Price
2 x 1000	<b>BYD6DD1</b>	$\frac{3}{8}$	$\frac{7}{32}$	\$.45	<b>\$.27</b>
2 x 2000	<b>BYD6DD2</b>	$\frac{3}{8}$	$\frac{7}{32}$	.45	<b>.27</b>
2 x 5000	<b>BYD6DD5</b>	$\frac{19}{32}$	$\frac{7}{32}$	.50	<b>.30</b>
2 x 10000	<b>BYD6DS1</b>	$\frac{3}{8}$	$\frac{7}{32}$	.50	<b>.30</b>

### General Purpose DISC CLOSE TOLERANCE

TYPE: **L**

VOLTAGE: 1000 VDCW

TOLERANCE:  $\pm 10\%$ , except as noted, to 390 mmfd. incl.  $\pm 20\%$ , 400 mmfd. and over.

TEMPERATURE RANGE: -55°C to +85°C.

#### SINGLES

Cap. Mmfd.	Cat. No.	Dia. Max. (Inches)	Thick. Max. (Inches)	List Price	Net Price
†3.3	<b>L10V33</b>	$\frac{2}{32}$	$\frac{5}{32}$	\$.20	<b>\$.12</b>
†5.0	<b>L10V5</b>	$\frac{2}{32}$	$\frac{5}{32}$	.20	<b>.12</b>
†6.8	<b>L10V68</b>	$\frac{2}{32}$	$\frac{5}{32}$	.20	<b>.12</b>
7.0	<b>L10V7</b>	$\frac{2}{32}$	$\frac{5}{32}$	.20	<b>.12</b>
8.0	<b>L10V8</b>	$\frac{2}{32}$	$\frac{5}{32}$	.20	<b>.12</b>
10	<b>L10Q1</b>	$\frac{2}{32}$	$\frac{5}{32}$	.20	<b>.12</b>
12	<b>L10Q12</b>	$\frac{2}{32}$	$\frac{5}{32}$	.20	<b>.12</b>
15	<b>L10Q15</b>	$\frac{2}{32}$	$\frac{5}{32}$	.20	<b>.12</b>
18	<b>L10Q18</b>	$\frac{2}{32}$	$\frac{5}{32}$	.20	<b>.12</b>
20	<b>L10Q2</b>	$\frac{2}{32}$	$\frac{5}{32}$	.20	<b>.12</b>
22	<b>L10Q22</b>	$\frac{2}{32}$	$\frac{5}{32}$	.20	<b>.12</b>
24	<b>L10Q24</b>	$\frac{2}{32}$	$\frac{5}{32}$	.20	<b>.12</b>
25	<b>L10Q25</b>	$\frac{2}{32}$	$\frac{5}{32}$	.20	<b>.12</b>
27	<b>L10Q27</b>	$\frac{2}{32}$	$\frac{5}{32}$	.20	<b>.12</b>
30	<b>L10Q3</b>	$\frac{2}{32}$	$\frac{5}{32}$	.20	<b>.12</b>
33	<b>L10Q33</b>	$\frac{2}{32}$	$\frac{5}{32}$	.20	<b>.12</b>
39	<b>L10Q39</b>	$\frac{2}{32}$	$\frac{5}{32}$	.20	<b>.12</b>
47	<b>L10Q47</b>	$\frac{2}{32}$	$\frac{5}{32}$	.20	<b>.12</b>
50	<b>L10Q5</b>	$\frac{2}{32}$	$\frac{5}{32}$	.20	<b>.12</b>
51	<b>L10Q51</b>	$\frac{2}{32}$	$\frac{5}{32}$	.20	<b>.12</b>

†Tolerance  $\pm .5$  Mmfd.

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## "TINYMIKE" CERAMIC CAPACITORS

TYPE: L (cont'd)

### SINGLES

Cap. Mmfd.	Cat. No.	Dia. Max. (Inches)	Thick. Max. (Inches)	List Price	Net Price
56	L10Q56	9/32	5/32	\$.20	\$.12
68	L10Q68	9/32	5/32	.20	.12
75	L10Q75	9/32	5/32	.20	.12
82	L10Q82	9/32	5/32	.20	.12
91	L10Q91	9/32	5/32	.20	.12
100	L10T1	9/32	5/32	.20	.12
110	L10T11	9/32	5/32	.20	.12
120	L10T12	9/32	5/32	.20	.12
130	L10T13	9/32	5/32	.20	.12
150	L10T15	9/32	5/32	.20	.12
180	L10T18	9/32	5/32	.20	.12
200	L10T2	9/32	5/32	.20	.12
220	L10T22	9/32	5/32	.20	.12
240	L10T24	9/32	5/32	.20	.12
250	L10T25	9/32	5/32	.20	.12
270	L10T27	9/32	5/32	.20	.12
300	L10T3	9/32	5/32	.20	.12
330	L10T33	9/32	5/32	.20	.12
350	L10T35	9/32	5/32	.20	.12
360	L10T36	9/32	5/32	.20	.12
390	L10T39	9/32	5/32	.20	.12
400	L10T4	9/32	5/32	.20	.12
420	L10T42	9/32	5/32	.20	.12
470	L10T47	9/32	5/32	.20	.12
500	L10T5	9/32	5/32	.20	.12
510	L10T51	9/32	5/32	.20	.12
560	L10T56	9/32	5/32	.20	.12
600	L10T6	9/32	5/32	.20	.12
620	L10T62	9/32	5/32	.20	.12
680	L10T68	9/32	5/32	.20	.12
750	L10T75	9/32	5/32	.20	.12
800	L10T8	9/32	5/32	.20	.12
820	L10T82	9/32	5/32	.20	.12
910	L10T91	9/32	5/32	.20	.12
1000	L10D1	9/32	5/32	.20	.12
1200	L10D12	9/32	5/32	.20	.12
1300	L10D13	9/32	5/32	.20	.12
1500	L10D15	9/32	5/32	.20	.12
1600	L10D16	9/32	5/32	.20	.12
1800	L10D18	9/32	5/32	.20	.12
2000	L10D2	9/32	5/32	.20	.12
2200	L10D22	9/32	5/32	.20	.12
2500	L10D25	9/32	5/32	.20	.12
2700	L10D27	9/32	5/32	.20	.12
3000	L10D3	9/32	5/32	.20	.12
3300	L10D33	9/32	5/32	.20	.12
3900	L10D39	9/32	5/32	.20	.12
4000	L10D4	9/32	5/32	.20	.12
4300	L10D43	9/32	5/32	.20	.12
4700	L10D47	9/32	5/32	.20	.12
5000	L10D5	9/32	5/32	.30	.18
5100	L10D51	9/32	5/32	.30	.18

### General Purpose DISC HIGH VOLTAGE

TYPE: HVA — HVB — HVC

VOLTAGE: 1600 VDCW

TEMPERATURE RANGE: -55°C to +85°C.

TOLERANCE: 4.7 to 100 mmfd. incl. ±10%, except as noted.  
150 to 1000 mmfd. incl. ±20%.  
1200 to 6800 mmfd. incl. GMC.

### SINGLES

Cap. Mmfd.	Cat. No.	Dia. Max. (Inches)	Thick. Max. (Inches)	List Price	Net Price
†4.7	HVA16V47	3/8	7/32	\$.30	\$.18
6.8	HVA16V68	3/8	7/32	.30	.18
10	HVA16Q1	3/8	7/32	.30	.18
12	HVA16Q12	3/8	7/32	.30	.18
15	HVA16Q15	3/8	7/32	.30	.18

TYPE: HVA — HVB — HVC (cont'd)

Cap. Mmfd.	Cat. No.	Dia. Max. (Inches)	Thick. Max. (Inches)	List Price	Net Price
18	HVA16Q18	3/8	7/32	\$.30	\$.18
20	HVA16Q2	3/8	7/32	.30	.18
22	HVA16Q22	3/8	7/32	.30	.18
33	HVA16Q33	3/8	7/32	.30	.18
47	HVA16Q47	3/8	7/32	.30	.18
56	HVA16Q56	19/32	7/32	.30	.18
62	HVA16Q62	19/32	7/32	.30	.18
68	HVA16Q68	19/32	7/32	.30	.18
82	HVA16Q82	19/32	7/32	.30	.18
100	HVA16T1	19/32	7/32	.30	.18
150	HVB16T15	3/8	7/32	.30	.18
180	HVB16T18	3/8	7/32	.30	.18
220	HVB16T22	3/8	7/32	.30	.18
300	HVB16T3	3/8	7/32	.30	.18
330	HVB16T33	3/8	7/32	.30	.18
390	HVB16T39	3/8	7/32	.30	.18
470	HVB16T47	3/8	7/32	.30	.18
680	HVB16T68	3/8	7/32	.30	.18
1000	HVB16D1	3/8	7/32	.30	.18
1200	HVC16D12	3/8	7/32	.30	.18
1500	HVC16D15	19/32	7/32	.30	.18
2000	HVC16D2	19/32	7/32	.30	.18
2200	HVC16D22	19/32	7/32	.30	.18
3300	HVC16D33	19/32	7/32	.30	.18
4700	HVC16D47	3/8	7/32	.30	.18
6800	HVC16D68	3/8	7/32	.30	.18

†Tolerance ±.5 Mmfd.

### High Voltage DISC for BUFFER Applications

TYPE: HVE

VOLTAGE: 1600 VDCW

TOLERANCE: GMC, except as noted.

TEMPERATURE RANGE: -55°C to +85°C.

### SINGLES

Cap. Mmfd.	Cat. No.	Dia. Max. (Inches)	Thick. Max. (Inches)	List Price	Net Price
3000	HVE16D3	3/8	7/32	\$.35	\$.21
4000	HVE16D4	3/8	7/32	.35	.21
5000	HVE16D5	3/8	7/32	.35	.21
6000	HVE16D6	3/8	7/32	.35	.21
7000	HVE16D7	3/8	7/32	.35	.21
7500	HVE16D75	3/8	7/32	.35	.21
8000	HVE16D8	3/8	7/32	.35	.21
10000	HVE16S1	3/8	7/32	.35	.21
†15000	HVE16S15	3/8	7/32	.60	.36

†Tolerance +80% -20%.

### General Purpose DISC HIGH VOLTAGE

TYPE: HVA — HVB — HVC

VOLTAGE: 2000 VDCW

TEMPERATURE RANGE: -55°C to +85°C.

TOLERANCE: 4.7 to 82 mmfd. incl. ±10%, except as noted.  
100 to 1500 mmfd. incl. ±20%.  
2000 to 6000 mmfd. incl. GMC.

### SINGLES

Cap. Mmfd.	Cat. No.	Dia. Max. (Inches)	Thick. Max. (Inches)	List Price	Net Price
†4.7	HVA20V47	3/8	7/32	\$.35	\$.21
6.8	HVA20V68	3/8	7/32	.35	.21
10	HVA20Q1	3/8	7/32	.35	.21

(cont'd next page)



## "TINYMIKE" CERAMIC CAPACITORS

TYPE: HVA — HVB — HVC (cont'd)

Cap. Mmfd.	Cat. No.	Dia. Max. (Inches)	Thick. Max. (Inches)	List Price	Net Price
15	HVA20Q15	3/8	1/32	\$.35	\$.21
22	HVA20Q22	3/8	1/32	.35	.21
33	HVA20Q33	3/8	1/32	.35	.21
39	HVA20Q39	19/32	1/32	.35	.21
47	HVA20Q47	19/32	1/32	.35	.21
56	HVA20Q56	19/32	1/32	.35	.21
62	HVA20Q62	19/32	1/32	.35	.21
68	HVA20Q68	19/32	1/32	.35	.21
75	HVA20Q75	19/32	1/32	.35	.21
82	HVA20Q82	19/32	1/32	.35	.21
100	HVB20T1	3/8	1/32	.35	.21
120	HVB20T12	3/8	1/32	.35	.21
150	HVB20T15	3/8	1/32	.35	.21
180	HVB20T18	3/8	1/32	.35	.21
200	HVB20T2	3/8	1/32	.35	.21
220	HVB20T22	3/8	1/32	.35	.21
270	HVB20T27	3/8	1/32	.35	.21
300	HVB20T3	3/8	1/32	.35	.21
330	HVB20T33	19/32	1/32	.35	.21
390	HVB20T39	19/32	1/32	.35	.21
470	HVB20T47	19/32	1/32	.35	.21
500	HVB20T5	19/32	1/32	.35	.21
560	HVB20T56	19/32	1/32	.35	.21
680	HVB20T68	19/32	1/32	.35	.21
1000	HVB20D1	3/4	1/32	.35	.21
1500	HVB20D15	3/4	1/32	.35	.21
2000	HVC20D2	19/32	1/32	.35	.21
2200	HVC20D22	19/32	1/32	.35	.21
3300	HVC20D33	3/4	1/32	.35	.21
4700	HVC20D47	3/4	1/32	.35	.21
5000	HVC20D5	3/4	1/32	.35	.21
6000	HVC20D6	3/4	1/32	.40	.24

†Tolerance  $\pm 5$  Mmfd.

### High Voltage DISC

for DEFLECTION YOKE Applications

TYPE: HVD

VOLTAGE: 2000 VDCW

TOLERANCE:  $\pm 10\%$

TEMPERATURE RANGE:  $-55^{\circ}\text{C}$  to  $+85^{\circ}\text{C}$ .

#### SINGLES

Cap Mmfd.	Cat. No.	Dia. Max. (Inches)	Thick. Max. (Inches)	List Price	Net Price
15	HVD20Q15	3/8	1/32	\$.35	\$.21
18	HVD20Q18	3/8	1/32	.35	.21
20	HVD20Q2	3/8	1/32	.35	.21
22	HVD20Q22	3/8	1/32	.35	.21
33	HVD20Q33	3/8	1/32	.35	.21
39	HVD20Q39	19/32	1/32	.35	.21
47	HVD20Q47	19/32	1/32	.35	.21
62	HVD20Q62	19/32	1/32	.35	.21
68	HVD20Q68	19/32	1/32	.35	.21
75	HVD20Q75	19/32	1/32	.35	.21
82	HVD20Q82	19/32	1/32	.35	.21
91	HVD20Q91	19/32	1/32	.35	.21

### General Purpose DISC HIGH VOLTAGE

TYPE: HVA — HVB — HVC

VOLTAGE: 3000 VDCW

TEMPERATURE RANGE:  $-55^{\circ}\text{C}$  to  $+85^{\circ}\text{C}$ .

TOLERANCE: 4.7 to 60 mmfd. incl.  $\pm 10\%$ , except as noted; 68 to 1000 mmfd. incl.  $\pm 20\%$ ; 1500 to 4000 mmfd. incl. GMC.

#### SINGLES

Cap. Mmfd.	Cat. No.	Dia. Max. (Inches)	Thick. Max. (Inches)	List Price	Net Price
†4.7	HVA30V47	3/8	1/32	\$.40	\$.24
6.8	HVA30V68	3/8	1/32	.40	.24
10	HVA30Q1	3/8	1/32	.40	.24
12	HVA30Q12	3/8	1/32	.40	.24
15	HVA30Q15	3/8	1/32	.40	.24
22	HVA30Q22	3/8	1/32	.40	.24
33	HVA30Q33	19/32	1/32	.40	.24
39	HVA30Q39	19/32	1/32	.40	.24
47	HVA30Q47	19/32	1/32	.40	.24
50	HVA30Q5	19/32	1/32	.40	.24
60	HVA30Q6	19/32	1/32	.40	.24
68	HVB30Q68	3/8	1/32	.40	.24
100	HVB30T1	3/8	1/32	.40	.24
120	HVB30T12	3/8	1/32	.40	.24
150	HVB30T15	3/8	1/32	.40	.24
180	HVB30T18	3/8	1/32	.40	.24
200	HVB30T2	3/8	1/32	.40	.24
220	HVB30T22	19/32	1/32	.40	.24
250	HVB30T25	19/32	1/32	.40	.24
270	HVB30T27	19/32	1/32	.40	.24
300	HVB30T3	19/32	1/32	.40	.24
330	HVB30T33	19/32	1/32	.40	.24
390	HVB30T39	19/32	1/32	.40	.24
470	HVB30T47	19/32	1/32	.40	.24
500	HVB30T5	19/32	1/32	.40	.24
680	HVB30T68	3/4	1/32	.40	.24
1000	HVB30D1	3/4	1/32	.40	.24
1500	HVC30D15	19/32	1/32	.40	.24
2000	HVC30D2	3/4	1/32	.40	.24
2200	HVC30D22	3/4	1/32	.40	.24
3300	HVC30D33	3/4	1/32	.40	.24
4000	HVC30D4	3/4	1/32	.40	.24

### General Purpose DISC HIGH VOLTAGE

TYPE: HVA — HVB

VOLTAGE: 5000 VDCW

TOLERANCE:  $\pm 20\%$

TEMPERATURE RANGE:  $-55^{\circ}\text{C}$  to  $+85^{\circ}\text{C}$ .

#### SINGLES

Cap. Mmfd.	Cat. No.	Dia. Max. (Inches)	Thick. Max. (Inches)	List Price	Net Price
4.7	HVA50V47	3/8	1/32	\$.45	\$.27
10	HVA50Q1	3/8	1/32	.45	.27
22	HVA50Q22	19/32	1/32	.45	.27
47	HVB50Q47	3/8	1/32	.45	.27
100	HVB50T1	3/8	1/32	.45	.27
220	HVB50T22	19/32	1/32	.45	.27
330	HVB50T33	19/32	1/32	.45	.27
470	HVB50T47	3/4	1/32	.45	.27



**"TINYMIKE" CERAMIC CAPACITORS**

Temperature Compensating DISC  
Coefficient NPO

TYPE: C

VOLTAGE: 1000 VDCW

TOLERANCE: ±10%, except as noted.

TEMPERATURE RANGE: -55°C to +85°C.

**SINGLES**

Cap. Mmfd.	Cat. Na.	Dia. Max. (Inches)	Thick. Max. (Inches)	List Price	Net Price
1.5	C10V15C	9/32	5/32	\$.50	\$.30
2.0	C10V2C	9/32	5/32	.50	.30
2.2	C10V22C	9/32	5/32	.50	.30
3.0	C10V3C	9/32	5/32	.50	.30
3.3	C10V33C	9/32	5/32	.50	.30
4.0	C10V4C	9/32	5/32	.50	.30
4.7	C10V47C	9/32	5/32	.50	.30
5.0	C10V5C	9/32	5/32	.50	.30
6.0	C10V6C	9/32	5/32	.50	.30
6.8	C10V68C	9/32	5/32	.50	.30
7.0	C10V7C	9/32	5/32	.50	.30
8.0	C10V8C	9/32	5/32	.50	.30
8.2	C10V82C	9/32	5/32	.50	.30
9.0	C10V9C	9/32	5/32	.50	.30
10	C10Q1C	9/32	5/32	.50	.30
12	C10Q12C	9/32	5/32	.50	.30
13	C10Q13C	9/32	5/32	.50	.30
15	C10Q15C	9/32	5/32	.50	.30
18	C10Q18C	9/32	5/32	.50	.30
20	C10Q2C	9/32	5/32	.50	.30
22	C10Q22C	19/32	5/32	.50	.30
24	C10Q24C	19/32	5/32	.50	.30
25	C10Q25C	19/32	5/32	.50	.30
27	C10Q27C	19/32	5/32	.50	.30
30	C10Q3C	19/32	5/32	.50	.30
33	C10Q33C	19/32	5/32	.50	.30
36	C10Q36C	19/32	5/32	.50	.30
39	C10Q39C	19/32	5/32	.50	.30
43	C10Q43C	19/32	5/32	.50	.30
47	C10Q47C	19/32	5/32	.50	.30
50	C10Q5C	3/4	5/32	.55	.33
51	C10Q51C	3/4	5/32	.55	.33
56	C10Q56C	3/4	5/32	.55	.33
62	C10Q62C	3/4	5/32	.55	.33
68	C10Q68C	3/4	5/32	.55	.33
75	C10Q75C	3/4	5/32	.55	.33
82	C10Q82C	3/4	5/32	.55	.33
91	C10Q91C	7/8	5/32	.55	.33
100	C10T1C	7/8	5/32	.55	.33

†Tolerance ±.5 Mmfd.

Temperature Compensating DISC  
Coefficient N750

TYPE: C

VOLTAGE: 1000 VDCW

TOLERANCE: ±10%

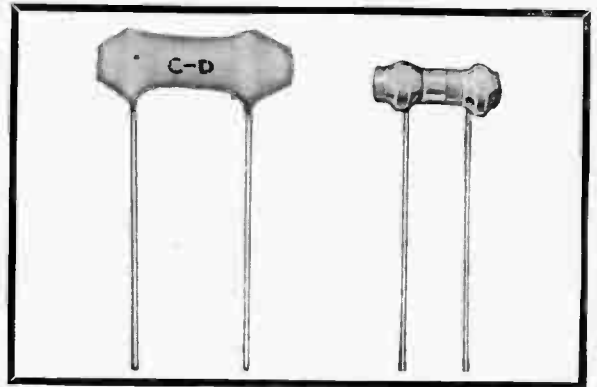
TEMPERATURE RANGE: -55°C to +85°C.

**SINGLES**

Cap. Mmfd.	Cat. Na.	Dia. Max. (Inches)	Thick. Max. (Inches)	List Price	Net Price
5.0	C10V5U	9/32	5/32	\$.50	\$.30
6.0	C10V6U	9/32	5/32	.50	.30
6.8	C10V68U	9/32	5/32	.50	.30
7.0	C10V7U	9/32	5/32	.50	.30
8.0	C10V8U	9/32	5/32	.50	.30
8.2	C10V82U	9/32	5/32	.50	.30
9.0	C10V9U	9/32	5/32	.50	.30
10	C10Q1U	9/32	5/32	.50	.30
12	C10Q12U	9/32	5/32	.50	.30
13	C10Q13U	9/32	5/32	.50	.30
15	C10Q15U	9/32	5/32	.50	.30
18	C10Q18U	9/32	5/32	.50	.30
20	C10Q2U	9/32	5/32	.50	.30
22	C10Q22U	9/32	5/32	.50	.30
24	C10Q24U	9/32	5/32	.50	.30

TYPE: C (cont'd)

Cap. Mmfd.	Cat. Na.	Dia. Max. (Inches)	Thick. Max. (Inches)	List Price	Net Price
25	C10Q25U	9/32	5/32	\$.50	\$.30
27	C10Q27U	9/32	5/32	.50	.30
30	C10Q3U	9/32	5/32	.50	.30
33	C10Q33U	9/32	5/32	.50	.30
36	C10Q36U	9/32	5/32	.50	.30
39	C10Q39U	9/32	5/32	.50	.30
43	C10Q43U	9/32	5/32	.50	.30
47	C10Q47U	9/32	5/32	.50	.30
50	C10Q5U	9/32	5/32	.50	.30
51	C10Q51U	9/32	5/32	.50	.30
56	C10Q56U	3/4	5/32	.50	.30
62	C10Q62U	3/4	5/32	.50	.30
68	C10Q68U	3/4	5/32	.50	.30
75	C10Q75U	3/4	5/32	.50	.30
82	C10Q82U	3/4	5/32	.50	.30
91	C10Q91U	7/8	5/32	.50	.30
100	C10T1U	7/8	5/32	.50	.30
110	C10T11U	7/8	5/32	.50	.30
120	C10T12U	7/8	5/32	.50	.30
130	C10T13U	7/8	5/32	.50	.30
150	C10T15U	19/32	5/32	.50	.30
160	C10T16U	19/32	5/32	.55	.33
175	C10T175U	19/32	5/32	.55	.33
180	C10T18U	19/32	5/32	.55	.33
200	C10T2U	19/32	5/32	.55	.33
220	C10T22U	3/4	5/32	.55	.33
240	C10T24U	3/4	5/32	.55	.33
270	C10T27U	3/4	5/32	.55	.33
300	C10T3U	3/4	5/32	.55	.33
330	C10T33U	3/4	5/32	.55	.33



General Purpose TUBULAR  
CLOSE TOLERANCE

TYPE: LT

VOLTAGE: 600 VDCW

TOLERANCE: ±20%, except as noted.

TEMPERATURE RANGE: -55°C to +85°C.

**SINGLES**

Cap. Mmfd.	Cat. Na.	Dia. Max. (Inches)	Thick. Max. (Inches)	List Price	Net Price
3.0	LT6V3	.240	.460	\$2.20	\$.12
5.0	LT6V5	.240	.460	.20	.12
6.8	LT6V68	.240	.460	.20	.12
8.0	LT6V8	.240	.460	.20	.12
10	LT6Q1	.240	.460	.20	.12
12	LT6Q12	.240	.460	.20	.12
15	LT6Q15	.240	.460	.20	.12
18	LT6Q18	.240	.460	.20	.12
22	LT6Q22	.240	.460	.20	.12
25	LT6Q25	.240	.460	.20	.12



## "TINYMIKE" CERAMIC CAPACITORS

Cap. Mmfd.	Cat. No.	Dia. Max. (Inches)	Thick. Max. (Inches)	List Price	Net Price
27	LT6Q27	.240	.460	\$2.00	\$1.12
33	LT6Q33	.240	.460	.20	.12
39	LT6Q39	.240	.460	.20	.12
47	LT6Q47	.240	.460	.20	.12
50	LT6Q5	.240	.460	.20	.12
56	LT6Q56	.240	.460	.20	.12
68	LT6Q68	.240	.460	.20	.12
75	LT6Q75	.240	.460	.20	.12
100	LT6T1	.240	.460	.20	.12
120	LT6T12	.240	.460	.20	.12
150	LT6T15	.240	.460	.20	.12
180	LT6T18	.240	.460	.20	.12
200	LT6T2	.240	.460	.20	.12
220	LT6T22	.240	.460	.20	.12
250	LT6T25	.240	.460	.20	.12
270	LT6T27	.240	.460	.20	.12
300	LT6T3	.240	.460	.20	.12
330	LT6T33	.240	.460	.20	.12
390	LT6T39	.240	.460	.20	.12
400	LT6T4	.240	.460	.20	.12
470	LT6T47	.240	.460	.20	.12
500	LT6T5	.240	.460	.20	.12
560	LT6T56	.240	.460	.20	.12
600	LT6T6	.240	.460	.20	.12
680	LT6T68	.240	.460	.20	.12
750	LT6T75	.240	.460	.20	.12
1000	LT6D1	.240	.710	.20	.12
1200	LT6D12	.240	.710	.20	.12
1500	LT6D15	.240	.710	.20	.12
1800	LT6D18	.240	.710	.20	.12
2000	LT6D2	.240	.710	.20	.12
† 2200	LT6D22	.240	.460	.20	.12
† 2500	LT6D25	.240	.460	.20	.12
† 2700	LT6D27	.240	.460	.20	.12
† 3000	LT6D3	.240	.460	.20	.12
† 3300	LT6D33	.240	.710	.20	.12
† 4000	LT6D4	.240	.710	.20	.12
† 4700	LT6D47	.240	.710	.20	.12
† 5000	LT6D5	.240	.710	.20	.12
† 5600	LT6D56	.240	.710	.20	.12
† 6800	LT6D68	.240	.710	.20	.12
† 10000	LT6S1	.300	.910	.20	.12
† 15000	LT6S15	.345	1.180	.30	.18
† 20000	LT6S2	.345	1.180	.30	.18
† 25000	LT6S25	.345	1.180	.30	.18

†Tolerance GMC.

### Temperature Compensating TUBULAR UNINSULATED Coefficient NPO

TYPE: CTA

VOLTAGE: 600 VDCW

TOLERANCE: ± 10%, except as noted.

TEMPERATURE RANGE: -55°C to +85°C.

#### SINGLES

Cap. Mmfd.	Cat. No.	Dia. Max. (Inches)	Thick. Max. (Inches)	List Price	Net Price
†1.5	CTA6V15C	.200	.400	\$5.50	\$3.30
†2.2	CTA6V22C	.200	.400	.50	.30
†3.3	CTA6V33C	.200	.400	.50	.30
†4.7	CTA6V47C	.200	.400	.50	.30
6.8	CTA6V68C	.200	.400	.50	.30
10	CTA6Q1C	.200	.400	.50	.30
12	CTA6Q12C	.200	.400	.50	.30
15	CTA6Q15C	.200	.400	.50	.30
18	CTA6Q18C	.200	.400	.50	.30
20	CTA6Q2C	.200	.400	.50	.30
22	CTA6Q22C	.200	.400	.50	.30
24	CTA6Q24C	.200	.400	.50	.30
27	CTA6Q27C	.200	.656	.50	.30
30	CTA6Q3C	.200	.656	.50	.30
33	CTA6Q33C	.200	.656	.50	.30

36	CTA6Q36C	.200	.656	\$5.50	\$3.30
39	CTA6Q39C	.200	.656	.50	.30
43	CTA6Q43C	.200	.656	.50	.30
47	CTA6Q47C	.250	.860	.50	.30
51	CTA6Q51C	.250	.860	.50	.30
56	CTA6Q56C	.250	.860	.50	.30
62	CTA6Q62C	.250	.860	.50	.30
68	CTA6Q68C	.250	.860	.50	.30
75	CTA6Q75C	.250	.860	.50	.30
82	CTA6Q82C	.250	.860	.50	.30
91	CTA6Q91C	.250	.860	.50	.30
100	CTA6T1C	.250	.860	.50	.30
110	CTA6T11C	.315	1.165	.50	.30
120	CTA6T12C	.315	1.165	.50	.30
130	CTA6T13C	.315	1.165	.50	.30
150	CTA6T15C	.315	1.165	.50	.30
160	CTA6T16C	.315	1.165	.50	.30
180	CTA6T18C	.315	1.165	.50	.30

†Tolerance ± .5 Mmfd.

### Temperature Compensating TUBULAR UNINSULATED

Coefficient N750

TYPE: CTA

VOLTAGE: 600 VDCW

TOLERANCE: ± 10%

TEMPERATURE RANGE: -55°C to +85°C.

#### SINGLES

Cap. Mmfd.	Cat. No.	Dia. Max. (Inches)	Thick. Max. (Inches)	List Price	Net Price
10	CTA6Q1U	.200	.400	\$5.50	\$3.30
12	CTA6Q12U	.200	.400	.50	.30
15	CTA6Q15U	.200	.400	.50	.30
18	CTA6Q18U	.200	.400	.50	.30
20	CTA6Q2U	.200	.400	.50	.30
22	CTA6Q22U	.200	.400	.50	.30
24	CTA6Q24U	.200	.400	.50	.30
27	CTA6Q27U	.200	.400	.50	.30
30	CTA6Q3U	.200	.400	.50	.30
33	CTA6Q33U	.200	.400	.50	.30
36	CTA6Q36U	.200	.400	.50	.30
39	CTA6Q39U	.200	.400	.50	.30
43	CTA6Q43U	.200	.400	.50	.30
47	CTA6Q47U	.200	.400	.50	.30
51	CTA6Q51U	.200	.400	.50	.30
56	CTA6Q56U	.200	.400	.50	.30
62	CTA6Q62U	.200	.400	.50	.30
68	CTA6Q68U	.200	.656	.50	.30
75	CTA6Q75U	.200	.656	.50	.30
82	CTA6Q82U	.200	.656	.50	.30
91	CTA6Q91U	.200	.656	.50	.30
100	CTA6T1U	.200	.656	.50	.30
110	CTA6T11U	.200	.656	.50	.30
120	CTA6T12U	.200	.656	.50	.30
130	CTA6T13U	.200	.656	.50	.30
150	CTA6T15U	.250	.860	.50	.30
160	CTA6T16U	.250	.860	.50	.30
180	CTA6T18U	.250	.860	.50	.30
200	CTA6T2U	.250	.860	.50	.30
220	CTA6T22U	.250	.860	.50	.30
240	CTA6T24U	.250	.860	.50	.30
270	CTA6T27U	.250	.860	.50	.30
300	CTA6T3U	.315	1.165	.50	.30
330	CTA6T33U	.315	1.165	.50	.30
360	CTA6T36U	.315	1.165	.50	.30
390	CTA6T39U	.315	1.165	.50	.30
430	CTA6T43U	.315	1.165	.50	.30
470	CTA6T47U	.315	1.165	.50	.30
510	CTA6T51U	.315	1.165	.50	.30





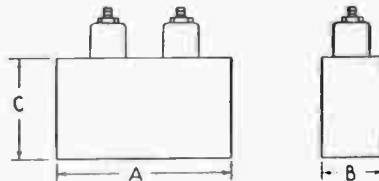
# Plastic Capacitors, Inc.

CHICAGO 14, ILL

- Mfrs. of
- Plastic Film Capacitors
  - Pulse Forming Networks
  - High Voltage Power Supplies
  - Paper Dielectric

## TYPE OE PLASTIC FILM DC FILTER - CONTAINER 70

Type OE high voltage capacitors are the smallest available for general filter and by-pass applications. The CP70 style containers are primed and painted. Bushings are steatite.



PART NUMBER	CAP. MFD	VOLTS DC	A	B	C	LIST PRICE
OE20-104	0.1	2000	2 1/2	1 3/16	2 1/8	\$5.10
OE20-254	0.25	2000	2 1/2	1 3/16	2 1/8	5.50
OE20-504	0.5	2000	2 1/2	1 3/16	2 1/8	5.80
OE20-105	1.0	2000	2 1/2	1 3/16	2 5/8	7.00
OE20-205	2	2000	2 1/2	1 3/16	3 7/8	8.10
OE20-405	4	2000	3 3/4	1 3/4	3 1/2	11.00
OE20-605	6	2000	3 3/4	1 3/4	4 3/4	15.50
OE20-805	8	2000	3 3/4	2 1/4	4 3/4	19.20
OE30-104	0.1	3000	2 1/2	1 3/16	2 1/4	12.10
OE30-254	0.25	3000	2 1/2	1 3/16	2 1/4	12.50
OE30-504	0.5	3000	2 1/2	1 3/16	3	13.20
OE30-105	1.0	3000	2 1/2	1 3/16	3 3/4	14.50
OE30-205	2	3000	3 3/4	1 1/4	4 3/8	18.40
OE30-405	4	3000	3 3/4	2 1/4	4 5/8	25.50
OE30-605	6	3000	4 9/16	3 3/4	3 3/8	45.00
OE30-805	8	3000	4 9/16	3 3/4	4 7/8	64.60
OE40-104	0.1	4000	2 1/2	1 3/16	2 1/8	19.50
OE40-254	0.25	4000	2 1/2	1 3/16	2 3/8	23.00
OE40-504	0.5	4000	2 1/2	1 3/16	3 1/8	26.00
OE40-105	1.0	4000	3 3/4	1 1/4	3 3/4	31.00
OE40-205	2	4000	3 3/4	1 3/4	4 3/8	38.50
OE40-405	4	4000	4 9/16	3 3/4	3 3/4	54.20
OE40-605	6	4000	4 9/16	3 3/4	4 7/8	59.80
OE40-805	8	4000	4 9/16	3 3/4	6 5/8	78.00
OE50-104	0.1	5000	2 1/2	1 3/16	2 1/8	22.40
OE50-254	0.25	5000	2 1/2	1 3/16	2 1/2	26.00
OE50-504	0.5	5000	2 1/2	1 3/16	3 7/8	28.40
OE50-105	1.0	5000	3 3/4	1 3/4	3 5/8	35.00
OE50-205	2	5000	3 3/4	2 1/4	4 3/4	44.30
OE50-405	4	5000	4 9/16	3 3/4	4 5/8	67.00
OE50-605	6	5000	4 9/16	3 3/4	6 3/4	94.00
OE50-805	8	5000	4 9/16	3 3/4	8 1/4	106.00
OE60-104	0.1	6000	3 3/4	1 1/4	2 1/2	24.40
OE60-254	0.25	6000	3 3/4	1 3/4	2 1/2	29.00
OE60-504	0.5	6000	3 3/4	1 3/4	3 7/8	33.00
OE60-105	1.0	6000	3 3/4	2 1/4	5	49.00
OE60-205	2	6000	4 9/16	3 3/4	5	65.00
OE60-405	4	6000	4 9/16	3 3/4	8 1/2	94.00
OE60-605	6	6000	8	4	9 1/4	130.00
OE60-805	8	6000	13 1/2	4 1/8	7	142.00

PART NUMBER	CAP MFD	VOLTS DC	A	B	C	LIST PRICE
OE75-104	0.1	7500	3 3/4	1 3/4	2 3/4	\$26.30
OE75-254	0.25	7500	3 3/4	1 3/4	2 3/4	32.00
OE75-504	0.5	7500	3 3/4	2 1/4	4 1/8	35.00
OE75-105	1.0	7500	3 3/4	3 3/16	5	58.00
OE75-205	2	7500	4 9/16	3 3/4	7	78.00
OE75-405	4	7500	8	4 1/8	9 1/4	118.00
OE75-605	6	7500	13 1/2	4 1/8	157.00	
OE75-805	8	7500	13 1/2	4 1/8	9 1/4	178.00
OE100-104	0.1	10 KV	3 3/4	1 3/4	3 3/8	34.20
OE100-254	0.25	10 KV	3 3/4	1 3/4	4 7/8	40.60
OE100-504	0.5	10 KV	3 3/4	2 1/4	4 7/8	58.00
OE100-105	1.0	10 KV	4 9/16	3 3/4	5 1/8	82.00
OE100-205	2	10 KV	4 9/16	3 3/4	9	105.00
OE100-405	4	10 KV	8	4	140.00	
OE100-605	6	10 KV	13 1/2	4 1/8	9 1/4	178.00
OE100-805	8	10 KV	13 1/2	4 1/8	13 1/8	208.00
OE150-104	0.1	15 KV	3 3/4	1 3/4	4 1/2	61.00
OE150-254	0.25	15 KV	3 3/4	3 3/16	4 3/4	72.00
OE150-504	0.5	15 KV	4 9/16	3 3/4	7 5/8	116.00
OE150-105	1.0	15 KV	8	4	7	153.00
OE150-205	2	15 KV	13 1/2	4 1/8	13 1/8	189.00
OE200-503	.05	20 KV	3 3/4	1 3/4	4 1/8	60.00
OE200-104	0.1	20 KV	3 3/4	2 1/4	5 1/8	78.00
OE200-254	0.25	20 KV	4 9/16	3 3/4	5 3/8	102.00
OE200-504	0.5	20 KV	4 9/16	3 3/4	10	159.00
OE200-105	1.0	20 KV	8	4	11	207.00
OE200-205	2	20 KV	13 1/2	4 1/8	13 1/8	297.00
OE250-103	.01	25 KV	3 3/4	2 1/4	2 7/8	51.00
OE250-203	.02	25 KV	3 3/4	2 1/4	3 5/8	55.00
OE250-303	.05	25 KV	3 3/4	2 1/4	4 5/8	64.00
OE250-104	0.1	25 KV	3 3/4	3 3/16	5 1/2	86.00
OE250-254	0.25	25 KV	4 9/16	3 3/4	9 1/2	132.00
OE250-504	0.5	25 KV	8	4	11	187.00
OE250-105	1.0	25 KV	13 1/2	4 1/8	13 1/8	297.00
OE300-103	.01	30 KV	3 3/4	2 1/4	3 1/2	63.50
OE300-203	.02	30 KV	3 3/4	2 1/4	4 1/2	72.00
OE300-303	.05	30 KV	3 3/4	3 3/16	5	95.00
OE300-104	0.1	30 KV	4 9/16	3 3/4	5 3/4	121.00
OE300-254	0.25	30 KV	8	4	7	163.00
OE300-504	0.5	30 KV	13 1/2	4 1/8	7	195.00

### HIGH VOLTAGE POWER PACKS

The high voltage power packs listings are designed for 118 volts 60 cycle input. Three styles are available. All except the HV20-202H and HV50-302H have a separate primary input for the heaters of the rectifier tubes if used. This enables the high voltage output to be adjusted from zero to rated voltage by changing the input from zero to 118V.

**HV SEALED TUBE TYPE** is smaller than the HV Standard and have the rectifiers sealed in the metal container. This necessitates return to the factory for rectifier tube replacement at a nominal charge.

PART NUMBER	OUTPUT		L	W	H	NET PRICE
	KV	MA				
HV 20-202H	2	2	3 3/4	3 3/16	5 1/2	\$54.00
HV 50-302H	5	5	3 3/4	4 9/16	6	74.40
HV100-102H	0 to 10	1	3 3/4	4 9/16	8	93.60
HV150-102H	0 to 15	1	3 3/4	4 9/16	9	108.00

**HV SELENIUM RECTIFIER TYPES** are the smallest 60 cycle high voltage Power Pack.

PART NUMBER	OUTPUT KV	OUTPUT MA	L	W	H	NET PRICE
HV 20-202S	0 to 2	2	3 3/4	3 3/16	5	\$64.20
HV 50-302S	0 to 5	5	3 3/4	4 9/16	5 1/2	127.20
HV100-102S	0 to 10	1	3 3/4	4 9/16	7	186.00
HV150-102S	0 to 15	1	3 3/4	4 9/16	8	246.00

THE ABOVE ARE PARTIAL LISTINGS. OTHER VOLTAGES AND CAPACITANCES ARE AVAILABLE.

PLASTIC CAPACITORS Inc. • CHICAGO 14, ILL.

**HV STANDARD POWER PACKS** have as their major feature special tube wells which permit easy access for replacement of the rectifier tubes.

PART NUMBER	OUTPUT KV	OUTPUT MA.	L	W	H	NET PRICE
HV50-502	0-5	5	6 5/8	4 3/8	6	\$89.40
HV100-102	0-10	1	7 1/2	5	5 1/2	108.00
HV150-502	0-10	5	8 1/4	6	6 1/2	120.00
HV150-102	0-15	1	7 1/2	5	5 1/2	118.80
HV150-502	0-15	5	8 1/4	6	6 1/2	130.80
HV200-102	0-20	1	7 1/2	5	5 1/2	138.00
HV200-502	0-20	5	10 1/4	7	7 3/4	191.40
HV300-102	0-30	1	8 3/4	6 3/4	6	207.00
HV300-502	0-30	5	10 1/4	7	7 3/4	222.00
HV500-502	0-50	5	12 1/2	11	12 1/2	426.00
HV750-502	0-75	2	19	11 1/2	13 1/2	744.00



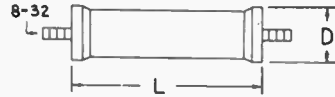
# Plastic Capacitors, Inc.

CHICAGO 14, ILL

- Mfrs. of
- Plastic Film Capacitors
  - Pulse Forming Networks
  - High Voltage Power Supplies
  - Paper Dielectric

## GLASS CAPS TYPE OF

Voltage rated for operation at 85°C. Glass style container with 8-32x3/8" axial studs, except 19/32 diameter which has #18x2 1/2" hot tinned copper wire. This capacitor is capable of passing environment and electrical tests of MIL-L-25A characteristic E terminal D.



PART NUMBER	CAP. MFD	VOLTS DC	DIMENSIONS LGTH.	DIA.	LIST PRICE
OF20-502	.005	2000	1 3/16	19/32	\$2.80
OF20-103	.01	2000	1 3/16	19/32	2.80
OF20-203	.02	2000	1 9/16	19/32	2.90
OF20-503	.05	2000	1 3/4	3/4	3.10
OF20-104	0.1	2000	2 1/4	3/4	3.20
OF20-254	0.25	2000	2 3/4	29/32	3.60
OF30-502	.005	3000	1 3/16	19/32	4.10
OF30-103	.01	3000	1 9/16	19/32	4.30
OF30-203	.02	3000	1 3/4	3/4	5.00
OF30-503	.05	3000	2 1/4	3/4	5.50
OF30-104	0.1	3000	1 3/4	1 1/8	6.00
OF30-254	0.25	3000	2	1 3/8	6.60
OF40-502	.005	4000	1 3/16	19/32	5.90
OF40-103	.01	4000	1 3/16	3/4	6.10
OF40-203	.02	4000	1 3/4	3/4	6.40
OF40-503	.05	4000	2	13/16	6.50
OF40-104	0.1	4000	2	1 1/8	7.40
OF40-254	0.25	4000	2 1/4	1 5/8	8.10
OF50-502	.005	5000	1 5/8	19/32	6.50
OF50-103	.01	5000	1 3/4	3/4	6.80
OF50-203	.02	5000	2 1/4	3/4	7.20
OF50-503	.05	5000	2 1/4	29/32	7.60
OF50-104	0.1	5000	2 1/4	1 3/8	8.50
OF50-254	0.25	5000	3	1 5/8	9.40
OF80-202	.002	8000	1 3/4	19/32	6.80
OF80-502	.005	8000	1 3/4	3/4	7.00
OF80-103	.01	8000	2 1/4	3/4	7.50
OF80-203	.02	8000	2 3/4	29/32	8.60
OF80-503	.05	8000	2 3/4	1 3/8	11.00
OF80-104	0.1	8000	3 5/8	1 5/8	12.50
OF100-102	.001	10 KV	1 5/8	19/32	7.20
OF100-202	.002	10 KV	1 5/8	3/4	7.40
OF100-502	.005	10 KV	1 3/4	13/16	8.50
OF100-103	.01	10 KV	2 1/4	29/32	9.20
OF100-203	.02	10 KV	2 3/4	1 1/8	11.40
OF100-503	.05	10 KV	2 3/4	1 5/8	14.60
OF100-603	.06	10 KV	3	1 5/8	15.50

PART NUMBER	CAP. MFD	VOLTS DC	DIMENSIONS LGTH.	DIA.	LIST PRICE
OF150-102	.001	15 KV	2 1/4	3/4	13.80
OF150-202	.002	15 KV	2 1/4	3/4	14.60
OF150-502	.005	15 KV	2 3/4	1 1/8	17.00
OF150-103	.01	15 KV	3 3/4	1 1/8	20.00
OF150-203	.02	15 KV	4 1/4	1 3/8	22.00
OF150-503	.05	15 KV	7	1 5/8	26.00
OF200-501	.0005	20 KV	3 1/2	19/32	18.00
OF200-102	.001	20 KV	3 1/2	3/4	19.00
OF200-202	.002	20 KV	3 1/2	13/16	21.00
OF200-502	.005	20 KV	3 1/2	1 1/8	22.50
OF200-103	.01	20 KV	4 1/2	1 1/8	24.00
OF200-203	.02	20 KV	4 1/2	1 5/8	27.00
OF300-201	.0002	30 KV	4 9/16	19/32	21.00
OF300-501	.0005	30 KV	4 9/16	19/32	21.00
OF300-102	.001	30 KV	5	3/4	23.50
OF300-202	.002	30 KV	5	29/32	26.00
OF300-502	.005	30 KV	5	1 3/8	28.00
OF300-103	.01	30 KV	6 1/2	1 5/8	35.00
OF400-101	.0001	40 KV	5 3/4	3/4	22.50
OF400-201	.0002	40 KV	5 3/4	3/4	22.50
OF400-501	.0005	40 KV	5 3/4	3/4	22.50
OF400-102	.001	40 KV	6 1/2	13/16	26.00
OF400-202	.002	40 KV	6 1/2	1 1/8	28.00
OF400-502	.005	40 KV	6 1/2	1 5/8	33.00
OF500-101	.0001	50 KV	8 1/4	3/4	23.50
OF500-201	.0002	50 KV	8 1/4	3/4	23.50
OF500-501	.0005	50 KV	8 1/4	3/4	24.50
OF500-102	.001	50 KV	8 1/4	13/16	28.00
OF500-202	.002	50 KV	8 1/4	1 1/8	31.50
OF500-502	.005	50 KV	10 3/4	1 3/8	36.00
OF600-101	.0001	60 KV	10	3/4	24.50
OF600-201	.0002	60 KV	10	3/4	24.50
OF600-501	.0005	60 KV	10	3/4	24.50
OF600-102	.001	60 KV	10	29/32	34.00
OF600-202	.002	60 KV	10	1 3/8	36.50
OF600-502	.005	60 KV	11 1/2	1 5/8	41.50

## RF AND PULSE GLASS CAPS

The plastic films used in the manufacture of RF and PULSE GLASS CAPS have very low losses. These capacitors will handle large peak currents such as encountered in a 25 ohm type E plus forming network charged to the peak pulse voltage at a repetition rate of 1000 PPS.

### TYPE TF

#### VOLTAGE RATED FOR 125°C OPERATION

PART NUMBER	CAP. MFD	VOLTS DC	P P VOLTS	DIMENSIONS LGTH.	DIA.	LIST PRICE
TF40-501	.0005	4000	3500	1 5/8	19/32	\$13.10
TF40-102	.001	4000	3500	1 5/8	3/4	13.10
TF40-202	.002	4000	3500	1 5/8	13/16	14.20
TF40-502	.005	4000	3500	1 5/8	1 1/8	15.40
TF40-103	.01	4000	3500	2 1/8	1 1/8	21.10
TF40-203	.02	4000	3500	2 1/8	1 5/8	24.20
TF60-101	.0001	6000	5000	2 1/8	3/4	15.20
TF60-201	.0002	6000	5000	2 1/8	3/4	15.20
TF60-501	.0005	6000	5000	2 1/8	3/4	15.20
TF60-102	.001	6000	5000	2 1/8	3/4	15.20
TF60-202	.002	6000	5000	2 1/8	13/16	16.80
TF60-502	.005	6000	5000	2 1/8	1 3/8	18.60
TF60-103	.01	6000	5000	2 5/8	1 3/8	24.10
TF80-101	.0001	8000	7000	2 7/8	3/4	16.10
TF80-201	.0002	8000	7000	2 7/8	3/4	16.10
TF80-501	.0005	8000	7000	2 7/8	3/4	16.10
TF80-102	.001	8000	7000	2 7/8	13/16	21.20
TF80-202	.002	8000	7000	2 7/8	1 1/8	22.40
TF80-502	.005	8000	7000	2 7/8	1 5/8	29.00
TF80-103	.01	8000	7000	3 7/8	1 1/8	36.90
TF120-101	.0001	12 KV	10 KV	3 1/8	3/4	16.90
TF120-201	.0002	12 KV	10 KV	3 1/8	3/4	16.90
TF120-501	.0005	12 KV	10 KV	3 1/8	13/16	16.90
TF120-102	.001	12 KV	10 KV	3 1/8	29/32	22.50
TF120-202	.002	12 KV	10 KV	3 7/8	1 1/8	29.70
TF120-502	.005	12 KV	10 KV	4 7/8	1 3/8	40.20
TF180-101	.0001	18 KV	15 KV	4 1/4	3/4	18.00
TF180-201	.0002	18 KV	15 KV	4 1/4	3/4	18.00
TF180-501	.0005	18 KV	15 KV	4 1/4	1 1/8	25.20
TF180-102	.001	18 KV	15 KV	5 3/4	1 1/8	35.20
TF180-202	.002	18 KV	15 KV	5 3/4	1 3/8	44.10

### TYPE HG

#### VOLTAGE RATED FOR 65°C OPERATION

PART NUMBER	CAP. MFD	VOLTS DC	P P VOLTS	DIMENSIONS LGTH.	DIA.	LIST PRICE
HG25-103	.01	2500	1500	1	1 1/8	\$6.50
HG25-203	.02	2500	1500	1 1/2	1 1/8	7.10
HG25-503	.05	2500	1500	2	1 3/8	8.60
HG25-104	0.1	2500	1500	2 1/2	1 5/8	11.40
HG35-502	.005	3500	2500	1	1 1/8	7.50
HG35-103	.01	3500	2500	1	1 5/8	8.10
HG35-203	.02	3500	2500	1 1/2	1 3/8	8.50
HG35-503	.05	3500	2500	2 1/2	1 5/8	11.60
HG50-502	.005	5000	3000	2	1 1/8	10.50
HG50-103	.01	5000	3000	2	1 3/8	11.50
HG50-203	.02	5000	3000	3	1 3/8	12.50
HG50-503	.05	5000	3000	6	1 3/8	18.50
HG70-202	.002	7000	5000	2	29/32	11.00
HG70-502	.005	7000	5000	2	1 5/8	14.20
HG70-103	.01	7000	5000	4	1 1/8	17.00
HG70-203	.02	7000	5000	4	1 5/8	18.60
HG100-102	.001	10 KV	7000	3	29/32	12.00
HG100-202	.002	10 KV	7000	3	1 1/8	13.50
HG100-502	.005	10 KV	7000	6	1 1/8	21.00
HG100-103	.01	10 KV	7000	6	1 3/8	24.00
HG140-102	.001	14 KV	10 KV	4	29/32	15.30
HG140-202	.002	14 KV	10 KV	4	1 3/8	20.00
HG140-502	.005	14 KV	10 KV	8	1 1/8	24.00
HG140-103	.01	14 KV	10 KV	8	1 5/8	27.00
HG200-201	.0002	20 KV	15 KV	5 3/4	3/4	17.00
HG200-501	.0005	20 KV	15 KV	5 3/4	29/32	20.00
HG200-102	.001	20 KV	15 KV	5 3/4	1 1/8	22.50
HG200-202	.002	20 KV	15 KV	5 3/4	1 5/8	24.50
HG250-201	.0002	25 KV	20 KV	7 1/4	3/4	20.00
HG250-501	.0005	25 KV	20 KV	7 1/4	29/32	25.00
HG250-102	.001	25 KV	20 KV	7 1/4	1 3/8	31.00
HG250-202	.002	25 KV	20 KV	7 1/4	1 5/8	35.00

THE ABOVE ARE PARTIAL LISTINGS. OTHER VOLTAGES AND CAPACITANCES ARE AVAILABLE.  
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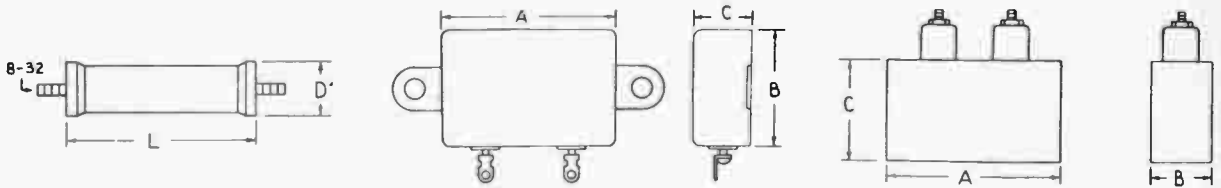


# Plastic Capacitors, Inc.

CHICAGO 14, ILL

- Mfrs. of
- Plastic Film Capacitors
  - Pulse Forming Networks
  - High Voltage Power Supplies
  - Paper Dielectric

## POLYSTYRENE CAPACITORS



Polystyrene capacitors feature extremely low dielectric absorption, very high stability and ultra high resistance. The polystyrene capacitors listed have a resistance of one million megohms X mfd or one million megohms whichever is less and a dielectric absorption of .02% maximum. Standard capacitance is 5% but tolerances of as low as 0.1% are available in the PC and PB style and 2% in the PG style.

### TYPE PC—CP70 STYLE CONTAINER

Part Number	Cap. MFD	Volts DC	A	Case Size B	C	List Price
PC1-504	0.5	100	1 3/4	1	2 1/8	\$8.10
PC1-105	1.0	100	1 3/4	1	3	10.00
PC1-205	2	100	2 1/2	1 3/16	3	14.40
PC1-405	4	100	3 3/4	1 3/4	4	18.50
PC1-505	5	100	3 3/4	1 1/4	5 1/4	21.70
PC1-605	6	100	3 3/4	1 3/4	4	24.80
PC1-805	8	100	3 3/4	2 1/4	4	29.10
PC1-106	10	100	3 3/4	2 1/4	4 1/2	33.40
PC2-504	0.5	200	1 3/4	1	2 1/8	8.30
PC2-105	1.0	200	1 3/4	1	4	10.20
PC2-205	2	200	3 3/4	1 1/4	3	14.70
PC2-405	4	200	3 3/4	1 3/4	4	18.50
PC2-505	5	200	3 3/4	1 3/4	4	21.50
PC2-605	6	200	3 3/4	2 1/4	4	24.50
PC2-805	8	200	3 3/4	3 3/16	4	29.00
PC2-106	10	200	4 9/16	3 3/4	4	33.00
PC4-254	0.25	400	1 3/4	1	3	11.00
PC4-504	0.5	400	2 1/2	1 3/16	3	11.50
PC4-105	1.0	400	3 3/4	1 1/4	4	15.00

Part Number	Cap. MFD	Volts DC	A	Case Size B	C	List Price
PC4-205	2	400	3 3/4	1 3/4	4	23.00
PC4-405	4	400	3 3/4	3 3/16	4	35.80
PC4-505	5	400	3 3/4	3 3/16	5 1/4	42.50
PC4-605	6	400	3 3/4	3 3/16	7 1/4	49.30
PC4-805	8	400	3 3/4	3 3/16	7 1/4	61.40
PC4-106	10	400	3 3/4	4 9/16	7 1/4	74.50
PC6-254	0.25	600	1 3/4	1	4	11.00
PC6-504	0.5	600	2 1/2	1 3/16	4	11.50
PC6-105	1.0	600	3 3/4	1 1/4	4 1/4	15.00
PC6-205	2	600	3 3/4	2 1/4	4 1/4	22.50
PC6-405	4	600	4 9/16	3 3/4	4 1/4	35.00
PC6-505	5	600	3 3/4	3 3/16	7 3/4	42.00
PC10-104	0.1	1000	1 3/4	1	2 1/8	9.70
PC10-254	0.25	1000	1 3/4	1	4	11.40
PC10-504	0.5	1000	2 1/2	1 3/16	4	15.30
PC10-105	1.0	1000	3 3/4	1 3/4	4	22.10
PC10-205	2	1000	3 3/4	3 3/16	4	34.70
PC10-405	4	1000	3 3/4	3 3/16	7 1/4	58.50
PC10-505	5	1000	4 9/16	3 3/4	7 1/4	71.20

### TYPE PB—BATHTUB CONTAINER

Part Number	Cap. MFD	Volts DC	A	Case Size B	C	List Price
PB1-503	.05	100	1 3/4	1	3/4	\$8.40
PB1-104	0.1	100	1 3/4	1	3/4	8.70
PB1-254	0.25	100	1 3/4	1	3/4	9.50
PB1-504	0.5	100	2	1 3/4	7/8	9.80
PB1-105	1.0	100	2	1 3/4	7/8	14.20
PB2-203	.02	200	1 3/4	1	3/4	8.40
PB2-503	.05	200	1 3/4	1	3/4	8.40
PB2-104	0.1	200	1 3/4	1	3/4	8.70
PB2-254	0.25	200	2	1 3/4	7/8	9.50
PB2-504	0.5	200	2	1 3/4	7/8	9.80
PB2-105	1.0	200	2	2	1 1/8	14.00
PB4-103	.01	400	1 3/4	1	3/4	8.40
PB4-203	.02	400	1 3/4	1	3/4	8.40
PB4-503	.05	400	1 3/4	1	3/4	8.70

Part Number	Cap. MFD	Volts DC	A	Case Size B	C	List Price
PB4-104	0.1	400	1 3/4	1	7/8	9.40
PB4-254	0.25	400	2	1 3/4	7/8	14.10
PB4-504	0.5	400	2	2	1 1/8	16.20
PB6-103	.01	600	1 3/4	1	3/4	8.40
PB6-203	.02	600	1 3/4	1	3/4	8.40
PB6-503	.05	600	1 3/4	1	3/4	8.70
PB6-104	0.1	600	2	1 3/4	7/8	9.40
PB6-254	0.25	600	2	1 3/4	7/8	14.00
PB10-103	.01	1000	1 3/4	1	3/4	9.90
PB10-203	.02	1000	1 3/4	1	3/4	10.70
PB10-503	.05	1000	1 3/4	1	7/8	11.80
PB10-104	0.1	1000	2	1 3/4	7/8	12.10
PB10-204	0.2	1000	2	2	1 1/8	15.20

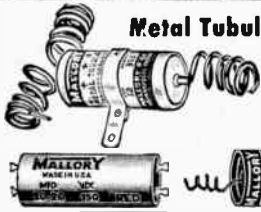
### TYPE PG—GLASS CONTAINER

Part Number	Capacity MFD	Volts DC	Dimensions		List Price
			Lgth.	Dia.	
PG1-103	.01	100	1	19/32	\$4.60
PG1-203	.02	100	1	19/32	4.60
PG1-503	.05	100	1 3/4	19/32	6.30
PG1-104	0.1	100	1 3/4	3/4	8.30
PG1-254	0.25	100	1 3/4	29/32	10.50
PG1-504	0.5	100	2 1/2	1 1/8	12.60
PG1-105	1.0	100	3 1/2	1 3/8	15.30
PG2-502	.005	200	1	3/4	5.30
PG2-103	.01	200	1	3/4	5.30
PG2-203	.02	200	1	3/4	5.30
PG2-503	.05	200	1	29/32	7.50
PG2-104	0.1	200	1 3/4	29/32	9.20
PG2-254	0.25	200	1 3/4	1 3/8	11.50
PG2-504	0.5	200	2 1/2	1 3/8	13.20
PG4-502	.005	400	1	3/4	6.30
PG4-103	.01	400	1	3/4	6.30
PG4-203	.02	400	1	13/16	7.60
PG4-503	.05	400	1 3/4	29/32	9.60

Part Number	Capacity MFD	Volts DC	Dimensions		List Price
			Lgth.	Dia.	
PG4-104	0.1	400	2 1/2	1 1/8	12.00
PG4-254	0.25	400	3 1/2	1 3/8	14.50
PG6-102	.001	600	1	3/4	6.30
PG6-202	.002	600	1	3/4	6.30
PG6-502	.005	600	1	3/4	6.30
PG6-103	.01	600	1	3/4	6.30
PG6-203	.02	600	1	29/32	8.00
PG6-503	.05	600	1 1/2	1 1/8	10.60
PG6-104	0.1	600	1 1/2	1 3/8	13.20
PG10-102	.001	1000	1	3/4	7.60
PG10-202	.002	1000	1	3/4	8.60
PG10-502	.005	1000	1 3/4	3/4	9.80
PG10-103	.01	1000	1 3/4	13/16	10.60
PG10-203	.02	1000	1 3/4	29/32	11.60
PG10-503	.05	1000	3 1/2	29/32	12.40
PG10-104	0.1	1000	3 1/2	1 1/8	13.30
PG10-204	0.2	1000	3 1/2	1 3/8	14.40

THE ABOVE ARE PARTIAL LISTINGS. OTHER VOLTAGES AND CAPACITANCES ARE AVAILABLE.

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### Metal Tubular Dry Electrolytic Capacitors

For filter and audio by-pass circuits. Sealed aluminum tube with external insulating sleeve. 3" bare, tinned-copper or insulated leads at each end, except TCS styles which have solder lugs. For use up to 85°C except types designated (†).

#### Single Section

Catalog Number	Cap. Mfd.	DC Wkg. Volts	Size Dia. Length	List Price
TC310	1000	3	1 1/8 x 1 3/4	\$1.70
TC605	500	6	1 3/8 x 1 3/4	1.55
TC610	1000	6	1 3/8 x 2	1.90
TC1502	200	15	1 1/2 x 1 1/2	1.40
TC1501	1000	15	1 1/2 x 2 1/4	2.30
TC1505	500	15	1 1/2 x 2	1.75
TC22	10	25	7/8 x 1 1/8	1.00
TC26	25	25	3/4 x 1 1/8	1.00
TC29	50	25	5/8 x 1 1/2	1.10
TC2501	100	25	1 1/8 x 1 3/4	1.35
TC2505	500	25	1 1/8 x 2 1/4	2.30
TC302	2	50	7/8 x 1 1/8	.90
TC30	5	50	5/8 x 1 1/4	1.00
TC31	1	50	5/8 x 1 1/4	.90
TC32	10	50	3/4 x 1 1/8	1.00
TC36	25	50	1 1/8 x 1 1/4	1.05
TC39	50	50	1 1/8 x 1 1/4	1.20
TC3501	100	50	1 1/8 x 1 3/4	1.40
TC40	5	150	3/4 x 1 1/8	1.40
TC41	8	150	3/4 x 1 1/8	1.05
TC42	10	150	3/4 x 1 1/8	1.05
TC43	12	150	3/4 x 1 1/8	1.10
TC44	16	150	1 1/8 x 1 1/2	1.15
TC45	20	150	1 1/8 x 1 1/2	1.20
TC47	30	150	1 1/8 x 1 1/2	1.30
TC48	40	150	1 1/8 x 1 1/2	1.35
TC49	50	150	1 1/8 x 1 1/2	1.40
TC492	80	150	1 1/8 x 2	1.60
TC493	100	150	1 1/8 x 2 1/4	1.75
TC495	150	150	1 1/8 x 2 1/4	1.90
TC50X	5	250	1 1/8 x 1 1/4	1.05
TC51	8	250	1 1/8 x 1 1/4	1.15
TC52	10	250	1 1/8 x 1 1/4	1.20
TC53	12	250	1 1/8 x 1 1/4	1.25
TC54	16	250	1 1/8 x 1 1/4	1.30
TC55	20	250	1 1/8 x 1 1/4	1.35
TC58	40	250	1 1/8 x 1 1/4	1.55
TC59	50	250	1 1/8 x 1 1/4	1.70
TC60	5	350	1 1/8 x 1 1/4	1.05
TC61	8	350	1 1/8 x 1 1/4	1.20
TC62	10	350	1 1/8 x 1 1/4	1.25
TC63	12	350	1 1/8 x 1 1/4	1.30
TC64	16	350	1 1/8 x 1 1/4	1.40
TC65	20	350	1 1/8 x 1 1/4	1.45
TC68	60	350	1 1/8 x 2 1/4	1.95
TC69	100	350	1 1/8 x 4	3.10
TC70	5	450	1 1/8 x 1 1/4	1.20
TC71	8	450	1 1/8 x 1 1/4	1.25
TC72	10	450	1 1/8 x 1 1/4	1.30
TC73	12	450	1 1/8 x 1 1/4	1.35
TC74	16	450	1 1/8 x 1 1/4	1.40
TC75	20	450	1 1/8 x 1 1/4	1.55
TC77	30	450	1 1/8 x 2 1/4	1.70
TC78	40	450	1 1/8 x 2 1/4	1.80
TC79	50	450	1 1/8 x 2 1/4	2.10
TC80	80	450	1 1/8 x 4	2.80
TC81	10	500	1 1/8 x 1 1/4	1.35
TC82	10	500	1 1/8 x 2 1/4	2.70
TC83	20	500	1 1/8 x 1 1/4	1.60
TC84	30	500	1 1/8 x 2 1/4	1.75
TC92	10	600	1 1/8 x 2 1/4	2.95
TC50025	250	50	1 1/8 x 1 1/4	1.75
TC308	.5Z @ 15750 Cycles	3 V.N.P.	1 1/8 x 2	2.20
TC420	1.5Z @ 60 Cycles 4 V		1 1/8 x 2 1/4	3.50
TC421	1.5Z @ 120 Cycles 6 V		1 1/8 x 2	3.00
TC1025	25	10 VNP	5/8 x 1 1/4	1.15
TC412	500	10 VNP	1 1/8 x 2 1/4	2.00
TC415	1000	15 VNP	1 x 3	2.90
TC425	100	25 VNP	1 x 1 1/2	1.70

#### Dual Common Negative

Catalog Number	Cap. Mfd.	DC Wkg. Volts	Size Dia. Length	List Price
TCD204	250-1000	10-6	1 1/4 x 2 1/4	\$2.80
TCD2155	100-100	150-150	1 1/8 x 4	3.20
TCD2165	30-30	200-200	1 1/8 x 2 1/4	2.20
TCD2169	50-75	250-50	1 1/8 x 2 1/4	2.40
TCD2174	100-150	250-50	1 1/8 x 4	3.60
TCD2173	8-8	250-250	1 1/8 x 1 1/4	1.60
TCD2274	40-40	300-300	1 1/8 x 3 1/2	2.95
TCD2297	40-50	450-50	1 1/8 x 3 1/2	2.50
TCD2302	30-60	450-300	1 1/8 x 4	3.20
TCD26	25-25	25	1 1/8 x 1 1/4	1.40
TCD45	20-20	150	1 1/8 x 2	1.65

#### Dual Common Negative—Continued

Catalog Number	Cap. Mfd.	DC Wkg. Volts	Size Dia. Length	List Price
TCD47	30-30	150	1 1/8 x 1 3/4	\$1.80
TCD48	40-40	150	1 1/8 x 2	1.85
TCD485	40-20	150	1 1/8 x 1 3/4	1.75
TCD49	50-50	150	1 1/8 x 2 1/4	2.10
TCD497	50-30	150	1 1/8 x 2	1.95
TCD498	80-50	150	1 1/8 x 2 1/4	2.35
TCD52	10-10	250	1 1/8 x 2	1.65
TCD55	20-20	250	1 1/8 x 2	1.85
TCD62	10-10	350	1 1/8 x 2	1.70
TCD65	20-20	350	1 1/8 x 3 1/2	2.25
TCD71	8-8	450	1 1/8 x 2	1.70
TCD72	10-10	450	1 1/8 x 2	1.85
TCD74	15-15	450	1 1/8 x 3 1/2	2.20
TCD75	20-20	450	1 1/8 x 3 1/2	2.50

#### Dual Separate Section

Catalog Number	Cap. Mfd.	DC Wkg. Volts	Size Dia. Length	List Price
TCS44	15-15	150	1 1/8 x 2 3/4	\$2.00
TCS45	20-20	150	1 1/8 x 2 3/4	2.10
TCS47	30-30	150	1 1/8 x 2 3/4	2.25
TCS48	40-40	150	1 1/8 x 2 3/4	2.35
TCS505	70-70	175	1 1/8 x 3 3/4	3.60
TCS52	10-10	250	1 1/8 x 2 3/4	2.10
TCS55	20-20	250	1 1/8 x 2 3/4	2.35
TCS61	8-8	350	1 1/8 x 2 3/4	2.10
TCS64	15-15	350	1 1/8 x 2 3/4	2.75
TCS71	8-8	450	1 1/8 x 2 3/4	2.15
TCS74	15-15	450	1 1/8 x 2 3/4	2.75
TCS75	20-20	450	1 1/8 x 3 1/2	3.15



### FP-WP Dry Electrolytic Capacitors

For use at ambient temperatures up to 85°C in filter and by-pass circuits in radio, TV and industrial electronics. Sealed in aluminum cans with twist-prong, lug construction. FP types have Mallory exclusive Fabricated Plates. WP have special etched plates. All feature low RF impedance and minimum coupling between sections. Separate anode terminals. Case is common cathode. For hardware, see page 13, Mallory Capacitors Section, of this catalog.

#### FP-WP Singles ††

Catalog Number	Capacity Mfd.	Working Volts—DC	Size D L	List Price
WP510	.5Z/15750 cycles	3V	1 x 2	\$2.20
WP540	1.0Z/60 cycles	3V	1 3/4 x 3	4.00
WP505	10Z/30 cycles	3V	3/4 x 2	2.00
WP035	225	15	3/4 x 2	1.75
WP039	1000	15	1 x 2 1/2	2.55
WP041	2000	15	1 3/4 x 2 1/2	3.45
WP042	3000	15	1 3/4 x 3	3.50
WP052	40	25	3/4 x 2	1.35
WP055	100	25	1 x 2	1.60
WP057	500	25	1 x 2 1/2	2.55
WP059	1000	25	1 3/4 x 2	3.55
WP063	4	50	3/4 x 2	1.25
WP065	500	50	1 3/4 x 2	2.65
WP068	1500	50	1 3/4 x 4	3.85
FP113	30	150	3/4 x 2	1.55
FP115	50	150	1 x 2	1.65
FP116	100	150	1 x 2 1/2	2.00
FP116.5	120	150	1 x 3	2.05
FP117	150	150	1 x 3	2.15
FP118	200	150	1 3/4 x 2 1/2	2.45
FP119	300	150	1 3/4 x 3	2.80
FP121	120	200	1 3/4 x 2	2.35
FP125	15	250	3/4 x 2	1.55
FP126	200	250	1 3/4 x 3	4.05
FP128	80	300	1 x 3	2.55
FP129.1	100	300	1 x 3	2.90
FP131	150	300	1 3/4 x 3	3.50
FP135	30	350	1 x 2	1.90
FP137	50	350	1 x 2 1/2	2.10
FP137.2	60	350	1 x 3	2.20
FP138	80	350	1 3/4 x 2 1/2	2.85
FP140	125	350	1 3/4 x 3	3.95
FP142	10	450	3/4 x 2	1.55
FP143	15	450	1 x 2	1.70
FP144	20	450	1 x 2	1.80
FP145	30	450	1 x 2 1/2	1.95
FP146	40	450	1 x 2 1/2	2.05
FP148	60	450	1 3/4 x 2 1/2	2.80
FP149	80	450	1 3/4 x 2 1/2	3.05
FP150	100	450	1 3/4 x 3	3.45
FP171	10	500	1 x 2	1.80
FP173	20	500	1 x 2	1.85
FP175	30	500	1 x 2 1/2	2.00
FP177	40	500	1 x 3	2.50
FP187	90	500	1 3/4 x 3	3.50

†† Numerical Sequence by Voltage

See next page for additional values

Mallory Page 1

# MALLORY DRY ELECTROLYTIC CAPACITORS

## FP-WP—Duals

Catalog Number	Capacity Mfd.	Working Volts—DC	Size D L	List Price
WP204	250-1000	10-6	1 3/8 x 2	\$2.85
WP205	5Z-2.5Z/15750-60C			
WP200	1000-1000	12-6V	1 3/8 x 4	3.60
WP200.5	500-100	15-15	1 3/8 x 2 1/2	4.40
WP201.1	40-40	20-20	1 x 2	2.75
WP202.1	50-50	25-25	1 x 2	1.55
WP202.5	100-100	50-50	1 x 2	1.70
WP206	50-150	50-50	1 x 2	2.10
FP208	20-20	150-25	1 x 2 1/2	2.20
FP211	30-30	150-150	1 x 2	1.70
FP210	40-20	150-150	1 x 2	1.85
FP212	40-40	150-150	1 x 2	1.80
FP213	50-30	150-150	1 x 2 1/2	1.90
FP214	50-50	150-150	1 x 2	2.00
FP214.5	75-75	150-150	1 x 2 1/2	2.15
FP215	125-100	150-150	1 3/8 x 2	2.60
FP216	80-40	150-150	1 3/8 x 2 1/2	3.40
FP216.1	200-5	150-200	1 x 3	2.30
FP216.3	200-150	150-150	1 3/8 x 2 1/2	2.75
FP216.4	200-200	150-150	1 3/8 x 4	3.75
FP216.6	60-60	200-200	1 3/8 x 4	4.00
FP216.8	40-25	250-150	1 x 3	2.55
FP217	20-20	250-250	1 x 2 1/2	2.15
FP221	40-40	250-250	1 x 2	1.90
FP217.7	150-150	250-250	1 x 3	2.50
FP217.74	200-200	250-250	1 3/8 x 4	5.15
FP217.8	20-60	300-250	1 3/8 x 4	6.00
WP217.85	35-50	300-6	1 x 3	2.75
FP217.87	40-40	300-300	1 x 2 1/2	2.80
FP217.9	75-75	300-300	1 3/8 x 2	2.95
FP218	120-20	300-300	1 3/8 x 3	3.80
FP223	5-75	350-150	1 3/8 x 3	4.00
FP225	15-15	350-350	1 x 3	2.10
FP227	20-20	350-350	1 x 2	2.25
FP227.3	30-30	350-350	1 x 2 1/2	2.30
WP227.35	80-80	350-350	1 x 3	2.90
FP227.4	80-80	350-350	1 x 3	3.50
FP227.5	80-40	350-350	1 3/8 x 2 1/2	3.50
FP227.6	80-80	350-350	1 3/8 x 3	3.60
FP227.7	100-100	350-350	1 3/8 x 4	4.70
FP229	35-100	400-50	1 3/8 x 4	6.15
FP229.3	75-75	400-400	1 x 3	2.60
FP229.4	80-40	400-400	1 3/8 x 4	4.85
FP229.5	120-40	400-400	1 3/8 x 4	4.70
FP229.6	50-100	400-400	1 3/8 x 4	5.25
FP229.8	80-100	450-50	1 3/8 x 2 1/2	3.00
FP229.9	30-200	450-150	1 3/8 x 3	3.75
FP244	80-50	450-50	1 3/8 x 3	3.50
FP230	20-50	450-250	1 3/8 x 3	3.50
FP235	20-80	450-350	1 3/8 x 3	2.80
FP550*	10-80	450-350	1 3/8 x 2 1/2	3.65
FP230.3	40-10	450-300	1 3/8 x 3	3.45
FP230.6	10-100	450-350	1 x 3	2.60
WP230.9	5-5	450-450	1 3/8 x 3	4.00
FP231	10-10	450-450	1 x 2	1.70
FP231.3	20-10	450-450	1 x 2	1.90
FP234	20-20	450-450	1 x 2 1/2	2.20
FP237	30-30	450-450	1 x 3	2.55
FP238	40-40	450-450	1 3/8 x 2 1/2	3.05
FP239	50-40	450-450	1 3/8 x 3	3.45
FP240†	50-50	450-450	1 3/8 x 3	3.65
FP242	60-20	450-450	1 3/8 x 3	3.85
FP242.5	60-60	450-450	1 3/8 x 3	3.50
FP245	80-10	450-450	1 3/8 x 4	4.50
FP245.2	80-20	450-450	1 3/8 x 3	3.60
FP245.3	80-30	450-450	1 3/8 x 3	3.90
FP247	100-40	450-450	1 3/8 x 4	4.15
FP250	40-80	450-450	1 3/8 x 4	4.85
FP255	20-100	475-200	1 3/8 x 2 1/2	3.65
FP256	20-100	475-300	1 3/8 x 3	3.95
FP258	15-15	475-400	1 3/8 x 4	4.50
FP259	30-10	475-475	1 x 2 1/2	2.35
FP260	40-10	475-475	1 x 3	2.60
FP262	40-40	475-475	1 3/8 x 3	3.10
FP263	60-40	475-475	1 3/8 x 3	4.30
FP264.5	80-40	475-475	1 3/8 x 4	4.55
FP266	80-50	475-475	1 3/8 x 4	5.05
FP277*	60-80	500-150	1 3/8 x 4	5.20
FP280*	40-50	500-200	1 3/8 x 3	3.75
FP284	30-30	500-500	1 3/8 x 2 1/2	3.30
FP288*	40-40	500-500	1 3/8 x 2 1/2	3.25
			1 3/8 x 3	4.30

## FP-WP—Triples—Continued

Catalog Number	Capacity Mfd.	Working Volts—DC	Size D L	List Price
FP309	50-30-100	150-150-25	1 x 2 1/2	\$2.70
FP311	50-50-20	150-150-25	1 x 3	2.65
FP311.1	80-40-25	150-150-25	1 x 3	2.75
FP311.15	80-40-300	150-150-25	1 3/8 x 2 1/2	3.70
FP311.2	20-20-20	150-150-150	1 x 2	2.30
FP311.4	40-20-20	150-150-150	1 x 2 1/2	2.40
FP311.5	40-40-40	150-150-150	1 x 3	2.60
FP311.55	50-20-20	150-150-150	1 x 2 1/2	2.55
FP311.6	50-40-10	150-150-150	1 x 2	2.55
FP311.65	50-50-50	150-150-150	1 x 3	3.00
FP311.66	70-15-15	150-150-150	1 x 2 1/2	2.70
FP311.67	80-30-10	150-150-150	1 x 3	2.75
FP311.7	80-40-20	150-150-150	1 3/8 x 2	2.90
FP311.9	120-120-40	150-150-150	1 3/8 x 3	4.05
FP312.5	200-100-60	150-150-150	1 3/8 x 4	4.55
FP313*	30-20-20	200-200-25	1 x 2	2.55
FP318.3	20-20-40	200-200-150	1 x 2 1/2	2.70
FP318.5	20-20-20	200-200-200	1 x 2 1/2	2.50
FP318.7	30-20-20	200-200-200	1 x 2 1/2	2.70
FP319	80-40-50	250-150-50	1 3/8 x 2 1/2	3.30
FP319*	15-20-20	250-150-150	1 x 2	2.40
FP319.5	90-90-20	250-250-50	1 3/8 x 3	4.60
FP319.8	20-20-20	250-250-250	1 x 2	2.60
FP320	40-20-20	250-250-250	1 3/8 x 2	2.90
FP321	40-20-20	250-250-250	1 x 3	2.90
FP326	100-60-20	300-150-25	1 3/8 x 3	4.20
FP326.2	20-150-80	300-150-150	1 3/8 x 3	3.95
FP326.3	100-200-60	300-150-150	1 3/8 x 4	5.45
FP334*	20-80-10	300-250-200	1 3/8 x 2 1/2	3.45
FP326.4	60-30-30	300-250-250	1 3/8 x 2 1/2	3.75
FP335	100-60-20	300-250-250	1 3/8 x 3	4.90
FP336	200-60-20	300-250-250	1 3/8 x 4	5.80
FP326.6	100-10-60	300-300-50	1 3/8 x 2 1/2	4.05
FP326.7	140-100-60	300-300-50	1 3/8 x 4	5.95
FP326.74	140-10-200	300-300-150	1 3/8 x 4	5.50
WP326.8	4-100-40	350-25-25	1 x 2	2.25
FP327	40-100-25	350-50-25	1 3/8 x 2	3.20
WP327.2	20-50-100	350-100-75	1 x 3	3.30
FP327.4	125-5-100	350-200-75	1 3/8 x 4	5.30
FP327.6	30-20-100	350-250-50	1 x 3	3.25
FP331	30-30-20	350-300-25	1 x 3	3.15
FP327.8	30-50-20	350-300-25	1 3/8 x 2 1/2	3.60
FP328	15-10-20	350-350-25	1 x 2	2.50
FP327.9	20-4-100	350-350-25	1 x 3	2.60
FP329.1	20-4-100	350-350-25	1 x 2 1/2	2.80
FP329.5	20-20-20	350-350-25	1 x 2	2.80
FP330	30-20-20	350-350-25	1 x 3	3.10
FP330.15	10-5-30	350-350-50	1 x 2	2.20
FP330.2	10-5-150	350-350-50	1 x 2 1/2	2.70
FP330.21	20-5-150	350-350-50	1 x 3	2.95
FP330.23	40-80-400	350-350-50	1 3/8 x 3	5.65
FP330.25	30-20-100	350-350-150	1 3/8 x 2 1/2	4.00
FP330.3	20-10-5	350-350-250	1 x 2	2.55
FP330.5	10-10-10	350-350-350	1 x 2	2.40
FP330.7	30-20-10	350-350-350	1 x 3	3.25
FP330.9	60-50-50	350-350-350	1 3/8 x 4	4.90
FP331.3	80-60-60	350-350-350	1 3/8 x 4	5.55
FP331.6	90-40-20	350-350-350	1 3/8 x 4	5.25
FP332.4	100-100-10	350-350-350	1 3/8 x 4	6.80
FP333	10-50-30	400-350-25	1 3/8 x 2	3.10
FP333.2	80-40-100	400-400-50	1 3/8 x 4	5.00
FP333.3	80-40-150	400-400-50	1 3/8 x 4	5.15
FP333.5	20-10-40	400-400-350	1 x 4	3.40
FP333.6	20-20-10	400-400-350	1 x 3	3.00
FP333.7	60-30-20	400-400-350	1 3/8 x 3	4.55
FP333.8	80-20-10	400-400-350	1 3/8 x 3	4.30
FP333.85	100-10-80	400-400-350	1 3/8 x 4	6.10
FP333.9	90-10-5	400-400-400	1 3/8 x 3	4.40
WP334.6	20-500-500	450-25-25	1 3/8 x 3	5.35
FP342	40-40-130	450-150-50	1 3/8 x 2 1/2	3.70
FP343	40-100-50	450-150-50	1 3/8 x 3	3.95
WP339.5	10-50-100	450-150-75	1 x 3	3.25
FP340	20-50-100	450-150-75	1 3/8 x 2	3.40
FP341	40-90-50	450-150-150	1 3/8 x 3	4.00
FP341.3	20-80-50	450-200-150	1 3/8 x 2 1/2	3.60
FP341.5	20-60-100	450-250-25	1 3/8 x 2 1/2	3.65
FP341.8	10-80-80	450-250-250	1 3/8 x 3	4.35
FP342.2	5-80-40	450-300-300	1 3/8 x 3	4.15
FP342.5	30-15-40	450-350-25	1 3/8 x 3	3.20
FP342.7	30-40-50	450-350-25	1 x 4	3.70
FP343.1	15-20-20	450-350-250	1 x 3	2.95
FP343.6	20-15-15	450-350-350	1 x 3	3.25
FP343.9	20-40-10	450-350-350	1 3/8 x 2 1/2	3.50
FP344.2	10-30-150	450-400-5	1 x 3	3.00
FP344.4	60-80-20	450-400-250	1 3/8 x 4	5.45
FP344.5	4-40-40	450-400-300	1 3/8 x 2 1/2	3.70
FP345.2	10-10-20	450-400-300	1 3/8 x 2 1/2	3.65
FP345.3	10-10-20	450-450-25	1 x 2	2.40
FP345.4	40-20-80	450-450-25	1 3/8 x 2 1/2	3.50
FP345.4	80-10-120	450-450-25	1 3/8 x 3	4.40
FP345.5	15-15-40	450-450-25	1 x 2 1/2	2.75
FP345.8	20-20-20	450-450-25	1 x 2 1/2	3.05
FP346	40-40-20	450-450-25	1 3/8 x 3	3.95
FP364	80-40-100	450-450-25	1 3/8 x 4	5.10
FP366.5	20-10-50	450-450-50	1 x 3	2.85
FP367	30-10-150	450-450-50	1 3/8 x 2 1/2	3.50
FP367.5	35-25-100	450-450-50	1 3/8 x 3	3.95
FP367.5	40-30-25	450-450-50	1 3/8 x 2 1/2	3.75
FP368.3	60-40-75	450-450-50	1 3/8 x 4	4.60
FP368.6	80-20-100	450-450-50	1 3/8 x 4	4.80
FP368.6	30-30-125	450-450-75	1 3/8 x 3	4.15
FP369.1	40-40-40	450-450-150	1 3/8 x 3	4.50

## FP-WP—Triples

Catalog Number	Capacity Mfd.	Working Volts—DC	Size D L	List Price
WP301	30-30-30	50-50-50	1 x 2	\$2.15
WP520	40-40-40	25-25-25	1 x 2	2.15
FP303	20-250-100	150-15-15	1 3/8 x 2	2.90
FP312	100-50-25	150-50-25	1 x 3	3.00
WP302.*	15-15-1000	150-150-2	1 x 2	3.00
WP302.1	15-15-1200	150-150-2	1 x 2	3.00
FP302.4	80-20-			

# MALLORY DRY ELECTROLYTIC CAPACITORS

FP-WP—Triples—Continued

Catalog Number	Capacity Mfd.	Working Volts—DC	Size D L	List Price
FP370	40-10-80	450-450-200	1 3/8 x 3	\$3.90
FP375	40-40-100	450-450-200	1 3/8 x 4	4.95
FP375.2	15-10-120	450-450-300	1 3/8 x 4	4.60
FP375.4	40-40-60	450-450-350	1 3/8 x 4	4.90
FP375.5	40-40-80	450-450-350	1 3/8 x 4	5.55
FP375.6	60-20-40	450-450-350	1 3/8 x 4	4.90
FP375.7	20-10-15	450-450-400	1 x 3	3.10
FP375.8	10-10-10	450-450-450	1 x 2 1/2	2.60
FP376.1	15-15-10	450-450-450	1 x 3	2.95
FP376.3	20-10-10	450-450-450	1 x 3	2.90
FP376.5	20-20-20	450-450-450	1 3/8 x 2 1/2	3.60
FP376.6	30-10-10	450-450-450	1 3/8 x 2	3.15
FP376.7	30-30-30	450-450-450	1 3/8 x 3	4.45
FP376.8	40-40-10	450-450-450	1 3/8 x 3	4.15
FP376.9	40-40-20	450-450-450	1 3/8 x 3	4.45
FP377	40-40-40	450-450-450	1 3/8 x 4	4.90
FP377.2	50-40-30	450-450-450	1 3/8 x 4	4.90
FP377.4	60-10-10	450-450-450	1 3/8 x 3	3.90
FP377.6	60-30-10	450-450-450	1 3/8 x 3	4.50
FP378	80-40-20	450-450-450	1 3/8 x 4	5.40
FP379.1	20-50-20	475-50-25	1 x 3	2.75
FP381.1	80-80-50	475-150-50	1 3/8 x 4	4.85
FP382.1	40-40-100	475-250-100	1 3/8 x 3	4.10
FP384	20-20-40	475-300-25	1 3/8 x 2	3.10
FP384.14	5-100-200	475-300-150	1 3/8 x 4	6.15
FP384.2	10-4-40	475-350-300	1 3/8 x 2	3.00
FP384.5	10-45-100	475-450-50	1 3/8 x 3	3.65
FP384.7	40-40-25	475-450-50	1 3/8 x 3	4.40
FP385	10-40-100	475-450-200	1 3/8 x 3	4.20
FP385.5	40-80-10	475-450-450	1 3/8 x 4	5.50
FP386	10-10-5	475-475-25	1 x 2 1/2	2.45
FP387.1	10-10-150	475-475-50	1 x 3	3.00
FP388.1	25-10-20	475-475-50	1 x 3	2.95
FP389.1	20-10-100	475-475-400	1 3/8 x 4	5.25
FP391.1	20-20-60	475-475-450	1 3/8 x 4	4.85
FP394	10-10-10	475-475-475	1 x 3	2.70
FP396	30-30-20	475-475-475	1 3/8 x 3	4.45
FP396.1	40-20-20	475-475-475	1 3/8 x 3	4.75
FP396.12	40-30-10	475-475-475	1 3/8 x 3	4.50
FP396.14	40-30-30	475-475-475	1 3/8 x 4	5.15
FP396.2	40-10-10	475-475-475	1 3/8 x 2 1/2	3.85
FP397	40-35-10	475-475-475	1 3/8 x 3	4.65
FP398	10-40-40	500-450-450	1 3/8 x 3	4.15

FP-WP—Quads—Continued

Catalog Number	Capacity Mfd.	Working Volts—DC	Size D L	List Price
FP419.9	15-15-15-50	350-350-350-50	1 3/8 x 2	\$3.75
FP420.2	50-40-40-160	350-350-350-50	1 3/8 x 4	5.75
FP420.23	100-10-10-20	350-350-350-50	1 3/8 x 3	5.15
FP420.26	100-40-30-50	350-350-350-50	1 3/8 x 4	6.55
FP420.28	140-20-10-100	350-350-350-50	1 3/8 x 4	6.05
FP420.29	90-30-5-100	350-350-350-75	1 3/8 x 4	5.90
FP420.32	20-10-5-60	350-350-350-200	1 3/8 x 2 1/2	3.65
FP420.33	30-10-5-100	350-350-350-100	1 3/8 x 2 1/2	4.40
FP420.35	40-20-20-10	350-350-350-350	1 3/8 x 2 1/2	4.35
FP420.38	40-40-40-40	350-350-350-350	1 3/8 x 4	6.00
FP420.41	40-120-10-150	400-250-250-50	1 3/8 x 4	5.80
FP420.44	30-40-50-200	400-300-250-150	1 3/8 x 4	6.00
FP420.45	40-80-100-25	400-350-200-50	1 3/8 x 4	6.05
FP420.47	20-50-40-80	400-350-350-50	1 3/8 x 3	5.00
FP420.5	30-60-20-100	400-350-350-50	1 3/8 x 4	5.00
FP420.53	20-5-20-20	400-400-25-25	1 3/8 x 2	3.05
FP420.56	50-25-100-20	400-400-50-25	1 3/8 x 3	4.65
FP420.6	80-40-100-20	400-400-50-25	1 3/8 x 4	5.60
FP420.7	100-10-30-20	400-400-50-50	1 3/8 x 3	5.10
FP420.8	20-10-10-25	400-400-100-25	1 3/8 x 2	3.10
FP421	5-5-50-80	400-400-300-250	1 3/8 x 3	4.65
FP421.2	60-40-40-10	400-400-350-50	1 3/8 x 4	5.75
FP421.4	30-30-15-20	400-400-400-25	1 3/8 x 3	4.30
FP421.6	80-40-30-40	400-400-400-25	1 3/8 x 4	5.95
FP421.8	40-40-40-150	400-400-400-50	1 3/8 x 4	5.70
FP422.1	20-80-20-50	450-200-200-50	1 3/8 x 2 1/2	4.10
FP422.7	60-80-40-20	450-250-250-150	1 3/8 x 4	5.85
FP422.9	10-100-20-20	450-300-300-300	1 3/8 x 3	5.25
FP413X	40-40-40-20	450-300-300-150	1 3/8 x 3	4.90
FP423.4	10-40-100-100	450-350-250-50	1 3/8 x 3	5.55
FP424.1	10-100-10-20	450-350-350-25	1 3/8 x 3	5.20
FP425*	30-40-40-10	450-350-350-200	1 3/8 x 3	5.15
FP425.1	80-10-40-30	450-400-300-300	1 3/8 x 4	5.80
FP426	20-15-20-20	450-450-25-25	1 3/8 x 2	3.45
FP426.5	20-20-60-100	450-450-150-25	1 3/8 x 2 1/2	4.25
FP426.9	40-40-125-125	450-450-150-25	1 3/8 x 4	5.70
FP427.5	10-10-60-100	450-450-200-50	1 3/8 x 2 1/2	3.85
FP427.6	35-25-20-100	450-450-200-50	1 3/8 x 3	4.65
FP427.7	10-10-10-50	450-450-300-25	1 3/8 x 2	3.15
FP427.9	20-20-20-10	450-450-350-350	1 3/8 x 3	4.15
FP428	40-10-35-10	450-450-350-350	1 3/8 x 3	4.80
FP428.4	40-40-30-30	450-450-350-350	1 3/8 x 4	5.90
FP424	15-15-10-20	450-450-450-25	1 3/8 x 2	3.50
FP428.9	30-30-10-125	450-450-450-25	1 3/8 x 3	4.30
FP432	40-10-10-250	450-450-450-25	1 3/8 x 3	4.70
FP431	40-15-10-25	450-450-450-25	1 3/8 x 2 1/2	4.10
FP430.2	40-20-20-25	450-450-450-25	1 3/8 x 3	4.60
FP436	40-20-20-40	450-450-450-25	1 3/8 x 3	4.65
FP429	40-30-10-20	450-450-450-25	1 3/8 x 3	4.50
FP430.6	40-40-40-40	450-450-450-25	1 3/8 x 4	5.50
FP430.9	60-40-40-10	450-450-450-25	1 3/8 x 4	6.00
FP430.95	60-50-5-20	450-450-450-25	1 3/8 x 4	5.35
FP437	20-20-20-100	450-450-450-50	1 3/8 x 2 1/2	4.55
FP431.2	40-10-10-25	450-450-450-50	1 3/8 x 3	4.70
FP431.3	40-10-10-50	450-450-450-50	1 3/8 x 4	3.55
FP431.4	60-40-10-25	450-450-450-50	1 3/8 x 4	5.25
FP431.7	40-10-10-100	450-450-450-100	1 3/8 x 4	5.30
FP433	60-10-10-20	450-450-450-150	1 3/8 x 3	4.60
FP432.4	40-40-30-10	450-450-450-200	1 3/8 x 4	5.35
FP432.9	40-20-10-100	450-450-450-250	1 3/8 x 4	5.85
FP433.2	40-10-10-40	450-450-450-350	1 3/8 x 3	4.75
FP433.4	40-20-20-20	450-450-450-350	1 3/8 x 3	5.00
WP433.6	5-5-5-5	450-450-450-450	1 3/8 x 2	3.00
FP434	10-10-10-10	450-450-450-450	1 3/8 x 2	3.35
FP434.5	20-10-10-10	450-450-450-450	1 3/8 x 2	3.70
FP444	20-20-20-20	450-450-450-450	1 3/8 x 3	4.70
FP444.4	30-15-15-15	450-450-450-450	1 3/8 x 3	4.45
FP444.5	30-30-20-10	450-450-450-450	1 3/8 x 3	4.60
FP444.6	30-30-15-10	450-450-450-450	1 3/8 x 3	4.70
FP444.8	30-30-20-20	450-450-450-450	1 3/8 x 3	5.20
FP444.9	30-30-30-15	450-450-450-450	1 3/8 x 4	5.30
FP445	35-35-10-5	450-450-450-450	1 3/8 x 3	4.60
FP446	40-35-10-10	450-450-450-450	1 3/8 x 3	4.80
FP447	40-40-20-20	450-450-450-450	1 3/8 x 4	5.55
FP447.5	40-40-30-30	450-450-450-450	1 3/8 x 4	6.05
FP448	60-20-20-20	450-450-450-450	1 3/8 x 4	5.65
FP448.5	60-30-10-2	450-450-450-450	1 3/8 x 3	5.10
FP449	70-10-10-5	450-450-450-450	1 3/8 x 3	4.75
FP450	80-10-10-10	450-450-450-450	1 3/8 x 4	5.05
FP451	10-100-10-100	475-300-300-25	1 3/8 x 3	4.90
FP451.3	10-4-140-100	475-300-300-50	1 3/8 x 4	5.30
FP452	20-80-20-10	475-300-300-300	1 3/8 x 3	5.00
FP453	20-40-80-100	475-350-200-100	1 3/8 x 4	5.45
FP453.4	10-40-80-100	475-350-300-100	1 3/8 x 4	5.55
FP453.8	10-30-5-80	475-350-350-50	1 3/8 x 2 1/2	3.70
FP454.2	20-60-40-10	475-350-350-350	1 3/8 x 3	5.20
FP454.6	10-40-4-100	475-400-350-50	1 3/8 x 2 1/2	4.05
FP456	25-20-40-100	475-450-300-50	1 3/8 x 3	4.95
FP456.5	10-60-30-125	475-450-400-50	1 3/8 x 4	5.55
FP455	10-50-30-30	475-450-450-25	1 3/8 x 3	4.75
FP457*	10-40-10-20	475-450-450-50	1 3/8 x 2 1/2	3.95
FP459	10-40-10-100	475-450-450-50	1 3/8 x 2 1/2	4.30
FP461	15-15-80-40	475-475-300-50	1 3/8 x 3	4.80
FP463	50-30-20-20	475-475-300-300	1 3/8 x 4	5.70
FP464.9	40-10-4-40	475-475-350-350	1 3/8 x 3	4.95
FP467	20-10-20-100	475-475-450-25	1 3/8 x 2 1/2	4.20
FP474	10-10-10-10	475-475-475-475	1 3/8 x 2	3.50
FP474.5	20-20-10-10	475-475-475-475	1 3/8 x 2 1/2	4.35
FP475	20-20-20-20	475-475-475-475	1 3/8 x 3	5.20
FP475.5	40-10-10-10	475-475-475-475	1 3/8 x 3	4.65
FP476	40-20-10-10	475-475-475-475	1 3/8 x 3	5.10
FP495	40-40-8-8	500-500-500-500	1 3/8 x 4	5.70

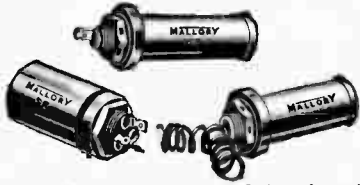
FP-WP—Quads

Catalog Number	Capacity Mfd.	Working Volts—DC	Size D L	List Price
FP403	50-20-150-30	150-150-15-15	1 3/8 x 2	\$3.20
FP405	20-20-160-40	150-150-25-25	1 3/8 x 2	3.20
WP405.5	40-50-160-40	150-150-25-25	1 3/8 x 2	3.35
WP406	40-40-200-100	150-150-25-25	1 3/8 x 2	3.55
FP407	30-20-20-200	150-150-150-10	1 3/8 x 2	3.10
FP407.5	40-40-20-200	150-150-150-10	1 3/8 x 2	3.20
FP408	60-40-10-200	150-150-150-10	1 3/8 x 2	3.45
FP408.5	80-80-10-100	150-150-150-10	1 3/8 x 2 1/2	3.90
FP409	40-40-30-20	150-150-150-25	1 3/8 x 2	3.10
FP409.4	50-20-20-200	150-150-150-25	1 3/8 x 2	3.50
FP409.6	50-10-40-50	150-150-150-25	1 3/8 x 2	3.15
FP410	50-50-50-20	150-150-150-25	1 3/8 x 2 1/2	3.55
FP410.3	60-40-20-20	150-150-150-25	1 3/8 x 2	3.30
FP410.7	60-60-10-60	150-150-150-25	1 3/8 x 2 1/2	3.50
FP411	80-40-40-100	150-150-150-25	1 3/8 x 2 1/2	3.70
FP411.3	80-40-40-20	150-150-150-25	1 3/8 x 2 1/2	3.50
FP411.32	80-40-40-40	150-150-150-25	1 3/8 x 2 1/2	3.60
FP411.4	80-50-50-25	150-150-150-25	1 3/8 x 2 1/2	3.80
FP411.5	100-90-60-200	150-150-150-25	1 3/8 x 3	4.95
FP411.7	125-125-40-100	150-150-150-25	1 3/8 x 4	4.85
FP411.8	200-200-100-			

# DRY ELECTROLYTIC CAPACITORS

P. R. MALLORY & CO., INC. · INDIANAPOLIS

P. R. MALLORY & CO., INC.  
**MALLORY**



## Aluminum Can Threaded Neck Dry Electrolytic Capacitors

For replacement of wet and dry electrolytic capacitors. RS, RM and HS have flexible, insulated leads. HD and SR have solder lug anode connections; cathodes are connected to case.

Catalog Number	Capacity Mfd.	Volts DC	Size Dia. Length	List Price
RS207	30	250	1 x 3½	\$2.05
RS212	8	450	1½ x 3	2.20
RS213	8	450	1 x 2¾	2.20
RS214	12	450	1½ x 3	2.40
RS215	12	450	1 x 2¾	2.40
RS216	16	450	1 x 3½	2.45
RS217	16	450	1½ x 3	2.45
RS219	20	450	1½ x 3	2.70
RS223	30	450	1½ x 3	3.00
RS224	40	450	1½ x 3	3.15
HD684	10	450	1 x 3	2.30
HS691*	4	600	1½ x 4	2.95
HS693*	8	600	1½ x 4	3.15
HS696*	20	600	1½ x 4¼	3.85
RM262	8-8	450	1½ x 3	3.00
RM265	8-8-8	450	1½ x 4¼	5.00
SR638	8-8	450	1½ x 2¾	3.00
SR645	8-8	450	1½ x 2¾	3.00

\* Will operate at 85°C. Others operate at 65°C.

## Cardboard Tubular Dry Electrolytic Capacitors



Economical, cardboard tube, wax-sealed filter and by-pass units. Have flexible, insulated leads out one end except those marked (\*) which have negative leads out opposite ends. All units (except TN111) are supplied with mounting strap; in addition all units marked (†) have special feet for vertical mounting.

Catalog Number	Capacity Mfd.	Volts DC	Size D L	List Price
<b>Single Section</b>				
ST75	70	50 VAC	¾ x 2½	\$1.25
ST595†	8	450	1½ x 2½	1.25
ST597†	16	450	¾ x 2¾	1.40
ST598†	20	450	1 x 2¾	1.55
ST599†	30	450	1 x 3¼	1.70
ST645	60	450	1½ x 3¾	2.35
ST845	80	450	1½ x 4¾	2.80
<b>Dual Common Negative</b>				
TN111‡	10-10	25-25	¾ x 1¾	\$1.40
2N601	250-1000	10-6	1½ x 2½	2.80
2N609*	20-20	150-150	¾ x 2½	1.65
2N613*	30-30	150-150	¾ x 2¾	1.80
2N614*	40-20	150-150	¾ x 2½	1.75
2N611*	40-40	1°-0-150	1½ x 2½	1.85
2N621†	50-50	150-150	1 x 2½	2.10
2N623	100-100	150-150	1½ x 3¾	3.20
2N625	30-30	200-200	1 x 2½	2.20
2N627	50-75	250-50	1¼ x 2½	2.40
2N629	100-150	250-50	1½ x 3¾	3.60
2N616*	8-8	250-250	¾ x 2½	1.60
2N631	40-40	300-300	1½ x 3¾	2.95
2N633	40-50	450-50	1½ x 3¾	2.50
2N635	30-60	450-300	1¼ x 3¾	3.20
2N618†	8-8	450-450	1½ x 2¾	1.70
<b>Dual Separate Section</b>				
2S556†	30-30	150-150	1 x 2¾	\$2.25
2S567†	8-8	450-450	1½ x 2¾	2.15
2S569†	16-16	450-450	1½ x 3¾	2.80

## Cardboard Tubular Dry Electrolytic Capacitors (Continued from Preceding Column)

Catalog Number	Capacity Mfd.	Volts DC	Size D L	List Price
<b>Triple Common Negative</b>				
3N527*	20-20-20	150-150-25	1½ x 2¼	\$2.05
3N533*	30-30-20	150-150-25	1 x 2¾	2.20
TN125*	20-10-10	150-150-150	¾ x 2¾	2.00
TN129†	40-20-20	150-150-150	1½ x 2¾	2.25
3N540	80-50-50	150-150-150	1½ x 3½	3.10
3N535	40-30-40	350-250-150	1½ x 3¾	3.30
3N537	30-50-100	450-150-25	1¼ x 3¾	3.20
3N539	30-30-30	450-350-250	1½ x 3¾	3.75
3N541	40-20-10	450-450-450	1½ x 3¾	3.55
<b>Triple Separate Section</b>				
3S579†	8-8-20	450-450-25	1½ x 2¾	\$2.65
3S584†	8-8-8	450-450-450	1½ x 2¾	2.85
<b>Quad Common Negative</b>				
4N723	10-10-10-150	450-450-450-50	1¾ x 3¾	\$3.60
4N727	10-10-10-10	450-450-450-450	1½ x 3¾	3.25
<b>Quad Separate Section</b>				
4S715†	16-16-10-10	150-150-25-25	1½ x 2¾	\$3.25

‡ Has bare tinned leads out both ends.

## Plastic Cased High Capacity and Non-Polarized Electrolytic Capacitors



HC types are for use with dry disc rectifiers, in such applications as; movie equipment and electric fence power supplies. NP types are non-polarized for intermittent AC service.

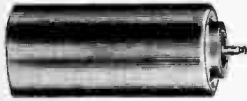
Catalog Number	Capacity Mfd.	DC Wkg. Volts	Size D L	List Price
HC1020	2000	10	1¼ x 3¾	\$3.95
HC1040	4000	10	1½ x 3¾	4.75
HC10100	10000	10-15	2¼ x 4¾	8.25
HC1060A*	6000	10	1½ x 4¾	5.55
HC1520	2000	15	1¼ x 3¾	4.70
HC1540	4000	15	1½ x 3¾	5.50
HC1560	6000	15	1½ x 4¾	6.30
HC2060	6000	20-30	2¼ x 4¾	8.65
HC2510	1000	25	1¼ x 3¾	4.85
HC2520	2000	25	1½ x 3¾	5.75
HC2540	4000	25	1½ x 4¾	6.75
HC4040	4000	40-60	2¼ x 4¾	9.50
HC5005	500	50	1¼ x 3¾	3.90
HC5010	1000	50	1½ x 3¾	6.40
HC5020	2000	50	1½ x 4¾	8.75
HC15010	1000	150	2¼ x 4¾	10.50
HC20005	500	200	2¼ x 4¾	9.80
HC45003**	300	450	2¼ x 4¾	10.50
FF45052**	525	450	2¼ x 4¾	22.50
NP1225	200	125	1½ x 4¾	5.00
NP1235	300	125	2¼ x 4¾	5.75
NP1255	500	125	2¼ x 4¾	7.50
NP3003	15	300	1¼ x 3¾	3.75
NP3014	100	300	1½ x 4¾	6.75
NP3025	200	300	2¼ x 4¾	9.50
NP4505	50	450	1½ x 3¾	7.50
NP4510	100	450	2¼ x 4¾	11.60

\* This unit in Aluminum Case  
\*\* Designed for Photoflash Application



## Silverlytic Subminiature Capacitors

Catalog Number	Capacity Mfd.	DC Wkg. Volts	Size D L	List Price
ALA-10A1	1	10	¾ x ¾	\$2.20
ALA-5A2	2	5	¾ x ¾	2.35
ALA-4A4	4	4	¾ x ¾	2.55



**XT Type  
Tantalum Capacitors**

**Application**—Originally designed to meet the exacting requirements of geophysical, well drilling and other applications where a ruggedly constructed, hermetically sealed electrolytic capacitor was necessary. The possible applications for the present models of the Mallory tantalum capacitors are unlimited in circuit designs requiring rugged use and wide variations in temperature.

**Description**—The Mallory metal encased tantalum capacitor is the answer to applications calling for a capacitor designed to withstand temperatures ranging from  $-55^{\circ}\text{C}.$  to  $+200^{\circ}\text{C}.$  The XT type is enclosed in a hermetically sealed steel case which will withstand 100 hours of 20% salt spray at  $95^{\circ}\text{F}$  without harmful corrosion. The case is sealed with a glass-to-metal end seal.

The standard case diameter for all XT types is  $\frac{7}{8}$ ". The height will vary from  $\frac{1}{2}$ " to  $4\frac{1}{16}$ ", depending on capacity and voltage ratings.

**Terminals**—Provided with a wrap-around terminal for easy soldering.

**Mounting**—Mounting hardware is not supplied with the capacitor. The variety of applications for this capacitor is not conducive to a single means of mounting. Insulating material, such as Teflon, etc., should be used between the capacitor and mounting bracket where the cathode is not at chassis potential. **CAUTION:** Soldering to any part of the case is not recommended.

**Type XT**

Catalog Number	Mfd.	DC Volts		Max. Ohms		Height (In.)	Suggested Industrial Price
		175°C.	85°C.	ESR	IMP		
XTL120	120	12	18	2.5	45	$\frac{1}{2}$	\$10.90
XTH240	240	12	18	2.5	35	$\frac{1}{16}$	13.55
XTL75	75	20	30	2.5	50	$\frac{1}{2}$	10.90
XTH150	150	20	30	2.5	40	$\frac{1}{16}$	13.55
XTL40	40	38	60	2.5	75	$\frac{1}{2}$	10.90
XTH80	80	38	60	2.5	50	$\frac{1}{16}$	13.55
XTL25	25	60	100	2.5	100	$\frac{1}{2}$	10.90
XTH50	50	60	100	2.5	70	$\frac{1}{16}$	13.55
XTL12	12	120	180	5	200	$2\frac{7}{32}$	18.90
XTH25	25	120	180	5	140	$1\frac{1}{4}$	20.25
XTL8	8	180	270	7.5	300	$1\frac{3}{16}$	25.90
XTH16	16	180	270	7.5	210	$1\frac{1}{16}$	33.25
XTL6	6	240	360	10	400	$1\frac{1}{32}$	34.00
XTH12	12	240	360	10	280	$2\frac{3}{8}$	42.25
XTL5	5	300	450	12.5	500	$1\frac{2}{16}$	42.50
XTH10	10	300	450	12.5	350	$2\frac{1}{16}$	51.25
XTL4	4	360	540	15	600	$2\frac{1}{4}$	50.90
XTH8	8	360	540	15	420	$3\frac{1}{2}$	60.00
XTL3.5	3.5	420	630	17.5	700	$2\frac{1}{16}$	58.25
XTH7	7	420	630	17.5	490	$4\frac{1}{16}$	70.00

For Screw Terminal and Nut—add "s" to part number and add: \$0.65 each for any quantity

For 100% Environmental Testing add \$1.55 each for any quantity

Prices are for 175°C. maximum. For 200°C. ratings, add "X" to part number and add 10% to base price. i.e.: XTL-120 becomes XTLX-120

Cathode Tab can be supplied at no extra charge—add "A" to part number. i.e.: XTL-120A

**MALLORY MOLDED TUBULAR CAPACITORS**

Effectively sealed against moisture ingress and mechanical shock.

See page 6 — Mallory Section.



**Mallory Type TAW and TAP  
Silverlytic Capacitors**

**Application**—Designed for those who need an extremely small (subminiaturized) capacitor for transistor applications.

**Description**—The Mallory type TAW and TAP Silverlytic Capacitors are the result of intensive development and research and are designed to meet the most rigid specifications for performance, stability, and reliability. They are premium capacitors, ruggedly constructed and capable of giving a performance equivalent to standard electrolytics of conventional size. They possess extremely long operational life, double seal construction, "a case within a case," and excellent low temperature characteristics. Operating temperature for the TAW Silverlytic ranges from  $-55^{\circ}\text{C}.$  to  $+65^{\circ}\text{C}.$ , and for the TAP Silverlytic operating range is  $-55^{\circ}\text{C}.$  to  $+85^{\circ}\text{C}.$  DC leakage is less than 1 microampere after 10 minutes of rated voltage. Capacity tolerance for the TAW is  $-15\%$  to  $+100\%$ , and for the TAP  $-15\%$  to  $+75\%$ .

**Terminals**—Axial leads  $1\frac{1}{2}$ " long, tinned for easy soldering.

**Mounting**—Designed for mounting with attached leads.

**Packaging**—5 units per display carton.

**TAW (Wire Type)**

Catalog Number	Capacity Mfd.	Volts DC	Color Code	Size Dia. Length	List Price
TAW24A1	1	24	Blue	.145 x $\frac{3}{8}$	\$3.85
TAW12A2	2	12	Orange	.145 x $\frac{3}{8}$	3.85
TAW8A3	3	8	Yellow	.145 x $\frac{3}{8}$	3.85
TAW4A4	4	4	Green	.145 x $\frac{3}{8}$	2.75
TAW4A6	6	4	Red	.145 x $\frac{3}{8}$	3.85

**TAP (Pellet Type)**

Catalog Number	Capacity Mfd.	Volts DC	Size Dia. Length	List Price
TAP125-1M	1.5	125	$\frac{7}{32}$ x $\frac{3}{8}$	\$6.75
TAP100-2	2	100	$\frac{7}{32}$ x $\frac{3}{8}$	6.75
TAP75-3M	3.5	75	$\frac{7}{32}$ x $\frac{3}{8}$	6.75
TAP60-4	4	60	$\frac{7}{32}$ x $\frac{3}{8}$	6.75
TAP50-5	5	50	$\frac{7}{32}$ x $\frac{3}{8}$	6.75
TAP40-6	6	40	$\frac{7}{32}$ x $\frac{3}{8}$	6.75
TAP30-8	8	30	$\frac{7}{32}$ x $\frac{3}{8}$	6.75
TAP25-10	10	25	$\frac{7}{32}$ x $\frac{3}{8}$	6.75
TAP20-12	12	20	$\frac{7}{32}$ x $\frac{3}{8}$	6.75
TAP15-15	15	15	$\frac{7}{32}$ x $\frac{3}{8}$	6.75
TAP10-20	20	10	$\frac{7}{32}$ x $\frac{3}{8}$	6.75
TAP6-30	30	6	$\frac{7}{32}$ x $\frac{3}{8}$	6.75

**ACE Type Capacitors (Single Ended)**

Constructed to the same exacting specifications as the Mallory GEM line. Designed primarily for replacement use in automation and printed circuit radio and TV applications. Leads use 20 and 18 gage wire of double tinned "Copperweld" construction.

Catalog Number	Capacity MFD	Voltage DC	Size Dia. Length	List Price
ACE6215	.0015	600	$\frac{3}{8}$ x 1	\$0.30
ACE6222	.0022	600	$\frac{3}{8}$ x 1	.30
ACE6233	.0033	600	$\frac{3}{8}$ x 1	.30
ACE6115	.015	600	$\frac{3}{8}$ x $1\frac{1}{8}$	.35
ACE6122	.022	600	$\frac{7}{16}$ x $1\frac{1}{8}$	.40
ACE6133	.033	600	$\frac{1}{2}$ x $1\frac{1}{4}$	.40
ACE6168	.068	600	$\frac{1}{2}$ x $1\frac{1}{2}$	.50
ACE6015	.15	600	$\frac{3}{8}$ x $1\frac{1}{8}$	.60
ACE1011	.01	1000	$\frac{7}{16}$ x $1\frac{1}{8}$	.55
ACE10115	.015	1000	$\frac{1}{2}$ x $1\frac{1}{4}$	.55
ACE10133	.033	1000	$\frac{3}{8}$ x $1\frac{1}{4}$	.60
ACE1014	.04	1000	$\frac{3}{8}$ x $1\frac{1}{8}$	.60
ACE1621	.001	1600	$\frac{3}{8}$ x $1\frac{1}{4}$	.70
ACE1622	.002	1600	$\frac{3}{8}$ x $1\frac{1}{4}$	.70



# DRY ELECTROLYTIC AND PLASTIC TUBULAR CAPACITORS

P. R. MALLORY & CO., INC. · INDIANAPOLIS



## Bathtub Dry Electrolytic Capacitors



Hermetically sealed for marine, aircraft and geophysical service. Will operate, without derating, from -40°F to 185°F. Have mounting flanges and solder lugs.

Catalog Number	Cap. Mfd.	DC Wkg. Volts	Size*			List Price	
			H	W	L Y		
BS26	25	25	3/8	x 1	x 1 3/8	x 2 1/2	\$4.50
BS29	50	25	3/8	x 1	x 1 3/8	x 2 1/2	4.60
BS36	25	50	3/8	x 1	x 1 3/8	x 2 1/2	4.55
BS39	50	50	3/8	x 1	x 1 3/8	x 2 1/2	4.70
BS45	20	150	3/8	x 1	x 1 3/8	x 2 1/2	4.70
BS48	40	150	1	x 1 1/4	x 1 3/8	x 2 1/2	4.85
BS62	10	300	3/8	x 1	x 1 3/8	x 2 1/2	4.75
BS65	20	300	1 1/8	x 1 1/4	x 1 3/8	x 2 1/2	4.90
BS81	8	500	1	x 1 3/8	x 2	x 2 3/8	5.75
BS91	8	600	1	x 1 3/8	x 2	x 2 3/8	5.85

\* H—Height; W—Width; L—Length; Y—Mounting Centers

## AC Motor Starting Capacitors

PS type—round, moisture-proof, plastic case. For mounting accessories, see page 11, Mallory Capacitors section, this catalog.



Catalog Number	Mfd. New	Rating Old	Volts AC	Size		List Price
				D	L	
PS2010*	20	20-24	110	1 7/16	x 2 3/8	\$2.05
PS2610*	26	26-30	110	1 7/16	x 2 3/8	2.10
PS3210*	32	32-36	110	1 7/16	x 2 3/8	2.10
PS3810*	38	38-42	110	1 7/16	x 2 3/8	2.10
PS4310*	43	43-48	110	1 7/16	x 2 3/8	2.10
PS5310	53	53-60	110	1 7/16	x 3 3/8	2.15
PS6410	64	64-72	110	1 7/16	x 3 3/8	2.25
PS7010	70	70-78	110	1 7/16	x 3 3/8	2.40
PS7510	75	75-84	110	1 7/16	x 3 3/8	2.55
PS8610	86	86-96	110	1 7/16	x 3 3/8	2.65
PS9710	97	97-107	110	1 7/16	x 3 3/8	2.80
PS10810	108	108-120	110	1 7/16	x 3 3/8	2.85
PS12410	124	124-138	110	1 7/16	x 3 3/8	2.95
PS13010	130	130-157	110	1 7/16	x 3 3/8	2.95
PS14510	145	145-162	110	1 7/16	x 3 3/8	3.20
PS16110	161	161-180	110	1 7/16	x 3 3/8	3.25
PS19410	194	194-216	110	1 7/16	x 3 3/8	3.90
PS20010*	200	200-220	110	1 13/16	x 3 3/8	3.90
PS21610	216	216-240	110	1 13/16	x 3 3/8	4.05
PS24310	243	243-270	110	1 13/16	x 3 3/8	4.70
PS27010	270	270-300	110	1 13/16	x 4 3/8	4.75
PS32410	324	324-360	110	1 13/16	x 4 3/8	5.40
PS34010	340	340-412	110	1 13/16	x 4 3/8	5.55
PS37810	378	378-420	110	2 1/16	x 4 3/8	6.00
PS40010	400	400-450	110	2 1/16	x 4 3/8	6.05
PS43010	430	430-485	110	2 1/16	x 4 3/8	6.95
PS48510	485	485-540	110	2 1/16	x 4 3/8	7.60
PS2520	25	25-30	220	1 7/16	x 3 3/8	4.60
PS3220	32	32-36	220	1 7/16	x 3 3/8	4.90
PS3820	38	38-42	220	1 13/16	x 3 3/8	5.30
PS4320	43	43-48	220	1 13/16	x 3 3/8	5.55
PS5320	53	53-60	220	1 13/16	x 3 3/8	5.75
PS6420	64	64-72	220	1 13/16	x 4 3/8	6.75
PS7020	70	70-78	220	2 1/16	x 4 3/8	7.00
PS7520	75	75-84	220	2 1/16	x 4 3/8	7.35
PS8620	86	86-96	220	2 1/16	x 4 3/8	7.65
PS2730	27	27-32	330	1 13/16	x 3 3/8	6.50

\* Cases will not accommodate PL caps and HB brackets.

## AC Motor Running Capacitors

Have sealed metal cases. Non-inflammable oil impregnation. For continuous AC duty. Not suitable for DC. Capacity tolerance ±10%.



Catalog Number	Cap. Mfd.	Volts AC	Size		List Price
			Dia.	Length	
RP-3301	1	330	1 3/8	x 1 3/8	\$4.20
RP-3302	2	330	1 3/8	x 3 3/16	5.20
RP-3303	3	330	2	x 2 3/8	5.55
RP-3304	4	330	2	x 2 3/8	6.20
RP-3305	5	330	2	x 3 3/8	6.80
RP-3306	6	330	2	x 3 3/8	7.50
RP-3307	7	330	2	x 4 3/8	7.90
RP-3308	8	330	2	x 5 1/8	8.35
RP-3310	10	330	2 1/2	x 4 3/16	9.55
RP-3312	12	330	2 1/2	x 5 3/16	10.90
RP-3315	15	330	2 1/2	x 6 1/16	13.80

## Molded Tubular Paper Capacitors

Cases are molded from high grade mineral-filled bakelite, effectively sealed against moisture ingress and mechanical shock, by Epoxy Resin. (See Mallory Catalog 557 for more complete listing.)

Catalog Number	Capacity Mfd.	Size		List Price
		Dia.	Length	
<b>Working Voltage 400 V.D.C., Test 1000 V.D.C.</b>				
GEM-421	.001	5/16	x 1	\$0.25
GEM-425	.005	5/16	x 1	.25
GEM-411	.01	5/16	x 1	.25
GEM-4115	.015	3/8	x 1 1/4	.25
GEM-412	.02	3/8	x 1 1/4	.25
GEM-4122	.022	3/8	x 1 1/4	.30
GEM-4125	.025	3/8	x 1 1/4	.30
GEM-413	.03	3/8	x 1 1/4	.30
GEM-4133	.033	7/16	x 1 1/4	.30
GEM-414	.04	7/16	x 1 1/4	.30
GEM-4147	.047	7/16	x 1 1/4	.30
GEM-415	.05	7/16	x 1 1/4	.30
GEM-416	.06	1/2	x 1 1/4	.35
GEM-4168	.068	1/2	x 1 1/2	.35
GEM-401	.1	1/2	x 1 1/2	.35
GEM-4015	.15	3/4	x 1 1/2	.40
GEM-402	.2	3/4	x 2 1/4	.45
GEM-4022	.22	3/4	x 2 1/4	.45
GEM-4025	.25	3/4	x 2 1/4	.45
GEM-4033	.33	3/4	x 2 1/4	.50
GEM-4047	.47	1	x 2 3/8	.60
GEM-405	.5	1	x 2 3/8	.60
GEM-41	1.0	1	x 2 3/8	1.25

### Working Voltage 600 V.D.C., Test 1500 V.D.C.

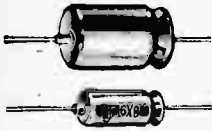
GEM-621	.001	5/16	x 1	\$0.25
GEM-6215	.0015	5/16	x 1	.25
GEM-622	.002	5/16	x 1	.25
GEM-6222	.0022	5/16	x 1 1/2	.25
GEM-6225	.0025	5/16	x 1	.25
GEM-623	.003	5/16	x 1	.25
GEM-6233	.0033	5/16	x 1	.25
GEM-624	.004	5/16	x 1	.25
GEM-6247	.0047	5/16	x 1	.25
GEM-625	.005	3/8	x 1 1/4	.25
GEM-626	.006	3/8	x 1 1/4	.25
GEM-6268	.0068	3/8	x 1 1/4	.30
GEM-627	.007	3/8	x 1 1/4	.30
GEM-628	.008	3/8	x 1 1/4	.30
GEM-6282	.0082	3/8	x 1 1/4	.30
GEM-611	.01	3/8	x 1 1/4	.30
GEM-6112	.012	3/8	x 1 1/4	.30
GEM-6115	.015	3/8	x 1 1/4	.30
GEM-612	.02	7/16	x 1 1/4	.30
GEM-6122	.022	7/16	x 1 1/4	.30
GEM-6125	.025	7/16	x 1 1/4	.35
GEM-613	.03	7/16	x 1 1/4	.35
GEM-6133	.033	1/2	x 1 1/2	.35
GEM-614	.04	1/2	x 1 1/2	.35
GEM-6147	.047	1/2	x 1 1/2	.40
GEM-615	.05	1/2	x 1 1/2	.40
GEM-6156	.056	3/4	x 1 1/2	.40
GEM-616	.06	3/4	x 1 1/2	.40
GEM-6168	.068	3/4	x 1 1/2	.45
GEM-601	.1	3/4	x 1 1/2	.45
GEM-602	.2	3/4	x 2 1/4	.70
GEM-6022	.22	3/4	x 2 1/4	.70
GEM-6025	.25	3/4	x 2 1/4	.55
GEM-6027	.27	1	x 2 3/8	.70
GEM-6047	.47	1	x 2 3/8	.80
GEM-605	.5	1	x 2 3/8	.80
GEM-61	1.0	1	x 2 3/8	1.25

### Working Voltage 1600 V.D.C., Test 3200 V.D.C.

GEM-16225	.0025	7/16	x 1 1/4	\$0.65
GEM-1623	.003	7/16	x 1 1/4	.55
GEM-16233	.0033	7/16	x 1 1/4	.55
GEM-1624	.004	7/16	x 1 1/4	.55
GEM-16247	.0047	1/2	x 1 1/4	.55
GEM-1625	.005	1/2	x 1 1/2	.55
GEM-16256	.0056	1/2	x 1 1/4	.65
GEM-1626	.006	1/2	x 1 1/2	.55
GEM-16268	.0068	1/2	x 1 1/2	.65
GEM-1627	.007	1/2	x 1 1/2	.55
GEM-16275	.0075	1/2	x 1 1/2	.55
GEM-1628	.008	1/2	x 1 1/2	.60
GEM-16282	.0082	1/2	x 1 1/2	.65
GEM-1611	.01	1/2	x 1 1/2	.60
GEM-1612	.02	3/4	x 1 1/2	.70
GEM-16125	.0125	3/4	x 1 1/2	.70
GEM-1613	.03	3/4	x 1 1/2	.70
GEM-1614	.04	3/4	x 2 1/4	.70
GEM-1615	.05	3/4	x 1 1/2	.70

Mallory Page 6

**Subminiature Aluminum Electrolytic Capacitors**



Mallory's new subminiature electrolytic capacitors are outstanding in their application to the very small size portable radios, hearing aids, portable TV, test instru-

ments, and military communications equipment. Small in size, but designed to take it, they use etched plate of high purity aluminum.

Type	Capacity	Voltage	Size		List Price
			Dia.	Length	
TT 1 x 5	5	1	3/16 x 1/2		\$1.35
TT 3 x 10	10	3	3/16 x 3/8		1.35
TT 3 x 25	25	3	1/4 x 3/8		1.35
TT 3 x 40	40	3	1/4 x 3/8		1.35
TT 3 x 110	110	3	3/8 x 3/8		1.50
TT 6 x 2	2	6	3/16 x 1/2		1.35
TT 6 x 5	5	6	3/16 x 1/2		1.35
TT 6 x 8	8	6	3/16 x 3/8		1.40
TT 6 x 10	10	6	3/16 x 3/8		1.40
TT 6 x 15	15	6	1/4 x 3/8		1.40
TT 6 x 25	25	6	1/4 x 3/8		1.40
TT 6 x 30	30	6	3/8 x 3/8		1.50
TT 6 x 40	40	6	3/8 x 3/8		1.50
TT 6 x 50	50	6	3/8 x 3/8		1.50
TT 6 x 60	60	6	3/8 x 3/8		1.50

Type	Capacity	Voltage	Size		List Price
			Dia.	Length	
TT 10 x 15	15	10	1/4 x 3/8		\$1.40
TT 10 x 25	25	10	3/8 x 3/8		1.40
TT 12 x 1	1	12	3/16 x 1/2		1.40
TT 12 x 2	2	12	3/16 x 1/2		1.40
TT 12 x 5	5	12	3/16 x 3/8		1.40
TT 12 x 10	10	12	1/4 x 3/8		1.40
TT 15 x 10	10	15	1/4 x 3/8		1.50
TT 15 x 20	20	15	3/8 x 3/8		1.55
TT 15 x 30	30	15	3/8 x 3/8		1.60
TT 25 x 5	5	25	1/4 x 3/8		1.50
TT 25 x 8	8	25	3/8 x 3/8		1.50
TT 25 x 15	15	25	3/8 x 3/8		1.55
TT 25 x 20	20	25	3/8 x 3/8		1.60
TT 50 x 5	5	50	1/4 x 3/8		1.55
TT 50 x 10	10	50	3/8 x 3/8		1.60
TT 50 x 20	20	50	3/8 x 3/8		1.60

P.R. MALLORY & CO. Inc.  
**MALLORY**

presents the most complete line of  
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available for military, industrial and  
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The Mercury battery, designed and developed by MALLORY, offers a more economical and dependable power source for transistorized portable radios, hearing aids and industrial test equipment . . . and they last longer too—on the shelf or in the set.

FOR THE PROFIT LINE . . .

SELL AND USE

P.R. MALLORY & CO. Inc.  
**MALLORY BATTERIES**

See pages 2 and 3, Section M

# Paper, Oil, Wax Impregnated and Wax Filled Capacitors



P. R. MALLORY & CO., INC. · INDIANAPOLIS



## Metal Cased Oil Impregnated Paper Capacitors

For vibrator buffer, coupling and other electronic circuits where highest quality, tubular-type capacitors are required. Mineral oil-impregnated, hermetically sealed, metal-cased tubulars with external insulating sleeves. 2 3/8" leads. For operation at 85°C.

Catalog Number	Capacity Mfd.	Working Volts DC	Size Dia. Length	List Price
OT101	.01	600	3/8 x 1 3/16	\$0.95
OT103	.02	600	3/8 x 1 3/16	1.05
OT106	.05	600	1 1/16 x 1 3/8	1.10
OT110	.1	600	1 1/16 x 1 11/16	1.25
OT113	.25	600	1 3/16 x 2 1/8	1.70
OT116	.5	600	1 1/16 x 2 1/4	2.20
OT301	.01	1000	3/8 x 1 3/16	1.10
OT303	.02	1000	1 1/16 x 1 3/8	1.20
OT306	.05	1000	1 1/16 x 2 3/16	1.30
OT310	.1	1000	1 3/16 x 2 3/16	1.50
OT370	.002	1600	3/8 x 1 3/8	1.20
OT377	.003	1600	3/8 x 1 3/8	1.20
OT371	.005	1600	3/8 x 1 3/8	1.20
OT372	.008	1600	3/8 x 1 3/8	1.20
OT373	.01	1600	1 1/16 x 1 3/8	1.20
OT375	.015	1600	1 1/16 x 1 11/16	1.25
OT376	.02	1600	1 1/16 x 1 11/16	1.30
OT378	.03	1600	1 1/16 x 2 3/16	1.30
OT379	.04	1600	1 1/16 x 2 3/16	1.30
OT380	.05	1600	1 1/16 x 2 7/16	1.40
OT458	.0025	2000	1 1/16 x 1 3/8	1.25
OT459	.005	2000	1 1/16 x 1 11/16	1.25
OT460	.0075	2000	1 1/16 x 1 3/8	1.25
OT461	.01	2000	1 1/16 x 1 3/8	1.25
OT462	.0125	2000	1 1/16 x 1 3/8	1.30
OT463	.015	2000	1 1/16 x 1 3/8	1.30
OT464	.02	2000	1 1/16 x 2	1.35
OT465	.03	2000	1 3/16 x 2	1.40
OT466	.04	2000	1 3/16 x 2 1/16	1.40
OT467	.05	2000	1 3/16 x 2 1/16	1.45



## Oil Impregnated Cardboard Cased Tubular Paper Capacitors

Ideal for auto set buffer circuits.

Catalog Number	Capacity Mfd.	Working Volts DC	Size Dia. Length	List Price
OW635	.0005	6000	9/16 x 1 3/4	\$1.10
OW621	.001	6000	1 1/16 x 1 3/8	1.10
OW622	.002	6000	2 7/32 x 1 3/8	1.10
OW623	.003	6000	1 x 1 3/8	1.15
OW625	.005	6000	2 7/32 x 2 1/2	1.15
OW6275	.0075	6000	1 5/16 x 2 1/2	1.20
OW611	.01	6000	1 1/32 x 2 1/2	1.20
OW612	.02	6000	1 7/32 x 3	1.25
OW613	.03	6000	1 1/4 x 3 3/8	1.25
OW615	.05	6000	1 3/8 x 4 3/8	1.75

Packaged in Individual Display Carton with Mounting Strap.



## Capacitor Selector

For determining correct capacity to use in making replacements of defective motor starting capacitors which have lost their identity. For checking capacity ranges from 25 to 645 mfd. 110-125 VAC.

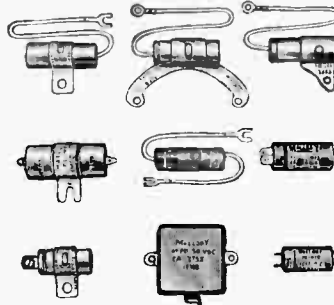
Catalog No. MSS-101 \$15.00 Net

## Octal Base Plug-in Electrolytic Capacitors

Designed for military and communication equipment Parts replacement, also very useful for the designer and builder. Replacement of a filter is no more difficult than replacing a tube with these new plug-in units.

Catalog Number	Capacity	Voltage	Size Dia. Length	List Price
PB110	20	150	1 3/32 x 2 1/2	\$3.95
PB114	40	150	1 3/32 x 2 1/2	4.10
PB139	100	350	1 3/8 x 3 1/2	5.85
PB142	10	450	1 3/32 x 2 1/2	4.05
PB144	20	450	1 3/32 x 2 1/2	4.30
PB146	40	450	1 3/8 x 4 1/4	4.55
PB149	80	450	1 3/8 x 4 1/4	5.55
PB208	20-20	150-150	1 3/32 x 2 1/2	4.20
PB212	40-40	150-150	1 3/32 x 2 1/2	4.35
PB234	20-20	450-450	1 3/8 x 2 1/2	5.05
PB238	40-40	450-450	1 3/8 x 4 1/4	5.95
PB311.2	20-20-20	150-150-150	1 3/32 x 2 1/2	4.80
PB345.8	20-20-20	450-450-25	1 3/8 x 2 1/2	5.55
PB375.8	10-10-10	450-450-450	1 3/32 x 2 1/2	5.10

## Automotive Noise Suppression Capacitors



For suppressing radio interference emanating from auto generators, oil gauges, ammeters and other automotive, aircraft or marine equipment.

AM—For ammeter and gauge suppression.

FM—For Ford generator suppression.

DL—For domelight suppression.

RF—For vibrator hash suppression.

CA—For general suppression in aircraft and marine applications.

AS, AG—For generator, ammeter and contact spark suppression.

Top Row: AG Types; FM442; FM441  
Center Row: DL445X; AM454; RF482  
Bottom Row: AS types; CA275X; RF481

Wax impregnated cartridges assembled in various style housings. Type AG is hermetically sealed, provides low impedance and is ideal for extreme climatic conditions.

Catalog Number	Cap. Mfd.	Working Volts DC	Size D L	Signal Corps No.	List Price
RF481	.5	50	3/8 x 1 3/8		\$0.90
RF482	1.0	50	3/8 x 1 3/8		1.15
CA275X	4.0	50	2 x 2 x 1		3.00
AS125†	.01	100	.675 x 1 1/16	CA-432	1.20
AG442*	.05	100	3/8 x 1 1/4		.80
AG443	.05	100	7/16 x 1 3/16		1.00
AS145†	.1	100	.675 x 1 3/8	CA-442	1.40
AS165†	.25	100	3/4 x 1 1/2	CA-452	1.50
AS185†	.5	100	1 x 1 1/2	CA-462	1.75
FM441	.5	100	.675 x 1 3/8		.85
RF480	.5	100	1 3/16 x 1 3/16		.80
AG450	.5-.5	100	3/8 x 2		1.50
FM442	.5	160	.675 x 1 3/8		.85
AG444	.25	200	3/8 x 1 3/8		.60
DL445X	.4	200	1 x 2 3/8		2.25
AM454	.5	200	1 1/16 x 2		.65
AG451	.5	200	3/8 x 2		.65
AG453†	.5	200	3/8 x 2		1.50
AG452	1.0	200	1 x 2 3/16		.90
AS525†	.01	500 AC-DC	.675 x 1	CA-472	1.35
AS545†	.1	500 AC-DC	1 x 2 1/2	CA-482	1.60
AS565†	.25	500 AC-DC	1 x 2 1/2	CA-502	2.00

\* For Midget Aircraft Motors.

† Has shielded lead.

‡ Also marked with Signal Corps Number as shown.

**Steel-Cased, Oil-Filled Capacitors**



For general use in aircraft, marine, geophysical and industrial electronic equipment where extreme dependability under severe conditions

is desired. Oil impregnated, single, dual, and triple section units housed in rugged, hermetically sealed, hot-tinned steel cases. Single sections have two terminals. Dual section units have three terminals with left terminal common, and both are internally insulated from case. Triple units have three terminals with common ground to case. All terminals protrude in a row on one long side of case.

Catalog Number	Cap. Mfd.	Working Volts DC	Size*				List Price			
			H	W	L	X				
CB403	.25	400	3/8	x	7/8	x	1 1/2	x	2 1/2	\$2.25
CB404	.5	400	3/8	x	1	x	1 1/4	x	2 1/2	2.40
CB405	1.0	400	3/8	x	1 1/4	x	2	x	2 3/4	2.85
CB406	2.0	400	1 1/8	x	2	x	2	x	2 3/4	3.60
CB602	.1	600	3/8	x	7/8	x	1 1/4	x	2 1/2	2.65
CB603	.25	600	3/8	x	1	x	1 1/4	x	2 1/2	2.80
CB604	.5	600	3/8	x	1 1/4	x	1 1/4	x	2 1/2	3.00
CB605	1.0	600	3/8	x	1 3/4	x	2	x	2 3/4	3.40
CB1002	.1	1000	3/8	x	7/8	x	1 1/4	x	2 1/2	2.85
CB1003	.25	1000	3/8	x	1	x	1 1/4	x	2 1/2	2.95
CB1004	.5	1000	3/8	x	1 1/4	x	2	x	2 3/4	3.20
CBD403	.25-.25	400	3/8	x	1 1/4	x	1 1/4	x	2 1/2	3.25
CBD404	.5-.5	400	3/8	x	1 1/4	x	2	x	2 3/4	3.75
CBD602	.1-.1	600	3/8	x	7/8	x	1 1/4	x	2 1/2	3.35
CBT403	3X .25	400	3/8	x	1 3/4	x	2	x	2 3/4	4.00
CBT404	3X .5	400	1	x	1 3/4	x	2	x	2 3/4	4.75
CBT602	3X .1	600	3/8	x	1	x	1 1/4	x	2 1/2	3.80

\* H—Height; W—Width; L—Length; X—Mounting Centers.

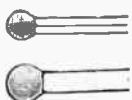
**High Voltage Ceramic Capacitors—  
500 MMFD /  
20KV WVDC**



Designed for exact replacements as filters in high voltage circuits of television sets. The three capacitors have identical electrical characteristics and case styles, but differ in terminal arrangements. High quality ceramic dielectric materials and low loss plastic cases assure consistent operating results. Combinations of plain copper, internally threaded, slotted, or externally threaded studs are offered.

Catalog Number	Stud Description	List Price
HV-20035	Plain No. 6 copper, 1/2" long equipped with universal adapter	\$1.85
HV-20035A	(1) Internally threaded for 6-32 MS with .187 flat (2) Externally threaded for 6-32 MS with .187 flat	
HV-20035B	(1) Internally threaded for 6-32 MS with .187 flat (2) No. 6 gauge with 1/16" slot	1.85

**Disc Ceramic Capacitors**



Small physical size, rugged construction, and excellent electrical characteristics. These unique capacitors are particularly suitable for replacement of molded mica and paper tubular units. They have dipped phenolic coating for maximum protection from moisture.

**600 Working Volts DC**

Catalog Number	Capacity (mfd)	Size Max. Dia.	List Price
DC-521	.001	1 1/2	\$0.25
DC-5215	.0015	1 1/2	.25
DC-522	.002	1 1/2	.30
DC-525	.005	1 1/2	.25
DC-511	.01	3/4	.25
DCD-521	.001-.001	1 1/2	.40
DCD-5215	.0015-.0015	1 1/2	.40
DCD-522	.002-.002	1 1/2	.40
DCD-524	.004-.004	3/4	.45

**3000 Working Volts DC**

Catalog Number	Capacity (mmfd.)	Size Max. Dia.	List Price
DC3054R7	4.7	3/8	\$0.50
DC3056R8	6.8	3/8	.50
DC3041	10	3/8	.50
DC30415	15	3/8	.50
DC30422	22	1 1/2	.50
DC30433	33	1 1/2	.50
DC30447	47	1 1/2	.50
DC30456	56	3/8	.50
DC30468	68	3/8	.50
DC3031	100	3/8	.55
DC30322	220	3/8	.60
DC30333	330	3/8	.60
DC30347	470	3/8	.65
DC30368	680	3/8	.75
DC3021	1000	1 1/2	.75
DC30215	1500	1 1/2	.85
DC30222	2200	3/8	1.05
DC30233	3300	3/8	1.25

**6000 Working Volts DC**

Catalog Number	Capacity (mmfd.)	Size Max. Dia.	List Price
DC6054R7	4.7	1 1/2	\$1.00
DC6056R8	6.8	3/8	1.00
DC6041	10	3/8	1.00
DC60415	15	1 1/2	1.00
DC60422	22	3/8	1.00
DC60318	180	1 1/2	1.00
DC60322	220	1 1/2	1.00
DC60333	330	3/8	1.00

**For the Best in Batteries**

Buy **MALLORY**  
**MERCURY** Batteries

See Mallory for the

Most complete Line

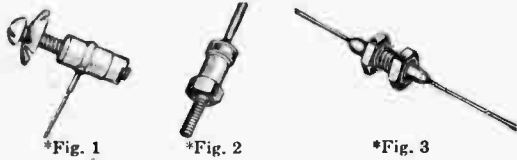
of Mercury and Zinc Carbon

Batteries now Available.

# CERAMIC CAPACITORS

P. R. MALLORY & CO., INC. - INDIANAPOLIS

P. R. MALLORY & CO. INC.  
**MALLORY**



## Mallory Ceramic Tubular Trimmers

Have high quality, silvered, steatite tubes; screw adjustment; low minimum capacitance and tinned-copper leads. 500 wkg. V. DC.

Cat. No.	mmfd	Length of Body	Fig. No.*	List Price
CT565A	.5-3	3/8"	1	<b>\$0.50</b>
CT565	.5-3	3/8"	1	.50
CT551	1-4	3/8"	1	.50
CT552	2-6	3/8"	1	.50

## Stand-Off Ceramic Capacitors

Recommended for the dual purpose of by-passing R.F. current to ground, and of mechanically supporting other circuit elements. They are especially suited for VHF and UHF applications because of their low inductance and high resonant frequency.

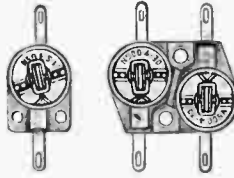
Cat. No.	Cap. mmfd	Tolerance	Fig. No.*	List Price
SC-521	1000	20%	2	<b>\$1.00</b>
SC-535	500	20%	2	1.00

## Feed-Thru Ceramic Capacitor

A well built, sturdy, feed-thru capacitor used to by-pass R.F. to ground in feed-thru applications. Wire terminals are rugged and will serve as tie points for several connections for supporting other circuit elements, and are sufficiently long for point-to-point wiring.

Cat. No.	Cap. mmfd	Tolerance	Fig. No.*	List Price
FC5215	1500	20%	3	<b>\$1.00</b>

## Ceramic Trimmer Capacitors



Small, electrically stable capacitors for use in high frequency FM-TV circuits. Each capacitor consists of fired silver electrodes on a ceramic rotor and base. They have a 360° rotor with a substantially constant capacity change and are completely sealed from dust and dirt. Single or dual units are available.

Solder type lugs at each end of capacitor.

Two clearance holes are provided in each capacitor for screw mounting.

Single Units—Overall size 2 1/32" x 2 7/32" x 3/8" thick.  
Voltage Rating—800 VDC

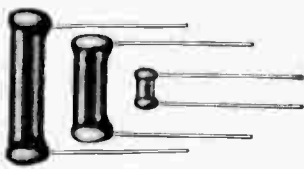
Catalog No.	Cap. Range (mmfd)	Temperature Coefficient	List Price
ST-5515-Z	1.5 to 7	Zero	<b>\$1.50</b>
ST-553-Z	3 to 12	Zero	1.50
ST-554-N	4 to 30	Neg. 500 Parts/Million/°C.	1.50
ST-557-N	7 to 45	Neg. 500 Parts/Million/°C.	1.50

Dual Units—Overall size 1 1/16" x 3/8" x 3/8" thick.  
Voltage Rating—800 VDC

Catalog No.	Cap. Range Each Section (mmfd)	Temperature Coefficient	List Price
DT-5515-Z	1.5 to 7	Zero	<b>\$2.50</b>
DT-553-Z	3 to 12	Zero	2.50
DT-554-N	4 to 30	Neg. 500 Parts/Million/°C.	2.50
DT-557-N	7 to 45	Neg. 500 Parts/Million/°C.	2.50

## Fixed Ceramic Capacitors

(Voltage Rating—600 VDC)



Mallory tubular, fixed, ceramic capacitors are manufactured in 3 types. UC is general purpose type for by-passing, coupling and other applications where a moderate capacitance change with temperature change can be tolerated. ZT is zero temperature type, the nominal capacitance of which remains substantially constant over a temperature variation from -55°C to 85°C. NT is negative temperature type with a negative coefficient of 750 parts/million/degrees C. These capacitors are supplied with a dipped phenolic insulation for protection against moisture and have radially placed bare, tinned-copper leads approximately 1/4" long.

Voltage Rating—800VDC.

General Purpose ±20% Tolerance				Zero Temperature Coefficient ±10% Tolerance			
Cat. No.	Capacity (mmfd)	Size*	List Price	Cat. No.	Capacity (mmfd)	Size*	List Price
UC-541	10	1	<b>\$0.25</b>	ZT-5675	.75	1	<b>\$0.75</b>
UC-5412	12	1	.25	ZT-5515	1.5	1	.50
UC-5415	15	1	.25	ZT-553	3	1	.50
UC-5418	18	1	.25	ZT-5533	3.3	1	.50
UC-5422	22	1	.25	ZT-5547	4.7	1	.50
UC-5425	25	1	.25	ZT-555	5	1	.50
UC-5427	27	1	.25	ZT-5568	6.8	1	.50
UC-5433	33	1	.25	ZT-541	10	1	.50
UC-5439	39	1	.25	ZT-542	20	1	.50
UC-5447	47	1	.25	ZT-5425	25	2	.50
UC-545	50	1	.25	ZT-5433	33	2	.50
UC-5456	56	1	.25	ZT-545	50	3	.55
UC-5468	68	1	.25	ZT-5475	75	3	.55
UC-5475	75	1	.25	ZT-531	100	3	.55
UC-551	100	1	.25	ZT-5315	150	4	.60
UC-5512	120	1	.25	ZT-53175	175	4	.60
UC-5515	150	1	.25				
UC-552	200	1	.25				
UC-5322	220	1	.25				
UC-5325	250	1	.25				
UC-5327	270	1	.25				
UC-533	300	1	.25				
UC-5333	330	1	.25				
UC-5339	390	1	.25				
UC-5347	470	1	.25				
UC-535	500	1	.25				
UC-5356	560	1	.25				
UC-5368	680	1	.25				
UC-5375	750	2	.25				
UC-521	1000	2	.25				
UC-5212	1200	2	.25				
UC-5215	1500	2	.25				
UC-5218	1800	3	.25				
UC-522	2000	3	.25				
UC-5222	2200	3	.25				
UC-5225	2500	3	.25				
UC-5227	2700	3	.25				
UC-523	3000	3	.25				
UC-5233	3300	3	.25				
UC-5240	4000	3	.25				
UC-5247	4700	3	.25				
UC-525	5000	3	<b>.30</b>				

Negative Temperature Coefficient 750 Parts/Million/°C ±10% Tolerance			
Cat. No.	Capacity (mmfd)	Size*	List Price
NT-555	5	1	<b>\$0.50</b>
NT-541	10	1	.50
NT-5447	47	2	.50
NT-5475	75	3	.50
NT-531	100	3	.50

* SIZE CHART		
Sizes	Diameter	Length
1	.240	.460
2	.240	.710
3	.315	1.250
4	.415	1.213

**Mallory Noise Filters**



**Type X**



**Type W**



**Type Z**



**Type Z8A**



**Type LC**



**Type LB**

For reducing or eliminating radio frequency interference caused by various electrical appliances.

Type W has dual capacitors housed in metal tubes. Common lead of capacitors connected to case, except WSP type which has shock-limiting capacitor from common lead to case. Designed for direct mounting. Type X has single and dual capacitors housed in round metal case, except X6 which is housed in rectangular plastic case. Designed for plug-in mounting. Type Z—Single and dual inductance-capacity filters housed in round metal container and designed for

insertion between appliance and electrical outlet. Types Z6 and Z8 have terminal for return lead to ground of appliance. Type Z8A designed for direct mounting and is equipped with 5" flexible leads. Type LC—combination inductance-capacity filter housed in rectangular metal case. Equipped with line cord and plug as well as outlet for appliance. Type LB—heavy duty choke-capacity, combination filters sealed in rectangular, standard, heavy-gauge metal cut-out boxes. Equipped with heavy, flexible insulated wire leads for splicing with house or motor wiring.

Catalog Number	Amps	Volts	Size	Intensity or Degree of Interference	Source of Interference	List Price
<b>W7</b>		110-220 AC-DC	3/8 x 2	Light	Compressors, Sewing Machines, Vacuum Cleaners	<b>\$1.35</b>
<b>W9</b>		115-220 AC-DC	1 x 3	Medium	Air-Conditioners, Dental Equipment, Fans, Signs	<b>1.75</b>
<b>W11</b>		115-220 AC-DC	1 1/8 x 3	Severe	Grinders, Thermostats, Motors	<b>2.10</b>
<b>W7SP</b>		115-220 AC-DC	3/8 x 2	Light	Adding Machines, Cash Registers, Dishwashers	<b>1.80</b>
<b>W9SP</b>		115-220 AC-DC	1 x 2 1/2	Medium	Vacuum Cleaners, Washing Machines	<b>2.20</b>
<b>X1</b>	5	110	1 1/8 x 1 1/8	Slight	Heating Pads, Radio Receivers	<b>1.60</b>
<b>X3</b>	5	110-220	1 1/8 x 2 3/16	Medium	Barber Clippers, Hair Dryers (small)	<b>1.80</b>
<b>X5</b>	5	110-220	1 1/8 x 2 3/16	Medium	Floor Polishers, Refrigerators	<b>2.70</b>
<b>X6</b>	15	125 AC-DC	1 1/4 x 2 x 1	Light	Electric Razors, Food Mixers and Grinders	<b>1.60</b>
<b>Z2</b>	3	110-220	1 1/8 x 2 1/16	Medium	Violet Ray, Radio Receivers, Barber Clippers	<b>2.20</b>
<b>Z4</b>	3	110-220	1 1/8 x 2 1/16	Severe	Heating Pads, Humidifiers (plug type)	<b>2.50</b>
<b>Z6</b>	3	110-220	1 1/8 x 3/4	Severe	Electric razors, Radio Receivers	<b>3.60</b>
<b>Z8</b>	3	110-220	1 1/8 x 3/4	Severe	Sewing Machines, Hair Dryers (small)	<b>3.60</b>
<b>Z8A</b>	3	115-220 AC-DC	1 7/16 x 2 3/8	Severe	Fans (plug type) Vacuum Cleaners	<b>3.00</b>
<b>LC5</b>	5	115-220 AC-DC	2 1/16 x 3 1/16 x 3 9/16	Heavy	Air Conditioners, Cash Registers	<b>11.25</b>
<b>LC10</b>	10	115-220 AC-DC	2 1/16 x 3 1/16 x 3 9/16	Heavy	Dictating Machines, Ironing Machines	<b>15.00</b>
<b>LB10</b>	10	220	6 1/2 x 6 1/2 x 4	Heavy	Sign Flashers, Oil Burners, Neon Signs	<b>17.50</b>
<b>LB20</b>	20	220	10 1/4 x 10 1/4 x 6	Heavy	Stokers, Garbage Grinders, Fans, Compressors	<b>47.50</b>
<b>LB40</b>	40	220	12 x 10 1/4 x 6	Heavy	Motors, Sign Flashers	<b>58.75</b>
<b>NF1-115</b>	1	115 AC—500 DC	1 3/4 x 1 1/4 x 7/8		NF type filters are designed for professional-industrial noise filtering problems. May be used in such applications as; electric motors, lighting systems, make and break relay systems and fans. Should be installed and used exactly as suggested on applicable instruction sheets.	<b>8.90</b>
<b>NF3-220</b>	3	220 AC	2 x 1 1/4 x 1			<b>13.20</b>
<b>NF5-115</b>	5	115 AC—500 DC	2 x 1 1/4 x 7/8			<b>7.30</b>
<b>NF10-115</b>	10	115 AC—500 DC	2 x 2 x 1 1/8			<b>9.75</b>
<b>NF15-220</b>	15	220 AC	2 1/16 x 2 1/2 x 1 1/16			<b>27.10</b>
<b>NF25-230</b>	25	230 AC	2 x 2 x 1 1/4			<b>12.10</b>

**MALLORY TYPE "K"  
VITREOUS WIRE-WOUND POWER  
RHEOSTATS  
AND POTENTIOMETERS**

Hinged-spring contact arm; low contact resistance; low wear; easy cleaning and brush replacement; antibacklash characteristic.

See complete line Mallory page 4  
Potentiometers, Rheostats, Resistors Section

**MALLORY GEM TYPE  
Molded Tubular Paper Capacitors**

A Complete Line of Ratings

Sealed against moisture by Epoxy Resin which assures Longer, more trouble-free life.

See page 6

For a more complete listing from 200 V.D.C. to 15,000 V.D.C. send for Mallory Catalog 556

# MICA CAPACITORS

P.R. MALLORY & CO. INC.  
**MALLORY**

P. R. MALLORY & CO., INC. · INDIANAPOLIS

## Mica Receiver Capacitors



Designed for use in radio, TV and industrial electronic circuits. Made with carefully selected mica and foil. Phenolic case with RTMA color coding for identification.

Case Size— $\frac{7}{16}$ " x  $\frac{25}{32}$ " x  $\frac{7}{32}$ "  
with  $\frac{1}{8}$ " Wire Leads

Voltage Rating  
= 500 VDC Working—1000 VDC Test

Capacity mmfd.	Standard Mica $\pm 20\%$ Cap. Tolerance		Silver Mica $\pm 10\%$ Cap. Tolerance		Silver Mica $\pm 2\%$ Cap. Tolerance	
	Catalog Number	List Price	Catalog Number	List Price	Catalog Number	List Price
5	MC205	\$0.25	MCB205	\$0.45		
10	MC215	.25	MCB215	.40	MCE215	\$0.50
25	MC220	.25	MCB220	.40	MCE220	.50
40	MC223	.20	MCB223	.40	MCE223	.50
50	MC225	.20	MCB225	.40	MCE225	.50
75	MC230	.20	MCB230	.40	MCE230	.50
100	MC235	.20	MCB235	.40	MCE235	.50
150	MC236	.20	MCB236	.45	MCE236	.55
200	MC237	.20	MCB237	.45	MCE237	.55
250	MC240	.25	MCB240	.45	MCE240	.55
300	MC241	.25	MCB241	.55	MCE241	.70
400	MC243	.25	MCB243	.65	MCE243	.80
500	MC245	.25	MCB245	.70	MCE245	.85
800	MC251	.25	MCB251	.95	MCE251	1.10
1000	MC255	.30	MCB255	1.10	MCE255	1.35
1500	MC256	.30				
500	MC445	.30	MCB445	.70	MCE445	.85
800	MC451	.30	MCB451	.95	MCE451	1.15
1500			MCB456	1.35	MCE456	1.65
2000	MC457	.40	MCB457	1.35	MCE457	1.65
2500	MC460	.45	MCB460	1.80	MCE460	2.20
3000	MC461	.50	MCB461	2.05	MCE461	2.45
4000	MC463	.55	MCB463	2.15	MCE463	2.60
5000	MC465	.60	MCB465	2.25	MCE465	2.70
6000	MC467	.75	MCB467	2.60	MCE467	3.15
7000	MC469	.90	MCB469	2.90	MCE469	3.50
8000	MC471	1.00	MCB471	3.20	MCE471	3.85
10000	MC475	1.20	MCB475	3.50	MCE475	4.20

Case Size— $\frac{13}{16}$ " x  $\frac{13}{16}$ " x  $\frac{5}{16}$ "  
with  $\frac{1}{8}$ " Wire Leads

Voltage Rating  
= 500 VDC Working—1000 VDC Test

## Mica Transmitting Capacitors (Type MH)



For use in transmitting and power amplifier circuits. Made with accurately gauged, high-quality, India mica in molded phenolic case.  
Test volts are 200% of WVDC. Case size  $1\frac{1}{2}$ " x  $1\frac{1}{4}$ " (minus terminals).

## High-Voltage Mica Capacitors for TV Replacement

$\pm 20\%$  Cap. Tolerance

Catalog Number	Capacity mmfd	Working Volts DC	W	Size L H	List Price
MCP53R3	3.3	3000	$2\frac{9}{32}$	$\frac{7}{16}$ x $\frac{7}{32}$	\$0.35
MCP550	5	3000	1	$\frac{9}{8}$ x $1\frac{1}{32}$	.35
MCP410	10	3000	1	$\frac{9}{8}$ x $1\frac{1}{32}$	.35
MCM422	22	2500	$2\frac{9}{32}$	$\frac{7}{16}$ x $\frac{7}{32}$	.30
MCM433	33	2500	$2\frac{9}{32}$	$\frac{7}{16}$ x $\frac{7}{32}$	.35
MCL420	20	2000	$2\frac{9}{32}$	$\frac{7}{16}$ x $\frac{7}{32}$	.35
MCL427	27	2000	$2\frac{9}{32}$	$\frac{7}{16}$ x $\frac{7}{32}$	.35
MCL443	43	2000	$2\frac{9}{32}$	$\frac{7}{16}$ x $\frac{7}{32}$	.35
MCL447	47	2000	$2\frac{9}{32}$	$\frac{7}{16}$ x $\frac{7}{32}$	.30
MCL450	50	2000	$2\frac{9}{32}$	$\frac{7}{16}$ x $\frac{7}{32}$	.40
MCL456	56	2000	$2\frac{9}{32}$	$\frac{7}{16}$ x $\frac{7}{32}$	.40
MCL426	62	2000	$2\frac{9}{32}$	$\frac{7}{16}$ x $\frac{7}{32}$	.40
MCL468	68	2000	$2\frac{9}{32}$	$\frac{7}{16}$ x $\frac{7}{32}$	.35
MCL482	82	2000	$2\frac{9}{32}$	$\frac{7}{16}$ x $\frac{7}{32}$	.40
MCL315	150	2000	$2\frac{9}{32}$	$\frac{7}{16}$ x $\frac{7}{32}$	.45
MCL320	200	2000	$2\frac{9}{32}$	$\frac{7}{16}$ x $\frac{7}{32}$	.60
MCL325	250	2000	$2\frac{9}{32}$	$\frac{7}{16}$ x $\frac{7}{32}$	.65
MCL330	300	2000	$2\frac{9}{32}$	$\frac{7}{16}$ x $\frac{7}{32}$	.70
MCL339	391	2000	$2\frac{9}{32}$	$\frac{7}{16}$ x $\frac{7}{32}$	.85
MCL347	470	2000	$\frac{13}{16}$	$\frac{13}{16}$ x $1\frac{1}{32}$	.90
MCL350	500	2000	$\frac{13}{16}$	$\frac{13}{16}$ x $1\frac{1}{32}$	.90
MCK475	75	1500	$2\frac{9}{32}$	$\frac{7}{16}$ x $\frac{7}{32}$	.30
MCK310	100	1500	$2\frac{9}{32}$	$\frac{7}{16}$ x $\frac{7}{32}$	.35
MCK315	150	1500	$2\frac{9}{32}$	$\frac{7}{16}$ x $\frac{7}{32}$	.35
MCK318	180	1500	$2\frac{9}{32}$	$\frac{7}{16}$ x $\frac{7}{32}$	.35
MCK322	220	1500	$2\frac{9}{32}$	$\frac{7}{16}$ x $\frac{7}{32}$	.40
MCK327	270	1500	$2\frac{9}{32}$	$\frac{7}{16}$ x $\frac{7}{32}$	.45
MCK333	330	1500	$2\frac{9}{32}$	$\frac{7}{16}$ x $\frac{7}{32}$	.50
MCK347	470	1500	$2\frac{9}{32}$	$\frac{7}{16}$ x $\frac{7}{32}$	.60
MCK368	680	1500	1	$\frac{9}{8}$ x $1\frac{1}{32}$	.65
MCK382	820	1500	1	$\frac{9}{8}$ x $1\frac{1}{32}$	.75
MCK210	1000	1500	1	$\frac{9}{8}$ x $1\frac{1}{32}$	.80
MCK215	1500	1500	1	$\frac{9}{8}$ x $1\frac{1}{32}$	1.10
MCK220	2000	1500	1	$\frac{9}{8}$ x $1\frac{1}{32}$	1.35
MCK224	2400	1500	1	$\frac{9}{8}$ x $1\frac{1}{32}$	1.55

Catalog Number	Cap. Mfd.	Working Volts DC	Test Volts DC	Thick- ness	List Price
MH535	.0001	600	1200	$2\frac{3}{64}$	\$1.20
MH635	.0001	1200	2500	$2\frac{3}{64}$	1.55
MH735	.0001	2500	5000	$2\frac{3}{64}$	1.80
MH545	.0005	600	1200	$2\frac{3}{64}$	1.20
MH645	.0005	1200	2500	$2\frac{3}{64}$	1.55
MH745	.0005	2500	5000	$2\frac{3}{64}$	2.40
MH555	.001	600	1200	$2\frac{3}{64}$	1.20
MH655	.001	1200	2500	$2\frac{3}{64}$	1.80
MH755	.001	2500	5000	$2\frac{3}{64}$	2.80
MH557	.002	600	1200	$2\frac{3}{64}$	1.30
MH657	.002	1200	2500	$2\frac{3}{64}$	2.40
MH757	.002	2500	5000	$2\frac{3}{64}$	4.10
MH565	.005	600	1200	$2\frac{3}{64}$	1.50
MH665	.005	1200	2500	$2\frac{3}{64}$	3.30
MH765	.005	2500	5000	$2\frac{3}{64}$	6.25
MH575	.01	600	1200	$2\frac{3}{64}$	2.25
MH675	.01	1200	2500	$2\frac{3}{64}$	5.25
MH577	.02	600	1200	$2\frac{3}{64}$	3.05

**You can depend on  
MALLORY CAPACITORS  
Ask for them by name!**



### Mica Transmitting Capacitors (Type MX)

Ideal for amateur transmitting equipment. May also be used in coupling, tank and by-pass circuits at currents within specified rating.

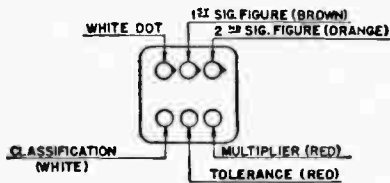
Catalog Number	Cap. Mfd.	Test Volts DC	Max. Amps.	Freq. KC.	List Price
MX855	.001	12,500	9.0	15000	\$8.00
			10.0	7500	
			11.0	3750	
			12.0	1875	
MX857	.002	12,500	9.0	15000	11.00
			12.0	7500	
			13.0	3750	
			15.0	1875	
MX865	.005	10,000	10.0	15000	14.50
			13.0	7500	
			14.0	3750	
			15.0	1875	
MX875	.01	7,000	10.0	15000	15.25
			13.0	7500	
			15.0	3750	
			15.0	1875	
MX877	.02	3,500	10.0	15000	16.00
			13.0	7500	
			17.0	3750	
			17.0	1875	
MX885	.05	3,500	11.0	15000	18.50
			14.0	7500	
			16.0	3750	
			18.0	1875	
MX895	.1	2,000	11.0	15000	18.50
			14.0	7500	
			16.0	3750	
			18.0	1875	

Case Size: 4 1/16" x 2 3/4" x 2 1/4" (Minus Terminals).

Capacity tolerance ±20%.

### Instructions for use of RETMA Color Code

Hold capacitor with arrow pointing to right. From left to right, the first dot shall always be white to indicate standard RETMA molded mica capacitor. The second and third dots become the first two significant figures in the capacitance. The second row is read from right to left. The lower right dot should be the multiplier. The lower second dot indicates the tolerance and the lower left dot indicates the class.



Example shown above = 1300 mmfd. ±2%, 500 V.W.

The key to color significance is as follows:

Color	Sig. Fig.	Mult.	Tol.	Class.*		
Black	0	1	±20%	A		
Brown	1	10		B		
Red	2	100		C		
Orange	3	1000		D		
Yellow	4	10000	±5%	I		
Green	5					
Blue	6					
Violet	7					
Gray	8					
White	9					
Gold		0.1			±10%	J
Silver		0.01				

\* Denotes various electrical characteristics. Voltage ratings vary with capacitance as shown in RMA Specification—April, 1946.



### Transmitting Capacitors (Type TX)

For radio, television, transmitting and all circuits requiring high voltage capacitors. Compact rectangular oil filled capacitors of sturdy construction. Capacity tolerance -10% +20%. Do not use on AC.

Catalog Number	Cap. Mfd.	Working Volts DC	W	Size* L	H	List Price
TX801	1	600	1	1 1/4	2 1/2	\$5.20
TX802	2	600	1	1 1/4	2 3/8	6.50
TX803	4	600	1	1 1/4	2 3/4	8.50
TX816	6	600	1 1/2	2 1/2	4 1/2	10.50
TX817	10	600	1 1/4	3 3/4	4 1/2	14.00
TX822	.5	1000	1	1 1/4	2 1/2	4.55
TX804	1	1000	1	1 1/4	2 3/8	5.70
TX805	2	1000	1	1 1/4	2 3/4	7.60
TX806	4	1000	1 1/2	2 1/2	4 1/2	9.60
TX824	6	1000	1 1/4	3 3/4	4 1/2	12.75
TX825	10	1000	1 1/2	3 3/4	4 1/2	15.50
TX807	1	1500	1	1 1/4	2 3/4	6.85
TX808	2	1500	1 1/2	2 1/2	4 1/2	9.50
TX809	4	1500	1 1/2	3 3/4	4 1/2	12.75
TX829	6	1500	1 3/4	3 3/4	4 1/2	15.75
TX830	10	1500	3 3/16	3 3/4	4 1/2	23.00
TX831	.25	2000	1	1 1/4	2 3/8	6.50
TX832	.5	2000	1	1 1/4	2 3/4	6.90
TX810	1	2000	1 1/2	2 1/2	3 3/4	8.40
TX811	2	2000	1 1/4	3 3/4	4 1/4	9.95
TX823	4	2000	2 1/4	3 3/4	4 1/2	13.75
TX833	6	2000	3 3/16	3 3/4	4 1/2	18.00
TX834	10	2000	4 1/16	3 3/4	4 1/2	28.50
TX812	1	2500	1 3/16	2 1/2	4 1/4	12.25
TX813	2	2500	1 3/8	3 3/4	4 1/2	20.00
TX835	.1	3000	1 3/16	2 1/2	2 3/4	12.75
TX836	.25	3000	1 3/16	2 1/2	3 3/8	14.00
TX837	.5	3000	1 3/16	2 1/2	4 1/2	15.50
TX814	1	3000	1 3/8	3 3/4	4 1/2	18.75
TX815	2	3000	3 3/16	3 3/4	4 1/2	23.25
TX838	4	3000	4 1/16	3 3/4	5 1/2	34.00
TX839	1	4000	2 1/4	3 3/4	4 1/2	34.00
TX827	2	4000	4 1/16	3 3/4	4 1/2	43.00
TX818	1	5000	5 1/4	3 1/2	5 1/2	39.00
TX819	2	5000	5 1/8	3 1/2	9	50.00
TX820	.5	6000	4 3/8	5 1/8	6 1/2	62.00
TX821	1	6000	3 1/2	4 1/16	6 1/2	77.00

\* W—Width; L—Length; H—Height.



### Transmitting Capacitors (Type TZ)

For filter and by-pass circuits in power amplifiers, television and transmitting equipment where compact round can units are desired. Capacity tolerance -10% +20%. Do not use on AC.

Catalog Number	Capacity Mfd.	Working Volts DC	Size Dia.	Height	List Price
TZ382	2.0	600	1 1/2	2 1/2	\$4.65
TZ383	4.0	600	1 3/4	4 1/4	6.20
TZ384	1.0	1000	1 3/4	2 1/2	4.30
TZ389	4.0	1000	2	4	7.25
TZ387	1.0	1500	2	2 1/2	5.45
TZ388	2.0	1500	2	4	7.25
TZ390	1.0	2000	2	3 1/4	6.85
TZ391	2.0	2000	2	4 1/2	7.60

### TERMINAL HEIGHTS

TX Capacitors	TZ Capacitors
600 through 2500V—1 1/4	600V—3/8
3000 through 4000V—1 1/2	1 and 2 mfd at 1000V—5/8
5000 through 6000V—2 1/2	.5 and 1 mfd at 1500V—3/4
	4 mfd at 1000V—1 1/4
	2 mfd at 1500V—1 1/4
	1 mfd at 2000V—1 1/4
	2 mfd at 2000V—1 1/4



# CAPACITOR HARDWARE

P. R. MALLORY & CO., INC. · INDIANAPOLIS

P. R. MALLORY & CO. INC.  
**MALLORY**



**Type TH**—Special clips for horizontal mounting of any tubular or FP unit within the diameter range shown. Designed primarily to mount without tools under special chassis lances in original equipment; they may also be attached to chassis with 5-32 screw and nut in any  $\frac{1}{8}$ " hole.

**Type VR**—Brackets for vertical mounting round units.

Catalog Number	Description	Size	List Price
TH-13	Spring clip for TC	$\frac{3}{8}$	\$0.05
TH-15	Spring clip for TC	$\frac{1}{2}$ to $\frac{9}{16}$	.05
TH-17	Spring clip for TC	$\frac{5}{8}$ to $\frac{11}{16}$	.05
TH-19	Spring clip for TC and FP	$\frac{3}{4}$ to $\frac{13}{16}$	.05
TH-21	Spring clip for TC	$\frac{7}{8}$ to $\frac{15}{16}$	.05
TH-23	Spring clip for TC and FP	1 to $1\frac{1}{16}$	.05
TH-25	Spring clip for TC and FP	$1\frac{3}{8}$ to $1\frac{7}{16}$	.10
VR-1	Clamp for vertical mounting	1 to $1\frac{1}{8}$	.15
VR-3	Clamp for vertical mounting	$1\frac{3}{8}$ to $1\frac{7}{16}$	.15
VR-4	Clamp for vertical mounting	$1\frac{1}{2}$ to $1\frac{9}{16}$	.20
VR-6	Clamp for vertical mounting	$1\frac{3}{4}$ to $1\frac{3}{4}$	.25
VR-8	Clamp for vertical mounting	2 to $2\frac{1}{16}$	.30
VR-10	Clamp for vertical mounting	$2\frac{1}{2}$	.35



## Type "P" Hardware

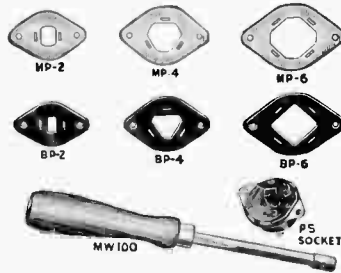
**Types PL and PL-A**—Plastic end cap to protect terminals on HC, NP or P units when desired.

**Type HB**—Horizontal bracket for mounting HC, NP or P units, using end cap type PL or PLA.

Catalog Number	Description	Size	List Price
PL-3	Plastic end cap For "On Motor" mounting	$1\frac{7}{16}$	\$0.20
PL-6		$1\frac{1}{2}$	
PL-8		$2\frac{1}{16}$	
PL-3A	Plastic end cap For "Off Motor" mounting	$1\frac{7}{16}$	.20
PL-6A		$1\frac{1}{2}$	
PL-8A		$2\frac{1}{16}$	
PL-8A		$2\frac{1}{16}$	
HB-4	Horizontal bracket (plastic cases)	$3\frac{3}{8}$	.30
HB-8	Horizontal bracket (plastic cases)	$4\frac{3}{8}$	.35

## Type "MSU," P, HC, and NP Hardware

Catalog Number	Description	Size	List Price
115-1	Top Cap	$1\frac{3}{8}$	\$0.20
116-1	Top Cap	2	
118-1	Bottom Cap	$1\frac{3}{8}$	.20
119-1	Bottom Cap	2	.20
121-1	Bracket	$1\frac{3}{8}$ x $3\frac{3}{8}$	.35
122-1	Bracket	$1\frac{3}{8}$ x $4\frac{3}{8}$	.35
123-1	Bracket	2 x $3\frac{3}{8}$	.35
124-1	Bracket	2 x $4\frac{3}{8}$	.35



**Type MP**—Metal plates for grounded mounting of FP and WP capacitors.

**Type BP**—Phenolic plates for insulated mounting of FP and WP capacitors.

**Type PS**—Molded plastic sockets for plug-in mounting FP or WP capacitors. (Blank ear on capacitor should be removed to permit polarization with respect to socket.)

**Type MW-100**—Special wrench for twisting mounting ears on FP or WP capacitors.

Catalog Number	Description	Size	List Price
MP-2	Metal mounting wafer for FP	$\frac{3}{8}$	\$0.05
MP-4	Metal mounting wafer for FP	1	.05
MP-6	Metal mounting wafer for FP	$1\frac{3}{8}$	.05
BP-2	Phenolic mounting wafer for FP	$\frac{3}{8}$	.05
BP-4	Phenolic mounting wafer for FP	1	.05
BP-4A	Phenolic mounting wafer for FP (To mount 1" FP in chassis punched for $1\frac{3}{8}$ " wafer)	1	.05
BP-6	Phenolic mounting wafer for FP	$1\frac{3}{8}$	.05
PS-4	Plug-in socket for FP	1	.70
PS-6	Plug-in socket for FP	$1\frac{3}{8}$	.90
PSC-4	Retainer clamp for PS-4 socket		.10
MW-100	Mounting wrench for FP		1.75

## Recommended Replacements for Modified and Discontinued FP and WP Types

(as listed on pages 1 and 2, Mallory Capacitor Section, this catalog)

Old Catalog Number	Recommended Replacement	Old Catalog Number	Recommended Replacement
FP228	FP227.3	FP373	FP385
FP236	FP260	FP376*	FP396.2
FP246X	FP266	FP379*	FP385
FP313*	FP330	FP380	FP343.4†
FP316*	FP343.1	FP387	FP387.1
FP318*	FP319.5	FP389	FP375.8†
FP332	FP345.2†	FP390	FP376.1†
FP334*	FP333.8	FP391	FP391.1
FP339	FP345.8†	FP393	FP376.8†
FP342*	FP342.5	FP395	FP369.1†
FP344	FP344.5	FP416*	FP419.3
FP345	FP370†	FP418*	FP418.3
FP352	FP341.5†	FP420*	FP447
FP353	FP343.6	FP422	FP423.4
FP354	FP311.2†	FP425*	FP432.4
FP355	FP311.4†	FP427	FP422.1†
FP356	FP311.7†	FP457*	FP476
FP357	FP311.5†	FP465*	FP467
FP358	FP311.9†	FP471	FP476
FP360*	FP343.1	FP550*	FP245
FP363	FP320†	WP032	WP042
FP367	FP330.5†	WP302*	WP302.1
FP369	FP330.3†		

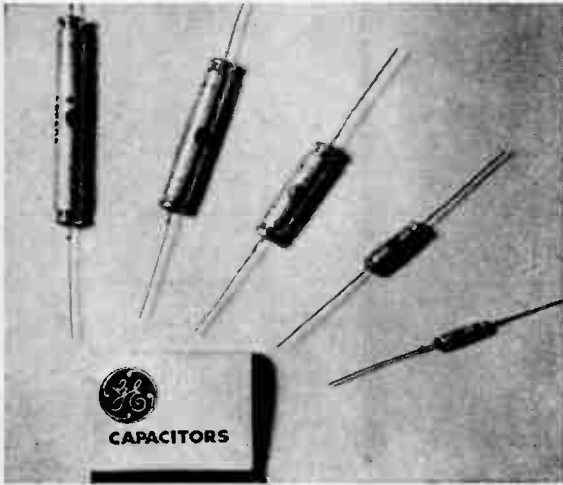
\* Will be deleted from line when present stocks are exhausted.  
† Change in catalog number only. No change in rating.



# TANTALYTIC\* CAPACITORS

\*Registered trade-mark of General Electric Co.

## TANTALYTIC CAPACITORS FOR LOW-VOLTAGE USE



The Tantalytic capacitor is designed for certain direct-current applications up to 150 WVDC where aluminum electrolytics and paper capacitors are not entirely satisfactory, and is suggested for use where superior characteristics and ultimate size reduction in the high-quality electrolytic field are of prime importance.

This capacitor is a tantalum-electrode electrolytic unit, similar in construction to an aluminum electrolytic capacitor, but smaller in size because of the characteristics of the tantalum. The Tantalytic capacitor has lower leakage currents, longer shelf life, and a wider range of temperature operation ( $-55^{\circ}\text{C}$  to  $+85^{\circ}\text{C}$ ), without derating, than the conventional aluminum electrolytic capacitor.

Both polarized- and nonpolarized-type capacitors are available. Polarized types are suitable for applications where no reversal of potential occurs. Nonpolarized units are for use in applications where reversal of potential does occur. However, the cathode (negative) electrode in the polarized type is formed to 3.75 volts as protection against small reversals.

Tantalytic capacitors, in a wide range of ratings, are currently being used in telephone equipment and military communication and ordnance equipment.

These capacitors are available in either plain or etched tantalum foil. Advantages of each and a comparison thereof appear in the specifications, GET-2333.

Write for Bulletin GEC-808.

### Legend for Fig. 1

1. Solderable lead;
2. Tantalum lead;
3. Silver-plated copper case;
4. Weld between tantalum and solderable leads;
5. Polarity mark, used only on polar units;
6. Bushing.

Case Size	Dimensions in Inches	
	A	B
B	$\frac{1}{8}$	$\frac{3}{8}$
C	$\frac{7}{8}$	$\frac{1}{2}$
D1	$1\frac{1}{8}$	$\frac{3}{4}$
D2	$2\frac{1}{8}$	$\frac{3}{4}$
D8	$2\frac{3}{4}$	$\frac{3}{4}$

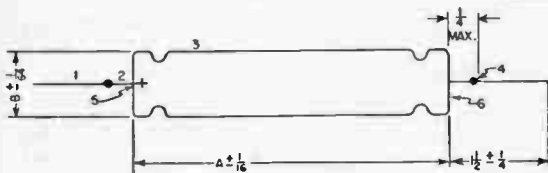


Fig. 1. Outline diagram

### STANDARD RATINGS

Volts D-c	Type	Case Size B—Fig. 1				Case Size C—Fig. 1				Case Size D1—Fig. 1				Case Size D2—Fig. 1				Case Size D8—Fig. 1			
		Plain Foil, $\mu\text{f}$	Cat. No.	Etch Foil, $\mu\text{f}$	Cat. No.	Plain Foil, $\mu\text{f}$	Cat. No.	Etch Foil, $\mu\text{f}$	Cat. No.	Plain Foil, $\mu\text{f}$	Cat. No.	Etch Foil, $\mu\text{f}$	Cat. No.	Plain Foil, $\mu\text{f}$	Cat. No.	Etch Foil, $\mu\text{f}$	Cat. No.	Plain Foil, $\mu\text{f}$	Cat. No.	Etch Foil, $\mu\text{f}$	Cat. No.
3.75	NP	10	29F528	x	.....	45	29F529	x	.....	140	29F530	x	.....	280	29F531	x	.....	100	29F532	x	.....
6	P	8	29F533	x	.....	30	29F142	x	.....	100	29F534	x	.....	200	29F535	x	.....	300	29F536	x	.....
	NP	7	29F537	x	.....	25	29F538	x	.....	85	29F539	x	.....	175	29F540	x	.....	250	29F541	x	.....
10	P	6	29F542	x	.....	25	29F543	x	.....	80	29F544	x	.....	160	29F545	x	.....	220	29F546	x	.....
	NP	4	29F547	x	.....	16	29F548	x	.....	55	29F549	x	.....	110	29F550	x	.....	150	29F551	x	.....
15	P	4.5	29F552	15	29F180	18	29F553	60	29F481	55	29F554	200	29F182	110	29F555	400	29F183	100	29F556	580	29F484
	NP	2.5	29F557	10	29F510	10	29F558	40	29F511	35	29F559	125	29F512	70	29F560	250	29F513	160	29F561	350	29F514
25	P	3	29F562	10	29F146	12	29F563	40	29F485	35	29F564	125	29F186	70	29F567	250	29F187	100	29F568	350	29F488
	NP	1.5	29F565	5	29F189	6	29F566	20	29F490	20	29F569	70	29F191	40	29F570	140	29F192	60	29F571	200	29F612
30	P	2.5	29F617	8	29F610	10	29F618	32	29F627	30	29F619	110	29F628	60	29F620	220	29F629	85	29F631	300	29F630
	NP	1.4	29F622	4.5	29F631	5.5	29F623	18	29F632	18	29F624	60	29F633	36	29F625	120	29F634	55	29F635	170	29F635
50	P	1.5	29F570	4.5	29F173	6	29F571	18	29F174	20	29F572	60	29F175	40	29F573	100	29F176	75	29F574	150	29F176
	NP	.8	29F575	2.5	29F195	3	29F576	10	29F194	10	29F577	30	29F195	20	29F578	60	29F196	50	29F579	80	29F197
75	P	1	29F580	3	29F198	4	29F581	12	29F499	14	29F582	30	29F500	28	29F583	70	29F501	50	29F584	100	29F502
	NP	.5	29F585	1.5	29F503	2	29F586	6	29F504	7	29F587	15	29F505	14	29F588	35	29F506	26	29F589	50	29F507
100	P	.8	29F590	2	29F515	3	29F591	8	29F472	10	29F592	25	29F516	20	29F593	50	29F517	30	29F594	70	29F518
	NP	.4	29F595	1	29F519	1.5	29F596	4	29F520	5	29F597	12	29F521	10	29F598	25	29F522	15	29F599	35	29F523
150	P	.3	29F600	1	29F109	2	29F413	4	29F447	7	29F601	13	29F171	14	29F602	25	29F172	20	29F603	38	29F179
	NP	.25	29F108	.3	29F524	1	29F401	2	29F470	3.5	29F604	6	29F525	7	29F605	12	29F526	16	29F606	18	29F527



# TANTALYTIC\* AND PYRANOL\* CAPACITORS

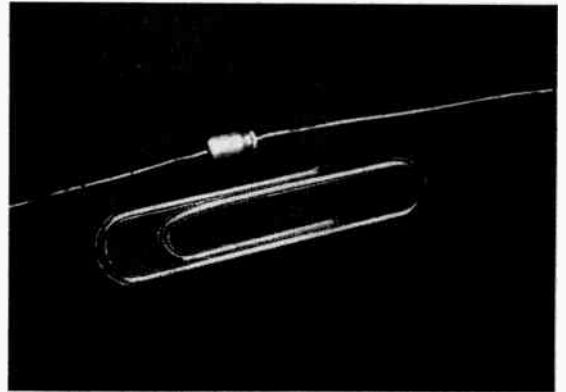
\*Registered trade-mark of General Electric Co.

## MICRO-MINIATURE TANTALYTIC CAPACITORS

Micro-miniature Tantalytic capacitors are designed for low-voltage d-c applications where long shelf life, electrical stability, and ultimate size reduction are of prime importance. Widely used in hearing aids and other subminiature assemblies employing transistors, micro-miniatures are rated as high as 4 volts, 4 $\mu$ f in the 0.195-inch case; higher ratings can be achieved in the 0.500-inch case. Capacitance tolerance for all units is -0% +200%.

The micro-miniature employs a tantalum anode enclosed in a silver case and impregnated with a nonacid electrolyte. A synthetic plug is roll-cripped into the end of the case and a solderable tin-coated nickel lead is lap-welded to the projecting tantalum anode lead. This permits connection up to the bushing. The case itself is the cathode and is equipped with a tin-coated nickel lead soldered to the case. The unit is of the polarized type.

Write for Bulletin GEA-6065.



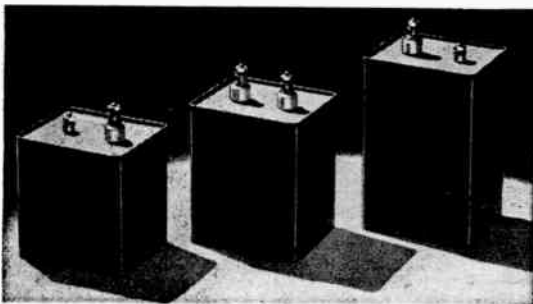
MAXIMUM MICROFARADS PERMISSIBLE WITHIN EACH CASE SIZE VERSUS RATED VOLTS, DC

Rated Volts, DC	Max. Microfarads			
	0.095 x 0.195 in.	0.095 x 0.275 in.	0.125 x 0.310 in.	0.125 x 0.500 in.
1	8	16	25	50
2	7	14	20	40
4	5	10	15	30
8	3	6	10	20
16	1.5	3	5	10

RATINGS AND DIMENSIONS

$\mu$ f	Volts	Cat. No.	Color Marking	Dia. In.	Length, In.
16	1	29F841G2	Gray and green	0.095	0.275
8	2	29F835G2	Gray and blue	0.095	0.195
4	4	29F837G2	Yellow	0.095	0.195
1	8	29F839G2	Orange	0.095	0.195
2	8	29F838G2	Gray and orange	0.095	0.195

## ENERGY-STORAGE DISCHARGE CAPACITORS



G-E light-duty energy-storage capacitors are made in a wide range of ratings to fit practically every requirement of high-speed flash photography, as well as home

STANDARD RATINGS

Max. D-c volts	Capacitance, Microfarads	Max. D-c volts	Capacitance, Microfarads
2000	28	4000	50
		4000	100
2500	14	5000	25/50
		6000	55
3000	60	6000	25
3500	12.5		
4000	25/50		

and industrial welders for light metals. Careful construction, high-quality materials, and skillful design contribute to long life and efficient operation.



# PYRANOL\* CAPACITORS

\*Registered trade-mark of General Electric Co.

## STANDARD COMMERCIAL TYPES

### For A-c and D-c Applications — Fixed Paper-dielectric Capacitors



A-c/d-c dual-rated Pyranol capacitors for motors, controls, luminous-tube transformers, electronic equipments, and other applications will reduce inventories, simplify design problems, and increase standardization. Capacitors in the voltage ranges 236 through 660 volts, a-c, and 400 through 1500 volts, d-c, are now dual-rated and can be used for either a-c or d-c applications. Other a-c and d-c ratings available: 0.01 to 75 microfarads, 236 to 660 volts, a-c, and 400 to 100,000 volts, d-c.

Because of the high dielectric strength, high permittivity, and exceptional stability of Pyranol treating material, its use has made possible a capacitor which is much smaller in size, and far superior to those formerly available.

#### Design Advantages

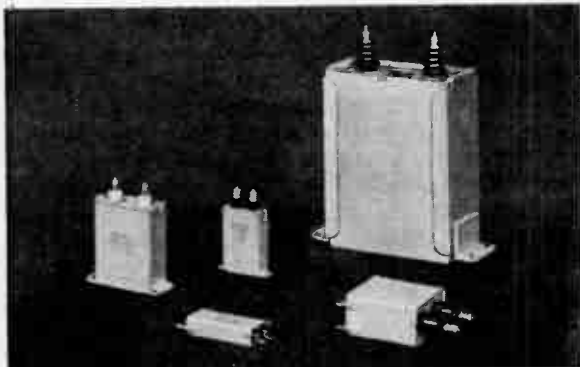
- (1) Units are small and compact, because of the use of Pyranol treating material.
- (2) A wide range of ratings is available in rectangular, cylindrical, and oval cases.
- (3) Three styles of mounting brackets are available and are supplied separate from the units. Units may be operated in any position.

Write to the nearest G-E Apparatus Sales Office for Bulletin GEC-809.

#### STANDARD RATING RANGE

Rated Voltage 60 Cycles		Capacitance Ratings — Microfarads			
A-c	D-c	Case Style 60	Case Style 70	Fabricated Rectangular	Cylindrical Motor Line
236	400	2	4-16	—	—
330	—	—	—	1-50	1.2-12
330	600	0.25-1	1-50	—	—
440	—	—	—	28	—
440	1000	0.1-0.5	1-15	—	—
660	—	—	—	2-6	—
660	1500	0.01-0.05	1-15	—	—
—	2000	—	—	—	—
—	100,000	—	0.05-75	—	—

### Case Style 70



Case Style 70 units with various types of terminals and removable mounting brackets

These Pyranol fixed paper-dielectric capacitors in Case Style 70 are hermetically sealed in rectangular cases. This line includes standard ratings, ranging from very small units weighing only three ounces to large high-voltage units weighing up to 175 pounds.

All are of single-capacity construction, with a capacitance tolerance of  $\pm 10$  per cent. Cases are isolated and the two bushings are brought out through the cover. Units in 600-, 1000-, and 1500-volt ratings are available with either solder-lug terminals or with pillar-insulator terminals. All higher-voltage ratings have pillar-insulator terminals. These units may be operated in altitudes up to 7500 feet.

Up to 600 volts d-c, bushings with solder-lug terminals are made of G-E silicone; above this rating, they are of phenolic-cup construction. Bushings with pillar-



# PYRANOL\* CAPACITORS

\*Registered trade-mark of General Electric Co.

## Case Style 70 (Cont.)

insulator terminals are made of molded phenolic or porcelain of the highest quality. All bushings are thoroughly bonded to the container to provide a permanent liquid-tight seal.

All units can be supplied with removable mounting brackets. Both spade-lug and L-type are available. Brackets can be attached to either the top or the bottom of the units to permit upright or inverted mounting.

Write to the nearest G-E Apparatus Sales Office for Bulletin GEC-809.

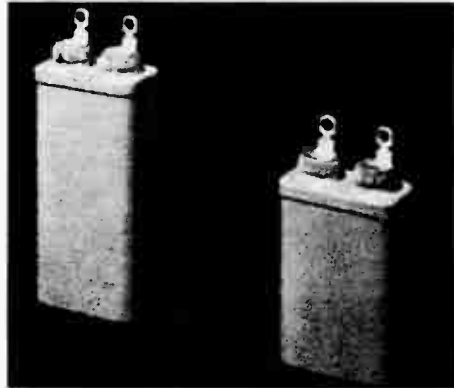
### STANDARD RATINGS

Nominal Direct Voltage Rating	Capacitance Ratings, Microfarads
2000	0.10, 0.25, 0.50, 1.0, 2.0, 4.0, 6.0, 8.0, 10.0, 12.0
2500	0.50, 1.0, 2.0, 4.0, 10.0, 20.0, 25.0, 55.0, 75.0
3000	0.10, 0.25, 0.50, 1.0, 2.0, 4.0, 8.0, 12.0, 20.0, 45.0, 60.0
4000	0.10, 0.25, 0.50, 1.0, 2.0, 4.0, 6.0, 7.0, 13.0, 20.0, 30.0
5000	0.05, 0.10, 0.25, 0.50, 1.0, 2.0, 4.0, 6.0, 8.0, 14.0, 18.0
6000	0.10, 1.0, 2.0, 4.0, 5.0, 10.0, 14.0
7500	0.10, 0.25, 0.50, 1.0, 2.0, 3.0, 7.0, 9.0
10,000	0.10, 0.25, 0.50, 1.0, 1.5, 2.0, 3.5, 5.0
12,500	0.05, 0.10, 0.25, 0.50, 0.75, 1.0, 1.2, 2.5, 3.3
15,000	0.25, 0.50, 0.75, 0.90, 1.75, 2.25
20,000	0.15, 0.25, 0.50, 1.0, 1.25, 3.0
25,000	0.10, 0.25, 0.60, 1.0
30,000	0.25, 0.5, 0.75
40,000	0.10, 0.20, 0.25, 0.35
50,000	0.17, 0.25
75,000*	0.25
100,000*	0.125

\*Mid-point connected to case.

NOTE: Case styles 50, 60, and 70 capacitors are also available to MIL-C-25A Specification.

## Case Style 60



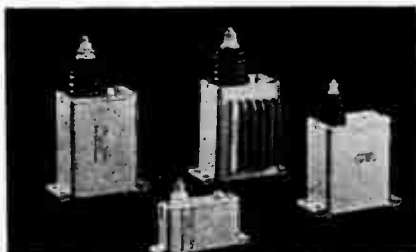
These small rectangular-case fixed-paper-dielectric units are of narrower width than the "bathtub" units, and will fit into a very restricted panel surface, where case height is not the limiting dimension. Removable-type mounting lugs are of very sturdy construction.

These units have solder-lug terminals, and are available in either single- or dual-section construction for all circuit diagrams.

The metallic containers are hermetically sealed, and of deep-drawn construction.

Case Style 60 units have no brackets, but removable brackets of either the footed or spade-lug type can be supplied.

## CAPACITORS FOR OSCILLATOR TANK CIRCUITS



This line of fixed paper-dielectric capacitors has been developed primarily for grid and plate blocking service in the electronic oscillator circuits of high-frequency induction-heating equipments. They can also be used to advantage in other high-frequency oscillator circuits of a similar nature.

G-E high-voltage paper-dielectric capacitors are of relatively high capacitance ( $0.01 \mu\text{f}$ ) for high-frequency units, yet they are more economical than conventional high-frequency units of considerably smaller capacitance values. They can, therefore, be applied with savings in cost as well as reduced losses and lower voltage drop across the capacitor.

### features

- Hermetically sealed in metallic cases.
- Single-bushing construction for minimum size.
- Removable mounting brackets.
- Internal lead connections arranged for minimum inductance.

### STANDARD RATINGS

D-c Voltage Rating	Microfarad Rating
5000	0.01
15,000	0.01
20,000	0.01
20,000*	0.01

\*With cooling fins for higher current-carrying capacity. Capacitance tolerance  $\pm 10\%$ .

Capacitors

**AEROVOX**

Resistors

**ELECTROLYTICS**

**TYPE AFH (85°C)**

**Twist-Prong  
Electrolytic Capacitors**

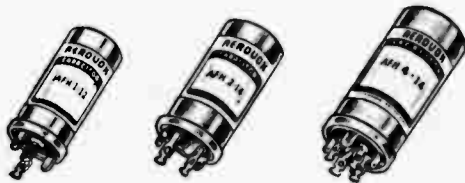
**SINGLES • DUALS • TRIPLES • QUADS**

The outstanding line of twist-prong electrolytic capacitors with the very latest refinements . . . 85°C operation; improved hermetic sealing; special Type AFHS for high ripple selenium rectifier circuits; high-purity aluminum foil construction throughout; either etched or composite-plate depending on electrical requirements.

For use over a wide temperature range with minimum change in capacitance. Designed for filter audio bypass applications in radio-TV and amplifier equipment.

While AFH electrolytics enjoy a tremendous popularity as replacement capacitors for TV receivers, they are rapidly gaining acceptance in many industrial applications.

Capacity tolerances and surge voltages are as listed in RETMA Specification No. RS-154.



**AFH — SINGLES**

AFH No.	Capacity	Voltage	Size
1-00-50	2000	6	1 3/8 x 2
1-01	3000	10	1 3/8 x 3
1-01-25	225	15	3/4 x 2
1-02	1000	15	1 x 3
1-03	2000	15	1 3/8 x 3
1-04	3000	15	1 3/8 x 3
1-05	25	25	3/4 x 2
1-06	40	25	3/4 x 2
1-07	100	25	3/4 x 2
1-08	500	25	1 x 2 1/2
1-10	1000	25	1 3/8 x 2
1-10-10	4	50	3/4 x 2
1-11	100	50	3/4 x 2
1-12	150	50	3/4 x 2
1-13	500	50	1 3/8 x 2 1/2
1-14	1000	50	1 3/8 x 3 1/2
1-14-50	1500	50	1 3/8 x 4
1-15	25	150	1 x 2
1-16	30	150	1 x 2
1-17	40	150	1 x 2
1-18	50	150	1 x 2
1-19	60	150	1 x 2
1-20	80	150	1 x 2
1-21	100	150	1 x 2
**1-22 AFHS	120	150	1 x 3
**1-22-05 AFHS	120	150	1 3/8 x 2 1/2
**1-23 AFHS	140	150	1 x 3
1-24	150	150	1 x 3
*1-24-24 AFHS	200	150	1 x 3 1/2
**1-24-25 AFHS	200	150	1 3/8 x 2 1/2

\*—New item.

\*\*—Revised catalog number.

†—Special construction for printed wiring.

**AFH — SINGLES — (Continued)**

AFH No.	Capacity	Voltage	Size
**1-24-75 AFHS	300	150	1 3/8 x 3
1-25	40	200	1 x 2
1-26	15	250	1 x 2
1-27	20	250	3/4 x 2
1-28	30	250	3/4 x 2
1-29	40	250	1 x 2
1-30	60	250	1 x 2 1/2
1-31	80	250	1 x 3
1-31-25	100	250	1 x 3
1-31-75	150	250	1 3/8 x 2 1/2
1-32	15	300	1 x 2
1-33	30	300	1 x 2
1-34	50	300	1 x 2 1/2
1-35	80	300	1 x 3
1-36	100	300	1 x 3 1/2
*1-36-05 AFHS	100	300	1 3/8 x 2 1/2
1-37	125	300	1 3/8 x 3
1-37-25 AFHS	150	300	1 3/8 x 3
1-37-30 AFHS	200	300	1 3/8 x 3 1/2
1-38	15	350	1 x 2
1-39	30	350	1 x 2
1-40	40	350	1 x 2 1/2
1-41	50	350	1 x 3
1-42	80	350	1 3/8 x 2 1/2
1-42-10 AFHS	90	350	1 3/8 x 3
**1-43 AFHS	125	350	1 3/8 x 3
1-43-20	150	350	1 3/8 x 3 1/2
*1-43-80 AFHS	320	350	1 3/8 x 4
1-44	10	400	3/4 x 2
1-45	20	400	1 x 2
1-46	40	400	1 3/8 x 2
1-47	80	400	1 3/8 x 2 1/2
1-48	10	450	1 x 2
1-49	15	450	1 x 2
1-50	20	450	1 x 2
1-51	30	450	1 x 2 1/2
1-52	40	450	1 x 3
1-53	50	450	1 x 3
1-54	60	450	1 3/8 x 2 1/2
1-55	80	450	1 3/8 x 3
1-55-20	100	450	1 3/8 x 3
**1-55-25	125	450	1 3/8 x 4
1-56	30	475	1 x 3
1-56-10	40	475	1 3/8 x 2
1-57	90	475	1 3/8 x 3 1/2
1-58	10	500	1 x 2
1-59	20	500	1 x 2 1/2
1-60	30	500	1 x 3
1-61	40	500	1 x 3 1/2
1-62	80	500	1 3/8 x 3
1-63	90	500	1 3/8 x 3 1/2
1-64	10	525	1 x 2
1-65	10 ohm-30 cps	3 VNP	3/4 x 2
1-66	0.5 ohm-15,750 cps	3 VNP	1 x 2
1-67	1 ohm-60 cps	3 VNP	1 3/8 x 3

**DUALS**

AFH No.	Capacity	Voltage	Size
2-01	1000-500	6 NP-6 NP	1 3/8 x 2
2-02	1000-1000	15	1 x 3 1/2
‡*2-02-05	250-250	16	1 x 2
*2-02-10	500-100	16	1 x 2
2-03	20-20	25	1 x 2
2-04	40-40	25	1 x 2
2-05	150-50	25	1 x 2
†*2-05-25	250-250	25	1 x 2 1/2
2-06	50-50	50	1 x 2

‡—To be discontinued. When present stock depleted use 2-05-25.  
AFHS—Denotes Selenium Rectifier Capacitor.

Capacitors

**AEROVOX**

Resistors

**ELECTROLYTICS — (Continued)**

**DUALS — (Continued)**

AFH No.	Capacity	Voltage	Size
2-06-20	100-100	50	1x2
2-07	20-10	150	1x2
2-08	20-20	150	1x2
2-09	30-15	150	1x2
2-10	30-20	150	1x2
2-11	30-30	150	1x2
2-12	40-20	150	1x2
2-13	40-30	150	1x2
2-14	40-40	150	1x2
2-15	50-30	150	1x2
†2-15-05	50-30	150	1x2
2-16	50-50	150	1x2½
2-17	60-60	150	1x3
2-18	75-75	150	1x3
2-19	80-40	150	1x3
2-20	80-80	150	1½x2
*2-20-50	125-100	150	1½x2½
**2-21 AFHS	200-5	150	1½x2½
2-22	200-125	150	1½x3
*2-22-50	200-150	150	1½x3
2-23	200-200	150	1½x3
2-24	60-60	200	1½x2
**2-24-20 AFHS	100-100	200	1½x3
2-24-75	200-5	200	1½x3
2-25	10-10	250	1x2
2-26	20-20	250	1x2
2-27	30-30	250	1x2½
2-28	40-20	250	1x2½
2-29	40-40	250	1x3
2-30 AFHS	150-150	250	1½x4
2-30-25 AFHS	200-15	250	1½x3½
2-30-75 AFHS	200-200	250	1½x4½
2-31	10-10	300	1x2
2-32	15-15	300	1x2
2-33	50-50	300	1½x2½
2-33-75	80-60	300	1½x2½
2-34	80-80	300	1½x3
2-35	120-20	300	1½x3
*2-35-50 AFHS	200-80	300	1½x4
2-36	15-15	350	1x2
2-37	20-20	350	1x2½
2-38	30-20	350	1x3
2-39	30-30	350	1x3
2-40	50-30	350	1½x2½
*2-40-80	80-40	350	1½x3
2-41	80-80	350	1½x3½
2-41-10	90-40	350	1½x3
2-41-50	100-100	350	1½x4
2-41-80 AFHS	160-10	350	1½x3
2-43	15-15	400	1x2½
**2-43-30	30-10	400	1x3
2-44	60-60	400	1½x3½
2-44-90	75-75	400	1½x4
2-45	80-10	400	1½x3
2-45-10	80-20	400	1½x3
2-45-40	80-60	400	1½x4
2-45-50 AFHS	80-80	400	1½x4
2-45-60	120-40	400	1½x4
2-46	5-5	450	1x2
2-47	10-10	450	1x2
2-48	15-10	450	1x2½
2-49	15-15	450	1x2½
2-50	20-10	450	1x2½
2-51	20-20	450	1x3
2-52	30-10	450	1x3

**DUALS — (Continued)**

AFH No.	Capacity	Voltage	Size
2-53	30-15	450	1½x2
2-54	30-30	450	1½x2
2-56	40-20	450	1½x2½
2-57	40-40	450	1½x3
2-58	50-40	450	1½x3
2-59	50-50	450	1½x3
2-60	60-20	450	1½x3
2-61	60-40	450	1½x3½
2-61-50	60-60	450	1½x4
2-62	80-10	450	1½x3
2-63	80-20	450	1½x3½
2-64	80-40	450	1½x3½
2-64-25	100-40	450	1½x4
2-64-50	15-15	475	1x2½
2-65	30-10	475	1½x2
2-66	40-10	475	1½x2½
2-66-50	80-40	475	1½x4
2-66-60	80-50	475	1½x4
2-67	10-10	500	1x2½
2-69	20-20	500	1½x2½
2-71	30-10	500	1½x2½
**2-71-90	40-25	500	1½x3
2-72	40-40	500	1½x3
2-73	60-40	500	1½x3½
2-74	250/1000	10/6	1½x2
2-75	250/2000	10/6	1½x2
2-76	50/500	150/5	1x3
2-78	40/150	150/25	1x2
2-78-10	50/150	150/25	1x2½
*2-78-25	150/100	150/25	1½x2½
**2-78-30	40/20	150/50	1x2
2-78-60 AFHS	150/50	150/50	1x3½
2-79	40/20	250/25	1x2
2-80	50/100	250/50	1½x2
2-81	100/150	250/50	1½x3
2-81-80	35/500	300/6	1x2½
2-82	20/20	300/25	1x2
2-82-30	20/40	300/50	1x3
*2-82-55	150/100	300/150	1½x4
2-82-60	20/60	300/250	1x3
2-84	20/20	350/25	1x2
2-85	40/20	350/25	1x2½
2-85-70	5/75	350/150	1x3
2-86	40/10	350/200	1½x2
2-86-15	40/10	350/250	1x3
2-86-30	60/80	350/250	1½x3½
*2-86-40	30/30	350/300	1x3
2-86-45	35/100	400/50	1x3
2-86-60	40/100	400/50	1½x2
*2-86-70	100/30	400/50	1½x3
2-86-75	60/80	400/250	1½x4
2-86-95	100/80	400/350	1½x4
2-87	10/20	450/25	1x2
2-88	20/20	450/25	1x2
2-89	40/20	450/25	1x3
2-90	80/20	450/25	1½x3
2-90-50	50/100	450/50	1½x2½
2-91	80/50	450/50	1½x3
2-91-50	80/100	450/50	1½x3
2-92	10/50	450/100	1½x2
2-93	20/100	450/100	1½x2
2-94	30/40	450/150	1½x2
2-94-30	30/200	450/150	1½x3
2-94-45	80/40	450/200	1½x3

\*—New item.  
\*\*—Revised catalog number

†—Special construction for printed wiring.  
AFHS—Denotes Selenium Rectifier Capacitor.

Capacitors

**AEROVOX**

Resistors

**ELECTROLYTICS — (Continued)**

**DUALS — (Continued)**

AFH No.	Capacity	Voltage	Size
2-94-60	20/50	450/250	1x3
2-94-75 AFHS	20/150	450/250	1 $\frac{3}{8}$ x3
2-94-90	10/100	450/350	1 $\frac{3}{8}$ x3
2-95	20/80	450/350	1 $\frac{3}{8}$ x3
2-96	40/10	450/350	1 $\frac{3}{8}$ x2
2-97	40/40	450/350	1 $\frac{3}{8}$ x3
2-99	75/50	475/50	1 $\frac{3}{8}$ x3
2-99-75	40/80	475/200	1 $\frac{3}{8}$ x2 $\frac{1}{2}$
2-100	20/100	475/300	1 $\frac{3}{8}$ x3
2-100-50	20/100	475/400	1 $\frac{3}{8}$ x4
2-101	40/40	475/400	1 $\frac{3}{8}$ x3
2-101-75	80/20	475/400	1 $\frac{3}{8}$ x3 $\frac{1}{2}$
2-102	80/50	500/50	1 $\frac{3}{8}$ x3 $\frac{1}{2}$
2-103	60/80	500/150	1 $\frac{3}{8}$ x3
2-104	40/50	500/200	1 $\frac{3}{8}$ x3
2-105	15/20	500/300	1x2 $\frac{1}{2}$
2-106	20/100	500/300	1 $\frac{3}{8}$ x3
2-107	40/40	500/400	1 $\frac{3}{8}$ x3
2-108	0.5 ohm-15,750 cps	12	1 $\frac{3}{8}$ x2
	2.5 ohm-60 cps	6	

**TRIPLES**

AFH No.	Capacity	Voltage	Size
3-00-50	1500-1500-1500	3	1x3 $\frac{1}{2}$
3-01	20-20-20	25	1x2
3-02	40-40-40	25	1x2
3-03	30-30-30	50	1x2
3-05	20-20-20	150	1x2
3-06	30-30-10	150	1x2
3-07	40-20-10	150	1x2
3-08	40-20-20	150	1x2
3-09	40-30-20	150	1x2
3-10	40-40-40	150	1x2 $\frac{1}{2}$
3-11-20	50-40-10	150	1x2 $\frac{1}{2}$
3-11-40	50-50-30	150	1x3
*3-11-50	50-50-50	150	1x3
3-12	60-40-20	150	1x3
**3-12-20	70-40-40	150	1x3
3-13	80-40-20	150	1x3
3-13-15	120-80-40	150	1 $\frac{3}{8}$ x3
3-13-30	120-120-40	150	1 $\frac{3}{8}$ x3
3-13-50	200-100-60	150	1 $\frac{3}{8}$ x3 $\frac{1}{2}$
3-13-75	200-150-150	200	1 $\frac{3}{8}$ x4
3-14	15-15-10	250	1x2
3-17	20-20-10	250	1x2
*3-17-10	20-20-20	250	1x2 $\frac{1}{2}$
**3-17-50	30-15-15	250	1x2 $\frac{1}{2}$
3-18	30-20-10	250	1x2 $\frac{1}{2}$
3-19	40-20-10	250	1x3
3-20	40-20-20	250	1x3
3-21	80-80-60	250	1 $\frac{3}{8}$ x3
3-22	10-10-10	300	1x2
3-25	60-20-10	300	1 $\frac{3}{8}$ x2
**3-25-40	80-20-10	300	1 $\frac{3}{8}$ x2 $\frac{1}{2}$
3-25-50	80-40-40	300	1 $\frac{3}{8}$ x3 $\frac{1}{2}$
3-25-75	100-20-10	300	1 $\frac{3}{8}$ x3
3-26	120-50-40	300	1 $\frac{3}{8}$ x4
3-27	10-10-10	350	1x2 $\frac{1}{2}$
3-28	20-20-10	350	1x3
*3-28-30	30-20-10	350	1x2 $\frac{1}{2}$
3-29	60-40-20	350	1 $\frac{3}{8}$ x3 $\frac{1}{2}$
3-29-25	60-50-50	350	1 $\frac{3}{8}$ x4
3-29-50	80-60-60	350	1 $\frac{3}{8}$ x4

\*—New Item.

\*\*—Revised catalog number.

**TRIPLES — (Continued)**

AFH No.	Capacity	Voltage	Size
3-29-75	90-40-20	350	1 $\frac{3}{8}$ x4
3-29-85	100-100-10	350	1 $\frac{3}{8}$ x4
3-29-95	120-40-40	350	1 $\frac{3}{8}$ x4
3-30	10-10-10	400	1x2 $\frac{1}{2}$
3-30-60	80-20-10	400	1 $\frac{3}{8}$ x3
3-30-75	90-10-5	400	1 $\frac{3}{8}$ x3
3-31	10-10-10	450	1x3
3-33	15-15-10	450	1x3
3-34	15-15-15	450	1x3
3-35	20-10-10	450	1x3
3-36	20-20-20	450	1 $\frac{3}{8}$ x2 $\frac{1}{2}$
3-37	30-20-20	450	1 $\frac{3}{8}$ x3
**3-37-95	30-30-10	450	1 $\frac{3}{8}$ x3
3-38	30-30-20	450	1 $\frac{3}{8}$ x3
3-39	30-30-30	450	1 $\frac{3}{8}$ x3
3-41	40-10-10	450	1 $\frac{3}{8}$ x3
3-42	40-30-20	450	1 $\frac{3}{8}$ x3
3-43	40-40-10	450	1 $\frac{3}{8}$ x3
3-43-50	40-40-20	450	1 $\frac{3}{8}$ x3
3-44	40-40-40	450	1 $\frac{3}{8}$ x3 $\frac{1}{2}$
3-44-50	50-40-30	450	1 $\frac{3}{8}$ x4
3-45	60-20-20	450	1 $\frac{3}{8}$ x3 $\frac{1}{2}$
**3-45-10	60-30-10	450	1 $\frac{3}{8}$ x3
3-45-25	60-40-20	450	1 $\frac{3}{8}$ x3 $\frac{1}{2}$
3-45-50	80-40-10	450	1 $\frac{3}{8}$ x4
3-46	80-40-20	450	1 $\frac{3}{8}$ x4
3-47	10-10-10	475	1x3
3-48	30-20-20	475	1 $\frac{3}{8}$ x3
3-49	30-30-10	475	1 $\frac{3}{8}$ x3
3-49-10	30-30-20	475	1 $\frac{3}{8}$ x3
3-50	40-10-10	475	1 $\frac{3}{8}$ x3
3-50-05	40-20-20	475	1 $\frac{3}{8}$ x3
*3-50-07	40-30-10	475	1 $\frac{3}{8}$ x3
3-50-10	40-30-30	475	1 $\frac{3}{8}$ x4
3-51	10-10-10	500	1x3
3-52	30-20-20	500	1 $\frac{3}{8}$ x3
3-53	40-10-10	500	1 $\frac{3}{8}$ x3
3-54	40-40-10	500	1 $\frac{3}{8}$ x3 $\frac{1}{2}$
3-55	100/50-25	100/25	1x3
3-57	15-15/1200	150/2	1x2
3-58	30-20/100	150/6	1x2
3-59	20-20/100	150/10	1x2
3-60	20-20/250	150/10	1x2
3-61	30-30/200	150/10	1x2
3-62	40-20/150	150/10	1x2
3-63	40-20/200	150/10	1x2 $\frac{1}{2}$
3-64	40-20/250	150/10	1x2 $\frac{1}{2}$
3-64-50	80-20/200	150/10	1 $\frac{3}{8}$ x2
3-64-60	80-30/300	150/10	1 $\frac{3}{8}$ x2
†3-64-65	80-60/250	150/10	1x3
**3-64-85 AFHS	100-80/200	150/10	1 $\frac{3}{8}$ x2 $\frac{1}{2}$
3-65	20/250-100	150/15	1 $\frac{3}{8}$ x2
3-66	80-20/100	150/15	1 $\frac{3}{8}$ x2
3-67	20-20/20	150/25	1x2
3-68	20-20/200	150/25	1x3
3-69	30-20/20	150/25	1x2
3-70	30-30/20	150/25	1x2
3-72	40-20/20	150/25	1x2
3-73	40-20/100	150/25	1x3
3-74	40-20/200	150/25	1x3
3-75	40-30/20	150/25	1x2 $\frac{1}{2}$
3-76	40-40/20	150/25	1x2 $\frac{1}{2}$
3-76-50	40-40/200	150/25	1x3
3-76-55	40-40/250	150/25	1x3
3-77	50-30/20	150/25	1x2 $\frac{1}{2}$

†—Special construction for printed wiring.

AFHS—Denotes Selenium Rectifier Capacitor.



Capacitors

**AEROVOX**

Resistors

**ELECTROLYTICS — (Continued)**

**TRIPLES — (Continued)**

AFH No.	Capacity	Voltage	Size
3-78	50-30/100	150/25	1x3
3-79	50-50/20	150/25	1x3
3-80	60-20/20	150/25	1x2
3-81	60-40/20	150/25	1x2½
3-82	80-40/20	150/25	1x2½
3-82-40	80-40/300	150/25	1¾x2½
3-83	120-60/20	150/25	1¾x2½
3-83-10	10/10-4	150/50	1x2
*3-83-95	300-80/200	150/50	1¾x4
3-84	30-20/20	200/25	1x2
*3-84-50	60-5/20	200/50	1x2½
3-85	90-90/20	200/50	1¾x3
3-86	100-10/40	200/50	1¾x2
3-86-50	30-20/40	200/150	1x2½
3-86-80 AFHS	60/200-140	200/150	1¾x4
3-86-90	10-10/100	250/10	1x2
3-87	15-15/20	250/25	1x2
3-88	20-15/20	250/25	1x2
3-89	30-30/20	250/25	1x2½
3-90	70-70/20	250/50	1¾x3
3-91	90-90/20	250/50	1¾x3
3-92	15/20-20	250/150	1x2
3-93	40-20/10	250/150	1¾x2
3-94 AFHS	40-40/10	250/200	1¾x2
3-95	80-80/60	250/200	1¾x3½
3-96-20 AFHS	10/500-500	300/15	1¾x2
3-97	20-20/20	300/25	1x2
3-98	40-15/20	300/25	1x2½
3-98-80	100-10/20	300/25	1¾x3
3-98-90 AFHS	140-10/100	300/25	1¾x3½
3-99	30-30/25	300/50	1x3
3-99-75	100-10/60	300/50	1¾x2½
3-99-80 AFHS	125-20/100	300/50	1¾x3½
3-99-82	125-60/40	300/50	1¾x4
*3-99-83	140-100/60	300/50	1¾x3½
3-99-85	200-20/10	300/100	1¾x4
3-99-95	20/150-80	300/150	1¾x3
3-100	40-40/20	300/150	1¾x2
3-100-20	60/200-30	300/150	1¾x4
**3-100-40 AFHS	100/200-30	300/150	1¾x4
3-100-60	140-10/200	300/150	1¾x4
3-101	10-10/15	300/250	1x2
3-101-20	60/30-30	300/250	1¾x2½
3-101-40	100/60-20	300/250	1¾x3½
3-101-60	200/60-20	300/250	1¾x4
3-102-90	5/100-40	350/25	1x2
3-103	10-10/20	350/25	1x2
3-104	15-10/20	350/25	1x2
3-105	15-15/20	350/25	1x2½
3-105-50	20-5/100	350/25	1x3
3-106	20-10/20	350/25	1x2½
3-107	20-20/20	350/25	1x2½
3-107-50 AFHS	20/50-50	350/25	1x2
3-108	30-10/20	350/25	1x2½
3-109	30-20/20	350/25	1x3
3-110	30-30/20	350/25	1¾x2
3-111	40-40/50	350/25	1¾x2½
3-111-50	90-40/50	350/25	1¾x3½
3-111-85 AFHS	200-10/50	350/25	1¾x4
3-111-90	10-5/30	350/50	1x2
3-112	10-5/150	350/50	1x3
3-112-10	20-5/150	350/50	1x3
3-112-20	20-10/100	350/50	1x3½
*3-112-60 AFHS	80-40/400	350/50	1¾x4
3-112-75	150-4/30	350/50	1¾x3

**TRIPLES — (Continued)**

AFH No.	Capacity	Voltage	Size
3-112-80	30-20/100	350/75	1¾x2½
3-113	40-20/10	350/100	1¾x2
3-114-50	30-20/100	350/150	1¾x2½
**3-114-52	40-20/10	350/150	1x3
*3-114-55	40/200-100	350/150	1¾x3½
*3-114-58	60/200-30	350/150	1¾x4
3-114-60	10/40-40	350/200	1x3
3-114-70	30-5/100	350/200	1¾x2½
3-114-80	80-40/100	350/200	1¾x3
3-114-90	100-60/20	350/200	1¾x4
3-115	20-10/5	350/250	1x2½
3-116	30/20-10	350/250	1x3
3-117	30-10/20	350/250	1x3
*3-118	100-60/20	350/250	1¾x4
3-119	15-15/40	400/25	1x2½
3-120	20-20/20	400/25	1x3
3-121	30-10/150	400/50	1¾x2½
3-122	80-40/150	400/50	1¾x4
3-122-30	100-10/20	400/50	1¾x3½
3-122-80	40/200-60	400/200	1¾x4
3-123	80/20-10	400/300	1¾x3½
3-123-10	20-10/10	400/350	1x3
3-123-30	20-10/40	400/350	1x4
3-123-40	20-20/10	400/350	1x3
*3-123-65	60-30/20	400/350	1¾x3
3-123-80	80-20/10	400/350	1¾x3
*3-123-90	100-10/80	400/350	1¾x4
3-124	10-10/10	450/25	1x2
3-125	10-10/20	450/25	1x2
3-127	15-15/20	450/25	1x2½
3-127-10	15-15/40	450/25	1x2½
**3-127-30	20-10/20	450/25	1x2½
3-128	20-15/20	450/25	1x3
3-129	20-20/20	450/25	1x3
3-129-50	20/500-500	450/25	1¾x3½
3-130	30/100-25	450/25	1¾x2
3-131	30-30/20	450/25	1¾x2½
3-131-30	30-30/125	450/25	1¾x3
3-132	40-20/20	450/25	1¾x2½
3-133	40-40/20	450/25	1¾x3
3-134	40-40/40	450/25	1¾x3
3-134-50	80-10/125	450/25	1¾x3
3-135	80-40/100	450/25	1¾x4
3-136	10-10/40	450/50	1x2½
3-137	20-10/40	450/50	1x3
3-138	20-10/50	450/50	1x3
3-138-30	30-10/150	450/50	1¾x2½
3-138-40	30-15/150	450/50	1¾x3
3-139	30-30/40	450/50	1¾x3
3-139-50	35-25/100	450/50	1¾x3
3-139-75	40-10/40	450/50	1¾x2½
3-140	40-10/100	450/50	1¾x3
3-140-50	40-30/25	450/50	1¾x2½
3-141	40-40/80	450/50	1¾x3½
3-142	40-40/100	450/50	1¾x3½
3-142-20	60-40/75	450/50	1¾x4
3-142-40	80-20/100	450/50	1¾x4
3-142-60	80/100-20	450/50	1¾x3
3-142-80	30-30/125	450/75	1¾x3
3-143	10-10/50	450/100	1¾x2
3-144	30-20/30	450/150	1¾x2½
3-145	40/90-50	450/150	1¾x3
3-146	40-10/80	450/150	1¾x3
3-147	40-40/40	450/150	1¾x3½
3-148	40-10/80	450/200	1¾x3

\*—New item.  
\*\*—Revised catalog number.

†—Special construction for printed wiring.  
AFHS—Denotes Selenium Rectifier Capacitor.

Capacitors

**AEROVOX**

Resistors

**ELECTROLYTICS — (Continued)**

**TRIPLES — (Continued)**

AFH No.	Capacity	Voltage	Size
3-148-40	40-40/60	450/200	1 $\frac{3}{8}$ x3 $\frac{1}{2}$
3-148-50	40-40/100	450/200	1 $\frac{3}{8}$ x4
*3-148-80	10/80-80	450/250	1 $\frac{3}{8}$ x3
3-149	20/40-10	450/250	1 $\frac{3}{8}$ x2
3-149-35	80/40-40	450/250	1 $\frac{3}{8}$ x4
3-149-40	5/80-40	450/300	1 $\frac{3}{8}$ x3
3-149-60	10/100-20	450/300	1 $\frac{3}{8}$ x3
3-149-80	15-10/120	450/300	1 $\frac{3}{8}$ x3 $\frac{1}{2}$
3-150	15-15/10	450/300	1x3
3-151	20/15-10	450/300	1x3
3-152	15-5/15	450/350	1x3
3-152-50	20/15-15	450/350	1x3
3-153	20-20/60	450/350	1 $\frac{3}{8}$ x3
3-153-30	20/40-10	450/350	1 $\frac{3}{8}$ x2 $\frac{1}{2}$
3-153-60	20/80-10	450/350	1 $\frac{3}{8}$ x3
3-154	40-10/10	450/350	1 $\frac{3}{8}$ x2
3-154-20	40-40/60	450/350	1 $\frac{3}{8}$ x4
3-154-30	40-40/80	450/350	1 $\frac{3}{8}$ x4
*3-154-40	50-5/50	450/350	1 $\frac{3}{8}$ x3 $\frac{1}{2}$
3-154-60	60/20-20	450/350	1 $\frac{3}{8}$ x3 $\frac{1}{2}$
3-155-15	10-10/150	475/50	1x3
3-155-30	25-10/20	475/50	1x3
3-155-45	40/80-10	475/300	1 $\frac{3}{8}$ x3 $\frac{1}{2}$
3-155-52	20/20-10	475/350	1x3 $\frac{1}{2}$
3-155-60	20-10/100	475/400	1 $\frac{3}{8}$ x4
3-155-75	40/80-10	475/450	1 $\frac{3}{8}$ x4
*3-155-90	30-20/20	500/25	1 $\frac{3}{8}$ x2 $\frac{1}{2}$
3-156	10-10/100	500/50	1x3 $\frac{1}{2}$
3-157	20-10/100	500/50	1x4
3-158	30-10/20	500/50	1 $\frac{3}{8}$ x2 $\frac{1}{2}$
3-159	40-40/100	500/200	1 $\frac{3}{8}$ x4
3-160	10-10/5	500/350	1x2 $\frac{1}{2}$
*3-160-50	10/40-40	500/450	1 $\frac{3}{8}$ x3 $\frac{1}{2}$
3-161	20-20/60	500/450	1 $\frac{3}{8}$ x3 $\frac{1}{2}$
3-162	40/25/130	150/25/15	1x3
3-162-80	50/100/25	150/50/25	1x2 $\frac{1}{2}$
3-163	100/50/25	150/50/25	1x3
3-164	80/40/50	250/150/50	1 $\frac{3}{8}$ x2 $\frac{1}{2}$
3-165	100/60/20	300/150/25	1 $\frac{3}{8}$ x3
3-165-30 AFHS	140/200/100	300/150/50	1 $\frac{3}{8}$ x4
3-165-70 AFHS	100/60/200	300/200/150	1 $\frac{3}{8}$ x4
3-166	20/50/100	350/100/75	1x3
3-167	10/50/100	350/150/50	1x3
3-167-25 AFHS	40/80/500	350/200/25	1 $\frac{3}{8}$ x3 $\frac{1}{2}$
3-167-50	125/5/100	350/200/75	1 $\frac{3}{8}$ x3 $\frac{1}{2}$
3-168	50/10/500	350/250/5	1 $\frac{3}{8}$ x2 $\frac{1}{2}$
3-169	30/30/20	350/300/25	1x3
3-169-50	30/50/20	350/300/25	1 $\frac{3}{8}$ x2 $\frac{1}{2}$
3-169-90	10/40/5	350/300/150	1x2 $\frac{1}{2}$
3-170	20/40/10	350/300/150	1x3 $\frac{1}{2}$
3-170-50	40/20/10	350/300/200	1 $\frac{3}{8}$ x2
3-171	60/40/20	400/300/25	1 $\frac{3}{8}$ x3 $\frac{1}{2}$
3-172	10/40/10	400/300/150	1 $\frac{3}{8}$ x2
3-173	55/50/80	400/300/250	1 $\frac{3}{8}$ x3 $\frac{1}{2}$
3-174	10/50/30	400/350/25	1x3
3-174-50	80/80/100	400/350/50	1 $\frac{3}{8}$ x4
3-175	10/50/100	450/150/25	1x3
3-176	40/40/130	450/150/50	1 $\frac{3}{8}$ x3
3-177	40/100/50	450/150/50	1 $\frac{3}{8}$ x3
3-177-20	10/50/100	450/150/75	1x3
3-177-40	20/50/100	450/150/75	1 $\frac{3}{8}$ x2
3-177-80	20/80/50	450/200/150	1 $\frac{3}{8}$ x2 $\frac{1}{2}$
3-178	20/60/100	450/250/25	1 $\frac{3}{8}$ x2 $\frac{1}{2}$
3-178-25	10/10/50	450/250/50	1x2 $\frac{1}{2}$
3-179	10/40/10	450/300/150	1 $\frac{3}{8}$ x2

\*—New item.

\*\*—Revised catalog number.

**TRIPLES — (Continued)**

AFH No.	Capacity	Voltage	Size
3-179-50	30/10/10	450/300/150	1x3
3-180	10/10/20	450/350/25	1x2
3-180-50	10/10/50	450/350/25	1x3
3-181	30/15/40	450/350/25	1x3
3-181-50	30/40/50	450/350/25	1x4
3-182	20/80/100	450/350/50	1 $\frac{3}{8}$ x3 $\frac{1}{2}$
3-183	15/20/20	450/350/250	1 $\frac{3}{8}$ x2
3-184	20/15/10	450/350/300	1x3
3-185	10/30/150	450/400/5	1x3
3-186	30/50/40	450/400/25	1 $\frac{3}{8}$ x3
3-186-80	60/80/20	450/400/250	1 $\frac{3}{8}$ x4
3-186-90	4/40/40	450/400/300	1 $\frac{3}{8}$ x2 $\frac{1}{2}$
3-187	10/30/30	450/400/300	1 $\frac{3}{8}$ x2 $\frac{1}{2}$
*3-187-20	60/80/20	450/400/350	1 $\frac{3}{8}$ x4
3-187-25	20/50/20	475/50/25	1x3
3-187-75	80/80/50	475/150/50	1 $\frac{3}{8}$ x4
3-188	10/100/40	475/200/50	1 $\frac{3}{8}$ x2 $\frac{1}{2}$
3-188-50	40/40/100	475/250/100	1 $\frac{3}{8}$ x3
3-189	20/20/40	475/300/25	1 $\frac{3}{8}$ x2
3-189-40	10/4/100	475/350/50	1x2 $\frac{1}{2}$
3-189-60	20/10/5	475/350/150	1x2 $\frac{1}{2}$
3-189-70	10/4/40	475/350/300	1 $\frac{3}{8}$ x2
3-190	40/40/25	475/450/50	1 $\frac{3}{8}$ x3
3-190-80	10/45/100	475/450/200	1 $\frac{3}{8}$ x3
3-191	10/100/40	500/200/50	1 $\frac{3}{8}$ x2 $\frac{1}{2}$
3-192	40/40/100	500/250/50	1 $\frac{3}{8}$ x3
3-193	20/20/40	500/300/25	1 $\frac{3}{8}$ x2
3-193-25	20/40/100	500/300/25	1 $\frac{3}{8}$ x2 $\frac{1}{2}$
3-193-75	5/100/200	500/300/150	1 $\frac{3}{8}$ x4
3-194	40/40/25	500/400/50	1 $\frac{3}{8}$ x3

**QUADS**

AFH No.	Capacity	Voltage	Size
4-01	40-40-40-30	150	1 $\frac{3}{8}$ x2
4-01-40	100-80-60-40	150	1 $\frac{3}{8}$ x3
*4-01-55 AFHS	200-200-60-30	150	1 $\frac{3}{8}$ x4
4-01-60	40-40-40-40	200	1 $\frac{3}{8}$ x2
4-01-80	40-20-10-10	300	1 $\frac{3}{8}$ x2
4-02	40-40-20-10	300	1 $\frac{3}{8}$ x2 $\frac{1}{2}$
4-02-10	40-40-30-20	300	1 $\frac{3}{8}$ x3
4-02-20	60-20-10-5	300	1 $\frac{3}{8}$ x2 $\frac{1}{2}$
4-02-30	60-40-10-10	300	1 $\frac{3}{8}$ x2 $\frac{1}{2}$
4-02-45	80-60-20-10	300	1 $\frac{3}{8}$ x4
4-02-60	100-40-20-20	300	1 $\frac{3}{8}$ x4
*4-02-75 AFHS	150-100-10-5	300	1 $\frac{3}{8}$ x4
4-02-90	200-20-20-20	300	1 $\frac{3}{8}$ x4
4-03	10-10-10-10	350	1 $\frac{3}{8}$ x2
4-04	40-20-20-10	350	1 $\frac{3}{8}$ x2 $\frac{1}{2}$
4-04-50	40-40-40-40	350	1 $\frac{3}{8}$ x4
4-05	80-10-10-10	350	1 $\frac{3}{8}$ x3
4-05-50	80-40-10-4	350	1 $\frac{3}{8}$ x3 $\frac{1}{2}$
4-05-60	100-40-10-10	350	1 $\frac{3}{8}$ x3 $\frac{1}{2}$
4-06	30-30-20-20	400	1 $\frac{3}{8}$ x3
4-06-25	40-35-10-10	400	1 $\frac{3}{8}$ x3
4-06-40	50-40-30-20	400	1 $\frac{3}{8}$ x4
4-06-75	80-10-10-10	400	1 $\frac{3}{8}$ x3 $\frac{1}{2}$
4-07	80-20-10-10	400	1 $\frac{3}{8}$ x3 $\frac{1}{2}$
4-09	5-5-5-5	450	1 $\frac{3}{8}$ x2
4-10	10-10-10-10	450	1 $\frac{3}{8}$ x2
4-13	20-10-10-10	450	1 $\frac{3}{8}$ x2 $\frac{1}{2}$
4-14	20-20-20-20	450	1 $\frac{3}{8}$ x3
4-15	30-15-15-15	450	1 $\frac{3}{8}$ x3
4-15-10	30-20-20-10	450	1 $\frac{3}{8}$ x3
*4-15-20	30-30-15-10	450	1 $\frac{3}{8}$ x3

†—Special construction for printed wiring.

AFHS—Denotes Selenium Rectifier Capacitor.

## ELECTROLYTICS — (Continued)

### QUADS — (Continued)

AFH No.	Capacity	Voltage	Size
4-15-30	30-30-20-20	450	1 $\frac{3}{8}$ x3
**4-15-40	30-30-30-15	450	1 $\frac{3}{8}$ x4
4-16	35-35-10-5	450	1 $\frac{3}{8}$ x3 $\frac{1}{2}$
4-17	40-10-10-10	450	1 $\frac{3}{8}$ x3
4-18	40-20-10-10	450	1 $\frac{3}{8}$ x3
4-18-10	40-35-10-10	450	1 $\frac{3}{8}$ x3
4-18-20	40-40-5-5	450	1 $\frac{3}{8}$ x4
4-18-30	40-40-20-20	450	1 $\frac{3}{8}$ x4
4-18-40	40-40-30-30	450	1 $\frac{3}{8}$ x4
4-18-45	40-40-40-40	450	1 $\frac{3}{8}$ x4
4-18-50	60-20-20-20	450	1 $\frac{3}{8}$ x4
4-18-60	60-30-10-2	450	1 $\frac{3}{8}$ x3
4-18-75	70-10-10-5	450	1 $\frac{3}{8}$ x3
4-18-80	80-10-10-10	450	1 $\frac{3}{8}$ x4
4-19	10-10-10-10	475	1 $\frac{3}{8}$ x2
4-19-10	20-20-10-10	475	1 $\frac{3}{8}$ x2 $\frac{1}{2}$
4-19-20	20-20-20-20	475	1 $\frac{3}{8}$ x3
4-19-40	40-10-10-10	475	1 $\frac{3}{8}$ x3
4-19-50	40-20-10-10	475	1 $\frac{3}{8}$ x3
4-20	10-10-10-10	500	1 $\frac{3}{8}$ x2
4-20-50	40-40-8-8	500	1 $\frac{3}{8}$ x4
4-21	30-20-20/200	150/10	1 $\frac{3}{8}$ x2
4-22	40-40-20/200	150/10	1 $\frac{3}{8}$ x2
4-23	60-40-20/200	150/10	1 $\frac{3}{8}$ x2
4-23-50 AFHS	80-80-10/200	150/10	1 $\frac{3}{8}$ x2 $\frac{1}{2}$
4-23-75 AFHS	50-20/150-30	150/15	1 $\frac{3}{8}$ x2
4-25	20-20-20/20	150/25	1 $\frac{3}{8}$ x2
4-25-70	20-20/160-40	150/25	1 $\frac{3}{8}$ x2
4-26	30-30-30/40	150/25	1 $\frac{3}{8}$ x2
4-27	40-20-20/20	150/25	1 $\frac{3}{8}$ x2
4-28	40-40-30/20	150/25	1 $\frac{3}{8}$ x2
4-29	40-40-40/20	150/25	1 $\frac{3}{8}$ x2
4-30	40-40/40-40	150/25	1 $\frac{3}{8}$ x2
4-31	40-40-40/100	150/25	1 $\frac{3}{8}$ x2
4-32	40-40-40/160	150/25	1 $\frac{3}{8}$ x2
4-33	40-40/100-100	150/25	1 $\frac{3}{8}$ x2
4-33-20	40-40/200-100	150/25	1 $\frac{3}{8}$ x2
4-33-50	50-20-20/200	150/25	1 $\frac{3}{8}$ x2
4-34	50-30-30/100	150/25	1 $\frac{3}{8}$ x2
4-35	50-50-50/20	150/25	1 $\frac{3}{8}$ x2
**4-35-15	60-20-10/20	150/25	1 $\frac{3}{8}$ x2
4-35-25	60-40-20/20	150/25	1 $\frac{3}{8}$ x2
4-35-50 AFHS	60-60-10/60	150/25	1 $\frac{3}{8}$ x2
**4-35-75 AFHS	70-40-40/25	150/25	1 $\frac{3}{8}$ x2 $\frac{1}{2}$
4-36	75-75-75/30	150/25	1 $\frac{3}{8}$ x3
4-37	80-40-40/20	150/25	1 $\frac{3}{8}$ x2
4-37-10	80-40-40/40	150/25	1 $\frac{3}{8}$ x2 $\frac{1}{2}$
4-38	80-40-40/100	150/25	1 $\frac{3}{8}$ x2 $\frac{1}{2}$
4-38-30	100-90-60/200	150/25	1 $\frac{3}{8}$ x3
4-38-75	125-125-40/100	150/25	1 $\frac{3}{8}$ x3
4-38-90 AFHS	140-40/50-30	150/50	1 $\frac{3}{8}$ x3
*4-38-95 AFHS	200-200-100/10	150/75	1 $\frac{3}{8}$ x4
4-39	40-20-10/20	200/25	1 $\frac{3}{8}$ x2
4-40	40-20-10/20	250/25	1 $\frac{3}{8}$ x2
4-41	100-40-10/100	250/50	1 $\frac{3}{8}$ x3 $\frac{1}{2}$
4-42	80-60-40/20	250/150	1 $\frac{3}{8}$ x3 $\frac{1}{2}$
4-43	10-10-10/20	300/25	1 $\frac{3}{8}$ x2
4-44	40-20-20/25	300/25	1 $\frac{3}{8}$ x2
4-44-20	40-30-20/50	300/25	1 $\frac{3}{8}$ x2 $\frac{1}{2}$
4-45	40-40-20/20	300/25	1 $\frac{3}{8}$ x3
4-46	60-40-20/50	300/25	1 $\frac{3}{8}$ x3
4-46-20	60-30-10/60	300/50	1 $\frac{3}{8}$ x2 $\frac{1}{2}$
4-46-35	150-30-30/150	300/50	1 $\frac{3}{8}$ x4
4-46-50	10/200-140-30	300/150	1 $\frac{3}{8}$ x4
4-46-60	10/200-200-30	300/150	1 $\frac{3}{8}$ x4

### QUADS — (Continued)

AFH No.	Capacity	Voltage	Size
4-47	40-40-40/20	300/150	1 $\frac{3}{8}$ x3
**4-47-50 AFHS	100-10/200-30	300/150	1 $\frac{3}{8}$ x4
*4-47-60 AFHS	140-10/200-60	300/150	1 $\frac{3}{8}$ x5
4-47-80 AFHS	120-40-40/10	300/250	1 $\frac{3}{8}$ x4
4-48	10-10-10/20	350/25	1 $\frac{3}{8}$ x2
4-49	20-10-5/20	350/25	1 $\frac{3}{8}$ x2
4-49-25	30-10-5/200	350/25	1 $\frac{3}{8}$ x2
4-50	30-20-20/20	350/25	1 $\frac{3}{8}$ x2 $\frac{1}{2}$
4-50-60	40-10/100-25	350/25	1 $\frac{3}{8}$ x2
4-50-90	40-20-5/10	350/25	1 $\frac{3}{8}$ x2 $\frac{1}{2}$
4-51	40-20-20/25	350/25	1 $\frac{3}{8}$ x2 $\frac{1}{2}$
4-52	40-40-20/20	350/25	1 $\frac{3}{8}$ x3
4-52-05	40-40-30/10	350/25	1 $\frac{3}{8}$ x3
4-53	40-40-40/40	350/25	1 $\frac{3}{8}$ x3
4-53-40	60-5/100-40	350/25	1 $\frac{3}{8}$ x2 $\frac{1}{2}$
4-54	15-15-15/50	350/50	1 $\frac{3}{8}$ x2
4-55	40-30-10/50	350/50	1 $\frac{3}{8}$ x3
4-56	40-40-40/150	350/50	1 $\frac{3}{8}$ x3 $\frac{1}{2}$
4-56-05 AFHS	50-40-20/100	350/50	1 $\frac{3}{8}$ x3
4-56-30	60-25-25/100	350/50	1 $\frac{3}{8}$ x3
4-56-60	100-10-10/20	350/50	1 $\frac{3}{8}$ x3
4-56-65	100-20/50-30	350/50	1 $\frac{3}{8}$ x3 $\frac{1}{2}$
4-56-75	100-40-30/50	350/50	1 $\frac{3}{8}$ x4
*4-56-80	100-80-10/20	350/50	1 $\frac{3}{8}$ x4
4-56-85	140-20-10/100	350/50	1 $\frac{3}{8}$ x4
*4-56-88	200-10/20-5	350/50	1 $\frac{3}{8}$ x4
4-56-90	90-30-5/100	350/75	1 $\frac{3}{8}$ x3 $\frac{1}{2}$
4-56-92	20-10-5/60	350/200	1 $\frac{3}{8}$ x2 $\frac{1}{2}$
4-56-93	20/100-100-20	350/200	1 $\frac{3}{8}$ x4
4-56-93.4	30-10-5/100	350/200	1 $\frac{3}{8}$ x2 $\frac{1}{2}$
*4-56-93.5	30-20-5/100	350/200	1 $\frac{3}{8}$ x3
4-56-94	10-10/10-10	350/300	1 $\frac{3}{8}$ x2
4-56-94.8	130-20-10/40	350/300	1 $\frac{3}{8}$ x4
4-56-95 AFHS	160/60-10-4	350/300	1 $\frac{3}{8}$ x4
4-56-96	10-10/25-25	400/25	1 $\frac{3}{8}$ x2
4-57	20-20-20/20	400/25	1 $\frac{3}{8}$ x2 $\frac{1}{2}$
*4-57-40	80-40-10/20	400/25	1 $\frac{3}{8}$ x4
4-57-50	80-40-30/40	400/25	1 $\frac{3}{8}$ x4
4-57-55	90-40-10/40	400/25	1 $\frac{3}{8}$ x4
4-57-75	40-40-40/150	400/50	1 $\frac{3}{8}$ x4
4-57-85	80-20-10/100	400/50	1 $\frac{3}{8}$ x4
4-57-90 AFHS	100-10/30-20	400/50	1 $\frac{3}{8}$ x4
*4-57-93 AFHS	80-40-10/100	400/200	1 $\frac{3}{8}$ x4
4-57-95	80-40/40-40	400/200	1 $\frac{3}{8}$ x4
4-58	40-10/80-10	400/250	1 $\frac{3}{8}$ x3 $\frac{1}{2}$
4-58-50	80/40-20-10	400/300	1 $\frac{3}{8}$ x4
4-58-75	80-40/40-20	400/350	1 $\frac{3}{8}$ x4
4-59	10-10-10/20	450/25	1 $\frac{3}{8}$ x2
4-60	10-10-10/25	450/25	1 $\frac{3}{8}$ x2
4-61	10-10-10/100	450/25	1 $\frac{3}{8}$ x2
4-62	10-10-10/150	450/25	1 $\frac{3}{8}$ x2 $\frac{1}{2}$
4-63	10-10/20-20	450/25	1 $\frac{3}{8}$ x2
4-65	20-10-10/100	450/25	1 $\frac{3}{8}$ x2
4-66	20-15/20-20	450/25	1 $\frac{3}{8}$ x2
4-67	20-20-20/20	450/25	1 $\frac{3}{8}$ x2 $\frac{1}{2}$
4-68	30-15-15/40	450/25	1 $\frac{3}{8}$ x2 $\frac{1}{2}$
4-69	30-20-20/20	450/25	1 $\frac{3}{8}$ x3
4-70	30-30-10/20	450/25	1 $\frac{3}{8}$ x3
4-70-10	30-30-10/125	450/25	1 $\frac{3}{8}$ x3
4-71	30-30-20/20	450/25	1 $\frac{3}{8}$ x3
**4-71-25	30-30/125-125	450/25	1 $\frac{3}{8}$ x3
4-72	40-10-10/250	450/25	1 $\frac{3}{8}$ x3
4-73	40-10-10/300	450/25	1 $\frac{3}{8}$ x3
4-74	40-15-10/25	450/25	1 $\frac{3}{8}$ x3
4-75	40-20-10/20	450/25	1 $\frac{3}{8}$ x3

\*—New item.

\*\*—Revised catalog number.

†—Special construction for printed wiring.  
AFHS—Denotes Selenium Rectifier Capacitor.

Capacitors

**AEROVOX**

Resistors

**ELECTROLYTICS — (Continued)****QUADS — (Continued)**

AFH No.	Capacity	Voltage	Size
4-76	40-20-20/20	450/25	1 $\frac{3}{8}$ x3
4-77	40-20-20/40	450/25	1 $\frac{3}{8}$ x3
4-78	40-30-10/20	450/25	1 $\frac{3}{8}$ x3
4-78-10	40-40-10/20	450/25	1 $\frac{3}{8}$ x3 $\frac{1}{2}$
4-79	40-40-20/20	450/25	1 $\frac{3}{8}$ x3 $\frac{1}{2}$
4-79-10	40-40-40/40	450/25	1 $\frac{3}{8}$ x4
4-79-20	60-40-40/10	450/25	1 $\frac{3}{8}$ x4
4-79-30	60-50-5/20	450/25	1 $\frac{3}{8}$ x4
4-80	20-20-20/100	450/50	1 $\frac{3}{8}$ x3
4-81	30-30-15/30	450/50	1 $\frac{3}{8}$ x3
4-82	30-30-15/100	450/50	1 $\frac{3}{8}$ x3 $\frac{1}{2}$
4-83	40-20-10/100	450/50	1 $\frac{3}{8}$ x3 $\frac{1}{2}$
4-84	40-40-10/20	450/50	1 $\frac{3}{8}$ x3
4-85	40-40/30-10	450/50	1 $\frac{3}{8}$ x3
4-85-25	40-40-10/50	450/50	1 $\frac{3}{8}$ x4
4-86	60-10-10/20	450/50	1 $\frac{3}{8}$ x3
4-86-20	60-30-30/150	450/50	1 $\frac{3}{8}$ x4
4-86-25	60-40-10/25	450/50	1 $\frac{3}{8}$ x4
4-87	40-40-10/100	450/100	1 $\frac{3}{8}$ x3 $\frac{1}{2}$
4-88	60-10-10/20	450/150	1 $\frac{3}{8}$ x3
4-88-20	35-35-10/10	450/200	1 $\frac{3}{8}$ x3 $\frac{1}{2}$
4-88-40	40-40-30/10	450/200	1 $\frac{3}{8}$ x4
4-88-50	40-40/100-60	450/200	1 $\frac{3}{8}$ x4
4-88-60	40-20-10/100	450/250	1 $\frac{3}{8}$ x4
4-88-70	60-10-10/40	450/250	1 $\frac{3}{8}$ x3 $\frac{1}{2}$
4-88-80	10/100-20-20	450/300	1 $\frac{3}{8}$ x3
4-89	20-20/30-30	450/300	1 $\frac{3}{8}$ x3
4-90	20-20/20-10	450/350	1 $\frac{3}{8}$ x3
4-91	20-20/30-30	450/350	1 $\frac{3}{8}$ x3
4-91-50	40-10-10/40	450/350	1 $\frac{3}{8}$ x3
4-92	40-10/35-10	450/350	1 $\frac{3}{8}$ x3
4-92-50	40-20-20/20	450/350	1 $\frac{3}{8}$ x3
4-92-75	40-20/80-10	450/350	1 $\frac{3}{8}$ x4
4-93	40-40/30-30	450/350	1 $\frac{3}{8}$ x4
4-93-40	5/80-40-25	450/400	1 $\frac{3}{8}$ x4
4-93-45	10/80-40-25	450/400	1 $\frac{3}{8}$ x4
4-93-50	60/40-20-20	450/400	1 $\frac{3}{8}$ x4
4-93-75	30-30-10/20	475/25	1 $\frac{3}{8}$ x3
4-94	40-20-10/10	475/25	1 $\frac{3}{8}$ x3
4-94-50	20/80-20-10	475/300	1 $\frac{3}{8}$ x3 $\frac{1}{2}$
4-94-60	50-30/20-20	475/300	1 $\frac{3}{8}$ x4
4-94-70	10/130-20-10	475/350	1 $\frac{3}{8}$ x4
4-94-75	20/60-40-10	475/350	1 $\frac{3}{8}$ x3 $\frac{1}{2}$
*4-94-85	30/135-10-10	475/350	1 $\frac{3}{8}$ x4
4-94-90	10/80-40-40	475/450	1 $\frac{3}{8}$ x4
4-95	20-20-10/10	500/300	1 $\frac{3}{8}$ x2 $\frac{1}{2}$
4-96	50-30-10/20	500/300	1 $\frac{3}{8}$ x4
4-96-20	5/25-25/100	75/25/15	1 $\frac{3}{8}$ x2
4-96-50	40-40/50/80	250/150/50	1 $\frac{3}{8}$ x2 $\frac{1}{2}$
4-96-75	80-8/40/50	250/150/50	1 $\frac{3}{8}$ x2 $\frac{1}{2}$
4-96-90	10/10/100-20	250/200/25	1 $\frac{3}{8}$ x2
4-97	100/40/80-20	300/50/25	1 $\frac{3}{8}$ x2 $\frac{1}{2}$
*4-97-30	80-5/60/20	300/150/25	1 $\frac{3}{8}$ x3
4-97-40	20/150-150/100	300/150/50	1 $\frac{3}{8}$ x3 $\frac{1}{2}$
4-97-75	100-40/125/50	300/150/50	1 $\frac{3}{8}$ x4
*4-97-90	150-20/10/250	300/250/50	1 $\frac{3}{8}$ x4
4-98	20/150-80/20	350/150/25	1 $\frac{3}{8}$ x3
4-98-50	60/60-30/160	350/150/25	1 $\frac{3}{8}$ x3
4-98-70	60-20/80/100	350/150/50	1 $\frac{3}{8}$ x3 $\frac{1}{2}$
4-99	15/80-40/200	350/200/25	1 $\frac{3}{8}$ x3

\*—New item.

\*\*—Revised catalog number.

**QUADS — (Continued)**

AFH No.	Capacity	Voltage	Size
4-99-25	20/160-60/40	350/200/25	1 $\frac{3}{8}$ x2 $\frac{1}{2}$
4-99-50	80-20/20/200	350/200/50	1 $\frac{3}{8}$ x3 $\frac{1}{2}$
4-99-60	100-60/60/40	350/200/75	1 $\frac{3}{8}$ x4
4-99-75	20/100-100/10	350/200/100	1 $\frac{3}{8}$ x4
4-99-80	80-60/60/10	350/200/150	1 $\frac{3}{8}$ x4
4-99-90	60-40/60/20	350/250/150	1 $\frac{3}{8}$ x4
4-99-93	50-30/8/20	350/250/200	1 $\frac{3}{8}$ x2 $\frac{1}{2}$
4-99-95	40-20/10/20	350/300/25	1 $\frac{3}{8}$ x2
4-100	40/40-20/20	350/300/25	1 $\frac{3}{8}$ x3
4-100-10	30-30/40/100	350/300/75	1 $\frac{3}{8}$ x3
4-100-25	50-25/100/20	400/50/25	1 $\frac{3}{8}$ x3
4-100-40	80-40/100/20	400/50/25	1 $\frac{3}{8}$ x4
4-100-45	20-10/10/25	400/100/25	1 $\frac{3}{8}$ x2
4-100-50	10-10/40/10	400/200/50	1 $\frac{3}{8}$ x2
4-100-65 AFHS	40-40/80/80	400/250/50	1 $\frac{3}{8}$ x4
4-100-75	40/120-10/150	400/250/50	1 $\frac{3}{8}$ x4
4-101	5-5/50/80	400/300/250	1 $\frac{3}{8}$ x3
4-102	10/50-30/30	400/350/25	1 $\frac{3}{8}$ x3
4-102-15	50/60-40/20	400/350/25	1 $\frac{3}{8}$ x4
4-102-25	80/40-10/10	400/350/25	1 $\frac{3}{8}$ x4
4-102-40	20/40/100-10	400/350/50	1 $\frac{3}{8}$ x3
4-102-50	20/50-40/80	400/350/50	1 $\frac{3}{8}$ x3
4-102-75	30/60-20/100	400/350/50	1 $\frac{3}{8}$ x4
4-103	60-40/40/10	400/350/50	1 $\frac{3}{8}$ x3 $\frac{1}{2}$
*4-103-40	100-10/20/20	400/350/50	1 $\frac{3}{8}$ x4
4-104	40/10/80-10	400/350/250	1 $\frac{3}{8}$ x3
4-104-50	60-10/80/10	400/350/250	1 $\frac{3}{8}$ x4
4-105-10	10-10/20/60	450/150/25	1 $\frac{3}{8}$ x2
4-105-30	20-20/60/100	450/150/25	1 $\frac{3}{8}$ x2 $\frac{1}{2}$
4-105-60	40-40/125/125	450/150/25	1 $\frac{3}{8}$ x4
4-106	40/40/30-10	450/150/50	1 $\frac{3}{8}$ x3
4-107	10-10/60/100	450/200/50	1 $\frac{3}{8}$ x3
4-107-50	10/80-40/100	450/200/50	1 $\frac{3}{8}$ x3
4-108	20/80-20/50	450/200/50	1 $\frac{3}{8}$ x3
4-108-10	35-25/20/100	450/200/50	1 $\frac{3}{8}$ x3
4-108-30	40/40-40/20	450/250/25	1 $\frac{3}{8}$ x3
4-108-40	60/80-40/20	450/250/150	1 $\frac{3}{8}$ x4
4-108-50	10-10/10/50	450/300/25	1 $\frac{3}{8}$ x2
4-108-60	25/100-10/60	450/300/50	1 $\frac{3}{8}$ x3
4-108-70	40/40-40/20	450/300/150	1 $\frac{3}{8}$ x3
4-108-90	10/100-20/20	450/300/200	1 $\frac{3}{8}$ x3
4-109	10/60-40/25	450/350/25	1 $\frac{3}{8}$ x3 $\frac{1}{2}$
4-110	10/100-10/20	450/350/25	1 $\frac{3}{8}$ x3 $\frac{1}{2}$
4-111	20/15-15/20	450/350/25	1 $\frac{3}{8}$ x2
4-111-50	20/80-50/100	450/350/50	1 $\frac{3}{8}$ x4
4-111-60	50/25-25/100	450/350/50	1 $\frac{3}{8}$ x3
4-112	30/40-40/10	450/350/200	1 $\frac{3}{8}$ x3 $\frac{1}{2}$
4-112-10	20/20/50-20	450/400/50	1 $\frac{3}{8}$ x3 $\frac{1}{2}$
4-112-20	80/40-10/150	450/400/50	1 $\frac{3}{8}$ x4
4-112-50	80/10/40-30	450/400/300	1 $\frac{3}{8}$ x4
4-112-75	10/100-10/100	475/300/25	1 $\frac{3}{8}$ x3 $\frac{1}{2}$
4-112-80	10/140-4/100	475/300/50	1 $\frac{3}{8}$ x4
4-113	15-15/80/40	475/300/50	1 $\frac{3}{8}$ x3
4-113-20	10/30-5/80	475/350/50	1 $\frac{3}{8}$ x2 $\frac{1}{2}$
4-113-40	40-10/4/40	475/350/300	1 $\frac{3}{8}$ x3
4-113-60	10/50-30/30	475/450/25	1 $\frac{3}{8}$ x3
4-113-80	20-10/20/100	475/450/25	1 $\frac{3}{8}$ x2 $\frac{1}{2}$
4-114	10-5/80/40	475/450/50	1 $\frac{3}{8}$ x3 $\frac{1}{2}$
4-114-50	10/40-10/100	475/450/50	1 $\frac{3}{8}$ x2 $\frac{1}{2}$
*4-114-55	10/10-4/20	500/300/25	1 $\frac{3}{8}$ x2
4-114-60	10/100-30/100	500/300/25	1 $\frac{3}{8}$ x3 $\frac{1}{2}$
4-114-75	30/10/150-30	500/450/50	1 $\frac{3}{8}$ x3

†—Special construction for printed wiring.

AFHS—Denotes Selenium Rectifier Capacitor.

Capacitors

**AEROVOX**

Resistors

**ELECTROLYTICS — (Continued)**

**QUADS — (Continued)**

AFH No.	Capacity	Voltage	Size
4-114-90	100/50/10/20	300/200/150/50	1 3/8 x 3
4-115	120/20/100/20	300/250/50/25	1 3/8 x 4
4-116	200/20/100/20	300/250/50/25	1 3/8 x 4
4-116-50	40/100/100/25	350/250/50/25	1 3/8 x 3 1/2
4-117	20/40/10/250	350/300/150/50	1 3/8 x 3
4-117-25	20/150/10/250	350/300/250/50	1 3/8 x 4
4-117-40	20/10/10/20	400/350/200/25	1 3/8 x 2
4-117-44	40/80/100/25	400/350/200/50	1 3/8 x 4 1/2
4-117-45	40/80/100/100	400/350/200/50	1 3/8 x 4 1/2
4-117-47	20/10/80/20	400/350/300/25	1 3/8 x 3
4-117-48	40/30/10/20	400/350/300/25	1 3/8 x 2
4-117-50	10/10/60/100	450/300/200/50	1 3/8 x 3
4-117-60	10/40/40/100	450/300/250/50	1 3/8 x 3 1/2
4-117-75	30/40/50/200	450/300/250/150	1 3/8 x 4
4-117-90	10/40/100/100	450/350/250/50	1 3/8 x 3
4-117-95	30/25/50/200	450/400/250/150	1 3/8 x 4
4-118	80/10/30/40	450/400/300/150	1 3/8 x 4
4-118-50	5/60/50/20	450/400/350/25	1 3/8 x 3
4-118-90	40/40/50/80	475/250/150/50	1 3/8 x 3 1/2
4-119	20/40/100/80	475/300/50/25	1 3/8 x 3
4-120	10/40/80/100	475/350/200/100	1 3/8 x 3 1/2
4-120-10	20/40/80/100	475/350/200/100	1 3/8 x 4
4-120-20	10/40/80/100	475/350/300/100	1 3/8 x 4
4-120-50	10/40/100/10	475/400/50/25	1 3/8 x 2 1/2
4-120-75	10/40/4/100	475/400/350/50	1 3/8 x 2 1/2
4-121	10/10/80/50	475/450/200/50	1 3/8 x 2 1/2
4-121-50	25/20/20/100	475/450/300/50	1 3/8 x 3
4-122	25/20/40/100	475/450/300/50	1 3/8 x 3 1/2
4-123	10/60/30/125	475/450/400/50	1 3/8 x 4

**REPLACEMENTS FOR MODIFIED AFH and PR TYPES**

Old Cat. No.	Capacity and Voltage	New Cat. No.
AFH 1-68	125@450	AFH 1-55-25
AFHS 1-69	120@150	AFHS 1-22
AFHS 1-69A	120@150	AFHS 1-22-05
AFHS 1-70	140@150	AFHS 1-23
AFHS 1-71	200@150	AFHS 1-24-25
AFHS 1-72	300@150	AFHS 1-24-75
AFHS 1-73	125@350	AFHS 1-43
AFH 2-42	30-10@400	AFH 2-43-30
AFH 2-70	40-25@500	AFH 2-71-90
AFH 2-77	40/20@150, 50	AFH 2-78-30
AFH 2-83	30/30@350/300	AFH 2-86-40
AFHS 2-109	200-5@150	AFHS 2-21
AFHS 2-110	100-100@200	AFHS 2-24-20
AFH 3-11	70-40-40@150	AFH 3-12-20
AFH 3-16	30-15-15@250	AFH 3-17-50
AFH 3-24	80-20-10@300	AFH 3-25-40
AFH 3-32	30-30-10@450	AFH 3-37-95
AFH 3-40	60-30-10@450	AFH 3-45-10
AFH 3-96	10/80-80@450/250	AFH 3-148-80
AFH 3-102	15-10/120@450/300	AFH 3-149-80
AFH 3-114	40-20/10@350/150	AFH 3-114-52
AFH 3-126	20-10/20@450/25	AFH 3-127-30
AFH 3-155	10/40-40@500/450	AFH 3-160-50
AFH 3-195	30-20/20@500/25	AFH 3-155-90
AFHS 3-196	100-80/200@150/10	AFHS 3-64-85
AFHS 3-197	100/200-30@300/150	AFHS 3-100-40
AFH 4-11	30-30-15-10@450	AFH 4-15-20
AFH 4-12	30-30-30-15@450	AFH 4-15-40
AFH 4-24	60-20-10/20@150/25	AFH 4-35-15
AFH 4-105	30-30/125-125@450/25	AFH 4-71-25
AFHS 4-124	70-40-40/25@150/25	AFHS 4-35-75
AFHS 4-125	100-10/200-30@300/150	AFHS 4-47-50
PR 4-100	140-5/200-30@300/150	PR 4-288

**AFH HARDWARE**

**METAL WASHERS**

Cat. No.	Size
MW-1	3/4" d.
MW-2	1" d.
MW-3	1 3/8" d.
MW-4	1" in 1 3/8" hole mounting

**INSULATING TUBES**

Cat. No.	Size
TU-1	1 x 2
TU-2	1 x 2 1/2
TU-3	1 x 3
TU-4	1 x 3 1/2
TU-5	1 x 4
TU-6	1 3/8 x 2
TU-7	1 3/8 x 2 1/2
TU-8	1 3/8 x 3
TU-9	1 3/8 x 3 1/2
TU-10	1 3/8 x 4

**BAKELITE WASHERS**

Cat. No.	Size
BW-1	3/4" d.
BW-2	1" d.
BW-3	1 3/8" d.
BW-4	1" in 1 3/8" hole mounting

**TYPE PR Wax-Filled Tubular Capacitors**



Wax-filled electrolytic tubulars in wax-impregnated cardboard tubes. Sections manufactured to same high standards as more expensive metal-cased units. These units are made for exact duplicate replacements in television receivers and antenna rotating devices. Tolerances meet RETMA standards and are manufactured for operating temperatures of 0-65°C. PR numbers designate replacements for Television Receivers, XA numbers designate replacements for Rotators.

**TYPE PR SINGLES**

PR No.	Capacity	Voltage	Size
XA-4283	70	50 (VAC)	7/8 x 3
*XA-4098A	70	50 (VAC)	7/8 x 3
PR 1-050	100	150	1 x 3 1/2
PR 1-075	200	200	1 3/8 x 3 3/8
PR 1-100	140	300	1 3/8 x 3 3/8

**TYPE PR DUALS**

PR No.	Capacity	Voltage	Size
††PR 2-050	120-120	150	1 1/8 x 4 7/8
PR 2-100	200-5	150	1 x 4
PR 2-120	250-50	150	1 3/8 x 3 1/4
PR 2-200	120-80	200	1 3/8 x 3
PR 2-275	200-5	200	1 1/8 x 4 1/8
PR 2-300	150-100	300	1 3/8 x 4 1/2
PR 2-400	140-5	350	1 1/4 x 4 1/8
PR 2-600	40/125	200/40	1 x 3 1/4
PR 2-700	50/75	250/50	1 1/8 x 2 3/4
PR 2-725	5/25	300/25	3/4 x 1 7/8
PR 2-755	200/100	300/50	1 3/4 x 4 5/8
PR 2-800	20/100	450/25	1 1/4 x 2 3/4

\* 5" leads. No bracket.  
†† Separate sections.

Capacitors

**AEROVOX**

Resistors

**ELECTROLYTICS — (Continued)**

**TYPE PR TRIPLES**

PR No.	Capacity	Voltage	Size
PR 3-010	150-150-150	150	1 3/8 x 4 1/4
PR 3-012	250-200-10	150	1 3/8 x 4 3/8
PR 3-020	60-60-60	300	1 3/8 x 3 1/2
PR 3-025	60-60-4	350	1 3/8 x 3 1/4
PR 3-030	80-40-20	350	1 3/8 x 3 1/2
†PR 3-035	30-10-10	450	1 3/8 x 3 1/2
PR 3-043	250-120/50	150/25	1 3/8 x 3 7/8
PR 3-045	100-10/20	300/25	1 1/8 x 3 1/2
PR 3-046	100-100/200	300/25	1 1/2 x 4 1/2
PR 3-047	100-60/100	300/50	1 3/8 x 4
PR 3-048	100/200-40	300/200	1 3/8 x 4 1/2
PR 3-050	10-10/100	350/50	1 1/4 x 2 1/2
PR 3-053	100-10/50	350/50	1 3/8 x 3 1/2
PR 3-054	10/200-100	400/150	1 3/8 x 4 3/8
PR 3-055	20-10/150	450/50	1 3/8 x 3
PR 3-060	20/200-5	450/200	1 1/4 x 4 1/8
PR 3-065	5/80-40	450/400	1 3/4 x 4 1/4
PR 3-070	150/100/80	150/50/25	1 3/8 x 3
PR 3-080	80/10/100	300/250/50	1 3/8 x 3 1/2
PR 3-085	120/40/100	300/250/50	1 3/8 x 4
PR 3-090	30/40/125	350/200/25	1 3/8 x 2 1/4
PR 3-100	140/5/200	350/300/200	1 1/2 x 4 5/8
PR 3-125	100/40/40	350/300/250	1 3/8 x 3 3/4
PR 3-150	30/50/100	450/150/25	1 3/8 x 2 1/2
PR 3-160	25/100/100	450/150/50	1 3/8 x 3

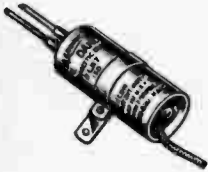
**TYPE PR QUADS**

PR No.	Capacity	Voltage	Size
PR 4-125	40-40-40-4	150	1 x 3
PR 4-175	20-20-20-10	450	1 3/8 x 3 1/2
PR 4-185	40-20-20-10	450	1 3/8 x 3 3/4
PR 4-200	40-40-20-20	450	1 3/8 x 4 1/2
PR 4-220	40-20-20/100	150/25	1 1/4 x 3 1/4
PR 4-225	40-10-10/200	150/35	1 1/8 x 3
PR 4-275	140-4/50-4	300/150	1 3/8 x 3 1/2
PR 4-280	140-5/200-30	300/150	1 1/2 x 4
PR 4-285	140-10-5/200	300/150	1 1/2 x 4 3/8
PR 4-300	120-40-40/10	300/250	1 3/8 x 4 1/4
PR 4-350	15-15/150-150	350/150	1 3/8 x 4 1/4
PR 4-450	80-60-20/40	350/300	1 3/8 x 4 5/8
PR 4-500	10-10-10/150	450/50	1 1/4 x 3 3/4
PR 4-600	140/5/200-30	350/300/200	1 1/2 x 4 5/8
PR 4-700	80-10/40/100	400/300/50	1 3/8 x 4
PR 4-800	10/80/40-40	450/300/250	1 3/8 x 3 1/2
PR 4-850	40/100/100/25	350/250/50/25	1 3/8 x 3 3/4
PR 4-875	140/5/200/100	350/300/200/150	1 1/2 x 4 1/8
PR 4-900	20/120/40/100	450/300/250/50	1 3/8 x 4 1/4

**TYPE PR QUINTS**

PR No.	Capacity	Voltage	Size
PR 5-500	40-20-20-20/50	300/50	1 3/8 x 4

† Separate negative furnished for two 10 mfd sections.



**TYPE PRS "DANDEE"  
(85°C)  
SINGLES • DUALS • TRIPLES  
QUADS  
Metal Can  
Tubular Electrolytic Capacitors  
TYPE PRS-AC (AC rated units)  
NP-PRS (non-polarized units)**

Compact, electrolytic tubular capacitors furnished in aluminum cans with cardboard insulating sleeves. Designed for use in television and radio applications where space is at a premium.

Included in this listing are the AC rated units (PRS-AC) and non-polarized units (NP-PRS) for replacement use in cross-over networks and color TV receivers. Also listed are Types PRSB — separate section, dual units for use in specialized applications.

Single section capacitors are furnished with bare tinned copper leads 3 inches long. Negative grounded to case. Multiple units are furnished with insulated, stranded copper leads 5 inches long. Negative is common and grounded to case.

Sizes listed are diameters over cardboard insulating sleeve. For actual can size deduct 1/16" from diameter and 1/8" from length. Multiple units are supplied with mounting strap. If mounting strap is required on single units, specify on order.

Tolerance and surge voltage are in accordance with RETMA Specification RS-154.

**TYPE PRS — SINGLES**

Cap. Mfd.	Size	Cap. Mfd.	Size	Cap. Mfd.	Size	Cap. Mfd.	Size	Cap. Mfd.	Size
	<b>4V</b>	25	1/8 x 1 1/4	20	1 1/8 x 1 3/4		<b>350V</b>	50	1 1/8 x 3 3/4
2000	1 1/8 x 2 3/4	50	1 1/8 x 1 1/2	24	1 1/8 x 1 3/4	4	1 1/8 x 1 1/2	60	1 1/8 x 3 1/4
	<b>6V</b>	100	1 1/8 x 1 1/2	30	1 1/8 x 1 1/2	8	1 1/8 x 1 1/2	80	1 1/8 x 3 3/4
100	1 1/8 x 1 1/4	250	1 1/8 x 2 1/4	40	1 1/8 x 1 3/4	10	1 1/8 x 1 3/4	100	1 1/8 x 3 3/4
250	1 1/8 x 1 3/4	500	1 1/8 x 2 1/2	50	1 1/8 x 1 3/4	12	1 1/8 x 1 3/4		<b>500V</b>
500	1 1/8 x 1 3/4		<b>50V</b>	60	1 1/8 x 1 3/4	16	1 1/8 x 1 3/4	4	1 1/8 x 2
1000	1 1/8 x 2 1/4	2	1/8 x 1 3/8	80	1 1/8 x 2 1/4	24	1 1/8 x 1 3/4	8	1 1/8 x 1 3/4
1500	1 1/8 x 2 1/4	5	1/8 x 1 1/4	100	1 1/8 x 2 1/4	30	1 1/8 x 2 1/4	10	1 1/8 x 1 3/4
2000	1 1/8 x 2 3/4	10	1/8 x 1 1/4	150	1 1/8 x 3	40	1 1/8 x 2 1/4	12	1 1/8 x 2 1/4
	<b>12V</b>	20	1 1/8 x 1 1/4	200	1 1/8 x 3	50	1 1/8 x 2 1/4	16	1 1/8 x 2 1/4
100	1 1/8 x 1 1/2	25	1 1/8 x 1 1/4	300	1 1/8 x 4	60	1 1/8 x 2 1/2	20	1 1/8 x 2 1/4
250	1 1/8 x 1 3/4	50	1 1/8 x 1 3/4		<b>250V</b>		<b>450V</b>	30	1 1/8 x 2 3/4
500	1 1/8 x 2 1/4	100	1 1/8 x 1 3/4	4	1 1/8 x 1 1/4	1	1/8 x 1 1/4	8	1 1/8 x 3 3/8
1000	1 1/8 x 3 3/4	150	1 1/8 x 1 3/4	8	1 1/8 x 1 1/2	2	1/8 x 1 1/4	10	1 1/8 x 3 3/8
	<b>15V</b>	250	1 1/8 x 1 3/4	12	1 1/8 x 1 3/4	4	1 1/8 x 1 1/2	12	1 1/8 x 3 3/8
100	1 1/8 x 1 1/2	500	1 1/8 x 3 3/8	16	1 1/8 x 1 1/2	8	1 1/8 x 1 1/2	16	1 1/8 x 3 3/8
250	1 1/8 x 2 1/4		<b>150V</b>	20	1 1/8 x 1 1/2	10	1 1/8 x 1 3/4	20	1 1/8 x 3 3/8
500	1 1/8 x 2 1/4	4	1/8 x 1 1/4	30	1 1/8 x 2 1/4	12	1 1/8 x 1 1/2	8	1 1/8 x 3 3/8
1000	1 1/8 x 3 3/4	8	1 1/8 x 1 1/4	40	1 1/8 x 2 1/4	16	1 1/8 x 1 3/4	10	1 1/8 x 3 3/8
	<b>25V</b>	10	1 1/8 x 1 1/4	50	1 1/8 x 2 1/4	20	1 1/8 x 1 3/4	12	1 1/8 x 3 3/8
10	1/8 x 1 1/4	12	1 1/8 x 1 1/4	60	1 1/8 x 2 1/4	30	1 1/8 x 2 1/4	16	1 1/8 x 3 3/8
16	1/8 x 1 1/4	16	1 1/8 x 1 1/2	100	1 1/8 x 3 3/4	40	1 1/8 x 2 1/2		<b>700V</b>

Capacitors

**AEROVOX**

Resistors

**ELECTROLYTICS — (Continued)**

**TYPE PRS — DUALS**

Cap. Mfd.	Size	Cap. Mfd.	Size
<b>25V</b>			
10-10	$\frac{1}{16}$ x $1\frac{1}{4}$	<b>200V</b>	
20-20	$\frac{1}{16}$ x $1\frac{1}{4}$		
10-10	$\frac{1}{16}$ x $1\frac{1}{2}$		
<b>50V</b>			
10-10	$\frac{1}{16}$ x $1\frac{1}{2}$	<b>250V</b>	
8-8	$\frac{1}{16}$ x $1\frac{3}{8}$		
16-8	$\frac{1}{16}$ x $2\frac{1}{4}$		
<b>150V</b>			
20-10	$\frac{1}{16}$ x $1\frac{1}{2}$	16-8	$\frac{1}{16}$ x $1\frac{3}{8}$
20-20	$\frac{1}{16}$ x $1\frac{3}{8}$	16-16	$\frac{1}{16}$ x $2\frac{1}{4}$
30-20	$\frac{1}{16}$ x $2\frac{1}{4}$	20-20	$\frac{1}{16}$ x $2\frac{1}{4}$
30-30	$\frac{1}{16}$ x $1\frac{3}{4}$	30-30	$\frac{1}{16}$ x $2\frac{1}{4}$
40-20	$\frac{1}{16}$ x $1\frac{3}{8}$	<b>450V</b>	
40-40	$\frac{1}{16}$ x $2\frac{1}{4}$		
50-30	$\frac{1}{16}$ x $2\frac{1}{4}$		
50-50	$\frac{1}{16}$ x $2\frac{1}{4}$	8-8	$\frac{1}{16}$ x $2\frac{1}{4}$
80-20	$\frac{1}{16}$ x $2\frac{1}{4}$	10-10	$\frac{1}{16}$ x $2\frac{1}{4}$
80-40	$\frac{1}{16}$ x $2\frac{3}{8}$	16-8	$\frac{1}{16}$ x $2\frac{1}{4}$
80-50	$\frac{1}{16}$ x $2\frac{3}{8}$	16-16	$\frac{1}{16}$ x $2\frac{1}{4}$
100-100	$\frac{1}{16}$ x $3\frac{1}{4}$	20-20	$\frac{1}{16}$ x $2\frac{1}{4}$

**TYPE PRS — TRIPLES**

Cap. Mfd.	Size	Cap. Mfd.	Size
<b>150V</b>			
20-20-20	$\frac{1}{16}$ x $1\frac{3}{4}$	40-40-20	$\frac{1}{16}$ x $2\frac{1}{4}$
30-20-10	$\frac{1}{16}$ x $1\frac{3}{4}$	40-40-40	$\frac{1}{16}$ x $2\frac{1}{4}$
30-30-20	$\frac{1}{16}$ x $1\frac{3}{4}$	50-30-10	$\frac{1}{16}$ x $2\frac{1}{4}$
30-30-30	$\frac{1}{16}$ x $2\frac{1}{4}$	50-30-20	$\frac{1}{16}$ x $2\frac{1}{2}$
40-20-20	$\frac{1}{16}$ x $2\frac{1}{4}$	80-40-20	$\frac{1}{16}$ x $2\frac{1}{2}$
40-30-20	$\frac{1}{16}$ x $2\frac{1}{4}$	<b>450V</b>	
		10-10-10	$\frac{1}{16}$ x $2\frac{1}{4}$

**TYPE PRS — MULTIPLES**

Cap. Mfd.	VDCW	Size
30-20/100	150/25	$\frac{1}{16}$ x $2\frac{1}{4}$
40-30/20	150/25	$\frac{1}{16}$ x $2\frac{1}{4}$
50-30/100	150/25	$\frac{1}{16}$ x $2\frac{1}{4}$
50-30-250	150/25	$\frac{1}{16}$ x $2\frac{3}{4}$
50-50/20	150/25	$\frac{1}{16}$ x $2\frac{1}{4}$
40-40/250	150/10	$\frac{1}{16}$ x $2\frac{1}{4}$
20-20/20	150/25	$\frac{1}{16}$ x $1\frac{3}{4}$
30-20/20	150/25	$\frac{1}{16}$ x $1\frac{3}{4}$
40-20/20	150/25	$\frac{1}{16}$ x $1\frac{3}{4}$
40-40/20	150/25	$\frac{1}{16}$ x $1\frac{3}{4}$
40-40/100	150/25	$\frac{1}{16}$ x $2\frac{1}{4}$
50-30/20	150/25	$\frac{1}{16}$ x $1\frac{3}{4}$
80-20/100	150/25	$\frac{1}{16}$ x $2\frac{1}{4}$
80-40/20	150/25	$\frac{1}{16}$ x $2\frac{1}{4}$
20-20/20	450/25	$\frac{1}{16}$ x $2\frac{3}{4}$

**TYPE PRS — B**

Cap. Mfd.	Size	List Price	Cap. Mfd.	Size	List Price
<b>150V</b>					
20-20	1 x $2\frac{1}{2}$	2.05	16-16	1 x 3	2.20
20-40	1 x 3	2.20	<b>450V</b>		
<b>250V</b>					
8-16	1 x $2\frac{1}{2}$	2.10	8-8	1 x 3	2.15
			8-16	$1\frac{1}{8}$ x $3\frac{1}{2}$	2.45
			16-16	$1\frac{1}{8}$ x $3\frac{1}{2}$	2.80

**TYPE PRS — AC Rated — NP-PRS**

Cap. Mfd.	Size	Cap. Mfd.	Size	Cap. Mfd.	Size		
<b>10 VAC</b>							
8	$\frac{1}{16}$ x $1\frac{1}{2}$	<b>15 VNP</b>		40	$\frac{1}{16}$ x $2\frac{1}{4}$		
<b>25 VAC</b>							
20	$\frac{1}{16}$ x $1\frac{1}{2}$						
<b>TYPE NP-PRS Non-Polarized</b>							
<b>3 VNP</b>							
1000	$\frac{1}{16}$ x $2\frac{1}{4}$	2	$\frac{1}{16}$ x $1\frac{1}{2}$	2	$\frac{1}{16}$ x $1\frac{1}{4}$		
<b>6 VNP</b>							
500	$\frac{1}{16}$ x $2\frac{1}{4}$	10	$\frac{1}{16}$ x $1\frac{3}{8}$	5	$\frac{1}{16}$ x $1\frac{3}{4}$		
<b>10 VNP</b>							
25	$\frac{1}{16}$ x $1\frac{1}{4}$	50	$\frac{1}{16}$ x $1\frac{1}{2}$	10	$\frac{1}{16}$ x 2		
50	$\frac{1}{16}$ x $1\frac{1}{2}$	100	$\frac{1}{16}$ x $1\frac{3}{4}$	10	$\frac{1}{16}$ x 2		
450	$\frac{1}{16}$ x $2\frac{1}{4}$	<b>30 VNP</b>		10	$\frac{1}{16}$ x 2		
500	$\frac{1}{16}$ x $1\frac{3}{4}$	20	$\frac{1}{16}$ x $1\frac{1}{2}$	10	$\frac{1}{16}$ x 2		
<b>50 VNP</b>							
		2	$\frac{1}{16}$ x $1\frac{1}{4}$	4	$\frac{1}{16}$ x $1\frac{1}{2}$		
		4	$\frac{1}{16}$ x $1\frac{1}{4}$				



**TYPE SRE "BANTAM" METAL TUBULAR ELECTROLYTICS**

Smaller than the PRS, the SRE capacitor handles full-sized loads and is available in a wide range of capacitances and voltages. Ideal for cramped and limited space applications in hearing aids, personal portable radios, TV receivers and instruments. They are especially useful in low-voltage miniaturized circuits. Hermetically-sealed in aluminum cans and furnished with a cardboard insulating sleeve. Negative grounded to can.

Cap. Mfd.	Size	Cap. Mfd.	Size	Cap. Mfd.	Size		
<b>3V</b>							
25	$\frac{3}{8}$ x 1	<b>12V</b>		1	$\frac{3}{8}$ x 1		
50	$\frac{3}{8}$ x 1						
100	$\frac{3}{8}$ x 1						
200	$\frac{3}{8}$ x $1\frac{1}{8}$	100	$\frac{1}{2}$ x 1	2	$\frac{3}{8}$ x 1		
300	$\frac{1}{2}$ x $1\frac{1}{8}$	200	$\frac{1}{2}$ x $1\frac{3}{8}$	5	$\frac{3}{8}$ x 1		
500	$\frac{1}{2}$ x $1\frac{3}{8}$	<b>15V</b>		10	$\frac{3}{8}$ x 1		
<b>6V</b>							
5	$\frac{3}{8}$ x 1						
25	$\frac{3}{8}$ x 1	100	$\frac{1}{2}$ x $1\frac{1}{8}$	15	$\frac{3}{8}$ x $1\frac{1}{8}$		
50	$\frac{3}{8}$ x 1	<b>25V</b>		25	$\frac{1}{2}$ x 1		
100	$\frac{1}{2}$ x $1\frac{1}{8}$						
250	$\frac{1}{2}$ x $1\frac{1}{8}$						
		5	$\frac{3}{8}$ x 1	10	$\frac{3}{8}$ x 1		
		10	$\frac{3}{8}$ x 1	5	$\frac{3}{8}$ x 1		
		20	$\frac{3}{8}$ x 1	10	$\frac{3}{8}$ x $1\frac{1}{8}$		
		25	$\frac{3}{8}$ x 1	15	$\frac{1}{2}$ x $1\frac{1}{8}$		
		50	$\frac{1}{2}$ x 1	20	$\frac{1}{2}$ x $1\frac{3}{8}$		
		100	$\frac{1}{2}$ x $1\frac{1}{8}$	25	$\frac{1}{2}$ x $1\frac{3}{8}$		

Capacitors

**AEROVOX**

Resistors

**ELECTROLYTICS — (Continued)**



**TYPE PWE "PEE-WEE"  
CERAMIC-CASED  
ELECTROLYTIC  
CAPACITORS**

This construction provides a most effective moisture barrier and insures maximum life. With the exception of the metal-cased, hermetically-sealed unit, the Type PWE capacitor offers the best humidity protection available.

These tiny capacitors are capable of handling full-sized loads and are rugged enough for industrial usage. They are especially suitable for limited space applications in transistorized radios, hearing-aids, instruments, etc.

Aerovox presents a full line of miniature ceramic-cased electrolytic capacitors. These miniature units are encased in dense steatite tubes with a special Aerovox plastic end-fill which binds to the ceramic case.

Operating temperature range is minus 30°C/plus 65°C. Capacitance at 25°C is minus 10%/plus 250%.

Capacity Mfds.	3 VDCW		6 VDCW		10 VDCW		25 VDCW		50 VDCW	
	Type No.	Size	Type No.	Size	Type No.	Size	Type No.	Size	Type No.	Size
1	PWE 3001	A	PWE 6001	A	PWE 10001	A	PWE 25001	A	*PWE 50001	A
2	PWE 3002	A	PWE 6002	A	PWE 10002	A	PWE 25002	A	*PWE 50002	A
3	PWE 3003	A	PWE 6003	A	PWE 10003	A	PWE 25003	A	PWE 50003	A
5	PWE 3005	A	*PWE 6005	A	PWE 10005	A	*PWE 25005	A	*PWE 50005	B
8	PWE 3008	A	PWE 6008	A	PWE 10008	A	PWE 25008	A	PWE 50008	C
10	PWE 3010	A	*PWE 6010	A	PWE 10010	A	*PWE 25010	B	*PWE 50010	C
15	PWE 3015	A	*PWE 6015	A	*PWE 10015	A	*PWE 25015	C	*PWE 50015	D
20	PWE 3020	A	*PWE 6020	A	*PWE 10020	B	*PWE 25020	C	*PWE 50020	E
25	*PWE 3025	A	*PWE 6025	B	*PWE 10025	C	*PWE 25025	C	*PWE 50025	F
30	*PWE 3030	A	*PWE 6030	B	PWE 10030	C	PWE 25030	D		
40	*PWE 3040	A	*PWE 6040	C	PWE 10040	C	PWE 25040	D		
50	*PWE 3050	B	*PWE 6050	C	*PWE 10050	D	*PWE 25050	E		
100	*PWE 3100	C	*PWE 6100	E	*PWE 10100	F	*PWE 25100	G		
200	*PWE 3200	E	*PWE 6200	F						
250	*PWE 3250	F	*PWE 6250	G						
300	*PWE 3300	F								
500	*PWE 3500	G								

\* Stock items

Code	Size DXL	Code	Size DXL
A	1/4x3/4	E	3/8x1
B	1/4x7/8	F	3/8x1 1/4
C	3/8x3/4	G	3/8x2
D	3/8x7/8		

**TYPE XPP — MINIATURIZED METAL-CASED ELECTROLYTICS**

OPERATING TEMPERATURE RANGE — minus 20°C to plus 65°C.

CAPACITANCE AT 25°C — minus 10%—plus 250%.

RC PRODUCT AT 25°C — 120 CPS: 500 maximum.  
RC product (rated capacitance in mfd. x equivalent series resistance in ohms).

MAXIMUM LEAKAGE:  
.15 microamperes/mfd/volt: below 10 volt rating.  
.10 microamperes/mfd/volt: above 10 volt rating.

Aerovox now extends its line of electrolytic capacitors to include a new series of miniature hermetically-sealed, metal-cased, tubular aluminum electrolytic capacitors.

Designed specifically for those applications where size and weight are at a premium and must be kept at a minimum, Aerovox XPP electrolytics are ideal for all transistorized assemblies such as personal portable radios, hearing aids, instruments and many other miniaturized electronic apparatus. These new units offer the very latest technical advances with regard to extended life and provide for relatively high capacitance at low voltage.



Cap. Mfds.	3VDCW		6VDCW		10VDCW		12VDCW		15VDCW		25VDCW	
	Type No.	Size	Type No.	Size	Type No.	Size	Type No.	Size	Type No.	Size	Type No.	Size
1	XPP-3001	A	*XPP-6001	A	XPP-10001	A	XPP-12001	A	XPP-15001	A	XPP-25001	B
2	*XPP-3002	A	*XPP-6002	A	XPP-10002	A	XPP-12002	A	XPP-15002	A	XPP-25002	B
3	XPP-3003	A	*XPP-6003	A	XPP-10003	B	XPP-12003	B	XPP-15003	C	XPP-25003	C
4	XPP-3004	A	*XPP-6004	B	XPP-10004	B	XPP-12004	B	XPP-15004	C	XPP-25004	C
5	XPP-3005	A	*XPP-6005	B	XPP-10005	B	*XPP-12005	B	*XPP-15005	C	*XPP-25005	C
6	*XPP-3006	A	XPP-6006	B	XPP-10006	C	XPP-12006	C	XPP-15006	C	*XPP-25006	C
8	XPP-3008	B	*XPP-6008	B	XPP-10008	C	XPP-12008	C	*XPP-15008	C	*XPP-25008	E
10	*XPP-3010	C	*XPP-6010	C	*XPP-10010	C	*XPP-12010	C	*XPP-15010	C	*XPP-25010	E
15	XPP-3015	C	*XPP-6015	C	*XPP-10015	C	XPP-12015	C	XPP-15015	D	*XPP-25015	F
20	XPP-3020	C	*XPP-6020	D	*XPP-10020	D	XPP-12020	D	*XPP-15020	D	*XPP-25020	F
25	*XPP-3025	C	*XPP-6025	D	*XPP-10025	E	XPP-12025	E	XPP-15025	E	XPP-25025	F
30	XPP-3030	D	*XPP-6030	E	XPP-10030	E	XPP-12030	E	*XPP-15030	F		
40	*XPP-3040	D	*XPP-6040	E	XPP-10040	E	XPP-12040	F	XPP-15040	F		
50	*XPP-3050	D	*XPP-6050	E	*XPP-10050	E	XPP-12050	F	XPP-15050	F		
60	XPP-3060	E	*XPP-6060	F								
100	*XPP-3100	F										

\* Stock items.

Size			
A	3/16x1/2	D	1/4x3/4
B	3/16x5/8	E	3/8x5/8
C	1/4x3/4	F	3/8x3/4



**TYPE FF  
Photo-Flash Capacitors**

Highest purity materials make this unit possible. Due to selective choice of materials and quality-control-conscious production methods these units are furnished for the rugged photo-flash application calling for lowest leakage requirements.

Units are furnished in molded black plastic container, highly resistant to moisture and oil. With screw-lug terminals for rapid installation. Surge voltages and time duty cycles are as listed in RETMA Specification No. RS-154.

Type Number	Cap. Mfd.	Working Voltage	Max. Surge Voltage	Watt Secs.	Size
FF-1	300	450	525	30	2 1/16 x 4 3/8
FF-2	525	450	525	53	2 1/16 x 4 3/8



Capacitors

**AEROVOX**

Resistors

**ELECTROLYTICS — (Continued)**



**TYPE AEP  
Plug-in  
Electrolytic Capacitors**

Hermetically sealed, dry electrolytic capacitor furnished in round, aluminum can and 4-pin, octal-base mounting. For quick changes, readily removed and replaced in a standard octal-base tube socket. For use where continuous service is important. They are ideally suited for experimental testing, juke boxes and communication receiver uses. These units are the commercial equivalents of Type CE51's, 2's and 3's, as listed in MIL Specification MIL C62A.

Operating temperature to +65°C. Quadruple element units furnished with ground lug for cathode connection.

Type	Capacity Mfd.	VDCW	Diam. x Hght.
<b>SINGLE ELEMENT UNITS</b>			
AEP400P	2000	15	1 3/8 x 2 1/2
AEP5A	25	25	1 1/2 x 2 1/2
AEP4D	20	150	1 1/2 x 2 1/2
AEP8D	40	150	1 1/2 x 2 1/2
AEP2J	10	450	1 1/2 x 2 1/2

Type	Capacity Mfd.	VDCW	Diam. x Hght.
AEP3J	15	450	1 1/2 x 2 1/2
AEP4J	20	450	1 1/2 x 2 1/2
AEP6J	30	450	1 1/2 x 2 1/2
AEP8J	40	450	1 1/2 x 2 1/2
AEP16J	80	450	1 3/8 x 3 1/2
AEP2L	10	600	1 3/8 x 4 1/4
<b>DUAL ELEMENT UNITS</b>			
AEP44D	20-20	150	1 1/2 x 2 1/2
AEP88D	40-40	150	1 1/2 x 2 1/2
AEP22J	10-10	450	1 1/2 x 2 1/2
AEP44J	20-20	450	1 3/8 x 2 1/2
AEP88J	40-40	450	1 3/8 x 3
<b>TRIPLE ELEMENT UNITS</b>			
AEP444D	20-20-20	150	1 1/2 x 2 1/2
AEP884D4A	40-40-20	150/25	1 1/2 x 2 1/2
AEP222J	10-10-10	450	1 1/2 x 2 1/2
AEP22J4A	10-10-20	450/25	1 1/2 x 2 1/2
AEP44J4A	20-20-20	450/25	1 3/8 x 2 1/2
AEP444J	20-20-20	450	1 3/8 x 3
AEP822J	40-10-10	450	1 3/8 x 3
<b>QUADRUPLE ELEMENT UNITS</b>			
AEPG444D4A	20-20-20/20	150/25	1 3/8 x 2 1/2
AEPG2222J	10-10-10-10	450	1 3/8 x 2 1/2
AEPG444J4A	20-20-20/20	450/25	1 3/8 x 3



**TYPE G  
Insulated  
Screw-Mounting Capacitors**

Hermetically-sealed aluminum can unit, threaded cover size 7/8—16 with hex nut and washer for convenient mounting on chassis. Washer can be used to insulate can from chassis. Terminals molded in cover. Cathode connection through terminal in cover. These units are the equivalent of case style CE41 and 42 of specification MIL C62A.

\* To be discontinued when present stock is depleted.

Cap. Mfd.	Size—DxH	List Price	Cap. Mfd.	Size—DxH
<b>SINGLE ELEMENT</b>				
<b>TYPE G475</b>				
475 VDCW	525V. Surge Peak		20	1 3/8 x 2 1/4
*4	1 3/8 x 2 1/4	\$4.05	*30	1 3/8 x 2 1/4
*8	1 3/8 x 2 1/4	4.20	40	1 3/8 x 2 3/4
<b>TYPE G450</b>				
450 VDCW	500V. Surge Peak		80	1 3/8 x 4 1/4
*4	1 3/8 x 2 1/4	4.00	<b>DUAL ELEMENT</b>	
*8	1 3/8 x 2 1/4	4.00	<b>TYPE G450</b>	
10	1 3/8 x 2 1/4	4.20	*8-8	1 3/8 x 2 1/4
*12	1 3/8 x 2 1/4	4.30	10-10	1 3/8 x 2 1/4
*16	1 3/8 x 2 1/4	4.35	*12-12	1 3/8 x 2 1/4
			*16-8	1 3/8 x 2 1/4
			*16-16	1 3/8 x 2 3/4
			20-20	1 3/8 x 2 3/4



**TYPE GL and GLS**

These ever-popular inverted-mounting, aluminum can units, are furnished with the same high purity materials as the more expensive type E and G. Two separate color-coded leads 4" long, for each section. Inverted chassis mounting can be made, using palnut and threaded neck. Threaded neck size 5/8—18.

Type GL is furnished in 1 3/8" diameter.

Type GLS is similar, except furnished in 1" diameter cans for more compact assemblies.

TYPE GL SINGLE ELEMENT		Cap. Mfd.	Size—DxH
Cap. Mfd.	Size—DxH		
<b>TYPE GL600</b>			
600 VDCW	750V. Surge Peak	16	1 3/8 x 4 1/2
4	1 3/8 x 4	<b>TYPE GL475</b>	
8	1 3/8 x 4 1/2	475 VDCW	525V. Surge Peak
		8	1 3/8 x 3
		12	1 3/8 x 3
		16	1 3/8 x 3

Cap. Mfd.	Size—DxH	Cap. Mfd.	Size—DxH
<b>TYPE GL450</b>			
450 VDCW	500V. Surge Peak	16-16	1 3/8 x 4
4	1 3/8 x 3	20-20	1 3/8 x 4
8	1 3/8 x 3	<b>TRIPLE ELEMENT</b>	
10	1 3/8 x 3	<b>TYPE GL450</b>	
12	1 3/8 x 3	8-8-8	1 3/8 x 4
16	1 3/8 x 3	10-10-10	1 3/8 x 4
20	1 3/8 x 3	<b>TYPE GLS SINGLE ELEMENT</b>	
30	1 3/8 x 3	<b>TYPE GLS450</b>	
40	1 3/8 x 3	450 VDCW	500V. Surge Peak
80	1 3/8 x 4	4	1 x 2 1/8
<b>DUAL ELEMENT</b>			
<b>TYPE GL475</b>			
8-8	1 3/8 x 4	8	1 x 2 1/8
<b>TYPE GL450</b>			
8-8	1 3/8 x 4	12	1 x 3 1/4
10-10	1 3/8 x 4	16	1 x 3 1/4
12-12	1 3/8 x 4	<b>DUAL ELEMENT</b>	
16-8	1 3/8 x 4	<b>TYPE GLS450</b>	
		8-8	1 3/8 x 3

Capacitors

**AEROVOX**

Resistors

**ELECTROLYTICS — (Continued)**



**TYPE E  
Hermetically-Sealed,  
Aluminum, Round  
Metal-Cased Capacitors**

Can be mounted with terminals upright or inverted by use of a ring-type clamp provided with unit. Can is floating, thus having two terminals on single-section capacitors, three on duals, and four on triples.  
These units are the equivalent of case style CE31, 2 and 3 of MIL Specification C62A.

**SINGLE ELEMENT**

Capacity Mfd.	Can Size — Dia. x Hght.
	<b>475 VDCW</b>
*4	1 3/8 x 2 1/4
	<b>450 VDCW</b>
*4	1 3/8 x 2 1/4
*8	1 3/8 x 2 1/4
10	1 x 2 1/4
*12	1 3/8 x 2 1/4
*16	1 3/8 x 2 1/4
20	1 x 2 3/4
*30	1 3/8 x 2 3/4
40	1 3/8 x 2 3/4
80	1 3/8 x 4 1/4
	<b>250 VDCW</b>
500	2 x 4 1/8
	<b>50 VDCW</b>
10	1 x 1 3/4
25	1 x 1 3/4
	<b>25 VDCW</b>
10	1 x 1 3/4
25	1 x 1 3/4
	<b>1 VNP</b>
1250	1 3/8 x 4 1/4

**DUAL ELEMENT**

	<b>450 VDCW</b>
*8-8	1 3/8 x 2 1/4
10-10	1 3/8 x 2 1/4
*12-12	1 3/8 x 2 1/4
*16-8	1 3/8 x 2 1/4
*16-16	1 3/8 x 2 3/4
20-20	1 3/8 x 2 3/4

**TRIPLE ELEMENT**

	<b>450 VDCW</b>
*8-8-8	1 3/8 x 2 1/4
10-10-10	1 3/8 x 2 1/4
	<b>350/50 VDCW</b>
30-30/50	1 3/8 x 4 1/4

**QUADRUPLE ELEMENT**

	<b>350/150 VDCW</b>
20-10/5-5	1 3/8 x 4 1/4

\* To be discontinued when present stock is depleted.



**TYPE WR  
Replacement for  
Wet Electrolytic**

Dry electrolytic for replacement of wet electrolytic units. Furnished in round aluminum cans, the range of capacities covers most applications in standard radio receivers and other equipment originally using wet type electrolytic capacitors. 450V. D. C.

Capacity Mfd.	Replacement for	Dia. x Hght.
10	4 to 12 mfd.	1 3/8 x 3
20	16 to 20 mfd.	1 3/8 x 3
30	20 to 30 mfd.	1 3/8 x 3
40	30 to 40 mfd.	1 3/8 x 3

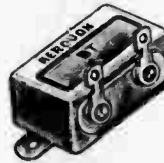


**TYPE HCLV  
High Capacity  
Low Voltage**

Type HCLV Capacitors are high-capacity, low-voltage units for use in electric fence control, motion picture, sound equipment, and other low-voltage applications.

Units are furnished in round, hermetically-sealed aluminum cans and supplied with a cardboard outer insulating tube and mounting ring.

Capacity Mfd.	Dia. x Hght.
	<b>TYPE HCLV12 — 12 VDCW</b>
500	1 3/8 x 2 1/4
1000	1 3/8 x 2 1/4
2000	1 3/8 x 3 1/8
3000	1 3/8 x 4 1/8
4000	1 1/2 x 4 1/8
	<b>TYPE HCLV18 — 18 VDCW</b>
500	1 3/8 x 2 1/8
1000	1 3/8 x 2 1/8
2000	1 3/8 x 3 1/8
4000	1 1/2 x 4 1/8
	<b>TYPE HCLV25 — 25 VDCW</b>
500	1 3/8 x 2 1/8
1000	1 3/8 x 3 1/8
2000	1 3/8 x 4 1/8
3000	1 3/4 x 4 1/8
4000	2 x 4 1/8
	<b>TYPE HCLV50 — 50 VDCW</b>
1000	1 3/8 x 4 1/8
2000	1 3/4 x 4 1/8
3000	2 x 4 1/8
4000	2 1/2 x 4 1/8



**TYPE BT  
Drawn-Case "Bathtub"  
Electrolytic Capacitors**

Hermetically-sealed units designed for rigid mounting in minimum space. Of sturdy construction, these high-quality units are equivalent to the case style CE63 of MIL Specification C62A.

Capacity Mfd.	L x W x H
	<b>TYPE BT500 — 500 VDCW</b>
4	2 x 2 x 1 1/8
8	2 x 2 x 1 1/8
	<b>TYPE BT450 — 450 VDCW</b>
8	1 3/4 x 1 x 1
12	1 3/4 x 1 1/4 x 1
16	2 x 1 3/4 x 1
	<b>TYPE BT350 — 350 VDCW</b>
8	1 3/4 x 1 x 7/8
12	1 3/4 x 1 x 7/8
16	1 3/4 x 1 x 1
20	1 3/4 x 1 1/4 x 1 1/8
	<b>TYPE BT150 — 150 VDCW</b>
8	1 3/4 x 1 x 7/8
12	1 3/4 x 1 x 7/8
16	1 3/4 x 1 x 7/8
24	1 3/4 x 1 x 7/8
30	1 3/4 x 1 x 1
40	1 3/4 x 1 x 1
	<b>TYPE BT50 — 50 VDCW</b>
10	1 3/4 x 1 x 7/8
25	1 3/4 x 1 x 7/8
50	1 3/4 x 1 x 7/8
	<b>TYPE BT25 — 25 VDCW</b>
10	1 3/4 x 1 x 7/8
25	1 3/4 x 1 x 7/8
50	1 3/4 x 1 x 7/8

Capacitors

**AEROVOX**

Resistors

**P A P E R**

**TYPE P84CM**

† **DURAMIC**

**Ceramic-Cased  
Tubular Capacitors**



New ceramic (dense steatite) encased paper tubular for performance above that of conventional paper tubulars. New thermosetting end-seal for exceptional humidity protection — 250 hour humidity test as per REC-118. Firmly imbedded terminals will not work loose or pull out. Operating temps are —55°C to +85°C. Meets all requirements of RETMA Spec. REC-118, hi-temp range, class M.

Cap. Mfd.	P284CM 200 VDCW Size	P484CM 400 VDCW Size	P684CM 600 VDCW Size	P1084CM 1000 VDCW Size	P1684CM 1600 VDCW Size	P2584CM 2500 VDCW Size	P6084CM 6000 VDCW Size
	Dia. x Lgth.	Dia. x Lgth.	Dia. x Lgth.	Dia. x Lgth.	Dia. x Lgth.	Dia. x Lgth.	Dia. x Lgth.
.0001							
.00025						3/8 x 1 1/2	3/8 x 1 3/4
.0005						3/8 x 1 1/2	3/8 x 1 3/4
.001			3/8 x 1			3/8 x 1 1/2	3/8 x 1 3/4
.0015			3/8 x 1	3/8 x 1	3/8 x 1 1/4		1/2 x 1 3/4
.002			3/8 x 1	3/8 x 1	3/8 x 1 1/4		
.0022			3/8 x 1	3/8 x 1	3/8 x 1 1/4		
.003			3/8 x 1	3/8 x 1	3/8 x 1 1/4		
.0033			3/8 x 1	3/8 x 1	3/8 x 1 1/4	3/8 x 1 1/2	5/8 x 2 1/8
.004			3/8 x 1	3/8 x 1	3/8 x 1 1/4		
.0047			3/8 x 1	3/8 x 1 1/4	3/8 x 1 1/4		
.005			3/8 x 1	3/8 x 1 1/4	3/8 x 1 1/4		
.006			3/8 x 1	3/8 x 1 1/4	3/8 x 1 1/2	1/2 x 1 1/8	3/4 x 2 1/8
.0068		3/8 x 1	3/8 x 1 1/4	3/8 x 1 1/4	3/8 x 1 1/4		
.01	3/8 x 1	3/8 x 1	3/8 x 1 1/4	3/8 x 1 1/4	3/8 x 1 1/4		
.015	3/8 x 1 1/4	3/8 x 1 1/4	3/8 x 1 1/4	3/8 x 1 1/4	3/8 x 1 1/4	5/8 x 1 7/8	1 1/8 x 2 1/8
.02	3/8 x 1 1/4	3/8 x 1 1/4	3/8 x 1 1/4	3/8 x 1 1/4	3/8 x 1 1/4		
.022	3/8 x 1 1/4	3/8 x 1 1/4	3/8 x 1 1/4	3/8 x 1 1/4	3/8 x 1 1/4		
.03	3/8 x 1 1/4	3/8 x 1 1/4	3/8 x 1 1/4	3/8 x 1 1/4	3/8 x 1 1/4		
.033	3/8 x 1 1/4	3/8 x 1 1/4	3/8 x 1 1/4	3/8 x 1 1/4	3/8 x 1 1/4		
.047	3/8 x 1 1/4	3/8 x 1 1/4	3/8 x 1 1/4	3/8 x 1 1/4	3/8 x 1 1/4		
.05	3/8 x 1 1/4	3/8 x 1 1/4	3/8 x 1 1/4	3/8 x 1 1/4	3/8 x 1 1/4		
.068	3/8 x 1 1/4	3/8 x 1 1/4	3/8 x 1 1/4	3/8 x 1 1/4	3/8 x 1 1/4		
.1	1/2 x 1 1/8	1/2 x 1 1/8	3/8 x 1 7/8	3/8 x 1 7/8	3/8 x 1 7/8		
.15	1/2 x 1 1/8	1/2 x 1 1/8	3/8 x 1 7/8	3/8 x 1 7/8	3/8 x 1 7/8		
.2	5/8 x 1 7/8	5/8 x 1 7/8	3/4 x 2	3/4 x 2	3/4 x 2		
.22	5/8 x 1 7/8	5/8 x 1 7/8	3/4 x 2	3/4 x 2	3/4 x 2	1 1/8 x 2	*1 1/8 x 2 5/8
.25	5/8 x 1 7/8	5/8 x 1 7/8	3/4 x 2	3/4 x 2	3/4 x 2		
.33	3/4 x 2	3/4 x 2	1 x 2 1/4	1 x 2 1/4	1 x 2 1/4		
.47	1 1/8 x 2 1/4	1 1/8 x 2 1/4	1 x 2 1/4	1 x 2 1/4	1 x 2 1/4		
.5	1 1/8 x 2 1/4	1 1/8 x 2 1/4	1 x 2 1/4	1 x 2 1/4	1 x 2 1/4		
.68	1 1/8 x 2	1 x 2 1/4	1 x 2 1/4	1 x 2 1/4	1 x 2 1/4		
1.0	1 x 2 1/4	1 x 2 1/8	*1 1/8 x 3				

† Trade Mark

SPECIAL CLOSE TOLERANCE UNITS FOR HORIZONTAL OSCILLATOR CIRCUIT.				
P84CM — Tolerance ± 10%				
Cap. Mfd.	600 VDCW Size		1000 VDCW Size	
	Dia. x Lgth.	Dia. x Lgth.	Dia. x Lgth.	Dia. x Lgth.
.0012	3/8 x 1		3/8 x 1	
.018	3/8 x 1 1/4		1/2 x 1 1/2	
.025	3/8 x 1 1/4		1/2 x 1 1/2	
.027	3/8 x 1 1/2		1/2 x 1 1/2	
.033	1/2 x 1 1/8		1/2 x 1 1/8	
.039	1/2 x 1 1/8		1/2 x 1 1/8	
.057	3/8 x 1 1/8		1/2 x 1 1/8	

\* Will be furnished in cardboard tube Type P84M.

**"AUTOPASS" Type P-151N Vertical Mounting Bakelite-Cased Paper Capacitors**



Aerovox Type P151N capacitors were specifically designed and developed for use in conjunction with printed-wiring assemblies where it is highly desirable to mount capacitors at right angles to the mounting surface thereby conserving valuable space.

Aerolene impregnated and assembled into a molded phenolic case, Type P151N capacitors are then sealed with a thermo-setting end-seal. The end-seal surface is below the outside edges of the plastic case, permitting the capacitor to be mounted flush against the mounting surface. The leads of these capacitors are stiff, and critical spacing is closely held to facilitate their use in mechanized assemblies. Outside foil is identified by wire lead nearest to edge of case or by a paint stripe on the case nearest the outside foil.

Cap. Mfd.	200 VDC Size		400 VDC Size		600 VDC Size	
	Dia. x Lgth.	Dia. x Lgth.	Dia. x Lgth.	Dia. x Lgth.	Dia. x Lgth.	Dia. x Lgth.
.001	3/8 x 1 1/2		3/8 x 1 1/2		3/8 x 1 1/2	
.0015	3/8 x 1 1/2		3/8 x 1 1/2		3/8 x 1 1/2	
.0022	3/8 x 1 1/2		3/8 x 1 1/2		3/8 x 1 1/2	
.0033	3/8 x 1 1/2		3/8 x 1 1/2		3/8 x 1 1/2	
.0047	3/8 x 1 1/2		3/8 x 1 1/2		3/8 x 1 1/2	
.0068	3/8 x 1 1/2		3/8 x 1 1/2		3/8 x 1 1/2	
.01	3/8 x 1 1/2		3/8 x 1 1/2		3/8 x 1 1/2	
.015	3/8 x 1 1/2		3/8 x 1 1/2		3/8 x 1 1/2	
.022	3/8 x 1 1/2		3/8 x 1 1/2		3/8 x 1 1/2	
.033	3/8 x 1 1/2		3/8 x 1 1/2		3/8 x 1 1/2	
.047	1/2 x 1 1/2		1/2 x 1 1/2		1/2 x 1 1/2	
.068	1/2 x 1 1/2		1/2 x 1 1/2		1/2 x 1 1/2	
.1	1/2 x 1 1/2		3/8 x 1 3/4		3/8 x 1 3/4	
.15	1/2 x 1 1/2		3/8 x 1 3/4		3/8 x 1 3/4	
.22	3/8 x 1 3/4		3/8 x 1 3/4		3/8 x 1 3/4	
.33	3/8 x 1 3/4		3/8 x 1 3/4		3/8 x 1 3/4	
.47	3/4 x 2 1/2		3/4 x 2 1/2		3/4 x 2 1/2	

Standard Tolerance ±20%. For ±10% Add 15% to Price.

Capacitors

**AEROVOX**

Resistors

**P A P E R**



**TYPE P88N**  
**† DURANITE**  
**Duranite Blue Moulded**  
**Tubular Capacitors**

Toughest capacitors ever offered for radio-electronic equipment, DURANITE capacitors. Design, impregnant, processing, and casing insure glove-fitting contact and seal throughout. DURANITE provides a permanent, non-varying, rock-hard casing, does not dry out, does not develop cracks or fissures. Pig-tail leads firmly imbedded, won't pull out, won't work loose. Moisture-proof; operate from sub-zero to over 212°F. Exposure to temperatures of 250°F. will not impair life or performance, no deterioration on the shelf. A white band around one end of the capacitor identifies the outside foil.

Cap. Mfd.	P288N	P488N	P688N	P1088N
	200 V	400 V	600 V	1000 V
.0001			A	
.00025			A	
.0004			A	
.0005			A	
.001	A	A	A	A
.0015	A	A	A	A
.002	A	A	A	A
.0022	A	A	A	A
.003	A	A	A	A
.0033	A	A	A	B
.004	A	A	A	B
.0047	A	A	A	B
.005	A	A	A	B
.006	A	A	B	B
.0068	A	A	B	B
.007	A	A	B	B
.0075	A	A	B	B
.008	A	A	B	B
.01	A	A	B	B
.015	A	B	B	D
.02	B	B	D	E
.022	B	B	D	E
.025	B	B	D	E
.03	B	B	D	E

Cap. Mfd.	P288N	P488N	P688N	P1088N
	200 V	400 V	600 V	1000 V
.033	B	B	E	E
.04	B	D	F	F
.047	B	D	E	F
.05	B	D	E	F
.06	D	E	F	F
.068	D	E	F	F
.075	D	E	F	F
.1	D	E	F	F
.15	E	F	F	F
.2	F	F	G	G
.22	F	F	G	G
.25	F	F	G	G
.27	F	G	H	H
.33	F	G	H	H
.47	F	G	H	H
.5	F	G	H	H
1.0	H	H		

Size	Length x Dia.	Size	Length x Dia.
A	1 1/8 x 1 1/2	E	1 5/8 x 1 7/8
B	1 3/8 x 1 1/2	F	2 x 2 1/2
		G	2 1/4 x 3/4
D	1 3/8 x 1 1/2	H	2 1/2 x 1

**TYPE P85N Miniaturized**  
**Aerolene Capacitors**



Miniaturized Aerolene (Hyvol N) Impregnated tubular units. Duranite endfill excludes moisture. Designed for personal radios, hearing aids and miniature assemblies requiring maximum performance in minimum size. Operating temperature range -30°C. to +100°C.

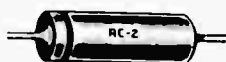
Standard Tolerance  
 Up to .0099 MFD +30%—20%  
 .01 MFD and up, ±20%

Cap. Mfd.	200 V	400 V	600 V
	.00025	1 3/64 x 1 1/32	1 3/64 x 2 1/32
.0005	1 3/64 x 1 1/32	1 3/64 x 2 1/32	1 3/64 x 2 1/32
.001	1 3/64 x 1 1/32	1 3/64 x 2 1/32	1 3/64 x 2 1/32
.0015	1 3/64 x 1 1/32	1 3/64 x 2 1/32	1 3/64 x 2 1/32
.002	1 3/64 x 1 1/32	1 3/64 x 2 1/32	1 3/64 x 2 1/32
.0022	1 3/64 x 1 1/32	1 3/64 x 2 1/32	1 3/64 x 2 1/32
.003	1 3/64 x 1 1/32	1 3/64 x 2 1/32	1 3/64 x 2 1/32
.0033	1 3/64 x 1 1/32	1 3/64 x 2 1/32	1 3/64 x 2 1/32
.004	1 3/64 x 1 1/32	1 3/64 x 2 1/32	1 3/64 x 2 1/32
.0047	1 3/64 x 1 1/32	1 3/64 x 2 1/32	1 3/64 x 2 1/32
.005	1 3/64 x 1 1/32	1 3/64 x 2 1/32	1 3/64 x 2 1/32
.006	1 3/64 x 1 1/32	1 3/64 x 2 1/32	2 1/64 x 2 1/32
.0068	1 3/64 x 1 1/32	1 3/64 x 2 1/32	2 1/64 x 2 1/32
.01	1 3/64 x 2 1/32	1 3/64 x 2 1/32	2 1/64 x 2 1/32
.015	1 3/64 x 2 1/32	1 3/64 x 2 1/32	2 1/64 x 1 1/32
.02	1 3/64 x 2 1/32	2 1/64 x 2 1/32	2 1/64 x 1 1/32
.022	1 3/64 x 2 1/32	2 1/64 x 2 1/32	2 1/64 x 1 1/32
.03	1 3/64 x 2 1/32	2 1/64 x 2 1/32	2 1/64 x 1 1/32
.033	2 1/64 x 2 1/32	2 1/64 x 1 1/32	2 1/64 x 1 1/32
.04	2 1/64 x 2 1/32	2 1/64 x 1 1/32	2 1/64 x 1 1/32
.047	2 1/64 x 2 1/32	2 1/64 x 1 1/32	2 1/64 x 1 1/32
.05	2 1/64 x 2 1/32	2 1/64 x 1 1/32	2 1/64 x 1 1/32
.068	2 1/64 x 1 1/32	2 1/64 x 1 1/32	2 1/64 x 1 1/32
.1	2 1/64 x 1 1/32	2 1/64 x 1 1/32	2 1/64 x 1 1/32

Note: Other capacities and voltage ranges available on special order.

Cap. Mfd.	100 VDCW
.25	.489 x 1 1/32
.50	.645 x 1 1/32

**TYPE RC**  
**Resonant Capacitors**



† Trade Mark

Resonant capacitors for adequate bypassing of IF circuits in order to keep IF frequencies from entering such circuits and causing troublesome squeals and howls. AEROVOX RESONANT CAPACITORS, Series RC, are available in conventional tubular design, wax impregnated and wax sealed as follows:

Catalog No.	Capacity Mfd.	VVDC	DXL
RC2	.05	400	1/2 x 1 1/8
RC3	.1	400	1/2 x 1 5/8
RC4	.2	400	3/4 x 1 7/8

Capacitors

**AEROVOX**

Resistors

**P A P E R**

**Type VBC Vibrator Buffer Capacitors**

These units are heavy-duty, Hyvol M impregnated, vibrator buffer capacitors in ceramic tubes, specifically designed for severe-service auto-radio applications.



Type	Cap. Mfd.	Size
VBC-2	.001	3/8 x 1 1/4
VBC-3	.002	3/8 x 1 1/2
VBC-4	.0022	3/8 x 1 1/2
VBC-5	.003	3/8 x 1 1/2
VBC-6	.0033	7/16 x 1 1/2
VBC-7	.004	7/16 x 1 1/2
VBC-8	.0047	7/16 x 1 1/2
VBC-9	.005	1 1/2 x 1 1/2
VBC-22	.006	1 1/2 x 1 1/2
VBC-23	.0068	1 1/2 x 1 1/2
VBC-24	.007	1 1/2 x 1 1/2

Type	Cap. Mfd.	Size
VBC-25	.0075	1 1/2 x 1 1/2
VBC-26	.008	1 1/2 x 1 1/2
VBC-27	.01	3/4 x 1 1/2
VBC-28	.015	5/8 x 1 3/4
VBC-29	.02	5/8 x 2
VBC-32	.025	5/8 x 2
VBC-33	.03	3/4 x 2
VBC-34	.05	1 1/4 x 2
VBC-35	.015-.015	1 1/4 x 2

**Vibrator "HASH" Capacitor VHC36**

.5 Mfd. 100 Volts WVDC 1 1/4 x 1 1/4

**AUTO-RADIO CAPACITORS**



Type	Cap. Mfd.
<b>SINGLE ELEMENT</b>	
Car Generators	
Type 1120	1.0
Type 1140	0.5
<b>DUAL ELEMENT</b>	
Type 1141	0.5-0.5
Ford Auto Radios	
Type 1144	0.5
For 1936 Models	
Type 1150	0.5

Type	Cap. Mfd.
<b>Motorola Auto Radios</b>	
Type 1466	.0008
<b>Ammeter Condenser</b>	
Type 1160	0.5
<b>Gas Gage Filter Condenser</b>	
Type 1143-G	0.05
<b>Oil Gage Filter Condenser</b>	
Type 1142-O	0.25

Note: All auto radio capacitors subject to Federal Excise Tax.

**F I L T E R S**

**R-F NOISE CAPACITANCE SUPPRESSORS**

These radio-noise suppression capacitors have been especially designed for use in aircraft, vehicular and industrial electric and electronic fields.

Primary application of the INA-116, INA-117, and INA-118, is as r-f bypass capacitors from line to ground in low voltage DC supply lines. These units are rated at full 150 VDC over temperature range of -55°C. to +71°C. and 60 VDC from -55°C. to +95°C.

Types INA-218, INA-219, INA-220 and INA-221 are feed-thru capacitors in which the effective section inductance is minimized by the so-called "duct-type" design. Significant reductions can often be realized in size, weight and in some instances, overall cost by the use of feed-thru capacitors as compared to the conventional r-f suppression filter designs. The feed-thru capacitors listed below may be used with good characteristics to 1000 megacycles. Operating temperature range is -55°C. to +85°C.



**BYPASS**  
INA-116, INA-117, INA-118



**FEED-THRU**  
INA-218, INA-219, INA-220, INA-221

Type	Maximum Voltage	Nom. Cap. Rating (Mfd.)	Case Size	Mounting Centers
INA-117	150 VDC	2.0	1 1/4 x 1 x 3/4	2 1/4
INA-116	150 VDC	4.0	1 1/4 x 1 x 3/4	2 1/4
INA-118	150 VDC	10.0	2 x 2 x 7/8	2 3/8
INA-218	115 VAC - 200 VDC	.01	7/16 x 1	1 3/16
INA-219	115 VAC - 200 VDC	.05	7/16 x 2 3/16	1 3/16
INA-220	115 VAC - 200 VDC	.1	3/4 x 1	1 1/4
INA-221	115 VAC - 200 VDC	.25	3/4 x 1 7/8	1 1/4

Capacitors

**AEROVOX**

Resistors

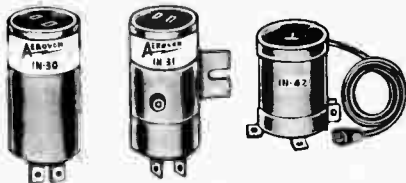
**INTERFERENCE FILTERS**



**TYPE IN-23.** Especially used for neon sign fixtures. Convenient mounting bracket. One filter for each fixture. Flexible leads. Also used on small motors. Size: 1 x 2 1/4 inches.

**TYPE IN-27.** Simple, inexpensive, plug-in unit where interference is slight. Size: 1 1/8 x 1 1/2 inches.

**TYPE IN-28.** For use where ground is at considerable distance. Most efficient when mounted on appliance. Bracket supplied. Size: 1 1/2 x 2 inches.



**TYPE IN-29.** Effective plug-in unit for local noise sources of variable character but strong intensity. Especially suited for shavers and other vibrating devices. Size: 1 1/2 x 3 inches.

**TYPE IN-30.** Similar to IN-29 but with greater inductance to handle more severe noise interference. Size: 1 1/2 x 3 inches.

**TYPE IN-31.** Bracket mounted unit with high inductance. Size: 1 1/2 x 3 inches.

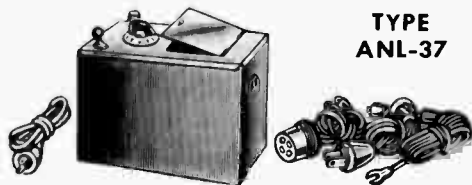
**TYPE IN-42.** Heavy duty unit for serious interference from power transmission lines, etc. Plugs into outlet. Appliance or radio plugs into receptacle in filter. Mounting ring provided. Rating: 110/220V AC; 6 amps. Size: 2 1/2 inch dia. x 3 3/4 inch.



**Type IN-105.** Low-impedance delta connected capacitor for fluorescent light fixture in bathtub case size 1 3/4" x 1" x 3/4" high.

**TYPE IN-106.** Best filter for fluorescents. Balanced network. Especially suited for radio and television salesrooms. One unit per fixture in series where power leads enter. Metal container with four stranded wire leads. Rating: 125V AC or DC; 2.6 amps. Size: 1 1/2" x 3" x 1 1/2" high.

**INTERFERENCE ANALYZER**



**TYPE ANL-37**

The Aerovox Filter Selector eliminates the guess work in determining the proper filter to use. Plugs between interfering device and outlet. Adjust selector switch until noise is eliminated or minimized. Dial then indicates type filter (IN27 thru IN42) to be used.

Unit in handsome, sturdy metal cabinet. Compartment contains necessary attachment plugs and clips. Size: 5 1/2 x 5 1/2 x 8 inches.

**FILTERS (Cont'd)**

**UHF-INTERFERENCE FILTERS**

These latest filter units provide maximum attenuation from 150 KC well up into the UHF range. And they are extra-rugged, extra-compact, extra-efficient, by any comparison with previous filters.

Primary applications are in r.f. noise suppression work in military or commercial aircraft and for vehicular low-voltage DC applications. Also, for special applications such as battery or low-voltage DC filters, for shield room applications, and for critical equipment.

Available in seven standard types meeting a wide variety of applications. For extraordinary requirements, special filters can be developed and built to your order.



Type	Amps	VDC	L x W x H
IN 148	2.0	150	1 1/4" x 1" x 3/8"
IN 150	3.0	150	1 1/4" x 1" x 1"
IN 151	5.0	150	1 1/4" x 1 1/4" x 1"
IN 152	10.0	150	2 1/8" x 1 1/4" x 1"
IN 153	25.0	150	2" x 2" x 1 1/8"
IN 156	40.0	150	5 1/4" x 1 1/2" x 1 1/8"
IN 154	100.0	150	3 1/8" x 2 1/2" x 2 1/2"

**FILTER APPLICATIONS**

For These Electrical Appliances	Use These Best Type	Aerovox Filters Also Satisfactory Types
Adding Machines	*IN-106	IN-42, *IN-110
Addressing Machines	*IN-106	IN-42
Air Conditioners	*INB Types	IN-42
Auto Call Systems	IN-31	IN-30, IN-29
Barbers Clippers	IN-30	IN-29
Battery Chargers:		
Mercury Arc	*INB Types	IN-42
Rotary Type	*INB Types	
Vibrator Type	*INB Types	IN-42
Billing Machines	IN-106	IN-42, IN-30, IN-29
Calculating Machines	*IN-106	IN-42, IN-30, IN-29, IN-31
Cash Registers	IN-42	IN-30, IN-29
Dental Machines	IN-30	IN-29
Dial Telephones	Call Telephone Company	
Diathermy	*INB Types with shielding	
Dictating Machines	IN-31	IN-30, IN-29, IN-42
Dishwashers	IN-42	
Drink Mixers	*IN-106	IN-30, IN-29
Drills	IN-105	*IN-42
Electric Towels	IN-42	
Electric Typewriters	IN-42	IN-31
Elevator Motors	*INB Types	
Fans	*IN-106	*IN-105, IN-42, IN-30, IN-29
Floor Polishers	IN-42	
Flour Bleachers	*INB Types	
Food Mixers	IN-30	IN-29
Fruit Juice Extractors	IN-30	*INB Types
Fluorescent Lamps	IN-106	*INB Types
Generator	*INB	IN-29
Hair Dryers	IN-30	IN-29
Heating Pads	IN-30	IN-29
Humidifiers	*IN-106	
Massage Machines	IN-42	
Motors:		
Large	*INB Types	*IN-105, IN-42
Small	*IN-106	
Motor generators	*INB Types	
Dial Burners	*INB Types	*IN-105, IN-42
Dzonators	*IN-106	IN-42, IN-30, IN-29, IN-27
Radio Receivers	*IN-106	
Refrigerators (home)	IN-42	
Rotary Converters	*INB Types	
Service Booths	*INB Types	IN-42
Sewing Machines	*IN-106	
Shavers, Electric	*INB Types	IN-30, IN-31, IN-27
Sign Flashers	IN-29	
Stokers	*INB Types	IN-30, IN-29
Vacuum Cleaners	IN-42	
Washing Machines	IN-42	
X-Ray Equipment	*INB Types	

\* Indicates permanently installed filter types.

(NDTE: IN-31 or IN-42 may be used for plug-in lamps such as fluorescent desk lamps).

ALL TYPES ON THIS PAGE AVAILABLE IN CLOSER TOLERANCE ON SPECIAL ORDER

Capacitors

**AEROVOX**

Resistors

**PAPER OIL**

**TYPE JP20**

**High Voltage Transmitter Capacitors**



High quality oil capacitors for communications, electronic and general DC applications in industrial equipment. Single or parallel grouped from 6000 to 50,000 VDCW. Heavy duty, highest quality precision construction thru-out. Aerovox Hyvol impregnated. Hermetically sealed for long life under exacting operating conditions. Single units rated at 30 KV or less normally supplied with capacitor element insulated from ground. Units built to order. Submit full application information when ordering.

**SIZE: HEIGHT x WIDTH x DEPTH**

Capacity Mfd.	6000 VDCW	7500 VDCW	10,000 VDCW	12,500 VDCW	
.5		11 x 8 x 4		11 x 8 x 4	
1.0		11 x 8 x 4		11 x 12 x 4	
1.5			11 x 8 x 4		
2.0	11 x 8 x 4	11 x 8 x 4	11 x 12 x 4	13 x 12 x 6	
4.0	11 x 12 x 4	13 x 12 x 4	13 x 12 x 6		
5.0	11 x 12 x 4		13 x 12 x 6	15 x 12 x 9½	
6.0	13 x 12 x 4	13 x 12 x 6			
10.0	13 x 12 x 6				
	15,000 VDCW	20,000 VDCW	25,000 VDCW	37,500 VDCW	50,000 VDCW
.1				13 x 13½ x 4	13 x 13½ x 4
.2			11 x 12 x 4	13 x 13½ x 6	15 x 13½ x 8½
.2½	11 x 8 x 4	11 x 8 x 4	11 x 12 x 4	15 x 13½ x 8½	15 x 15½ x 15
.5	11 x 12 x 4	11 x 12 x 4	11 x 12 x 6	15 x 13½ x 15	
1.0	13 x 12 x 4	13 x 12 x 6	15 x 12 x 9½		
1.5		15 x 12 x 9½			
2.0	15 x 12 x 9½	15 x 12 x 9½			
3.0	15 x 12 x 9½				
4.0		15 x 14 x 16			



**TYPE PX—Energy Storage Capacitors**

For high-speed flash photography, flash signaling equipment, pulsing and other energy storage uses.

VDC Peak	Nominal Cap. Mfd.	Type No.
1500	20	PX10D1
2000	28	PX14D3
2500	24	PX14D2
3000	16	PX18D1
2500	30	PX15D1
4000	12.5	PX20D1
Size: Depth x Width x Height		
	PX10D1	2½" x 3¾" x 4¾"
	PX15D1	4¾" x 3¾" x 6½"
	ALL OTHERS	4¾" x 3¾" x 4¾"

**TYPE 12 Vertical-Mounting Oil-Impregnated Oil-Filled**



High-voltage, inverted or vertical, immersion-proof unit suitable for such high-voltage circuit applications as in television, cathode-ray tube power supplies, high-voltage rectifiers, or as a high-voltage by-pass capacitor.

Cap. Mfd.	Hght. x Dia.	Cap. Mfd.	Hght. x Dia.	Cap. Mfd.	Hght. x Dia.
2000 VDCW		4000 VDCW		7500 VDCW	
1.0	3¼ x 2¼	.05	2¼ x 2¼	.01	3¼ x 2¼
2.0	5¼ x 2¼	.1	3¼ x 2¼	.02	3¼ x 2¼
		.25	5¼ x 2¼	.03	3¼ x 2¼
3000 VDCW		6000 VDCW		:1	
.05	2¼ x 2¼	.03	2¼ x 2¼	.05	4¼ x 2¼
.1	2¼ x 2¼	.05	3¼ x 2¼	:1	4¼ x 2¼
.25	3¼ x 2¼	.1	4¼ x 2¼		
.5	3¼ x 2¼				
1.0	5¼ x 2¼				

ALL TYPES ON THIS PAGE AVAILABLE IN CLOSER TOLERANCE DN SPECIAL ORDER

Capacitors

**AEROVOX**

Resistors

**INDUSTRIAL SECTION — STANDARD TYPES**

**TYPE JP09 HYVOL**

**PAPER CAPACITORS**



JP09

JP09MSB

JP09MS

JP09MB

Immersion-proof units in sturdy, rectangular metal cans. High-voltage, screw-type, pillar terminals fitted with soldering lugs. Use of HYVOL allows exceptionally compact size for capacity, working voltage and safety factor. Intended for heavy-duty, continuous service in transmitters, amplifiers, etc. Operating temperature -55 to +85°C.

Standard tolerance +20 -10%. Other tolerance on request.

Type MB bracket is supplied unless otherwise specified except on units with base sizes 3 3/4" x 3 3/4" and 3 3/4" x 4 1/4" where Type MS bracket is supplied. MSB bracket is available for all sizes on request.

CAPACITY	SIZE	CAPACITY	SIZE	CAPACITY	SIZE	CAPACITY	SIZE	CAPACITY	SIZE
<b>600V</b>				<b>2000V</b>				<b>5000V</b>	
.5	1 1/4 x 1 3/4 x 2 1/4	6.0	1 1/4 x 3/4 x 4 3/4	.1	1 1/4 x 1 1/4 x 2 1/4	10.0	3 3/4 x 4 1/4 x 7"	.1	2 1/4 x 3 3/4 x 2 3/4
1.0	1 1/4 x 1 3/4 x 2 1/4	8.0	1 3/4 x 3/4 x 3 3/4*	.25	1 1/4 x 1 3/4 x 2 1/4		3 3/4 x 4 1/4 x 6 1/2	.25	2 1/4 x 3 3/4 x 3 3/4
2.0	1 1/4 x 1 3/4 x 2 1/4		1 1/4 x 3/4 x 4 3/4	.5	1 3/4 x 2 1/2 x 2 3/4*			.5	2 1/4 x 3 3/4 x 4 1/2
3.0	1 1/4 x 1 3/4 x 3 3/4	10.0	1 3/4 x 3/4 x 4 3/4*	1 1/4 x 1 3/4 x 2 1/4				1.0	3 3/4 x 4 1/4 x 4 3/4
4.0	1 3/4 x 2 1/2 x 3 3/4	12.0	2 1/4 x 3/4 x 4 3/4*	1 1/4 x 2 1/2 x 3 3/4				2.0	3 3/4 x 4 1/4 x 6
5.0	1 3/4 x 2 1/2 x 4 1/4*	15.0	2 3/4 x 3/4 x 3 3/4	2.0	1 3/4 x 3 3/4 x 4 3/4*	<b>3000V</b>			
6.0	1 3/4 x 1 3/4 x 4 3/4		2 1/2 x 3 3/4 x 4 3/4	3.0	1 3/4 x 3 3/4 x 4	.1	1 3/4 x 2 1/2 x 2		
8.0	1 3/4 x 2 1/2 x 4 3/4	<b>1500V</b>		4.0	1 3/4 x 3 3/4 x 4 3/4	.25	1 3/4 x 2 1/2 x 2 1/2*	<b>6000V</b>	
10.0	1 3/4 x 3 3/4 x 3 3/4	.5	1 1/4 x 1 1/4 x 2 1/4	5.0	2 1/4 x 3 3/4 x 3 3/4	.5	1 3/4 x 2 1/2 x 2 1/2	.1	2 1/4 x 3 3/4 x 3 3/4
12.0	1 3/4 x 3 3/4 x 4 3/4	1.0	1 1/4 x 1 1/4 x 3 3/4	6.0	3 3/4 x 3 3/4 x 4 3/4*	1.0	1 3/4 x 2 1/2 x 3 3/4	.25	2 1/4 x 3 3/4 x 4 3/4
15.0	1 3/4 x 3 3/4 x 4 3/4	2.0	1 3/4 x 2 1/2 x 4 3/4	8.0	3 3/4 x 3 3/4 x 5 1/2*	2.0	2 1/4 x 3 3/4 x 4 3/4*	1.0	3 3/4 x 4 1/4 x 7 1/2
		3.0	1 3/4 x 2 1/2 x 4 3/4	10.0	3 3/4 x 3 3/4 x 4 3/4	.5	1 3/4 x 2 1/2 x 4 1/4*		
<b>1000V</b>		4.0	1 3/4 x 3 3/4 x 4 3/4	12.0	3 3/4 x 4 3/4 x 5 1/2	4.0	3 3/4 x 3 3/4 x 4 3/4	<b>7500V</b>	
.1	1 1/4 x 1 1/4 x 1 1/4	5.0	1 3/4 x 3 3/4 x 4 3/4	15.0	3 3/4 x 4 3/4 x 6 1/2	3 3/4 x 4 1/4 x 4 3/4		.1	2 1/4 x 3 3/4 x 3 3/4
.25	1 1/4 x 1 1/4 x 2 1/4	6.0	1 3/4 x 3 3/4 x 4 3/4					.25	3 3/4 x 4 1/4 x 3 3/4
.5	1 1/4 x 1 1/4 x 2 1/4	8.0	2 1/2 x 3 3/4 x 4 3/4	<b>2500V</b>		.1	2 1/4 x 3 3/4 x 2 1/4	.5	3 3/4 x 4 1/4 x 5 1/2
1.0	1 1/4 x 1 1/4 x 2 1/4	10.0	3 3/4 x 3 3/4 x 4 3/4	.5	1 1/4 x 3 3/4 x 3 3/4	.25	2 1/4 x 3 3/4 x 2 3/4		
2.0	1 1/4 x 1 1/4 x 3 3/4	12.0	3 3/4 x 3 3/4 x 4 3/4	1.0	1 3/4 x 3 3/4 x 3 3/4	.5	2 1/4 x 3 3/4 x 3 3/4	1.0	2 1/4 x 3 3/4 x 4 3/4
3.0	1 3/4 x 2 1/2 x 3 3/4	15.0	3 3/4 x 4 1/4 x 4 3/4	2.0	1 3/4 x 3 3/4 x 4 3/4	1.0	2 1/4 x 3 3/4 x 5 1/2	2.0	3 3/4 x 4 1/4 x 5 1/2
4.0	1 3/4 x 2 1/2 x 4 3/4			3 3/4 x 4 1/4 x 4 3/4*		2.0	3 3/4 x 4 1/4 x 5 1/2	4.0	3 3/4 x 4 1/4 x 8 1/2
5.0	1 3/4 x 3 3/4 x 3 3/4			4.0	3 3/4 x 4 1/4 x 4	4.0	3 3/4 x 4 1/4 x 8 1/2		

\*To be supplied in this size until current stock is depleted after which alternate size will be supplied.



**TYPE JP10**

Cylindrical hermetically sealed can with screwbase molded cover for vertical mounting. These units are Hyvol impregnated and filled for long life and safe operation at temperatures from -55 to +85°C.

Standard units have two terminals, case floating.

Standard tolerance +20% -10%. Other tolerances available on request.

CAPACITY	600VDCW SIZE	1000VDCW SIZE	1500VDCW SIZE
.5	JP610	JP1010	JP1510
1.0		1 1/2 x 2 1/4	1 1/2 x 2 1/4*
2.0	1 1/2 x 2 1/4	1 1/2 x 4 1/2	1 1/2 x 4 1/2*
4.0	1 1/2 x 4 1/2		1 1/2 x 3 3/4

\* To be supplied in this size until current stock is depleted after which alternate size will be supplied.



Capacitors

**AEROVOK**

Resistors

**INDUSTRIAL SECTION—STANDARD TYPES (Continued)**

**TYPE JP16MCT and JP16M HYVOL**



Small corrosion and immersion-proof unit for severe atmospheric and climatic conditions. JP16MCT is standard; JP16M is available in 400 and 600 volts. Operating temperature -55 to +85°C. Dual units have two terminals, case grounded. Standard tolerance +20 -10%. CP06S and CP06F brackets available for JP16M. Base Size 1 3/4 x 1 1/4.

SINGLE CAPACITY	400 VDCW	600 VDCW	1000 VDCW	DUAL CAPACITY	600 VDCW
	HEIGHT	HEIGHT	HEIGHT		HEIGHT
	JP416M, JP416MCT	JP616M, JP616MCT	JP1016MCT		JP616M, JP616MCT
.05		1 1/4	1 1/4	2 x .05	1 1/4
.1	1 1/4	1 1/4	1 1/4	2 x .1	1 1/4
.25	1 1/4	1 1/4	2	2 x .25	2
.5	1 1/4	2	2 1/4	2 x .5	2 1/4
1.0	2	2 1/4			



**TYPE JP18MCB HYVOL**

Similar to JP16M in construction and electrical characteristics. Because of the difference in the base size type JP18MCB can be supplied with three terminals. Dual units are case floating, triples are case grounded. The size difference also makes these units suitable for use in assemblies where JP16M's do not fit. Operating temperature range -55 to +85°C. Standard tolerance +20 -10%.

Capacity	400 VDCW	600 VDCW	1000 VDCW	Capacity	400 VDCW	600 VDCW	1000 VDCW	Capacity	400 VDCW	600 VDCW	1000 VDCW
	Height	Height	Height		Height	Height	Height		Height	Height	Height
.01	JP418MCB	JP618MCB	JP1018MCB	2 x .01	JP418MCB	JP618MCB	JP1018MCB	3 x .01	JP418MCB	JP618MCB	JP1018MCB
.02			1 1/4	2 x .02			1 1/4	3 x .02			1 1/4
.05		1 1/4	1 1/4	2 x .05	1	1 1/4	1 1/4	3 x .05	1 1/4	1 1/4	1 1/4
.1	1	1 1/4	1 1/4	2 x .1	1 1/4	1 1/2	2	3 x .1	1 1/4	1 1/4	2 1/4
.25	1 1/4	1 1/4	2	2 x .25	1 1/4	2	2 1/4	3 x .25	2	2 1/4	
.5	1 1/4	2	2 1/4	2 x .5	2	2 1/4					
1.0	2	2 1/4									

BASE SIZE 1 1/4 x 3/4

**TYPE JP30M Bathtub Case**



High-quality bypass capacitors furnished in drawn metal bathtub cases, hermetically sealed. These units are Myvol M impregnated for operation at temperatures from -55 to +85°C. They are especially recommended for applications where high reliability and superior performance are required. Typical applications for these rugged units would include marine, aircraft and tropical climates.

Capacity	400 VDCW	600 VDCW	1000 VDCW	Capacity	400 VDCW	600 VDCW	1000 VDCW
	Size	Size	Size		Size	Size	Size
.05	JP430M	JP630M	JP1030M	2 x .05	JP430M	JP630M	JP1030M
.1	1 1/4 x 1 x 3/4	1 1/4 x 1 x 3/4	1 1/4 x 1 x 3/4	2 x .1	1 1/4 x 1 x 3/4	1 1/4 x 1 x 3/4	1 1/4 x 1 x 3/4
.25	1 1/4 x 1 x 3/4	1 1/4 x 1 x 3/4	1 1/4 x 1 x 3/4	2 x .25	1 1/4 x 1 x 3/4	1 1/4 x 1 x 1	2 x 1 1/4 x 3/4
.5	1 1/4 x 1 x 3/4	1 1/4 x 1 x 1	2 x 1 1/4 x 3/4	2 x .5	2 x 1 1/4 x 3/4	2 x 1 1/4 x 3/4	2 x 2 x 1 1/4
.75	2 1/4 x 1 1/4 x 3/4	2 1/4 x 1 1/4 x 3/4	2 x 1 1/4 x 3/4	2 x 1.0	2 x 2 x 1 1/4	2 x 2 x 1 1/4	
1.0	2 x 1 1/4 x 3/4	2 x 1 1/4 x 1	2 x 2 x 1 1/4	3 x .05	1 1/4 x 1 x 3/4	1 1/4 x 1 x 3/4	1 1/4 x 1 x 3/4
2.0	2 x 2 x 1 1/4	2 x 2 x 1 1/4		3 x .1	1 1/4 x 1 x 3/4	1 1/4 x 1 x 3/4	2 x 1 1/4 x 3/4
				3 x .25	2 x 1 1/4 x 3/4	2 x 1 1/4 x 3/4	2 x 2 x 1 1/4
				3 x .5	2 x 2 x 1	2 x 2 x 1 1/4	

\* Also available with top terminals, size 2 x 1 1/4 x 3/4, Type JP30MT.

**TYPE P89M**



Immersion-proof, oil-impregnated, oil filled units in hermetically sealed metal tubes. Ideal for coupling and bypass functions in transmitters, high-voltage applications and for use in test equipment. Case is insulated, not connected to the capacitor section. Standard units are supplied with cardboard insulating sleeve and radial mounting bracket (Type P89M). All sizes shown are can sizes. For size over insulating sleeve add 1/4" to diameter and 3/8" to length.

Available in the following style variations:

- P89M —with cardboard insulating sleeve, radial mtg. bracket.
- P89MA —with cardboard insulating sleeve and tangential mounting bracket.
- P89MAP —with plastic insulating sleeve and tangential mtg. bracket.
- P89MAY —without insulating sleeve but with tangential mounting bracket.
- P89MP —with plastic insulating sleeve, radial mounting bracket.
- P89MX —without mounting bracket but with cardboard insulating sleeve.
- P89MXP —without mounting bracket but with plastic insulating sleeve.
- P89MXY —without insulating sleeve or mounting bracket.
- P89MY —without insulating sleeve but with radial mounting bracket.

Voltage	Capacity	Can Size	Voltage	Capacity	Can Size	Voltage	Capacity	Can Size
400V	.01	3/4 x 1 1/4	1000V	.03	3/4 x 1 1/4	2500V	.02	3/4 x 2
400V	.02	3/4 x 1 1/4	1000V	.05	3/4 x 1 1/4	2500V	.03	3/4 x 2 1/4
400V	.05	3/4 x 1 1/4	1000V	.1	1 1/4 x 1 1/4	2500V	.05	3/4 x 2 1/2
400V	.1	3/4 x 1 1/4	1000V	.25	3/4 x 2 1/4	2500V	.1	1 x 3
400V	.25	1 1/4 x 2 1/4	2000V	.001	3/4 x 1 1/4	3000V	.005	3/4 x 1 1/4
400V	.5	1 x 2 1/4	2000V	.005	3/4 x 1 1/4	3000V	.01	3/4 x 1 1/4
600V	.001	3/4 x 1 1/4	2000V	.01	3/4 x 1 1/4	3000V	.02	3/4 x 2
600V	.005	3/4 x 1 1/4	2000V	.015	3/4 x 1 1/4	3000V	.03	1 x 2 1/4
600V	.01	3/4 x 1 1/4	2000V	.02	3/4 x 1 1/4	3000V	.05	1 x 2 1/2
600V	.02	3/4 x 1 1/4	2000V	.03	3/4 x 1 1/4	3000V	.1	1 1/4 x 2 1/4
600V	.05	3/4 x 1 1/4	2000V	.04	3/4 x 2 1/4	4000V	.05	1 1/4 x 3 1/4
600V	.1	3/4 x 1 1/4	2000V	.05	3/4 x 2 1/4	4000V	.1	1 1/4 x 4 1/4
600V	.25	1 1/4 x 2 1/4	2000V	.1	1 x 2 1/2	6000V	.005	1 x 2 1/2
600V	.5	1 1/4 x 2 1/4	2500V	.005	3/4 x 1 1/4	6000V	.01	1 x 3 1/4
1000V	.01	3/4 x 1 1/4	2500V	.01	3/4 x 1 1/4	6000V	.05	1 1/4 x 5

ALL TYPES ON THIS PAGE AVAILABLE IN CLOSER TOLERANCE ON SPECIAL ORDER

Capacitors

**AEROVOX**

Resistors

**INDUSTRIAL SECTION—STANDARD TYPES (Continued)**

**PAPER SUB-MINIATURES**



Tubular, metal-cased capacitors, hermetically sealed with glass terminal end seals. Miniaturized, conventional, foil-paper construction. Especially developed to meet high temperature and minimum space requirements of present day electronic equipment. Designed for rugged long life operation, these units are preferred for many of those applications where reliability is a factor. Impregnated with Hvyol "S" a special, high-temperature-operating, stable, liquid impregnant for operation at elevated temperature. These units are capable of withstanding a voltage breakdown test of twice rated voltage between terminals or between terminals and case for a one-minute period. Ambient temperature shall be plus 25°C. plus or minus 10°C. during this test. Power factor will be less than 1% when measured or referred to a frequency of 1000 cycles per second at 25°C. Types P123S and P123SX are rated for operation over a temperature range of -65°C. to +100°C. Types P323S and P323SX are rigidly processed to assure operation over the temperature range of -65°C. to +125°C. The capacitor sections on types P123S and P323S utilize an inserted tab construction to obtain minimum size. Types P123SX and P323SX utilize extended foil construction for those applications where operation is required at very low AC voltages.

All values are available in ±10% or ±20%.

\* Style Variations

Suffix	Description	Suffix	Description	Suffix	Description
G	— One end grounded	T	— Insulated with threaded neck mounting	V	— Insulated with side vertical bracket
	— Omit G, both ends insulated	GE	— Grounded with axial threaded stud	GB	— Grounded with tangential bracket
GP	— Grounded and plastic sleeve	GR	— Grounded with two radial threaded studs	B	— Insulated with tangential bracket
P	— Insulated with plastic sleeve	R	— Insulated with two radial threaded studs	GL	— Grounded with tab terminal
GT	— Grounded with threaded neck mounting	GV	— Grounded with side vertical bracket	L	— Insulated with tab terminal

\* Style variations and ratings listed below are standard. All others available on special order.

Capacity	P123S P323S	P123SP P323SP	P123SX P323SX	P123SX P P323SX P	Capacity	P123S P323S	P123SP P323SP	P123SX P323SX	P123SX P P323SX P
<b>100 Volts</b>					<b>300 Volts (cont.)</b>				
.001	.175 x 3/4	.237 x 13/16	.175 x 3/4	.237 x 13/16	.033	.312 x 7/8	.374 x 13/16	.400 x 1 1/8	.462 x 1 1/4
.0015	.175 x 3/4	.237 x 13/16	.175 x 3/4	.237 x 13/16	.047	.312 x 7/8	.374 x 13/16	.400 x 1 1/8	.462 x 1 1/4
.0022	.175 x 3/4	.237 x 13/16	.175 x 3/4	.237 x 13/16	.068	.400 x 3/4	.462 x 13/16	.400 x 1 1/8	.462 x 1 1/4
.0033	.175 x 3/4	.237 x 13/16	.175 x 3/4	.237 x 13/16	.1	.400 x 1 1/8	.462 x 13/16	.400 x 1 1/8	.462 x 1 1/4
.0047	.175 x 3/4	.237 x 13/16	.175 x 3/4	.237 x 13/16	.15	.400 x 1 1/8	.462 x 13/16	.400 x 1 1/8	.462 x 1 1/4
.0068	.175 x 3/4	.237 x 13/16	.195 x 3/4	.257 x 13/16	.22	.562 x 1 1/8	.624 x 13/16	.562 x 1 1/8	.624 x 1 1/4
.01	.175 x 3/4	.237 x 13/16	.235 x 3/4	.297 x 13/16	.33	.562 x 1 1/8	.624 x 13/16	.562 x 1 1/8	.624 x 1 1/4
.015	.175 x 3/4	.237 x 13/16	.235 x 3/4	.297 x 13/16	.47	.562 x 1 1/8	.624 x 13/16	.670 x 1 1/8	.732 x 1 1/4
.022	.195 x 3/4	.257 x 13/16	.312 x 7/8	.374 x 13/16	.68	.670 x 1 1/8	.732 x 13/16	.750 x 2 1/8	.812 x 2 1/4
.033	.235 x 3/4	.297 x 13/16	.312 x 7/8	.374 x 13/16	1.0	.750 x 2 1/8	.812 x 2 1/8	1.000 x 2 1/8	1.062 x 2 1/4
.047	.312 x 7/8	.374 x 13/16	.312 x 7/8	.374 x 13/16	<b>400 Volts</b>				
.068	.312 x 7/8	.374 x 13/16	.400 x 3/8	.462 x 13/16	.001	.235 x 3/4	.297 x 13/16	.235 x 3/4	.297 x 13/16
.1	.312 x 7/8	.374 x 13/16	.400 x 3/8	.462 x 13/16	.0015	.235 x 3/4	.297 x 13/16	.235 x 3/4	.297 x 13/16
.15	.400 x 1 1/8	.462 x 13/16	.400 x 1 1/8	.462 x 13/16	.0022	.235 x 3/4	.297 x 13/16	.235 x 3/4	.297 x 13/16
.22	.400 x 1 1/8	.462 x 13/16	.400 x 1 1/8	.462 x 13/16	.0033	.235 x 3/4	.297 x 13/16	.235 x 3/4	.297 x 13/16
.33	.400 x 1 1/8	.462 x 1 1/16	.562 x 1 1/8	.624 x 1 1/16	.0047	.235 x 3/4	.297 x 13/16	.312 x 7/8	.374 x 13/16
.47	.562 x 1 1/8	.624 x 1 1/16	.562 x 1 1/8	.624 x 1 1/16	.0068	.235 x 3/4	.297 x 13/16	.312 x 7/8	.374 x 13/16
.68	.562 x 1 1/8	.624 x 1 1/16	.562 x 1 1/8	.624 x 1 1/16	.01	.235 x 3/4	.297 x 13/16	.312 x 7/8	.374 x 13/16
1.0	.562 x 1 1/8	.624 x 1 1/16	.670 x 1 1/8	.732 x 1 1/16	.015	.312 x 7/8	.374 x 13/16	.312 x 7/8	.374 x 13/16
<b>200 Volts</b>					.022	.312 x 7/8	.374 x 13/16	.400 x 3/8	.462 x 13/16
.001	.235 x 3/4	.297 x 13/16	.235 x 3/4	.297 x 13/16	.033	.312 x 7/8	.374 x 13/16	.400 x 3/8	.462 x 13/16
.0015	.235 x 3/4	.297 x 13/16	.235 x 3/4	.297 x 13/16	.047	.400 x 3/8	.462 x 13/16	.400 x 1 1/8	.462 x 1 1/4
.0022	.235 x 3/4	.297 x 13/16	.235 x 3/4	.297 x 13/16	.068	.400 x 1 1/8	.462 x 13/16	.400 x 1 1/8	.462 x 1 1/4
.0033	.235 x 3/4	.297 x 13/16	.235 x 3/4	.297 x 13/16	.1	.400 x 1 1/8	.462 x 13/16	.562 x 1 1/8	.624 x 1 1/4
.0047	.235 x 3/4	.297 x 13/16	.235 x 3/4	.297 x 13/16	.15	.562 x 1 1/8	.624 x 13/16	.562 x 1 1/8	.624 x 1 1/4
.0068	.235 x 3/4	.297 x 13/16	.235 x 3/4	.297 x 13/16	.22	.562 x 1 1/8	.624 x 13/16	.562 x 1 1/8	.624 x 1 1/4
.01	.235 x 3/4	.297 x 13/16	.312 x 7/8	.374 x 13/16	.33	.562 x 1 1/8	.624 x 1 1/16	.670 x 1 1/8	.732 x 1 1/16
.015	.235 x 3/4	.297 x 13/16	.312 x 7/8	.374 x 13/16	.47	.670 x 1 1/8	.732 x 1 1/16	.750 x 2 1/8	.812 x 2 1/4
.022	.235 x 3/4	.297 x 13/16	.312 x 7/8	.374 x 13/16	.68	.750 x 2 1/8	.812 x 2 1/8	.750 x 2 1/8	.812 x 2 1/4
.033	.312 x 7/8	.374 x 13/16	.312 x 7/8	.374 x 13/16	1.0	1.000 x 1 1/8	1.062 x 1 1/16	1.000 x 2 1/8	1.062 x 2 1/4
.047	.312 x 7/8	.374 x 13/16	.400 x 3/8	.462 x 13/16	<b>600 Volts</b>				
.068	.312 x 7/8	.374 x 13/16	.400 x 3/8	.462 x 13/16	.001	.235 x 3/4	.297 x 13/16	.235 x 3/4	.297 x 13/16
.1	.400 x 3/8	.462 x 13/16	.400 x 1 1/8	.462 x 13/16	.0015	.235 x 3/4	.297 x 13/16	.235 x 3/4	.297 x 13/16
.15	.400 x 1 1/8	.462 x 13/16	.400 x 1 1/8	.462 x 13/16	.0022	.235 x 3/4	.297 x 13/16	.235 x 3/4	.297 x 13/16
.22	.400 x 1 1/8	.462 x 13/16	.562 x 1 1/8	.624 x 13/16	.0033	.235 x 3/4	.297 x 13/16	.312 x 7/8	.374 x 13/16
.33	.562 x 1 1/8	.624 x 1 1/16	.562 x 1 1/8	.624 x 1 1/16	.0047	.235 x 3/4	.297 x 13/16	.312 x 7/8	.374 x 13/16
.47	.562 x 1 1/8	.624 x 1 1/16	.562 x 1 1/8	.624 x 1 1/16	.0068	.235 x 3/4	.297 x 13/16	.312 x 7/8	.374 x 13/16
.68	.562 x 1 1/8	.624 x 1 1/16	.670 x 1 1/8	.732 x 1 1/16	.01	.312 x 7/8	.374 x 13/16	.312 x 7/8	.374 x 13/16
1.0	.670 x 1 1/8	.732 x 1 1/16	.750 x 2 1/8	.812 x 2 1/4	.015	.312 x 7/8	.374 x 13/16	.400 x 3/8	.462 x 13/16
<b>300 Volts</b>					.022	.312 x 7/8	.374 x 13/16	.400 x 3/8	.462 x 13/16
.001	.235 x 3/4	.297 x 13/16	.235 x 3/4	.297 x 13/16	.033	.400 x 3/8	.462 x 13/16	.400 x 1 1/8	.462 x 1 1/4
.0015	.235 x 3/4	.297 x 13/16	.235 x 3/4	.297 x 13/16	.047	.400 x 1 1/8	.462 x 13/16	.400 x 1 1/8	.462 x 1 1/4
.0022	.235 x 3/4	.297 x 13/16	.235 x 3/4	.297 x 13/16	.068	.400 x 1 1/8	.462 x 13/16	.562 x 1 1/8	.624 x 1 1/4
.0033	.235 x 3/4	.297 x 13/16	.235 x 3/4	.297 x 13/16	.1	.562 x 1 1/8	.624 x 13/16	.562 x 1 1/8	.624 x 1 1/4
.0047	.235 x 3/4	.297 x 13/16	.235 x 3/4	.297 x 13/16	.15	.562 x 1 1/8	.624 x 13/16	.562 x 1 1/8	.624 x 1 1/4
.0068	.235 x 3/4	.297 x 13/16	.312 x 7/8	.374 x 13/16	.22	.562 x 1 1/8	.624 x 1 1/16	.670 x 1 1/8	.732 x 1 1/16
.01	.235 x 3/4	.297 x 13/16	.312 x 7/8	.374 x 13/16	.33	.670 x 1 1/8	.732 x 1 1/16	.750 x 2 1/8	.812 x 2 1/4
.015	.235 x 3/4	.297 x 13/16	.312 x 7/8	.374 x 13/16	.47	.750 x 2 1/8	.812 x 2 1/8	.750 x 2 1/8	.812 x 2 1/4
.022	.312 x 7/8	.374 x 13/16	.312 x 7/8	.374 x 13/16	1.0	1.000 x 2 1/8	1.062 x 2 1/8	1.000 x 2 1/8	1.062 x 2 1/4

ALL TYPES ON THIS PAGE AVAILABLE IN CLOSER TOLERANCE ON SPECIAL ORDER

Capacitors

**AEROVOX**

Resistors

INDUSTRIAL SECTION—STANDARD TYPES (Continued)

PAPER SUB-MINIATURES (Continued)

Capacity	P123SG P323SG	P123SGP P323SGP	P123SXG P323SXG	P123SXGP P323SXGP	Capacity	P123SG P323SG	P123SGP P323SGP	P123SXG P323SXG	P123SXGP P323SXGP
100 Volts					300 Volts (cont.)				
.01	—	—	.235 x 1 1/4	.297 x 3/4	.022	.312 x 1 3/16	.374 x 3/8	.312 x 1 3/16	.374 x 3/8
.015	—	—	.235 x 1 1/4	.297 x 3/4	.033	.312 x 1 3/16	.374 x 3/8	.400 x 1 3/16	.462 x 3/8
.022	—	—	.312 x 1 3/16	.374 x 3/8	.047	.312 x 1 3/16	.374 x 3/8	.400 x 1 3/16	.462 x 3/8
.033	.235 x 1 1/4	.297 x 3/4	.312 x 1 3/16	.374 x 3/8	400 Volts				
.047	.312 x 1 3/16	.374 x 3/8	.312 x 1 3/16	.374 x 3/8	.001	.235 x 1 1/4	.297 x 3/4	.235 x 1 1/4	.297 x 3/4
.068	.312 x 1 3/16	.374 x 3/8	.400 x 1 3/16	.462 x 1 1/4	.0015	.235 x 1 1/4	.297 x 3/4	.235 x 1 1/4	.297 x 3/4
.1	.312 x 1 3/16	.374 x 3/8	.400 x 1 3/16	.462 x 1 1/4	.0022	.235 x 1 1/4	.297 x 3/4	.235 x 1 1/4	.297 x 3/4
.15	.400 x 1 3/16	.462 x 1 1/4	.400 x 1 3/16	.462 x 1 1/4	.0033	.235 x 1 1/4	.297 x 3/4	.235 x 1 1/4	.297 x 3/4
.22	.400 x 1 3/16	.462 x 1 1/4	.400 x 1 3/16	.462 x 1 1/4	.0047	.235 x 1 1/4	.297 x 3/4	.235 x 1 1/4	.297 x 3/4
.33	.400 x 1 3/16	.462 x 1 1/4	.562 x 1 1/4	.624 x 1 1/2	.0068	.235 x 1 1/4	.297 x 3/4	.312 x 1 3/16	.374 x 3/8
.47	.562 x 1 1/4	.624 x 1 1/2	.562 x 1 1/4	.624 x 1 1/2	.01	.235 x 1 1/4	.297 x 3/4	.312 x 1 3/16	.374 x 3/8
.68	.562 x 1 1/4	.624 x 1 1/2	.562 x 1 1/4	.624 x 1 1/2	.015	.312 x 1 3/16	.374 x 3/8	.312 x 1 3/16	.374 x 3/8
1.0	.562 x 1 1/4	.624 x 1 1/2	.670 x 1 3/8	.732 x 1 3/8	.022	.312 x 1 3/16	.374 x 3/8	.400 x 1 3/16	.462 x 3/8
200 Volts					600 Volts				
.001	.235 x 1 1/4	.297 x 3/4	.235 x 1 1/4	.297 x 3/4	.047	.400 x 1 3/16	.462 x 1 1/4	.400 x 1 3/16	.462 x 1 1/4
.0015	.235 x 1 1/4	.297 x 3/4	.235 x 1 1/4	.297 x 3/4	.068	.400 x 1 3/16	.462 x 1 1/4	.400 x 1 3/16	.462 x 1 1/4
.0022	.235 x 1 1/4	.297 x 3/4	.235 x 1 1/4	.297 x 3/4	.1	.400 x 1 3/16	.462 x 1 1/4	.562 x 1 1/4	.624 x 1 1/2
.0033	.235 x 1 1/4	.297 x 3/4	.235 x 1 1/4	.297 x 3/4	.15	.562 x 1 1/4	.624 x 1 1/2	.562 x 1 1/4	.624 x 1 1/2
.0047	.235 x 1 1/4	.297 x 3/4	.235 x 1 1/4	.297 x 3/4	.22	.562 x 1 1/4	.624 x 1 1/2	.562 x 1 1/4	.624 x 1 1/2
.0068	.235 x 1 1/4	.297 x 3/4	.235 x 1 1/4	.297 x 3/4	.33	.562 x 1 1/4	.624 x 1 1/2	.670 x 1 3/8	.732 x 1 3/8
.01	.235 x 1 1/4	.297 x 3/4	.312 x 1 3/16	.374 x 3/8	.47	.670 x 1 3/8	.732 x 1 3/8	.750 x 2 1/4	.812 x 2 1/4
.015	.235 x 1 1/4	.297 x 3/4	.312 x 1 3/16	.374 x 3/8	.68	.750 x 2 1/4	.812 x 2 1/4	.750 x 2 1/4	.812 x 2 1/4
.022	.235 x 1 1/4	.297 x 3/4	.312 x 1 3/16	.374 x 3/8	1.0	1.000 x 1 1/2	1.062 x 1 3/8	1.000 x 2 1/4	1.062 x 2 1/4
.033	.312 x 1 3/16	.374 x 3/8	.312 x 1 3/16	.374 x 3/8	200 Volts				
.047	.312 x 1 3/16	.374 x 3/8	.400 x 1 3/16	.462 x 1 1/4	.011	.235 x 1 1/4	.297 x 3/4	.235 x 1 1/4	.297 x 3/4
.068	.312 x 1 3/16	.374 x 3/8	.400 x 1 3/16	.462 x 1 1/4	.0015	.235 x 1 1/4	.297 x 3/4	.235 x 1 1/4	.297 x 3/4
.1	.400 x 1 3/16	.462 x 1 1/4	.400 x 1 3/16	.462 x 1 1/4	.0022	.235 x 1 1/4	.297 x 3/4	.235 x 1 1/4	.297 x 3/4
.15	.400 x 1 3/16	.462 x 1 1/4	.400 x 1 3/16	.462 x 1 1/4	.0033	.235 x 1 1/4	.297 x 3/4	.235 x 1 1/4	.297 x 3/4
.22	.400 x 1 3/16	.462 x 1 1/4	.562 x 1 1/4	.624 x 1 1/2	.0047	.235 x 1 1/4	.297 x 3/4	.312 x 1 3/16	.374 x 3/8
.33	.562 x 1 1/4	.624 x 1 1/2	.562 x 1 1/4	.624 x 1 1/2	.0068	.235 x 1 1/4	.297 x 3/4	.312 x 1 3/16	.374 x 3/8
.47	.562 x 1 1/4	.624 x 1 1/2	.562 x 1 1/4	.624 x 1 1/2	.01	.312 x 1 3/16	.374 x 3/8	.312 x 1 3/16	.374 x 3/8
.68	.562 x 1 1/4	.624 x 1 1/2	.670 x 1 3/8	.732 x 1 3/8	.015	.312 x 1 3/16	.374 x 3/8	.400 x 1 3/16	.462 x 3/8
1.0	.670 x 1 3/8	.732 x 1 3/8	.750 x 2 1/4	.812 x 2 1/4	.022	.312 x 1 3/16	.374 x 3/8	.400 x 1 3/16	.462 x 3/8
300 Volts					.033	.400 x 1 3/16	.462 x 3/8	.400 x 1 3/16	.462 x 3/8
.001	.235 x 1 1/4	.297 x 3/4	.235 x 1 1/4	.297 x 3/4	.047	.400 x 1 3/16	.462 x 1 1/4	.400 x 1 3/16	.462 x 1 1/4
.0015	.235 x 1 1/4	.297 x 3/4	.235 x 1 1/4	.297 x 3/4	.068	.400 x 1 3/16	.462 x 1 1/4	.562 x 1 1/4	.624 x 1 1/2
.0022	.235 x 1 1/4	.297 x 3/4	.235 x 1 1/4	.297 x 3/4	.1	.562 x 1 1/4	.624 x 1 1/2	.562 x 1 1/4	.624 x 1 1/2
.0033	.235 x 1 1/4	.297 x 3/4	.235 x 1 1/4	.297 x 3/4	.15	.562 x 1 1/4	.624 x 1 1/2	.562 x 1 1/4	.624 x 1 1/2
.0047	.235 x 1 1/4	.297 x 3/4	.235 x 1 1/4	.297 x 3/4	.22	.562 x 1 1/4	.624 x 1 1/2	.670 x 1 3/8	.732 x 1 3/8
.0068	.235 x 1 1/4	.297 x 3/4	.312 x 1 3/16	.374 x 3/8	.33	.670 x 1 3/8	.732 x 1 3/8	.750 x 2 1/4	.812 x 2 1/4
.01	.235 x 1 1/4	.297 x 3/4	.312 x 1 3/16	.374 x 3/8	.47	.750 x 2 1/4	.812 x 2 1/4	.750 x 2 1/4	.812 x 2 1/4
.015	.235 x 1 1/4	.297 x 3/4	.312 x 1 3/16	.374 x 3/8	.68	1.000 x 1 1/2	1.062 x 1 3/8	1.000 x 2 1/4	1.062 x 2 1/4
400 Volts					1.0	1.000 x 2 1/4	1.062 x 2 1/4	1.000 x 2 1/4	1.062 x 2 1/4

TYPE V84C



AEROFILM (MYLAR\*) CAPACITORS

V84C† Aerofilm Tubular Capacitors are high quality units in dense stearite cases. These units have exceptionally high Insulation<sup>®</sup> resistance and low dielectric absorption and power factor. They are extremely Stable having a relatively small capacitance change with temperature variations over a range of 0 to 85°C.

These excellent characteristics are due to the use of Aerofilm (Aerovox's trade name for Mylar\* polyester film), finest quality casing material, and an epoxy end fill which will not flow, soften or melt at any operating temperature.

Standard tolerance is ±10% but also available in ±5% and ±20%.

Rated Voltage for Temperatures of 85°C. and above:

85°C.	200 VDCW	400 VDCW	600 VDCW
125°C.	100 VDCW	300 VDCW	400 VDCW
150°C.	75 VDCW	200 VDCW	300 VDCW

Catalogue No.	Cap. Mfd.	Size	Catalogue No.	Cap. Mfd.	Size	Catalogue No.	Cap. Mfd.	Size
<b>200 VDCW</b>			<b>400 VDCW</b>			<b>600 VDCW</b>		
V84C 2D47	.0047	.175 x 1 3/16	V84C 4D15	.0015	.175 x 1 3/16	V84C 6D1	.001	.175 x 1 3/16
V84C 2D68	.0068	.175 x 1 3/16	V84C 4D22	.0022	.175 x 1 3/16	V84C 6D15	.0015	.195 x 1 3/16
V84C 2S1	.01	.175 x 1 3/16	V84C 4D33	.0033	.175 x 1 3/16	V84C 6D22	.0022	.195 x 1 3/16
V84C 2S15	.015	.195 x 1 3/16	V84C 4D47	.0047	.175 x 1 3/16	V84C 6D33	.0033	.195 x 1 3/16
V84C 2S22	.022	.195 x 1 3/16	V84C 4D68	.0068	.195 x 1 3/16	V84C 6D47	.0047	.3/4 x 1 1/4
V84C 2S33	.033	1/4 x 1 1/4	V84C 4S1	.01	1/4 x 1 1/4	V84C 6D68	.0068	3/4 x 1 1/4
V84C 2S47	.047	1/4 x 1 1/4	V84C 4S15	.015	1/4 x 1 1/4	V84C 6S1	.01	3/4 x 1 1/4
V84C 2S68	.068	3/4 x 1 1/4	V84C 4S22	.022	3/4 x 1 1/4	V84C 6S15	.015	3/4 x 1 1/4
V84C 2P1	.1	3/4 x 1 1/4	V84C 4S33	.033	3/4 x 1 1/4	V84C 6S22	.022	3/4 x 1 1/4
V84C 2P15	.15	3/4 x 1 1/4	V84C 4S47	.047	3/4 x 1 1/4	V84C 6S33	.033	3/4 x 1 1/4
V84C 2P22	.22	1/2 x 1 1/4	V84C 4S68	.068	3/4 x 1 1/4	V84C 6S47	.047	1/2 x 1 1/4
V84C 2P33	.33	1 1/2 x 1 1/2	V84C 4P1	.1	1/2 x 1 1/4	V84C 6S68	.068	1/2 x 1 1/4
V84C 2P47	.47	3/4 x 1 1/2	V84C 4P15	.15	3/4 x 1 1/2	V84C 6P1	.1	3/4 x 1 1/2
V84C 2P68	.68	2 1/2 x 1 3/4	V84C 4P22	.22	3/4 x 1 1/2	V84C 6P15	.15	1 1/4 x 1 1/2
V84C 2W1	1.0	3/4 x 1 3/4	V84C 4P33	.33	1 1/4 x 1 3/4	V84C 6P22	.22	1 3/4 x 1 3/4
			V84C 4P47	.47	3/4 x 2	V84C 6P33	.33	3/4 x 1 3/4
			V84C 4P68	.68	3/4 x 2	V84C 6P47	.47	3/4 x 2 1/4
			V84C 4W1	1.0	3/4 x 2 1/2			

\* Dupont's Registered trade name.

† TRADE MARK

ALL TYPES ON THIS PAGE AVAILABLE IN CLOSER TOLERANCE ON SPECIAL ORDER

Capacitors

**AEROVOX**

Resistors

**INDUSTRIAL SECTION—STANDARD TYPES (Continued)  
METALLIZED-PAPER CAPACITORS**

**TYPE P30Z Bathtub Case**



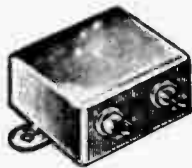
Aerolite Metallized-Paper capacitors. Hyvol K or M impregnated in bathtub, hermetically-sealed metal cases. Meets rigid MIL requirements for moisture immersion and vibration testing.

Standard Tolerance  $\pm 20\%$

Cap. Mfd.	Volts	Size
4.0	150	1 1/4 x 1 x 3/8
6.0	150	2 x 1 1/4 x 3/8
8.0	150	2 x 2 x 1
10.0	150	2 x 2 x 1 1/8
12.0	150	2 x 2 x 1 1/4
.5	200	1 1/4 x 1 x 3/8
1.0	200	1 1/4 x 1 x 3/8
2.0	200	1 1/4 x 1 x 3/8
.25	400	1 1/4 x 1 x 3/8

Cap. Mfd.	Volts	Size
.5	400	1 1/4 x 1 x 3/8
1.0	400	1 1/4 x 1 x 3/8
2.0	400	2 x 1 1/4 x 3/8
4.0	400	2 x 2 x 1 1/8
.1	600	1 1/4 x 1 x 3/8
.25	600	1 1/4 x 1 x 3/8
.5	600	1 1/4 x 1 x 3/8
1.0	600	1 1/4 x 1 x 3/8
2.0	600	2 x 2 x 1

**TYPE P30ZN High Temperature Bathtub Case**



AEROVOX type P30ZN Aerolene impregnated metallized-paper capacitors housed in "bathtub" metal cases hermetically sealed. Operating temperature range  $-65^{\circ}\text{C}$ . to  $+100^{\circ}\text{C}$ . at full rating with operation to  $+125^{\circ}\text{C}$ . at 75 percent of voltage rating.

Standard Tolerance  $\pm 20\%$

Capacity	150 V	200 V	400 V	600 V
.1		1 1/4 x 1 x 3/8	1 1/4 x 1 x 3/8	1 1/4 x 1 x 3/8
.25		1 1/4 x 1 x 3/8	1 1/4 x 1 x 3/8	1 1/4 x 1 x 3/8
.5		1 1/4 x 1 x 3/8	1 1/4 x 1 x 3/8	1 1/4 x 1 x 3/8
1.0		1 1/4 x 1 x 3/8	1 1/4 x 1 x 3/8	1 1/4 x 1 x 3/8
2.0		1 1/4 x 1 x 3/8	2 x 1 1/4 x 3/8	2 x 2 x 1
3.0	1 1/4 x 1 x 3/8		2 x 1 1/4 x 3/8	2 x 2 x 1 1/8
4.0	1 1/4 x 1 x 3/8		2 x 2 x 1	2 x 2 x 1 1/4
5.0	1 1/4 x 1 x 3/8		2 x 2 x 1 1/8	
6.0	1 1/4 x 1 1/4 x 3/8			
8.0	2 x 1 1/4 x 3/8			
10.0	2 x 1 1/4 x 3/8			
12.0	2 x 2 x 1			
15.0	2 x 2 x 1			

**TYPE P82Z Wax Impregnated Cardboard Sleeve**



Metallized-paper capacitor in wax impregnated cardboard sleeve. These units are manufactured with metal end caps and extended foil construction for low impedance. Operating temperature,  $-40^{\circ}\text{C}$ . to  $+70^{\circ}\text{C}$ . Standard tolerance  $\pm 20\%$ . Also available in  $\pm 10\%$  and  $\pm 5\%$  on special order.

Capacity Mfd.	200 V	400 V	600 V
.01	3/8 x 3/8	3/8 x 3/8	3/8 x 3/8
.02	3/8 x 3/8	3/8 x 3/8	3/8 x 3/8
.03	3/8 x 3/8	3/8 x 3/8	1 1/2 x 3/8
.05	3/8 x 3/8	1 1/2 x 3/8	1 1/2 x 3/8
.1	3/8 x 3/8	1 1/2 x 3/8	1 1/2 x 3/8
.25	1 1/2 x 3/8	3/4 x 1 1/8	3/4 x 1 1/8
.5	1 1/2 x 3/8	3/4 x 1 1/8	2 1/2 x 1 1/8
1.0	3/4 x 1 1/8	2 1/2 x 2 1/8	
2.0	3/4 x 1 1/8		

**TYPE P83Z Microminiatures**



Ultra-small, new metallized-paper dielectric capacitor particularly applicable in the electronic field to replace the low capacity paper units now being used. Hyvol K impregnated in humidity resistant molded thermo-plastic cases.

Standard Tolerance  $\pm 25\%$

Capacity Mfd.	Voltage	Case Size (Inches) Dia. x Lgth.	Capacity Mfd.	Voltage	Case Size (Inches) Dia. x Lgth.
.004	200 VDC	3/16 x 3/16	.0005	600 VDC	3/16 x 3/16
.005	200 VDC	3/16 x 3/16	.0008	600 VDC	3/16 x 3/16
.01	200 VDC	3/16 x 3/16	.001	600 VDC	3/16 x 3/16
.02	200 VDC	3/16 x 3/16	.002	600 VDC	3/16 x 3/16
.04	200 VDC	3/16 x 3/16	.0022	600 VDC	3/16 x 3/16
.002	400 VDC	3/16 x 3/16	.0047	600 VDC	3/16 x 3/16
.003	400 VDC	3/16 x 3/16	.005	600 VDC	3/16 x 3/16
.008	400 VDC	3/16 x 3/16	.0068	600 VDC	3/16 x 3/16
.01	400 VDC	3/16 x 3/16			

**TYPE P89ZXY Hermetically Sealed Tubulars**



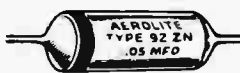
Hermetically sealed metallized paper capacitors. Sealed in metal cases with rubber bakelite end seals. Impregnated with Hyvol K or Hyvol M, these units are manufactured for operating temperature of  $-55^{\circ}\text{C}$ . to  $+70^{\circ}\text{C}$ . without voltage derating and operation up to  $95^{\circ}\text{C}$ . ambient with derating. Standard units are furnished without insulating tube or bracket (P89ZXY). Standard tolerance  $\pm 20\%$ . Also available in  $\pm 10\%$  and  $\pm 5\%$  on special order.

**Style Variations**

- P89Z —with cardboard insulating sleeve and radial mounting bracket.
- P89ZX —without mounting bracket but with cardboard insulating sleeve.
- P89ZXP—without mounting bracket but with plastic insulating sleeve.
- P89ZXY—without insulating sleeve or mounting bracket.
- P89ZY —without insulating sleeve but with radial mounting bracket.

Cap. Mfd.	Size 150 VDC	Size 200 VDC	Size 400 VDC	Size 600 VDC
.01				3/8 x 1
.02				3/8 x 1
.03				3/8 x 1
.05				1/2 x 1 1/2
.1		3/8 x 1	3/8 x 1 1/4	1/2 x 1 1/2
.25		1/2 x 1	3/8 x 1 1/4	3/8 x 1 1/2
.5		1/2 x 1 1/4	3/8 x 2	3/8 x 2
1.0		3/8 x 1 1/2	3/8 x 2 1/2	1 1/4 x 2 1/2
2.0		3/8 x 2	1 x 2 1/2	1 1/4 x 2 1/2
3.0	3/4 x 2			
4.0	1 1/4 x 2			
6.0	1 x 2			

**TYPE P92ZN High Temperature Tubulars**



AEROVOX type P92ZN Aerolene impregnated metallized-paper capacitors are modified plastic tubular type, Duranite end-sealed capacitors in paper cases. Operating temperature range is  $-30^{\circ}\text{C}$ . to  $+100^{\circ}\text{C}$ .

Standard Tolerance  $\pm 20\%$

Capacity	200 V	400 V	600 V
.01	3/16 x 3/16	1/4 x 2 1/2	3/16 x 2 1/2
.02	3/16 x 2 1/2	3/16 x 2 1/2	3/16 x 2 1/2
.03	3/16 x 2 1/2	3/16 x 2 1/2	1 1/2 x 2 1/2
.05	3/16 x 2 1/2	3/16 x 2 1/2	1 1/2 x 2 1/2
.1	3/16 x 2 1/2	3/16 x 1 1/2	1 1/2 x 1 1/2
.25	3/16 x 2 1/2	3/16 x 1 1/2	3/8 x 1 1/2
.5	1 1/2 x 1 1/2	3/8 x 1 1/2	1 1/4 x 1 1/2
1.0	3/4 x 1 1/2	3/8 x 1 1/2	1 1/4 x 1 1/2
2.0	3/8 x 1 1/2	1 1/4 x 2 1/8	1 1/4 x 2 1/8

ALL TYPES ON THIS PAGE AVAILABLE IN CLOSER TOLERANCE ON SPECIAL ORDER

# Capacitors

# AEROVOX

# Resistors

## INDUSTRIAL SECTION—STANDARD TYPES (Continued)

### TYPES P123ZG and P123ZNG

#### Metal-Cased Capacitors



### METALLIZED-PAPER

Metallized paper tubulars hermetically sealed in metal tubes with glass end seals soldered for positive moisture seal.

Designed to meet critical operating temperatures and the need for increased reliability in the electronic field.

The P123ZG is manufactured to meet operating temperature range of -55°C. to +70°C. without derating and up to 100°C. with derating to 75%.

The P123ZNG—Aerolene impregnated—is similar to the P123ZG, with the additional feature that it will operate up to temperatures of 100°C., at full voltage rating and 125°C. with voltage derating to 75%.

P123ZG and P123ZNG are case grounded. P123Z and P123ZN are case insulated. Standard tolerance .01 mfd and lower ±25%. .015 mfd and up to ±20%. Also available in ±10% and ±5% on special order.

Suffix P denotes plastic tube; B denotes mtg. bracket (not available with plastic tube); T denotes threaded neck terminal

Capacity	P123Z	P123ZP	P123ZG	P123ZGP
200 Volts				
.0005	.175 x 1/2	.237 x 9/16	.175 x 7/16	.237 x 1/2
.001	.175 x 1/2	.237 x 9/16	.175 x 7/16	.237 x 1/2
.002	.175 x 1/2	.237 x 9/16	.175 x 7/16	.237 x 1/2
.003	.175 x 1/2	.237 x 9/16	.175 x 7/16	.237 x 1/2
.005	.175 x 1/2	.237 x 9/16	.175 x 7/16	.237 x 1/2
.01	.175 x 1/2	.237 x 9/16	.175 x 7/16	.237 x 1/2
.015	.195 x 9/16	.257 x 5/8	.195 x 1/2	.257 x 9/16
.02	.195 x 9/16	.257 x 5/8	.195 x 1/2	.257 x 9/16
.022	.195 x 9/16	.257 x 5/8	.195 x 1/2	.257 x 9/16
.033	.235 x 5/8	.297 x 11/16	.235 x 1/2	.297 x 5/8
.04	.235 x 5/8	.297 x 11/16	.235 x 1/2	.297 x 5/8
.047	.235 x 5/8	.297 x 11/16	.235 x 1/2	.297 x 5/8
.05	.235 x 5/8	.297 x 11/16	.235 x 1/2	.297 x 5/8
.068	.312 x 29/32	.374 x 27/32	.312 x 29/32	.374 x 29/32
.1	.312 x 29/32	.374 x 27/32	.312 x 29/32	.374 x 29/32
.15	.312 x 1 1/32	.374 x 1 1/32	.312 x 1 1/32	.374 x 1 1/32
.2	.312 x 1 1/32	.374 x 1 1/32	.312 x 1 1/32	.374 x 1 1/32
.22	.312 x 1 1/32	.374 x 1 1/32	.312 x 1 1/32	.374 x 1 1/32
.25	.312 x 1 1/32	.374 x 1 1/32	.312 x 1 1/32	.374 x 1 1/32
.33	.400 x 1 1/32	.462 x 1 1/32	.400 x 1 1/32	.462 x 1 1/32
.47	.400 x 1 1/32	.462 x 1 1/32	.400 x 1 1/32	.462 x 1 1/32
.5	.400 x 1 1/32	.462 x 1 1/32	.400 x 1 1/32	.462 x 1 1/32
.68	.562 x 1 1/32	.624 x 1 1/32	.562 x 1 1/32	.624 x 1 1/32
1.0	.562 x 1 1/32	.624 x 1 1/32	.562 x 1 1/32	.624 x 1 1/32
1.5	.562 x 1 1/32	.624 x 1 1/32	.562 x 1 1/32	.624 x 1 1/32
2.0	.562 x 1 1/32	.624 x 1 1/32	.562 x 1 1/32	.624 x 1 1/32

Capacity	P123Z	P123ZP	P123ZG	P123ZGP
400 Volts (cont.)				
.047	.400 x 29/32	.462 x 27/32	.400 x 29/32	.462 x 29/32
.05	.400 x 29/32	.462 x 27/32	.400 x 29/32	.462 x 29/32
.068	.400 x 1 1/32	.462 x 1 1/32	.400 x 1 1/32	.462 x 1 1/32
.1	.400 x 1 1/32	.462 x 1 1/32	.400 x 1 1/32	.462 x 1 1/32
.15	.500 x 1 1/32	.562 x 1 1/32	.500 x 1 1/32	.562 x 1 1/32
.2	.500 x 1 1/32	.562 x 1 1/32	.500 x 1 1/32	.562 x 1 1/32
.22	.562 x 1 1/32	.624 x 1 1/32	.562 x 1 1/32	.624 x 1 1/32
.25	.562 x 1 1/32	.624 x 1 1/32	.562 x 1 1/32	.624 x 1 1/32
.33	.562 x 1 1/32	.624 x 1 1/32	.562 x 1 1/32	.624 x 1 1/32
.47	.562 x 1 1/32	.624 x 1 1/32	.562 x 1 1/32	.624 x 1 1/32
.5	.562 x 1 1/32	.624 x 1 1/32	.562 x 1 1/32	.624 x 1 1/32
.68	.670 x 29/32	.732 x 27/32	.670 x 29/32	.732 x 29/32
1.0	.670 x 29/32	.732 x 27/32	.670 x 29/32	.732 x 29/32

Capacity	P123Z	P123ZP	P123ZG	P123ZGP
400 Volts				
.0005	.235 x 1/2	.297 x 9/16	.235 x 3/8	.297 x 1/2
.001	.235 x 1/2	.297 x 9/16	.235 x 3/8	.297 x 1/2
.002	.235 x 1/2	.297 x 9/16	.235 x 3/8	.297 x 1/2
.003	.235 x 3/8	.297 x 11/16	.235 x 3/8	.297 x 3/8
.005	.235 x 3/8	.297 x 11/16	.235 x 3/8	.297 x 3/8
.01	.235 x 3/8	.297 x 11/16	.235 x 3/8	.297 x 3/8
.015	.235 x 3/8	.297 x 11/16	.235 x 3/8	.297 x 3/8
.02	.235 x 3/8	.297 x 11/16	.235 x 3/8	.297 x 3/8
.022	.312 x 29/32	.374 x 27/32	.312 x 29/32	.374 x 29/32
.033	.312 x 29/32	.374 x 27/32	.312 x 29/32	.374 x 29/32
.04	.312 x 29/32	.374 x 27/32	.312 x 29/32	.374 x 29/32

Capacity	P123Z	P123ZP	P123ZG	P123ZGP
600 Volts				
.0005	.235 x 1/2	.297 x 9/16	.235 x 3/8	.297 x 1/2
.001	.235 x 1/2	.297 x 9/16	.235 x 3/8	.297 x 1/2
.002	.235 x 3/8	.297 x 11/16	.235 x 3/8	.297 x 3/8
.003	.235 x 3/8	.297 x 11/16	.235 x 3/8	.297 x 3/8
.005	.235 x 3/8	.297 x 11/16	.235 x 3/8	.297 x 3/8
.01	.312 x 29/32	.374 x 27/32	.312 x 29/32	.374 x 29/32
.015	.312 x 29/32	.374 x 27/32	.312 x 29/32	.374 x 29/32
.02	.312 x 29/32	.374 x 27/32	.312 x 29/32	.374 x 29/32
.022	.312 x 29/32	.374 x 27/32	.312 x 29/32	.374 x 29/32
.033	.400 x 29/32	.462 x 27/32	.400 x 29/32	.462 x 29/32
.04	.400 x 29/32	.462 x 27/32	.400 x 29/32	.462 x 29/32
.047	.400 x 29/32	.462 x 27/32	.400 x 29/32	.462 x 29/32
.05	.400 x 29/32	.462 x 27/32	.400 x 29/32	.462 x 29/32
.068	.400 x 1 1/32	.462 x 1 1/32	.400 x 1 1/32	.462 x 1 1/32
.1	.500 x 1 1/32	.562 x 1 1/32	.500 x 1 1/32	.562 x 1 1/32
.15	.500 x 1 1/32	.562 x 1 1/32	.500 x 1 1/32	.562 x 1 1/32
.2	.562 x 1 1/32	.624 x 1 1/32	.562 x 1 1/32	.624 x 1 1/32
.22	.562 x 1 1/32	.624 x 1 1/32	.562 x 1 1/32	.624 x 1 1/32
.25	.562 x 1 1/32	.624 x 1 1/32	.562 x 1 1/32	.624 x 1 1/32
.33	.562 x 1 1/32	.624 x 1 1/32	.562 x 1 1/32	.624 x 1 1/32
.47	.670 x 29/32	.732 x 27/32	.670 x 29/32	.732 x 29/32
.5	.670 x 29/32	.732 x 27/32	.670 x 29/32	.732 x 29/32
.68	.670 x 29/32	.732 x 27/32	.670 x 29/32	.732 x 29/32
1.0	.750 x 29/32	.812 x 27/32	.750 x 29/32	.812 x 29/32

Capacity	P123ZN	P123ZNP	P123ZNG	P123ZNGP
200 Volts				
.0005	.175 x 1/2	.237 x 9/16	.175 x 7/16	.237 x 1/2
.001	.175 x 1/2	.237 x 9/16	.175 x 7/16	.237 x 1/2
.002	.175 x 1/2	.237 x 9/16	.175 x 7/16	.237 x 1/2
.003	.175 x 1/2	.237 x 9/16	.175 x 7/16	.237 x 1/2
.005	.175 x 1/2	.237 x 9/16	.175 x 7/16	.237 x 1/2
.01	.175 x 1/2	.237 x 9/16	.175 x 7/16	.237 x 1/2
.015	.195 x 9/16	.257 x 5/8	.195 x 1/2	.257 x 9/16
.02	.195 x 9/16	.257 x 5/8	.195 x 1/2	.257 x 9/16
.022	.195 x 9/16	.257 x 5/8	.195 x 1/2	.257 x 9/16
.033	.235 x 5/8	.297 x 11/16	.235 x 1/2	.297 x 5/8
.04	.235 x 5/8	.297 x 11/16	.235 x 1/2	.297 x 5/8
.047	.235 x 5/8	.297 x 11/16	.235 x 1/2	.297 x 5/8
.05	.235 x 5/8	.297 x 11/16	.235 x 1/2	.297 x 5/8
.068	.312 x 13/16	.374 x 3/8	.312 x 3/4	.374 x 13/16
.1	.312 x 13/16	.374 x 3/8	.312 x 3/4	.374 x 13/16
.15	.312 x 1 1/32	.374 x 13/16	.312 x 1 1/32	.374 x 1 1/32
.2	.312 x 1 1/32	.374 x 13/16	.312 x 1 1/32	.374 x 1 1/32
.22	.312 x 1 1/32	.374 x 13/16	.312 x 1 1/32	.374 x 1 1/32
.25	.312 x 1 1/32	.374 x 13/16	.312 x 1 1/32	.374 x 1 1/32
.33	.400 x 1 1/32	.462 x 1 1/32	.400 x 1 1/32	.462 x 1 1/32
.47	.400 x 1 1/32	.462 x 1 1/32	.400 x 1 1/32	.462 x 1 1/32
.5	.400 x 1 1/32	.462 x 1 1/32	.400 x 1 1/32	.462 x 1 1/32
.68	.500 x 1 1/32	.562 x 1 1/32	.500 x 1 1/32	.562 x 1 1/32
1.0	.562 x 1 1/32	.624 x 1 1/32	.562 x 1 1/32	.624 x 1 1/32
1.5	.562 x 1 1/32	.624 x 1 1/32	.562 x 1 1/32	.624 x 1 1/32
2.0	.562 x 1 1/32	.624 x 1 1/32	.562 x 1 1/32	.624 x 1 1/32

Capacity	P123ZN	P123ZNP	P123ZNG	P123ZNGP
400 Volts (cont.)				
.068	.312 x 1 1/32	.374 x 1 1/32	.312 x 1 1/32	.374 x 1 1/32
.1	.400 x 1 1/32	.462 x 1 1/32	.400 x 1 1/32	.462 x 1 1/32
.15	.500 x 1 1/32	.562 x 1 1/32	.500 x 1 1/32	.562 x 1 1/32
.2	.500 x 1 1/32	.562 x 1 1/32	.500 x 1 1/32	.562 x 1 1/32
.22	.500 x 1 1/32	.562 x 1 1/32	.500 x 1 1/32	.562 x 1 1/32
.25	.500 x 1 1/32	.562 x 1 1/32	.500 x 1 1/32	.562 x 1 1/32
.33	.562 x 1 1/32	.624 x 1 1/32	.562 x 1 1/32	.624 x 1 1/32
.47	.562 x 1 1/32	.624 x 1 1/32	.562 x 1 1/32	.624 x 1 1/32
.5	.562 x 1 1/32	.624 x 1 1/32	.562 x 1 1/32	.624 x 1 1/32
.68	.670 x 1 1/32	.732 x 1 1/32	.670 x 1 1/32	.732 x 1 1/32
1.0	.670 x 2 1/4	.732 x 2 1/4	.670 x 2 1/4	.732 x 2 1/4
1.5	.750 x 2 1/4	.812 x 2 1/4	.750 x 2 1/4	.812 x 2 1/4
2.0	1.000 x 1 1/4	1.062 x 1 1/4	1.000 x 1 1/4	1.062 x 1 1/4

ALL TYPES ON THIS PAGE AVAILABLE IN CLOSER TOLERANCE ON SPECIAL ORDER

Capacitors

**AEROVOX**

Resistors

**INDUSTRIAL SECTION — MIL TYPES  
MIL-C-25A CAPACITORS**

Hermetically sealed tubular capacitors with glass terminal seal and axial wire leads. Characteristic E for operation at —65 to +100°C. Characteristic K for operation at —65 to +125°C. CP04 and CP05 are inserted tab construction; CP08 and CP09 are extended foil construction. Standard tolerance is ±10% (K). Also available in ±20% (M).

**TYPES CP04 and CP05 — Characteristics E and K**

CAPACITY	VOLTAGE	CP04, CHAR. E		CP04, CHAR. K		CP05, CHAR. E		CP05, CHAR. K	
		P123SG		P323SG		P123SGP		P323SGP	
		NO TUBE Case Floating	NO TUBE Case Grounded	NO TUBE Case Floating	NO TUBE Case Grounded	PLASTIC TUBE Case Floating	PLASTIC TUBE Case Grounded	PLASTIC TUBE Case Floating	PLASTIC TUBE Case Grounded
.033	100V	CP04A1EB333K	CP04A3EB333K	CP04A1KB333K	CP04A3KB333K	CP05A1EB333K	CP05A3EB333K	CP05A1KB333K	CP05A3KB333K
.1	100V	CP04A1EB104K	CP04A3EB104K	CP04A1KB104K	CP04A3KB104K	CP05A1EB104K	CP05A3EB104K	CP05A1KB104K	CP05A3KB104K
.15	100V	CP04A1EB154K	CP04A3EB154K	CP04A1KB154K	CP04A3KB154K	CP05A1EB154K	CP05A3EB154K	CP05A1KB154K	CP05A3KB154K
.22	100V	CP04A1EB224K	CP04A3EB224K	CP04A1KB224K	CP04A3KB224K	CP05A1EB224K	CP05A3EB224K	CP05A1KB224K	CP05A3KB224K
.33	100V	CP04A1EB334K	CP04A3EB334K	CP04A1KB334K	CP04A3KB334K	CP05A1EB334K	CP05A3EB334K	CP05A1KB334K	CP05A3KB334K
.47	100V	CP04A1EB474K	CP04A3EB474K	CP04A1KB474K	CP04A3KB474K	CP05A1EB474K	CP05A3EB474K	CP05A1KB474K	CP05A3KB474K
.68	100V	CP04A1EB684K	CP04A3EB684K	CP04A1KB684K	CP04A3KB684K	CP05A1EB684K	CP05A3EB684K	CP05A1KB684K	CP05A3KB684K
1.0	100V	CP04A1EB105K	CP04A3EB105K	CP04A1KB105K	CP04A3KB105K	CP05A1EB105K	CP05A3EB105K	CP05A1KB105K	CP05A3KB105K
.015	200V	CP04A1EC153K	CP04A3EC153K	CP04A1KC153K	CP04A3KC153K	CP05A1EC153K	CP05A3EC153K	CP05A1KC153K	CP05A3KC153K
.022	200V	CP04A1EC223K	CP04A3EC223K	CP04A1KC223K	CP04A3KC223K	CP05A1EC223K	CP05A3EC223K	CP05A1KC223K	CP05A3KC223K
.047	200V	CP04A1EC473K	CP04A3EC473K	CP04A1KC473K	CP04A3KC473K	CP05A1EC473K	CP05A3EC473K	CP05A1KC473K	CP05A3KC473K
.068	200V	CP04A1EC683K	CP04A3EC683K	CP04A1KC683K	CP04A3KC683K	CP05A1EC683K	CP05A3EC683K	CP05A1KC683K	CP05A3KC683K
1	200V	CP04A1EC104K	CP04A3EC104K	CP04A1KC104K	CP04A3KC104K	CP05A1EC104K	CP05A3EC104K	CP05A1KC104K	CP05A3KC104K
.15	200V	CP04A1EC154K	CP04A3EC154K	CP04A1KC154K	CP04A3KC154K	CP05A1EC154K	CP05A3EC154K	CP05A1KC154K	CP05A3KC154K
.22	200V	CP04A1EC224K	CP04A3EC224K	CP04A1KC224K	CP04A3KC224K	CP05A1EC224K	CP05A3EC224K	CP05A1KC224K	CP05A3KC224K
.33	200V	CP04A1EC334K	CP04A3EC334K	CP04A1KC334K	CP04A3KC334K	CP05A1EC334K	CP05A3EC334K	CP05A1KC334K	CP05A3KC334K
.47	200V	CP04A1EC474K	CP04A3EC474K	CP04A1KC474K	CP04A3KC474K	CP05A1EC474K	CP05A3EC474K	CP05A1KC474K	CP05A3KC474K
.68	200V	CP04A1EC684K	CP04A3EC684K	CP04A1KC684K	CP04A3KC684K	CP05A1EC684K	CP05A3EC684K	CP05A1KC684K	CP05A3KC684K
1.0	200V	CP04A1EC105K	CP04A3EC105K	CP04A1KC105K	CP04A3KC105K	CP05A1EC105K	CP05A3EC105K	CP05A1KC105K	CP05A3KC105K
.01	400V	CP04A1EE103K	CP04A3EE103K	CP04A1KE103K	CP04A3KE103K	CP05A1EE103K	CP05A3EE103K	CP05A1KE103K	CP05A3KE103K
.033	400V	CP04A1EE333K	CP04A3EE333K	CP04A1KE333K	CP04A3KE333K	CP05A1EE333K	CP05A3EE333K	CP05A1KE333K	CP05A3KE333K
.047	400V	CP04A1EE473K	CP04A3EE473K	CP04A1KE473K	CP04A3KE473K	CP05A1EE473K	CP05A3EE473K	CP05A1KE473K	CP05A3KE473K
.068	400V	CP04A1EE683K	CP04A3EE683K	CP04A1KE683K	CP04A3KE683K	CP05A1EE683K	CP05A3EE683K	CP05A1KE683K	CP05A3KE683K
1	400V	CP04A1EE104K	CP04A3EE104K	CP04A1KE104K	CP04A3KE104K	CP05A1EE104K	CP05A3EE104K	CP05A1KE104K	CP05A3KE104K
.15	400V	CP04A1EE154K	CP04A3EE154K	CP04A1KE154K	CP04A3KE154K	CP05A1EE154K	CP05A3EE154K	CP05A1KE154K	CP05A3KE154K
.22	400V	CP04A1EE224K	CP04A3EE224K	CP04A1KE224K	CP04A3KE224K	CP05A1EE224K	CP05A3EE224K	CP05A1KE224K	CP05A3KE224K
.33	400V	CP04A1EE334K	CP04A3EE334K	CP04A1KE334K	CP04A3KE334K	CP05A1EE334K	CP05A3EE334K	CP05A1KE334K	CP05A3KE334K
.47	400V	CP04A1EE474K	CP04A3EE474K	CP04A1KE474K	CP04A3KE474K	CP05A1EE474K	CP05A3EE474K	CP05A1KE474K	CP05A3KE474K
.68	400V	CP04A1EE684K	CP04A3EE684K	CP04A1KE684K	CP04A3KE684K	CP05A1EE684K	CP05A3EE684K	CP05A1KE684K	CP05A3KE684K
1.0	400V	CP04A1EE105K	CP04A3EE105K	CP04A1KE105K	CP04A3KE105K	CP05A1EE105K	CP05A3EE105K	CP05A1KE105K	CP05A3KE105K
.001	600V	CP04A1EF102K	CP04A3EF102K	CP04A1KF102K	CP04A3KF102K	CP05A1EF102K	CP05A3EF102K	CP05A1KF102K	CP05A3KF102K
.0015	600V	CP04A1EF152K	CP04A3EF152K	CP04A1KF152K	CP04A3KF152K	CP05A1EF152K	CP05A3EF152K	CP05A1KF152K	CP05A3KF152K
.0022	600V	CP04A1EF222K	CP04A3EF222K	CP04A1KF222K	CP04A3KF222K	CP05A1EF222K	CP05A3EF222K	CP05A1KF222K	CP05A3KF222K
.0033	600V	CP04A1EF332K	CP04A3EF332K	CP04A1KF332K	CP04A3KF332K	CP05A1EF332K	CP05A3EF332K	CP05A1KF332K	CP05A3KF332K
.0047	600V	CP04A1EF472K	CP04A3EF472K	CP04A1KF472K	CP04A3KF472K	CP05A1EF472K	CP05A3EF472K	CP05A1KF472K	CP05A3KF472K
.0068	600V	CP04A1EF682K	CP04A3EF682K	CP04A1KF682K	CP04A3KF682K	CP05A1EF682K	CP05A3EF682K	CP05A1KF682K	CP05A3KF682K
.01	600V	CP04A1EF103K	CP04A3EF103K	CP04A1KF103K	CP04A3KF103K	CP05A1EF103K	CP05A3EF103K	CP05A1KF103K	CP05A3KF103K
.015	600V	CP04A1EF153K	CP04A3EF153K	CP04A1KF153K	CP04A3KF153K	CP05A1EF153K	CP05A3EF153K	CP05A1KF153K	CP05A3KF153K
.022	600V	CP04A1EF223K	CP04A3EF223K	CP04A1KF223K	CP04A3KF223K	CP05A1EF223K	CP05A3EF223K	CP05A1KF223K	CP05A3KF223K
.033	600V	CP04A1EF333K	CP04A3EF333K	CP04A1KF333K	CP04A3KF333K	CP05A1EF333K	CP05A3EF333K	CP05A1KF333K	CP05A3KF333K
.047	600V	CP04A1EF473K	CP04A3EF473K	CP04A1KF473K	CP04A3KF473K	CP05A1EF473K	CP05A3EF473K	CP05A1KF473K	CP05A3KF473K
.068	600V	CP04A1EF683K	CP04A3EF683K	CP04A1KF683K	CP04A3KF683K	CP05A1EF683K	CP05A3EF683K	CP05A1KF683K	CP05A3KF683K
1	600V	CP04A1EF104K	CP04A3EF104K	CP04A1KF104K	CP04A3KF104K	CP05A1EF104K	CP05A3EF104K	CP05A1KF104K	CP05A3KF104K
.15	600V	CP04A1EF154K	CP04A3EF154K	CP04A1KF154K	CP04A3KF154K	CP05A1EF154K	CP05A3EF154K	CP05A1KF154K	CP05A3KF154K
.22	600V	CP04A1EF224K	CP04A3EF224K	CP04A1KF224K	CP04A3KF224K	CP05A1EF224K	CP05A3EF224K	CP05A1KF224K	CP05A3KF224K
.33	600V	CP04A1EF334K	CP04A3EF334K	CP04A1KF334K	CP04A3KF334K	CP05A1EF334K	CP05A3EF334K	CP05A1KF334K	CP05A3KF334K
.47	600V	CP04A1EF474K	CP04A3EF474K	CP04A1KF474K	CP04A3KF474K	CP05A1EF474K	CP05A3EF474K	CP05A1KF474K	CP05A3KF474K
.68	600V	CP04A1EF684K	CP04A3EF684K	CP04A1KF684K	CP04A3KF684K	CP05A1EF684K	CP05A3EF684K	CP05A1KF684K	CP05A3KF684K

**TYPES CP61\*, CP63, CP65 — Characteristic E  
AEROVOX TYPE JP16M**

Compact, oil impregnated and filled, rectangular unit of minimum size and weight. Excellent for space saving applications. Immersion proof and hermetically sealed. Dual section has case grounded. CP61 can be mounted with terminals up or down by using detachable brackets, MIL type CP06F or CP06S. CP63 and CP65 has channel brackets attached. Standard tolerance on single section units, ±10% (K), on multiple section units +20 —10% (V).

Cap.	Voltage	JP16M No Brackets	JP16MCT. Top Term.	JP16MCB Bottom Term.	Cap.	Voltage	JP16M No Brackets	JP16MCT. Top Term.	JP16MCB Bottom Term.
.1	400V	CP61B1EE104K	CP63B1EE104K	CP65B1EE104K	.01	1000V	CP61B1EG103K	CP63B1EG103K	CP65B1EG103K
.25	400V	CP61B1EE254K	CP63B1EE254K		.02	1000V	CP61B1EG203K	CP63B1EG203K	CP65B1EG203K
1.0	400V	CP61B1EE105K	CP63B1EE105K		.05	1000V	CP61B1EG503K	CP63B1EG503K	CP65B1EG503K
.05	600V	CP61B1EF503K	CP63B1EF503K	CP65B1EF503K	.1	1000V		CP63B1EG104K	
.1	600V	CP61B1EF104K	CP63B1EF104K	CP65B1EF104K	.25	1000V		CP63B1EG254K	
.25	600V	CP61B1EF254K	CP63B1EF254K	CP65B1EF254K	.5	1000V		CP63B1EG504K	
.5	600V	CP61B1EF504K	CP63B1EF504K	CP65B1EF504K	2X.01	1000V	CP61B6EG103V		
1.0	600V	CP61B1EF105K	CP63B1EF105K	CP65B1EF105K	2X.02	1000V	CP61B6EG203V		
2X.05	600V	CP61B6EF503V	CP63B6EF503V	CP65B6EF503V	2X.05	1000V	CP61B6EG503V		
2X.1	600V	CP61B6EF104V	CP63B6EF104V	CP65B6EF104V					
2X.25	600V	CP61B6EF254V	CP63B6EF254V	CP65B6EF254V					
2X.5	600V	CP61B6EF504V	CP63B6EF504V	CP65B6EF504V					

\* CP61 is now designated as CP90 in MIL Specifications. Bracket designation is CP090.

Capacitors

**AEROVOX**

Resistors

**INDUSTRIAL SECTION — MIL TYPES  
MIL-C-25A CAPACITORS**

Hermetically sealed tubular capacitors with glass terminal seal and axial wire leads. Characteristic E for operation at -65 to +100°C. Characteristic K for operation at -65 to +125°C. CP04 and CP05 are inserted tab construction; CP08 and CP09 are extended foil construction. Standard tolerance is ±10% (K). Also available in ±20% (M).

**TYPES CP08 and CP09 — Characteristics E and K**

CAPACITY	VOLTAGE	CP08, CHAR. E		CP08, CHAR. K		CP09, CHAR. E		CP09, CHAR. K	
		P123SX		P323SX		P123SXP		P323SXP	
		NO TUBE	NO TUBE	NO TUBE	NO TUBE	PLASTIC TUBE	PLASTIC TUBE	PLASTIC TUBE	PLASTIC TUBE
		Case Floating	Case Grounded	Case Floating	Case Grounded	Case Floating	Case Grounded	Case Floating	Case Grounded
.01	100V	CP08A1EB103K	CP08A3EB103K	CP08A1KB103K	CP08A3KB103K	CP09A1EB103K	CP09A3EB103K	CP09A1KB103K	CP09A3KB103K
.015	100V	CP08A1EB153K	CP08A3EB153K	CP08A1KB153K	CP08A3KB153K	CP09A1EB153K	CP09A3EB153K	CP09A1KB153K	CP09A3KB153K
.047	100V	CP08A1EB473K	CP08A3EB473K	CP08A1KB473K	CP08A3KB473K	CP09A1EB473K	CP09A3EB473K	CP09A1KB473K	CP09A3KB473K
.1	100V	CP08A1EB104K	CP08A3EB104K	CP08A1KB104K	CP08A3KB104K	CP09A1EB104K	CP09A3EB104K	CP09A1KB104K	CP09A3KB104K
.15	100V	CP08A1EB154K	CP08A3EB154K	CP08A1KB154K	CP08A3KB154K	CP09A1EB154K	CP09A3EB154K	CP09A1KB154K	CP09A3KB154K
.22	100V	CP08A1EB224K	CP08A3EB224K	CP08A1KB224K	CP08A3KB224K	CP09A1EB224K	CP09A3EB224K	CP09A1KB224K	CP09A3KB224K
.33	100V	CP08A1EB334K	CP08A3EB334K	CP08A1KB334K	CP08A3KB334K	CP09A1EB334K	CP09A3EB334K	CP09A1KB334K	CP09A3KB334K
.47	100V	CP08A1EB474K	CP08A3EB474K	CP08A1KB474K	CP08A3KB474K	CP09A1EB474K	CP09A3EB474K	CP09A1KB474K	CP09A3KB474K
.68	100V	CP08A1EB684K	CP08A3EB684K	CP08A1KB684K	CP08A3KB684K	CP09A1EB684K	CP09A3EB684K	CP09A1KB684K	CP09A3KB684K
.1	100V	CP08A1EB105K	CP08A3EB105K	CP08A1KB105K	CP08A3KB105K	CP09A1EB105K	CP09A3EB105K	CP09A1KB105K	CP09A3KB105K
.0047	200V	CP08A1EC472K	CP08A3EC472K	CP08A1KC472K	CP08A3KC472K	CP09A1EC472K	CP09A3EC472K	CP09A1KC472K	CP09A3KC472K
.0068	200V	CP08A1EC682K	CP08A3EC682K	CP08A1KC682K	CP08A3KC682K	CP09A1EC682K	CP09A3EC682K	CP09A1KC682K	CP09A3KC682K
.022	200V	CP08A1EC223K	CP08A3EC223K	CP08A1KC223K	CP08A3KC223K	CP09A1EC223K	CP09A3EC223K	CP09A1KC223K	CP09A3KC223K
.033	200V	CP08A1EC333K	CP08A3EC333K	CP08A1KC333K	CP08A3KC333K	CP09A1EC333K	CP09A3EC333K	CP09A1KC333K	CP09A3KC333K
.047	200V	CP08A1EC473K	CP08A3EC473K	CP08A1KC473K	CP08A3KC473K	CP09A1EC473K	CP09A3EC473K	CP09A1KC473K	CP09A3KC473K
.068	200V	CP08A1EC683K	CP08A3EC683K	CP08A1KC683K	CP08A3KC683K	CP09A1EC683K	CP09A3EC683K	CP09A1KC683K	CP09A3KC683K
.1	200V	CP08A1EC104K	CP08A3EC104K	CP08A1KC104K	CP08A3KC104K	CP09A1EC104K	CP09A3EC104K	CP09A1KC104K	CP09A3KC104K
.15	200V	CP08A1EC154K	CP08A3EC154K	CP08A1KC154K	CP08A3KC154K	CP09A1EC154K	CP09A3EC154K	CP09A1KC154K	CP09A3KC154K
.22	200V	CP08A1EC224K	CP08A3EC224K	CP08A1KC224K	CP08A3KC224K	CP09A1EC224K	CP09A3EC224K	CP09A1KC224K	CP09A3KC224K
.33	200V	CP08A1EC334K	CP08A3EC334K	CP08A1KC334K	CP08A3KC334K	CP09A1EC334K	CP09A3EC334K	CP09A1KC334K	CP09A3KC334K
.47	200V	CP08A1EC474K	CP08A3EC474K	CP08A1KC474K	CP08A3KC474K	CP09A1EC474K	CP09A3EC474K	CP09A1KC474K	CP09A3KC474K
.68	200V	CP08A1EC684K	CP08A3EC684K	CP08A1KC684K	CP08A3KC684K	CP09A1EC684K	CP09A3EC684K	CP09A1KC684K	CP09A3KC684K
1.0	200V	CP08A1EC105K	CP08A3EC105K	CP08A1KC105K	CP08A3KC105K	CP09A1EC105K	CP09A3EC105K	CP09A1KC105K	CP09A3KC105K
.0033	400V	CP08A1EE332K	CP08A3EE332K	CP08A1KE332K	CP08A3KE332K	CP09A1EE332K	CP09A3EE332K	CP09A1KE332K	CP09A3KE332K
.015	400V	CP08A1EE153K	CP08A3EE153K	CP08A1KE153K	CP08A3KE153K	CP09A1EE153K	CP09A3EE153K	CP09A1KE153K	CP09A3KE153K
.033	400V	CP08A1EE333K	CP08A3EE333K	CP08A1KE333K	CP08A3KE333K	CP09A1EE333K	CP09A3EE333K	CP09A1KE333K	CP09A3KE333K
.047	400V	CP08A1EE473K	CP08A3EE473K	CP08A1KE473K	CP08A3KE473K	CP09A1EE473K	CP09A3EE473K	CP09A1KE473K	CP09A3KE473K
.068	400V	CP08A1EE683K	CP08A3EE683K	CP08A1KE683K	CP08A3KE683K	CP09A1EE683K	CP09A3EE683K	CP09A1KE683K	CP09A3KE683K
1	400V	CP08A1EE104K	CP08A3EE104K	CP08A1KE104K	CP08A3KE104K	CP09A1EE104K	CP09A3EE104K	CP09A1KE104K	CP09A3KE104K
.15	400V	CP08A1EE154K	CP08A3EE154K	CP08A1KE154K	CP08A3KE154K	CP09A1EE154K	CP09A3EE154K	CP09A1KE154K	CP09A3KE154K
.22	400V	CP08A1EE224K	CP08A3EE224K	CP08A1KE224K	CP08A3KE224K	CP09A1EE224K	CP09A3EE224K	CP09A1KE224K	CP09A3KE224K
.33	400V	CP08A1EE334K	CP08A3EE334K	CP08A1KE334K	CP08A3KE334K	CP09A1EE334K	CP09A3EE334K	CP09A1KE334K	CP09A3KE334K
.47	400V	CP08A1EE474K	CP08A3EE474K	CP08A1KE474K	CP08A3KE474K	CP09A1EE474K	CP09A3EE474K	CP09A1KE474K	CP09A3KE474K
.001	600V	CP08A1EF102K	CP08A3EF102K	CP08A1KF102K	CP08A3KF102K	CP09A1EF102K	CP09A3EF102K	CP09A1KF102K	CP09A3KF102K
.0015	600V	CP08A1EF152K	CP08A3EF152K	CP08A1KF152K	CP08A3KF152K	CP09A1EF152K	CP09A3EF152K	CP09A1KF152K	CP09A3KF152K
.0022	600V	CP08A1EF222K	CP08A3EF222K	CP08A1KF222K	CP08A3KF222K	CP09A1EF222K	CP09A3EF222K	CP09A1KF222K	CP09A3KF222K
.0033	600V	CP08A1EF332K	CP08A3EF332K	CP08A1KF332K	CP08A3KF332K	CP09A1EF332K	CP09A3EF332K	CP09A1KF332K	CP09A3KF332K
.0047	600V	CP08A1EF472K	CP08A3EF472K	CP08A1KF472K	CP08A3KF472K	CP09A1EF472K	CP09A3EF472K	CP09A1KF472K	CP09A3KF472K
.0068	600V	CP08A1EF682K	CP08A3EF682K	CP08A1KF682K	CP08A3KF682K	CP09A1EF682K	CP09A3EF682K	CP09A1KF682K	CP09A3KF682K
.01	600V	CP08A1EF103K	CP08A3EF103K	CP08A1KF103K	CP08A3KF103K	CP09A1EF103K	CP09A3EF103K	CP09A1KF103K	CP09A3KF103K
.015	600V	CP08A1EF153K	CP08A3EF153K	CP08A1KF153K	CP08A3KF153K	CP09A1EF153K	CP09A3EF153K	CP09A1KF153K	CP09A3KF153K
.022	600V	CP08A1EF223K	CP08A3EF223K	CP08A1KF223K	CP08A3KF223K	CP09A1EF223K	CP09A3EF223K	CP09A1KF223K	CP09A3KF223K
.033	600V	CP08A1EF333K	CP08A3EF333K	CP08A1KF333K	CP08A3KF333K	CP09A1EF333K	CP09A3EF333K	CP09A1KF333K	CP09A3KF333K
.047	600V	CP08A1EF473K	CP08A3EF473K	CP08A1KF473K	CP08A3KF473K	CP09A1EF473K	CP09A3EF473K	CP09A1KF473K	CP09A3KF473K
.068	600V	CP08A1EF683K	CP08A3EF683K	CP08A1KF683K	CP08A3KF683K	CP09A1EF683K	CP09A3EF683K	CP09A1KF683K	CP09A3KF683K
.1	600V	CP08A1EF104K	CP08A3EF104K	CP08A1KF104K	CP08A3KF104K	CP09A1EF104K	CP09A3EF104K	CP09A1KF104K	CP09A3KF104K
.15	600V	CP08A1EF154K	CP08A3EF154K	CP08A1KF154K	CP08A3KF154K	CP09A1EF154K	CP09A3EF154K	CP09A1KF154K	CP09A3KF154K
.22	600V	CP08A1EF224K	CP08A3EF224K	CP08A1KF224K	CP08A3KF224K	CP09A1EF224K	CP09A3EF224K	CP09A1KF224K	CP09A3KF224K
.33	600V	CP08A1EF334K	CP08A3EF334K	CP08A1KF334K	CP08A3KF334K	CP09A1EF334K	CP09A3EF334K	CP09A1KF334K	CP09A3KF334K
.47	600V	CP08A1EF474K	CP08A3EF474K	CP08A1KF474K	CP08A3KF474K	CP09A1EF474K	CP09A3EF474K	CP09A1KF474K	CP09A3KF474K

**TYPES CP67, CP69 — Characteristics E**

**AEROVOX TYPE JP18M**

Oil impregnated and filled unit, rectangular case with different base size from CP61 series. This difference makes the unit available with 2 or 3 sections, case floating. Single units can also be used for special applications where type CP61 does not fit. Both CP67 and CP69 supplied with channel brackets attached. Standard tolerance on single section units ±10% (K), on multiple section units +20 -10% (V).

Capacity	Voltage	JP18MCT		JP18MCB		Capacity	Voltage	JP18MCT		JP18MCB	
		Top Terminal	Bottom Terminal	Top Terminal	Bottom Terminal			Top Terminal	Bottom Terminal		
.05	600V	CP67B1EF503K	CP69B1EF503K	CP67B1EF503K	CP69B1EF503K	.05	1000V	CP67B1EG503K	CP69B1EG503K	CP67B1EG503K	CP69B1EG503K
.1	600V	CP67B1EF104K	CP69B1EF104K	CP67B1EF104K	CP69B1EF104K	.1	1000V			CP67B1EG104K	CP69B1EG104K
.25	600V	CP67B1EF254K	CP69B1EF254K	CP67B1EF254K	CP69B1EF254K	.25	1000V			CP67B1EG254K	CP69B1EG254K
.5	600V	CP67B1EF504K	CP69B1EF504K	CP67B1EF504K	CP69B1EF504K	.5	1000V			CP67B1EG504K	CP69B1EG504K
1.0	600V	CP67B1EF105K	CP69B1EF105K	CP67B1EF105K	CP69B1EF105K	2X.01	1000V			CP67B1EG103V	CP69B1EG103V
2X.05	600V	CP67B4EF503V	CP69B4EF503V	CP67B4EF503V	CP69B4EF503V	2X.02	1000V			CP67B4EG203V	CP69B4EG203V
2X.1	600V	CP67B4EF104V	CP69B4EF104V	CP67B4EF104V	CP69B4EF104V	2X.05	1000V			CP67B4EG503V	CP69B4EG503V
2X.25	600V	CP67B4EF254V	CP69B4EF254V	CP67B4EF254V	CP69B4EF254V	2X.1	1000V			CP67B4EG104V	CP69B4EG104V
2X.5	600V	CP67B4EF504V	CP69B4EF504V	CP67B4EF504V	CP69B4EF504V	2X.25	1000V			CP67B4EG254V	CP69B4EG254V
3X.05	600V	CP67B5EF503V	CP69B5EF503V	CP67B5EF503V	CP69B5EF503V	3X.01	1000V			CP67B5EG103V	CP69B5EG103V
3X.1	600V	CP67B5EF104V	CP69B5EF104V	CP67B5EF104V	CP69B5EF104V	3X.02	1000V			CP67B5EG203V	CP69B5EG203V
3X.25	600V	CP67B5EF254V	CP69B5EF254V	CP67B5EF254V	CP69B5EF254V	3X.05	1000V			CP67B5EG503V	CP69B5EG503V
.01	1000V	CP67B1EG103K	CP69B1EG103K	CP67B1EG103K	CP69B1EG103K	3X.1	1000V			CP67B1EG104V	CP69B1EG104V
.02	1000V	CP67B1EG203K	CP69B1EG203K	CP67B1EG203K	CP69B1EG203K						

Capacitors

**AEROVOX**

Resistors

**INDUSTRIAL SECTION — MIL TYPES  
TYPE CP70**

**Characteristics E and F  
Porcelain and Riveted Terminals  
AEROVOX TYPES JPO9M and JPO9MR**

Oil impregnated and filled, large, rectangular, metal-cased capacitor for heavy-duty, continuous-service applications such as power supplied for transmitters, amplifiers, etc. Immersion proof and hermetically sealed. Available with either high-voltage, screw-type porcelain-pillar terminals or the space-saving riveted terminal. Pillar terminals have soldering lugs. Standard tolerance  $\pm 10\%$  (K). Also available in  $\pm 20\%$  tolerance (M). MIL-C-25A mounting brackets are also available for all units.

Capacity	Voltage	CHAR. E JPO9M Perc. Term.	Case Size and Brkt. Desig.	CHAR. F JPO9M Perc. Term.	Case Size and Brkt. Desig.	CHAR. E JPO9MR Rivet Term.	Case Size and Brkt. Desig.	CHAR. F JPO9MR Rivet Term.	Case Size and Brkt. Desig.
.5	600V	CP70E1EF504K	A2			CP70B1EF105K	A2		
1.0	600V	CP70E1EF105K	A2			CP70B1EF205K	A4	CP70B1FF205K	A3
2.0	600V	CP70E1EF205K	A4	CP70E1FF205K	A3	CP70B1EF405K	B4	CP70B1FF405K	B3
4.0	600V	CP70E1EF405K	B4	CP70E1FF405K	B3	CP70B1EF605K	C2	CP70B1FF605K	B6
6.0	600V	CP70E1EF605K	C2	CP70E1FF605K	B6	CP70B1EF805K	C3	CP70B1FF805K	C2
8.0	600V	CP70E1EF805K	C3	CP70E1FF805K	C2	CP70B1EF106K	D3	CP70B1FF106K	C4
10.0	600V	CP70E1EF106K	D3	CP70E1FF106K	C4				
.1	1000V	CP70E1EG104K	A1						
.25	1000V	CP70E1EG254K	A2						
.5	1000V	CP70E1EG504K	A2						
1.0	1000V	CP70E1EG105K	A3	CP70E1FG105K	A2	CP70B1EG105K	A3		
2.0	1000V	CP70E1EG205K	A6	CP70E1FG205K	A5	CP70B1EG205K	A6	CP70B1FG205K	A5
4.0	1000V	CP70E1EG405K	C2	CP70E1FG405K	B6	CP70B1EG405K	C2	CP70B1FG405K	B6
6.0	1000V	CP70E1EG605K	D3	CP70E1FG605K	C4	CP70B1EG605K	D3	CP70B1FG605K	C4
8.0	1000V	CP70E1EG805K	D5			CP70B1EG805K	D5	CP70B1FG805K	D2
10.0	1000V	CP70E1EG106K	E5	CP70E1FG106K	D5	CP70B1EG106K	E5	CP70B1FG106K	D5
12.0	1000V	CP70E1EG126K	E6			CP70B1EG126K	E6	CP70B1FG126K	E4
15.0	1000V	CP70E1EG156K	G2	CP70E1FG156K	F1	CP70B1EG156K	G2	CP70B1FG156K	F1
.5	1500V	CP70E1EH504K	A3						
1.0	1500V	CP70E1EH105K	A6	CP70E1FH105K	A5				
2.0	1500V	CP70E1EH205K	B6	CP70E1FH205K	B5	CP70B1EH205K	B6	CP70B1FH205K	B5
4.0	1500V	CP70E1EH405K	D4	CP70E1FH405K	C4	CP70B1EH405K	D4	CP70B1FH405K	C4
6.0	1500V	CP70E1EH605K	E5	CP70E1FH605K	D5	CP70B1EH605K	E5	CP70B1FH605K	D5
8.0	1500V	CP70E1EH805K	F2	CP70E1FH805K	F1	CP70B1EH805K	F2	CP70B1FH805K	F1
10.0	1500V	CP70E1EH106K	G4	CP70E1FH106K	G2	CP70B1EH106K	G4	CP70B1FH106K	G2
12.0	1500V	CP70E1EH126K	J3	CP70E1FH126K	G2	CP70B1EH126K	J3	CP70B1FH126K	G2
15.0	1500V	CP70E1EH156K	J6	CP70E1FH156K	J3	CP70E1EH156K	J6	CP70B1FH156K	J3
.1	2000V	CP70E1EJ104K	B1						
.25	2000V	CP70E1EJ254K	B1						
.5	2000V	CP70E1EJ504K	B2						
1.0	2000V	CP70E1EJ105K	B6	CP70E1FJ105K	B3				
2.0	2000V	CP70E1EJ205K	C4						
4.0	2000V	CP70E1EJ405K	E6	CP70E1FJ405K	E3				
.5	2500V	CP70E1EK504K	B4						
1.0	2500V	CP70E1EK105K	D2	CP70E1FK105K	D1				
2.0	2500V	CP70E1EK205K	E5	CP70E1FK205K	D5				
4.0	2500V	CP70E1EK405K	J2						
10.0	2500V	CP70E1EK106K	J10						
.1	3000V	CP70E1EL104K	B2						
.25	3000V	CP70E1EL254K	B3						
.5	3000V	CP70E1EL504K	B6						
1.0	3000V	CP70E1EL105K	E4						
2.0	3000V	CP70E1EL205K	G2						
4.0	3000V	CP70E1EL405K	J7						
.1	4000V	CP70E1EM104K	E1						
.5	5000V	CP70E1EN504K	E6						
.1	6000V	CP70D1EP104K	E3						
.25	6000V	CP70D1EP254K	E5						
.5	6000V	CP70D1EP504K	J3						

A1	1 1/4" x 1 1/4" x 1 5/8"	D3	3/4" x 1 1/4" x 4"
A2	1 3/4" x 1 1/4" x 2 1/4"	D4	3/4" x 1 1/4" x 4 1/4"
A3	1 3/4" x 1 1/4" x 2 7/8"	D5	3/4" x 1 1/4" x 4 3/4"
A4	1 3/4" x 1 1/4" x 3 1/4"	E1	3/4" x 2 1/4" x 2 3/4"
A5	1 3/4" x 1 1/4" x 3 7/8"	E3	3/4" x 2 1/4" x 3 7/8"
A6	1 3/4" x 1 1/4" x 4 3/4"	E4	3/4" x 2 1/4" x 4 1/2"
B1	2 1/2" x 1 1/4" x 2 1/2"	E5	3/4" x 2 1/4" x 4 3/4"
B2	2 1/2" x 1 1/4" x 2 7/8"	E6	3/4" x 2 1/4" x 5 1/8"
B3	2 1/2" x 1 1/4" x 3 1/2"	F1	3/4" x 2 1/2" x 4 3/4"
B4	2 1/2" x 1 1/4" x 3 7/8"	F2	3/4" x 2 1/2" x 5 3/4"
B5	2 1/2" x 1 1/4" x 4 1/4"	G2	3/4" x 3 1/4" x 4 3/4"
B6	2 1/2" x 1 1/4" x 4 3/4"	G4	3/4" x 3 1/4" x 5 1/2"
C2	3 3/4" x 1 1/4" x 3 7/8"	J2	4 1/4" x 3 3/4" x 4 3/4"
C3	3 3/4" x 1 1/4" x 4 1/4"	J3	4 1/4" x 3 3/4" x 4 3/4"
C4	3 3/4" x 1 1/4" x 4 3/4"	J6	4 1/4" x 3 3/4" x 6"
D1	3 3/4" x 1 3/4" x 3 1/4"	J7	4 1/4" x 3 3/4" x 6 1/2"
D2	3 3/4" x 1 3/4" x 3 7/8"	J10	4 1/4" x 3 3/4" x 8 1/2"

If MIL brackets are required with units, specify CP07S (spade) or CP07F (footed) and add the bracket designation listed beside the unit. Example: CP70E1EF504K with CP07SA2 brackets.

**TYPES CP53, CP54, CP55 AEROVOX TYPE JP30M  
TYPES CP53, CP54, CP55 — Characteristic E**

Oil impregnated and filled, drawn-metal cased capacitors, immersion proof and hermetically sealed. This unusually compact "bathtub" type capacitor is the most popular of the small units for severe operating conditions. Available with terminals on side (CP53), top (CP54), or bottom (CP55). The standard tolerance on single section units is  $\pm 10\%$  (K), on multiple section units  $\pm 20 - 10\%$  (V).

CAPACITY	VOLTAGE	JP30M, SIDE TERM.	JP30MT, TOP TERM.	JP30MB, BOTTOM TERM.	CAPACITY	VOLTAGE	JP30M, SIDE TERM.	JP30MT, TOP TERM.	JP30MB, BOTTOM TERM.
2.0	100V	CP53B1EB205K			3X.05	600V	CP53B5EF503V	CP54B5EF503V	CP55B5EF503V
4.0	100V	CP53B1EB405K			3X.1	600V	CP53B5EF104V	CP54B5EF104V	CP55B5EF104V
1.0	200V	CP53B1EC105K			3X.25	600V	CP53B5EF254V	CP54B5EF254V	CP55B5EF254V
2.0	200V	CP53B1EC205K			3X.5	600V	CP53B5EF504V	CP54B5EF504V	CP55B5EF504V
.5	400V	CP53B1EE504K	CP54B1EE504K		.05	1000V	CP53B1EG503K		
3X.5	400V	CP53B5EE504V			.1	1000V	CP53B1EG104K		
.05	600V	CP53B1EF503K	CP54B1EF503K	CP55B1EF503K	.25	1000V	CP53B1EG254K		
.1	600V	CP53B1EF104K	CP54B1EF104K	CP55B1EF104K	.5	1000V	CP53B1EG504K		
.25	600V	CP53B1EF254K	CP54B1EF254K	CP55B1EF254K	1.0	1000V	CP53B1EG105K		
.5	600V	CP53B1EF504K	CP54B1EF504K	CP55B1EF504K	2X.05	1000V	CP53B4EG503V		
1.0	600V	CP53B1EF105K	CP54B1EF105K	CP55B1EF105K	2X.1	1000V	CP53B4EG104V		
2.0	600V	CP53B1EF205K	CP54B1EF205K	CP55B1EF205K	2X.25	1000V	CP53B4EG254V		
2X.05	600V	CP53B4EF503V	CP54B4EF503V	CP55B4EF503V	2X.5	1000V	CP53B4EG504V		
2X.1	600V	CP53B4EF104V	CP54B4EF104V	CP55B4EF104V	3X.05	1000V	CP53B5EG503V		
2X.25	600V	CP53B4EF254V	CP54B4EF254V	CP55B4EF254V	3X.1	1000V	CP53B5EG104V		
2X.5	600V	CP53B4EF504V	CP54B4EF504V	CP55B4EF504V	3X.25	1000V	CP53B5EG254V		
2X1.0	600V	CP53B4EF105V	CP54B4EF105V	CP55B4EF105V					



Capacitors

**AEROVOX**

Resistors

**INDUSTRIAL SECTION — MIL TYPES**

**MIL-C-25A CAPACITORS**

**TYPES CP-25, CP26, CP27, CP28, CP29 — AEROVOX TYPE P89M**

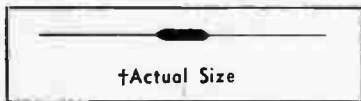
Oil impregnated and filled hermetically sealed tubular capacitors for use in bypass and coupling applications in transmitters and test equipment. Available in 5 case styles, with plastic insulating sleeve and either radial or soldered tangential bracket. Case is floating, but can be furnished grounded on special order. Standard tolerance  $\pm 10\%$  (K). Available also in  $\pm 20\%$  tolerance (M).

CAPACITY	VOLTAGE	P89MXY	P89MXP	P89MY	P89MP	P89MAY
.1	200V	CP25A1EC104K	CP26A1EC104K	CP27A1EC104K	CP28A1EC104K	CP29A1EC104K
.25	200V	CP25A1EC254K	CP26A1EC254K	CP27A1EC254K	CP28A1EC254K	CP29A1EC254K
.5	200V	CP25A1EC504K	CP26A1EC504K	CP27A1EC504K	CP28A1EC504K	CP29A1EC504K
.003	600V	CP25A1EF302K	CP26A1EF302K	CP27A1EF302K	CP28A1EF302K	CP29A1EF302K
.006	600V	CP25A1EF602K	CP26A1EF602K	CP27A1EF602K	CP28A1EF602K	CP29A1EF602K
.01	600V	CP25A1EF103K	CP26A1EF103K	CP27A1EF103K	CP28A1EF103K	CP29A1EF103K
.02	600V	CP25A1EF203K	CP26A1EF203K	CP27A1EF203K	CP28A1EF203K	CP29A1EF203K
.05	600V	CP26A1EF503K	CP26A1EF503K	CP27A1EF503K	CP28A1EF503K	CP29A1EF503K
.1	600V	CP25A1EF104K	CP26A1EF104K	CP27A1EF104K	CP28A1EF104K	CP29A1EF104K
.25	600V	CP25A1EF254K	CP26A1EF254K	CP27A1EF254K	CP28A1EF254K	CP29A1EF254K
.5	600V	CP25A1EF504K	CP26A1EF504K	CP27A1EF504K	CP28A1EF504K	CP29A1EF504K
.003	1000V	CP25A1EG302K	CP26A1EG302K	CP27A1EG302K	CP28A1EG302K	CP29A1EG302K
.006	1000V	CP25A1EG602K	CP26A1EG602K	CP27A1EG602K	CP28A1EG602K	CP29A1EG602K
.01	1000V	CP25A1EG103K	CP26A1EG103K	CP27A1EG103K	CP28A1EG103K	CP29A1EG103K

**TYPE CP41 — Characteristics E and F  
AEROVOX TYPE JP10M**

Cylindrical, hermetically sealed can with screwbase molded cover for vertical mounting. Operating temperature range  $-55$  to  $+85^\circ\text{C}$ . Solder lug, nonremovable terminals (MIL designation B). Supplied with mounting nut and lockwasher. Standard tolerance  $\pm 10\%$  (K). Also available in  $\pm 20\%$  (M).

CAPACITY	VOLTAGE	CHAR. E JP1DM	CHAR. F JP1DM
2.0	600V	CP41B1EF205K	CP41B1FF205K
4.0	600V	CP41B1EF405K	CP41B1FF405K
1.0	1000V	CP41B1EG105K	CP41B1FG105K
2.0	1000V	CP41B1EG205K	CP41B1FG205K
.5	1500V		CP41B1FH504K
1.0	1500V		CP41B1FH105K



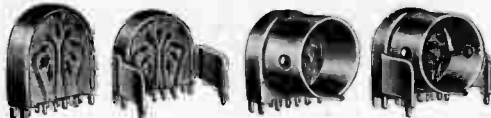
Cerafil—newest and smallest ceramic capacitor to be developed for transistorized assemblies. Rugged ceramic units for operation from  $-55^\circ\text{C}$  to  $+85^\circ\text{C}$ . Standard units have axial wire leads. These units will meet all the requirements of MIL-C-11015A.

- 1—All dimensions in inches.
- 2—Tinned copper-clad steel or tinned copper leads No. 26 (.0159 nom. dia.) AWG.
- 3—Insulation Resistance—greater than 10,000 megohms.
- 4—All units are marked by color-code. No color-code for temperature coefficient or for lead designation since it is obvious.
- 5—Lead length— $1\frac{1}{2}$ " maximum.

**\* CERAFIL CERAMIC CAPACITORS**

Part Number	Capacity (Mfd.)	Voltage	Capacitance change with respect to reference value at $25^\circ\text{C}$ . over temperature range of $-55^\circ\text{C}$ . to $+85^\circ\text{C}$ .		Capacity Tolerance (%)	Dimensions (Insulated)		Color Code
			No Voltage	100 Volts		Diameter (Max.)	Length (Max.)	
C-80V 102AM	.001	100 500	+10%	+10%	$\pm 20\%$	.090	.320	Brown, Red, Black
C-80V 502AM	.005	100 500			$\pm 20\%$	.120	.500	Brown, Orange, Black
C-80V 103AM	.01	100 500			$\pm 20\%$	.180	.500	Brown, Yellow, Black
C-80V 203AM	.02	100 500			$\pm 20\%$	.200	.500	Brown, Green, Black
C-80V 503AM	.05	100 500			$\pm 20\%$	.240	.650	Brown, Blue, Black
C-80V 104AM	.1	100 500	-15%	-35%	$\pm 20\%$	.310	.750	Brown, Violet, Black

**\* RIGHT ANGLE TUBE SOCKETS**



Type A      Type AX      Type B      Type BX

Ordering Example: RA7A = (Type A 7 Pin Socket)

Available in 7-pin and 9-pin types in four styles, these sockets are designed to meet existing MIL Specifications. Active contacts are silver plated and non-faliguing contact pressure provides proper insertion and withdrawal pressure with a minimum of contact resistance. Ideal for hand or mechanical insertion into printed-wiring boards using simple in-line punched round holes. Templates are furnished with each socket. Long terminals permit use of sockets on wide range of board thicknesses.

- Type A — for general purpose applications.
- Type AX — for special applications (military and commercial) where extra strength and rigidity are required.
- Type B — same as Type A except tube shield shell added.
- Type BX — same as Type AX except tube shield shell added.

RA 7 — 7 pin right angle tube socket.      RA 9 — 9 pin right angle tube socket

**\* MODULIZED STANDARD CIRCUITS**

Modules are comprised of uniformly standard, stacked statelite wafers combining the required resistive, capacity and inductive components to form a completely reliable, ruggedly compact electronic circuit.

Based on a study conducted by the National Bureau of Standards, the modules listed below were chosen as representative of circuits appearing in both military and commercial equipment. In all cases, similar functional circuits have been in use for at least ten years without major improvement. Accessories, such as the twelve position bread board, the individual module mounting socket and banana plugs are available to facilitate the inter-connecting of standard circuit modules to form complete electronic sub-assemblies.

Part No.	Description	Part No.	Description	Part No.	Description
A1001	Linear Amplifier, Low Level.	P1001	Video Limiter.	P1006	Dual High Level Cathode Follower.
A1002	Linear Amplifier, Intermediate.	P1002	Low-level Cathode Follower.	R1001	DC Regulator Plus or minus 300V.
A1003	Linear Amplifier, Phase inverter-driver.	P1003	Common Cathode Mixer or Dual Cathode Follower.	R1002	DC Regulator, Plus or Minus 150V.
C1002	Flip-flop, 1 megacycle.	P1004	Cascade Intermediate Video Amplifier.	T1001	Variable Time Delay Monostable Multivibrator.
G1001	PRF Multivibrator.	P1005	Triode Video Driver Amplifier.	T1002	Phantastron Delay.

Capacitors

**AEROVOX**

Resistors

**CERAMICS**

**Hi-Q CAPACITORS**

Ceramic disc and tubular capacitors may be roughly divided into two main categories; namely, General Purpose (including By-pass and Coupling) and Temperature Compensating. The Aerovox line furnishes both tubular and disc-type ceramics in both categories as well as many special purpose types, including Stand-off, Feed-thru, High-voltage Cartwheels and Plate Assemblies.

All general purpose units are marked with Aerovox name or trademark, capacity and voltage, if other than standard.

All temperature compensating units are color-coded in accordance with RETMA Specifications REC107A.

Bypass Coupling Capacitors (BPD) are furnished in GMV (Guaranteed Minimum Value) capacity tolerance since in applications such as in screen grid bypassing, capacity is not a critical characteristic. Due to this fact, Hi-K (Hi Dielectric constant) bodies are used, resulting in the smallest size body for a given capacity.

General purpose capacitors (DI-SI-CI), on the other hand, are recommended for circuits where capacity is more critical such as RC networks, etc. Since capacity tolerance in these cases is  $\pm 20\%$  or less, Hi-K bodies cannot be used. Therefore, sizes of this type of unit are larger than the bypass coupling type.

Temperature compensating units (NPO, N750 in discs and tubular) are for use in critical applications where capacity must not change appreciably with changes in temperature; for example, resonant

circuits or any other application where stability of capacity is necessary.

Since the temperature coefficient is determined by the ceramic mix, all temperature compensating units are manufactured to standard tolerance

Unless otherwise specified, the tolerance on the temperature coefficient is as follows:

Temp. Coef.	Tolerance PPM
NPO	$\pm 30\%$
N080	$\pm 30\%$
N330	$\pm 500\%$
N750	$\pm 100\%$

It should be noted that this is the tolerance of the temperature coefficient and not on the capacity value.

All ceramic capacitors are made by firing the silver electrodes directly to the ceramic dielectric to assure low noise operation. Units are coated with a non-Hygroscopic Phenolic or sealed in Steatite tubes and then impregnated with micro-crystalline wax which helps protect the units from humidity.

The special items such as feed-thru, stand-off, high-voltage cartwheels and printed assemblies are manufactured to complete a full line of ceramic capacitors for replacement as well as industrial use.

**Hi-Q DISK CAPACITORS**



**DISK CAPACITORS**  
Bypass and Coupling

**BPD-GMV CAPACITOR**  
Stock Items 600 VDCW Singles

Type	Cap. Mfd.	Dia.	Type	Cap. Mfd.	Dia.
BPD	.00001	$\frac{3}{16}$	BPD	.0033	$\frac{3}{16}$
BPD	.000015	$\frac{3}{16}$	BPD	.004	$\frac{1}{32}$
BPD	.000022	$\frac{3}{16}$	BPD	.0047	$\frac{1}{32}$
BPD	.000025	$\frac{3}{16}$	BPD	.005	$\frac{1}{32}$
BPD	.000033	$\frac{3}{16}$	BPD	.0068	$\frac{1}{32}$
BPD	.000047	$\frac{3}{16}$	BPD	.01	$\frac{1}{16}$
BPD	.00005	$\frac{3}{16}$	BPD	.015	$\frac{3}{4}$
BPD	.000068	$\frac{3}{16}$	BPD	.02	$\frac{2}{32}$
BPD	.0001	$\frac{3}{16}$	BPD	.03	$\frac{2}{32}$
BPD	.00012	$\frac{3}{16}$	BPD	.05	$\frac{2}{32}$
BPD	.00015	$\frac{3}{16}$			
BPD	.0002	$\frac{3}{16}$			
BPD	.00027	$\frac{3}{16}$			
BPD	.00033	$\frac{3}{16}$			
BPD	.00047	$\frac{3}{16}$			
BPD	.0005	$\frac{3}{16}$			
BPD	.00068	$\frac{3}{16}$			
BPD	.0008	$\frac{3}{16}$			
BPD	.001	$\frac{3}{16}$			
BPD	.0015	$\frac{3}{16}$			
BPD	.002	$\frac{3}{8}$			
BPD	.0022	$\frac{3}{8}$			
BPD	.0025	$\frac{3}{16}$			

**DUALS and TRIPLES**

BPD2-2 x .001	$\frac{1}{32}$
BPD2-2 x .0015	$\frac{1}{32}$
BPD2-2 x .002	$\frac{1}{32}$
BPD2-2 x .0022	$\frac{1}{32}$
BPD2-2 x .003	$\frac{3}{4}$
BPD2-2 x .004	$\frac{3}{4}$
BPD2-2 x .0047	$\frac{3}{4}$
BPD2-2 x .01	$\frac{3}{4}$
BPD2-2 x .02	$\frac{2}{32}$
BPD3-3 x .0015	$\frac{3}{4}$
BPD3-3 x .002	$\frac{3}{4}$

**DI-DISK CAPACITORS**  
General Purpose



**Stock Items 600 VDCW**

Type	Cap. Mmfd.	Dia.	Type	Cap. Mmfd.	Dia.
DI-1	3.3	$\frac{3}{16}$	DI-2	250	$\frac{3}{8}$
DI-1	5	$\frac{3}{16}$	DI-2	270	$\frac{3}{8}$
DI-1	6.8	$\frac{3}{16}$	DI-2	300	$\frac{3}{8}$
DI-1	8.2	$\frac{3}{16}$	DI-2	330	$\frac{3}{8}$
DI-1	10	$\frac{3}{16}$	DI-2	390	$\frac{3}{8}$
DI-1	12	$\frac{3}{16}$	DI-2	470	$\frac{3}{8}$
DI-1	15	$\frac{3}{16}$	DI-2	500	$\frac{3}{8}$
DI-1	18	$\frac{3}{16}$	DI-2	560	$\frac{3}{8}$
DI-1	20	$\frac{3}{16}$	DI-2	680	$\frac{3}{8}$
DI-1	22	$\frac{3}{16}$	DI-2	750	$\frac{3}{8}$
DI-1	25	$\frac{3}{16}$	DI-3	1000	$\frac{3}{16}$
DI-1	27	$\frac{3}{16}$	DI-3	1200	$\frac{3}{16}$
DI-1	30	$\frac{3}{16}$	DI-4	1500	$\frac{1}{32}$
DI-1	33	$\frac{3}{16}$	DI-4	1800	$\frac{1}{32}$
DI-1	39	$\frac{3}{16}$	DI-4	2000	$\frac{1}{32}$
DI-1	47	$\frac{3}{16}$	DI-4	2200	$\frac{1}{32}$
DI-1	50	$\frac{3}{16}$	DI-5	2500	$\frac{1}{16}$
DI-1	56	$\frac{3}{16}$	DI-5	2700	$\frac{1}{16}$
DI-2	68	$\frac{3}{8}$	DI-5	3000	$\frac{1}{16}$
DI-2	82	$\frac{3}{8}$	DI-5	3300	$\frac{1}{16}$
DI-2	100	$\frac{3}{8}$	DI-7	4700	$\frac{2}{32}$
DI-2	120	$\frac{3}{8}$	DI-7	5000	$\frac{2}{32}$
DI-2	150	$\frac{3}{8}$	DI-7	5600	$\frac{2}{32}$
DI-2	180	$\frac{3}{8}$	DI-7	6800	$\frac{2}{32}$
DI-2	200	$\frac{3}{8}$	DI-7	7500	$\frac{2}{32}$
DI-2	220	$\frac{3}{8}$	DI-7	10000	$\frac{2}{32}$

Standard tolerance  $\pm 20\%$ . For  $\pm 10\%$  up to and including 5600 mmfd. add 10% to price.

Capacitors

**AEROVOX**

Resistors

**C E R A M I C S — (Continued)**

**Hi-VOLTAGE  
DISK CAPACITORS**

General Purpose



Hi-Q high voltage disk capacitors are available in many capacities and voltage ratings. These types offer many possible uses in TV circuits where voltages above 500 are necessary. They are the ideal units for dependable day-after-day service. Hi-Q has available numerous combinations of capacity, working voltages and physical sizes. These units are manufactured to specific tolerances as listed.

1500 VDCW			1500 VDCW—(Cont'd)			3000 VDCW			6000 VDCW		
Type	Capacity Mmfd.	Dia.	Type	Capacity Mmfd.	Dia.	Type	Capacity Mmfd.	Dia.	Type	Capacity Mmfd.	Dia.
HVD-15	4.7	3/16	HVD-15	680	3/16	HVD-30	33	3/16	HVD-60	4.7	1/16
HVD-15	6.8	3/16	HVD-15	820	3/16	HVD-30	47	3/16	HVD-60	6.8	1/16
HVD-15	10	3/16	HVD-15	1000	3/16	HVD-30	56	3/16	HVD-60	10	1/16
HVD-15	15	3/16	HVD-15	1200	3/16	HVD-30	68	3/16	HVD-60	15	1/16
HVD-15	22	3/16	HVD-15	1500	1/8	HVD-30	82	3/16	HVD-60	18	1/16
HVD-15	33	3/16	HVD-15	2200	1/8	HVD-30	100	3/16	HVD-60	22	1/16
HVD-15	47	3/16	HVD-15	3300	1/8	HVD-30	120	3/16	HVD-60	30	1/16
HVD-15	56	3/16	HVD-15	4700	1/8	HVD-30	150	3/16	HVD-60	33	1/16
HVD-15	68	3/16	HVD-15	5600	1/8	HVD-30	180	3/16	HVD-60	47	1/16
HVD-15	82	3/16				HVD-30	220	3/16	HVD-60	56	1/16
HVD-15	100	3/16				HVD-30	330	3/16	HVD-60	68	1/16
HVD-15	120	3/16				HVD-30	470	3/16	HVD-60	82	1/16
HVD-15	150	3/16				HVD-30	560	3/16	HVD-60	100	1/16
HVD-15	180	3/16				HVD-30	680	3/16	HVD-60	120	1/16
HVD-15	220	3/16				HVD-30	820	3/16	HVD-60	150	1/16
HVD-15	270	3/16				HVD-30	1000	3/16	HVD-60	220	1/16
HVD-15	330	3/16				HVD-30	1200	3/16	HVD-60	330	1/16
HVD-15	390	3/16				HVD-30	1500	3/16	HVD-60	470	1/16
HVD-15	470	3/16				HVD-30	2200	3/16			
HVD-15	560	3/16				HVD-30	3300	1/8			

3000 VDCW		
Type	Capacity Mmfd.	Dia.
HVD-30	4.7	3/16
HVD-30	6.8	3/16
HVD-30	10	3/16
HVD-30	15	3/16
HVD-30	22	3/16

Tolerance ±20% up to .001 mfd.  
+80% —20% over .001 mfd.

**VIBRATOR BUFFER CAPACITORS — DAC**

1600 VDCW — GMV



Vibrator Buffer Capacitors — ceramic disks for use as buffers in car radios and similar equipment, compact, easily assembled, 1/4 the size of previous paper tubular types rated for 1600 VDCW GMV. For use as replacements only when original equipment uses ceramic buffer.

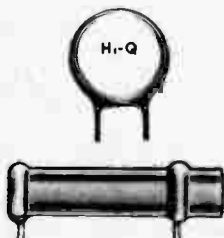
Type	Capacity Mfd.	Diameter	Type	Capacity Mfd.	Diameter
DAC-2	.001	1/16	DAC-9	.005	3/16
DAC-3	.002	1/16	DAC-22	.006	1/16
DAC-4	.0022	1/16	DAC-23	.0068	1
DAC-5	.003	1/16	DAC-24	.007	1
DAC-6	.0033	1/16	DAC-25	.0075	1
DAC-7	.004	1/16	DAC-26	.008	1
DAC-8	.0047	1/16	DAC-27	.01	1

**Hi-Q TEMPERATURE COMPENSATING DISK CAPACITORS — 500 VDCW**

NPO Cap.			NPO Cap.			N-750 Capacity			N-750 Capacity		
Type	Mmfd.	Dia.	Type	Mmfd.	Dia.	Type	Mmfd.	Size	Type	Mmfd.	Size
NPO-D1	3.0	3/16	NPO-D1	25	3/16	N750-D1	10	3/16	N750-D1	100	1 1/2
NPO-D1	3.3	3/16	NPO-D1	33	1/32	N750-D1	15	3/16	N750-D1	150	1 1/2
NPO-D1	4.7	3/16	NPO-D1	39	1/32	N750-D1	20	3/16	N750-D1	200	1 1/4
NPO-D1	5.0	3/16	NPO-D1	47	1/32	N750-D1	22	3/16	N750-D1	220	1 1/4
NPO-D1	6.8	3/16	NPO-D1	50	1/32	N750-D1	25	3/16	N750-D1	330	2 3/2
NPO-D1	8.2	3/16	NPO-D1	68	1/16	N750-D1	33	3/16	N750-D1	360	2 3/2
NPO-D1	10	3/16	NPO-D1	75	1/16	N750-D1	47	3/8	N750-D1	390	2 3/2
NPO-D1	15	3/8	NPO-D1	100	3/4	N750-D1	68	3/8	N750-D1	430	2 3/2
NPO-D1	20	3/8	NPO-D1	120	2 3/2	N750-D1	75	3/16			
NPO-D1	22	3/8	NPO-D1	150	2 3/2						

Standard Tolerance — up to 10 mmf. ±.5 mmf., above 10 mmf. ±10%

**TUBULAR and DISK CAPACITOR SIZES**



SI TUBULAR		
Designation	Size	
SI-1	.234	x .437
SI-2	.234	x .687
SI-3	.312	x 1.250
SI-4	.375	x 1.093
SI-5	.375	x 1.600
SI-6	.375	x 1.968
SI-7	.275	x .875
SI-13	.234	x .468
SI-19	.312	x .937
SI-22	.280	x .750
SI-27	.275	x .500

CI TUBULAR		
Designation	Size	
CI-1	.250	x .562
CI-2	.250	x .812
CI-3	.340	x 1.320

DI DISK		
Designation	Diameter	
DI-0	1/4	
DI-1	3/16	
DI-2	3/8	
DI-3	3/8	
DI-4	1 1/2	
DI-5	1 1/8	



Capacitors

**AEROVOX**

Resistors

**C E R A M I C S — (Continued)**

**Hi-Q TUBULAR CAPACITORS**

**General Purpose**

Hi-Q general purpose tubular ceramic capacitors may be used for coupling, by-passing and filtering where frequency control is not critical (not to be confused with the Hi-Q

line of close tolerance temperature compensating units). Available in two types (SI and CI) small in size, rugged construction and available in a wide range of capacity values.



**500 VDCW**

Cap. Mmfd.	Size
5	SI-1 CI-1
10	SI-1 CI-1
12	SI-1 CI-1
15	SI-1 CI-1
18	SI-1 CI-1
20	SI-1 CI-1
22	SI-1 CI-1
24	SI-1 CI-2
25	SI-1 CI-1
27	SI-1 CI-1
30	SI-1 CI-1
33	SI-1 CI-1
39	SI-1 CI-1
47	SI-1 CI-1
50	SI-1 CI-1
51	SI-1 CI-1
56	SI-1 CI-1
68	SI-1 CI-1
75	SI-1 CI-1
82	SI-1 CI-1
91	SI-1 CI-1
100	SI-1 CI-1
110	SI-1 CI-1
120	SI-1 CI-1
150	SI-1 CI-1
180	SI-1 CI-1
200	SI-1 CI-1
220	SI-1 CI-1
240	SI-1 CI-1
250	SI-1 CI-1
270	SI-1 CI-1
300	SI-1 CI-1
330	SI-1 CI-1
360	SI-1 CI-1
390	SI-1 CI-1

Cap. Mmfd.	Size
470	SI-1 CI-1
500	SI-1 CI-1
510	SI-1 CI-1
560	SI-1 CI-1
680	SI-1 CI-1
750	SI-1 CI-1
820	SI-1 CI-2
910	SI-1 CI-2
1000	SI-1 CI-2
1200	SI-2 CI-2
1500	SI-2 CI-2
1800	SI-2 CI-2
2000	SI-2 CI-2
2200	SI-7 CI-3
2400	SI-7 CI-3
2500	SI-7 CI-3
2700	SI-7 CI-3
3000	SI-19 CI-3
3300	SI-19 CI-3
4000	SI-19 CI-3
4700	SI-3 CI-3
5000	SI-3 CI-3
5100	SI-3 CI-3
5600	SI-3 CI-3
6000	SI-3 CI-3
6800	SI-4
7500	SI-4
10,000	SI-5
15,000	SI-6
17,500	SI-6
20,000	SI-5 GMV
25,000	SI-5 GMV
30,000	SI-6 GMV
33,000	SI-6 GMV

**Hi-Q TEMPERATURE COMPENSATING TUBULAR CAPACITORS**

**Stock Items**

**N750-500 VDCW**



Type	Capacity Mmfd.	Size
N750-SI	3.3	SI-1
N750-SI	5	SI-1
N750-SI	10	SI-1
N750-SI	12	SI-1
N750-SI	15	SI-1
N750-SI	18	SI-1
N750-SI	20	SI-1
N750-SI	22	SI-1
N750-SI	24	SI-1
N750-SI	25	SI-1
N750-SI	27	SI-1
N750-SI	30	SI-1
N750-SI	33	SI-1
N750-SI	36	SI-1
N750-SI	39	SI-1
N750-SI	43	SI-1
N750-SI	47	SI-1
N750-SI	50	SI-1
N750-SI	51	SI-1
N750-SI	56	SI-1
N750-SI	62	SI-1
N750-SI	68	SI-1
N750-SI	75	SI-13
N750-SI	82	SI-13

Type	Capacity Mmfd.	Size
N750-SI	91	SI-2
N750-SI	100	SI-2
N750-SI	110	SI-2
N750-SI	120	SI-7
N750-SI	130	SI-2
N750-SI	150	SI-7
N750-SI	160	SI-7
N750-SI	180	SI-7
N750-SI	200	SI-7
N750-SI	220	SI-7
N750-SI	240	SI-7
N750-SI	270	SI-7
N750-SI	300	SI-19
N750-SI	330	SI-3
N750-SI	360	SI-3
N750-SI	390	SI-3
N750-SI	430	SI-4
N750-SI	470	SI-4
N750-SI	510	SI-4
N750-SI	560	SI-5
N750-SI	620	SI-5
N750-SI	680	SI-5
N750-SI	750	SI-5

Standard Tolerance — up to 10 mmf.  $\pm 5$  mmf., above 10 mmf.  $\pm 10\%$

**NO80 — 500 VDCW**

Type	Capacity Mmfd.	Size
NO80-SI	10	SI-1
NO80-SI	22	SI-1
NO80-SI	33	SI-13

Type	Capacity Mmfd.	Size
NO80-SI	47	SI-27
NO80-SI	62	SI-27

**N330  $\pm 500$  ppm**

Deflection Yoke Capacitor for silvered mica capacitor replacement

Type	Capacity Mmfd.	Type	Size
N330-SI	47 $\pm 10\%$	1500 VDCW	SI-2
N330-SI	56 $\pm 10\%$	1500 VDCW	SI-2

**Hi-Q TEMPERATURE COMPENSATING TUBULAR CAPACITORS NPO-SI**

Type	Capacity Mmfd.	Size
NPO-SI	.5	SI-1
NPO-SI	.68	SI-1
NPO-SI	1.0	SI-1
NPO-SI	1.5	SI-1
NPO-SI	2	SI-1
NPO-SI	2.2	SI-1
NPO-SI	3.0	SI-1
NPO-SI	3.3	SI-1
NPO-SI	4.7	SI-1
NPO-SI	5.0	SI-1
NPO-SI	6.8	SI-1
NPO-SI	8.2	SI-1

Type	Capacity Mmfd.	Size
NPO-SI	10	SI-1
NPO-SI	12	SI-1
NPO-SI	15	SI-1
NPO-SI	18	SI-1
NPO-SI	20	SI-1
NPO-SI	22	SI-1
NPO-SI	24	SI-13
NPO-SI	25	SI-13
NPO-SI	27	SI-13
NPO-SI	30	SI-13
NPO-SI	33	SI-13
NPO-SI	36	SI-2

Type	Capacity Mmfd.	Size
NPO-SI	39	SI-2
NPO-SI	43	SI-2
NPO-SI	47	SI-2
NPO-SI	50	SI-2
NPO-SI	51	SI-2
NPO-SI	56	SI-7
NPO-SI	62	SI-7
NPO-SI	68	SI-7
NPO-SI	75	SI-7
NPO-SI	82	SI-7
NPO-SI	91	SI-7

Type	Capacity Mmfd.	Size
NPO-SI	100	SI-7
NPO-SI	110	SI-19
NPO-SI	120	SI-19
NPO-SI	130	SI-3
NPO-SI	150	SI-3
NPO-SI	160	SI-4
NPO-SI	175	SI-4
NPO-SI	180	SI-4
NPO-SI	220	SI-5
NPO-SI	240	SI-5
NPO-SI	270	SI-5

Standard Tolerance — up to 10 mmf.  $\pm 5$  mmf., above 10 mmf.  $\pm 10\%$   
When ordering the above units, designate type and MMFD fully. For

example: NPO - SI-1.5 MMFD. The zero temperature coefficient capacitor is the most stable ceramic commercial capacitor available.

**SI-TV Hi-VOLTAGE — 6000 VDCW**

A recent addition to the already complete line of Aerovox Hi-Q Ceramic Capacitors. Especially adapted to television applications this capacitor is available in two sizes. For capacities from 4.7 mmf. to 22. mmf. the size is .280 x .750. For 24. mmf. to 60. mmf. the case size is .312 x 1.250. All units referred to here are 6000 Volts DCW.

Cap. Mmfd.	Size
4.7	SI-22
8.2	SI-22
12	SI-22
15	SI-22
18	SI-22
20	SI-22
22	SI-22

Cap. Mmfd.	Size
24	SI-3
27	SI-3
30	SI-3
40	SI-3
47	SI-3
50	SI-3
60	SI-3

Capacitors

**AEROVOX**

Resistors

**CERAMICS**

**Hi-Q HIGH VOLTAGE "CARTWHEEL" CAPACITORS**



Hi-Q high voltage "cartwheels" are thoroughly tested units capable of assuring dependable service while withstanding high voltages. This new universal type (UV) offers interchangeable terminals in 5 styles for use in filter and by-pass applications in TV high voltage power supplies.

**TERMINAL HARDWARE**



**Stock Items**

Type	Voltage	Cap. Mmfd.
UV-501	10,000 VDCW	500 mmf.
UV-502	20,000 VDCW	500 mmf.
UV-503	30,000 VDCW	500 mmf.

**Stock Items — Terminal Hardware**

Type	Type
UV-1A	UV-4A
UV-2A	UV-6A
UV-3A	

**Hi-Q TUBULAR STAND-OFF CAPACITORS**

Hi-Q stand-off capacitors are basically tubular, having as an integral part of their construction, a screw fixture for mounting to the chassis or common ground. Close coupling and their unique construction make them an excellent choice for by-passing high frequencies.

All units are coated with a high temperature enamel, stamped with capacity and supplied with mounting nut, if desired.

The MCS is a quick mounting type which permits high speed mechanical installation. The ceramic tube is enclosed in a cadmium-plated metal case with a specially developed end seal for protection against humidity and temperature changes.

All units are flash tested at 1250 volts D.C. The power factor is under 3% and the insulation resistance is above 7500 megohms.

TYPE MCS



TYPE CS



**Stock Items — 500 VDCW**

Type	Capacity Mmfd.
CS-1A	50
CS-1A	100
CS-1B	500
CS-1B	1000
CS-1B	1500
CS-2	3000
CS-3	4000

Type	Capacity Mmfd.
CS-4	7500
CIS-1	50
CIS-1	100
CIS-1	500
CIS-1	1000
CIS-2	1500
MCS	1500

Radial leads only  
Tolerance  $\pm 10\%$  up to and including 500 mmf.  
 $\pm 20\%$  above 500 mmf.

**Hi-Q TUBULAR FEED-THRU CAPACITORS**

Hi-Q Feed-Thru Capacitors provide means to transmit thru shields or ground potentials and simultaneously by-pass unwanted frequencies. A good mechanical connection is provided by the silver-plated bushing. These are excellent dependable units even under severe mechanical vibrations as in aircraft, missiles and automotive requirements. All units are flash tested at 1250 volts D.C.

Hi-Q Eyelet Feed-Thru Ceramic Capacitors provide the ultimate in miniaturization. They can be soldered directly to the chassis and provide excellent by-pass performance where space is critical. Especially recommended for use in UHF.

**Stock Items Feed-Thru**

**500 VDCW**

Type	Cap. Mfd.	Thread
CFC-1	500 mmf.*	12-28
	1000 mmf.*	12-28
	1500 mmf.*	12-28
CF-1	1500 mmf.	1/4-28
CF-2	1800 mmf.*	3/16-24
	2300 mmf.*	3/16-24
	3000 mmf.	3/16-24
CF-3	4000 mmf.	3/16-24
CF-4	7000 mmf.	3/16-24

**Stock Items Feed-Thru**

**Eyelet Type-Miniature**

Cap. Mfd.	Size	Type	Tolerance
50*	CN-1**	EF	$\pm 10\%$
100*	CN-1**	EF	$\pm 10\%$
500*	CN-1**	EF	$\pm 20\%$
1000*	CN-1**	EF	GMV

\*—New

\*\*—Center conductor

Tolerance  $\pm 20\%$



EYELET FEED-THRU  
TYPE EF



FEED-THRU TYPE CFC



FEED-THRU TYPE CF

Capacitors

**AEROVOX**

Resistors

**M I C A S**

**MIL Types CM20, CM30, CM35**

**AEROVOX Types 1468, 1469, 1467, 1464**

Compact precision made mica dielectric capacitors made in accordance with MIL specification C-5A. Molded in low-loss, bakelite, impregnated and color-coded. Tested to meet all MIL requirements. Types 1467 and

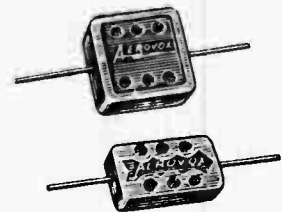
1468 are stacked mica and foil units molded in yellow bakelite to meet MIL characteristic B. Types 1464 and 1469 are silvered mica molded in red bakelite, available in characteristics C and D.

**Type CM-20 (500 VDCW)**

1468LS		1469	
Cap. Mmf.	Type Designation	Cap. Mmf.	Type Designation
1	CM-20B-010	5	CM-20C-050
5	CM-20B-050	10	CM-20C-100
10	CM-20B-100	12	CM-20C-120
12	CM-20B-120	15	CM-20C-150
15	CM-20B-150	18	CM-20C-180
18	CM-20B-180	20	CM-20C-200
20	CM-20B-200	22	CM-20C-220
22	CM-20B-220	24	CM-20C-240
24	CM-20B-240	25	CM-20C-250
25	CM-20B-250	27	CM-20C-270
27	CM-20B-270	30	CM-20C-300
30	CM-20B-300	33	CM-20C-330
33	CM-20B-330	36	CM-20C-360
36	CM-20B-360	39	CM-20C-390
39	CM-20B-390	40	CM-20C-400
40	CM-20B-400	43	CM-20C-430
43	CM-20B-430	47	CM-20C-470
47	CM-20B-470	50	CM-20C-500
50	CM-20B-500	51	CM-20C-510
51	CM-20B-510	56	CM-20C-560
56	CM-20B-560	62	CM-20C-620
62	CM-20B-620	68	CM-20C-680
68	CM-20B-680	70	CM-20C-700
75	CM-20B-750	75	CM-20C-750
82	CM-20B-820	82	CM-20C-820
91	CM-20B-910	91	CM-20C-910
100	CM-20B-101	100	CM-20C-101
110	CM-20B-111	110	CM-20C-111
120	CM-20B-121	120	CM-20C-121
130	CM-20B-131	130	CM-20C-131
150	CM-20B-151	150	CM-20C-151
160	CM-20B-161	160	CM-20C-161
180	CM-20B-181	180	CM-20C-181
200	CM-20B-201	200	CM-20D-201
220	CM-20B-221	220	CM-20D-221
240	CM-20B-241	240	CM-20D-241
250	CM-20B-251	250	CM-20D-251
270	CM-20B-271	270	CM-20D-271
300	CM-20B-301	300	CM-20D-301
330	CM-20B-331	330	CM-20D-331
350	CM-20B-351	350	CM-20D-351
360	CM-20B-361	360	CM-20D-361
390	CM-20B-391	390	CM-20D-391
400	CM-20B-401	400	CM-20D-401
430	CM-20B-431	430	CM-20D-431
470	CM-20B-471	470	CM-20D-471
500	CM-20B-501	500	CM-20D-501
510	CM-20B-511	510	CM-20D-511
560	CM-20B-561	560	CM-20D-561
600	CM-20B-601	620	CM-20D-621
620	CM-20B-621	680	CM-20D-681
680	CM-20B-681	750	CM-20D-751
750	CM-20B-751	820	CM-20D-821
800	CM-20B-801	910	CM-20D-911
820	CM-20B-821	1000	CM-20D-102
900	CM-20B-901		
910	CM-20B-911		
1000	CM-20B-102		

**Type CM-30 (500 VDCW)**

1467LS		1464	
Cap. Mmf.	Type Designation	Cap. Mmf.	Type Designation
470	CM-30B-471	470	CM-30D-471
500	CM-30B-501	510	CM-30D-511
510	CM-30B-511	560	CM-30D-561
560	CM-30B-561	620	CM-30D-621
620	CM-30B-621	680	CM-30D-681
680	CM-30B-681	750	CM-30D-751
750	CM-30B-751	800	CM-30D-801
820	CM-30B-821	820	CM-30D-821
910	CM-30B-911	900	CM-30D-901
1000	CM-30B-102	910	CM-30D-911
1100	CM-30B-112	1000	CM-30D-102
1200	CM-30B-122	1100	CM-30D-112
1300	CM-30B-132	1200	CM-30D-122
1500	CM-30B-152	1300	CM-30D-132
1600	CM-30B-162	1500	CM-30D-152
1800	CM-30B-182	1600	CM-30D-162
2000	CM-30B-202	1800	CM-30D-182
2200	CM-30B-222	2000	CM-30D-202
2400	CM-30B-242	2200	CM-30D-222
2500	CM-30B-252	2400	CM-30D-242
2700	CM-30B-272	2500	CM-30D-252
3000	CM-30B-302	2700	CM-30D-272
3300	CM-30B-332	3000	CM-30D-302
3600	CM-30B-362	3300	CM-30D-332
3900	CM-30B-392	3600	CM-30D-362
4000	CM-30B-402	3900	CM-30D-392
4300	CM-30B-432	4000	CM-30D-402
4700	CM-30B-472	4300	CM-30D-432
5000	CM-30B-502	4700	CM-30D-472
5100	CM-30B-512	5000	CM-30D-502
5600	CM-30B-562	5100	CM-30D-512
6000	CM-30B-602	5600	CM-30D-562
6200	CM-30B-622	6200	CM-30D-622
6800	CM-30B-682	6800	CM-30D-682
7000	CM-30B-702	7500	CM-30D-752
7500	CM-30B-752	8200	CM-30D-822
8000	CM-30B-802	9100	CM-30D-912
8200	CM-30B-822		
9100	CM-30B-912		
10000	CM-30B-103		



**Type CM-35 (500 VDCW)**

1467LS		1464	
Cap. Mmf.	Type Designation	Cap. Mmf.	Type Designation
3600	CM-35B-362	3600	CM-35D-362
3900	CM-35B-392	3900	CM-35D-392
4000	CM-35B-402	4000	CM-35D-402
4300	CM-35B-432	4300	CM-35D-432
4700	CM-35B-472	4700	CM-35D-472
5000	CM-35B-502	5000	CM-35D-502
5100	CM-35B-512	5100	CM-35D-512
5600	CM-35B-562	5600	CM-35D-562
6200	CM-35B-622	6000	CM-35D-602
6800*	CM-35B-682	6200	CM-35D-622
7000*	CM-35B-702	6800*	CM-35D-682
7500*	CM-35B-752	7000*	CM-35D-702
8000*	CM-35B-802	7500*	CM-35D-752
8200*	CM-35B-822	8000*	CM-35D-802
9100*	CM-35B-912	8200*	CM-35D-822
10000*	CM-35B-103	9100*	CM-35D-912
12000*	CM-35B-123	10000*	CM-35D-103
13000*	CM-35B-133		
14000*	CM-35B-143		
15000*	CM-35B-153		

**NOTES**

In mica and foil construction the standard tolerance is  $\pm 20\%$ . Also available in  $\pm 10\%$  and  $\pm 5\%$ . Closest available tolerance up to and including 10 mmf. is  $\pm 1$  mmf.; above 10 mmf.  $\pm 2\%$  or  $\pm 2$  mmf., whichever is greater.

In silver mica the standard tolerance is  $\pm 5\%$ . Also available in  $\pm 2\%$  and  $\pm 1\%$ . Closest available tolerance up to 10 mmf. is  $\pm 1/2$  mmf.; 10 mmf. and up  $\pm 1\%$  or  $\pm 1$  mmf., whichever is greater.

Nominal Size All CM30 Units —  $3/4 \times 5/8 \times 1/2$   
 Nominal Size All CM35 Units —  $3/4 \times 5/8 \times 3/4$   
 Nominal Size All CM20 Units —  $3/4 \times 3/4 \times 3/8$

\* Capacities are 300 WV. Type Designation 1467XLS and 1464X.

Capacitors

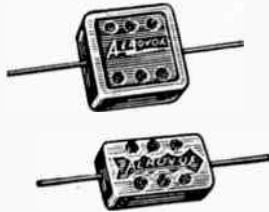
**AEROVOX**

Resistors

**M I C A S — (Continued)**

**TYPES 1468LS-HV and 1467LS-HV**

Designed especially for television, low power transmitters and power amplifier applications, these capacitors feature the highest voltages ever before available in these case sizes. They are furnished to meet characteristic B of the MIL specification. Standard Tolerance is plus and minus 20% and they are tested to meet RETMA standards. Units are marked with capacity and working voltage and are tested at double the rated voltage to insure long life.



**TYPE 1468LS-HV**

Cap. Mmfd.	1000	1500	2000	2500
	VDCW	VDCW	VDCW	VDCW
	2000	3000	4000	5000
	VDCT	VDCT	VDCT	VDCT
5	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
10	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
12	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
15	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
18	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
20	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
22	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
24	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
25	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
27	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
30	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
33	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
36	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
39	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
43	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
47	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
50	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
51	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
56	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
62	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
68	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
75	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
82	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
91	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
100	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
110	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
120	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
130	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
150	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
160	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
180	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
200	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
220	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
240	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
250	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
270	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
300	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
330	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
350	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
360	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
390	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
400	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
430	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
470	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
500	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
510	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
560	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
620	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

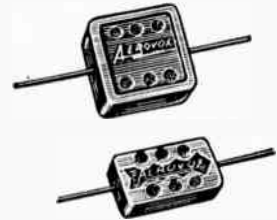
**TYPE 1467LS-HV**

Cap. Mmfd.	1000	1500	2000	2500
	VDCW	VDCW	VDCW	VDCW
	2000	3000	4000	5000
	VDCT	VDCT	VDCT	VDCT
150	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
160	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
180	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
220	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
240	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
250	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
270	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
300	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
330	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
360	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
390	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
430	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
470	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
500	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
510	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
560	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
620	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
680	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
750	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
820	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
910	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
1000	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
1100	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
1200	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
1300	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
1500	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
1600	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
1800	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
2000	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
2200	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
2400	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
2500	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
2700	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
3000	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
3300	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
3600	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
3900	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
4000	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
4300	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
4700	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
5000	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
5100	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

Std. Tolerance  $\pm 20\%$   
 For  $\pm 10\%$  Tolerance add 10% to Price  
 For  $\pm 5\%$  Tolerance add 25% to Price  
 Nominal Size —  $\frac{3}{16} \times \frac{1}{8} \times \frac{3}{16}$  —  
 1467LS-HV   
 Nominal Size —  $\frac{1}{4} \times \frac{3}{16} \times \frac{1}{4}$  —  
 1468LS-HV

SYMBOL INDICATES STOCK ITEMS

**TYPES 1441W, 1441WX  
1478LS, and 1479**



Additional selection of design, sizes and voltages offer the correct Aerovox mica unit for every application—Types 1441W, 1441WX and 1478LS are made in mica and foil construction. Type 1479 is made in silvered mica construction. Units molded in low loss bakelite. (Red used for Type 1479).

**TYPE 1441W (Similar to CM-40)**  
500 VDCW 1000 VDCT

Cap. Mfd.	Cap. Mfd.
.0005	.003
.00075	.004*
.001	.005*
.0015	.006*
.002	.007*
.0025	.008*

Size:  $1 \times \frac{3}{8} \times \frac{3}{8}$ " Compact with wire leads.  
 \* Thickness  $\frac{3}{16}$ "

**TYPE 1441WX (Similar to CM-40)**  
300 VDCW 600 VDCT

Cap. Mfd.	Cap. Mfd.
.004	.008*
.005	.009*
.006	.01*
.007*	

Size:  $1 \times \frac{3}{8} \times \frac{3}{8}$ " Compact with wire leads.  
 \* Thickness  $\frac{3}{16}$ "

**TYPE 1478LS (Similar to CM-25)**  
500 VDCW 1000 VDCT

Cap. Mfd.	Cap. Mfd.
.0005	.0015
.00075	.002
.001	

Size:  $1 \frac{1}{8} \times \frac{1}{4} \times \frac{1}{4}$ " Midget size with wire leads.

Std. Tolerance  $\pm 20\%$   
 For  $\pm 10\%$  Tolerance add 10% to Price  
 For  $\pm 5\%$  Tolerance add 25% to Price

**TYPE 1479 (Similar to CM25)**  
500 VDCW 1000 VDCT

Cap. Mfd.	Cap. Mfd.
.0001	.0005
.00015	.0007
.0002	.00075
.00025	.0008
.0003	.0009
.00035	.001
.0004	

Standard Tolerance  $\pm 5\%$   
 Size:  $1 \frac{1}{8} \times \frac{1}{4} \times \frac{1}{4}$ " provided with wire leads.  
 For  $\pm 2\%$  Tolerance add 15% to Price  
 For  $\pm 1\%$  Tolerance add 25% to Price

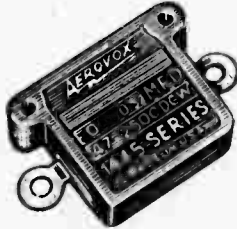
Capacitors

**AEROVOX**

Resistors

**M I C A S — (Continued)**

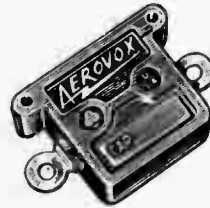
**TYPES 1445, 1446 and 1447**



Designed with insulated mounting holes 1 1/4" apart independent of soldering lugs. Used to shunt meter windings.

Size: 1 1/8" x 1 1/8" x 1 1/16"  
Standard Tolerance ±10%  
±5% and ±2% tolerance are available on special order.  
Meter Mounting Bracket E available. Specify when ordering.  
These units are equivalent to case styles CM45 and CM50 of specification MIL-C5A.

**TYPES 1455, 1456 and 1457**



Same as Types 1445-47 except for sizes and capacitance ranges. Distance between mounting holes is 1 1/2".

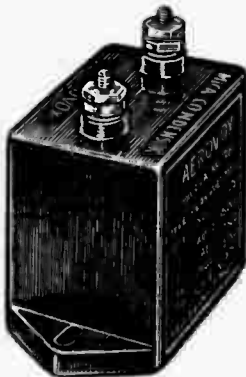
Size: 1 1/4" x 1 3/16" x 1 1/16"  
Standard Tolerance ±10%  
±5% and ±2% tolerance are available on special order.  
Meter Mounting Bracket E available. Specify when ordering.

TYPE 1445		TYPE 1446		TYPE 1447	
600 VDCW 1000 VDCT		1200 VDCW 2500 VDCT		2500 VDCW 5000 VDCT	
Cap. Mfd.	Cap. Mfd.	Cap. Mfd.	Cap. Mfd.	Cap. Mfd.	Cap. Mfd.
.00005	.00005	.00005	.00005	.00005	.00005
.0001	.0001	.0001	.0001	.000075	.0001
.00015	.00015	.00015	.00015	.0001	.0001
.0002	.0002	.0002	.0002	.00015	.00015
.00025	.00025	.00025	.00025	.0002	.0002
.0003	.0003	.0003	.0003	.00025	.00025
.00035	.00035	.00035	.00035	.0003	.0003
.0004	.0004	.0004	.0004	.00035	.00035
.0005	.0005	.0005	.0005	.0004	.0004
.001	.001	.001	.001	.0005	.0005
.0015	.0015	.0015	.0015	.001	.001
.002	.002	.002	.002	.0015	.0015
.0025	.0025	.0025	.0025	.002*	.002*
.003	.003	.003	.003	.0025*	.0025*
.004	.004*	.004*	.004*	.003*	.003*
.005	.005*	.005*	.005*	.004*	.004*
.006	.006*	.006*	.006*	.005*	.005*
.008	.008*	.008*	.008*		
.01	.01*	.01*	.01*		
.015*	.015*	.015*	.015*		
.02*					
.025*					
.03*					
.04*					

\*Thickness 3/16"

TYPE 1455		TYPE 1456		TYPE 1457	
600 VDCW 1000 VDCT		1200 VDCW 2500 VDCT		2500 VDCW 5000 VDCT	
Cap. Mfd.	Cap. Mfd.	Cap. Mfd.	Cap. Mfd.	Cap. Mfd.	Cap. Mfd.
.00005	.00025	.00005	.0015	.00005	.0005
.0001	.003	.0001	.002	.000075	.001
.00015	.004	.00015	.0025	.0001	.0015
.0002	.005	.0002	.003	.00015	.002
.00025	.006	.00025	.004	.0002	.0025
.0003	.008	.0003	.005	.00025	.003
.00035	.01	.00035	.006	.0003	.0035
.0004	.015	.0004	.008	.00035	.004
.0005	.02	.0005	.01	.0004	.004
.001	.025	.001			
.0015	.03				
.002					

**TYPES 1991 thru 1996  
Porcelain-Cased Capacitors**



Ideal for high-frequency application. Glazed porcelain case, high temperature wax sealed. Heavy duty power terminals. Minimum power loss due to dielectric absorption. No heating at full load.

Size: 4" overall by 3" high; 2 1/2" between mounting holes.

Standard Tolerance ±10%

Cap. Mfd.	DC Voltage Rating	Type	Maximum Current Capacity—Amperes			
			15 mc	75 mc	3750 kc	1875 kc
.00005	12,500	1996	3	2.5	1.5	1
.0001	12,500	1996	5	4	3	2
.00025	12,500	1996	7	8	6	4
.0005	12,500	1996	8	9	8	7
	7,000	1994	7	8	6	4
.001	12,500	1996	9	10	11	12
	7,000	1994	8	9	10	8
	3,500	1992	8	9	8	5
.0015	12,500	1996	9	10	11	12
	7,000	1994	9	9	10	8
	5,000	1993	8	9	9	7
	3,500	1992	8	9	8	5
	2,000	1991	7	8	8	5
.002	12,500	1996	9	12	13	15
	10,000	1995	9	10	11	12
	7,000	1994	9	9	10	10
	5,000	1993	8	9	9	8
	3,500	1992	8	8	9	7
	2,000	1991	7	8	8	6
.003	12,500	1996	9	12	13	15
	10,000	1995	9	11	12	13
	7,000	1994	9	10	10	10
	5,000	1993	8	9	9	9
	3,500	1992	8	9	9	8
	2,000	1991	7	8	8	7
.005	10,000	1995	10	13	14	15
	7,000	1994	9	11	12	11
	5,000	1993	9	11	12	10
	3,500	1992	9	10	11	9
	2,000	1991	8	9	10	8
.01	7,000	1994	10	13	15	15
	5,000	1993	10	13	15	15
	3,500	1992	10	13	14	14
	2,000	1991	10	13	14	14
.02	3,500	1992	10	14	16	17
	2,000	1991	10	13	15	15
.05	3,500	1992	10	14	17	18
	2,000	1991	10	14	16	17
.1	2,000	1991	10	14	17	18



Capacitors

**AEROVOX**

Resistors

**M I C A S — (Continued)**

**TYPES 1650L, 1651L, 1652L, 1653L and 1654L**

Heaviest-duty molded in bakelite mica capacitors of the AEROVOX line. Threaded mounting holes for roundhead screw terminals or plain holes available. Add suffix "A" for plain holes.



TYPE 1650L		TYPE 1652L	
600 VDCW — 1000 VDCT	350 VACW — 700 VACT	2500 VDCW — 5000 VDCT	1750 VACW — 3500 VACT
.00005		.00005	
.0001		.000075	
.00025		.0001	
.0003		.00015	
.00035		.0002	
.0004		.00025	
.0005		.0003	
.001		.00035	
.0015		.0004	
.002		.0005	
.0025		.001	
.003		.0015	
.004		.002	
.005		.0025	
.006		.003	
.008		.004	
.01		.005	
.015		.006	
.02		.008*	
.025		.01*	
.03			
.04*			
.05*			
.06*			
		TYPE 1653L	
		3750 VDCW — 7500 VDCT	2625 VACW — 5250 VACT
		.00005	
		.000075	
		.0001	
		.00015	
		.0002	
		.00025	
		.0003	
		.00035	
		.0004	
		.0005	
		.001	
		.0015	
		.002	
		.0025	
		.003	
		.0035	
		.004	
		.005	
		.006	
		.008	
		.01	
		.015	
		.02	
		.025*	
		.03*	
		TYPE 1654L	
		5000 VDCW — 10,000 VDCT	3500 VACW — 7000 VACT
		.00005	
		.000075	
		.0001	
		.00015	
		.0002	
		.00025	
		.0003	
		.00035	
		.0004	
		.0005	
		.001	
		.0015	
		.002	
		.0025	
		.003	
		.0035	
		.004	
		.005	
		.0075	
		.008	
		.01	
		.015	
		.02	
		.03	
		.04	
		.05	
		.1	
		.25	

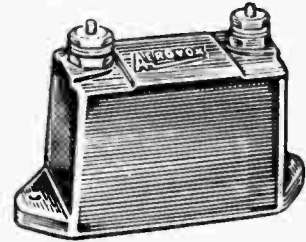
These units are equivalent to case styles CM55, CM56, CM60, and CM61 of specification MIL-C-5A. Standard Tolerance  $\pm 10\%$

$\pm 5\%$  Tolerance available on special order.  
 $\pm 2\%$  Tolerance available on special order.  
 Nominal Size:  $1\frac{1}{4}'' \times 1\frac{1}{4}'' \times \frac{1}{4}''$   
 Thickness  $\frac{3}{4}''$

Ceramic mounting insulators (specify "M") available. 1650-54 series furnished with 6-32 tapped holes for screw mounting.

**TYPES 1550L, 1570L and 1590L Potted Transmitting Capacitors**

These potted transmitting capacitors in thermo-setting case materials have greater load-carrying capacity than molded-in-thermo-setting case material capacitors. Types 1550 to 1590, inclusive, not only have high voltage rating but afford higher current ratings than equivalent capacitances in thermo-setting case material units. Because of their construction they are made with higher capacitance stability. Furnished only in low-loss thermo-setting case material as standard. Bakelite cased mica stack capacitors. These units have highest quality mica sections stacked for greater load carrying capacity. The sections are potted in low-loss bakelite cases and permanently clamped with non-magnetic material.



**TYPE 1570L (Similar to CM65)**

Cat. No.	Capacity	Test Volts Eff.	Max. Operating Current in Amps.			
			3000 kc	1000 kc	300 kc	100 kc
1570LS-204	.00005	3500	1.3	.6	.15	.05
1570LS-210	.0001	3500	2.0	.9	.3	.1
1570LS-214	.00015	3500	2.2	1.0	.45	.15
1570LS-217	.0002	3500	2.6	1.2	.6	.25
1570LS-219	.00025	3500	2.9	1.6	.7	.25
1570LS-221	.0003	3500	3.2	1.9	.8	.3
1570LS-223	.0004	3500	3.6	2.0	.9	.4
1570LS-226	.0005	3500	3.75	2.0	1.0	.5
1570LS-228	.0006	3500	4.1	2.0	1.2	.6
1570LS-232	.0008	3500	4.6	2.5	1.5	.7
1570LS-234	.001	3500	4.9	3.0	1.6	.8
1570LS-236	.0015	3500	5.8	3.5	2.0	1.0
1570LS-237	.002	3500	6.3	4.0	2.5	1.3
1570LS-240	.003	2500	7.1	5.0	3.0	1.5
1570LS-242	.004	2500	7.6	6.0	3.5	1.6
1570LS-245	.005	2500	8.5	6.5	4.0	2.0
1570LS-248	.006	2500	9.0	7.5	4.5	2.2
1570LS-254	.008	1500	10.0	8.0	5.0	2.3
1570LS-257	.01	1500	10.0	10.0	6.0	2.5
1570LS-260	.02	1500	11.0	10.0	7.0	3.0
1570LS-268	.05	500	8.5	7.5	6.0	3.8
1570LS-273	.1	250	11.0	12.0	10.0	6.0

Type 1570L also manufactured in case style CM65 of Spec. MIL-C-5A. Prices on request.

**TYPE 1550L (Similar to CM70)**

Cat. No.	Capacity	Test Volts Eff.	Max. Operating Current in Amps.			
			3000 kc	1000 kc	300 kc	100 kc
1550LS-200	.00005	6000	1.5	.7	.2	.07
1550LS-201	.0001	6000	2.5	1.3	.35	.1
1550LS-202	.00015	6000	3.0	1.7	.5	.16
1550LS-203	.0002	6000	3.5	1.8	.7	.3
1550LS-204	.00025	6000	5.0	2.5	1.0	.3
1550LS-206	.0003	6000	5.0	2.5	1.0	.4
1550LS-208	.0004	6000	5.0	2.7	1.1	.5
1550LS-210	.0005	6000	5.0	3.0	1.6	.75
1550LS-212	.0006	6000	5.1	3.1	1.7	.8
1550LS-215	.00075	6000	5.5	3.5	2.1	1.0
1550LS-216	.0008	6000	6.0	4.0	2.1	1.0
1550LS-218	.001	6000	7.0	4.0	2.2	1.0
1550LS-220	.0015	6000	9.0	5.1	3.0	1.6
1550LS-221	.002	6000	9.0	6.0	4.0	1.9
1550LS-222	.002	3000	6.0	4.6	3.0	1.1
1550LS-223	.0025	5000	9.0	6.0	4.0	2.0
1550LS-225	.003	3000	6.5	6.0	4.1	1.6
1550LS-228	.004	3000	10.0	6.5	4.5	2.0
1550LS-230	.005	3000	10.0	6.8	5.0	2.5
1550LS-235	.0075	3000	11.0	8.0	6.5	2.9
1550LS-236	.008	3000	11.0	9.0	6.8	3.0
1550LS-238	.01	2000	11.0	10.0	8.0	4.0
1550LS-239	.015	2000	11.5	11.0	9.0	5.0
1550LS-240	.02	2000	12.5	11.0	10.5	7.0
1550LS-241	.03	2000	13.0	16.0	13.0	7.0
1550LS-242	.04	1500	13.0	16.0	13.0	7.5
1550LS-243	.05	1500	14.0	16.0	13.0	7.5
1550LS-244	.1	1000	16.0	18.0	14.0	9.0
1550LS-247	.25	250	16.0	18.0	14.0	12.0

Type 1550L also manufactured in case style CM70 of Spec. MIL-C-5A. Prices on request.

Standard Tolerance for all Transmitting Mica Capacitors is  $\pm 5\%$ .

For 2% Tolerance add 20% to Price.

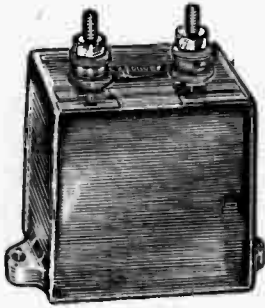
Capacitors

**AEROVOX**

Resistors

**M I C A S — (Continued)**

**TYPE 1590L — POTTED TRANSMITTING CAPACITORS**



Cat. No.	Capacity	Test Volts Eff.	Max. Operating Current in Ammps.			
			3000 kc	1000 kc	300 kc	100 kc
1590L-200	.00025	8000	7.0	5.0	2.0	.6
1590L-201	.0005	8000	8.5	6.0	3.0	1.0
1590L-203	.001	8000	10.0	8.5	4.5	2.0
1590L-205	.002	8000	12.0	11.0	8.0	4.0
1590L-207	.003	8000	15.0	15.0	11.0	5.0
1590L-209	.004	8000	16.0	16.0	12.0	6.0
1590L-211	.005	8000	16.0	16.0	13.0	7.0
1590L-213	.006	8000	16.0	18.0	13.0	7.0
1590L-217	.01	8000	17.0	21.0	15.0	9.0
1590L-218	.01	6000	16.0	20.0	15.0	8.0
1590L-219	.02	5000	18.0	22.0	18.0	12.0
1590L-220	.03	4000	18.0	23.0	20.0	13.0
1590L-222	.05	4000	18.0	25.0	23.0	15.0
1590L-223	.05	2000	18.0	25.0	22.0	12.0
1590L-224	.1	2000	18.0	28.0	23.0	15.0
1590L-226	.2	600	18.0	28.0	23.0	15.0
1590L-227	.25	600	18.0	28.0	23.0	15.0
1590L-228	.3	600	18.0	28.0	23.0	15.0
1590L-230	.5	600	18.0	28.0	23.0	15.0
1590L-233	1.0	600	18.0	28.0	23.0	15.0

For 2% Tolerance add 20% to Price



**TYPES 1940, 1950, 1960, 1970 and 1980  
Stack-Mounting Transmitting Capacitors**

These stack-mounting transmitting mica capacitors are especially intended for various applications such as grid, plate blocking, coupling, tank, and by-passing functions for higher-powered installations. They are made with a special cylindrical low-loss, glazed ceramic case providing a long creepage path between terminals. They are designed to eliminate corona losses, inside and outside alike, and also provide uniform voltage gradient. The cast-aluminum terminal ends provide low contact resistance between units. These units are conservatively rated to withstand surge voltages above their rated values. They have extremely low power factor so that they can handle large KVA loads without overheating.

**TYPE 1940**

Catalog No.	Cap. Mfd.	Test Volts Eff.
1940-236	.000075	35000
1940-203	.0001	35000
1940-204	.00015	35000
1940-205	.0002	35000
1940-206	.00025	35000
1940-207	.0003	35000
1940-208	.00035	35000
1940-209	.0004	35000
1940-210	.0005	35000
1940-211	.0006	35000
1940-212	.0007	35000
1940-213	.0008	35000
1940-214	.001	35000
1940-215	.00125	35000
1940-216	.0015	35000
1940-217	.002	30000
1940-218	.0025	25000
1940-219	.003	25000
1940-220	.004	20000
1940-221	.005	20000
1940-222	.006	15000
1940-223	.007	15000
1940-224	.008	15000
1940-225	.01	15000
1940-237	.02	12000
1940-238	.03	10000
1940-239	.04	7500
1940-240	.05	6000
1940-241	.06	6000
1940-242	.07	6000
1940-243	.08	6000
1940-244	.1	5000

**TYPE 1950 (Similar to CM75)**

Catalog No.	Cap. Mfd.	Test Volts Eff.
1950-202	.00005	6000
1950-204	.0001	6000
1950-207	.0002	6000
1950-209	.0003	6000
1950-212	.0005	6000
1950-216	.001	6000
1950-218	.002	6000
1950-220	.003	6000
1950-222	.005	6000
1950-226	.01	5000
1950-228	.02	3000
1950-231	.05	1500

**TYPE 1970 (Similar to CM85)**

Catalog No.	Cap. Mfd.	Test Volts Eff.
1970-202	.00005	20,000
1970-203	.0001	20,000
1970-204	.00015	20,000
1970-205	.0002	20,000
1970-210	.0005	20,000
1970-213	.0008	20,000
1970-214	.001	20,000
1970-216	.0015	20,000
1970-217	.002	15,000
1970-220	.004	12,000
1970-221	.005	10,000
1970-225	.01	10,000
1970-227	.02	6,000

**TYPE 1960 (Similar to CM80)**

Catalog No.	Cap. Mfd.	Test Volts Eff.
1960-202	.00005	15,000
1960-203	.0001	15,000
1960-204	.00015	12,500
1960-205	.0002	12,500
1960-209	.0005	12,500
1960-212	.0008	10,000
1960-213	.001	10,000
1960-214	.0015	10,000
1960-215	.002	10,000
1960-218	.004	8,000
1960-219	.005	8,000
1960-223	.01	7,000
1960-224	.015	5,000
1960-225	.02	4,000

**TYPE 1980 (Similar to CM90)**

Catalog No.	Cap. Mfd.	Test Volts Eff.
1980-202	.00005	35,000
1980-203	.0001	35,000
1980-204	.00015	35,000
1980-207	.0003	35,000
1980-209	.0004	35,000
1980-210	.0005	35,000
1980-213	.0008	30,000
1980-214	.001	25,000
1980-217	.002	20,000
1980-220	.004	20,000
1980-221	.005	20,000
1980-224	.008	15,000
1980-225	.01	15,000
1980-230	.05	5,000

All units also manufactured in equivalent MIL-C-5A case styles. Prices on request.  
For plus and minus 2% add 20% to prices.  
Standard tolerance for all units is plus and minus 5%.

Capacitors

**AEROVOX**

Resistors

**M I C A S — (Continued)**

**PLASTIC-COATED, DIPPED-MICA CAPACITORS  
TYPES ADM-15, ADM-19, ADM-20**



Aerovox plastic-coated dipped-mica units exceed many of the advantages of molded mica units, and at the same time are smaller than conventional units. Meeting all the applicable RETMA Test Standards for molded mica capacitors, these unique dipped-mica units offer the following outstanding features:

- High operating temperatures —55°C to +125°C
- Excellent long-life characteristics
- Improved temperature coefficient range
- Radial leads for automatic insertion and plug-in assemblies
- Ideal for printed-wiring assemblies
- Unsurpassed performance and stability characteristics
- Smaller physical size.

Humidity Resistance: these capacitors shall have an insulation resistance of not less than 2,000 megohms after being subjected to the Humidity Resistance Test as outlined in RETMA Standard RS-153. Minimum Insulation Resistance: 25,000 megohms at 25°C; 1000 megohms at 125°C.

Capacitors will be marked with capacity and tolerance where tolerance is closer than plus/minus 20%. In addition, voltage rating will be marked on all units other than 500 volts rating.

**CHARACTERISTICS**

ADM-15—from 5 to 20 mmf. Characteristic "C"  
from 22 to 150 mmf. Characteristic "E"  
from 160 mmf. and up Characteristic "F".  
ADM-19—All capacities listed "F" Characteristic.  
ADM-20—All capacities listed "F" Characteristic.

Minimum tolerance for capacitances up to and including 10 mmf. is  $\pm 1/2$  mmf., for all other capacitances  $\pm 1\%$  or 1 mmf. whichever is greater.

Sizes	L	W	T
ADM-15	1 $\frac{1}{32}$	$\frac{5}{16}$	$\frac{3}{32}$ max.
ADM-19	$\frac{5}{16}$	$\frac{7}{16}$	$\frac{3}{32}$ max.
ADM-20	2 $\frac{1}{32}$	$\frac{7}{16}$	$\frac{3}{32}$ max.

Cap. Mmf.	Type Designation	Cap. Mmf.	Type Designation	Cap. Mmf.	Type Designation	Type Designation
5	ADM-15-050	100	ADM-15-101	680	ADM-19-681	ADM-20-681
10	ADM-15-100	110	ADM-15-111	750	ADM-19-751	ADM-20-751
12	ADM-15-120	120	ADM-15-121	820	ADM-19-821	ADM-20-821
15	ADM-15-150	130	ADM-15-131	910	ADM-19-911	ADM-20-911
18	ADM-15-180	150	ADM-15-151	1000	ADM-19-102	ADM-20-102
20	ADM-15-200	160	ADM-15-161	1100	ADM-19-112	ADM-20-112
22	ADM-15-220	180	ADM-15-181	1200	ADM-19-122	ADM-20-122
24	ADM-15-240	200	ADM-15-201	1300	ADM-19-132	ADM-20-132
27	ADM-15-270	220	ADM-15-221	1500	ADM-19-152	ADM-20-152
30	ADM-15-300	240	ADM-15-241	1600	ADM-19-162	ADM-20-162
33	ADM-15-330	250	ADM-15-251	1800	ADM-19-182	ADM-20-182
36	ADM-15-360	270	ADM-15-271	2000	ADM-19-202	ADM-20-202
39	ADM-15-390	300	ADM-15-301	2200	ADM-19-222	ADM-20-222
43	ADM-15-430	330	ADM-15-331	2400	*ADM-19-242	ADM-20-242
47	ADM-15-470	360	ADM-15-361	2500	*ADM-19-252	ADM-20-252
50	ADM-15-500	390	ADM-15-391	2700	*ADM-19-272	ADM-20-272
51	ADM-15-510	430	*ADM-15-431	3000	*ADM-19-302	ADM-20-302
56	ADM-15-560	470	*ADM-15-471	3300		ADM-20-332
62	ADM-15-620	500	*ADM-15-501	3600		ADM-20-362
68	ADM-15-680	510	*ADM-15-511	3900		ADM-20-392
75	ADM-15-750	560		4300		*ADM-20-432
82	ADM-15-820	620		4700		*ADM-20-472
91	ADM-15-910			5000		*ADM-20-502
				5100		*ADM-20-512

\* All items asterisked are rated at 300 VDCW.

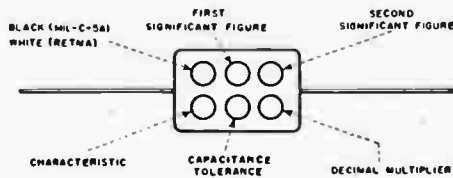
**GLOSSARY**

- A—1650-54 series—rifle drilled mounting holes for #6 screw clearance.
- B—Denotes thicker mold when two thicknesses are available.
- E—1445-47 and 1455-57 series denotes E Type Meter Mounting Bracket.
- L—Denotes Low Loss Thermosetting case material. (Furnished as Standard at no extra charge.)
- M—1650-54 series denotes Ceramic Mounting Insulators.
- P—Denotes units rated for 800 VDCW — Types 1441, 1467, 1468.
- R—Silvered Mica—Types 1441, 1441W, 1445-47.
- S—Sealed for immersion. (All units are furnished in "S" as Standard at no extra charge.)
- T—Denotes Heat Treatment.
- W—Wire leads on Type 1441.
- HV—High Voltage on Types 1467, 1468.
- LS—Low loss, sealed for immersion. (Furnished as Standard at no extra charge.)
- TT—Dual heat treatments.
- X—Denotes 300 VDCW.

For charges covering the above check the pages of catalogue covering specific types and price supplement.

For any items or terms not covered please contact the Distributor's Division, Aerovox Corp., New Bedford, Mass.

**COLOR CODE INFORMATION**



Color	Capacitance		Tolerance %	Characteristic
	Significant Figure	Decimal Multiplier		
BLACK	0	1	20 (M)	A
BROWN	1	10		B
RED	2	100	2 (G)	C
ORANGE	3	1000	3 (RETMA only)	D
YELLOW	4	-		E
GREEN	5	-	5 (RETMA only)	F
BLUE	6	-		
VIOLET	7	-		
GRAY	8	-		
WHITE	9	-		
GOLD	-	0.1	5 (MIL-C-5 only) (J)	
SILVER	-	.01	10 (K)	
NONE				

MIL-C-5 LETTER DESIGNATION FOR CHARACTERISTIC		
Characteristic	Temperature Coefficient Parts/Million/Degree C. see par. F-2h(1)	Capacitance Drift see par. F-2h(2) (maximum)
A	Not specified	Not specified
B	Not specified	Not specified
C	+200 to +200	±0.5 per cent
D	-100 to +100	±0.3 per cent
E	+20 to +100	±0.1 per cent
F	0 to +70	±0.1 mmf. ±(0.05 per cent ±0.1 mmf.)

Capacitors

**AEROVOX**

Resistors

**INDUSTRIAL SECTION**

**RESISTORS**

**CARBOFILM PRECISION RESISTORS**



Made under licensed agreement with Western Electric, these precision resistors are the result of years of intensive research in developing components with extreme accuracy and stability. Carbofilm resistors are intended for circuits calling for the accuracy and stability of wire-wound resistors with the marked economy of carbon resistors. They serve a real need in test equipment and laboratory instruments.

Packed and sealed in plastic tubes for your protection.

**SIZES**

- CPS ½ watt 0.162D x 1 1/2 L
- CP ½ watt 0.230D x 1 1/4 L
- CPL ½ watt 0.230D x 1 3/4 L
- CP 1 watt 0.293D x 1 3/4 L
- CP 2 watt 0.293D x 2 1/4 L

**Carbofilm Characteristics**

**TEMPERATURE COEFFICIENT . . . .**

Temperature coefficient of deposited carbon resistors increases with resistance value and varies from -0.00018 per °C. for lowest values to -0.0005 per °C. for the higher values over the temperature range of -55°C. to +85°C.

**HUMIDITY . . . .**

Will meet the requirements of MIL-STD-202 Method 106.

**OVERLOAD . . . .**

Application of a D.C. Test potential 2½ times the rated continuous working voltage, but not exceeding twice the maximum voltage specified in MIL-R10509A for a period of 5 seconds will not cause a change in excess of .5%.

**LOAD LIFE . . . .**

A maximum change of 1% may be expected with operation at full rated wattage applied intermittently 1½ hours on—½ hour off for a period of 1,000 hours at 40°C., provided voltage ratings of MIL-R10509A are not exceeded.

**ACCURACY . . . .**

Guaranteed tolerance of plus/minus 1% at 25°C. (77°F.).

**AGING . . . .**

Due to manufacturing process and control, changes attributed to aging are negligible. The average change in resistance for self-aging is approximately 0.2% per year.

**NOISE . . . .**

Noise level will not exceed .2 microvolts per volt.

**FREQUENCY . . . .**

Because of inherently low inductance and absence of skin effects deposited carbon resistors are superior in performance at high frequencies to conventional resistors.

**DERATING . . . .**

Full load operation at 40°C.—Derate to zero load at 120°C.

**Standard Stock Values Carbofilm Resistors**

OHMS	OHMS	OHMS	OHMS	OHMS	OHMS	Megohms
3.0	60	1300	24,000	150,000	850,000	5.6
3.3	62	1450	25,000	160,000	900,000	6.0
3.5	65	1500	27,000	175,000	910,000	6.2
3.6	68	1600	30,000	180,000		6.5
3.9	70	1750	33,000	200,000	Megohms	6.8
4.0	74.5	1800	36,000	220,000	1.0	7.0
4.3	75	2000	39,000	225,000	1.1	7.5
4.5	80	2200	40,000	240,000	1.2	8.0
4.7	82	2250	43,000	250,000	1.25	8.2
5.0	85	2400	45,000	270,000	1.3	8.5
5.1	89.5	2500	47,000	300,000	1.5	9.0
5.5	90	2700	50,000	330,000	1.6	9.1
5.6	91	2950	51,000	350,000	1.8	10.0
6.0	99.5	3000	55,000	360,000	2.0	12.0
6.2	100	3300	56,000	390,000	2.2	12.5
6.5	110	3500	60,000	400,000	2.225	13.0
6.8	120	3600	62,000	430,000	2.4	15.0
7.5	130	3900	65,000	450,000	2.5	16.0
8.0	150	4000	68,000	470,000	2.7	18.0
8.2	160	4300	70,000	500,000	3.0	20.0
8.5	175	4450	75,000	510,000	3.3	22.0
9.0	180	4500	80,000	550,000	3.5	25.0
9.1	200	4700	82,000	560,000	3.6	27.0
10.0	220	5000	85,000	600,000	3.9	30.0
11.0	225	5100	90,000	620,000	4.0	33.0
12.0	240	5500	91,000	650,000	4.3	36.0
12.5	250	5600	100,000	680,000	4.5	39.0
13.0	270	5950	110,000	700,000	4.7	43.0
14.5	300	6000	120,000	750,000	5.0	47.0
15.0	330	6200	125,000	800,000	5.1	50.0
16.0	350	6500	130,000	820,000	5.5	100.0*
17.5	360	6800				
18.0	390	7000				
20	400	7450				
22.0	430	7500				
22.5	450	8000				
24.0	470	8200				
25.0	500	8500				
27.0	510	8950				
29.5	550	9000				
30	560	9100				
33	600	9950				
35	620	10,000				
36	650	11,000				
39	680	12,000				
40	750	12,500				
43	800	13,000				
44.5	820	13,500				
45	850	15,000				
47	900	16,000				
50	910	17,500				
51	1000	18,000				
55	1100	20,000				
56	1200	22,000				
59.5	1250	22,500				

**CARBOFILM RESISTORS PRICES  
STANDARD VALUES ONLY**

CPS-½ 7.5 ohms to 40 ohms  
43 ohms to 2 meg.

CP-½ 3 ohms to 40 ohms  
43 ohms to 5 meg.

CPL-½ 5.1 meg to 7.5 meg.

CP-1 10 ohms to 15 ohms  
16 ohms to 40 ohms  
43 ohms to 1 meg.  
1.1 meg. to 5 meg.  
5.1 meg. to 15 meg.

CP-2 50 ohms to 99.5 ohms  
100 ohms to 10 meg.  
12 meg. to 20 meg.  
22 meg. to 30 meg.  
33 meg. to 50 meg.  
\*100 meg.

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Standard tolerance ±1%  
SEE PRICE SUPPLEMENT FOR PRICE  
BREAKS AND ADDERS.

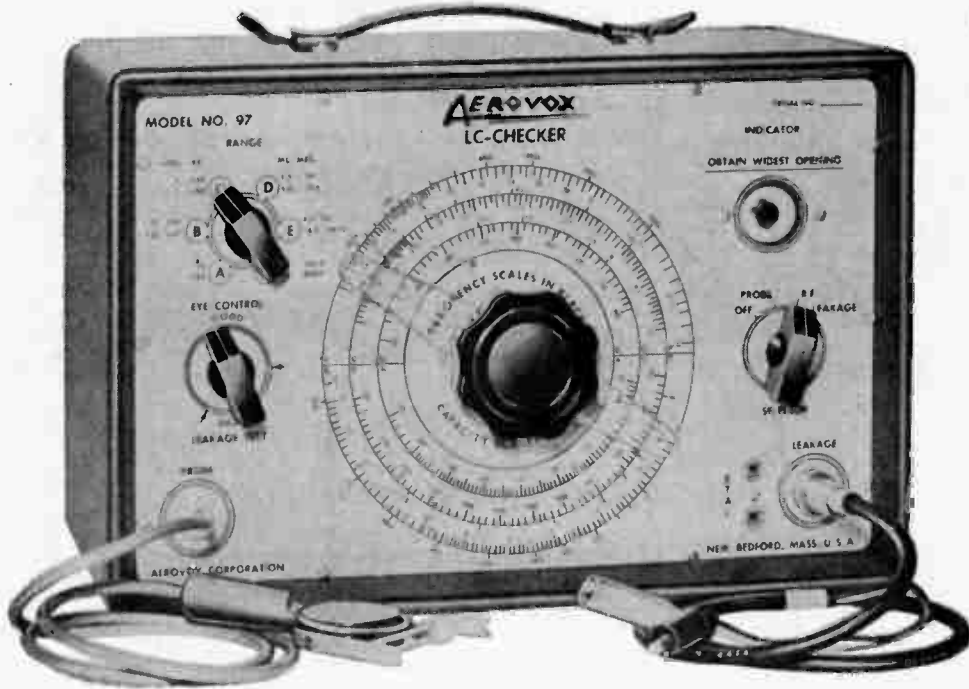
\*Only stock value above 50 megohms is  
100 megohms furnished in ±2% toler-  
ance.

Types CPC3½, CPC-1, CPC-2 available on special order. Equivalent to characteristic B of MIL-R-10509B, MILtypes RN70, RN75 and RN80 respectively. For full details ask for bulletin No. CPR369.

Capacitors

**AEROVOX**

Resistors



## AEROVOX L-C CHECKER — Model 97

Aerovox Corporation, New Bedford, Massachusetts, announces the availability of their new Model 97 L-C Checker. Completely redesigned and engineered according to the latest in design theories, the L-C Checker utilizes the newest techniques of printed-circuitry to achieve the most efficient instrumentation available today to technicians and servicemen. The all-new Model 97 L-C Checker represents the ultimate in versatility and adaptability in a test instrument.

Some of the new features of the Model 97 L-C Checker include extended frequency range from a minimum of 150

kc to a maximum of 44 megs.; a recessed front panel with an extra-large, easy-to-read dial, with a magnifying indicator. Finished in an attractive smooth grey, the instrument weighs only 8½ pounds and measures 13" x 8½" x 6" deep and is furnished with all the necessary test cords and probes.

The Aerovox Model 97 L-C Checker is the only test instrument presently available capable of testing true capacitance without removing the capacitor from the circuit. A partial listing of the applications of the L-C Checker Model 97 includes:

1. Checking capacitors for values of capacitance and relative Q at radio frequency.
2. Checking capacitor insulation resistance.
3. Checking alignment of radio frequency and intermediate frequency circuits of domestic, marine, and short wave receivers.
4. Tracking of super-het oscillators.
5. Checking alignment of FM-I.F. channels and independent alignment of FM-I.F. transformers.
6. Checking resonant absorption troubles in "all wave" receiver circuits, locating dead spots, etc.
7. Location of resonant points in shorted windings (unused coils) in multi-range oscillators, etc.
8. Checking natural resonant points of r.f. chokes to make sure they are beyond circuit operating range.
9. Checking natural period of antennae and transmission lines.
10. Checking quartz crystals for true or false frequency, operation at harmonics and activity.
11. Checking transmitter buffer, amplifier and tank circuits for parasitic current loops with power off for safety.
12. Tuning of wave traps and filters for harmonic suppression.

The Aerovox Model 97 L-C Checker is truly the one piece of test equipment most capable of answering the servicemen's and technicians needs.



## ERIE GENERAL PURPOSE CERAMICONS®

### TYPES GP1 — GP2 — GP3

**ERIE CERAMICONS** are small fixed capacitors consisting essentially of a ceramic dielectric with silver electrodes which are fired on at a very high temperature. Erie Ceramicons are outstanding because of their excellent high frequency characteristics, small size, rugged construction and availability in a wide range of capacity values.

**GP1 CERAMICONS** — The performance specifications of Type GP1 Ceramicons are identical with those of temperature compensating types of Ceramicons. A GP designation does allow the capacitor manufacturer added flexibility in selecting ceramic body. These capacitors meet performance specifications of RETMA Standard No. REC-107-A, Class 1, Characteristic U2.

**GP2 CERAMICONS** — The capacitance of GP2 Ceramicons will not vary more than + 10% or - 35% from + 25°C. value, as the temperature is varied from - 40°C. to + 85°C. These capacitors meet the performance specifications of RETMA Standard No. REC-107-A, Class 2, Characteristic Y5Y.

**GP3 CERAMICONS** — The capacitance of GP3 Ceramicons will not vary more than + 25% or - 50% from the 25°C. value, as the temperature is varied from + 10°C. to + 75°C. These capacitors meet the performance specifications of RETMA Standard No. REC-107-A, Class 2, Characteristic Z5Z.



### "GP"® GENERAL PURPOSE CERAMICONS

are ideally suited for such applications as coupling and by-passing, in circuits where temperature coefficient is not important — in other words for all receiver applications **except** in frequency determining circuits. Working voltage — 600 volts D. C. Use Erie "GP" Ceramicons as replacements for molded mica and paper tubular capacitors.

Available in both molded and phenolic insulated styles

Order by Catalog Number from Table Below

600 VDCW—STOCK ITEMS—1500 VDC TEST

STANDARD TOLERANCE ± 10% 5 MMF THROUGH 1500 MMF  
 ± 20% 1800 MMF THROUGH 10,000 MMF

Catalog No.	Cap. MMF	Body Style
GP-5	5	315
GP-10	10	315
GP-12	12	315
GP-15	15	315
GP-18	18	315
GP-20	20	315
GP-22	22	315
GP-24	24	315
GP-25	25	315
GP-27	27	315
GP-30	30	315
GP-33	33	315
GP-39	39	315
GP-47	47	315
GP-50	50	315
GP-51	51	315
GP-56	56	315
GP-68	68	315
GP-75	75	315
GP-82	82	315
GP-100	100	315
GP-110	110	315
GP-120	120	315
GP-150	150	315
GP-180	180	315
GP-200	200	315
GP-220	220	315
GP-240	240	315
GP-250	250	315

Catalog No.	Cap. MMF	Body Style
GP-270	270	315
GP-300	300	315
GP-330	330	315
GP-360	360	315
GP-390	390	315
GP-470	470	315
GP-500	500	315
GP-510	510	315
GP-560	560	315
GP-680	680	315
GP-750	750	316
GP-820	820	316
GP-1,000	1,000	316
GP-1,200	1,200	316
GP-1,500	1,500	316
GP-1,800	1,800	333
GP-2,000	2,000	333
GP-2,200	2,200	333
GP-2,500	2,500	333
GP-2,700	2,700	333
GP-3,000	3,000	333
GP-3,300	3,300	333
GP-4,000	4,000	333
GP-4,700	4,700	333
GP-5,000	5,000	333
GP-5,600	5,600	333
GP-6,000	6,000	333
GP-6,800	6,800	333
GP-7,500	7,500	333
GP-10,000	10,000	333

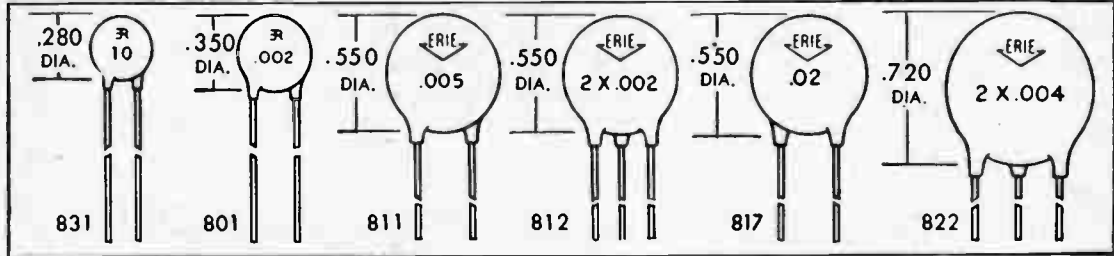
Note: "Ceramicon" and "GP Ceramicon" are registered trade names and refer to ceramic dielectric capacitors manufactured only by Erie Resistor Corporation.



## ERIE DISC CERAMICONS®

Erie Disc Ceramicons consist of a flat ceramic dielectric with silver fired onto the dielectric. Lead wires are firmly soldered to the silver electrodes, and the unit is given a

protective coating of phenolic. Low series inductance assures efficient high frequency operation.



Order by Catalog Number from Table Below

600 VDCW — STOCK ITEMS — 1500 VDC TEST

### HIGH STABILITY GENERAL PURPOSE CERAMICONS ±10%

Catalog No.	Capacity	Body Style
ED-5	5 mmf	831
ED-10	10 mmf	831
ED-12	12 mmf	831
ED-15	15 mmf	831
ED-18	18 mmf	831
ED-20	20 mmf	831
ED-22	22 mmf	831
ED-24	24 mmf	831
ED-25	25 mmf	831
ED-27	27 mmf	831
ED-30	30 mmf	831
ED-33	33 mmf	831
ED-39	39 mmf	831
ED-47	47 mmf	831
ED-50	50 mmf	831
ED-51	51 mmf	831
ED-56	56 mmf	831
ED-68	68 mmf	801
ED-75	75 mmf	801
ED-82	82 mmf	801
ED-91	91 mmf	801
ED-100	100 mmf	801
ED-120	120 mmf	811

Catalog No.	Capacity	Body Style
ED-150	150 mmf	811
ED-180	180 mmf	811
ED-200	200 mmf	811
ED-220	220 mmf	811
ED-240	240 mmf	811
ED-250	250 mmf	811
ED-270	270 mmf	811
ED-300	300 mmf	811
ED-330	330 mmf	811
ED-360	360 mmf	811
ED-390	390 mmf	811
ED-470	470 mmf	811
ED-500	500 mmf	811
ED-510	510 mmf	811
ED-560	560 mmf	811
ED-680	680 mmf	811
ED-750	750 mmf	811
ED-820	820 mmf	811
ED-910	910 mmf	811
ED-1000	1000 mmf	811
ED-1200	1200 mmf	811
ED-1500	1500 mmf	811
ED-1800	1800 mmf	811

### HI-K BY-PASS AND COUPLING CERAMICONS GMV

Catalog No.	Capacity	Body Style
ED-.00047	.00047 mfd	831
ED-.0008	.0008 mfd	831
ED-.001	.001 mfd	801
ED-.0012	.0012 mfd	801
ED-.0015	.0015 mfd	801
ED-.002	.002 mfd	801
ED-.0022	.0022 mfd	811
ED-.0025	.0025 mfd	811
ED-.0027	.0027 mfd	811
ED-.003	.003 mfd	811
ED-.0033	.0033 mfd	811
ED-.004	.004 mfd	811
ED-.0047	.0047 mfd	811
ED-.005	.005 mfd	811
ED-.0068	.0068 mfd	811
ED-.01	.01 mfd	811
ED-.015	.015 mfd	817
ED-.02	.02 mfd	817

### MIL-C-11015A DISC CERAMICONS +100% - 20% TOLERANCE

MIL Designation	Body Style	Capacity
CK60Y471Z	831	470
CK60Y681Z	831	680
CK60Y821Z	831	820
CK61Y102Z	801	1000
CK61Y152Z	801	1500
CK62Y222Z	811	2200
CK62Y322Z	811	3300
CK62Y472Z	811	4700
CK63Y103Z	841	10000

### HI-K DUAL CERAMICONS GMV

Catalog No.	Capacity	Body Style
ED2-.001	2x.001 mfd	812
ED2-.0015	2x.0015 mfd	812
ED2-.002	2x.002 mfd	812
ED2-.003	2x.003 mfd	822
ED2-.004	2x.004 mfd	822
ED2-.005	2x.005 mfd	822



## TEMPERATURE COMPENSATING CERAMICONS<sup>®</sup>

Erie Ceramicons are capacity-sensitive to temperature in varying pre-determined degrees, and because of this characteristic have found wide-spread application as temperature-compensating elements in circuits which must be frequency-stabilized over wide temperature ranges. They are also manufactured with practically no thermal sensitivity for use in applications requiring a capacitor whose value is not affected by temperature.

## NPO TEMPERATURE COEFFICIENT CERAMICONS<sup>®</sup>

NPO Temperature Coefficient Ceramicons are highly recommended for frequency determining applications where no capacity change with change in temperature is desired. "Q" for NPO Ceramicons above 30 mmf is 1000 or higher. Below 30 mmf "Q" decreases slightly as capacity decreases. Working voltage — 600 volts D. C. Recommended as replacements for silver-mica capacitors.

*Order by Catalog Number from Table Below*

**STOCK ITEMS — 600 VDCW**

Catalog No.	Cap. MMF	Cap. Tol.	TC Tol.	Body Size
TCO-.5	0.5	0.25 mmf	±250	301 or A
TCO-.68	0.68	0.25 mmf	±250	301 or A
TCO-1	1.0	0.25 mmf	±250	301 or A
TCO-1.5	1.5	0.25 mmf	±250	301 or A
TCO-2.2	2.2	0.25 mmf	±120	301 or A
TCO-3	3.0	0.25 mmf	±120	301 or A
TCO-3.3	3.3	0.50 mmf	±120	301 or A
TCO-4.7	4.7	0.50 mmf	±60	301 or A
TCO-5	5.0	0.50 mmf	±60	301 or A
TCO-6.8	6.8	0.50 mmf	±60	301 or A
TCO-8.2	8.2	0.50 mmf	±60	301 or A
TCO-10	10	0.50 mmf	±30	301 or A
TCO-12	12	0.50 mmf	±30	315 or K
TCO-15	15	0.50 mmf	±30	315 or K
TCO-18	18	0.50 mmf	±30	315 or K
TCO-20	20	0.5 mmf	±30	315 or K
TCO-22	22	5%	±30	315 or K
TCO-24	24	5%	±30	316 or L
TCO-25	25	5%	±30	316 or L
TCO-27	27	5%	±30	316 or L
TCO-30	30	5%	±30	316 or L
TCO-33	33	5%	±30	316 or L
TCO-36	36	5%	±30	316 or L
TCO-39	39	5%	±30	316 or L

Catalog No.	Cap. MMF	Cap. Tol.	TC Tol.	Body Size
TCO-43	43	5%	±30	316 or L
TCO-47	47	5%	±30	338
TCO-50	50	5%	±30	338
TCO-51	51	5%	±30	338
TCO-56	56	5%	±30	337
TCO-62	62	5%	±30	337
TCO-68	68	5%	±30	337
TCO-75	75	5%	±30	337
TCO-82	82	5%	±30	337
TCO-91	91	5%	±30	337
TCO-100	100	5%	±30	337
TCO-110	110	5%	±30	333
TCO-120	120	5%	±30	333
TCO-130	130	5%	±30	333
TCO-150	150	5%	±30	334
TCO-160	160	5%	±30	334
TCO-175	175	5%	±30	334
TCO-180	180	5%	±30	334
TCO-200	200	5%	±30	334
TCO-220	220	5%	±30	335
TCO-240	240	5%	±30	335
TCO-270	270	5%	±30	335
TCO-300	300	5%	±30	335

### PARALLELING TC AND CAPACITIES

A wide range of capacitance values and temperature coefficients can be obtained by using Erie NPO capacitors in parallel with either N330 or N750 units. The following

formulae are used in determining the capacitance of the various temperature compensating units that are required to obtain any desired temperature coefficient and capacitance:

1. 
$$\frac{(\text{Capacitance in MMF}) (\text{Temp. Coef. Required})}{*750} =$$

Capacitance in MMF of the N750 unit to be used (use nearest standard capacitance value)

2. (Total Capacitance Required) minus the value found in step 1 = capacitance in MMF of the NPO unit to be used.

3. The total desired capacitance and temperature coefficient are obtained by connecting the units found in steps 1 and 2 in parallel.

\*If an N330 unit is to be used in parallel with an NPO unit, substitute 330 for 750 in this equation.





## NEGATIVE TEMPERATURE COEFFICIENT CERAMICONS®

N330 and N750 units provide temperature compensation to eliminate drift. Positive and Negative Temperature Coefficient Ceramicons P100 through N1500 are available on special order through your distributor.

### ERIE TUBULAR TYPE N330 CERAMICONS®

*Order by Catalog Number from Table Below*

**STOCK ITEMS — 600 VDCW**

Catalog No.	Cap. MMF	Cap. Tol.	TC Tol.	Body Size
TC3-1	1.0	0.5 mmf	±250	301 or A
TC3-1.5	1.5	0.5 mmf	±250	301 or A
TC3-2.2	2.2	0.5 mmf	±120	301 or A
TC3-3.3	3.3	0.5 mmf	±120	301 or A
TC3-3.9	3.9	0.5 mmf	±120	301 or A
TC3-4.7	4.7	5%	± 60	301 or A
TC3-5.6	5.6	5%	± 60	301 or A
TC3-6.8	6.8	5%	± 60	301 or A
TC3-8.2	8.2	5%	± 60	301 or A
TC3-10	10	5%	± 60	301 or A
TC3-12	12	5%	± 60	315 or K
TC3-15	15	5%	± 60	315 or K
TC3-18	18	5%	± 60	315 or K
TC3-22	22	5%	± 60	315 or K
TC3-27	27	5%	± 60	315 or K

Catalog No.	Cap. MMF	Cap. Tol.	TC Tol.	Body Size
TC3-33	33	5%	±60	315 or K
TC3-39	39	5%	±60	316 or L
TC3-47	47	5%	±60	316 or L
TC3-56	56	5%	±60	316 or L
TC3-68	68	5%	±60	316 or L
TC3-82	82	5%	±60	338
TC3-100	100	5%	±60	337
TC3-120	120	5%	±60	337
TC3-150	150	5%	±60	337
TC3-180	180	5%	±60	337
TC3-220	220	5%	±60	333
TC3-270	270	5%	±60	334
TC3-330	330	5%	±60	334
TC3-390	390	5%	±60	335
TC3-470	470	5%	±60	335

### ERIE TUBULAR TYPE N750 CERAMICONS®

*Order by Catalog Number from Table Below*

**STOCK ITEMS — 600 VDCW**

Catalog No.	Cap. MMF	Cap. Tol.	TC Tol.	Body Size
TC7-2.2	2.2	0.5 mmf	±120	301 or A
TC7-3.3	3.3	0.5 mmf	±120	301 or A
TC7-5	5	0.5 mmf	±120	301 or A
TC7-6.8	6.8	0.5 mmf	±120	301 or A
TC7-10	10	0.5 mmf	±120	301 or A
TC7-12	12	0.5 mmf	±120	315 or K
TC7-15	15	0.5 mmf	±120	315 or K
TC7-18	18	0.5 mmf	±120	315 or K
TC7-20	20	0.5 mmf	±120	315 or K
TC7-22	22	5%	±120	315 or K
TC7-24	24	5%	±120	315 or K
TC7-25	25	5%	±120	315 or K
TC7-27	27	5%	±120	315 or K
TC7-30	30	5%	±120	315 or K
TC7-33	33	5%	±120	315 or K
TC7-36	36	5%	±120	315 or K
TC7-39	39	5%	±120	315 or K
TC7-43	43	5%	±120	315 or K
TC7-47	47	5%	±120	315 or K
TC7-50	50	5%	±120	315 or K
TC7-51	51	5%	±120	315 or K
TC7-56	56	5%	±120	315 or K
TC7-62	62	5%	±120	315 or K
TC7-68	68	5%	±120	316 or L
TC7-75	75	5%	±120	316 or L

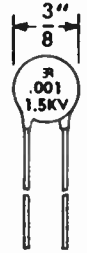
Catalog No.	Cap. MMF	Cap. Tol.	TC Tol.	Body Size
TC7-82	82	5%	±120	316 or L
TC7-91	91	5%	±120	316 or L
TC7-100	100	5%	±120	316 or L
TC7-110	110	5%	±120	316 or L
TC7-120	120	5%	±120	316 or L
TC7-130	130	5%	±120	337
TC7-150	150	5%	±120	337
TC7-160	160	5%	±120	337
TC7-180	180	5%	±120	337
TC7-200	200	5%	±120	337
TC7-220	220	5%	±120	337
TC7-240	240	5%	±120	337
TC7-270	270	5%	±120	337
TC7-300	300	5%	±120	333
TC7-330	330	5%	±120	333
TC7-360	360	5%	±120	333
TC7-390	390	5%	±120	334
TC7-430	430	5%	±120	334
TC7-470	470	5%	±120	334
TC7-510	510	5%	±120	334
TC7-560	560	5%	±120	334
TC7-620	620	5%	±120	335
TC7-680	680	5%	±120	335
TC7-750	750	5%	±120	335



## ERIE HIGH VOLTAGE DISC CERAMICONS®

Designed to employ the same basic diameters that have been standardized in 600 volt capacitors. Careful and detailed life testing has been accomplished over a long period of time to establish required dielectric thicknesses

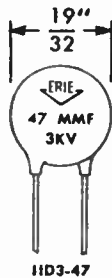
to assure conservative ratings in the high voltage line. They differ in appearance from lower voltage units in having greater thickness, the degree of difference depending on voltage rating.



HD15-1000

### 1500 VDCW — STOCK ITEMS — ± 20% TOLERANCE

Catalog No.	Capacity MMF	Catalog No.	Capacity MMF
HD15-4R7	4.7	HD15-220	220
HD15-6R8	6.8	HD15-330	330
HD15-10	10	HD15-470	470
HD15-15	15	HD15-680	680
HD15-22	22	HD15-1000	1000
HD15-33	33	HD15-1500	1500
HD15-47	47	HD15-2200	2200
HD15-68	68	HD15-3300	3300
HD15-100	100	HD15-4700	4700
HD15-150	150	HD15-5600	5600
HD15-180	180	HD15-6200	6200



HD3-47

### 3000 VDCW — STOCK ITEMS — ± 20% TOLERANCE

Catalog No.	Capacity MMF	Catalog No.	Capacity MMF
HD3-4R7	4.7	HD3-150	150
HD3-6R8	6.8	HD3-220	220
HD3-10	10	HD3-330	330
HD3-15	15	HD3-470	470
HD3-22	22	HD3-680	680
HD3-33	33	HD3-1000	1000
HD3-47	47	HD3-1500	1500
HD3-56	56	HD3-2200	2200
HD3-68	68	HD3-3300	3300
HD3-100	100		



HD6-33

### 6000 VDCW — STOCK ITEMS — ± 20% TOLERANCE

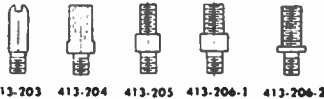
Catalog No.	Capacity MMF	Catalog No.	Capacity MMF
HD6-4R7	4.7	HD6-150	150
HD6-6R8	6.8	HD6-180	180
HD6-10	10	HD6-220	220
HD6-15	15	HD6-330	330
HD6-22	22	HD6-470	470
HD6-33	33		



## ERIE UNIVERSAL 20 KV CERAMICONS®

A highly universal 20 KV television power supply filter Ceramicon. Five types of terminals are available. By selecting the correct combinations of these, the correct replacement is provided for practically any existing receiver. Approved by leading TV manufacturers for replacement units.

Capacity of Style 413 is 500 MMF. Tolerance  $\begin{matrix} + 50\% \\ - 20\% \end{matrix}$



413-203 413-204 413-205 413-206-1 413-206-2

STYLE 413

Order by Part Number from Table Below

#### TERMINALS

Erie Part No.	Description
413-203	Slotted
413-204	Female — 6/32 Tap
413-205	Male — 6/32 Thread
413-206-1	Male — 8/32 Thread — 1/4" — Long
413-206-2	Male — 8/32 Thread — 3/8" — Long

Terminals are packaged 5 of a type per bag.

#### CERAMICONS

Erie Part No.	Description
*413	Bulk — No Terminals
413-1	Single Box — 7 Terminals
413-6	Kit — 6 Bodies, 14 Terminals

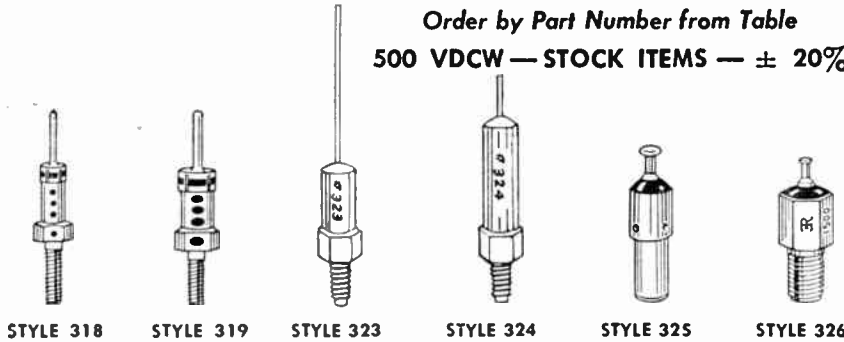
\*Does not include terminals, order them from terminal chart at left.



## ERIE STAND-OFF CERAMICONS®

Stand-off Ceramicons, an original Erie development, are now widely used for the dual purposes of by-passing R.F. current to ground, and of mechanically supporting other circuit elements. They are especially suited for V.H.F. and U.H.F. applications, due to their low-inductance electrical paths and resultant high resonant frequency.

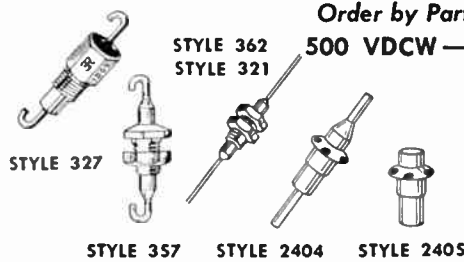
Order by Part Number from Table  
**500 VDCW — STOCK ITEMS — ± 20%**



Erie Part No.	Capacity MMF
318-471	470
318-501	500
319-470	47
319-471	470
319-501	500
319-102	1000
323-500	50
323-101	100
323-501	500
324-102	1000
324-152	1500
325-102	1000
325-152	1500
326-102	1000
326-152	1500

## ERIE FEED-THRU CERAMICONS®

These very practical feed-thru capacitors are highly recommended for by-passing R.F. to ground in feed-thru applications. Wire terminals of Style 362 and hook type terminals of Style 327 are sufficiently rugged to serve as tie points for several connections, for supporting other circuit elements, and long enough for point to point wiring. Style 327 is hermetically sealed and ruggedized, and is primarily for military and similar commercial usage. Nut supplied.



Order by Part Number from Table Below  
**500 VDCW — STOCK ITEMS — ± 20%**

Erie Part No.	Capacity MMF
321-102	1000
327-102	1000
357-102	1000
357-152	1500
362-102	1000
362-152	1500
2404-500	50
2404-101	100
2404-102	1000
2405-501	500
2405-102	1000

## ERIE SUPPRESSORS

Erie Suppressors are ruggedly constructed to withstand motor temperatures, vibration, and road shock. There are no soldered contacts in the assembly to open circuit due to engine heat. Every unit is sealed, making it impossible for water, grease or dirt to affect its operation.

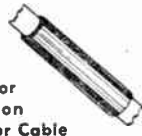
The change in resistance of Erie Suppressors after 1000 hours in 100% humidity at 40°C. is well within usual tolerances specified by radio manufacturers.

Many suppressors will drop considerably in resistance value after a few thousand miles of use, thus decreasing their suppression efficiency. The drop in Erie Suppressors is very small.



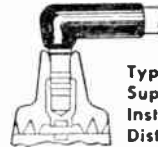
**L-Type Suppressor Installed on Spark Plug**

L-Type Suppressors are held firmly on the spark plug ferrules by the pressure contact at two points. The bottom of the bakelite suppressor case presses against the top of the plug ferrule and the crimp in the suppressor sleeve against the side of the ferrule.



**Type S-5 Suppressor Installed on Distributor Cable**

The Type S-5 Suppressor is installed by twisting the wood-type screws into the ignition cable. The base of the wood-screws in all types of Erie Suppressors is a hexagon which is recessed in a hexagonal cavity to prevent its turning when the cable is being installed.



**Type L-7 Suppressor Installed on Distributor**

The bottom of the two rings extending around the metal terminal of the Type L-7 Suppressor snaps into a correspondingly positioned groove in the distributor head socket, forming a secure lock. If desired, a rubber skirt can be used to cover this distributor head opening.



**Type S-14 Suppressor Installed on Magneto-Cable**

S-14 Suppressor is especially made for mounting into the magneto in certain types of ignition systems. The spring fits directly into the magneto. The other end has the wood screw for cable mounting.

Order by Part Number from Table Below — +50 — 15% Tolerance

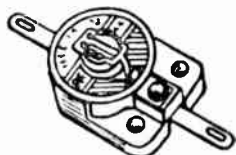
Erie Part No	Application	Type No.	Suppression-Ohms
L-4VR5ME L-4VR10ME	Spark Plug	L-4 L-4	5,000 10,000
L-7VR5ME L-7VR10ME	Spark Plug Distributor	L-7 L-7	5,000 10,000
S-5VR5ME S-5VR10ME	Distributor Cable	S-5 S-5	5,000 10,000
S-14VR5ME S-14VR10ME	Magneto-Cable	S-14 S-14	5,000 10,000



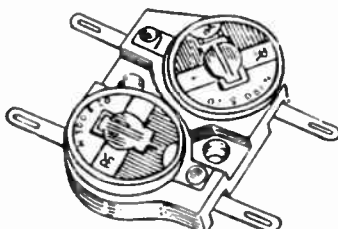
## ERIE CERAMICON® TRIMMERS

These trimmers have been well known for years for their stability under the most exacting conditions. The top of the base and underside of the titanium dioxide rotor are lapped optically flat, thus eliminating air space variations with temperature. Fired silver electrodes are applied to top of base and rotor, so that capacity is changed by varying the

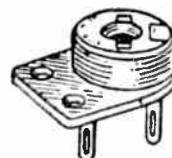
amount of overlap. Capacity change per degree of rotation is approximately constant, resulting in a smoothness of adjustment not possible with compression type trimmers, where the greater part of capacity change is concentrated close to one end of adjustment.



STYLE TS2A



STYLE TD2A



STYLE 557  
Patented

Order by Catalog Number from Table Below  
**STOCK ITEMS — 500 VDCW**

Catalog No.	Capacity Range (MMF)	Temperature Coefficient
TS-A	1.5-7	NPO
TS-B	3-12	NPO
TS-C	4-30	N500
TS-D	5-20	N300
TS-E	7-45	N500
TD-A	1.5-7	NPO
TD-B	3-12	NPO
TD-C	4-30	N500
TD-D	5-20	N300
TD-E	7-45	N500
557-A	1.5-7	NPO
557-B	3-12	NPO
557-F	5-25	NPO
557-G	5-30	N750
557-H	8-50	N750

MIL-C-81A Trimmers		
CV11A070	1.5-7	NPO
CV11A120	3-12	NPO
CV11A250	4.5-25	NPO
CV11B130	3-13	N300
CV11E200	5-20	N300
CV11C300	4-30	N500
CV11C450	7-45	N500
CV11D300	4-30	N650
CV11D450	7-45	N650
CV11D500	8-50	N650

## ERIE TUBULAR TRIMMERS

These are compact, economical Tubular Trimmers that are ideal for applications calling for a low minimum capacity and a high ratio of maximum to minimum capacity. Styles 532 and 535 have molded plastic dielectric. Styles 3115-01 and 3139-01 have ceramic dielectric.

Order by Catalog Number from Table Below  
**STOCK ITEMS — 500 VDCW**

Catalog No.	Capacity Range (MMF)	Panel Thickness
532-A	0.5-5	.040" to .065"
532-B	1-8	.040" to .065"
535-C	0.7-3	up to .050"
3115-D	0.5-3	.025" to .065"
3115-E	1-4	.025" to .065"
3139-D	0.5-3	.025" to .065"
3139-E	1-4	.025" to .065"



STYLE 532



STYLE 535

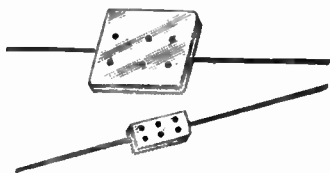


STYLE 3139-01  
 STYLE 3115-01

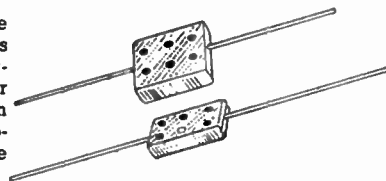




## CORNING MINIATURE FIXED CAPACITORS



Developed through Corning research, these truly miniature fixed glass capacitors possess outstanding behavior characteristics that suggest use in critical applications and under high temperatures. If you're concerned with guided missile development, nuclear equipment, and other high reliability systems, these glass capacitors offer you much.



### THE DIELECTRIC

A homogeneous, low-loss, uniformly produced continuous ribbon of glass; no foreign inclusions, no cracks, no imperfections to degrade the performance of the capacitor.

### THE CASE

The glass case, used only to anchor the wire leads, is of the same glass composition as the dielectric; thus, the capacitor performance is a function only of the superior dielectric properties of the glass and not of any enclosing or potting material or impregnant.

### CONSTRUCTION

Only three simple elements: The glass dielectric and case of identical glass composition; the metal foil plates; the wire terminal leads. After assembly, the many layers of dielectric glass, the metal foil plates, the glass case, and the wire leads are sealed together at a high temperature and pressure as an integral, rugged, monolithic unit. Thus, the properties of the capacitor are those of the closely controlled dielectric, and are not determined by assembly method or affected by any subsequent treatment.

### CHARACTERISTICS

Corning Fixed Glass Dielectric Capacitors, Types CY10, CY15, CY20, and CY30, are designed and manufactured to conform to the requirements of Military Specification MIL-C-11272A.

### STABILITY

Capacitance Drift — As defined by MIL-C-11272A is less than 0.1% or 0.1 uuf whichever is greater; it is very nearly zero and is generally within the accuracy of measurements.

Temperature Coefficient — Is fixed and therefore predictable and traceable. It is within the limits of  $+140 \pm 25$  ppm/°C. as defined by MIL-C-11272A from  $-55^\circ\text{C}$ . to  $+85^\circ\text{C}$ . and referred to  $+25^\circ\text{C}$ . (See figures 1 and 2.) The difference in temperature coefficient between any units at any given temperature is less than 15 ppm/°C.

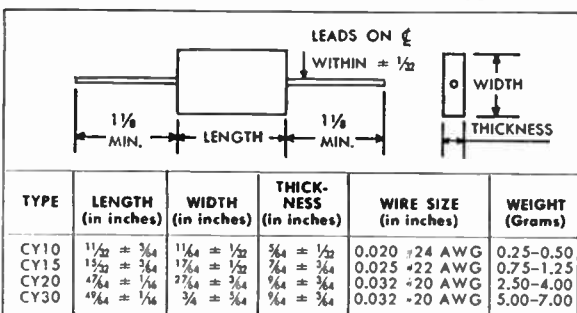


FIGURE 1

### MINIATURIZATION

The glass capacitor offers a higher degree of miniaturization than any other high quality capacitor. The volume of Type CY10 is only about 0.005 cubic inches; further reductions to as little as one-tenth of the volume of the standard wire lead types can be realized where wire lead terminals are not required. For physical dimensions see figure 1.

### INSULATION RESISTANCE

When measured under the conditions specified in MIL-C-11272A, the insulation resistance will be found to be greater than  $10^{11}$  ohms; that is, above the range of most standard measuring equipment.

### INDUCTANCE

Because of the direct connection of the wire leads to the foil plates, the inductance is less and therefore the self-resonant frequency is higher than for other similar capacitors.

### DIELECTRIC ABSORPTION

The dielectric absorption is extremely low; the percentage of charge reappearing after discharge is less than 0.1%.

### MOISTURE RESISTANCE

The glass capacitor meets the temperature cycling, immersion, and 10-day moisture resistance tests which are prescribed in the military standards MIL-C-11272A for capacitors which must meet stringent environmental requirements.

### VOLTAGE RATINGS

Standard ratings based on continuous operation in ambient temperatures from  $-55^\circ\text{C}$ . to  $+85^\circ\text{C}$ . and from  $-55^\circ\text{C}$ . to  $+125^\circ\text{C}$ . are shown in figure 2. Higher voltage ratings may be made available upon request.

### CAPACITANCE

From 1 to 10,000 uuf in standard sizes as shown in figure 2. Higher capacitances in special forms available upon request.

TYPE	CAPACITANCE RANGE (UUF)	
	DC WORKING VOLTAGE	
	300 V. — 85°C. 180 V. — 125°C.	500 V. — 85°C. 350 V. — 125°C.
CY10	1 — 240	1 — 150
CY15	57 — 1200	57 — 510
CY20	200 — 5100	200 — 3300
CY30	470 — 10,000	470 — 6200

FIGURE 2

### CAPACITANCE TOLERANCE

Standard tolerance is  $\pm 5\%$  or  $\pm 0.25$  uuf whichever is greater. Also available as  $\pm 20\%$ ,  $\pm 10\%$ ,  $\pm 2\%$ ,  $\pm 1\%$ , but in no case less than  $\pm 0.25$  uuf.

### DIELECTRIC LOSS

Losses are extremely low. The dissipation factor at 1 kc. and  $25^\circ\text{C}$ . is in the order of 0.055% and is not dependent on capacitance. Losses remain relatively low at elevated temperatures.

### LIFE

The shelf life change in capacitance is very small, and even at the elevated temperature of the  $125^\circ\text{C}$ . life test of MIL-C-11272A the recorded change in capacitance is less than 1% in 2,000 hours.

### EXPOSURE TO RADIATION

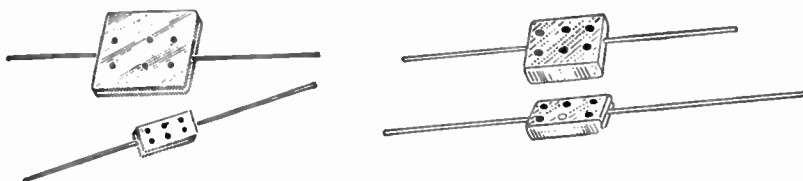
These capacitors have been found to withstand high levels of X-radiation without permanent damage or degradation of electrical properties.



# CORNING GLASS WORKS ELECTRONIC COMPONENTS

## CORNING FIXED GLASS CAPACITORS

CONFORMS TO MIL-C-11272A



### CY10 SERIES

Type Designation	Cap.	Tol.
CY10C050J 300V	5	± 5%
CY10C050J 500V	5	± 5%
CY10C050K 300V	5	± 10%
CY10C050K 500V	5	± 10%
CY10C8R2D 300V	8.2	±.5 mmf
CY10C8R2D 500V	8.2	±.5 mmf
CY10C100J 300V	10	± 5%
CY10C100J 500V	10	± 5%
CY10C100K 300V	10	± 10%
CY10C100K 500V	10	± 10%
CY10C120J 300V	12	± 5%
CY10C120J 500V	12	± 5%
CY10C120K 300V	12	± 10%
CY10C120K 500V	12	± 10%
CY10C150J 300V	15	± 5%
CY10C150J 500V	15	± 5%
CY10C150K 300V	15	± 10%
CY10C150K 500V	15	± 10%
CY10C180J 300V	18	± 5%
CY10C180J 500V	18	± 5%
CY10C180K 300V	18	± 10%
CY10C180K 500V	18	± 10%
CY10C200J 300V	20	± 5%
CY10C200J 500V	20	± 5%
CY10C200K 300V	20	± 10%

Type Designation	Cap.	Tol.
CY10C200K 500V	20	± 10%
CY10C220J 300V	22	± 5%
CY10C220J 500V	22	± 5%
CY10C220K 300V	22	± 10%
CY10C220K 500V	22	± 10%
CY10C240J 300V	24	± 5%
CY10C240J 500V	24	± 5%
CY10C270J 300V	27	± 5%
CY10C270J 500V	27	± 5%
CY10C270K 300V	27	± 10%
CY10C270K 500V	27	± 10%
CY10C300J 300V	30	± 5%
CY10C300J 500V	30	± 5%
CY10C330J 300V	33	± 5%
CY10C330J 500V	33	± 5%
CY10C330K 300V	33	± 10%
CY10C330K 500V	33	± 10%
CY10C360J 300V	36	± 5%
CY10C360J 500V	36	± 5%
CY10C390J 300V	39	± 5%
CY10C390J 500V	39	± 5%
CY10C390K 300V	39	± 10%
CY10C390K 500V	39	± 10%
CY10C430J 300V	43	± 5%
CY10C430J 500V	43	± 5%

Type Designation	Cap.	Tol.
CY10C470J 300V	47	± 5%
CY10C470J 500V	47	± 5%
CY10C470K 300V	47	± 10%
CY10C470K 500V	47	± 10%
CY10C500J 300V	50	± 5%
CY10C500J 500V	50	± 5%
CY10C510G 300V	51	± 2%
CY10C510G 500V	51	± 2%
CY10C510K 300V	51	± 5%
CY10C510K 500V	51	± 5%
CY10C510K 300V	51	± 10%
CY10C510K 500V	51	± 10%
CY10C560J 300V	56	± 5%
CY10C560J 500V	56	± 5%
CY10C560K 300V	56	± 10%
CY10C560K 500V	56	± 10%
CY10C620J 300V	62	± 5%
CY10C620J 500V	62	± 5%
CY10C680J 300V	68	± 5%
CY10C680J 500V	68	± 5%
CY10C680K 300V	68	± 10%
CY10C680K 500V	68	± 10%
CY10C750J 300V	75	± 5%
CY10C750J 500V	75	± 5%
CY10C820J 300V	82	± 5%

Type Designation	Cap.	Tol.
CY10C820J 500V	82	± 5%
CY10C820K 300V	82	± 10%
CY10C820K 500V	82	± 10%
CY10C910J 300V	91	± 5%
CY10C910J 500V	91	± 5%
CY10C101J 300V	100	± 5%
CY10C101J 500V	100	± 5%
CY10C101K 300V	100	± 10%
CY10C101K 500V	100	± 10%
CY10C111J 300V	110	± 5%
CY10C121J 300V	120	± 5%
CY10C121K 300V	120	± 10%
CY10C131J 300V	130	± 5%
CY10C151J 300V	150	± 5%
CY10C151K 300V	150	± 10%
CY10C161J 300V	160	± 5%
CY10C181J 300V	180	± 5%
CY10C181K 300V	180	± 10%
CY10C201J 300V	200	± 5%
CY10C201K 300V	200	± 10%
CY10C221J 300V	220	± 5%
CY10C221K 300V	220	± 10%
CY10C241J 300V	240	± 5%
CY10C241K 300V	240	± 10%

### CY15 SERIES

CY15C101J 500V	100	± 5%
CY15C101K 500V	100	± 10%
CY15C111J 500V	110	± 5%
CY15C121J 500V	120	± 5%
CY15C121K 500V	120	± 10%
CY15C131J 500V	130	± 5%
CY15C151J 500V	150	± 5%
CY15C151K 500V	150	± 10%
CY15C161J 500V	160	± 5%
CY15C181J 500V	180	± 5%
CY15C181K 500V	180	± 10%
CY15C201J 500V	200	± 5%

CY15C221J 500V	220	± 5%
CY15C221K 500V	220	± 10%
CY15C241J 500V	240	± 5%
CY15C271J 500V	270	± 5%
CY15C271K 500V	270	± 10%
CY15C301J 500V	300	± 5%
CY15C331J 500V	330	± 5%
CY15C331K 500V	330	± 10%
CY15C361J 500V	360	± 5%
CY15C361K 500V	360	± 10%
CY15C391J 500V	390	± 5%
CY15C391K 500V	390	± 10%

CY15C431J 500V	430	± 5%
CY15C471G 500V	470	± 2%
CY15C471J 500V	470	± 5%
CY15C471K 500V	470	± 10%
CY15C511G 500V	510	± 2%
CY15C511J 500V	510	± 5%
CY15C511K 500V	510	± 10%
CY15C561J 300V	560	± 5%
CY15C561K 300V	560	± 10%
CY15C621J 300V	620	± 5%
CY15C681J 300V	680	± 5%
CY15C681K 300V	680	± 10%

CY15C751J 300V	750	± 5%
CY15C821J 300V	820	± 5%
CY15C821K 300V	820	± 10%
CY15C911J 300V	910	± 5%
CY15C102F 300V	1000	± 1%
CY15C102G 300V	1000	± 2%
CY15C102J 300V	1000	± 5%
CY15C102K 300V	1000	± 10%
CY15C112J 300V	1100	± 5%
CY15C122G 300V	1200	± 2%
CY15C122J 300V	1200	± 5%
CY15C122K 300V	1200	± 10%

### CY20 SERIES

CY20C561J 500V	560	± 5%
CY20C561K 500V	560	± 10%
CY20C621J 500V	620	± 5%
CY20C681J 500V	680	± 5%
CY20C681K 500V	680	± 10%
CY20C751J 500V	750	± 5%
CY20C821J 500V	820	± 5%
CY20C821K 500V	820	± 10%
CY20C911J 500V	910	± 5%
CY20C102J 500V	1000	± 5%
CY20C102K 500V	1000	± 10%

CY20C112J 500V	1100	± 5%
CY20C122J 500V	1200	± 5%
CY20C122K 500V	1200	± 10%
CY20C132J 500V	1300	± 5%
CY20C152G 500V	1500	± 2%
CY20C152J 500V	1500	± 5%
CY20C152K 500V	1500	± 10%
CY20C162J 500V	1600	± 5%
CY20C182J 500V	1800	± 5%
CY20C182K 500V	1800	± 10%
CY20C202G 500V	2000	± 2%

CY20C202J 500V	2000	± 5%
CY20C202K 500V	2000	± 10%
CY20C222J 500V	2200	± 5%
CY20C222K 500V	2200	± 10%
CY20C242J 500V	2400	± 5%
CY20C272G 500V	2700	± 2%
CY20C272J 500V	2700	± 5%
CY20C272K 500V	2700	± 10%
CY20C302J 500V	3000	± 5%
CY20C332G 500V	3300	± 2%

CY20C332J 500V	3300	± 5%
CY20C332K 500V	3300	± 10%
CY20C362J 300V	3600	± 5%
CY20C392J 300V	3900	± 5%
CY20C392K 300V	3900	± 10%
CY20C432G 300V	4300	± 5%
CY20C472J 300V	4700	± 5%
CY20C472K 300V	4700	± 10%
CY20C512G 300V	5100	± 2%
CY20C512J 300V	5100	± 5%

### CY30 SERIES

CY30C302J 500V	3000	± 5%
CY30C302K 500V	3000	± 10%
CY30C332J 500V	3300	± 5%
CY30C332K 500V	3300	± 10%
CY30C362J 500V	3600	± 5%
CY30C362K 500V	3600	± 10%
CY30C392J 500V	3900	± 5%
CY30C392K 500V	3900	± 10%

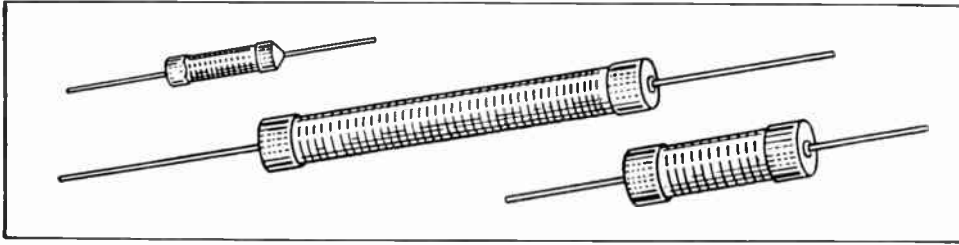
CY30C432J 500V	4300	± 5%
CY30C432K 500V	4300	± 10%
CY30C472J 500V	4700	± 5%
CY30C472K 500V	4700	± 10%
CY30C502J 500V	5000	± 5%
CY30C502K 500V	5000	± 10%
CY30C512J 500V	5100	± 5%
CY30C512K 500V	5100	± 10%

CY30C562J 500V	5600	± 5%
CY30C562K 500V	5600	± 10%
CY30C622J 500V	6200	± 5%
CY30C622K 500V	6200	± 10%
CY30C682J 300V	6800	± 5%
CY30C682K 300V	6800	± 10%
CY30C752J 300V	7500	± 5%
CY30C752K 300V	7500	± 10%

CY30C822J 300V	8200	± 5%
CY30C822K 300V	8200	± 10%
CY30C912J 300V	9100	± 5%
CY30C912K 300V	9100	± 10%
CY30C103F 300V	10000	± 1%
CY30C103G 300V	10000	± 2%
CY30C103J 300V	10000	± 5%
CY30C103K 300V	10000	± 10%



## CORNING FIXED FILM RESISTORS — TYPE S



**CORNING TYPE S RESISTORS (MIL-R-11804B SPECS) FOR RELIABLE, STABLE, ACCURATE OPERATION UP TO 200°C.**

Corning has developed these fixed film Type S resistors to meet problems of small space and high ambient temperatures.

These are not ordinary film-type resistors. They are integral units made by bonding a metallic oxide film to PYREX brand glass at red heat. The rugged film is noninductive, impervious to moisture, unaffected by the heat of soldering and is more abrasion resistant than the base glass itself.

**APPLICATIONS**

- Miniature power units
- High-gain, low-signal amplifiers
- Computers
- Missiles where shelf-life is critical
- Aircraft instruments where weight is critical

**SPECIFICATIONS**

**Resistance Element** — An accurate, stable, metallic oxide film, fused to a PYREX brand glass core, meets the most exacting circuit needs. The film thickness ranges from 20-50 microinches. Rugged performance does not depend on encapsulation.

**Protective Coating** — Moisture-resistant, high temperature Silicone lacquer is baked on the resistor for extra mechanical and dirt protection. Plastic stand-off insulating sleeves over end caps available for special applications. Fungus-resistant coating per MIL-V-173A is available if desired.

**Tolerance** — Tolerances are 1, 2, 5, and 10%. Tolerance calibrated at 25°C. ambient.

**Power Rating** — Full rating at 120°C. ambient. Double rating at 40°C. ambient for miniaturized power applications.

**Stability** — The maximum change in resistance is guaranteed to be less than 3% when tested with DC power on 1½ hours, off ½ hour, for 1,000 hours, employing proper power per derating curve for any particular ambient.

**Overload** — A standard 5-second overload of 10 times rated power causes a permanent resistance change of less than 1.0%. Repeated overloads cause negligible further changes.

**Voltage Coefficient** — Negligible factor averaging less than 0.001 % per volt.

**Temperature Coefficient** — For the Type S resistor, a temperature coefficient of ±0.03% per °C. can be guaranteed from -55°C. to +235°C. referenced to 25°C.

**Humidity** — Core and film are impervious to moisture. Corning Type S resistors more than meet the moisture-resistance tests per MIL-R-11804B.

**Noise** — Extremely low noise level. Some sources indicate readings 1/10 those of carbon film resistors.

**Frequency Characteristics** — Corning Type S resistors are noninductive up to and over 250 mc. The capacitive component varies between 0.2 to 1.0 uuf as frequency increases to 250 mc.

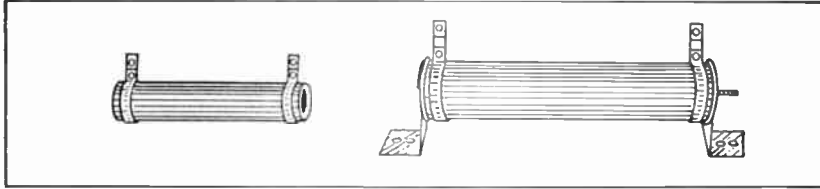
**Shelf Life** — One year aging shows less than 0.2% resistance change under the most adverse conditions.

TYPE		RESISTANCE		WATTAGE		Voltage	DIMENSIONS		AXIAL TERMINALS	
MIL	CGW	Min.	Max.	120°C.	40°C.	Rating	Length	Diameter	A.W.G.	Length
RD60	S-20	10	500 K	½	1	350	1½ ± ¼"	1¼ ± ½"	20	1½ ± ¼"
RD65	S-25	10	1.5 Meg.	1	2	500	1¾ ± ¼"	1¼ ± ½"	20	1½ ± ¼"
RD70	S-30	30	4.2 Meg.	2	4	750	2¼ ± ¼"	1¼ ± ½"	20	1½ ± ¼"





## CORNING TYPE R HIGH-POWER RESISTORS TO MIL-R-11804A SPECIFICATION



**Corning Type R Power Resistors** have a range of 10-1,000,000 ohms, ratings of 7-115 watts, and are non-inductive. They are designed for stable long-life service under the most adverse operating conditions. Noise and frequency characteristics are exceptionally good. Moisture resistance and overload capacity are superior.

**Cores** — The glass tube cores are made from a PYREX brand glass insuring highest resistivity even at elevated temperatures, low expansion, and unusual resistance to chemical and mechanical attack, as well as thermal shock. The cores are impervious, and the glass has been developed to eliminate electrolysis and voltage creepage.

**Resistance Film** — The resistive film of metallic oxides is as rugged as the glass. It is permanently and integrally bonded to the core at red heat. Expansions are matched. The film is practically noninductive at all usable frequencies.

**Terminals** — Silver metallized bands are fired onto the film conductor and core. Lug-type terminals of silver-plated copper alloy strip are expansion fitted over the silver bands to insure a perfect electrical and mechanical junction.

**Silicone Coating** — The coating is tough, moisture and acid resistant, and a good conductor of heat. It adds to the thermal shock resistance but is not essential to overall performance.

**Mounting Brackets** — These are supplied with the resistors at extra charge. They are made to MIL-R-11804A requirements.

**Range** — Resistance range varies with size and power. It is summarized on Table I. Standard tolerance is  $\pm 5\%$  for striped or spiraled units.

**Ratings** — Power ratings are based on 25°C. operating ambient. Maximum operating ambient may be as high as 200°C. and hot spot temperature 235°C.

**Temperature Coefficient** — The value of temperature coefficient in the range of 25-85°C. is less than  $\pm 0.035\%$  per deg. C. Type R resistors meet the requirements of MIL-R-11804A.

**Stability** — The average change of resistance after 500 hours operation at maximum dissipation at 25°C. ambient is 4%.

**Overload** — A standard 5-second overload of 6.25 times the rated power causes a permanent resistance change of less than 0.5%.

**Humidity** — Type R resistors more than meet the specifications for maximum resistance change of MIL-R-11804A.

**Voltage Coefficient** — The voltage coefficient averages less than .001% per volt.

**Noise** — Available data show an inherent noise level of less than .1 microvolt per volt.

**Frequency Characteristics** — The thin film construction of R type resistors makes them inherently noninductive. Inductance is of the order of magnitude of that of the terminals. They are particularly suited to sharp pulse work.

**Design Information** — The power ratings in Table I are for horizontal operation. When vertically operated, the dissipation may be safely increased by about 12%. Power ratings may be increased 4 times by forced air cooling.

TABLE 1

STYLE	RATED WATTS	OHMIC VALUES		Temperature Rise at Rated Load in Centigrade	Maximum Oper. Temperature in Centigrade
		Min.	Max.		
R 31	7	10	70,000	200	225
R 33	13	30	150,000	200	225
R 35	25	20	300,000	200	225
R 37	55	20	500,000	200	225
R 39	115	40	1,000,000	200	225



## CORNING GLASS TRIMMER CAPACITORS MIDGET ROTARY TYPE

Corning Midget Rotary Trimmer Capacitors offer outstanding performance coupled with economy. Midget trimmers are available in a variety of mounting types to cover the ranges of 0.3 to 3.0 mmfd., 1 to 8.0 mmfd., and 1 to 12.0 mmfd. respectively.

Dimensions — O.D. — .252"-.270"		
Height (Chassis to Top of Glass)	Push-On	Split-Bushing
1 — 12 mmf	1 1/4" ± 1/32"	1 1/2" ± 1/32"
1 — 8 mmf	1 1/6" ± 1/32"	1 1/2" ± 1/32"
.5 — 3 mmf	7/32" ± 1/32"	1 1/6" ± 1/32"

### ELECTRICAL CHARACTERISTICS CORNING MIDGET ROTARY TRIMMER CAPACITORS

Temperature Coefficient of Capacitance  
(Solid or Split Bushing Types Only)  
Brass core units — Approx. 200 ± 50 ppm/°C.  
Invar core units — Approx. 50 ± 50 ppm/°C.

Power Factor of the Dielectric — 0.16%

Direct Current Breakdown Voltage  
500 volts for all types with core at the maximum capacity position.

### MIDGET TRIMMER CAPACITOR WITH ROTARY TUNING MOTION

	<p><b>I. Push-On Mount with Saddle Clip, Brass Core</b></p> <table border="1"> <thead> <tr> <th>Part No.</th> <th>Range mmf.</th> </tr> </thead> <tbody> <tr> <td>680000</td> <td>.5 — 3</td> </tr> <tr> <td>680001</td> <td>1 — 8</td> </tr> <tr> <td>680002</td> <td>1 — 12</td> </tr> </tbody> </table>	Part No.	Range mmf.	680000	.5 — 3	680001	1 — 8	680002	1 — 12		<p><b>II. Push-On Mount with Wire Lead, Brass Core</b></p> <table border="1"> <thead> <tr> <th>Part No.</th> <th>Range mmf.</th> </tr> </thead> <tbody> <tr> <td>680003</td> <td>.5 — 3</td> </tr> <tr> <td>680004</td> <td>1 — 8</td> </tr> <tr> <td>680005</td> <td>1 — 12</td> </tr> </tbody> </table>	Part No.	Range mmf.	680003	.5 — 3	680004	1 — 8	680005	1 — 12
Part No.	Range mmf.																		
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	<p><b>III. Push-On Mount with Solder Spots, Brass Core</b></p> <table border="1"> <thead> <tr> <th>Part No.</th> <th>Range mmf.</th> </tr> </thead> <tbody> <tr> <td>680006</td> <td>.5 — 3</td> </tr> <tr> <td>680007</td> <td>1 — 8</td> </tr> <tr> <td>680008</td> <td>1 — 12</td> </tr> </tbody> </table>	Part No.	Range mmf.	680006	.5 — 3	680007	1 — 8	680008	1 — 12		<p><b>IV. Split-Bushing Mount with Pan Terminal, Invar Core</b></p> <table border="1"> <thead> <tr> <th>Part No.</th> <th>Range mmf.</th> </tr> </thead> <tbody> <tr> <td>683038</td> <td>.5 — 3</td> </tr> <tr> <td>683039</td> <td>1 — 8</td> </tr> <tr> <td>683040</td> <td>1 — 12</td> </tr> </tbody> </table>	Part No.	Range mmf.	683038	.5 — 3	683039	1 — 8	683040	1 — 12
Part No.	Range mmf.																		
680006	.5 — 3																		
680007	1 — 8																		
680008	1 — 12																		
Part No.	Range mmf.																		
683038	.5 — 3																		
683039	1 — 8																		
683040	1 — 12																		

### MIDGET DIRECT TRAVERSE TYPE

For those applications where sheer ruggedness is desired in addition to thermal stability and a smooth tuning characteristic, a direct traverse type of trimmer capacitor is recommended. Standard units are supplied with either a pan type terminal or a wire wrap-around terminal.

This basic direct traverse trimmer motion is used in single-ended trimmers having the following ratings:

0.5 to 3.0 mmfd.    1.0 to 8.0 mmfd.  
1.0 to 7.5 mmfd.    1.0 to 12.0 mmfd.

### TEMPERATURE COEFFICIENT OF CAPACITANCE

With *Invar Core* — Plus 50 ± 50 ppm/°C.  
With *Brass Core* — Plus 50-200 ± 50 ppm/°C.  
Minimum Q at Max. C. (1 1/2 turns from end cap) — 500 checked on a Boonton 160-A Q-Meter at 50 Mcs.  
Dielectric Strength (glass only) 1000 volts D.C. with core set at mid-capacity position.  
Safe Operating Temperature Range — From -55° C. to 125° C.  
Rated D.C. Breakdown Voltage (Core set at Max. C. position) 500 volts.

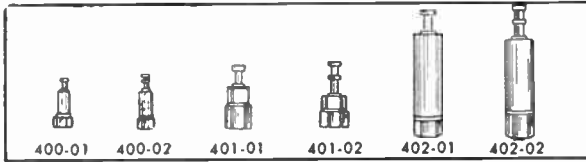


CODE NO.	Capacity Range mmfds.	Core Material	Terminal	Max. C Stop	Electrical Selection
682023	0.5-3.0	I	Pan	Yes	Special
682024	0.5-3.0	I	Pan	Yes	None
682025	0.5-3.0	I	Pan	Yes	None
682026	0.5-3.0	I	Pan	No	None
682053	1.0-7.5	I	Pan	Yes	Special
682054	1.0-7.5	I	Pan	Yes	None
682055	1.0-7.0	I	Pan	Yes	None
682056	1.0-8.0	I	Pan	No	None
682060	1.0-8.0	I	Wire	No	None
682061	1.0-8.0	I	Wire	No	Special
682062	1.0-8.0	Br	Wire	No	None
682063	1.0-8.0	I	Pan	No	None
682064	1.0-8.0	I	Pan	No	Special
682065	1.0-8.0	Br	Pan	No	None
681024	1.0-12.0	I	Pan	No	Special
681029	1.0-12.0	I	Pan	Yes	Special



**ERIE TEFLON\* STAND-OFF INSULATORS**

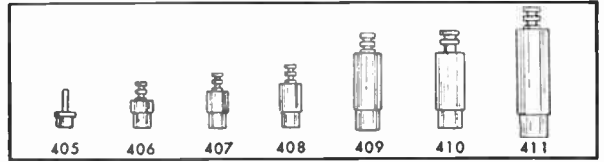
**TE-400 SERIES**



These Insulators are designed for low-loss, high frequency service in radar, television and other electronic equipment, as completely insulated tie-points in circuit wiring — unaffected by a wide range in ambient temperatures, pressure, altitudes, humidity, and mechanical shock and vibration.

\*duPont Trademark

**TE-405 SERIES**



These Miniature Stand-Off Insulators are compressed into mounting holes, are self-fastening, requiring no additional hardware. Hand tool for mounting available. High heat resistance permits soldering without damage to insulators. Excellent electrical characteristics adapt them to miniaturization and high frequency, high temperature, high voltage circuits.

Order by Catalog Number from Table Below

Insulator Number	RATING		DIMENSIONS						
	Flash Over Point†	Capacitance	A	B	C	D	E	F	G
TE-400	7,000 VAC-RMS	.12 mmfd.	3 <sup>3</sup> / <sub>4</sub>	2 <sup>3</sup> / <sub>4</sub>	3 <sup>1</sup> / <sub>2</sub>	.066	1/8	.230	.181
TE-401	6,300 VAC-RMS	.25 mmfd.	2 <sup>3</sup> / <sub>2</sub>	1 <sup>9</sup> / <sub>2</sub>	1/4	.140	1/4	.174	.258
TE-402	15,500 VAC-RMS	.14 mmfd.	1 <sup>1</sup> / <sub>2</sub>	1 <sup>1</sup> / <sub>4</sub>	1/4	.140	1/4	.745	.258

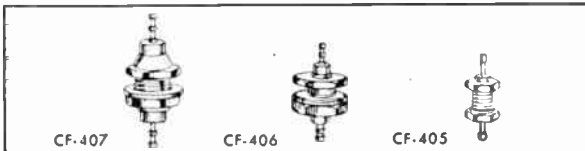
†Readings taken at Sea Level, Short Time Test.

Insulator Number	RATING		DIMENSIONS						
	Flash Over Point	Capacitance	A	B	C	D	E	F	Mounting Hole
TE-405	3,500 VAC	.5 mmfd.	.365	.040	.148	.045	.172	.115	.136
TE-406	5,000 VAC	.32 mmfd.	.421	.125	.165	3 <sup>1</sup> / <sub>2</sub>	3 <sup>1</sup> / <sub>4</sub>	.150	.152
TE-407	6,300 VAC	.25 mmfd.	.493	.187	.165	3 <sup>1</sup> / <sub>2</sub>	3 <sup>1</sup> / <sub>4</sub>	.150	.152
TE-408	7,500 VAC	.20 mmfd.	.546	.250	.165	3 <sup>1</sup> / <sub>2</sub>	3 <sup>1</sup> / <sub>4</sub>	.150	.152
TE-409	10,000 VAC	.10 mmfd.	.696	.400	.165	3 <sup>1</sup> / <sub>2</sub>	3 <sup>1</sup> / <sub>4</sub>	.150	.152
TE-410	11,000 VAC	.14 mmfd.	.972	.500	.215	3 <sup>1</sup> / <sub>4</sub>	1/4	.187	.202
TE-411	15,500 VAC	.18 mmfd.	1.272	.800	.215	3 <sup>1</sup> / <sub>4</sub>	1/4	.187	.202

†Readings taken at Sea Level, Short Time Test.

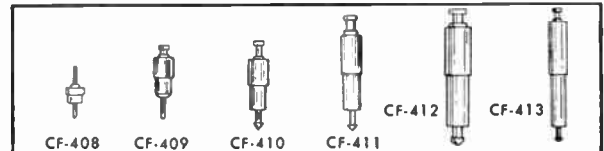
**ERIE TEFLON FEED-THRU INSULATORS**

**CF-405 SERIES**



Series CF-405 Feed-Thru Insulators have a hollow threaded metal body which fits through the bed plate and is secured by a hex nut. The terminal, which passes through the hollow body, is spaced by a force-fitted Teflon plug. These Feed-Thru Insulators combine the unsurpassed insulating properties of Teflon for high frequency, high temperature, high voltage service with mechanical ruggedness unusual in miniature insulator design.

**CF-408 SERIES**



Teflon Miniature Feed-Thru Insulators, compression type, are force-fitted into mounting holes, are self-fastening and self-sealing. No additional hardware is required for assembly. The resiliency of the Teflon bodies insures against breakage in assembly and transit, and offers shock-proof and vibration-proof durability in service. Hand tool for mounting available. Teflon's unexcelled electrical properties for high frequency, high temperature and high voltage use, unaffected by a wide range in ambient temperatures, pressure, altitudes and humidity, recommend them for critical circuits.

Order by Catalog Number from Table Below

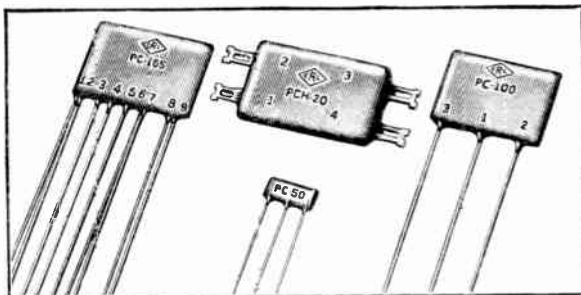
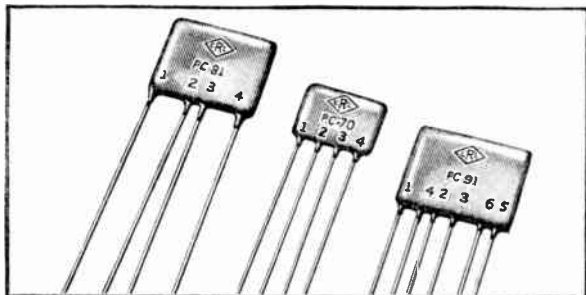
Insulator Number	RATING		DIMENSIONS					
	Flash Over Point†	Capacitance	A	B	C	D	E	F
CF-405	3500 VAC	2.0 mmfd.	.690	.133	12-28	.082	.163	.369
CF-406	4500 VAC	1.5 mmfd.	.876	.158	1/4-32	.093	.188	.500
CF-407	6300 VAC	1.95 mmfd.	1.316	.257	3/8-32	.125	.283	.750

†Readings taken at Sea Level, Short Time Test.

Insulator Number	RATING		DIMENSIONS						
	Flash Over Point	Capacitance	A	B	C	D	E	F	Mounting Hole
CF-408	3,500 VAC	.72 mmfd.	.515	.040	.148	.040	.172	.100	.136
CF-409	5,000 VAC	.9 mmfd.	.740	.187	.171	3 <sup>1</sup> / <sub>2</sub>	3 <sup>1</sup> / <sub>4</sub>	.212	.158
CF-410	7,000 VAC	.82 mmfd.	.865	.250	.171	3 <sup>1</sup> / <sub>2</sub>	3 <sup>1</sup> / <sub>4</sub>	.275	.158
CF-411	9,000 VAC	.8 mmfd.	1.115	.375	.171	1/8	3/8	.400	.158
CF-412	10,000 VAC	.83 mmfd.	1.365	.500	.217	1/8	1/4	.525	.204
CF-413	15,500 VAC	1.02 mmfd.	1.965	.800	.217	1/8	1/4	.825	.204

†Readings taken at Sea Level, Short Time Test.

## PACKAGED ELECTRONIC CIRCUITS



Packaged Electronic Circuits are electronic sub-assemblies of component parts including capacitors, resistors, and wiring printed and bonded to a rugged ceramic base plate.

Miniaturization, lower costs, circuit stability, and assured dependability, have resulted in over 75,000,000 Centralab P.E.C. units incorporated in present original equipment.

### FILPECS®

Cat. No.	R1	C1	C2	List
PC-50	47K	100 mmf	100 mmf	\$.60
PC-51	47K	150 mmf	150 mmf	.60
PC-52	47K	50 mmf	50 mmf	.60
PC-326	100K	100 mmf	100 mmf	1.00

### COUPLATES®

Cat. No.	R1	R2	C1	C2 & C3	List
PC-70	500K	500K	5000 mmf	250 mmf	\$.70
PC-71	250K	500K	5000 mmf	250 mmf	.70
PC-80	500K	500K	.01 mfd	250 mmf	.75
PC-81	250K	500K	.01 mfd	250 mmf	.75
PC-84	500K	500K	.01 mfd	500 mmf	.75

### SPECIAL

Cat. No.	R1	R2	C1	List
PC-82	470K	1 Meg	.01 mfd	\$.75

### PENTODES

Cat. No.	R1	R2	R3	C1	C2	C3	List
PC-90	4.7 Meg	1 Meg	2.2 Meg	5000 mmf	50 mmf	2000 mmf	\$.90
PC-91	4.7 Meg	1 Meg	2.2 Meg	5000 mmf	100 mmf	5000 mmf	.90
PC-92	4.7 Meg	1 Meg	2.2 Meg	5000 mmf	100 mmf	2000 mmf	1.00

### VERTICAL INTEGRATORS

Cat. No.	R1	R2	R3	C1	C2	C3	List
PC-100	22K	8.2K	8.2K	2000 mmf	5000 mmf	5000 mmf	\$.110
PC-104	22K	8.2K	8.2K	2000 mmf	5000 mmf	5000 mmf	1.10

(Special construction to reduce stray capacities.)

### VERTICAL INTEGRATOR

Cat. No.	R1	R2	R3	R4	C1	C2	C3	C4	List
PC-101	22K	8.2K	8.2K	22K	.01 mfd	2000 mmf	5000 mmf	5000 mmf	\$.125

### VERTICAL INTEGRATOR

Cat. No.	R1	R2	C1	C2	C3	List
PC-105	8.2K	8.2K	2000 mmf	5000 mmf	5000 mmf	\$.110

### VERTICAL INTEGRATOR

Cat. No.	R1	R2	C1	C2	List
PC-106	22K	10K	4700 mmf	4700 mmf	\$.100

### FILPLATES® Filter Plates

Cat. No.	R1	R2	C1	C2	List
PC-110	1000	820	5000 mmf	5000 mmf	\$.75
PC-111	220	1000	5000 mmf	5000 mmf	.75

### AUDETS® — Output Stage

Cat. No.	R1	R2	R3	C1	C2	C3 & C5	C4	List
PC-150	6.8 Meg	470K	470K	2000 mmf	220 mmf	250 mmf	5000 mmf	\$.100
PC-151	6.8 Meg	470K	470K	5000 mmf	220 mmf	250 mmf	5000 mmf	1.15
PC-154	6.8 Meg	470K	470K	2000 mmf	220 mmf	500 mmf	5000 mmf	1.00
PC-159	10 Meg	470K	470K	5000 mmf	220 mmf	250 mmf	5000 mmf	1.15

### AUDETS® — Output Stage

Cat. No.	R1	R2	R3	C1	C2	C3 & C5	C4	List
PC-157	6.8 Meg	470K	470K	2000 mmf	220 mmf	250 mmf	5000 mmf	\$.100
PC-158	6.8 Meg	470K	470K	5000 mmf	220 mmf	250 mmf	5000 mmf	1.15

### FENDETS® — Pentode Detector Couplates

Cat. No.	R1	R2	R3	R4	C1	C2	C3	C4	C5	List
PC-160	4.7 Meg	1 Meg	3.3 Meg	10 Meg	2000 mmf	150 mmf	.01 mfd	150 mmf	5000 mmf	\$.125
PC-165	4.7 Meg	1 Meg	3.3 Meg	10 Meg	2000 mmf	150 mmf	.01 mfd	150 mmf	5000 mmf	1.35
PC-166	4.7 Meg	1 Meg	2.2 Meg	4.7 Meg	2000 mmf	150 mmf	.01 mfd	150 mmf	5000 mmf	\$.100
PC-327	4.7 Meg	1 Meg	3.3 Meg	10 Meg	1000 mmf	68 mmf	5000 mmf	68 mmf	2500 mmf	1.25
PC-328	4.7 Meg	1 Meg	3.3 Meg	10 Meg	2000 mmf	150 mmf	.01 mfd	150 mmf	5000 mmf	1.50

### SPECIAL

Cat. No.	R1	C1	C2	List
PC-175	4.7 Meg	250 mmf	.01 mfd	\$.100

### SPECIAL

Cat. No.	R1	R2	C1	C2	List
PC-176	82K	39K	1000 mmf	2000 mmf	\$.75

### SPECIAL

Cat. No.	R1	R2	R3	C1	List
PC-177	150K	47K	1 Meg	.01 mfd	\$.100

### SPECIAL

Cat. No.	R1	R2	C1	List
PC-178	15K	270K	150 mmf	\$.75

### SPECIAL

Cat. No.	R1	R2	C1	C2	List
PC-179	150	220	5000 mmf	5000 mmf	\$.90
PC-329	330	27K	5000 mmf	2000 mmf	1.25



**PACKAGED ELECTRONIC CIRCUITS (Cont'd)**

SPECIAL				
Cat. No.	R1	C1	C2	List
PC-184	270K	.01 mfd	150 mmf	\$ .75

SPECIAL				
Cat. No.	R1	C1	C2	List
PC-185	4.7 Meg	.01 mfd	50 mmf	\$ .75

SPECIAL					
Cat. No.	R1	C1	C2	C3	List
PC-186	22K	1000 mmf	4000 mmf	.01 mfd	\$ .75

SPECIAL								
Cat. No.	R1	R2	R3	R4	C1	C2	C3	List
PC-190	100K	470K	1000	100K	4700 mmf	4700 mmf	100 mmf	\$1.25

(See Senior Compentrol C3-300.)

SYNC. TAKE-OFF COUPLATE®							
Cat. No.	R1	R2	R3	C1	C2	C3	List
PC-260	10K	330K	2.2 Meg	270 mmf	.01 mfd	25 mmf	\$1.25
PC-262	10K	220K	2.2 Meg	270 mmf	.01 mfd	25 mmf	1.25
PC-263	Omit	220K	2.2 Meg	270 mmf	.01 mfd	25 mmf	1.25
PC-264	10K	330K	2.2 Meg	270 mmf	.01 mfd	9.5 mmf	1.00
PC-330	Omit	470K	2.2 Meg	150 mmf	.01 mfd	25 mmf	1.25

SPECIAL							
Cat. No.	R1	R2	R3	C1	C2	C3	List
PC-304	47K	10K	10K	390 mmf	2200 mmf	5000 mmf	\$1.25

SPECIAL										
Cat. No.	R1	R2	R3	R4	R5	R6	R7	C1	C2	List
PC-305	470K	470K	470K	470K	100K	47K	100K	500 mmf	500 mmf	\$1.25

SPECIAL								
Cat. No.	R1	R2	R3	R4	C1	C2	C3	List
PC-306	10K	10K	10K	1 Meg	400 mmf	.01 mfd	.01 mfd	\$1.25

SPECIAL					
Cat. No.	R1	R2	C1	C2	List
PC-307	4.7 Meg	220K	1000 mmf	.014 mfd	\$1.00

HORIZONTAL OSCILLATOR								
Cat. No.	R1	R2	R3	C1	C2	C3	C4	List
PC-308	10K	39K	5.6K	1000 mmf	1500 mmf	390 mmf	3000 mmf	\$1.00

RETRACE-SUPPRESSION COUPLATE®					
Cat. No.	R1	R2	C1	C2	List
PC-309	10K	1 Meg	5000 mmf	.01 mfd	\$1.00
PC-314	2.7K	56K	.01 mfd	.01 mfd	1.00

AUDIO COUPLATE						
Cat. No.	R1	R2	C1	C2	C3	List
PC-310	1.5 Meg	10 Meg	5000 mmf	410 mmf	3000 mmf	\$1.00

VERTICAL FEED-BACK						
Cat. No.	R1	R2	C1	C2	C3	List
PC-311	100K	100K	1000 mmf	1000 mmf	2000 mmf	\$1.00

VERTICAL INTEGRATOR									
Cat. No.	R1	R2	R3	R4	C1	C2	C3	C4	List
PC-312	47K	47K	68K	100K	180 mmf	800 mmf	800 mmf	130 mmf	\$1.00

AUDET® — Output Stage								
Cat. No.	R1	R2	R3	C1	C2	C3 & C5	C4	List
PC-313	6.8 Meg	470K	470K	5000 mmf	220 mmf	375 mmf	5000 mmf	\$1.00
PC-331	6.8 Meg	470K	470K	2000 mmf	400 mmf	220 mmf	5000 mmf	1.00

AUDET® — Output Stage								
Cat. No.	R1	R2	R3	C1	C2	C3 & C5	C4	List
PC-315	6.8 Meg	470K	470K	2000 mmf	400 mmf	220 mmf	5000 mmf	\$1.00

SYNC. TAKE-OFF COUPLATE®						
Cat. No.	R1	R2	C1	C2	C3	List
PC-316	2.2 Meg	470K	800 mmf	.01 mfd	470 mmf	\$1.00

AUDIO COUPLATE®						
Cat. No.	R1	R2	R3	C1	C2	List
PC-317	6.8 Meg	470K	1 Meg	6800 mmf	.01 mfd	\$1.00

PENDET® Pentode Detector Couplate										
Cat. No.	R1	R2	R3	R4	C1	C2	C3	C4	C5	List
PC-318	4.7 Meg	1 Meg	3.3 Meg	10 Meg	5000 mmf	150 mmf	.01 mfd	150 mmf	500 mmf	\$1.50

PHASE COMPARATOR								
Cat. No.	R1	R2	R3	R4	C1	C2	C3	List
PC-319	680K	680K	4.7 Meg	220K	82 mmf	100 mmf	1000 mmf	\$1.25

SPECIAL							
Cat. No.	R1	R2	R3	C1	C2	C3	List
PC-320	100K	100K	100K	1000 mmf	150 mmf	150 mmf	\$1.00

SPECIAL					
Cat. No.	R1	R2	C1 & C2	C3	List
PC-321	10K	220K	680 mmf	5000 mmf	\$1.00

SPECIAL						
Cat. No.	R1	R2	R3	C1	C2	List
PC-322	4.7 Meg	4.7 Meg	4.7 Meg	1500 mmf	1500 mmf	\$1.00

SPECIAL							
Cat. No.	R1	R2	R3	C1	C2	C3	List
PC-323	4.7 Meg	4.7 Meg	4.7 Meg	3000 mmf	250 mmf	400 mmf	\$1.00

SPECIAL							
Cat. No.	R1	R2	C1	C2	C3	C4	List
PC-324	50K	50K	4500 mmf	4500 mmf	100 mmf	200 mmf	\$1.00

(Replacement plate for C1-60, C1-60-S Compentrols)

PC-325	100K	100K	2500 mmf	2500 mmf	50 mmf	100 mmf	1.00
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(Replacement plate for C1-70, C1-70-S, C2-100 and C2-200 Compentrols)

PC-326	See Listing under FILPECS PC-50.	1.00
PC-327	See Listing under PENDETS PC-160.	1.25
PC-328		1.50
PC-329		See Listing under SPECIAL PC-179.
PC-330	See Listing under SYNC. TAKE-OFF PC-260.	1.25

AUDETS® — OUTPUT STAGE							
Cat. No.	R1	R2 & R3	C1	C2	C3 & C5	C4	List
PC-331	6.8 Meg	470K	2000 mmf	400 mmf	220 mmf	5000 mmf	\$1.00

SPECIAL						
Cat. No.	R1	R2	C1	C2	C3	List
PC-332	4.7 Meg	220K	1000 mmf	1000 mmf	3300 mmf	\$1.25

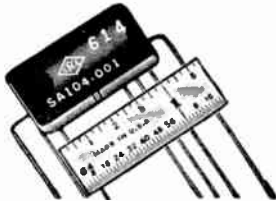
SPECIAL				
Cat. No.	R1	C1	C2	List
PC-333	38.4K	.01 mfd	.012 mfd	\$1.25

SPECIAL					
Cat. No.	R1	C1	C2	C3	List
PC-334	22K	1000 mmf	4000 mmf	.01 mfd	\$1.25

## PACKAGED ELECTRONIC CIRCUITS (Cont'd)

### FOUR STAGE TRANSISTOR AMPLIFIERS TYPE TA-11 — List Price \$50.00

Small as an air mail stamp . . . approx. 73 to 75 db gain . . . a complete four stage amplifier containing four transistors, five capacitors, twelve resistors. Usable frequency range (6-10 db down) approx. 400 cycles to 40 KV. Write for circuit schematic and technical details.



CAT. NO. TA-11.

**GAIN:** 73 db. min. at 1-KC.

**INPUT IMPEDANCE:** 1000 Ohms nominal.

**SIGNAL TO NOISE RATIO:** with 30  $\mu$  volt input, noise shall be 20 db. min. below signal.

**SUPPLY VOLTAGE:** 1.3 V. Mercury cell.

**POWER OUTPUT:** 1 milliwatt max. at 15% distortion .36mw at 2% (measured across 1000 Ohm receiver).

**CURRENT DRAIN:** 3.6 — 4.4 milliamperes.

**FREQUENCY CHARACTERISTICS:** 250 to 20,000 c.p.s.  $\pm 5$  db. (May be adjusted to special requirements).

**BASE PLATE:** Grade L-5A low loss steatite as per JAN-1-10.

**RESISTORS:** Screened and fired to the base plate. Meets all applicable specifications of MIL-R-11.

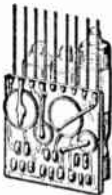
**CAPACITORS:**  $\frac{1}{4}$ " discs supply capacity values of 1 mf.

**TRANSISTORS:** High gain, low noise transistors are hermetically sealed directly into the steatite base with a metal-to-ceramic seal.

**COATING:** Sealed in epoxy resin to provide protection against mechanical abrasion and humidity.

**LEADS:** AWG No. 26 tinned copper wire, minimum length  $1\frac{1}{2}$ ", in logical position input at left, output at right, also eliminating feedback.

### AMPEC® THREE-STAGE P. E. C. AUDIO AMPLIFIER



#### Model 2 AMPEC

The wonder of the electronic age — a P. E. C. exclusive. Complete 3-stage audio amplifier smaller than a book of matches. For hearing aids, miniature radios, model control, etc.

List Price

PC-200 less tubes . . . . . \$15.00  
PC-201 with 3 subminiature tubes. 25.00

#### Model 3 AMPEC

Even smaller than the original Model 2 — about the size of a postage stamp with added tone circuit.

PC-202 Zero Bias Output, List Price no tubes . . . . . \$17.50  
PC-203 Zero Bias Output, with tubes . . . . . 32.00  
PC-204 Grid Bias Output, no tubes . . . . . 17.50  
PC-205 Grid Bias Output, with tubes . . . . . 33.50

Write for complete details. Ask for booklet 42-142.

### SINGLE STAGE TRANSISTOR AMPLIFIERS TYPES TA-6 & TA-7 — List Price \$16.65

Small as the eraser on a pencil . . . approx. 21 to 26 db gain . . . a complete single stage amplifier including transistor, capacitor and resistors. Two types available:

TA-6 interstage type (approx. 21 db gain) and TA-7 output stage (approx. 26 db gain).

Usable frequency range (6-10 db down) approx. 200 cycles to more than 40KC. Write for circuit schematic and technical details.



**BASE PLATE:** Grade L-5A low loss steatite as per JAN-1-10.

**RESISTORS:** Screened and fired to the base plate. Meets all applicable specifications of MIL-R-11.

**CAPACITORS:**  $\frac{1}{4}$ " discs supply capacity values of 1 mf.

**TRANSISTORS:** High gain, low noise transistors are hermetically sealed directly into the steatite base with a metal-to-ceramic seal.

**COATING:** Sealed in epoxy resin to provide protection against mechanical abrasion and humidity.

**LEADS:** Tinned ribbon .055" thick x .020" wide,  $\frac{3}{4}$ " long.

	Cat. No. TA-6**	Cat. No. TA-7**
*GAIN: . . . . .	21 Db Min. at 1 K.C.	26 Db Min. at 1 K.C.
*INPUT IMP: . . . . .	1000 ohms nominal	500 ohms nominal
*NOISE LEVEL: . . . . .	Less than $\frac{1}{2}$ Millivolt	Less than $\frac{1}{2}$ Millivolt
*SUPPLY VOL.: . . . . .	1.3 V. Mercury Cell. . . . .	1.3 V. Mercury Cell
*CURRENT DRAIN: . . . . .	0.4 to 0.6 Ma.	1.8 to 2.2 Ma.
*FREQ. CHAR.: . . . . .	$\pm 2$ Db 250 to 20,000 C.P.S.	$\pm 5$ Db 250 to 20,000 C.P.S.
*DESIGN LOAD IMPEDANCE: . . . . .	500-1500 ohms	1000 ohms inductive load, with 250 ohms Max. D.C. Resistance
*POWER OUTPUT: . . . . .	Drives TA-7	1 mw. Max. at 15% distortion .36 mw. at 2% (across 1000 ohm receiver)

**NOTE:** One to three TA-6's may be used to drive the TA-7 output stage. Three TA-6's & a TA-7 are substantially equivalent to a TA-11.

\*Special Designs: The standard performance limits given above may be modified for special applications.

### TUBE-R-CAP List Price \$0.30



Cat. No.	R1	C1	Cat. No.	R1	C1
RC-421	47K	56 mmf	RC-471	.3-1 Meg	470 mmf
RC-428	3.3 Meg	150 mmf	RC-476	22K	800 mmf
RC-431	220K	350 mmf	RC-485	180	4700 mmf
RC-465	470K	470 mmf	RC-490	.75-1.5 Meg	4700 mmf



CERAMIC CAPACITORS



CERAMIC TRIMMER CAPACITORS

TYPE 827 MINIATURE MOLDED CERAMIC TRIMMER

Base, high grade phenolic. Two .120" diam. mounting holes spaced  $\frac{3}{16}$ ". Can be mounted on chassis through  $\frac{3}{16}$ " diam. hole. Initial Insulation Resistance — 10,000 megohms minimum. Body size  $\frac{1}{32}$ " x  $\frac{3}{4}$ ".

Cap. Range Mmf.	CRL Cat. No.	Cap. Range Mmf.	CRL Cat. No.
2.5 to 7	827A	6.0 to 30	827C
3.5 to 12	827B	7.0 to 35	827D

List Price \$1.25 each

TYPE 820 TRIMMER

Lightweight ceramic body. Stator plate metallic silver fired to ceramic body. Mounting bracket with  $\frac{1}{8}$ " hole and locating lug. Body size, approx.  $\frac{27}{32}$ " x  $\frac{5}{8}$ ".

Cap. Mmf.	Cat. No.	Cap. Mmf.	Cat. No.
1.0 to 3.5	820D	35 to 55	820E*
2.5 to 6.0	820A	55 to 75	820F*
5.0 to 20.0	820B	70 to 90	820G*
7.0 to 35.0	820C		

\*Less bracket

List Price \$1.20

TYPE 822 CERAMIC TRIMMER

Medium weight Steatite body. Numbers ending in Z are of zero temperature coefficient (NPO); those ending in N are N650 temperature coefficient. Both rotor and stator plates are of metallic silver fired to ceramic rotor and stator. Mounting holes are clearance for No. 4 machine screws. Body size, approx.  $\frac{27}{32}$ " x  $\frac{21}{32}$ ".

Cap. Range Mmf.	CRL Cat. No.	To JAN Number	Cap. Range Mmf.	CRL Cat. No.	To JAN Number
1.5 to 3	822-DZ	—	4.5 to 25.0	822-AZ	CV11A250
1.5 to 7	822-EZ	CV11A070	2.0 to 6.0	822-DN	CV11D060
2.0 to 7.5	822-CZ	—	4.0 to 30.0	822-EN	CV11D300
2.5 to 13.0	822-BZ	—	4.5 to 25.0	822-CN	CV11D250
3.0 to 12.0	822-FZ	CV11A120	7.0 to 45.0	822-BN	CV11D450
			8.0 to 50.0	822-AN	CV11D500

List Price \$1.50 each

TYPE 823 CERAMIC TRIMMER

A trimmer of highest quality. Medium heavy Steatite base. Numbers ending in Z are of zero temperature coefficient (NPO); those ending in N are of N650 temperature coefficient. Both rotor and stator plates are of metallic silver fired to ceramic rotor and stator. Mounting studs are set in the base, tapped  $\frac{3}{16}$ " deep for 4-40 machine screws. Body size, approx.  $1\frac{9}{32}$ " long x  $\frac{15}{16}$ " wide.

Cap. Range Mmf.	CRL Cat. No.	To JAN Number	Cap. Range Mmf.	CRL Cat. No.	To JAN Number
5.0 to 12.0	823-EZ	CV12A120	5.0 to 15.0	823-FN	CV12D150
6.0 to 25.0	823-DZ	CV12A250	8.0 to 25.0	823-EN	—
10.0 to 50.0	823-BZ	—	8.0 to 50.0	823-DN	CV12D500
12.0 to 60.0	823-AZ	CV12A620	10.0 to 100	823-BN	—
			20.0 to 125	823-AN	CV12D121

List Price \$3.50 each

TYPE 829 TUBULAR CERAMIC TRIMMER

Special tiny, tubular trimmer, widely used in TV and FM applications. Ceramic body, .225" diameter.

Capacity Range Mmf.	Body Length(B) No.	Cat. No.	List Price	Capacity Range Mmf.	Body Length(B) No.	Cat. No.	List Price
.5 to 3	$\frac{1}{2}$ "	829-3	\$.50	1 to 7.5	$\frac{3}{4}$ "	829-7	\$.60
1 to 4	$\frac{1}{2}$ "	829-4	.50	1.5 to 10	$\frac{3}{4}$ "	829-10	.60
1 to 6	$\frac{5}{8}$ "	829-6	.50				



TRANSMITTING CAPACITORS  
TYPES 850-858 5KV AND 7.5KV

TOLERANCE: 850 type  $\pm 10\%$ , 858 type  $\pm 20\%$ .  
DIMENSIONS:  $1\frac{1}{16}$ " diameter,  $\frac{5}{8}$ " long.

MOUNTING: S Series:  $\frac{1}{8}$ " hex studs tapped 6-32 thd. SL Series:  $\frac{1}{32}$ " solder lugs with 6-32 tapped hole.

Cap. Mmf.	Volts D.C.W.	Temp. Coeff.	R. F. Load at 30 MC.	Cat. No. Stud Type	Cat. No. Lug Type
25	7,500	NPO	7 amps.	850S-25Z	850SL-25Z
50	7,500	NPO	10 amps.	850S-50Z	850SL-50Z
50	7,500	N750	8.8 amps.	850S-50N	850SL-50N
75	7,500	N750	10 amps.	850S-75N	850SL-75N
100	5,000	N750	9.8 amps.	850S-100N	850SL-100N
500	5,000	HI-K	.....	858S-500	.....
1,000	5,000	HI-K	.....	858S-1000	.....

List Price \$4.50 each

TYPE 853, 854, 855 — 5 KV

TOLERANCE:  $\pm 10\%$ .

DIMENSIONS: 853 —  $\frac{3}{16}$ " dia. x  $\frac{1}{2}$ " long.  
854 —  $\frac{7}{16}$ " dia. x  $\frac{7}{16}$ " long.  
855 —  $\frac{5}{16}$ " dia. x  $\frac{3}{8}$ " long.

MOUNTING: 853, 854, 855;  $1\frac{1}{2}$ " axial wire leads, 853A, 854A, 855A: axial screw terminals tapped 2-56.

Cap. Mmf.	Volts D.C.W.	Temp. Coeff.	R. F. Load at 30 MC.	Cat. No. Lead Type	Cat. No. Tap Type
3	5000	NPO	1.8 amps.	855-3Z	855A-3Z
5	5000	NPO	1.8 amps.	855-5Z	855A-5Z
10	5000	NPO	1.8 amps.	854-10Z	854A-10Z
10	5000	N750	3.2 amps.	855-10N	855A-10N
20	5000	NPO	2.8 amps.	853-20Z	853A-20Z
20	5000	N750	3.2 amps.	854-20N	854A-20N
40	5000	N750	5.6 amps.	853-40N	853A-40N

List Price \$3.00 each



TYPE 857 — 7.5 KV AND 15 KV

TOLERANCE:  $\pm 10\%$ . Diameter  $1\frac{1}{32}$ ",  $1\frac{1}{16}$ " long. Axial screw terminals, 10-32 NF-2 thread.  $\frac{1}{4}$ " deep full thread. Both ends.

Cap. Mmf.	Volts D.C.W.	Temp. Coeff.	R. F. Load at 30 MC.	Catalog Number	List Price
25	15,000	NPO	12 amps.	857-25Z	\$14.00
50	15,000	NPO	12 amps.	857-50Z	14.00
100	15,000	N750	14.4 amps.	857-100N	12.00
200	7,500	N750	18.2 amps.	857-200N	12.00

TYPE 859 — 20 KV

TOLERANCE:  $\pm 10\%$ .

DIMENSIONS: Overall length  $2\frac{7}{8}$ ", diam. 2".

MOUNTING: Terminal ends tapped 10-32.

Cap. Mmf.	Volts D.C.W.	Tolerance	Temp. Coeff.	R. F. Load at 30 MC.	Catalog Number
50	20,000	$\pm 10\%$	NPO	30 amps.	859S-50Z
100	20,000	$\pm 10\%$	NPO	30 amps.	859S-100Z
250	20,000	$\pm 10\%$	N750	30 amps.	859S-250N
500	20,000	$\pm 10\%$	N2400	30 amps.	859S-500N

List Price \$90.00 each



## CERAMIC CAPACITORS (Cont'd)

### MOLDED DISC CERAMIC HI-KAPS®

For Bypass, Coupling and General Applications



Molded disc ceramics feature highest available breakdown to ground, highest lead strength, and resistance to mechanical damage, closest tolerance. "MD's" can be placed directly against a chassis, or adjacent to high voltage leads without danger of flashover or breakdown.

Low inductance makes these units highly efficient in high frequency circuits. They are not recommended for use in resonant or tuning applications. Voltage Rating: 1,000 V.D.C.W. to 5,000 mmf, 600 V.D.C.W. over 5,000 mmf. Maintain high capacity and stand up under +85° C. operation. Insulation—Molded Centrathene†. 2,500 V.D.C. breakdown to ground. Electrical properties constant to 3,000 megacycles. Insulation resistance of molding 300,000 megohms. Moisture absorption .005%. Power factor of molding .02%. Fungus resistant. Unaffected by ozone, salt water, any known acid, or solvent at room temperature. Will not become brittle at -55° C. Leads—No. 22 tinned copper 1½" long. Packaged—5 units per package.

SIZE: ½" diameter, ⅜" thick thru 2,000 mmf. ⅓" diameter, ¼" thick over 2,000 mmf.

### TYPE MD MOLDED DISC CERAMIC HI-KAPS®

Capacity Mmf.	Tolerance	Cat. No.	Capacity Mmf.	Tolerance	Cat. No.
4.7	± 10%	MD-4R7	300	± 10%	MD-301
5	± 10%	MD-050	330	± 10%	MD-331
6	± 10%	MD-060	390	± 10%	MD-391
7.5	± 10%	MD-7R5	400	± 10%	MD-401
8.2	± 10%	MD-8R2	470	± 10%	MD-471
10	± 10%	MD-100	500	± 10%	MD-501
12	± 10%	MD-120	560	± 10%	MD-561
15	± 10%	MD-150	600	± 10%	MD-601
18	± 10%	MD-180	680	± 10%	MD-681
20	± 10%	MD-200	750	± 20%	MD-751
22	± 10%	MD-220	820	± 20%	MD-821
25	± 10%	MD-250	*.001	± 20%	MD-102
27	± 10%	MD-270	*.0012	± 20%	MD-122
33	± 10%	MD-330	*.0015	± 20%	MD-152
39	± 10%	MD-390	*.0018	± 20%	MD-182
47	± 10%	MD-470	*.002	± 20%	MD-202
50	± 10%	MD-500	*.0022	± 20%	MD-222
56	± 10%	MD-560	*.0025	± 20%	MD-252
68	± 10%	MD-680	*.0027	± 20%	MD-272
75	± 10%	MD-750	*.003	± 20%	MD-302
82	± 10%	MD-820	*.0033	± 20%	MD-332
91	± 10%	MD-910	*.004	± 20%	MD-402
100	± 10%	MD-101	*.0047	± 20%	MD-472
120	± 10%	MD-121	*.005	± 20%	MD-502
150	± 10%	MD-151	*.0056	GMV	MD-562
180	± 10%	MD-181	*.0068	GMV	MD-682
200	± 10%	MD-201	*.0075	GMV	MD-752
220	± 10%	MD-221	*.01	+ 80% - 20%	MD-103
250	± 10%	MD-251			
270	± 10%	MD-271			

\* MFD.

List Price \$0.25 — \$1.25 per package of 5

### 1000 V.D.C.W. STANDARD DISC HI-KAPS®



- The most complete line of standard disc capacitors available.
- All units 1000 VDCW—100% tested at 2000 V.D.C. except DD-6-103 and DD-233, which are 600 V.D.C.W. 100% flash tested at 1200 V.D.C.
- All units thru .005 mmf. built to Underwriters' Labs test specifications for use in A.C. lines.
- Close tolerances — smallest available sizes.
- Double coating of Durez phenolic insulation to give maximum breakdown strength.

Cap. Mmf.	Cat. No.	Tol.	Diam.	Cap. Mmf.	Cat. No.	Tol.	Diam.
3.3	DD-3R3	± .5 mmf	¼"	350	DD-351	± 20%	¼"
5	DD-050	± .5 mmf	¼"	360	DD-351	± 20%	¼"
6	DD-060	± .5 mmf	¼"	390	DD-391	± 20%	¼"
6.8	DD-6R8	± .5 mmf	¼"	400	DD-401	± 20%	¼"
7.5	DD-7R5	± .5 mmf	¼"	470	DD-471	± 20%	¼"
8	DD-080	± .5 mmf	¼"	500	DD-501	± 20%	¼"
10	DD-100	± 10%	¼"	560	DD-561	± 20%	¼"
12	DD-120	± 10%	¼"	600	DD-601	± 20%	¼"
15	DD-150	± 10%	¼"	680	DD-681	± 20%	¼"
18	DD-180	± 10%	¼"	750	DD-751	± 20%	¼"
20	DD-200	± 10%	¼"	800	DD-801	± 20%	¼"
22	DD-220	± 10%	¼"	820	DD-821	± 20%	¼"
24	DD-240	± 10%	¼"	*.0010	DD-102	± 20%	⅜"
25	DD-250	± 10%	¼"	*.0012	DD-122	± 20%	⅜"
27	DD-270	± 10%	¼"	*.0013	DD-132	± 20%	⅜"
30	DD-300	± 10%	¼"	*.0015	DD-152	± 20%	⅜"
33	DD-330	± 10%	¼"	*.0016	DD-152	± 20%	⅜"
39	DD-390	± 10%	¼"	*.0018	DD-182	± 20%	⅜"
47	DD-470	± 10%	¼"	*.0020	DD-202	± 20%	⅜"
50	DD-500	± 10%	¼"	*.0022	DD-222	± 20%	⅜"
56	DD-560	± 10%	¼"	*.0025	DD-252	± 20%	⅜"
68	DD-680	± 10%	¼"	*.0027	DD-272	± 20%	⅜"
75	DD-750	± 10%	¼"	*.0030	DD-302	± 20%	⅜"
82	DD-820	± 10%	¼"	*.0033	DD-332	± 20%	⅜"
91	DD-910	± 10%	¼"	*.0039	DD-392	± 20%	⅜"
100	DD-101	± 10%	¼"	*.0040	DD-402	± 20%	⅜"
120	DD-121	± 10%	¼"	*.0043	DD-432	± 20%	⅜"
130	DD-131	± 10%	¼"	*.0047	DD-472	± 20%	⅜"
150	DD-151	± 10%	¼"	*.0050	DD-502	± 20%	⅜"
180	DD-181	± 10%	¼"	*.0050	DD-502	GMV	⅜"
200	DD-201	± 10%	¼"	*.0056	DD-562	GMV	⅜"
220	DD-221	± 20%	¼"	*.0068	DD-682	GMV	⅜"
240	DD-241	± 20%	¼"	*.0075	DD-752	GMV	⅜"
250	DD-251	± 20%	¼"	*.01	DD-103	GMV	⅜"
270	DD-271	± 20%	¼"	*.01	DD-103	GMV	⅜"
300	DD-301	± 20%	¼"	*.01	DD-1032	± 20%	⅜"
330	DD-331	± 20%	¼"	*.02	DD-203	GMV	⅜"

List Price All Above — \$1.25 package of 5. Except Ⓞ, \$1.50 per 5

### TYPE DD2 — DUAL DISCS

Cap. Mmf.	Tol.	Diam.	VDCW	Cat. No.	List Price Pkg. of 5
2 x .001	GMV	⅜"	600	DD2-102	\$2.00
2 x .0015	GMV	⅜"	600	DD2-152	2.00
2 x .005	- 20% + 80%	⅜"	600	DD2-502	2.25

### TYPE DD3 — PATENTED SHIELDED DUAL DISC HI-KAPS®

Cap. Mmf.	Tol.	Diam.	VDCW	Cat. No.	List Price Each
2 x .001	GMV	⅜"	600	DD3-102	\$0.45
2 x .0015	GMV	⅜"	600	DD3-152	.45
2 x .002	GMV	⅜"	600	DD3-202	.45
2 x .005	GMV	⅜"	600	DD3-502	.50
2 x .01	GMV	⅜"	600	DD3-103	.50





CERAMIC CAPACITORS (Cont'd)

3000-6000 V. HI-VO-DISC† CAPACITORS



These new units are highly efficient for bypass-coupling in high frequency circuits under conditions of extreme humidity or temperature.

- TEMPERATURE — Maintain high capacity and performance at 85° C.
- TOLERANCES — All units, ± 20%.
- VOLTAGES—DD30 Series, 3000 VDCW, 6000 VDC Test.  
DD60 Series, 6000 VDCW, 12,000 VDC Test.
- SIZES: (A) 1/16" Diam. (B) 5/8" Diam. (C) 3/4" Diam. 7/8" Diam. DD30 Series 3/16" thick. DD60 Series 3/32" thick.

Cap. Mmf.	Cat. No. 3000 V.D.C.W.	Size	Cat. No. 6000 V.D.C.W.	Size
4.7	DD30-4R7	(B)	DD60-4R7	(A)
6.8	DD30-6R8	(B)	DD60-6R8	(A)
8.2	DD30-8R2	(B)	DD60-8R2	(A)
10	DD30-100	(B)	DD60-100	(A)
12	DD30-120	(B)	DD60-120	(A)
15	DD30-150	(B)	DD60-150	(A)
22	DD30-220	(B)	DD60-220	(A)
25	DD30-250	(B)	DD60-250	(A)
27	DD30-270	(B)	DD60-270	(A)
30	DD30-300	(B)	DD60-300	(A)
33	DD30-330	(B)	DD60-330	(A)
39	DD30-390	(B)	DD60-390	(A)
47	DD30-470	(B)	DD60-470	(A)
50	DD30-500	(B)	DD60-500	(A)
56	DD30-560	(B)	DD60-560	(A)
68	DD30-680	(B)	DD60-680	(A)
75	DD30-750	(B)	DD60-750	(A)
82	DD30-820	(B)	DD60-820	(A)
100	DD30-101	(B)	DD60-101	(A)
120	DD30-121	(B)	DD60-121	(A)
150	DD30-151	(B)	DD60-151	(A)
180	DD30-181	(B)	DD60-181	(A)
200	DD30-201	(B)	DD60-201	(A)
220	DD30-221	(B)	DD60-221	(A)
250	DD30-251	(B)	DD60-251	(A)
270	DD30-271	(B)	DD60-271	(A)
300	DD30-301	(B)	DD60-301	(A)
330	DD30-331	(B)	DD60-331	(A)
390	DD30-391	(B)	DD60-391	(A)
400	DD30-401	(B)	DD60-401	(A)
470	DD30-471	(B)	DD60-471	(A)
500	DD30-501	(B)	DD60-501	(A)
560	DD30-561	(B)	DD60-561	(A)
680	DD30-681	(B)	DD60-681	(A)
750	DD30-751	(B)	DD60-751	(A)
820	DD30-821	(A)	DD60-821	(A)
1000	DD30-102	(B)	DD60-102	(B)
1200	DD30-122	(A)	DD60-122	(B)
1500	DD30-152	(B)	DD60-152	(D)
2000	DD30-202	(C)	DD60-202	(D)
2200	DD30-222	(B)	DD60-222	(D)
2500	DD30-252	(B)	.....	..
2700	DD30-272	(B)	.....	..
3000	DD30-302	(C)	.....	..
3300	DD30-332	(C)	.....	..
3900	DD30-392	(C)	.....	..
4700	DD30-472	(D)	.....	..
5000	DD30-502	(D)	.....	..

List Prices — DD30 Series, \$2.00 per package of 5  
DD6D Series, \$2.50 per package of 5

TRANSISTOR CIRCUIT CAPACITORS



Designed to meet increasing market for high capacity-low voltage ceramic capacitors in transistor circuit applications. Proven by use in transistor radio receivers. Double durez resin insulated. Stamped with capacity and voltage. Packaged 5 capacitors per package with full identifications.

TYPE DM MIN-KAPS  
150 V.D.C.W. — 300 V.D.C. TEST

Miniature plate capacitors 17/32" long, 7/32" wide, 7/64" thick. Triple durez insulated. Stamped with capacity. Packaged 5 units per package except DM-2024, DM-103, and DM2-502 which are packaged singly.

Capacity Mfd.	Cat. No.	V.D.C.W.	Tolerance	List Price
.0001	DM-101	150	- 20% + 50%	\$.35
.0002	DM-201	150	- 20% + 50%	.35
.0003	DM-301	150	- 20% + 50%	.35
.0005	DM-501	150	- 20% + 50%	.35
.001	DM-102	150	- 20% + 50%	.35
.002	DM-202	150	- 20% + 50%	.45
.003	DM-302	150	- 20% + 80%	.45
.005	DM-502	150	- 20% + 80%	.45
.01	DM-103	150	- 20% + 80%	.65
2 x .005	DM2-502	150	- 20% + 80%	.65



MINIATURE HIGH CAPACITANCE PLATE CAPACITORS  
30 V.D.C.W. — 50 V.D.C. TEST

Capacity Mfd.	Cat. No.	Size Square	Thick	Tolerance	List Price
.02	DA-203	1/2"	.140"	- 20% + 100%	\$.40
.05	DA-503	1/2"	.160"	- 20% + 100%	.65
.1	DA-104	1/2"	.180"	- 20% + 100%	.95

HIGH CAPACITANCE LOW VOLTAGE DISC CAPACITORS  
75 V.D.C.W. — 150 V.D.C TEST

Capacity Mfd.	Cat. No.	Diam.	Thick	Tolerance	List Price
.05	DDA-503	3/16"	3/32"	- 30% + 80%	\$.50
.1	DDA-104	3/8"	3/32"	- 30% + 80%	.90

TYPE DDM MIN-KAP DISCS  
250 V.D.C.W. — 500 V.D.C. TEST

Designed for applications where voltages are higher and proper safety factors will not permit the use of above lower voltage units. Durez insulated — stamped with capacity. Packaged 5 units per package.

Capacity Mfd.	Cat. No.	Diam.	Thickness	Tolerance	List Price
.005	DDM-502	3/8"	.146"	- 40% + 60%	\$.50
.01	DDM-103	3/8"	.146"	- 40% + 60%	.50
.02	DDM-203	3/8"	.166"	- 40% + 60%	.90
2 x .01	DDM2-103	3/8"	.166"	- 40% + 60%	.90

## CERAMIC CAPACITORS (Cont'd)

### TC TEMPERATURE COMPENSATING TUBULARS



Designed especially to limit frequency drift in r.f. circuits where temperature variations are prevalent. These capacitors are constructed with a ceramic body which changes capacity as the temperature varies. 1,200 volts D.C. test; 600 volts D.C. working. Comply to JAN-C-20A specifications.

#### TCZ TUBULAR HI-KAP®

All TC Hi-Kaps conform to JAN-C-20A specifications. NPO Units (JAN-CH-CJ-CK) which show zero capacitance change over temperature range—20° C. to +85° C.

Cap. Mmf.	Tolerance	CRL Cat. No.	Size Type
.5	± .25 mmf.	TCZ-5	CC20
.68	± .25 mmf.	TCZ-.68	CC20
1.0	± .25 mmf.	TCZ-1	CC20
1.5	± .25 mmf.	TCZ-1.5	CC20
2.2	± .25 mmf.	TCZ-2.2	CC20
3.3	± .25 mmf.	TCZ-3.3	CC20
4.7	± .5 mmf.	TCZ-4.7	CC20
6.8	± .5 mmf.	TCZ-6.8	CC20
10	± .5 mmf.	TCZ-10	CC20
12	± 2%	TCZ-12	CC20
15	± 2%	TCZ-15	CC20
18	± 2%	TCZ-18	CC20
20	± 2%	TCZ-20	CC20
22	± 2%	TCZ-22	CC20
24	± 2%	TCZ-24	CC20
25	± 2%	TCZ-25	CC25
27	± 2%	TCZ-27	CC25
30	± 2%	TCZ-30	CC25
33	± 2%	TCZ-33	CC25
36	± 2%	TCZ-36	CC25
39	± 2%	TCZ-39	CC25
43	± 2%	TCZ-43	CC25
47	± 2%	TCZ-47	CC25
50	± 2%	TCZ-50	CC25
51	± 2%	TCZ-51	CC25
56	± 2%	TCZ-56	CC25
62	± 2%	TCZ-62	CC32
68	± 2%	TCZ-68	CC32
75	± 2%	TCZ-75	CC32
82	± 2%	TCZ-82	CC32
91	± 2%	TCZ-91	CC32
100	± 2%	TCZ-100	CC32
110	± 5%	TCZ-110	CC35
120	± 5%	TCZ-120	CC35
130	± 5%	TCZ-130	CC35
150	± 5%	TCZ-150	CC35
160	± 5%	TCZ-160	CC35
180	± 5%	TCZ-180	CC35
200	± 5%	TCZ-200	CC45
220	± 5%	TCZ-220	CC45
240	± 5%	TCZ-240	CC45
270	± 5%	TCZ-270	CC45
300	± 5%	TCZ-300	CC45

List Price \$0.50 each

#### TCN TUBULAR HI-KAP®

N750 Units (JAN-UJ, UK) which show capacity change of minus 750 parts per million<sup>2a</sup> per each degree C rise in temperature.

Cap. Mmf.	Tolerance	CRL Cat. No.	Size Type
3.3	± .5 mmf.	TCN-3.3	CC20
5	± .5 mmf.	TCN-5	CC20
10	± .5 mmf.	TCN-10	CC20
12	± 2%	TCN-12	CC20
15	± 2%	TCN-15	CC20
18	± 2%	TCN-18	CC20
20	± 2%	TCN-20	CC20
22	± 2%	TCN-22	CC20
24	± 2%	TCN-24	CC20
25	± 2%	TCN-25	CC20
27	± 2%	TCN-27	CC20
30	± 2%	TCN-30	CC20
33	± 2%	TCN-33	CC20
36	± 2%	TCN-36	CC20
39	± 2%	TCN-39	CC20
43	± 2%	TCN-43	CC20
47	± 2%	TCN-47	CC20
50	± 2%	TCN-50	CC20
51	± 2%	TCN-51	CC20
56	± 2%	TCN-56	CC20
62	± 2%	TCN-62	CC20
68	± 2%	TCN-68	CC25
75	± 2%	TCN-75	CC25
82	± 2%	TCN-82	CC25
91	± 2%	TCN-91	CC25
100	± 2%	TCN-100	CC25
110	± 5%	TCN-110	CC25
120	± 5%	TCN-120	CC25
130	± 5%	TCN-130	CC25
150	± 5%	TCN-150	CC25
160	± 5%	TCN-160	CC32
180	± 5%	TCN-180	CC32
200	± 5%	TCN-200	CC32
220	± 5%	TCN-220	CC32
240	± 5%	TCN-240	CC32
270	± 5%	TCN-270	CC35
300	± 5%	TCN-300	CC35
330	± 5%	TCN-330	CC35
360	± 5%	TCN-360	CC35
390	± 5%	TCN-390	CC35
430	± 5%	TCN-430	CC35
470	± 5%	TCN-470	CC35
510	± 5%	TCN-510	CC35
560	± 5%	TCN-560	CC45
620	± 5%	TCN-620	CC45
680	± 5%	TCN-680	CC45
750	± 5%	TCN-750	CC45

List Price \$0.50 each

### TCA — N330 TC UNITS

Cap. Mmf.	Tolerance	CRL Cat. No.	Size Type
10	± .5 mmf.	TCA-10	CC20
15	± 2%	TCA-15	CC20
22	± 2%	TCA-22	CC20
33	± 2%	TCA-33	CC20
47	± 2%	TCA-47	CC25
68	± 2%	TCA-68	CC25
100	± 2%	TCA-100	CC32

List Price Type TCA \$0.50 ea.

### TCL — N1500 TC UNITS

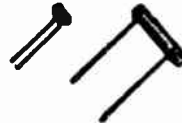
Cap. Mmf.	Tolerance	CRL Cat. No.	Size Type
10	± .5 mmf.	TCL-10	CC20
15	± 2%	TCL-15	CC20
22	± 2%	TCL-22	CC20
33	± 2%	TCL-33	CC20
47	± 2%	TCL-47	CC20
68	± 2%	TCL-68	CC20
100	± 2%	TCL-100	CC25

List Price Type TCL \$0.50 ea.

### MAXIMUM BODY DIMENSIONS

Size	Diameter	Length	Size	Diameter	Length
CC20	.200"	.400"	CC35	.285"	1.165"
CC25	.200"	.690"	CC45	.285"	1.625"
CC32	.225"	.860"			

### BC HI-KAP® TUBULARS



For by-pass, coupling and general use in AM, FM, TV, Audio, or other r.f. circuits. Double coating of durez phenolic for extra protection. 85° C. plus operation. Tropicalized. 1200 volts D.C. test; 600 volts D.C. working. 5 per package.

Cap. Mmf.	Cat. No.	Tolerance	Size	Cap. Mmf.	Cat. No.	Tolerance	Size
3	D6-030	± .5 mmf.	A	300	D6-301	± 10%	A
5	D6-050	± 10%	A	330	D6-331	± 10%	A
10	D6-100	± 10%	A	390	D6-391	± 10%	B
12	D6-120	± 10%	A	400	D6-401	± 10%	B
15	D6-150	± 10%	A	470	D6-471	± 10%	B
18	D6-180	± 10%	A	500	D6-501	± 10%	B
20	D6-200	± 10%	A	560	D6-561	± 10%	B
22	D6-220	± 10%	A	600	D6-601	± 10%	B
25	D6-250	± 10%	A	680	D6-681	± 10%	B
27	D6-270	± 10%	A	750	D6-751	± 20%	A
33	D6-330	± 10%	A	820	D6-821	± 20%	A
39	D6-390	± 10%	A	1,000	D6-102	± 20%	A
40	D6-400	± 10%	A	1,200	D6-122	± 20%	B
47	D6-470	± 10%	A	1,500	D6-152	± 20%	B
50	D6-500	± 10%	A	1,800	D6-182	± 20%	B
56	D6-560	± 10%	A	2,000	D6-202	± 20%	B
68	D6-680	± 10%	A	2,200	D6-222	± 20%	B
75	D6-750	± 10%	A	2,500	D6-252	GMV	B
82	D6-820	± 10%	A	2,700	D6-272	GMV	B
91	D6-910	± 10%	A	3,000	D6-302	GMV	B
100	D6-101	± 10%	A	3,300	D6-332	GMV	C
120	D6-121	± 10%	A	4,000	D6-402	GMV	C
150	D6-151	± 10%	A	4,700	D6-472	GMV	C
180	D6-181	± 10%	A	5,000	D6-502	GMV	C
200	D6-201	± 10%	A	5,600	D6-562	GMV	D
220	D6-221	± 10%	A	6,800	D6-682	GMV	D
250	D6-251	± 10%	A	7,500	D6-752	GMV	D
270	D6-271	± 10%	A	10,000	D6-103	GMV	D

List Price \$1.25 per package of 5

### BODY DIMENSIONS

A = .250" diam., .500" length	C = .312" diam., .900" length
B = .250" diam., .790" length	D = .310" diam., 1.180" length



CERAMIC CAPACITORS (Cont'd)

TEMPERATURE COMPENSATING DISC CAPACITORS

Disc type temperature compensating ceramic capacitors widely used in temperature sensitive circuits. Type DTZ zero T.C. capacitors are recommended for applications formerly requiring micas. Type DTN negative T.C. Capacitors designed to compensate for thermal variations in industrial components in tuned circuits. Packed 1 per package.

TYPE DTZ — NPO OR ZERO TC DISC KI-CAPS®

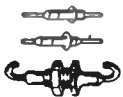
Cap. Mmf.	Cat. No.	Tolerance	Diameter	Thickness	List Price
1.5	DTZ-1R5	± .5 mmf.	¼"	⅜"	\$.50
2.2	DTZ-2R2	± .5 mmf.	¼"	⅜"	.50
3.3	DTZ-3R2	± .5 mmf.	¼"	⅜"	.50
4.7	DTZ-4R7	± .5 mmf.	¼"	⅜"	.50
6.8	DTZ-6R8	± 10%	¼"	⅜"	.50
10	DTZ-10	± 10%	¼"	⅜"	.50
15	DTZ-15	± 10%	¼"	⅜"	.50
20	DTZ-20	± 10%	⅜"	⅜"	.50
22	DTZ-22	± 10%	⅜"	⅜"	.50
25	DTZ-25	± 10%	⅜"	⅜"	.55
33	DTZ-33	± 10%	⅜"	⅜"	.55
47	DTZ-47	± 10%	⅜"	⅜"	.55
50	DTZ-50	± 10%	⅜"	⅜"	.55
68	DTZ-68	± 10%	⅜"	⅜"	.55
75	DTZ-75	± 10%	⅜"	⅜"	.55
82	DTZ-82	± 10%	⅜"	⅜"	.55
100	DTZ-100	± 10%	⅜"	⅜"	.55
120	DTZ-120	± 10%	⅜"	⅜"	.60
150	DTZ-150	± 10%	⅜"	⅜"	.60
180	DTZ-180	± 10%	⅜"	⅜"	.70
200	DTZ-200	± 10%	⅜"	⅜"	.70
220	DTZ-220	± 10%	⅜"	⅜"	.70
270	DTZ-270	± 10%	⅜"	⅜"	.80

TYPE DTN — N750 TC DISC HI-KAPS®

Cap. Mmf.	Cat. No.	Tolerance	Diameter	Thickness
5	DTN-5	± .5 mmf.	¼"	⅜"
10	DTN-10	± .5 mmf.	¼"	⅜"
15	DTN-15	± 5%	¼"	⅜"
20	DTN-20	± 5%	¼"	⅜"
22	DTN-22	± 5%	¼"	⅜"
25	DTN-25	± 5%	¼"	⅜"
33	DTN-33	± 5%	¼"	⅜"
47	DTN-47	± 5%	⅜"	⅜"
68	DTN-68	± 5%	⅜"	⅜"
75	DTN-75	± 5%	⅜"	⅜"
100	DTN-100	± 5%	⅜"	⅜"
150	DTN-150	± 5%	⅜"	⅜"
200	DTN-200	± 5%	⅜"	⅜"
220	DTN-220	± 5%	⅜"	⅜"
330	DTN-330	± 5%	⅜"	⅜"

List Price \$0.50 each

CERAMIC FEED THRU HI-KAPS®  
TYPES FT AND MFT



Type FT bushing-mounted capacitors for high-frequency circuits needing both feed-thru and ground to either chassis or shield. Lead inductance virtually eliminated. Type MFT Miniature Eyelet Feed-Thru is condensed for ultra-high-frequency applications where space is at a premium. Both styles, 500 V.D.C.W., 1,000 V.D.C. test.

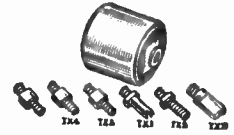
Cap. Mmf.	CRL Cat. No.	Tolerance	Cap. Mmf.	CRL Cat. No.	Tolerance
500	FT-500	± 20%	50	MFT-50	± 10%
1,000	FT-1,000	± 20%	100	MFT-100	± 10%
1,500	FT-1,500	- 20% + 50%	500	MFT-500	± 20%
1,800	FT-1,800	- 20% + 50%	1,000	MFT-1,000	GMV
2,300	FT-2,300	- 20% + 50%			

List Price \$1.00 each

List Price \$0.50 each

HI-VO-KAPS®

Factory guaranteed exact replacement. Accepted standard for filter and bypass applications in TV high voltage power supplies. Brass cadmium terminals available in combinations shown below. Capacity tolerance -20% +50%.



Voltage D.C.W.	Cap. Mmf.	CRL Cat. No.	Voltage D.C. Test	Fixed Terminals	List Price
12,500	500	TV1-501	22,500	2 Rods	\$1.00
12,500	500	TV2-501	22,500	1 Slot, 1 Tap	1.00
12,500	500	TV3-501	22,500	1 Tap, 1 Thread	1.00
20,000	500	TV1-502	40,000	2 Rod	1.50
20,000	500	TV2-502	40,000	1 Slot, 1 Tap	1.50
20,000	500	TV3-502	40,000	1 Tap, 1 Thread	1.50
20,000	500	TV4-502	40,000	2 Male Thread	1.50
20,000	500	YV5-502	40,000	2 Female Tap	1.50
20,000	500	TV7-502	40,000	1 8-32 thd., 1, 6-32 thd.	1.50
30,000	500	TV1-503	48,000	2 Rod	3.30
30,000	500	TV8-503	48,000	2 Spec. 8-32 thd.	3.30

ATTACHABLE TERMINAL HI-VO-KAP®

Heavy threads prevent terminal breakage—100% tested at twice rated voltage.

TV-20	500 mmf.	20KVDC	\$1.50 List
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TERMINALS

Package of 5 (Min.).....\$0.50

- TX-1—Plain Slotted Rod
- TX-2—6-32 Female Tap
- TX-3—6-32 Male Thread
- TX-4—Short 8-32 Male
- TX-5—Long 8-32 Male

- KIT TV-207—1 TV-20, 7 asst. terminals ..... LIST \$1.85
- KIT TXK-25—5 each of the 5 terminals..... LIST 2.50
- KIT TXK-125—25 each of the 5 terminals..... LIST 11.50
- KIT TVK-5-50—5 TV-20's, 10 each terminal..... LIST 9.17

TYPE DF FLAT HI-KAPS®  
600 V.D.C.W. — 1200 V.D.C. TEST



High capacity, low mass weight, unusual thinness, plus inherent Centralab ceramic capacitor stability make these units extremely popular both as bypass and filter capacitors. Compare the size — compare the guarantee of performance. No. 20 tinned wire leads. Packed 1 per package.

Cap Mfd.	Cat. No.	Tolerance	Max. Dimensions	List Price
.1	DF-104	+ 80 - 20%	1 ⅜" x 1 ⅜" x 1 ⅜"	\$0.80
.075	DF-753	GMV	1 ⅜" x 1 ⅜" x 1 ⅜"	.80
.05	DF-503	GMV	1 ⅜" x 1 ⅜" x 7 ⅜"	.70
.04	DF-403	GMV	1 ⅜" x 1 ⅜" x 7 ⅜"	.70
.03	DF-303	GMV	1 ⅜" x 1 ⅜" x 7 ⅜"	.70

TYPE DD16 BUFFERS

1600 V.D.C.W., 3000 V.D.C. Test — Originally designed for use in electric shavers, these units have wide acceptance for use as buffers in auto radio sets, as they are totally unaffected by heat, humidity or vibration. Meet U.L.-A.C. requirements.

Cap. Mf.	Cat. No.	Tolerance	Diam.	Thick.	List Price	Pkg. of 5
.003	DD16-302	GMV	⅜"	⅜"	\$1.75	
.004	DD16-402	GMV	⅜"	⅜"	1.75	
.005	DD16-502	GMV	⅜"	⅜"	1.75	
.006	DD16-602	GMV	⅜"	⅜"	1.75	
.007	DD16-702	GMV	⅜"	⅜"	1.75	
.0075	DD16-752	GMV	⅜"	⅜"	1.75	
.008	DD16-802	GMV	⅜"	⅜"	1.75	
.01	DD16-103	GMV	⅜"	⅜"	1.75	
.015	DD16-153	- 20% + 80%	⅜"	⅜"	3.00	

# SPRAGUE CAPACITORS

## SUBMINIATURE PAPER CAPACITORS



These capacitors are electrically and mechanically designed to meet stringent operating requirements. They are all hermetically sealed in metal cases.

Standard military-grade capacitors are impregnated with specially processed oils to meet required temperature characteristics. The commercial units are impregnated with Vitamin Q<sup>®</sup>, an organic polymeric impregnant which is exclusive with Sprague. Vitamin Q units have a higher

insulation resistance than comparable MIL capacitors.

Recent design improvements now make it possible to use inserted tab capacitors for low-voltage applications, as low as 1 volt. The principal difference between the two construction types is that at resonance, losses are likely to be lower in the extended foil type. Unless this is a critical factor, the inserted tab is recommended because of its smaller size.

Case	A1	B1	C1	O1	E1	F1	G1	H1	J1	J2	J3	K1	K2	K3	L1	L2	L3	L4	M1	M2	M3	M4	N1	N2	P1	P2	Q1	Q2	R1	R2	S1	T1
Diam.	.175	.195	.235	.238	.258	.298	.312	.375	.400	.400	.400	.463	.463	.463	.562	.562	.562	.562	.625	.625	.625	.625	.670	.670	.733	.733	.750	.750	.813	.813	1.0	1.063
Length	3/4	3/4	3/4	13/16	13/16	13/16	3/4	13/16	3/4	13/16	13/16	13/16	13/16	13/16	13/16	13/16	13/16	13/16	13/16	13/16	13/16	13/16	13/16	13/16	13/16	13/16	2 1/2	2 1/2	2 1/2	2 1/2	1 1/2	1 1/2

**IMPORTANT**—Be sure to add the correct prefix to the code number listed in the table. For example: If a .015 mf @ 200 V unit is required with a plain metal case with inserted tab construction for 85° C operation, the complete catalog number would be 91P1530252. The corresponding military-grade unit would be SP-CP04A1EC153M.

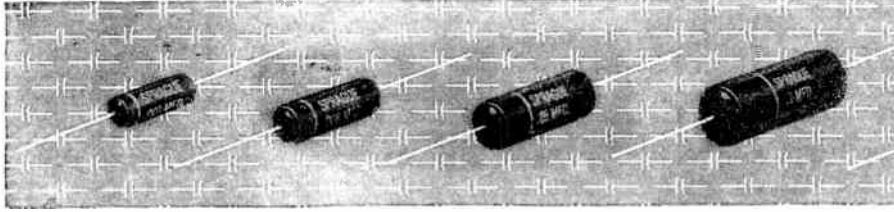
Volts D-C	Cap. µF	PLAIN METAL CASE Inserted Tab Construction				Metal Case w/insulating Sleeve Inserted Tab Construction				PLAIN METAL CASE Extended Foil Construction				Metal Case w/insulating Sleeve Extended Foil Construction																																																																																																																	
		91P (85°C) 96P (125°C)		SP-CP04 Chor. E (85°C) Chor. K (125°C)		91P (85°C) 96P (125°C)		SP-CP05 Chor. E (85°C) Chor. K (125°C)		191P (85°C) 196P (125°C)		SP-CP08 Chor. E (85°C) Chor. K (125°C)		191P (85°C) 196P (125°C)		SP-CP09 Chor. E (85°C) Chor. K (125°C)																																																																																																															
		Code No.	Size	Code No.	Size	Code No.	Size	Code No.	Size	Code No.	Size	Code No.	Size	Code No.	Size	Code No.	Size	Code No.	Size																																																																																																												
<b>100</b>	.001	1020152	A1	★	1020154	D1	★	1020152	A1	★	1020154	D1	★	1020154	D1	★	1020154	D1	★	1520154	D1	★	1520154	D1	★	2220154	D1	★	2220154	D1	★	3320154	D1	★	3320154	D1	★	4720154	D1	★	4720154	D1	★	6820154	E1	★	6820154	E1	★	1030154	F1	★	1030154	F1	★	1530154	F1	★	1530154	F1	★	2230154	H1	★	2230154	H1	★	3330154	H1	★	3330154	H1	★	4730154	H1	★	4730154	H1	★	6830154	H1	★	6830154	H1	★	1040154	H1	★	1040154	H1	★	1540154	H1	★	1540154	H1	★	2240154	H1	★	2240154	H1	★	3340154	H1	★	3340154	H1	★	4740154	H1	★	4740154	H1	★	6840154	H1	★	6840154	H1	★	1050154	H1	★	1050154	H1	★
	<b>200</b>	.001	1020252	C1	★	1020254	F1	★	1020252	C1	★	1020254	F1	★	1020254	F1	★	1520254	F1	★	1520254	F1	★	2220254	F1	★	2220254	F1	★	3320254	F1	★	3320254	F1	★	4720254	F1	★	4720254	F1	★	6820254	F1	★	6820254	F1	★	1030254	G1	★	1030254	G1	★	1530254	G1	★	1530254	G1	★	2230254	G1	★	2230254	G1	★	3330254	G1	★	3330254	G1	★	4730254	G1	★	4730254	G1	★	6830254	G1	★	6830254	G1	★	1040254	H1	★	1040254	H1	★	1540254	H1	★	1540254	H1	★	2240254	H1	★	2240254	H1	★	3340254	H1	★	3340254	H1	★	4740254	H1	★	4740254	H1	★	6840254	H1	★	6840254	H1	★	1050254	H1	★	1050254	H1	★		
		<b>300</b>	.001	1020352	C1	★ Refer to Commercial Equivalents	1020354	F1	★ Refer to Commercial Equivalents	1020352	C1	★ Refer to Commercial Equivalents	1020354	F1	★ Refer to Commercial Equivalents	1020354	F1	★	1520354	F1	★	1520354	F1	★	2220354	F1	★	2220354	F1	★	3320354	F1	★	3320354	F1	★	4720354	F1	★	4720354	F1	★	6820354	H1	★	6820354	H1	★	1030354	G1	★	1030354	G1	★	1530354	G1	★	1530354	G1	★	2230354	H1	★	2230354	H1	★	3330354	H1	★	3330354	H1	★	4730354	H1	★	4730354	H1	★	6830354	K1	★	6830354	K1	★	1040354	K2	★	1040354	K2	★	1540354	K3	★	1540354	K3	★	2240354	M1	★	2240354	M1	★	3340354	M2	★	3340354	M2	★	4740354	M3	★	4740354	M3	★	6840354	P1	★	6840354	P1	★	1050354	R1	★	1050354	R1	★	
			<b>400</b>	.001	1020452	C1	★	1020454	F1	★	1020452	C1	★	1020454	F1	★	1020454	F1	★	1520454	F1	★	1520454	F1	★	2220454	F1	★	2220454	F1	★	3320454	F1	★	3320454	F1	★	4720454	F1	★	4720454	F1	★	6820454	F1	★	6820454	F1	★	1030454	G1	★	1030454	G1	★	1530454	H1	★	1530454	H1	★	2230454	H1	★	2230454	H1	★	3330454	K1	★	3330454	K1	★	4730454	K2	★	4730454	K2	★	6830454	K3	★	6830454	K3	★	1040454	M1	★	1040454	M1	★	1540454	M2	★	1540454	M2	★	2240454	M3	★	2240454	M3	★	3340454	P1	★	3340454	P1	★	4740454	P2	★	4740454	P2	★	6840454	R1	★	6840454	R1	★						

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# SPRAGUE CAPACITORS

## BLACK BEAUTY® TELECAP® MOLDED TUBULARS



- Premium Quality at No Extra Cost
- Ideally Suited for High Humidity and High Temperature Operation
- Extremely High Insulation Resistance
- Excellent Retrace Characteristics and Capacitance Stability
- Withstand Severe Heat, Moisture, and Shock
- Housed in Tough Mineral-filled Phenolic
- Non-flammable Case for Greater Protection
- 200 volt thru 1000 volt Units Will Operate at 105°C (221°F)
- 1600 volt thru 12,500 volt Units Will Operate at 85°C (185°F)

## 68P MIDGET® TUBULARS



- The Smallest Reliable Paper Tubular Capacitor
- Will Fit Tight Spots in Pocket Radios, Auto Radios and Other Small Electronic Assemblies that Require High Temperature Operation, Good Humidity Performance, and Minimum Size at Moderate Cost
- Designed for 85°C (185°F) Operation

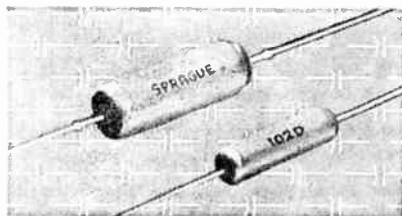
μF	D. x L.	Cat. No.	μF	D. x L.	Cat. No.	μF	D. x L.	Cat. No.	μF	D. x L.	Cat. No.
<b>200 WVDC</b>											
.02	3/8 x 1 1/4	2TM-S2	.0022	3/16 x 1	6TM-D22	.022	1/2 x 1 1/2	10TM-S22	.25	1 1/2 x 1 1/8	68P19
.022	3/8 x 1 1/4	2TM-S22	.0025	3/16 x 1	6TM-D25	.03	1/2 x 1 1/2	10TM-S3	.5	3/4 x 1 1/8	68P20
.047	3/8 x 1 1/4	2TM-S47	.003	3/16 x 1	6TM-D3	.035	1/2 x 1 1/2	10TM-S35	<b>200 WVDC</b>		
.05	3/8 x 1 1/4	2TM-S5	.0033	3/16 x 1	6TM-D33	.047	3/8 x 1 7/8	10TM-S47	.005	1/4 x 1 1/16	68P11
.1	7/16 x 1 1/4	2TM-P1	.004	3/16 x 1	6TM-D4	.05	3/8 x 1 7/8	10TM-S5	.006	1/4 x 1 1/16	68P12
.15	7/16 x 1 1/2	2TM-P15	.0047	3/16 x 1	6TM-D47	.068	3/8 x 1 7/8	10TM-S68	.01	1/2 x 1 1/16	68P14
.22	5/8 x 1 7/8	2TM-P22	.005	3/8 x 1 1/4	6TM-D5	.1	3/4 x 2 1/4	10TM-S1	.02	1/2 x 1 1/16	68P15
.25	5/8 x 1 7/8	2TM-P25	.006	3/8 x 1 1/4	6TM-D6	<b>* 1600 WVDC</b>					
.47	5/8 x 1 7/8	2TM-P47	.0068	3/8 x 1 1/4	6TM-D68	.0005	3/8 x 1 1/4	MB-T5	.05	3/16 x 1	68P16
.5	5/8 x 1 7/8	2TM-P5	.008	3/8 x 1 1/4	6TM-D8	.001	3/8 x 1 1/4	MB-D1	.1	1 1/2 x 1	68P17
1.0	3/4 x 2 1/4	2TM-M1	.01	3/8 x 1 1/4	6TM-S1	.0015	3/8 x 1 1/4	MB-D15	.2	1 1/2 x 1 1/8	68P18
<b>400 WVDC</b>											
.01	3/16 x 1	4TM-S1	.015	3/8 x 1 1/4	6TM-S15	.002	3/8 x 1 1/4	MB-D2	.25	1 3/4 x 1 1/8	68P24
.015	3/8 x 1 1/4	4TM-S15	.02	7/16 x 1 1/4	6TM-S2	.0022	3/8 x 1 1/4	MB-D22	.5	3/4 x 1 3/8	68P25
.02	3/8 x 1 1/4	4TM-S2	.022	7/16 x 1 1/4	6TM-S22	.003	3/16 x 1 1/4	MB-D3	<b>400 WVDC</b>		
.022	3/8 x 1 1/4	4TM-S22	.03	1/2 x 1 1/2	6TM-S3	.0033	3/16 x 1 1/4	MB-D33	.001	1/4 x 1 1/16	68P1
.025	3/8 x 1 1/4	4TM-S25	.033	1/2 x 1 1/2	6TM-S33	.004	7/16 x 1 1/4	MB-D4	.003	1/4 x 1 1/16	68P3
.03	3/8 x 1 1/4	4TM-S3	.035	1/2 x 1 1/2	6TM-S35	.0047	7/16 x 1 1/4	MB-D47	.004	1/4 x 1 1/16	68P4
.04	7/16 x 1 1/4	4TM-S4	.04	1/2 x 1 1/2	6TM-S4	.005	7/16 x 1 1/4	MB-D5	.005	3/8 x 1 3/16	68P5
.047	7/16 x 1 1/4	4TM-S47	.047	1/2 x 1 1/2	6TM-S47	.006	1/2 x 1 1/2	MB-D6	.006	1/4 x 1 1/16	68P8
.05	7/16 x 1 1/4	4TM-S5	.05	1/2 x 1 1/2	6TM-S5	.0068	1/2 x 1 1/2	MB-D68	.01	1/2 x 1 1/16	68P9
.068	1/2 x 1 1/2	4TM-S68	.06	5/8 x 1 7/8	6TM-S6	.007	1/2 x 1 1/2	MB-D7	.05	1 1/2 x 1 1/8	68P10
.1	1/2 x 1 1/2	4TM-P1	.068	5/8 x 1 7/8	6TM-S68	.0075	3/8 x 1 1/4	MB-D75	.1	3/4 x 1 1/8	68P21
.15	5/8 x 1 7/8	4TM-P15	.1	5/8 x 1 7/8	6TM-P1	.008	1/2 x 1 1/2	MB-D8	.2	5/8 x 1 1/8	68P38
.2	5/8 x 1 7/8	4TM-P2	.15	3/4 x 2 1/4	6TM-P15	.01	1/2 x 1 1/2	MB-S1	.25	5/8 x 1 3/8	68P22
.22	5/8 x 1 7/8	4TM-P22	.2	3/4 x 2 1/4	6TM-P2	.015	5/8 x 1 7/8	MB-S15	.5	3/4 x 2 3/8	68P23
.25	5/8 x 1 7/8	4TM-P25	.22	3/4 x 2 1/4	6TM-P22	.02	5/8 x 1 7/8	MB-S2	<b>600 WVDC</b>		
.47	3/4 x 2 1/4	4TM-P47	.25	3/4 x 2 1/4	6TM-P25	.022	5/8 x 1 7/8	MB-S22	.001	1/4 x 1 1/16	68P26
.5	3/4 x 2 1/4	4TM-P5	.5	1 x 2 3/8	6TM-P5	.03	5/8 x 1 7/8	MB-S3	.002	1/4 x 1 1/16	68P27
1.0	1 x 2 3/8	4TM-M1	1.0	1 x 2 3/8	*TC-10	.04	5/8 x 1 7/8	MB-S4	.003	1/2 x 1 1/16	68P28
<b>1000 WVDC</b>											
.0005	3/16 x 1	10TM-T5	<b>1000 WVDC</b>								
.001	3/16 x 1	10TM-D1	.0005	3/16 x 1	10TM-T5	<b>6000 WVDC</b>					
.0015	3/16 x 1	10TM-D15	.001	3/16 x 1	10TM-D1	.0005	1/2 x 1 1/2	TVM-356	.001	1/4 x 1 1/16	68P29
.002	3/16 x 1	10TM-D2	.0015	3/16 x 1	10TM-D15	.005	5/8 x 1 7/8	TVM-256	.005	1/2 x 1 1/16	68P30
.0022	3/16 x 1	10TM-D22	.002	3/16 x 1	10TM-D2	<b>10,000 WVDC</b>					
.003	3/8 x 1 1/4	10TM-D3	.003	3/8 x 1 1/4	10TM-D3	.0005	5/8 x 1 7/8	TVM-351	.006	3/16 x 1 3/16	68P31
.004	3/8 x 1 1/4	10TM-D4	.004	3/8 x 1 1/4	10TM-D4	<b>12,500 WVDC</b>					
.0047	3/8 x 1 1/4	10TM-D47	.0047	3/8 x 1 1/4	10TM-D47	.00025	5/8 x 1 7/8	12TVM-325	.008	3/16 x 1	68P32
.005	3/8 x 1 1/4	10TM-D5	.005	3/8 x 1 1/4	10TM-D5	.01	3/8 x 1 1/4	10TM-S1	.01	3/16 x 1	68P33
.0068	3/8 x 1 1/4	10TM-D68	.0068	3/8 x 1 1/4	10TM-D68	.015	7/16 x 1 1/4	10TM-S15	.02	1 1/2 x 1	68P34
.01	3/8 x 1 1/4	10TM-S1	.01	3/8 x 1 1/4	10TM-S1	<b>6000 WVDC</b>					
.015	7/16 x 1 1/4	10TM-S15	.015	7/16 x 1 1/4	10TM-S15	.001	1/2 x 1 1/2	TVM-216	.05	1 1/2 x 1 1/8	68P35
.02	1/2 x 1 1/2	10TM-S2	.02	1/2 x 1 1/2	10TM-S2	.005	5/8 x 1 7/8	TVM-256	.1	3/4 x 1 1/8	68P36
<b>2 x .015 3/4 x 2 *TR-215</b>											

\*Supplied in waxed cardboard units pending completion of molds.

★ DESIGNED FOR BUFFER APPLICATIONS

# SPRAGUE CAPACITORS

## TYPE 102D TANTALEX® CAPACITORS



Type 102D Tantalex capacitors are miniature d-c electrolytic capacitors which will operate over the wide temperature range of  $-55^{\circ}\text{C}$  to  $+85^{\circ}\text{C}$ . They are intended for low-voltage applications where small size and superior, stable electrical characteristics are required.

These outstanding units have extremely low leakage current, low power factor, and small capacitance drop-off at low temperatures.

Type 102D capacitors are hermetically sealed against atmospheric conditions and leakage or contamination of the non-corrosive electrolyte.

Units listed below have bare metal tubes. For units with outer insulating sleeves, add "A1" to end of catalog number, and add  $\frac{1}{16}$ " to both diameter and length.

$\mu\text{F}$	WVDC	D. x L.	Cat. No.	$\mu\text{F}$	WVDC	D. x L.	Cat. No.	$\mu\text{F}$	WVDC	D. x L.	Cat. No.
10	3	$\frac{3}{16} \times \frac{1}{16}$	102D101	160	15	$\frac{3}{8} \times 2\frac{3}{4}$	102D120	34	60	$\frac{3}{8} \times 2\frac{1}{2}$	102D139
55	3	$\frac{5}{32} \times \frac{1}{8}$	102D102	3	25	$\frac{3}{16} \times \frac{1}{16}$	102D121	48	60	$\frac{3}{8} \times 2\frac{3}{4}$	102D140
160	3	$\frac{3}{8} \times 1\frac{1}{16}$	102D103	12	25	$\frac{5}{32} \times \frac{1}{8}$	102D122	1	75	$\frac{3}{16} \times \frac{1}{16}$	102D141
350	3	$\frac{3}{8} \times 2\frac{1}{8}$	102D104	35	25	$\frac{3}{8} \times 1\frac{1}{16}$	102D123	4	75	$\frac{5}{32} \times \frac{1}{8}$	102D142
440	3	$\frac{3}{8} \times 2\frac{3}{4}$	102D105	70	25	$\frac{3}{8} \times 2\frac{1}{8}$	102D124	14	75	$\frac{3}{8} \times 1\frac{1}{16}$	102D143
8	6	$\frac{3}{16} \times \frac{1}{16}$	102D106	100	25	$\frac{3}{8} \times 2\frac{3}{4}$	102D125	28	75	$\frac{3}{8} \times 2\frac{1}{8}$	102D144
35	6	$\frac{5}{32} \times \frac{1}{8}$	102D107	2.5	30	$\frac{3}{16} \times \frac{1}{16}$	102D126	40	75	$\frac{3}{8} \times 2\frac{3}{4}$	102D145
100	6	$\frac{3}{8} \times 1\frac{1}{16}$	102D108	10	30	$\frac{3}{16} \times \frac{1}{16}$	102D127	.8	100	$\frac{3}{16} \times \frac{1}{16}$	102D146
200	6	$\frac{3}{8} \times 2\frac{1}{8}$	102D109	30	30	$\frac{5}{32} \times \frac{1}{8}$	102D128	3	100	$\frac{5}{32} \times \frac{1}{8}$	102D147
300	6	$\frac{3}{8} \times 2\frac{3}{4}$	102D110	60	30	$\frac{3}{8} \times 1\frac{1}{16}$	102D129	10	100	$\frac{3}{8} \times 1\frac{1}{16}$	102D148
6	10	$\frac{3}{16} \times \frac{1}{16}$	102D111	85	30	$\frac{3}{8} \times 2\frac{1}{8}$	102D130	20	100	$\frac{3}{8} \times 2\frac{1}{8}$	102D149
25	10	$\frac{5}{32} \times \frac{1}{8}$	102D112	1.5	50	$\frac{3}{16} \times \frac{1}{16}$	102D131	30	100	$\frac{3}{8} \times 2\frac{3}{4}$	102D150
80	10	$\frac{3}{8} \times 1\frac{1}{16}$	102D113	6	50	$\frac{5}{32} \times \frac{1}{8}$	102D132	.5	150	$\frac{3}{16} \times \frac{1}{16}$	102D151
160	10	$\frac{3}{8} \times 2\frac{1}{8}$	102D114	20	50	$\frac{3}{8} \times 1\frac{1}{16}$	102D133	1	150	$\frac{5}{32} \times \frac{1}{8}$	102D156
220	10	$\frac{3}{8} \times 2\frac{3}{4}$	102D115	40	50	$\frac{3}{8} \times 2\frac{1}{8}$	102D134	2	150	$\frac{5}{32} \times \frac{1}{8}$	102D152
4.5	15	$\frac{3}{16} \times \frac{1}{16}$	102D116	55	50	$\frac{3}{8} \times 2\frac{3}{4}$	102D135	7	150	$\frac{3}{8} \times 1\frac{1}{16}$	102D153
18	15	$\frac{5}{32} \times \frac{1}{8}$	102D117	1.25	60	$\frac{3}{16} \times \frac{1}{16}$	102D136	14	150	$\frac{3}{8} \times 2\frac{1}{8}$	102D154
55	15	$\frac{3}{8} \times 1\frac{1}{16}$	102D118	5	60	$\frac{5}{32} \times \frac{1}{8}$	102D137	20	150	$\frac{3}{8} \times 2\frac{3}{4}$	102D155
110	15	$\frac{3}{8} \times 2\frac{1}{8}$	102D119	17	60	$\frac{3}{8} \times 1\frac{1}{16}$	102D138				

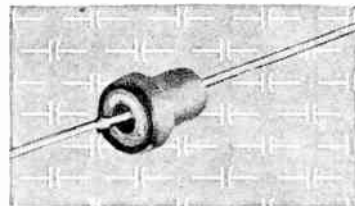
## TYPE 104D TANTALEX CAPACITORS

The operating temperature range of these units is from  $-55^{\circ}\text{C}$  to  $+85^{\circ}\text{C}$  at rated working voltage. Type 104D capacitors exhibit virtually no shelf aging and have extremely low leakage current.

The sintered porous tantalum anode of these capacitors is housed in a miniature

silver thimble which serves both as cathode and container for the electrolyte.

Extremely small in size, Type 104D capacitors are  $\frac{1}{2}$ " long and  $\frac{5}{16}$ " in diameter at their widest point. Excluding the connection leads, these tiny capacitors have a volume of less than  $\frac{1}{10}$  of a cubic inch.



$\mu\text{F}$	WVDC	—Catalog Number—		$\mu\text{F}$	WVDC	—Catalog Number—	
		—15, +50% tol.	—15, +20% tol.			—15, +50% tol.	—15, +20% tol.
30	6	104D101	104D101A1	5	50	104D107	104D107A1
25	8	104D102	104D102A1	4	60	104D108	104D108A1
20	10	104D103	104D103A1	3.5	75	104D109	104D109A1
15	15	104D104	104D104A1	2	100	104D110	104D110A1
10	25	104D105	104D105A1	1.75	125	104D111	104D111A1
8	30	104D106	104D106A1				

## HYPASS® CAPACITORS



Exclusive 3-terminal network feed-thru capacitors. By-pass V-H-F currents where ordinary capacitors are ineffective. Suppress TVI from short-wave transmitters, diathermy machines, electronic heating apparatus, etc. Eliminate interference caused by line-conducted radiation between neighboring TV sets. Install leads in series with circuit being filtered and ground the case.

$\mu\text{F}$	Amps.	WVDC	D. x L.	Cat. No.
.5	40	50	$1 \times 1\frac{1}{16}$	*48P18
.1	20	250(VAC)	$\frac{1}{16} \times 1\frac{1}{16}$	*48P9
.002	15	600	$\frac{1}{4} \times 1\frac{1}{8}$	46P12
.005	15	600	$\frac{1}{4} \times 1\frac{1}{8}$	46P8
.01	20	600	$\frac{3}{16} \times 1\frac{1}{4}$	47P6
.1	20	600	$\frac{1}{16} \times 1\frac{1}{16}$	*†80P3
.005	20	1000	$\frac{3}{16} \times 1\frac{1}{4}$	47P12
.01	20	1000	$\frac{3}{16} \times 1\frac{1}{2}$	47P13
.005	20	2500	$1 \times 1\frac{1}{16}$	47P14
.01	20	2500	$1 \times 1\frac{1}{16}$	47P15
.002	20	5000	$1 \times 1\frac{1}{16}$	47P16

\*Has female screw terminals  
†Bulkhead mounting

# SPRAGUE CAPACITORS

## TVA ATOM<sup>®</sup> ELECTROLYTICS



● The Smallest Dependable Dry Electrolytic—  
The Only Small Size Capacitor Designed For  
85°C (185°F) Operation

● Whether For AC-DC Sets, Auto Radios, Home  
Radio-phonograph Combinations, Or TV Sets, The  
SPRAGUE Line Will Handle All Your Replace-  
ments—No Dual Inventory Problems

● Small Enough To Fit Anywhere, Work Any-  
where

● Have Low Leakage And Long Shelf Life

● Will Withstand High Temperatures, High  
Ripple Currents, High Surge Voltages

● Metal Case Construction with Outer Insulating  
Tube

● Units Listed Here Are Specially Selected  
Ratings for Industrial and Laboratory Use.  
62 Additional TVA Ratings Are Listed in the  
Sprague Distributor Service Stock Catalog.

μF	WVDC	D. x L.	Cat. No.	μF	WVDC	D. x L.	Cat. No.	μF	WVDC	D. x L.	Cat. No.
<b>SINGLE UNITS</b>				<b>DUAL UNITS</b>							
50	6	3/8 x 1 1/4	TVA-1100	50	150	1 3/16 x 1 11/16	TVA-1414	10-10	25-25	3/8 x 1 7/16	TVA-2210
100	6	1/2 x 1 1/8	TVA-1101	80	150	3/8 x 1 11/16	TVA-1418	10-10	50-50	3/8 x 1 7/16	TVA-2315
500	6	5/8 x 2 3/16	TVA-1103	150	150	1 x 2 3/16	TVA-1420	8-8	150-150	3/8 x 1 7/16	TVA-2415
1000	6	1 1/16 x 2 3/16	TVA-1104	8	250	1/2 x 1 5/8	TVA-1503	16-16	150-150	3/8 x 1 7/16	TVA-2420
2000	6	1 3/16 x 2 5/16	TVA-1106	10	250	5/16 x 1 11/16	TVA-1504	20-20	150-150	3/8 x 1 7/16	TVA-2428
100	12	9/16 x 1 3/8	TVA-1130	16	250	3/8 x 1 11/16	TVA-1507	30-30	150-150	3/8 x 1 11/16	TVA-2434
250	12	3/8 x 1 11/16	TVA-1131	20	250	1 1/16 x 1 11/16	TVA-1508	40-20	150-150	3/8 x 1 11/16	TVA-2438
1000	12	1 3/16 x 2 3/16	TVA-1133	30	250	1 1/16 x 2 3/16	TVA-1510	40-30	150-150	3/8 x 1 11/16	TVA-2442
250	15	3/8 x 1 11/16	TVA-1161	40	250	3/4 x 2 3/16	TVA-1511	40-40	150-150	3/8 x 1 11/16	TVA-2445
500	15	1 1/16 x 2 3/16	TVA-1162	4	350	1/2 x 1 5/8	TVA-1601	50-30	150-150	3/8 x 1 11/16	TVA-2450
1000	15	3/8 x 2 3/16	TVA-1163	8	350	3/8 x 1 11/16	TVA-1603	50-50	150-150	3/8 x 2 3/16	TVA-2453
2	25	3/8 x 1 1/4	TVA-1201	12	350	1 1/16 x 1 11/16	TVA-1605	80-50	150-150	1 x 3 1/4	TVA-2462
10	25	3/8 x 1 1/4	TVA-1204	16	350	3/4 x 1 11/16	TVA-1607	20-20	250-250	3/8 x 1 11/16	TVA-2515
25	25	3/8 x 1 1/4	TVA-1205	20	350	1 3/16 x 1 11/16	TVA-1608	10-10	450-450	3/8 x 1 11/16	TVA-2722
50	25	9/16 x 1 3/8	TVA-1206	30	350	1 3/16 x 2 3/16	TVA-1610	20-20	450-450	3/8 x 2 3/16	TVA-2730
100	25	1 1/16 x 2 3/16	TVA-1207	40	350	7/8 x 2 3/16	TVA-1611	40-40	450-450	1 x 3 1/4	TVA-2740
250	25	3/4 x 1 11/16	TVA-1208	60	350	1 x 2 3/16	TVA-1613	<b>TRIPLE UNITS</b>			
500	25	7/8 x 2 3/16	TVA-1209	8	450	1 1/16 x 1 11/16	TVA-1704	20-20-20	150-150-25	3/8 x 1 11/16	TVA-3415
1	50	3/8 x 1 1/4	TVA-1300	10	450	1 1/16 x 1 11/16	TVA-1705	30-30-100	150-150-12	3/8 x 1 11/16	TVA-3419
5	50	3/8 x 1 1/4	TVA-1303	16	450	3/4 x 2 3/16	TVA-1708	40-30-20	150-150-25	3/8 x 1 11/16	TVA-3423
25	50	9/16 x 1 3/8	TVA-1306	20	450	3/4 x 2 3/16	TVA-1709	40-40-100	150-150-25	3/8 x 2 3/16	TVA-3427
50	50	1 1/16 x 1 11/16	TVA-1308	30	450	7/8 x 2 3/16	TVA-1711	50-30-20	150-150-25	3/8 x 2 3/16	TVA-3430
100	50	5/8 x 1 11/16	TVA-1310	40	450	1 x 2 11/16	TVA-1712	50-30-200	150-150-25	1 x 2 3/16	TVA-3433
150	50	3/4 x 1 11/16	TVA-1311	60	450	1 x 3 11/16	TVA-1714	50-50-20	150-150-25	1 3/16 x 2 3/16	TVA-3436
250	50	1 3/16 x 1 11/16	TVA-1312	80	450	1 x 3 11/16	TVA-1716	20-20-20	150-150-150	3/8 x 1 11/16	TVA-3440
5	150	3/8 x 1 1/4	TVA-1403	10	475	3/8 x 2 3/16	TVA-1802	30-30-30	150-150-150	3/8 x 2 3/16	TVA-3444
10	150	3/8 x 1 1/4	TVA-1406	20	475	3/8 x 2 3/16	TVA-1804	40-30-20	150-150-150	3/8 x 2 3/16	TVA-3448
20	150	9/16 x 1 11/16	TVA-1410	8	500	3/8 x 1 11/16	TVA-1902	40-40-40	150-150-150	1 x 2 3/16	TVA-3451
30	150	5/8 x 1 11/16	TVA-1412	16	500	1 3/16 x 2 3/16	TVA-1905	80-40-20	150-150-150	1 x 2 3/16	TVA-3455
40	150	3/4 x 1 11/16	TVA-1413	8	600	1 3/16 x 2 3/8	TVA-1962	12-12-20	450-450-25	1 x 2 3/16	TVA-3716
				20	600	1 x 4 1/8	TVA-1966				

## TE LITTL-LYTIC<sup>®</sup> ELECTROLYTICS

- A NEW Approach to Reliability in Reasonably-priced Sub-miniature Electrolytic Capacitors
- Hermetically-sealed, Metal Encased
- Ultra-low Leakage Current, Long Shelf Life
- Excellent Replacement Copocitors for Transistorized Radios, Hearing Aids, Wireless Microphones, Pocket Wire Recorders, and Other Miniature Electronic Equipment

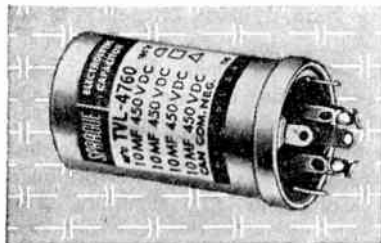


μF	WVDC	D. x L.	Cat. No.	μF	WVDC	D. x L.	Cat. No.	μF	WVDC	D. x L.	Cat. No.
5	1	3/16 x 3/8	TE-1010	10	6	1/4 x 3/8	TE-1087	5	15	1/4 x 3/8	TE-1152
2	3	3/16 x 3/8	TE-1051	15	6	1/4 x 3/8	TE-1089	10	15	1/4 x 3/8	TE-1155
10	3	1/4 x 3/8	TE-1053	25	6	1/4 x 3/8	TE-1091	20	15	3/8 x 3/8	TE-1157
25	3	1/4 x 3/8	TE-1055	30	6	3/8 x 3/8	TE-1092	30	15	3/8 x 3/8	TE-1158
40	3	1/4 x 3/8	TE-1057	40	6	3/8 x 3/8	TE-1095	5	25	3/8 x 3/8	TE-1202
110	3	3/8 x 3/4	TE-1060	50	6	3/8 x 3/4	TE-1100	6	25	1/2 x 3/8	TE-1203
200	3	3/8 x 1	TE-1064	60	6	3/8 x 3/4	TE-1101	10	25	3/8 x 3/8	TE-1204
1	6	3/16 x 3/8	TE-1080	100	6	3/8 x 3/8	TE-1102	15	25	3/8 x 3/8	TE-1205
2	6	3/16 x 3/8	TE-1081	10	10	1/4 x 3/8	TE-1114	20	25	3/8 x 3/8	TE-1206
3	6	3/16 x 3/8	TE-1082	15	10	1/4 x 3/8	TE-1116	5	50	1/4 x 3/8	TE-1303
4	6	3/16 x 3/8	TE-1083	25	10	3/8 x 3/8	TE-1118	10	50	3/8 x 3/8	TE-1304
5	6	3/16 x 3/8	TE-1084	5	12	1/4 x 3/8	TE-1127	20	50	3/8 x 3/8	TE-1305
8	6	1/4 x 3/8	TE-1086	10	12	1/4 x 3/8	TE-1128				



# SPRAGUE CAPACITORS

## TVL TWIST-LOK® ELECTROLYTICS



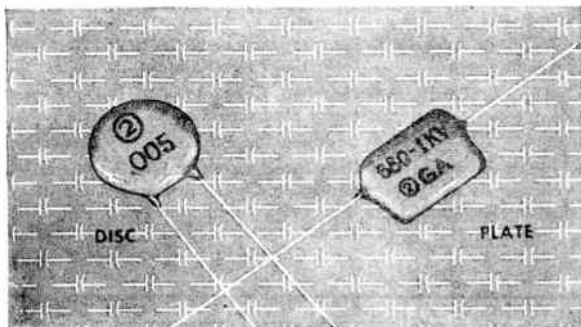
- Especially Designed for Tough TV and Radio Replacement Applications
- Hermetically Sealed in Aluminum Cans for Long Life and Dependable Performance
- Stand Up Under Extremely High Temperatures and High Surge Voltages as well as in High Ripple Selenium Rectifier Circuits
- Easy to Mount—A Twist of the Tabs Locks Unit Firmly in Place
- Furnished Complete with Bakelite and Metal Mounting Plates
- Designed for 85°C (185°F) Operation
- Units Listed Here are Specially Selected Ratings for Industrial and Laboratory Use. 933 Additional TVL Ratings are listed in the Sprague Distributor Service Stock Catalog.

μF	WVDC	D. x L.	Cat. No.	μF	WVDC	D. x L.	Cat. No.	μF	WVDC	D. x L.	Cat. No.
<b>SINGLE UNITS</b>											
2000	6	1 3/8 x 2	TVL-1115	10	450	1 x 2	TVL-1705	80-40	150-150	1 3/8 x 2 1/2	TVL-2442
1000	15	1 x 2 1/2	TVL-1165	20	450	1 x 2	TVL-1714	20-20	250-250	1 x 2	TVL-2515
2000	15	1 3/8 x 2	TVL-1168	30	450	1 x 2 1/2	TVL-1720	40-40	250-250	1 x 3 1/2	TVL-2520
3000	15	1 3/8 x 3	TVL-1170	40	450	1 x 3	TVL-1725	30-30	350-350	1 x 3	TVL-2628
4000	15	1 3/8 x 3 1/2	TVL-1173	50	450	1 x 3	TVL-1728	50-30	350-350	1 3/8 x 2 1/2	TVL-2630
500	25	1 x 2	TVL-1220	100	450	1 3/8 x 3	TVL-1750	80-40	350-350	1 3/8 x 3	TVL-2634
1000	25	1 3/8 x 2	TVL-1230	10	500	1 x 2	TVL-1940	10-10	450-450	1 x 2	TVL-2750
500	50	1 3/8 x 2 1/2	TVL-1330	20	500	1 x 2 1/2	TVL-1943	15-15	450-450	1 x 2 1/2	TVL-2753
1000	50	1 3/8 x 3 1/2	TVL-1338	30	500	1 x 3	TVL-1947	20-20	450-450	1 x 3	TVL-2755
1500	50	1 3/8 x 4	TVL-1341	40	500	1 x 3 1/2	TVL-1950	30-30	450-450	1 3/8 x 2 1/2	TVL-2759
50	150	1 x 2	TVL-1415	80	500	1 3/8 x 3	TVL-1958	40-20	450-450	1 3/8 x 2 1/2	TVL-2762
100	150	1 x 2 1/2	TVL-1423	<b>DUAL UNITS</b>				40-40	450-450	1 3/8 x 3	TVL-2764
150	150	1 x 3	TVL-1429	1000-1000	15-15	1 3/8 x 2 1/2	TVL-2161	50-50	450-450	1 3/8 x 3	TVL-2767
300	150	1 3/8 x 3 1/2	TVL-1434	100-100	50-50	1 x 2	TVL-2326	80-40	450-450	1 3/8 x 3 1/2	TVL-2778
40	250	1 x 2	TVL-1519	20-20	150-150	1 x 2	TVL-2415	15-15	475-475	1 x 2 1/2	TVL-2820
100	250	1 x 3	TVL-1535	40-20	150-150	1 x 2	TVL-2425	10-10	500-500	1 x 2 1/2	TVL-2933
200	250	1 3/8 x 3 1/2	TVL-1547	40-40	150-150	1 x 2 1/2	TVL-2428	20-20	500-500	1 3/8 x 2 1/2	TVL-2935
				50-50	150-150	1 x 2 1/2	TVL-2435	30-30	500-500	1 3/8 x 3	TVL-2937
								40-40	500-500	1 3/8 x 3	TVL-2940

μF	WVDC	D. x L.	Cat. No.	μF	WVDC	D. x L.	Cat. No.
<b>TRIPLE UNITS</b>							
20-20-20	25-25-25	1 x 2	TVL-3210	40-40-40	450-450-150	1 3/8 x 3 1/2	TVL-3758
40-40-40	25-25-25	1 x 2	TVL-3230	10-10-10	450-450-450	1 x 3	TVL-3776
40-20-200	150-150-25	1 x 3	TVL-3423.2	15-15-15	450-450-450	1 x 3	TVL-3778.2
40-40-20	150-150-25	1 x 2 1/2	TVL-3426	20-20-20	450-450-450	1 3/8 x 2 1/2	TVL-3780
40-40-200	150-150-25	1 x 3	TVL-3426.3	30-20-20	450-450-450	1 3/8 x 3	TVL-3781
50-30-100	150-150-25	1 x 3	TVL-3427	30-30-30	450-450-450	1 3/8 x 3 1/2	TVL-3782
50-50-20	150-150-25	1 x 3	TVL-3430	40-40-40	450-450-450	1 3/8 x 3 1/2	TVL-3787
80-40-20	150-150-25	1 x 2 1/2	TVL-3432	80-40-20	450-450-450	1 3/8 x 4	TVL-3793
20-20-20	150-150-150	1 x 2 1/2	TVL-3433	40-20-20	475-475-475	1 3/8 x 3	TVL-3842
40-20-10	150-150-150	1 x 2	TVL-3436	10-10-10	500-500-500	1 x 3	TVL-3952
40-30-20	150-150-150	1 x 2	TVL-3438	40-40-10	500-500-500	1 3/8 x 3 1/2	TVL-3965
40-40-40	150-150-150	1 x 3 1/2	TVL-3440	<b>QUADRUPLE UNITS</b>			
50-50-50	150-150-150	1 x 3	TVL-3442	30-30-30-40	150-150-150-25	1 3/8 x 2	TVL-4415
60-40-20	150-150-150	1 x 3	TVL-3443	40-40-40-20	150-150-150-25	1 3/8 x 2	TVL-4421
80-40-20	150-150-150	1 x 3	TVL-3444	50-50-50-20	150-150-150-25	1 3/8 x 2	TVL-4425
15-15-20	250-250-25	1 x 2	TVL-3510	80-40-40-100	150-150-150-25	1 3/8 x 2 1/2	TVL-4434
30-30-20	250-250-25	1 x 3	TVL-3513	40-40-40-30	150-150-150-150	1 3/8 x 2	TVL-4441
20-20-20	250-250-250	1 x 2	TVL-3532	100-80-60-40	150-150-150-150	1 3/8 x 3	TVL-4445
40-20-20	250-250-250	1 x 3 1/2	TVL-3540	40-40-40-40	350-350-350-350	1 3/8 x 4	TVL-4635.3
80-80-60	250-250-250	1 3/8 x 3	TVL-3545	80-60-40-20	350-350-350-350	1 3/8 x 4	TVL-4635.7
10-10-10	300-300-300	1 x 2	TVL-3580	10-10-10-20	450-450-450-25	1 3/8 x 2	TVL-4723
80-40-40	300-300-300	1 3/8 x 3 1/2	TVL-3583	20-20-20-20	450-450-450-25	1 3/8 x 2 1/2	TVL-4724.2
20-20-20	350-350-25	1 x 2 1/2	TVL-3635	40-20-20-40	450-450-450-25	1 3/8 x 3	TVL-4732
30-30-20	350-350-25	1 3/8 x 2	TVL-3636.3	40-40-20-20	450-450-450-25	1 3/8 x 3 1/2	TVL-4737
30-20-10	350-350-350	1 x 3	TVL-3639.8	40-40-40-40	450-450-450-25	1 3/8 x 4	TVL-4739
60-40-20	350-350-350	1 3/8 x 4	TVL-3640	80-40-40-40	450-450-450-25	1 3/8 x 4	TVL-4739.6
10-10-20	450-450-25	1 x 2 1/2	TVL-3731	20-20-20-100	450-450-450-50	1 3/8 x 2 1/2	TVL-4740
15-15-40	450-450-25	1 x 2 1/2	TVL-3734	10-10-10-10	450-450-450-450	1 3/8 x 2	TVL-4760
20-20-20	450-450-25	1 x 3	TVL-3739	20-10-10-10	450-450-450-450	1 3/8 x 2 1/2	TVL-4761
30-30-20	450-450-25	1 3/8 x 2 1/2	TVL-3741	20-20-20-20	450-450-450-450	1 3/8 x 3	TVL-4763
40-40-40	450-450-25	1 3/8 x 3	TVL-3744.2	30-15-15-15	450-450-450-450	1 3/8 x 3	TVL-4766
80-40-100	450-450-25	1 3/8 x 4	TVL-3746	40-40-40-40	450-450-450-450	1 3/8 x 4	TVL-4775
10-10-40	450-450-50	1 x 2 1/2	TVL-3749	20-20-20-20	475-475-475-475	1 3/8 x 3	TVL-4834
30-10-150	450-450-50	1 3/8 x 2 1/2	TVL-3752	40-20-10-10	475-475-475-475	1 3/8 x 3	TVL-4840
40-40-100	450-450-50	1 3/8 x 3 1/2	TVL-3755	10-10-10-10	500-500-500-500	1 3/8 x 2	TVL-4940

# SPRAGUE CAPACITORS

## CERA-MITE\* CERAMIC CAPACITORS



- Tiny, Tough, Dependable In Every Application
- Low Self-inductance Of Silvered Flat-plate Design Means Very High By-pass Efficiency In All TV Circuits
- Flat-plate Construction Permits Higher Self-resonant Frequency Than Tubular Ceramic Or Molded Mica Capacitors
- Tough Moisture-proof Coating Protects Against Short-circuiting And Assures Good Performance Under Severe Conditions Of Humidity And Vibration
- Cera-mite Capacitors Easily Fit Into Tight Spaces, Even Across Subminiature Tube Sockets
- Designed For 85°C (185°F) Continuous Operation

\*Trademark

### GENERAL APPLICATION TYPES

- Excellent Where Temperature Coefficient Is Not Important, Such As By-pass and Coupling Applications
- Types Listed Below Are Disc Capacitors
- Ideal For Replacing Older Types Of General Application Capacitors Such as Molded Micacs, Tubular Ceramics, and Paper Tubulars

$\mu\mu\text{F}$	Cat. No.	$\mu\mu\text{F}$	Cat. No.	$\mu\mu\text{F}$	Cat. No.	$\mu\mu\text{F}$	Cat. No.	$\mu\mu\text{F}$	Cat. No.	$\mu\mu\text{F}$	Cat. No.
<b>400 WVDC</b>		39	5GA-Q39	750	5GA-T75	3.3	20GA-V33	4000	*20HK-D4	<b>5000 WVDC</b>	
Std. Tolerance $\pm 20\%$		47	5GA-Q47	800	5GA-T8	5	20GA-V5	5000	*20HK-D5	Std. Tolerances:	
10	4GA-Q1	50	5GA-Q5	820	5GA-T82	7.5	20GA-V75	6000	*20HK-D6	4.7 $\mu\mu\text{F} \pm 5\%$	
15	4GA-Q15	56	5GA-Q56	1000	5GA-D1	10	20GA-Q1	*High-K Types		thru 22 $\mu\mu\text{F} \pm 10\%$	
22	4GA-Q22	68	5GA-Q68	1200	5GA-D12	12	20GA-Q12	<b>3000 WVDC</b>		4.7 50GA-V47	
33	4GA-Q33	75	5GA-Q75	1300	5GA-D13	15	20GA-Q15	Std. Tolerances:		10 50GA-Q1	
47	4GA-Q47	82	5GA-Q82	1500	5GA-D15	18	20GA-Q18	1.5 $\mu\mu\text{F} \pm 25\%$		22 50GA-Q22	
68	4GA-Q68	91	5GA-Q91	1600	5GA-D16	20	20GA-Q2	4.7 $\mu\mu\text{F} \pm 5\%$		47 50GA-Q47	
100	4GA-T1	100	5GA-T1	1800	5GA-D18	22	20GA-Q22	thru 68 $\mu\mu\text{F} \pm 10\%$		100 50GA-T1	
150	4GA-T15	120	5GA-T12	2000	5GA-D2	33	20GA-Q33	thru 500 $\mu\mu\text{F} \pm 20\%$		220 50GA-T22	
220	4GA-T22	130	5GA-T13	2200	5GA-D22	39	20GA-Q39	1.5 30GA-V15		330 50GA-T33	
330	4GA-T33	150	5GA-T15	2500	5GA-D25	47	20GA-Q47	4.7 30GA-V47		500 50GA-T5	
470	4GA-T47	180	5GA-T18	2700	5GA-D27	56	20GA-Q56	10 30GA-Q1		<b>7500 WVDC</b>	
<b>1000 WVDC</b>		200	5GA-T2	3000	5GA-D3	62	20GA-Q62	12 30GA-Q12		Std. Tolerances:	
Std. Tolerance $\pm 20\%$		220	5GA-T22	3300	5GA-D33	68	20GA-Q68	15 30GA-Q15		4.7 $\mu\mu\text{F} \pm 5\%$	
5	5GA-V5	240	5GA-T24	3900	5GA-D39	75	20GA-Q75	25 30GA-Q25		thru 18 $\mu\mu\text{F} \pm 10\%$	
6	5GA-V6	250	5GA-T25	4000	5GA-D4	82	20GA-Q82	30 30GA-Q3		thru 470 $\mu\mu\text{F} \pm 20\%$	
7.5	5GA-V75	270	5GA-T27	4300	5GA-D43	100	20GA-T1	39 30GA-Q39		4.7 75GA-V47	
8	5GA-V8	300	5GA-T3	4700	5GA-D47	120	20GA-T12	50 30GA-Q5		8.2 75GA-V82	
10	5GA-Q1	330	5GA-T33	5000	5GA-D5	150	20GA-T15	60 30GA-Q6		10 75GA-Q1	
12	5GA-Q12	350	5GA-T35	10000	$\dagger$ 5GA-S1	180	20GA-T18	68 30GA-Q68		12 75GA-Q12	
15	5GA-Q15	360	5GA-T36	20000	$\dagger$ 5GA-S2	200	20GA-T2	100 30GA-T1		15 75GA-Q15	
18	5GA-Q18	390	5GA-T39	$\dagger$ 500 WVDC		220	20GA-T22	120 30GA-T12		18 75GA-Q18	
20	5GA-Q2	400	5GA-T4	<b>2000 WVDC</b>		300	20GA-T3	150 30GA-T15		20 75GA-Q2	
22	5GA-Q22	470	5GA-T47	Std. Tolerances:		330	20GA-T33	180 30GA-T18		22 75GA-Q22	
25	5GA-Q25	500	5GA-T5	thru 5MMF $\pm .5$ MMF,		390	20GA-T39	200 30GA-T2		30 75GA-Q3	
27	5GA-Q27	560	5GA-T56	thru 82 MMF $\pm 10\%$ ,		470	20GA-T47	220 30GA-T22		33 75GA-Q33	
30	5GA-Q3	600	5GA-T6	thru 1000 MMF $\pm 20\%$ ,		500	20GA-T5	250 30GA-T25		47 75GA-Q47	
33	5GA-Q33	680	5GA-T68	thru 6000 MMF MRC		1000	20GA-D1	270 30GA-T27		56 75GA-Q56	
								300 30GA-T3		100 75GA-T1	
								500 30GA-T5		470 75GA-T47	

#### DISC CERAMICS FOR AC APPLICATIONS

- Rated at 125 VAC
- Standard Capacitance Tolerance  $\pm 20\%$

$\mu\text{F}$	Cat. No.	$\mu\text{F}$	Cat. No.
.001	125L-D10	.01	125L-S10
.0015	125L-D15	.015	125L-S15
.002	125L-D20	.02	125L-S20
.0047	125L-D47	2 x .005	125L-2D50
.005	125L-D50	2 x .01	125L-2S10

#### DISC CERAMICS FOR BUFFER APPLICATIONS

- Rated at 2000 WVDC
- Standard Capacitance Tolerance  $\pm 20\%$

$\mu\text{F}$	Cat. No.	$\mu\text{F}$	Cat. No.
.001	BL-D10	.006	BL-D60
.002	BL-D20	.007	BL-D70
.003	BL-D30	.0075	BL-D75
.004	BL-D40	.008	BL-D80
.005	BL-D50	.01	BL-S10

#### DISC CERAMICS FOR TRANSISTORIZED CIRCUITRY

- Fit Crowded Spaces in Transistorized Sets.
- High-K Type for Coupling and By-Pass Applications.

$\mu\text{F}$	WVDC	Diam.	Cat. No.
.005	50	$\frac{1}{16}$	TG-D50
.01	50	$\frac{3}{16}$	TG-S10
.025	50	$\frac{1}{8}$	TG-S25
.05	50	$\frac{1}{4}$	TG-S50
.1	50	$\frac{3}{8}$	TG-P10

# SPRAGUE CAPACITORS

## CERA-MITE CERAMIC CAPACITORS, continued

### HIGH-K TYPES

- Designed for Minimum Capacitance Requirements
- For By-pass and Coupling, where Additional Capacitance is Not Important
- Disc Capacitors, Rated at 1000 WVDC

μF	Cat. No.	μF	Cat. No.
<b>SINGLE UNITS</b>			
		.02	5HK-S2
		.025	5HK-S25
		.03	5HK-S3
.001	5HK-D1	.05	†5HK-S5
.0015	5HK-D15	1	†5HK-P1
.002	5HK-D2	<b>DUAL UNITS</b>	
.0022	5HK-D22	2 x .001	5HK-2D1
.0025	5HK-D25	2 x .0015	5HK-2D15
		2 x .002	5HK-2D2
.0033	5HK-D33	2 x .0022	5HK-2D22
.004	5HK-D4	2 x .004	5HK-2D4
.0047	5HK-D47	2 x .0047	5HK-2D47
.005	5HK-D5	2 x .01	5HK-2S1
.0068	5HK-D68	2 x .02	†5HK-2S2
.01	5HK-S1	†500 WVDC	
.015	5HK-S15		

### NPO TYPES

- Zero Temperature-coefficient Capacitors
- Used Where Capacitance Change with Temperature is Undesirable
- Superior to Silvered-mica Types in Stability, High "Q", and Insulation Resistance
- Rated at 500 WVDC
- Units listed below are discs, except those marked with a star (\*), which are plate capacitors

μF	Cat. No.	μF	Cat. No.
1.0	★5TCCB-V1	33	5TCC-Q33
1.5	★5TCCB-V15	39	5TCC-Q39
2.2	★5TCCB-V22	47	5TCC-Q47
3.3	★5TCCB-V33	50	5TCC-Q5
4.7	★5TCCB-V47	68	5TCC-Q68
6.8	★5TCCB-V68	75	5TCC-Q75
		100	5TCC-T1
10	5TCC-Q1	120	5TCC-T12
15	5TCC-Q15	150	5TCC-T15
20	5TCC-Q2	175	5TCC-T175
22	5TCC-Q22	220	5TCC-T22
25	5TCC-Q25	270	5TCC-T27

### N750 TYPES

- Used For Temperature Compensation to Eliminate Frequency Drifts
- Negative Temperature Coefficient is 750 ppm/°C
- Often Used in Combination with NPO Types
- Rated at 500 WVDC
- Starred (★) Item is a Plate Capacitor. All others are Discs

μF	Cat. No.	μF	Cat. No.
5.0	★5TCCB-V5	68	5TCU-Q68
10	5TCU-Q1	75	5TCU-Q75
15	5TCU-Q15	100	5TCU-T1
20	5TCU-Q2	150	5TCU-T15
22	5TCU-Q22	200	5TCU-T2
25	5TCU-Q25	220	5TCU-T22
33	5TCU-Q33	330	5TCU-T33
47	5TCU-Q47		

# M I C A C A P A C I T O R S

- Each Mica Capacitor Section Receives a Radio Frequency Test Before Molding
- Careful Selection and Electrical Grading of Raw Mica Assures Maximum Quality

- Section Foils on Foil Micas are Connected to Terminals through Special Low-resistance R-F Bonds
- R-F Current Tested for Peak Ratings After Impregnation and Molding

### TYPES MS & 1FM



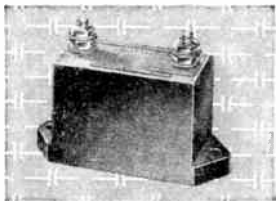
**TYPE MS—SILVERED MICA**  
(Standard Capacity Tolerance ±5%)

μF	Cat. No.	μF	Cat. No.	μF	Cat. No.
<b>500 WVDC 1000 V Test</b>					
.000005	MS-55	.000120	MS-312	.001300	MS-213
.000010	MS-41	.000130	MS-313	.001500	MS-215
.000012	MS-412	.000150	MS-315	.001600	MS-216
.000015	MS-415	.000160	MS-316	.001800	MS-218
.000018	MS-418	.000180	MS-318	.002000	MS-22
.000020	MS-42	.000200	MS-32	.002200	MS-222
.000022	MS-422	.000220	MS-322	.002400	MS-224
.000024	MS-424	.000240	MS-324	.002500	MS-225
.000025	MS-425	.000250	MS-325	.002700	MS-227
.000027	MS-427	.000270	MS-327	.003000	MS-23
.000030	MS-43	.000300	MS-33	.003300	MS-233
.000033	MS-433	.000330	MS-333	.003600	MS-236
.000036	MS-436	.000360	MS-336	.003900	MS-239
.000039	MS-439	.000390	MS-339	.004000	MS-24
.000040	MS-44	.000400	MS-34	.004300	MS-243
.000043	MS-443	.000430	MS-343	.004700	MS-247
.000047	MS-447	.000470	MS-347	.005000	MS-25
.000050	MS-45	.000500	MS-35	.005100	MS-251
.000051	MS-451	.000510	MS-351	.005600	MS-256
.000055	MS-455	.000560	MS-356	.006000	MS-26
.000060	MS-46	.000600	MS-36	.006200	MS-262
.000062	MS-462	.000620	MS-362	<b>300 WVDC 600 V Test</b>	
.000068	MS-468	.000680	MS-368	.006800	MS-268
.000070	MS-47	.000700	MS-37	.007000	MS-27
.000075	MS-475	.000750	MS-375	.007500	MS-275
.000082	MS-482	.000800	MS-39	.008000	MS-28
.000088	MS-488	.000910	MS-391	.008200	MS-282
.000091	MS-491	.001000	MS-21	.009000	MS-29
.000100	MS-31	.001100	MS-211	.009100	MS-291
.000110	MS-311	.001200	MS-212	.010000	MS-11
.000120	MS-312	.001300	MS-213	<b>MS and 1FM Dimensions</b>	
.000130	MS-313	.001500	MS-215	Cat. Nos.	L x W x T
				MS-55	1FM-41
				thru MS-356	thru 1FM-356
				MS-36	1FM-362
				thru MS-236	thru 1FM-236
				MS-239	1FM-239
				thru MS-282	thru 1FM-282
				MS-29	1FM-29
				thru MS-11	thru 1FM-11

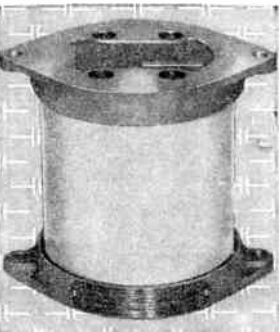
### OTHER MICA TYPES



TYPES 7FM, 8FM, 9FM



TYPES 1MC, 2MC



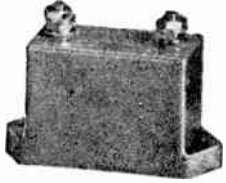
TYPES 1CC, 2CC, 3CC, 4CC

Sprague has a complete line of Mica Capacitors which include the types shown above, as well as ear-mounting types XFM, YFM, and ZFM. Consult Sprague C-612 for complete listings.

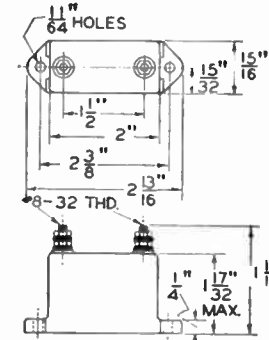


# SANGAMO CAPACITORS

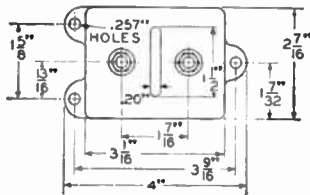
## TYPES F1, F2, F3 MICA CAPACITORS



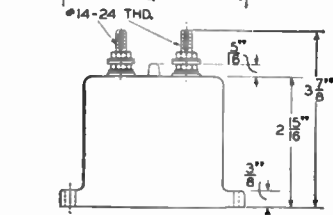
Types F1, F2, and F3 capacitors, the smallest of the Sangamo line of transmitting types, possess a range of voltage and current ratings suitable for many applications. They are housed in low loss molded bakelite cases. The mica and foil sections are permanently clamped, vacuum impregnated, and installed in the case in such a manner as to provide stable characteristics and adequate moisture proofing.



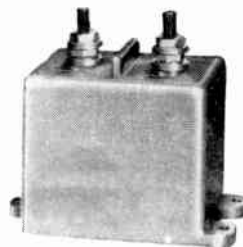
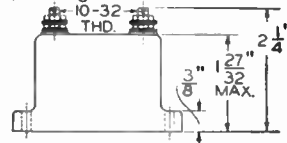
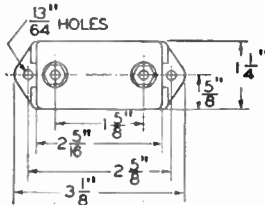
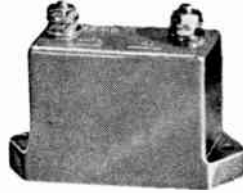
TYPE F1



TYPE F2



TYPE F3



## TYPE F1 MICA CAPACITORS

Catalog Number	Capacity Mfd.	Peak Wkg. Volts	List Price
F1-331	.0001	3000	\$12.60
F1-332	.0002	3000	12.60
F1-3325	.00025	3000	12.60
F1-335	.0005	3000	12.60
F1-321	.001	3000	12.60
F1-322	.002	3000	12.60
F1-223	.003	2000	12.60
F1-224	.004	2000	12.60
F1-225	.005	2000	12.60
F1-226	.006	2000	12.60
F1-1528	.008	1500	12.60
F1-111	.01	1000	12.60
F1-112	.02	1000	14.30
F1-0215	.05	250	14.30
F1-0201	.1	250	15.10

## TYPE F2 MICA CAPACITORS

Catalog Number	Capacity Mfd.	Peak Wkg. Volts	List Price
F2-531	.0001	5000	\$17.30
F2-5325	.00025	5000	17.30
F2-535	.0005	5000	17.30
F2-536	.0006	5000	17.30
F2-521	.001	5000	17.30
F2-522	.002	5000	17.30
F2-523	.003	5000	17.30
F2-325	.005	3000	17.30
F2-326	.006	3000	17.30
F2-211	.01	2000	17.30
F2-212	.02	2000	17.30
F2-1515	.05	1500	17.30
F2-0501	.1	500	19.20
F2-0202	.2	250	25.25
F2-02025	.25	250	27.90

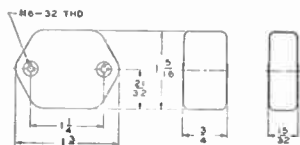
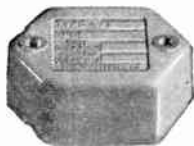
## TYPE F3 MICA CAPACITORS

Catalog Number	Capacity Mfd.	Peak Wkg. Volts	List Price
F3-8325	.00025	8000	\$35.25
F3-835	.0005	8000	35.25
F3-821	.001	8000	39.25
F3-822	.002	8000	39.25
F3-825	.005	8000	48.60
F3-811	.01	8000	55.20
F3-415	.05	4000	61.85
F3-201	.1	2000	48.60
F3-06025	.25	600	44.60
F3-0605	.5	600	52.55
F3-0610	1.0	600	81.85

Standard tolerance  $\pm 5\%$ , B characteristic. Inquiry should be directed to the factory for availability of capacities and voltages other than those listed above. Prices subject to change without notice.

## TYPE A

### MICA CAPACITORS



TYPE A

Catalog Number	Capacity Mfd.	List Price
600 W.V.D.C.—1200 T.V.D.C.		
A-T1450	.00005	\$1.45
A-T1310	.0001	1.45
A-T1315	.00015	1.45
A-T1320	.0002	1.45
A-T1325	.00025	1.45
A-T1350	.0005	1.45
A-T1210	.001	1.45
A-T1220	.002	1.65
A-T1225	.0025	1.70
A-T1230	.003	1.85
A-T1240	.004	2.00
A-T1250	.005	2.10
A-T1260	.006	2.20
A-T1280	.008	2.45
A-T1110	.01	2.80
A-T1115	.015	3.05
A-T1120	.02	3.55
A-T1125	.025	4.35
A-T1130	.03	4.55
A-K1140*	.04	5.85
A-K1150*	.05	7.10
A-K1160*	.06	8.05

Catalog Number	Capacity Mfd.	List Price
1200 W.V.D.C.—2500 T.V.D.C.		
A-T2450	.00005	\$1.60
A-T2310	.0001	1.60
A-T2315	.00015	1.60
A-T2320	.0002	1.60
A-T2325	.00025	1.60
A-T2350	.0005	1.60
A-T2210	.001	1.90
A-T2220	.002	2.50
A-T2225	.0025	2.0
A-T2230	.003	2.95
A-T2240	.004	3.10
A-T2250	.005	3.30
A-T2260	.006	3.45
A-T2280	.008	4.10
A-T2110	.01	4.70
A-K2115*	.015	5.80
A-K2125*	.02	7.05
A-K2125*	.025	7.90
A-K2130*	.03	8.10

Catalog Number	Capacity Mfd.	List Price
2500 W.V.D.C.—5000 T.V.D.C.		
A-T5450	.00005	\$1.90
A-T5310	.0001	1.90
A-T5325	.00025	2.15
A-T5350	.0005	2.55
A-T5210	.001	2.90
A-T5220	.002	4.25
A-T5225	.0025	4.60
A-T5230	.003	5.10
A-T5240	.004	5.65
A-K5250*	.005	6.20
A-K5260*	.006	6.35
A-K5280*	.008	6.85
A-K5110*	.01	7.30
A-K5115*	.015	8.05

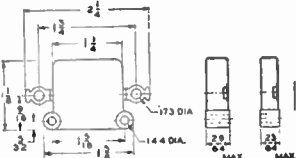
\* Thickness  $\frac{3}{4}$ " — Standard Insulators are available if desired. If .144" clearance holes are required, designate by adding letter "A" to Type No. (AA).

Standard tolerance  $\pm 10\%$ , B characteristic, unless otherwise specified. Inquiry should be directed to the factory as to the availability of capacities and voltages other than those listed above.

# SANGAMO CAPACITORS

## TYPE H

### MICA CAPACITORS



Catalog Number	Capacity Mfd.	List Price
<b>600 W.V.D.C.—1200 T.V.D.C.</b>		
H-T1450	.00005	\$1.20
H-T1310	.0001	1.20
H-T1320	.0002	1.20
H-T1325	.00025	1.20
H-T1330	.0003	1.20
H-T1340	.0004	1.20
H-T1350	.0005	1.20
H-T1210	.001	1.20
H-T1215	.0015	1.20
H-T1220	.002	1.30
H-T1225	.0025	1.30
H-T1230	.003	1.45
H-T1240	.004	1.50
H-T1250	.005	1.55
H-T1260	.006	1.80
H-T1270	.007	1.85
H-T1280	.008	1.90
H-T1110	.01	2.15
H-K1115*	.015	2.65
H-K1120*	.02	3.05
H-K1125*	.025	3.60
H-K1130*	.03	4.45

Catalog Number	Capacity Mfd.	List Price
<b>1200 W.V.D.C.—2500 T.V.D.C.</b>		
H-T2450	.00005	\$1.60
H-T2310	.0001	1.60
H-T2320	.0002	1.60
H-T2325	.00025	1.60
H-T2330	.0003	\$1.60
H-T2340	.0004	1.60
H-T2350	.0005	1.60
H-T2210	.001	1.80
H-T2215	.0015	2.30
H-T2220	.002	2.40
H-T2225	.0025	2.80
H-T2230	.003	3.05
H-K2240*	.004	3.05
H-K2250*	.005	3.30
H-K2260*	.006	3.30
H-K2280*	.008	3.85
H-K2110*	.01	5.10

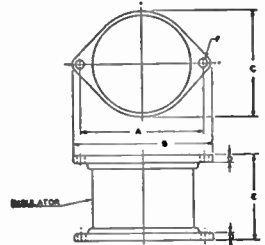
Catalog Number	Capacity Mfd.	List Price
<b>2500 W.V.D.C.—5000 T.V.D.C.</b>		
H-T5450	.00005	\$1.90
H-T5310	.0001	1.90
H-T5325	.00025	2.20
H-T5350	.0005	2.40
H-T5210	.001	2.80
H-T5215	.0015	3.55
H-K5220*	.002	4.15
H-K5230*	.003	4.90
H-K5240*	.004	5.65
H-K5250*	.005	6.40
H-T5330	.0003	2.25
H-T5320	.0002	1.90
H-T5340	.0004	2.30

\*Thickness 29/64". For meter mounting bracket add letter "E" to Type designation; if assembled add 30 cents to list price; if unassembled add 20 cents and specify case size.

Standard tolerance  $\pm 10\%$ , B Characteristic, unless otherwise specified. Inquiry should be directed to the factory as to the availability of capacities and voltages other than those listed above.



## TYPES G1, G2, G3 AND G4 MICA CAPACITORS



TYPE G1, 2, 3 and 4

### TYPE G1

Catalog Number	Capacity Mfd.	Peak Wkg. Volts	List Price
G1-641	.00001	6000	\$35.45
G1-645	.00005	6000	38.20
G1-631	.0001	6000	40.60
G1-632	.0002	6000	40.60
G1-634	.0004	6000	44.35
G1-635	.0005	6000	48.85
G1-621	.001	6000	46.65
G1-6215	.0015	6000	48.90
G1-622	.002	6000	48.90
G1-623	.003	6000	50.60
G1-624	.004	6000	50.60
G1-625	.005	6000	50.60
G1-526	.006	5000	51.45
G1-511	.01	5000	51.45
G1-4115	.015	4000	51.45
G1-312	.02	3000	51.45

### TYPE G3

Catalog Number	Capacity Mfd.	Peak Wkg. Volts	List Price
G3-2045	.00005	20000	\$110.90
G3-2031	.0001	20000	121.00
G3-2032	.0002	20000	131.10
G3-20325	.00025	20000	131.10
G3-2033	.0003	20000	131.10
G3-2035	.0005	20000	137.15
G3-2038	.0008	20000	137.15
G3-2021	.001	20000	141.15
G3-15215	.0015	15000	143.20
G3-1522	.002	15000	143.20
G3-1523	.003	15000	151.25
G3-1524	.004	15000	151.25
G3-1025	.005	10000	151.25
G3-1028	.008	10000	151.25
G3-1028	.008	10000	151.25
G3-1011	.01	10000	151.25
G3-512	.02	5000	151.25
G3-313	.03	3000	151.25

### TYPE G2

Catalog Number	Capacity Mfd.	Peak Wkg. Volts	List Price
G2-1031	.0001	10000	\$65.55
G2-10315	.00015	10000	65.55
G2-1032	.0002	10000	65.55
G2-10325	.00025	10000	65.55
G2-1035	.0005	10000	65.55
G2-1021	.001	10000	65.55
G2-10212	.0012	10000	65.55
G2-10215	.0015	10000	65.55
G2-1022	.002	10000	65.55
G2-823	.003	8000	65.55
G2-824	.004	8000	65.55
G2-525	.005	5000	65.55
G2-526	.006	5000	69.15
G2-511	.01	5000	69.15
G2-4115	.015	4000	69.15
G2-312	.02	3000	69.15

### TYPE G4

Catalog Number	Capacity Mfd.	Peak Wkg. Volts	List Price
G4-3043	.00003	30000	\$167.90
G4-3045	.00005	30000	167.90
G4-3031	.0001	30000	210.30
G4-30315	.00015	30000	210.30
G4-30325	.00025	30000	221.16
G4-3035	.0005	30000	221.16
G4-3038	.0008	30000	221.16
G4-3021	.001	30000	229.10
G4-25215	.0015	25000	229.10
G4-2022	.002	20000	229.10
G4-2023	.003	20000	229.10
G4-2024	.004	20000	234.35
G4-1525	.005	15000	242.00
G4-1526	.006	15000	252.25
G4-1228	.008	12000	260.00
G4-1011	.01	10000	272.44
G4-612	.02	6000	272.44
G4-514	.04	5000	272.44

Standard tolerance  $\pm 5\%$ , B characteristic.

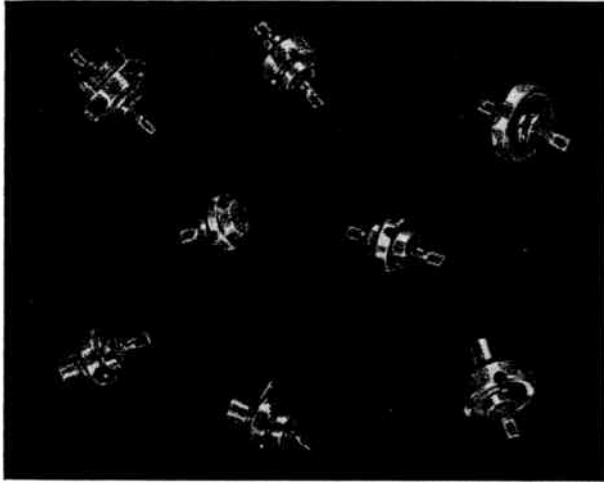
### TYPE G MICA CAPACITOR DIMENSIONS — INCHES

Type	A	B	C	D	E	F
G1	3 1/4	3 1/2	2 1/8	1/4	2 1/2	1 1/2
G2	4 1/4	5	3 1/2	1/4	3	.272
G3	5 1/4	6 1/2	5	3/8	4	.377
G4	5 1/4	6 1/2	5	1/2	5 1/2	.377
G5	8	9	6 3/4	1/2	10	.43

Inquiry as to the availability of capacities and voltages other than those listed above should be directed to the factory.

# SANGAMO CAPACITORS

## MICA CAPACITORS



### TYPE M Button Mica Capacitors

Small and light in weight, SANGAMO Type M silvered mica button capacitors are designed particularly for application in high frequency circuits. Their high "Q" is indicative of their low loss. These units meet all requirements for V.H.F. and U.H.F. applications, and are rigidly constructed to be electrically and mechanically stable.

The silver plated case design performs the dual purpose of shielding and being the low potential terminal. The high potential terminal through the center of the capacitor allows 360 degrees electrical current distribution, resulting in extremely low series inductance and more efficient performance in high frequency applications.

These Button Mica Capacitors are tested for dielectric strength and leakage at 1250 volts D.C. (working voltage 500 volts D.C. or 350 volts A.C.), are sealed against moisture, and the insulation resistance of each unit must be well over 10,000 megohms. Button mica capacitors with temperature coefficients and drift characteristics of W and X per the Joint Army-Navy specification MIL-C-10950A. The operating temperature range is from  $-50^{\circ}\text{C}$  to  $+85^{\circ}\text{C}$ . Their greatest application is found in military equipment.

# PAPER CAPACITORS

The SANGAMO "Telechief" is molded in HUMIDITITE to provide more stable capacity values, unsurpassed moisture resistance, excellent seal characteristic, and operation up to  $85^{\circ}\text{C}$ . temperature. Small in physical size, and rugged in construction, this tubular is especially adaptable to television, auto radio, small AC-DC set, and other uses. The leads are firmly imbedded in the hard plastic case and have been especially designed to resist breakage. The "Telechief" assures operating dependability under extremes of heat, humidity and physical stress.

### PLASTIC MOLDED TUBULAR



Catalog Number	Capacity mfd.	Working Volts D.C.	— Size — Dia. Len.	List Price
330221	.001	200	$\frac{1}{8}$ x 1	\$0.25
330225	.005	200	$\frac{1}{8}$ x 1	.25
330211	.01	200	$\frac{1}{8}$ x 1 1/2	.25
330212	.02	200	$\frac{1}{8}$ x 1 1/2	.25
3302147	.047	200	$\frac{1}{8}$ x 1 1/2	.30
330215	.05	200	$\frac{1}{8}$ x 1 1/2	.30
330201	.1	200	$\frac{1}{8}$ x 1 1/2	.35
3302015	.15	200	$\frac{1}{8}$ x 1 1/2	.35
3302022	.22	200	$\frac{1}{8}$ x 2	.40
3302025	.25	200	$\frac{1}{8}$ x 2	.45
3302047	.47	200	$\frac{1}{8}$ x 2	.60
330205	.5	200	$\frac{1}{8}$ x 2	.60
330210	1.0	200	1 x 2 1/2	.90
330421	.001	400	$\frac{1}{8}$ x 1	.25
33-425	.005	400	$\frac{1}{8}$ x 1	.25
330411	.01	400	$\frac{1}{8}$ x 1 1/2	.25
330412	.02	400	$\frac{1}{8}$ x 1 1/2	.25
3304122	.022	400	$\frac{1}{8}$ x 1 1/2	.25
3304147	.047	400	$\frac{1}{8}$ x 1 1/2	.30
330415	.05	400	$\frac{1}{8}$ x 1 1/2	.30
3304168	.068	400	$\frac{1}{8}$ x 1 1/2	.35
330401	.1	400	$\frac{1}{8}$ x 1 1/2	.35
3304015	.15	400	$\frac{1}{8}$ x 2	.35
330402	.2	400	$\frac{1}{8}$ x 2	.40
3304022	.22	400	$\frac{1}{8}$ x 2	.40
3304025	.25	400	$\frac{1}{8}$ x 2	.45
330405	.5	400	$\frac{1}{8}$ x 2	.60
330410	1.0	400	1 x 2 1/2	.90

Catalog Number	Capacity mfd.	Working Volts D.C.	— Size — Dia. Len.	List Price
330635	.0005	600	$\frac{1}{8}$ x 1	\$6.25
330621	.001	600	$\frac{1}{8}$ x 1	.25
3306215	.0015	600	$\frac{1}{8}$ x 1	.25
330622	.002	600	$\frac{1}{8}$ x 1	.25
3306222	.0022	600	$\frac{1}{8}$ x 1	.25
330623	.003	600	$\frac{1}{8}$ x 1	.25
330624	.004	600	$\frac{1}{8}$ x 1	.25
3306247	.0047	600	$\frac{1}{8}$ x 1	.25
330625	.005	600	$\frac{1}{8}$ x 1	.25
330626	.006	600	$\frac{1}{8}$ x 1 1/2	.25
33-6268	.0068	600	$\frac{1}{8}$ x 1 1/2	.30
330611	.01	600	$\frac{1}{8}$ x 1 1/2	.30
3306115	.015	600	$\frac{1}{8}$ x 1 1/2	.30
330612	.02	600	$\frac{1}{8}$ x 1 1/2	.30
3306122	.022	600	$\frac{1}{8}$ x 1 1/2	.30
330613	.03	600	$\frac{1}{8}$ x 1 1/2	.35
330614	.04	600	$\frac{1}{8}$ x 1 1/2	.35
3306147	.047	600	$\frac{1}{8}$ x 1 1/2	.40
330615	.05	600	$\frac{1}{8}$ x 1 1/2	.40
330616	.06	600	$\frac{1}{8}$ x 1 1/2	.40
330619	.1	600	$\frac{1}{8}$ x 2	.45
330602	.2	600	$\frac{1}{8}$ x 2	.55
3306025	.25	600	$\frac{1}{8}$ x 2	.55
330605	.5	600	1 x 2 1/2	.80
330610	1.0	600	1 1/2 x 2 1/2	1.25

NOTE: Additional capacity values in the 200 and 400 volt ratings can be supplied on request.

NOTE: Packaging: 20, 50, or 100 per display carton.

NOTE: Standard capacity tolerance:  
 .005 mfd. ....  $\pm 60\%$  — 25  
 .001 mfd. to .01 mfd. ....  $\pm 60\%$  — 20  
 .01 mfd. to .15 mfd. ....  $\pm 20\%$   
 .15 mfd. and up. ....  $\pm 20\%$  — 10





# SANGAMO CAPACITORS

## PAPER CAPACITORS

### TYPE 50



The Type 50 paper capacitors are primarily intended for bypass application. They are non-inductively wound, are supplied in fractional capacity values, and will provide efficient and continuous operation in R.F. and A.F. bypass, audio frequency coupling, and other A.C. circuits.

These units are impregnated and filled with mineral oil and may be operated under severe humidity conditions at temperatures up to +85°C. This type can also be supplied for operations up to +125°C.

#### 600 W.V. D.C.

Catalog Number	Capacity mfd.	Dimensions — Inches			List Price
		L	W	H	
5006-.05	.05	1 1/8	1	3/4	\$2.90
5006-.1	.1	1 1/8	1	3/4	2.95
5006-.25	.25	1 1/8	1	3/4	3.10
5006-.5	.5	1 1/8	1	1	3.30
5006-1	1.0	2	1 1/4	3/4	3.75
5006-2	2.0*	2	2	1 1/4	5.00
5006-.05x2	.05-.05	1 1/8	1	3/4	3.65
5006-.1x2	.1-.1	1 1/8	1	3/4	3.70
5006-.25x2	.25-.25	1 1/8	1	3/4	3.75
5006-.5x2	.5-.5	2	1 1/4	3/4	4.30
5006-1x2	1.0-1.0*	2	2	1 1/4	5.30
5006-1x3	.1-.1-1	1 1/8	1	3/4	4.20
5006-.25x3	.25-.25-.25	2	1 1/4	3/4	4.75
5006-.5x3	.5-.5-.5*	2	2	1 1/4	5.75

#### 1000 W.V. D.C.

Catalog Number	Capacity mfd.	Dimensions — Inches			List Price
		L	W	H	
5010-.05	.05	1 1/8	1	3/4	\$3.05
5010-.1	.1	1 1/8	1	3/4	3.15
5010-.25	.25	1 1/8	1	3/4	3.25
5010-.5	.5	2	1 1/4	3/4	3.55
5010-1	1.0*	2	2	1 1/4	4.40
5010-.05x2	.05-.05	1 1/8	1	3/4	3.85
5010-.1x2	.1-.1	1 1/8	1	3/4	4.00
5010-.25x2	.25-.25	2	1 1/4	3/4	4.20
5010-.5x2	.5-.5*	2	2	1 1/4	5.45
5010-1x3	.1-.1-1	2	1 1/4	3/4	4.80
5010-.25x3	.25-.25-.25*	2	2	1 1/4	5.50

NOTE: \*For bottom or top terminal, case size becomes 2" x 2" x 1 1/4"  
 NOTE: The above units built to comply with the electrical requirements of specification MIL-C-25A Style CP-53-54-55.  
 NOTE: Standard capacity tol. +20% —10%.

### TYPE 62-64



The Types 62 and 64 SANGAMO non-inductively wound paper capacitors are impregnated and filled with mineral oil and are hermetically sealed in seamless drawn-steel cases. The mineral oil impregnant assures dependable service between the wide temperature limits of —55°C. and +85°C. This type can also be supplied for operations up to +125°C. Standard capacitors are supplied with top terminals and brackets for upright mounting. When bottom terminals and inverted mounting are required, add the letter "B" to the end of the catalog number.

#### TYPE 62 PAPER CAPACITORS 600 W.V. D.C.

Catalog Number	Capacity mfd.	Dimensions inclgd. bracket			List Price
		L	W	H	
62B06-.01	.01	1 1/8	1 1/4	1 1/4	\$3.65
62B06-.05	.05	1 1/8	1 1/4	1 1/4	3.65
62B06-.1	.1	1 1/8	1 1/4	1 1/4	3.65
62B06-.25	.25	1 1/8	1 1/4	1 1/4	3.90
62C06-.5	.5	1 1/8	1 1/4	1 1/4	4.20
62A06-1	1.0	1 1/8	1 1/4	2 1/4	4.65
62A06-2	2.0	1 1/8	1 1/4	2 1/4	6.10

#### 1000 W.V. D.C.

Catalog Number	Capacity mfd.	Dimensions inclgd. bracket			List Price
		L	W	H	
62B10-.05	.05	1 1/8	1 1/4	1 1/4	\$3.75
62B10-.1	.1	1 1/8	1 1/4	1 1/4	4.00
62C10-.25	.25	1 1/8	1 1/4	1 1/4	4.20
62A10-.5	.5	1 1/8	1 1/4	2 1/4	4.45
62A10-1	1.0	1 1/8	1 1/4	2 1/4	5.20

#### TYPE 64 PAPER CAPACITORS 600 W.V. D.C.

Catalog Number	Capacity mfd.	Dimensions inclgd. bracket			List Price
		L	W	H	
64A06-.01	.01	2 1/8	1 1/4	2 1/4	\$3.55
64A06-.05	.05	2 1/8	1 1/4	2 1/4	3.55
64A06-.1	.1	2 1/8	1 1/4	2 1/4	3.55
64A06-.25	.25	2 1/8	1 1/4	2 1/4	3.85
64A06-.5	.5	2 1/8	1 1/4	2 1/4	4.10
64A06-1	1.0	2 1/8	1 1/4	2 1/4	4.70
64A06-2	2.0	1 1/8	1 1/4	2 1/4	6.05

#### 1000 W.V. D.C.

Catalog Number	Capacity mfd.	Dimensions inclgd. bracket			List Price
		L	W	H	
64A10.05	.05	2 1/8	1 1/4	2 1/4	\$3.70
64A10-.1	.1	2 1/8	1 1/4	2 1/4	3.95
64A10-.25	.25	2 1/8	1 1/4	2 1/4	4.15
64A10-.5	.5	2 1/8	1 1/4	2 1/4	4.40
64A10-1	1.0	1 1/8	1 1/4	2 1/4	5.15

NOTE: Not normally carried in stock. Available on special order only.  
 NOTE: The above units built to comply with the electrical requirements of specification MIL-C-25A.

### TYPE 40-41



The SANGAMO Types 40 and 41 diactor impregnated paper capacitors are ideal for use in high voltage filter applications.

Enclosed in aluminum containers, they facilitate convenient mounting to the chassis, an insulating washer and spade lug being provided for this purpose. In the Type 40 one connection is provided by an insulated terminal and the other is provided by the case. In the Type 41 both terminals are completely insulated from the case.

NOTE: These units built to comply with the electrical requirements of specification MIL-C-25A Style CP-40-41.

#### TYPE 40 PAPER CAPACITORS

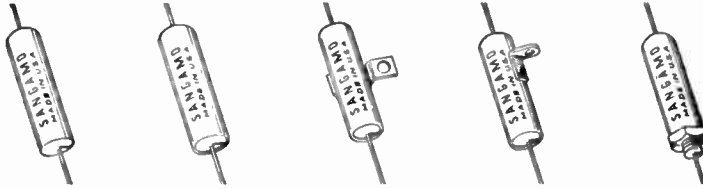
Catalog Number	Capacity mfd.	Working Volts D.C.	— Size —		List Price
			Dia.	Len.	
4006-1	1.	600	1 1/2	x 1 1/2	\$3.85
4006-2	2.	600	1 1/2	x 2 3/4	4.60
4006-4	4.	600	1 1/2	x 3 3/4	6.30
4010-1	1.	1000	1 1/2	x 2 3/4	4.20
4010-2	2.	1000	1 1/2	x 3 3/4	5.45
4015-.25	.25	1500	1 1/2	x 1 1/2	4.85
4015-.5	.5	1500	1 1/2	x 2 3/4	5.00
4015-1	1.	1500	1 1/2	x 3 3/4	5.45

#### TYPE 41 PAPER CAPACITORS

Catalog Number	Capacity mfd.	Working Volts D.C.	— Size —		List Price
			Dia.	Len.	
4108-1	1.	600	1 1/2	x 1 1/2	\$4.70
4108-2	2.	600	1 1/2	x 2 3/4	5.40
4108-4	4.	600	1 1/2	x 3 3/4	7.10
4110-1	1.	1000	1 1/2	x 2 3/4	5.00
4110-2	2.	1000	1 1/2	x 3 3/4	6.30
4115-.25	.25	1500	1 1/2	x 1 1/2	5.65
4115-.5	.5	1500	1 1/2	x 2 3/4	5.85
4115-1	1.	1500	1 1/2	x 3 3/4	6.30

# SANGAMO CAPACITORS

## SUBMINIATURE PAPER CAPACITORS IN HERMETICALLY SEALED TUBULAR METAL CANS . . . 125° C



### NUMBERING SYSTEM

**EXAMPLE: SB A 1 K 01 2 7 3 M**

Sangamo type. Identifies impregnant, operating temperature and element construction.

Sangamo design. Designates certain mechanical variations in cases.

Type of circuit.

Characteristic.

DC working voltage in hundreds.

Tolerance: K, ±10%; M, ±20%

Number of zeros preceding first significant figure of capacitance.

2nd significant figure of capacitance.

1st significant figure of capacitance.

\*Capacitance is specified in Mmf.

SANGAMO Types SB and SD are designed to meet the demands for a miniaturized, high quality, hermetically sealed paper tubular capacitor in applications where these factors are essential.

### MIL-C-25A

### CROSS REFERENCE

#### CAPACITOR SECTION INSULATED FROM CASE (FLOATING) GLASS TO METAL TERMINAL BOTH ENDS

Use SB Listing (Tab Construction)

(Mil type CP04)—Sangamo type SB basic unit un-insulated body. Order as SB-A1. Case sizes as listed. List prices as shown.

(Mil type CP05)—Sangamo type SB basic unit with plastic sleeve for insulated body. Add 1/16" to diameter and length. Add \$0.15 to list price. Order as SB-B1.

(Mil type CP10)—Sangamo type SB basic unit with soldered tangential bracket un-insulated body. Case sizes as listed. Add \$0.40 to list price. Order as SB-C1.

(Mil type CP11)—Sangamo type SB basic unit screw neck mounting un-insulated body minimum case diameter is .400". Add \$0.80 to list price. Order as SB-E1. Available in all SB ratings listed.

#### CAPACITOR SECTION GROUNDED TO CASE GLASS TO METAL TERMINAL AT ONE END

(Mil type CP04)—Sangamo type SB (tab construction) basic grounded unit. Deduct 1/16" from SB lengths shown, un-insulated body. Deduct \$1.00 each from list price. Order as SB-A3.

(Mil type CP05)—Sangamo type SB basic unit with plastic sleeve insulated body. Add 1/16" to diameter. Deduct \$0.85 from list price. Order as SB-B3.

(Mil type CP10)—Sangamo type SB basic unit with soldered-on tangential bracket, un-insulated body. Deduct 1/16" from length. Deduct \$0.60 from list price. Order as SB-C3.

(Mil type CP11)—Sangamo type SB basic unit screw neck mounting un-insulated body. Minimum case diameter. .400" available in all SB ratings listed. Deduct 1/16" from length. Deduct \$0.20 from list prices. Order as SB-E3.

#### CAPACITOR SECTION INSULATED FROM CASE (FLOATING) GLASS TO METAL TERMINAL BOTH ENDS

Use SD Listing (Extended Foil Construction)

(Mil type CP08)—Sangamo type SD basic unit un-insulated body. Use sizes and prices as shown. Order as SD-A1.

(Mil type CP09)—Sangamo type SD basic unit with plastic outer sleeve for insulated body. Add 1/16" to diameter and 1/16" to length. Add \$0.15 to list price. Order as SD-B1.

For soldered on tangential bracket on un-insulated body. Add \$0.40 each to list price. Order as SD-C1.

For soldered on L type bracket on un-insulated body. Add \$0.40 each to list price. Order as SD-D1.

For screw neck mounting type un-insulated body. Add \$0.80 each to list prices. Order as SD-E1.

#### CAPACITOR SECTION GROUNDED TO CASE GLASS TO METAL TERMINAL AT ONE END

Use SD Listing (Extended Foil Construction)

(Mil type CP08)—Sangamo type SD basic unit un-insulated body. Subtract 1/16" from SD lengths as shown. Deduct \$1.00 from list price. Order as SD-A3.

(Mil type CP09)—Sangamo type SD basic unit with plastic sleeve for insulated body. Add 1/16" to diameter. Deduct \$0.85 from list price. Order as SD-B3.

For soldered on tangential bracket on un-insulated body. Deduct \$0.60 from list price. Order as SD-D3. Deduct 1/16" from SD lengths shown.

For screw neck mounting type un-insulated body. Deduct \$0.20 from list price. Order as SD-E3. Deduct 1/16" from SD lengths shown.

100 VOLTS DC WORKING			
Cat. No.	Cap. mfd.	Dia. x Length	List Pr.
SBAIK01273	.027	.235 x 3/4	\$3.60
SBAIK01333	.033	.235 x 3/4	3.60
SBAIK01473	.047	.312 x 7/8	3.70
SBAIK01683	.068	.312 x 7/8	3.75
SBAIK01104	.1	.312 x 7/8	3.75
SBAIK01154	.15	.400 x 1 1/4	3.90
SBAIK01224	.22	.400 x 1 1/4	4.00
SBAIK01274	.27	.400 x 1 1/4	4.10
SBAIK01334	.33	.400 x 1 1/4	4.40
SBAIK01474	.47	.562 x 1 1/2	4.55
SBAIK01684	.68	.562 x 1 1/2	4.95
SBAIK01105	1.0	.562 x 1 1/2	5.15

200 VOLTS DC WORKING			
Cat. No.	Cap. mfd.	Dia. x Length	List Pr.
SBAIK02103	.01	.235 x 3/4	\$3.65
SBAIK02153	.015	.235 x 3/4	3.65
SBAIK02223	.022	.235 x 3/4	3.70
SBAIK02273	.027	.312 x 7/8	3.70
SBAIK02333	.033	.312 x 7/8	3.75
SBAIK02473	.047	.312 x 7/8	3.80
SBAIK02683	.068	.312 x 7/8	3.85
SBAIK02104	.1	.312 x 7/8	3.85
SBAIK02154	.15	.400 x 1 1/4	4.00
SBAIK02224	.22	.400 x 1 1/4	4.10
SBAIK02274	.27	.400 x 1 1/4	4.20
SBAIK02334	.33	.400 x 1 1/4	4.40
SBAIK02474	.47	.562 x 1 1/2	4.65
SBAIK02684	.68	.562 x 1 1/2	5.20
SBAIK02105	1.0	.670 x 1 1/2	5.50

400 VOLTS DC WORKING			
Cat. No.	Cap. mfd.	Dia. x Length	List Pr.
SBAIK04102	.001	.235 x 3/4	\$3.30
SBAIK04152	.0015	.235 x 3/4	3.40
SBAIK04222	.0022	.235 x 3/4	3.50
SBAIK04332	.0033	.235 x 3/4	3.60
SBAIK04472	.0047	.235 x 3/4	3.70
SBAIK04682	.0068	.235 x 3/4	3.80
SBAIK04103	.01	.235 x 3/4	3.85
SBAIK04153	.015	.235 x 3/4	3.85
SBAIK04223	.022	.312 x 7/8	3.85
SBAIK04273	.027	.312 x 7/8	3.85
SBAIK04333	.033	.312 x 7/8	3.90
SBAIK04473	.047	.400 x 1 1/4	3.95
SBAIK04683	.068	.400 x 1 1/4	4.00
SBAIK04104	.1	.400 x 1 1/4	4.05
SBAIK04154	.15	.562 x 1 1/2	4.20
SBAIK04224	.22	.562 x 1 1/2	4.30
SBAIK04274	.27	.562 x 1 1/2	4.90
SBAIK04334	.33	.562 x 1 1/2	4.95
SBAIK04474	.47	.700 x 1 1/2	5.05
SBAIK04684	.68	.750 x 2 1/4	5.50
SBAIK04105	1.0	1.00 x 1 1/2	6.10

600 VOLTS DC WORKING			
Cat. No.	Cap. mfd.	Dia. x Length	List Pr.
SBAIK06472	.0047	.235 x 3/4	\$3.75
SBAIK06682	.0068	.235 x 3/4	3.85
SBAIK06103	.01	.312 x 7/8	3.85
SBAIK06153	.015	.312 x 7/8	3.85
SBAIK06223	.022	.312 x 7/8	3.90
SBAIK06273	.027	.400 x 1 1/4	3.90
SBAIK06333	.033	.400 x 1 1/4	3.95
SBAIK06473	.047	.400 x 1 1/4	4.00
SBAIK06683	.068	.400 x 1 1/4	4.10
SBAIK06104	.1	.562 x 1 1/2	4.20
SBAIK06154	.15	.562 x 1 1/2	4.30
SBAIK06224	.22	.562 x 1 1/2	4.70
SBAIK06274	.27	.700 x 1 1/2	4.85
SBAIK06334	.33	.700 x 1 1/2	5.20
SBAIK06474	.47	.750 x 2 1/4	5.50

100 VOLTS DC WORKING			
Cat. No.	Cap. mfd.	Dia. x Length	List Pr.
SDAIK01332	.0033	.235 x 3/4	\$3.70
SDAIK01472	.0047	.235 x 3/4	3.80
SDAIK01103	.01	.235 x 3/4	3.95
SDAIK01153	.015	.235 x 3/4	3.95
SDAIK01223	.022	.312 x 7/8	4.00
SDAIK01333	.033	.312 x 7/8	4.05
SDAIK01473	.047	.312 x 7/8	4.15
SDAIK01683	.068	.400 x 1 1/4	4.20
SDAIK01104	.1	.400 x 1 1/4	4.20
SDAIK01154	.15	.400 x 1 1/4	4.40
SDAIK01274	.27	.562 x 1 1/2	4.60
SDAIK01334	.33	.562 x 1 1/2	5.00
SDAIK01474	.47	.562 x 1 1/2	5.15
SDAIK01684	.68	.670 x 1 1/2	5.60
SDAIK01105	1.0	.670 x 1 1/2	5.85

200 VOLTS DC WORKING			
Cat. No.	Cap. mfd.	Dia. x Length	List Pr.
SDAIK02222	.0022	.235 x 3/4	\$3.70
SDAIK02332	.0033	.235 x 3/4	3.80
SDAIK02472	.0047	.235 x 3/4	3.95
SDAIK02682	.0068	.235 x 3/4	4.00
SDAIK02103	.01	.312 x 7/8	4.10
SDAIK02153	.015	.312 x 7/8	4.10
SDAIK02223	.022	.312 x 7/8	4.15
SDAIK02333	.033	.312 x 7/8	4.20
SDAIK02473	.047	.400 x 1 1/4	4.25
SDAIK02683	.068	.400 x 1 1/4	4.30
SDAIK02104	.1	.400 x 1 1/4	4.35
SDAIK02154	.15	.400 x 1 1/4	4.50
SDAIK02224	.22	.562 x 1 1/2	4.65
SDAIK02274	.27	.562 x 1 1/2	4.75
SDAIK02334	.33	.562 x 1 1/2	4.95
SDAIK02474	.47	.700 x 1 1/2	5.25
SDAIK02684	.68	.750 x 2 1/4	5.90
SDAIK02105	1.0	.750 x 2 1/4	6.25

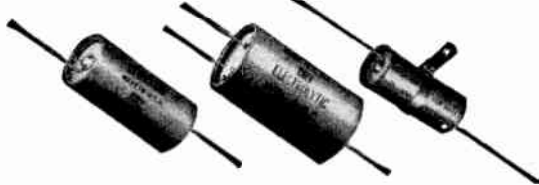
400 VOLTS DC WORKING			
Cat. No.	Cap. mfd.	Dia. x Length	List Pr.
SDAIK04222	.0022	.235 x 3/4	\$3.95
SDAIK04332	.0033	.235 x 3/4	4.05
SDAIK04472	.0047	.312 x 7/8	4.15
SDAIK04682	.0068	.312 x 7/8	4.25
SDAIK04103	.01	.312 x 7/8	4.30
SDAIK04153	.015	.312 x 7/8	4.30
SDAIK04223	.022	.400 x 1 1/4	4.35
SDAIK04333	.033	.400 x 1 1/4	4.40
SDAIK04473	.047	.400 x 1 1/4	4.45
SDAIK04683	.068	.400 x 1 1/4	4.50
SDAIK04104	.1	.562 x 1 1/2	4.55
SDAIK04154	.15	.562 x 1 1/2	4.75
SDAIK04224	.22	.562 x 1 1/2	4.85
SDAIK04274	.27	.700 x 1 1/2	5.55
SDAIK04334	.33	.700 x 1 1/2	5.65
SDAIK04474	.47	.750 x 2 1/4	5.75

600 VOLTS DC WORKING			
Cat. No.	Cap. mfd.	Dia. x Length	List Pr.
SDAIK06222	.0022	.235 x 3/4	\$4.00
SDAIK06332	.0033	.312 x 7/8	4.10
SDAIK06472	.0047	.312 x 7/8	4.20
SDAIK06682	.0068	.312 x 7/8	4.30
SDAIK06103	.01	.312 x 7/8	4.35
SDAIK06153	.015	.400 x 1 1/4	4.35
SDAIK06223	.022	.400 x 1 1/4	4.40
SDAIK06333	.033	.400 x 1 1/4	4.45
SDAIK06473	.047	.400 x 1 1/4	4.50
SDAIK06683	.068	.562 x 1 1/2	4.65
SDAIK06104	.1	.562 x 1 1/2	4.75
SDAIK06154	.15	.562 x 1 1/2	4.85
SDAIK06224	.22	.700 x 1 1/2	5.35
SDAIK06274	.27	.750 x 2 1/4	5.50
SDAIK06334	.33	.750 x 2 1/4	5.90
SDAIK06474	.47	.750 x 2 1/4	6.25

# SANGAMO CAPACITORS

## ELECTROLYTIC CAPACITORS

### TYPE MT-MTD-MTH



SANGAMO Type MT electrolytics are especially designed for television and other electronic applications where operation at 85°C. temperatures is required. They are hermetically sealed in round aluminum containers which are encased in heavy insulating sleeves on which polarity is clearly indicated. Being small in physical size they are most popular where mounting in limited space is required — They will fit anywhere and can be mounted in almost any position.

Catalog Number	Single Units		— Size — Dia. Len.	List Price
	Capacity mfd.	Working Volts D.C.		
MT-0210	10	25	3/8 x 1 1/2	\$1.00
MT-0220	20	25	3/8 x 1 3/8	1.00
MT-0225	25	25	3/8 x 1 3/8	1.00
MT-0250	50	25	3/8 x 1 3/8	1.10
MT-02100	100	25	3/8 x 1 3/8	1.17
MT-0502	2	50	3/8 x 1 3/8	1.00
MT-0504	4	50	3/8 x 1 3/8	1.00
MT-0510	10	50	3/8 x 1 3/8	1.00
MT-0520	20	50	3/8 x 1 3/8	1.05
MT-0525	25	50	3/8 x 1 3/8	1.05
MT-0550	50	50	3/8 x 1 3/8	1.20
MT-05100	100	50	3/8 x 1 3/8	1.72
MT-1504	4	150	3/8 x 1 3/8	1.00
MT-1508	8	150	3/8 x 1 3/8	1.05
MT-1510	10	150	3/8 x 1 3/8	1.15
MT-1512	12	150	3/8 x 1 3/8	1.10
MT-1516	16	150	3/8 x 1 3/8	1.15
MT-1520	20	150	3/8 x 1 3/8	1.20
MT-1530	30	150	3/8 x 1 3/8	1.30
MT-1540	40	150	3/8 x 1 3/8	1.35
MT-1550	50	150	3/8 x 1 3/8	1.40
MT-1580	80	150	1 x 1 1/2	1.65
MT-15100	100	150	1 x 2 1/2	1.75
MT-15150	150	150	1 x 2 3/4	2.00
MT-2504	4	250	3/8 x 1 3/8	1.15
MT-2508	8	250	3/8 x 1 3/8	1.15
MT-2512	12	250	3/8 x 1 3/8	1.25
MT-2516	16	250	3/8 x 1 3/8	1.30
MT-2520	20	250	3/8 x 1 3/8	1.35
MT-2530	30	250	3/8 x 1 3/8	1.55
MT-2540	40	250	3/8 x 2 3/8	1.55

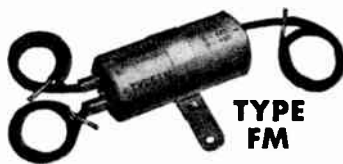
MT-25100	100	250	1 x 2 3/4	2.45
MT-3508	8	350	3/8 x 1 3/8	1.20
MT-3512	12	350	3/8 x 1 3/8	1.30
MT-3516	16	350	3/8 x 1 3/8	1.40
MT-4502	2	450	3/8 x 1 3/8	1.15
MT-4504	4	450	3/8 x 1 3/8	1.15
MT-4508	8	450	3/8 x 1 3/8	1.25
MT-4510	10	450	3/8 x 1 3/8	1.30
MT-4512	12	450	3/8 x 1 3/8	1.35
MT-4516	16	450	3/8 x 1 3/8	1.40
MT-4520	20	450	1 x 1 1/2	1.55
MT-4530	30	450	1 x 2 1/4	1.70
MT-4540	40	450	1 x 2 3/4	1.80
MT-4550	50	450	1 x 2 3/4	1.90
MT-4580	80	450	1 x 3 1/4	2.25
MT-4710	10	475	3/8 x 1 3/8	1.35
MT-4720	20	475	1 x 1 3/8	1.60

### Dual Units

MTD-0210	10-10	25	3/8 x 1 1/2	\$1.40
MTD-0220	20-20	25	3/8 x 1 1/2	1.40
MTD-0510	10-10	50	3/8 x 1 3/8	1.40
MTD-301	50-30	150	1 x 1 1/2	1.95
MTD-302	40-20	150	1 x 1 1/2	1.75
MTD-303	80-40	150	1 x 2 1/4	2.25
MTD-304	40-30	150	1 x 1 1/2	1.80
MTD-305	30-20	150	3/8 x 1 1/2	1.70
MTD-1508	8-8	150	3/8 x 1 3/8	1.50
MTD-1516	16-16	150	3/8 x 1 3/8	1.80
MTD-1520	20-20	150	3/8 x 1 3/8	1.65
MTD-1530	30-30	150	3/8 x 1 3/8	1.80
MTD-1540	40-40	150	1 x 1 1/2	1.85
MTD-1550	50-50	150	1 x 2 1/4	2.10
MTD-2516	16-16	250	1 x 1 1/2	1.70
MTD-2520	20-20	250	1 x 1 1/2	1.85
MTD-3520	20-20	350	1 x 2 3/4	2.25
MTD-308	8-16	450	1 x 1 3/8	2.00
MTD-4508	8-8	450	3/8 x 1 3/8	1.70
MTD-4510	10-10	450	1 x 1 1/2	1.85
MTD-4520	20-20	450	1 x 2 3/4	2.50
MTD-4530	30-30	450	1 x 3 1/4	3.10
MTD-4540	40-40	450	1 x 3 1/4	3.35
MTH-0610	100	6	3/8 x 1 1/2	\$1.20
MTH-0625	250	6	3/8 x 1 1/2	1.35
MTH-0650	500	6	3/8 x 2 1/8	1.55
MTH-06100	1000	6	1 x 1 1/2	1.90
MTH-06150	1500	6	1 x 2 1/8	2.10
MTH-1210	100	12	3/8 x 1 1/2	1.20
MTH-1225	250	12	3/8 x 1 1/2	1.45
MTH-1250	500	12	3/8 x 2 1/8	1.70
MTH-1510	100	15	3/8 x 1 1/2	1.25
MTH-1525	250	15	3/8 x 1 1/2	1.55
MTH-1550	500	15	3/8 x 2 1/8	1.75
MTH-2510	100	25	3/8 x 1 1/2	1.35
MTH-2525	250	25	3/8 x 1 1/2	1.70
MTH-2550	500	25	1 x 2 1/8	2.30
MTH-5010	100	50	3/8 x 1 1/2	1.40

NOTE: Dimensions are for metal tubes. Add 1/8" to diameter and 1/8" to length for dimensions over cardboard insulating tube.

NOTE: Packaging 10, 25, or 50 capacitors per display carton.



### TYPE FM

The SANGAMO Type FM electrolytic capacitors are similar in design to the Type MT in every respect except leads. The Type FM is equipped with flexible, insulated wire leads and stud terminals eliminating the problem of crossed wires and the necessity for the use of insulating sleeves.

Catalog Number	Dual Units		— Size — Dia. Len.	List Price
	Capacity mfd.	Working Volts D.C.		
FMD-0210	10-10	25	3/8 x 1 1/2	\$1.40
FMD-0220	20-20	25	3/8 x 1 1/2	1.40
FMD-0510	10-10	50	3/8 x 1 3/8	1.40
FMD-301	50-30	150	1 x 1 1/2	1.95
FMD-302	40-20	150	1 x 1 1/2	1.75
FMD-303	80-40	150	1 x 2 1/4	2.20
FMD-304	40-30	150	1 x 1 1/2	1.80
FMD-305	30-20	150	3/8 x 1 1/2	1.70
FMD-1508	8-8	150	3/8 x 1 3/8	1.50
FMD-1516	16-16	150	3/8 x 1 3/8	1.80
FMD-1520	20-20	150	3/8 x 1 3/8	1.65
FMD-1530	30-30	150	3/8 x 1 3/8	1.80
FMD-1540	40-40	150	1 x 1 1/2	1.85
FMD-1550	50-50	150	1 x 2 1/4	2.10
FMD-2516	16-16	250	1 x 1 1/2	1.65
FMD-2520	20-20	250	1 x 1 1/2	1.85
FMD-3520	20-20	350	1 x 2 3/4	2.35
FMD-308	8-16	450	1 x 1 3/8	2.00
FMD-4508	8-8	450	3/8 x 1 3/8	1.70
FMD-4510	10-10	450	1 x 1 1/2	2.50
FMD-4520	20-20	450	1 x 2 3/4	2.50
FMD-4530	30-30	450	1 x 3 1/4	3.00
FMD-4540	40-40	450	1 x 3 1/4	3.35

Catalog Number	Triple Units		— Size — Dia. Len.	List Price
	Capacity mfd.	Working Volts D.C.		
FMT-310	40-20-20	150	3/8 x 2 1/2	\$2.25
FMT-312	40-30-20	150	3/8 x 2 1/2	2.35
FMT-315	50-30-20	150	1 x 2 1/2	2.45
FMT-1520	20-20-20	150	3/8 x 1 3/8	2.20
FMT-1530	30-30-30	150	3/8 x 2 1/2	2.35
FMT-1540	40-40-40	150	1 x 2 1/2	2.45
FMT-317	20-20-20	150/25	3/8 x 1 3/8	1.95
FMT-321	40-20/20	150/25	1 x 1 3/8	2.05

### TYPE MMT

### MINIATURE TUBULARS



SANGAMO Type MMT miniature tubular electrolytic capacitors are designed for use in miniaturized equipment and are ideally suited to meet the precise operating requirements of low voltage circuits.

Catalog Number	Capacity mfd.	Working Volts D.C.	— Size —		List Price
			Dia.	Len.	
MMT-605	5	6	3/8	1 1/8	\$0.80
MMT-0510	5	50	3/8	1 1/8	1.00
MMT-0210	10	10	3/8	1 1/8	1.00
MMT-0510	10	50	3/8	1 1/8	1.00
MMT-0220	20	25	3/8	1 1/8	1.00
MMT-325	25	3	3/8	1 1/8	.85
MMT-625	25	6	3/8	1 1/8	.85
MMT-350	50	3	3/8	1 1/8	.95
MMT-650	50	6	3/8	1 1/8	.95
MMT-1505	5	150	3/8	1 1/8	1.00
MMT-4501	1	450	3/8	1 1/8	1.00
MMT-680	80	6	1/2	1 1/4	.90
MMT-0240	40	25	3/8	1 1/4	1.00
MMT-0520	20	50	3/8	1 1/4	1.00
MMT-1508	8	150	3/8	1 1/4	1.00
MMT-3003	3	300	3/8	1 1/4	1.00
MMT-4502	2	450	3/8	1 1/4	1.00
MMT-610	10	6	3/8	1 1/4	1.00
MMT-0250	50	25	3/8	1 1/4	.90
MMT-0530	30	50	3/8	1 1/4	.90
MMT-1510	10	150	3/8	1 1/4	1.00
MMT-4503	3	450	3/8	1 1/4	1.00

NOTE: Diagram dimensions are for metal tubes. Add 1/8 inch to diameter and 1/8 inch to length for dimensions over cardboard insulating tube.

# SANGAMO CAPACITORS

## ELECTROLYTIC CAPACITORS

### TYPE CS



The SANGAMO Type CS electrolytic capacitors are contained in wax-filled cardboard tubes with insulated leads approximately 8 inches in length extending from both ends of the unit. Capacity, voltage and polarity of each section is clearly indicated by color of the lead wires; coding information necessary to identify the individual sections is clearly stamped on the tube. Each unit is supplied with a mounting strap to facilitate mounting to the chassis.

#### Dual Common Negative Units

Catalog Number	Capacity mfd.	Working Volts D.C.	— Size — Dia. Len.	List Price
CSD-0210	10-10	25	1/2 x 2 1/2	\$1.40
CSD-0510	10-10	50	1/2 x 2 1/2	1.40
CSD-1508	8-8	150	1/2 x 2 1/2	1.50
CSD-1516	16-16	150	1/2 x 2 1/2	1.80
CSD-1520	20-20	150	1/2 x 2 1/2	1.85
CSD-500	30-20	130	1/2 x 2 1/2	1.70
CSD-1530	30-30	150	1/2 x 2 1/2	1.80
CSD-505	40-20	150	1 x 2 1/2	1.75
CSD-506	40-30	150	1 x 2 1/2	1.80
CSD-1540	40-40	150	1 x 2 1/2	1.85
CSD-512	50-30	150	1 x 2 1/2	1.95
CSD-1550	50-50	150	1 x 3	2.10
CSD-2516	16-16	250	1 x 2 1/2	1.75
CSD-4508	8-8	450	1 x 2 1/2	1.70
CSD-522	8-16	450	1 x 2 1/2	2.00
CSD-4520	20-20	450	1 x 3	2.50

#### Dual Separate Sections

Catalog Number	Capacity mfd.	Working Volts D.C.	— Size — Dia. Len.	List Price
CSS-1520	20-20	150	1 x 2 1/2	\$2.05
CSS-4508	8-8	450	1 x 3 1/2	2.15
CSS-4516	16-16	450	1 1/4 x 3 1/2	2.80

#### Triple Common Negative Units

Catalog Number	Capacity mfd.	Working Volts D.C.	— Size — Dia. Len.	List Price
CST-1520	20-20-20	150	1 x 2 1/2	\$2.20
CST-523	40-20-20	150	1 x 2 1/2	2.25
CST-524	40-30-20	150	1 x 2 1/2	2.35
CST-1540	40-40-40	150	1 x 3 1/2	2.45
CST-526	20-20-20	150-150-25	1 x 2 1/2	2.05
CST-527	40-20-20	150-150-25	1 x 2 1/2	2.15
CST-528	40-30-20	150-150-25	1 x 2 1/2	2.20
CST-532	50-30-20	150-150-25	1 x 2 1/2	2.35
CST-533	50-30-100	150-150-25	1 x 3 1/2	2.55
CST-534	80-40-20	150-150-25	1 x 3 1/2	2.60
CST-535	12-12-20	450-450-25	1 x 2 1/2	2.30
CST-537	20-20-20	450-450-25	1 1/4 x 3 1/2	2.90

NOTE: Packaging: 10, 25, or 50 per display carton.

### COLOR CODE OF WIRE LEADS FOR TYPES FM, CS, AND SL CAPACITORS

Black	Common negative
Orange	Positive, highest voltage or capacity
Red	Positive, next highest voltage or capacity
Blue	Positive, next highest voltage or capacity
Yellow	Positive, next highest voltage or capacity
Brown	Negative, in separate section unit

NOTE: Lead colors are determined by the rated working voltages. Where there are two or more sections of different voltages and the same capacity, the lead color will designate the voltage; with the same voltages and unequal capacities, the lead color will designate the capacity. If there are two sections with equal capacities and voltages the two lead wires will be in the same color.

NOTE: Based upon proposed R.T.A.A. Color code.

## TYPE EM and MJL MOTOR STARTING CAPACITORS

SANGAMO type EM and MJL electrolytic capacitors are standard universal replacements for all motor starter type presently in use, and their dimensions are comparable in every respect. The type EML is with solder terminals, the type EMS being equipped with screw types; otherwise the two units are identical in construction and operational characteristics. Insulating tubes are supplied with both types. The MJL is provided with solder lug terminals and plastic case. Bracket and end caps can be supplied.

#### TYPE EML



#### TYPE EMS



#### TYPE MJL



EML & EMS Catalog Number	Cap. Range	Can size less insulating tube	List Price	MJL Cat. No.	Cap. Range	Case Size	List Price
<b>110 VOLTS A.C.</b>							
EML-EMS-1153	53-64	1 1/2 x 3 1/4	\$2.15	MJL-1153	53-64	1 1/8 x 2 1/2	\$2.15
EML-EMS-1164	64-77	1 1/2 x 3 1/4	2.25	MJL-1164	64-77	1 1/8 x 2 1/2	2.25
EML-EMS-1172	72-88	1 1/2 x 3 1/4	2.30	MJL-1172	72-88	1 1/8 x 2 1/2	2.30
EML-EMS-1188	88-108	1 1/2 x 3 1/4	2.60	MJL-1188	88-108	1 1/8 x 2 1/2	2.60
EML-EMS-11108	108-130	1 1/2 x 3 1/4	2.85	MJL-11108	108-130	1 1/8 x 3 1/2	2.85
EML-EMS-11124	124-149	1 1/2 x 3 1/4	2.95	MJL-11124	124-149	1 1/8 x 3 1/2	2.95
EML-EMS-11130	130-156	1 1/2 x 3 1/4	3.25	MJL-11130	130-156	1 1/8 x 3 1/2	3.20
EML-EMS-11145	145-175	1 1/2 x 3 1/4	3.25	MJL-11145	145-175	1 1/8 x 3 1/2	3.20
EML-EMS-11161	161-193	1 1/2 x 3 1/4	3.25	MJL-11161	161-193	1 1/8 x 3 1/2	3.25
EML-EMS-11189	189-227	2 x 3 1/4	3.75	MJL-11189	189-227	1 1/8 x 3 1/2	3.75
EML-EMS-11216	216-259	2 x 3 1/4	4.05	MJL-11216	216-259	1 1/8 x 3 1/2	4.05
EML-EMS-11233	233-290	2 x 3 1/4	4.40	MJL-11243	233-290	1 1/8 x 3 1/2	4.70
EML-EMS-11243	243-290	2 x 3 1/4	4.70	MJL-11243	243-292	1 1/8 x 3 1/2	4.70
EML-EMS-11270	270-324	2 x 3 1/4	4.75	MJL-11270	270-324	1 1/8 x 3 1/2	4.75
EML-EMS-11340	340-408	2 x 3 1/4	5.70	MJL-11340	340-408	2 1/8 x 3 1/2	5.40
EML-EMS-11378	378-440	2 x 3 1/4	6.00	MJL-11378	378-440	2 1/8 x 3 1/2	6.00
EML-EMS-11400	400-480	2 x 3 1/4	6.05	MJL-11400	400-480	2 1/8 x 4 1/2	6.05
EML-EMS-11430	430-516	2 x 3 1/4	6.15	MJL-11430	430-516	2 1/8 x 4 1/2	6.85
EML-EMS-11460	460-552	2 x 3 1/4	6.55	MJL-11460	460-552	2 1/8 x 4 1/2	7.50
EML-EMS-11540	540-648	2 x 4 1/4	6.75	MJL-11540	540-648	2 1/8 x 4 1/2	8.10
EML-EMS-11590	590-708	2 x 4 1/4	6.80	MJL-11590	590-708	2 1/8 x 4 1/2	9.00
<b>220 VOLTS A.C.</b>							
EML-EMS-2221	21-25	1 1/2 x 2 1/2	\$2.96	MJL-2221	21-25	1 1/8 x 2 1/2	\$2.91
EML-EMS-2225	25-30	1 1/2 x 2 1/2	3.40	MJL-2225	25-30	1 1/8 x 2 1/2	3.80
EML-EMS-2230	30-36	1 1/2 x 3 1/4	3.84	MJL-2230	30-36	1 1/8 x 2 1/2	4.30
EML-EMS-2236	36-43	1 1/2 x 3 1/4	4.35	MJL-2236	36-43	1 1/8 x 3 1/2	4.55
EML-EMS-2243	43-53	1 1/2 x 3 1/4	4.60	MJL-2243	43-53	1 1/8 x 3 1/2	5.19
EML-EMS-2247	47-56	1 1/2 x 4 1/4	5.24	MJL-2247	47-56	1 1/8 x 3 1/2	5.55
EML-EMS-2253	53-64	1 1/2 x 4 1/4	5.24	MJL-2253	53-64	1 1/8 x 3 1/2	5.75
EML-EMS-2264	64-77	1 1/2 x 4 1/4	6.75	MJL-2264	64-77	1 1/8 x 3 1/2	6.75
EML-EMS-2272	72-88	2 x 3 1/4	7.00	MJL-2272	72-88	1 1/8 x 3 1/2	7.00
EML-EMS-2288	88-108	2 x 3 1/4	7.65	MJL-2288	88-108	2 1/8 x 3 1/2	7.65
EML-EMS-22108	108-130	2 x 4 1/4	8.00	MJL-22108	108-130	2 1/8 x 4 1/2	8.00
EML-EMS-22124	124-149	2 x 4 1/4	8.40	MJL-22124	124-149	2 1/8 x 4 1/2	8.40
EML-EMS-22130	130-156	2 x 4 1/4	9.00	MJL-22130	130-156	2 1/8 x 4 1/2	9.00
EML-EMS-22145	145-175	2 1/2 x 4 1/4	9.60	MJL-22145	145-175	2 1/8 x 4 1/2	9.60
EML-EMS-22161	161-193	2 1/2 x 4 1/4	10.15				

# SANGAMO CAPACITORS

## ELECTROLYTIC CAPACITORS

### TYPE BTE



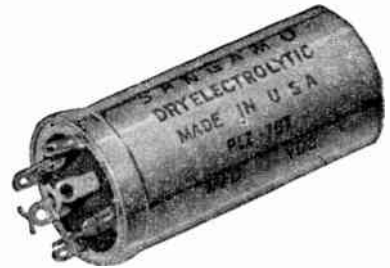
The SANGAMO Type BTE electrolytic capacitor is ideally suited for filter and bypass circuits in marine, aircraft, geophysical and many other applications. The Type BTE cartridges are first sealed in aluminum tubes and then encased in sturdy corrosion-resistant, hot tinned steel cases providing a complete hermetic seal under extremes of weather conditions. All units are equipped with glass-to-metal sealed terminals. Mounting flanges with 3/16" holes are provided at each end.

Catalog Number	Capacity mfd.	Working Volts D.C.	—Size—			List Price
			W	L	H	
BTE-0225	25	25	1	1 1/2	3/8	\$4.50
BTE-0250	50	25	1	1 1/2	3/8	4.60
BTE-0275	75	25	1	1 1/2	3/8	4.65
BTE-0525	25	50	1	1 1/2	3/8	4.55
BTE-0550	50	50	1	1 1/2	3/8	4.70
BTE-1510	10	150	1	1 1/2	3/8	4.65
BTE-1520	20	150	1	1 1/2	3/8	4.70
BTE-2510	10	250	1	1 1/2	3/8	4.50
BTE-2512	12	250	1	1 1/2	3/8	4.65
BTE-3508	8	350	1	1 1/2	3/8	4.75
BTE-4504	4	450	1	1 1/2	3/8	5.50

Designed and fabricated to conform to all physical and performance requirements of the CE63 style capacitor of Joint Armed Services Specification MIL-C-62A.

Similar design in case styles CE61, CE62, and CE64 may be furnished upon request.

### TYPE PL



FOR TELEVISION AND OTHER ELECTRONIC APPLICATIONS . . .

The SANGAMO Type PL electrolytic capacitors are specially designed for all television and electronic applications requiring long life and dependable performance at 85°C under conditions of extreme ripple currents and high surge voltages. They are sealed in round aluminum cans and have twist-prong tabs for washer or direct chassis mounting. The capacitor element current carrying tabs are securely clamped and staked to the terminal lugs, providing permanent, low resistance connections. In all cases the aluminum can is negative and the mounting ring provides the negative electrical connection.

The Type PL has been specially engineered for the rigid TV replacement applications found in all of the leading television receivers manufactured in the industry.

Over 1250 capacity and voltage combinations available in single, dual, triple, and quadruple construction. Also available with special terminal designs for printed circuit applications.

### TYPE SL



Designed primarily as replacements for wet electrolytics, the Type SL electrolytic capacitors are assembled in round aluminum cans with threaded necks providing easy mounting to a chassis with the aid of a palmnut which is supplied. The Type SL is completely insulated from the container, the negative connection being made to one of the insulated leads extending through the threaded neck of the can.

#### Single Section

Catalog Number	Capacity mfd.	Wkg. Volts D.C.	— Size —		List Price
			Dia.	Len.	
SL-2512	12	250	1	x 2 1/2	\$1.75
SL-2525	25	250	1	x 3 1/2	1.95
SL-4508	8	450	1 3/8	x 2 1/2	2.20
SL-4512	12	450	1 3/8	x 2 1/2	2.40
SL-4516	16	450	1 3/8	x 2 1/2	2.45
SL-4520	20	450	1 3/8	x 2 1/2	2.70
SL-4530	30	450	1 3/8	x 3 1/2	3.00
SL-4540	40	450	1 3/8	x 4 1/4	3.15

#### Common Negative Section

Catalog Number	Capacity mfd.	Wkg. Volts D.C.	— Size —		List Price
			Dia.	Len.	
SLD-4508	8-8	450	1 3/8	x 3 1/2	\$3.00
SLD-4516	16-16	450	1 3/8	x 3 1/2	3.55
SLT-4508	8-8-8	450	1 3/8	x 3 1/2	5.00

#### High Voltage, Series Wound Sections

Catalog Number	Capacity mfd.	Wkg. Volts D.C.	— Size —		List Price
			Dia.	Len.	
SL-6004	4	600	1 3/8	x 3 1/2	\$2.95
SL-6008	8	600	1 3/8	x 4 1/4	3.15
SL-6016	16	600	1 3/8	x 4 1/4	3.75

### TYPE TS



Ideally suited for all applications where quick capacitor changes are required, the SANGAMO Type TS units are equipped with a four-pin octal base mounting for use with standard octal base tube sockets. The special design of the bakelite octal base insures that the aluminum container will not contact the mounting surface and the connections to the brass pin terminals are imbedded in this bakelite base. The base pins are nickel-plated to prevent corrosion and insure good contact with the socket terminals.

#### Single Section

Catalog Number	Capacity mfd.	Wkg. Volts D.C.	— Size —		List Price
			Dia.	Len.	
TS-1520	20	150	1 3/8	x 2 1/2	\$3.95
TS-1540	40	150	1 3/8	x 2 1/2	4.10
TS-4510	10	450	1 3/8	x 2 1/2	4.05
TS-4520	20	450	1 3/8	x 2 1/2	4.30
TS-4540	40	450	1 3/8	x 2 1/2	4.55
TS-4580	80	450	1 3/8	x 4 1/4	5.55

#### Dual Sections

Catalog Number	Capacity mfd.	Wkg. Volts D.C.	— Size —		List Price
			Dia.	Len.	
TSD-1520	20-20	150	1 3/8	x 2 1/2	\$4.20
TSD-1540	40-40	150	1 3/8	x 2 1/2	4.40
TSD-4510	10-10	450	1 3/8	x 2 1/2	4.40
TSD-4520	20-20	450	1 3/8	x 2 1/2	5.05

#### Multiple Sections

Catalog Number	Capacity mfd.	Wkg. Volts D.C.	— Size —		List Price
			Dia.	Len.	
TST-4510	10-10-10	450	1 3/8	x 2 1/2	\$5.10
TST-901	20-20-20	450-450-25	1 3/8	x 2 1/2	5.55

NOTE: Not normally carried in stock. Available on special order only.

NOTE: Packaging: Individual display carton.

# SANGAMO CAPACITORS

## ELECTROLYTIC CAPACITORS



### TYPE TR-TRD-TRT Electrolytic Capacitors

SANGAMO Type TR-TRD-TRT are polarized, aluminum electrolytic capacitors intended primarily for use in low-frequency filter, by-pass and coupling applications in transmitters and electronic instruments where the service is normally D.C. and where a high degree of reliability is essential. The capacitors covered by this standard are intended for operation over a maximum ambient temperature range of  $-20^{\circ}\text{C}$  to  $+85^{\circ}\text{C}$  and where the operation of ambient temperatures above  $65^{\circ}\text{C}$  is not expected to exceed 10 to 15% of the total operating time. These capacitors may be subjected, without permanent damage, to conditions in transit where the temperatures may range from  $-55^{\circ}\text{C}$  to  $+65^{\circ}\text{C}$  and where the altitude may be up to 50,000 ft.

Cat. No.	Capacity mfd.	D.C. Working Volts	Case Size	List Price
TR-620	6	2000	1 1/2 x 2 1/2	\$3.40
TR-0110	15	1000	1 x 4	3.40
TR-0250	25	500	1 x 4	3.40
TR-0520	50	200	1 x 3 1/2	2.70
TR-1510	150	100	1 x 4	2.70
TR-2550	250	50	1 x 3	2.65
TR-3520	350	20	1 x 2 1/2	2.45
TR-3550	350	50	1 x 4	2.80
TR-4520	450	20	1 x 3	2.50
TR-4550	450	50	1 1/2 x 3	3.05
TRD-1550	150	50-50	1 x 4	2.85
TRD-2520	250	20-20	1 x 3 1/2	2.60
TRD-4510	450	10-10	1 x 4	2.60
TRD-4520	450	20-20	1 1/2 x 3 1/2	3.40
TRD-4540	450	40-10	1 1/2 x 4	4.45
TRT-1550	150	50-50-50	1 1/2 x 4	3.95
TRT-2540	250	40-40-40	1 1/2 x 4	4.20
TRT-3520	350	20-20-20	1 1/2 x 4	4.20
TRT-4520	450	20-20-20	1 1/2 x 4	4.70



### TYPE DCM

### Energy Storage Electrolytic Capacitors

The SANGAMO Type DCM unit is an electrolytic capacitor intended for use in an energy storage component in DC circuitry. These capacitors are principally utilized in applications where peak power requirements of the load exceed the maximum output of the associated power supply. Such capacitive components may well be used to minimize the cost of an overall electronic gear by enabling the design engineer to economize in his power supply design.

These units utilize etched cathodes to prevent loss of capacity due to reverse-current internal electrolytic action. This capacitor can be supplied in a variety of capacity values and voltage ratings. The terminal structures are designed to provide extremely low contact resistance and thus minimize arcing and heating during current surges.

Cat. No.	Capacity mfd.	VDCW Voltage	Can Dimensions Diam. Length	List Price
35M/5	35,000	5v	3 x 4 1/2	\$17.75
30M/10	30,000	10v	3 x 4 1/2	17.60
25M/15	25,000	15v	3 x 4 1/2	17.70
10M/15	10,000	15v	1 3/4 x 4 1/2	11.80
20M/25	20,000	25v	3 x 4 1/2	18.50
10M/25	10,000	25v	2 x 4 1/2	12.80
20M/30	20,000	30v	3 x 4 1/2	20.50
10M/30	10,000	50v	3 x 4 1/2	18.20
8M/50	8,000	50v	2 1/2 x 4 1/2	17.45
8M/55	8,000	55v	2 1/2 x 4 1/2	18.25
35C/100	3,500	100v	3 x 4 1/2	14.45
2M/150	2,000	150v	2 1/2 x 4 1/2	12.20
1M-250/150	1,250	150v	2 x 4 1/2	8.95
1M/250	1,000	250v	3 x 4 1/2	19.40
1M/300	1,000	300v	3 x 4 1/2	21.20
1M/350	1,000	350v	3 x 4 1/2	21.60
7C/350	700	350v	2 1/2 x 4 1/2	15.05
8C/350	800	450v	3 x 4 1/2	24.50
6C/450	600	450v	3 x 4 1/2	19.80

For additional capacity and voltage combinations write the factory.  
Above prices do not include brackets.  
Add \$1.25 list if brackets are required.

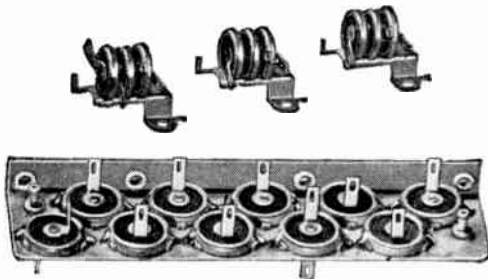
# SANGAMO

# SPECIALTY COMPONENTS

The SANGAMO ELECTRIC COMPANY develops, designs, and manufactures a variety of transformers, inductors, magnetic amplifiers, special Low-X resistors, dynamotors, and stand-off wiring devices. We also enter the field of circuitry in producing filter networks and 125°C operating temperature high voltage power supplies.

Following is a description of some of the special products that we are now supplying to the electrical and electronic industry.

## TYPE N46 & N51



The SANGAMO Types N46-N51 assemblies are multi-section, non-inductive, very high-frequency mica capacitors. These are multiple button type mica capacitor assemblies, pre-mounted in silver-plated, non-ferrous brackets to facilitate installation in miniaturized, high-frequency electronic circuitry. Such assemblies relieve the set fabricator of laborious, expensive, and often destructive mounting problems. The individual sections are of the same basic, non-inductive, highly stable design as the items supplied to the performance requirements of existing button type mica capacitor specifications. For further electrical characteristics and description of the individual units that make up the assembly, see data on Button Mica Capacitors in Sangamo Catalog No. 830A.



## TYPE N31

The SANGAMO Type N31 is a metal enclosed, hermetically sealed, highly stable capacitor network. This capacitor is furnished with solder-sealed glass terminals and is contained in a corrosion resistant case complete with affixed mounting bracket. The capacitor sections are specially designed for this product to possess inherently superior temperature coefficient characteristics and low dissipation factor.

The complete assembly is potted in a high electrical grade thermo-setting compounded resinous plastic. The unit is ideally adapted for use in tuned filter assemblies. This item is presently being produced in .01/.047-.05 mfd., 300/600 WVDC rating. Other combinations of capacity values and voltage ratings can be furnished upon request.

## TYPE N35

The SANGAMO Type N35 capacitor is a miniaturized multi-section mica capacitor specially designed for use in coupling carrier frequency communication systems to high voltage power distribution lines. A unique unitized construction provides excellent stabilization of capacity. The capacitor assembly is contained in a retaining frame that is designed to prevent arc-over to the structure. The completed capacitor is sealed in a heavy coating of moisture resistant insulating varnish. These units are produced in a multiplicity of capacity and voltage ratings.

## TYPE N38

The SANGAMO Type N38 capacitor is a hermetically sealed, oil-filled, mica capacitor designed for power pulse service. This unit is a capacitance-resistance network intended for use in low-frequency, high power pulse circuits. Both terminals are insulated from the metallic container. The design pictured here is specifically intended for use where a radio-frequency pulse envelope of large magnitude is superimposed on a high DC voltage. Similar units specifically designed for continuous duty on radio-frequency power applications can be supplied upon request.

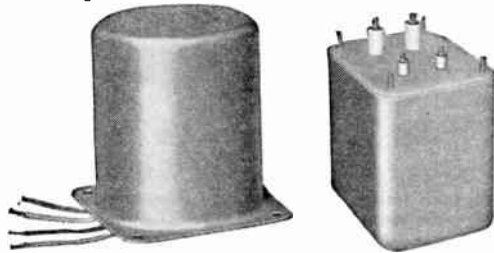
The SANGAMO N38 capacitor represents an engineering achievement of attaining definite miniaturization over presently available MIL type potted mica capacitors. This unit is now produced in a value of .06 mfd., only, as a specialty item, but can be supplied on demand in a variety of capacities. The specialty item is designed for operation at 4800 VAC, RMS pulse with 8000 volts DC superimposed.



## TRANSFORMERS

SANGAMO ELECTRIC COMPANY has been designing and building specialty transformers since 1927. These transformers have been used in a wide variety of applications in commercial and military apparatus. Although the major part of this transformer production has been for use in metering, telephone, and military equipment produced by Sangamo, we have also supplied a limited group of electrical and electronic manufacturers with transformers of special design. This "quarter-century plus" of transformer manufacturing and design experience is now available to the industry.

Hermetically sealed units are available in a great variety of case sizes, and include both drawn and fabricated cans. A full line of standard MIL-T-27 cans is also available. Three terminal styles are available; neoprene-ceramic, glass bead, or phenolic feedthrough.



Units may be either oil filled or compound filled. We recommend the use of oil filled units for extreme reliability and long life when unusual operating conditions are encountered. All Sangamo oil filled transformers are vacuum dried at high temperature prior to filling to assure the complete removal of moisture and entrapped air.



## OPEN FRAME

Open frame units can be furnished in all standard sizes and can be equipped with brackets as shown, vertical or horizontal channels, or several types of end bells. These units are customarily vacuum dried and varnish impregnated. Either stranded leads or solder lug terminals are available. For special applications these units can be made to operate at temperatures up to 200°C.

## TOTE-M-POLES

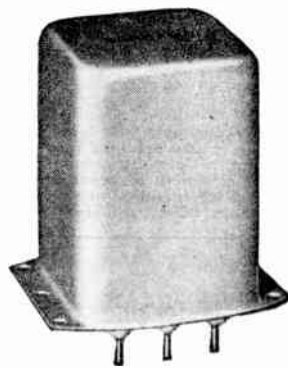
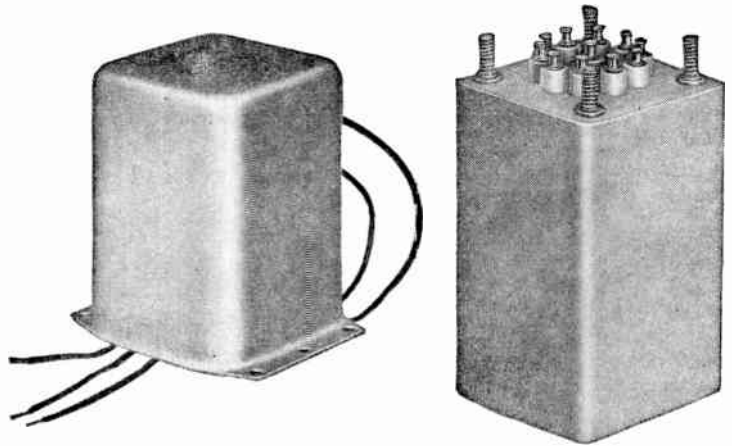


The Tote-m-pole component mounting post provides ideal support for small components such as resistors, capacitors, diodes and transistors at their operating point. Critical leads to grid suppressor resistors, for example, can be reduced to pigtailed.

The Tote-m-pole mounts in a single drilled hole. It can be reused many times for mock-up or component replacement. It is adapted to jig wiring practices whether the jig is of cardboard for design study or a production type. Tote-m-poles, as manufactured by Sangamo, are available with 4, 3, and 2 terminals and may be used with or without ground rosettes and spacers.

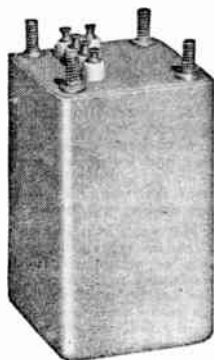
## AUDIO TRANSFORMERS

SANGAMO manufactures both a general line and a specialized line of audio transformers, including interstage, modulation, and output types. The general line offers good frequency response and adequate power handling facilities at a reasonable cost. By proper selection of core material and careful manufacturing techniques, special audio units can be supplied whose frequency coverage is flat within 3 db from 3 cycles to 100 kilocycles per second. Low distortion and phase shift are inherent in the design of these special quality units.



### MAGNETIC AMPLIFIERS

Several types of magnetic amplifiers are currently being produced by Sangamo. These magnetic amplifiers include both saturating and non-saturating types. They are constructed for a variety of purposes including computer elements, temperature controlling units, and servo motor applications.



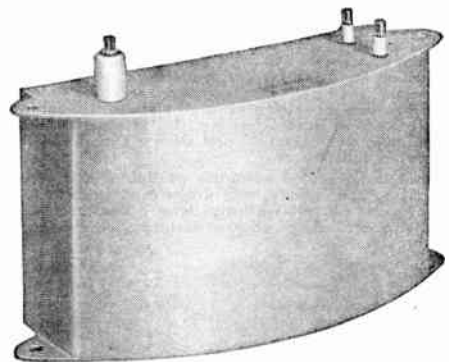
### MULTIPLE COMPONENT ASSEMBLIES

Special resonant and anti-resonant circuits, involving transformers, chokes, and capacitors, can be incorporated into single units having precise electrical characteristics. As custom engineered assemblies, these units can be adapted to a wide variety of applications. In resonant circuits, extreme accuracy can be obtained by careful selection and adjustment of components.



### PHASE SHIFTING UNITS

Phase shifting units are designed for applications requiring the maintenance of precise phase relationships between input and output circuits. These units, generally designed to operate with constant loads, are used in current feedback circuits, metering devices, and similar applications. By proper design, the effect of direct current in either winding can be made negligible over a wide range of voltages.



### HIGH VOLTAGE POWER SUPPLIES

Several types of high voltage oil-filled power supplies are being manufactured by Sangamo. These units, complete with transformers, rectifiers, and filter sections, are designed with a wide margin of safety for long, trouble free life. A typical unit pictured above delivers 10,000 volts D.C. at 250 microamperes from a 115 volt 400 cycle supply. The AC ripple voltage is less than 0.1%. This unit is designed to operate at 125°C maximum and at a maximum altitude of 50,000 feet.



# SANGAMO

# SPECIALTY COMPONENTS

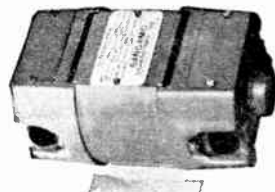
## SANGAMO DYNAMOTORS

SANGAMO Dynamotors are now available in two basic design series: the Series "S" developed for special purpose applications and the rugged "G" series for commercial use. Both are small, compact, yet capable of unusual output and high efficiency under the most rigorous conditions of service. Each series is available in an extended range of electrical characteristics in large or small quantities. The "S" series of dynamotors incorporate engineering excellence with the highest quality of material. These models are the specification types such as used for military applications, including aircraft, marine and "Hi-Gee" (missile) types, also for non-military applications for customers who write their own exacting specifications. They are designed either for intermittent or continuous duty and are a dependable power supply under the most exacting conditions. The FLATPAKS — the "G" series — are of rugged, precision manufacture and are particularly suited to mobile radio and general commercial use. These all new dynamotors are of a laminated field design and are unexcelled in reliability and performance. Advanced design features include: small size — ideal for applications when space is a problem — high efficiency, fast starting, and high output power at low cost. Both the "S" and "G" series dynamotors have a wide range of output voltage. For special application problems, Sangamo maintains a complete engineering and technical staff to assist any organization with its power planning.



### "TWINVOLT"

The all new "Twinvolt" Dynamotor.



### MODEL GY

Includes ratings through 110 watts continuous duty and 300 watts intermittent duty. Outputs to 650 volts.

### TYPE SF



Frame Size 4" — Ideally adapted to small transmitters. Up to 75 watts continuous and 200 watts intermittent. Input voltage 6 to 115. Output voltage up to 750. SFF continuous rating up to 250 watts.

### TYPE SP



Frame Size 3-1/2" — The "ideal receiver" dynamotor. Wattage rating up to 60 watts continuous, 90 watts intermittent. Input voltage 6 to 115. Output voltage up to 600.

### TYPE SD



Frame Size 2-3/4" — A small, practical, aircraft quality type Dynamotor. Suitable for short-range receivers. Continuous ratings up to 22 watts, intermittent 35 watts. Output voltages to 300 volts. Input volts 6 to 64.

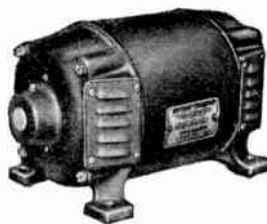
### TYPE SJ



Newest addition to the "S" series; the SJ dynamotor, 2 1/8" O.D. Maximum volts 250, 15 watts continuous, 25 watts for intermittent duty.

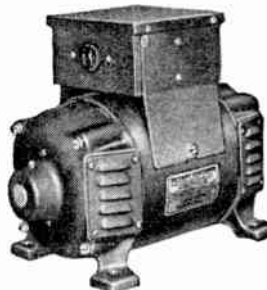
## ROTARY CONVERTERS

- LET SANGAMO ROTARY CONVERTERS WORK FOR YOU! The complete line of Sangamo Rotary Converters is designed for dependability...constructed to give uninterrupted, trouble-free service wherever a simple, practical method is required for converting direct current to alternating current for the operation of AC electrical devices and equipment.
- THOROUGHLY TESTED FOR COMPLETE OPERATING RELIABILITY! Efficient, long life operating performance is assured through exhaustive mechanical and electrical checks. Each unit spends hours in test; material and fabricated parts must pass individual analysis.
- FIELD MAINTENANCE REDUCES COST! Sangamo Rotary Converters are engineered to meet the most exacting efficiency standards...manufactured with such precision that parts are interchangeable in the field, eliminating costly delays for factory service.
- BUILT-IN EXTRAS, AT NO EXTRA COST! All Sangamo units are conservatively rated; they're built to withstand much tougher service than required with big reserves in every detail of design.
- SANGAMO also manufactures motor generators, gas engine driven generators, and special DC motors.



### CONVERTER, LESS FILTER

Types AK, BK, CK — Input voltages 6, 12, 24, 28, 32, 48, 115, 230 DC, up to 1500 VA output at 115 or 230 volts, 60 cycle.



### CONVERTER, WITH FILTER

Same ratings as above. Filter will meet suppression requirements of MIL-5-11748. Also furnished with manual or automatic frequency control, marine construction, and 50 cycle output.

SANGAMO ELECTRIC CO. • Springfield, Illinois



# FILM CAPACITORS, INC.

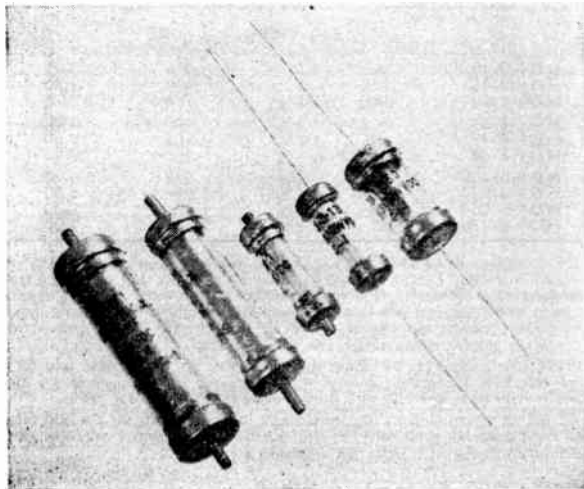
## F-C-I HIGH VOLTAGE CAPACITORS

F-C-I Type D capacitors employ a newly developed plastic film dielectric which, with suitable processing, produces capacitors which are better, smaller and cheaper than could ever be produced before. The table below shows the electrical properties of these capacitors. In view of these excellent characteristics, it is evident that F-C-I Type D capacitors are suitable for practically every type of high

voltage D.C. application. With these capacitors available, it is no longer necessary to stock groups of units each outstanding in only one property. F-C-I Type D capacitors are furnished in glass tubes with hermetically sealed metal end caps and either threaded studs or wire leads. Sizes not listed here can be furnished upon request. Ask for our quotation.

### NOW FURNISHED IN STEATITE CASES — NO BREAKAGE... NO LEAKAGE

Cat. No.	Capacity MFD.	Working Volts DC	Dimensions Dia.	Dimensions L	List Price	Cat. No.	Capacity MFD.	Working Volts DC	Dimensions Dia.	Dimensions L	List Price
D6-6-10	.01	600	1/2	1 3/8	\$ 2.80	D6-100-1	.001	10 KV	5/8	1 1/4	\$ 7.20
D6-6-20	.02	600	1/2	1 3/8	2.80	D6-100-2	.002	10 KV	5/8	1 1/4	7.40
D6-6-50	.05	600	1/2	1 3/8	2.90	D6-100-5	.005	10 KV	7/8	2 3/16	8.50
D6-6-100	.10	600	1/2	1 3/8	3.00	D6-100-10	.01	10 KV	7/8	2 3/16	9.20
D6-6-250	.25	600	1/2	2 3/8	3.20	D6-100-20	.02	10 KV	1	2 3/16	11.40
D6-6-500	.50	600	1	2 3/8	3.60	D6-100-50	.05	10 KV	1 1/2	2 3/16	14.60
D6-6-1000	1.00	600	1 1/4	2 3/8	3.90	D6-150-1	.001	15 KV	5/8	2 3/8	13.80
D6-10-10	.01	1000	1/2	1 3/8	2.90	D6-150-2	.002	15 KV	7/8	2 3/8	14.60
D6-10-20	.02	1000	1/2	1 3/8	2.90	D6-150-5	.005	15 KV	7/8	2 3/8	17.00
D6-10-50	.05	1000	1/2	1 3/8	2.90	D6-150-10	.01	15 KV	1 1/4	2 3/8	20.00
D6-10-100	.10	1000	1/2	2 3/8	3.10	D6-150-20	.02	15 KV	1 1/4	4 3/4	22.00
D6-10-250	.25	1000	7/8	2 3/8	3.10	D6-150-50	.05	15 KV	1 1/2	4 3/4	26.00
D6-10-500	.50	1000	1	2 3/8	3.30	D6-200-05	.0005	20 KV	5/8	2 3/8	18.00
D6-20-2	.002	2000	1/2	1 3/8	2.90	D6-200-1	.001	20 KV	7/8	2 3/8	19.00
D6-20-5	.005	2000	1/2	1 3/8	2.90	D6-200-2	.002	20 KV	7/8	2 3/8	21.00
D6-20-10	.01	2000	1/2	1 3/8	2.90	D6-200-5	.005	20 KV	1	2 3/8	22.50
D6-20-20	.02	2000	1/2	1 3/8	2.90	D6-200-10	.01	20 KV	1 1/2	2 3/8	24.00
D6-20-50	.05	2000	1/2	1 3/8	2.90	D6-200-20	.02	20 KV	1 1/2	4 3/4	27.00
D6-20-100	.10	2000	1/2	2 3/8	3.10	D6-300-02	.0002	30 KV	5/8	3	20.00
D6-20-250	.25	2000	1	2 3/8	3.50	D6-300-05	.0005	30 KV	5/8	3	21.00
D6-20-500	.50	2000	1 1/4	2 3/8	4.10	D6-300-1	.001	30 KV	7/8	3	23.50
D6-30-2	.002	3000	1/2	1 3/8	4.10	D6-300-2	.002	30 KV	7/8	4 3/4	26.00
D6-30-5	.005	3000	1/2	1 3/8	4.10	D6-300-5	.005	30 KV	1 1/4	4 3/4	28.00
D6-30-10	.01	3000	1/2	1 3/8	4.30	D6-300-10	.01	30 KV	1 1/4	6 7/8	35.00
D6-30-20	.02	3000	1/2	1 3/8	5.00	D6-400-01	.0001	40 KV	5/8	3	20.50
D6-30-50	.05	3000	1/2	2 3/8	5.50	D6-400-02	.0002	40 KV	5/8	3	21.50
D6-30-100	.10	3000	7/8	2 3/8	6.00	D6-400-05	.0005	40 KV	3/4	3	22.50
D6-30-250	.25	3000	1 1/4	2 3/8	6.60	D6-400-1	.001	40 KV	3/4	4 3/4	26.00
D6-50-5	.005	5 KV	5/8	1 1/8	6.50	D6-400-2	.002	40 KV	1	4 3/4	28.00
D6-50-10	.01	5 KV	3/4	1 1/8	6.80	D6-400-5	.005	40 KV	1 1/2	4 3/4	33.00
D6-50-20	.02	5 KV	3/4	2 9/16	7.20	D6-500-01	.0001	50 KV	5/8	4 1/4	22.50
D6-50-50	.05	5 KV	7/8	2 9/16	7.60	D6-500-02	.0002	50 KV	5/8	4 1/4	23.50
D6-50-100	.10	5 KV	1 1/4	2 9/16	8.50	D6-500-05	.0005	50 KV	3/4	4 1/4	24.50
D6-75-1	.001	7 1/2 KV	7/8	1 1/8	6.50	D6-500-1	.001	50 KV	3/4	6 7/8	28.00
D6-75-2	.002	7 1/2 KV	5/8	1 1/8	6.80	D6-500-2	.002	50 KV	7/8	6 7/8	31.50
D6-75-5	.005	7 1/2 KV	3/4	1 1/8	7.00	D6-500-5	.005	50 KV	1 1/4	6 7/8	36.00
D6-75-10	.01	7 1/2 KV	3/4	2 9/16	7.50	D6-600-01	.0001	60 KV	5/8	4 1/4	23.50
D6-75-20	.02	7 1/2 KV	7/8	2 9/16	8.60	D6-600-02	.0002	60 KV	5/8	4 1/4	24.50
D6-75-50	.05	7 1/2 KV	1 1/4	2 9/16	11.10	D6-600-05	.0005	60 KV	7/8	4 1/4	28.00
D6-75-100	.10	7 1/2 KV	1 1/2	2 9/16	12.50	D6-600-1	.001	60 KV	7/8	6 7/8	34.00
						D6-600-2	.002	60 KV	1 1/4	6 7/8	36.50
						D6-600-5	.005	60 KV	1 1/4	13	41.50



### ELECTRICAL PROPERTIES OF F-C-I TYPE D CAPACITORS

Operating Range	-55° C to +125° C
Voltage Range, D.C.	600 Volts to 60KV; higher on order
Capacitance Range	.0001 MF to 0.1 MF
Power Factor	0.5% at 1 KC
I.R. at Room Temperature	10 <sup>6</sup> Megohm-Microfarads
Dielectric Absorption	0.1%
Temperature Coefficient	+500 PPM/° C
Capacitance Stability	0.5%
Voltage Derating at 65° C	None
Voltage Derating at 85° C	30%
Voltage Derating at 105° C	50%
Voltage Derating at 125° C	66%

# FILM CAPACITORS, INC.

## MINIATURE POLYSTYRENE AND MYLAR® CAPACITORS

HERMETICALLY SEALED — CLOSE TOLERANCE

F-C-I miniature polystyrene and "Mylar" capacitors are furnished in metal shells hermetically sealed with metal-glass compression type seals. The capacitor elements are non-inductively wound, and wire leads are carefully soldered to the swaged, extended foils to minimize self-

inductance, power factor and noise. Characteristics of the polystyrene capacitors are given on pg. P-1156. The Mylar dielectric capacitors are characterized by high insulation resistance ( $10^9$  megohm-microfarads at 20° C); 0.5% power factor; and a temperature coefficient of +500 PPM/° C.

### POLYSTYRENE

PART No.	CAP. MFD.	SIZE		LIST PRICE
		L	D	
<b>100 VWDC</b>				
A4-1-10	.01	1	.235	\$4.50
A4-1-15	.015	1	.235	4.50
A4-1-22	.022	1	.312	4.50
A4-1-33	.033	1	.312	4.60
A4-1-47	.047	1	.400	4.60
A4-1-68	.068	1	.400	4.75
A4-1-100	.10	1 1/2	.400	5.25
A4-1-220	.22	1 1/2	.562	5.45
A4-1-330	.33	1 1/2	.670	5.70
A4-1-470	.47	1 1/2	.670	6.00
<b>200 VWDC</b>				
A4-2-10	.01	1	.312	4.50
A4-2-15	.015	1	.312	4.50
A4-2-22	.022	1	.400	4.75
A4-2-33	.033	1	.400	4.75
A4-2-47	.047	1 1/2	.400	4.85
A4-2-68	.068	1 1/2	.400	4.85
A4-2-100	.10	1 1/2	.562	5.00
A4-2-220	.22	1 1/2	.562	5.45
A4-2-330	.33	1 1/2	.750	5.80
A4-2-470	.47	1 1/2	1.00	6.10
<b>400 VWDC</b>				
A4-4-10	.01	1	.312	4.50
A4-4-15	.015	1	.400	4.50
A4-4-22	.022	1	.400	4.60
A4-4-33	.033	1 1/2	.400	4.75
A4-4-47	.047	1 1/2	.400	4.85
A4-4-68	.068	1 1/2	.562	5.00
A4-4-100	.10	1 1/2	.562	5.35
A4-4-220	.22	1 1/2	.750	5.45
A4-4-330	.33	1 1/2	.750	6.30
A4-4-470	.47	1 1/2	1.00	7.20
<b>600 VWDC</b>				
A4-6-10	.01	1	.400	4.50
A4-6-15	.015	1 1/2	.400	4.50
A4-6-22	.022	1 1/2	.562	4.75
A4-6-33	.033	1 1/2	.562	4.75
A4-6-47	.047	1 1/2	.670	5.00
A4-6-68	.068	1 1/2	.562	5.35
A4-6-100	.10	1 1/2	.670	5.35
A4-6-220	.22	1 1/2	.750	5.45
A4-6-330	.33	2 1/2	1.00	6.30
A4-6-470	.47	2 1/2	1.00	7.20

Prices listed above are for ±5% tolerance. For ±2% tolerance, add 20% and for ±1% tolerance, add 50% to these prices. These capacitors are also available in ceramic shells with epoxy resin end fill. Write for prices.

®Du Pont Trade Mark

### MYLAR

PART No.	CAP. MFD.	SIZE		LIST PRICE
		L	D	
<b>100 VWDC</b>				
HD4-1-10	.01	1	.235	\$3.60
HD4-1-15	.015	1	.235	3.60
HD4-1-22	.022	1	.235	3.60
HD4-1-33	.033	1	.312	3.60
HD4-1-47	.047	1	.312	3.60
HD4-1-68	.068	1	.400	3.60
HD4-1-100	.10	1	.400	3.70
HD4-1-220	.22	1 1/2	.400	3.85
HD4-1-330	.33	1 1/2	.562	4.05
HD4-1-470	.47	1 1/2	.562	4.25
HD4-1-1000	1.0	1 1/2	.670	4.80
<b>200 VWDC</b>				
HD4-2-10	.01	1	.235	3.60
HD4-2-15	.015	1	.235	3.60
HD4-2-22	.022	1	.312	3.65
HD4-2-33	.033	1	.312	3.70
HD4-2-47	.047	1	.400	3.70
HD4-2-68	.068	1	.400	3.80
HD4-2-100	.10	1 1/2	.400	3.90
HD4-2-220	.22	1 1/2	.562	4.15
HD4-2-330	.33	1 1/2	.670	4.50
HD4-2-470	.47	1 1/2	.670	4.75
HD4-2-1000	1.0	1 1/2	1.00	6.00
<b>400 VWDC</b>				
HD4-4-10	.01	1	.312	3.60
HD4-4-15	.015	1	.312	3.65
HD4-4-22	.022	1	.400	3.70
HD4-4-33	.033	1	.400	3.75
HD4-4-47	.047	1 1/2	.400	3.85
HD4-4-68	.068	1 1/2	.400	3.95
HD4-4-100	.10	1 1/2	.562	4.05
HD4-4-220	.22	1 1/2	.670	4.50
HD4-4-330	.33	1 1/2	.750	5.00
HD4-4-470	.47	1 1/2	1.00	5.60
HD4-4-1000	1.0	2 1/2	1.00	6.20
<b>600 VWDC</b>				
HD4-6-10	.01	1	.400	3.65
HD4-6-15	.015	1	.400	3.70
HD4-6-22	.022	1 1/2	.400	3.75
HD4-6-33	.033	1 1/2	.400	3.80
HD4-6-47	.047	1 1/2	.562	3.85
HD4-6-68	.068	1 1/2	.562	3.90
HD4-6-100	.10	1 1/2	.670	4.00
HD4-6-220	.22	1 1/2	1.00	5.00
HD4-6-330	.33	1 1/2	1.00	6.00
HD4-6-470	.47	2 1/2	1.00	7.00

The capacitors listed above are suitable for continuous operation at 125° C without derating. For 85° C operation, 100 volt series HD capacitors may be operated at 200 volts; 200 volt capacitors at 400 volts; 400 volt capacitors at 600 volts; and 600 volt capacitors at 1000 volts. To correctly designate 85° C capacitors, omit the letter "H" in the part number, and correct the single number standing for the voltage rating.

Prices listed above are for ±5% tolerance. For ±2% tolerance, add 20% and for ±1% tolerance, add 50% to these prices. These capacitors are also available in ceramic shells with epoxy resin end fill. Write for prices.

We are set up to produce these capacitors in any quantity to any odd value of capacitance at close tolerance for manufacturers of filter networks, R-C networks and the like. Write for information.

# FILM CAPACITORS, INC.

## HIGH CAPACITANCE MYLAR® CAPACITORS HERMETICALLY SEALED—HIGH INSULATION RESISTANCE

F-C-I Series D-2 capacitors are Mylar dielectric capacitors which possess extremely high insulation resistance, together with good power factor and dielectric absorption. The insulation resistance runs well over 10<sup>8</sup> megohm-microfarads at room temperature, even for the highest values of capacitance. The power factor and the dielectric

absorption are both on the order of 0.5%. These properties make Series D-2 capacitors extremely useful in computers of moderate precision, in timing circuits, and similar types of circuitry. Standard tolerance is ±10%, and closer tolerances are available on order. (Case sizes indicated below are in inches.)

CAP. MFD.	100 VWDC			200 VWDC			300 VWDC			400 VWDC			600 VWDC		
	CASE SIZE L	W	H LIST PRICE	CASE SIZE L	W	H LIST PRICE	CASE SIZE L	W	H LIST PRICE	CASE SIZE L	W	H LIST PRICE	CASE SIZE L	W	H LIST PRICE
0.5	1 3/4	1	3/4 \$ 3.00	1 3/4	1	3/4 \$ 3.00	1 3/4	1	1 \$ 3.20	1 3/4	1	1 \$ 3.38	1 3/4	1	1 \$ 3.38
1.0	1 3/4	1	3/4 3.12	1 3/4	1	1 3.12	1 3/4	1	1 1/2 4.95	1 3/4	1	2 1/4 5.37	1 3/4	1	2 3/4 5.50
2.0	1 3/4	1	1 4.00	1 3/4	1	1 1/2 5.12	1 3/4	1	2 1/4 6.35	1 3/4	1	3 1/4 6.60	2 1/2	1 1/4	3 1/2 7.60
5.0	1 3/4	1	2 3/4 6.35	1 3/4	1	3 1/4 7.00	2 1/2	1 1/4	3 1/2 9.50	3 3/4	1 1/4	2 1/2 11.25	3 3/4	1 1/4	5 11.25
10.0	2 1/2	1 1/4	3 1/2 11.00	2 1/2	1 1/4	3 1/2 11.60	3 3/4	1 3/4	3 1/4 17.75	3 3/4	1 3/4	4 19.75	3 3/4	1 3/4	5 24.70
20.0	3 3/4	1 3/4	2 1/2 18.80	3 3/4	1 3/4	3 1/4 20.30	4 3/4	3 3/4	3 4 29.40	4 3/4	3 3/4	4 32.50	4 3/4	3 3/4	4 1/2 42.50
25.0	3 3/4	1 3/4	3 1/4 22.20	3 3/4	1 3/4	4 23.70	4 3/4	3 3/4	3 1/2 36.10	4 3/4	3 3/4	4 39.00	4 3/4	3 3/4	5 51.50

### METALLIZED PAPER CAPACITORS

Available in voltages from 150 VWDC to 600 VWDC and capacitance values from .01 to 50 MF at 85° C and 125° C. Units can be furnished in case types and sizes which are standard in the industry.

### METALLIZED MYLAR CAPACITORS

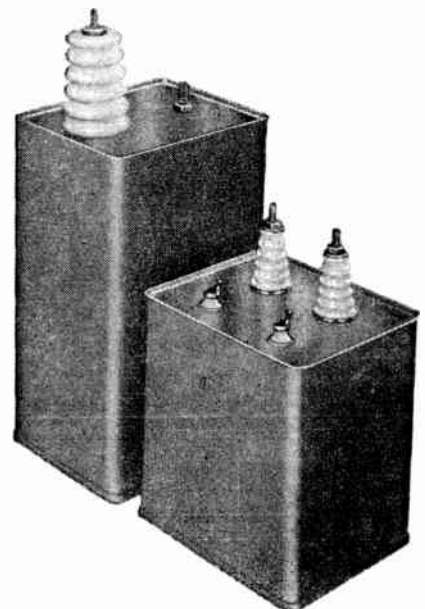
Available in voltages from 100 VWDC to 600 VWDC and capacitance values from .01 to 50 MF at 85° C and 125° C. Units can be furnished in all types of cases.

## HIGH VOLTAGE PACKAGED POWER SUPPLIES

Completely enclosed and hermetically sealed power supplies operating on 115 volt, 60 or 400 cycle, AC input. Output ranges from 2,000 vdc to 50,000 vdc. Standard sizes as follows:

PART No.	OUTPUT VOLTAGE	RATED CURRENT OUTPUT	MAX. CURRENT OUTPUT
PS1-20-2	2 KVDC	2 MA	5 MA
PS1-50-5	5 KVDC	3 MA	5 MA
PS1-100-1	10 KVDC	1 MA	1.75 MA
PS1-150-1	15 KVDC	1 MA	1.75 MA
PS1-300-1	30 KVDC	1 MA	1.75 MA
PS1-500-2	50 KVDC	2 MA	4 MA

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TRADE DISCOUNT APPLIES TO LIST PRICES ONLY

The MASTER — 22nd Edition

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# ARCO ELECTRONICS INC.

## ELMenco CAPACITORS

MAIN OFFICE  
ARCO ELECTRONICS INC.  
NEW YORK 13, N. Y.

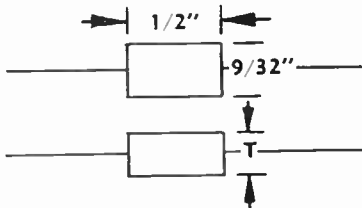
ARCO ELECTRONICS INC.  
CHICAGO 5, ILLINOIS

ARCO ELECTRONICS INC.  
DALLAS 19, TEXAS

ARCO CAPACITORS INC.  
LOS ANGELES 35, CALIFORNIA

## MOLDED SILVERED MICA

### TYPE CM-15



T—from 1-300 mmf. 3/16"  
T—from 301-510 mmf. 7/32"

500 VDCW

Cap. Mmf.	Designation Type	List Price Tolerance		
		5% "J"	2% "G"	1% "F"
1	CM-15-C-010†	\$0.40		
2	CM-15-C-020†	.40		
3	CM-15-C-030†	.40		
5	CM-15-C-050†	.40		
10	CM-15-C-100	.40		
12	CM-15-C-120	.40		
15	CM-15-C-150	.40		
18	CM-15-C-180	.40		
20	CM-15-C-200	.40		
22	CM-15-C-220	.40		
24	CM-15-E-240	.40		
27	CM-15-E-270	.40	\$0.46	
30	CM-15-E-300	.40	.46	
33	CM-15-E-330	.40	.46	
36	CM-15-E-360	.40	.46	
39	CM-15-E-390	.40	.46	
43	CM-15-E-430	.40	.46	
47	CM-15-E-470	.40	.46	
50	CM-15-E-500	.40	.46	\$0.50
51	CM-15-E-510	.40	.46	.50
56	CM-15-E-560	.40	.46	.50
62	CM-15-E-620	.40	.46	.50
68	CM-15-E-680	.40	.46	.50
75	CM-15-E-750	.40	.46	.50
82	CM-15-E-820	.45	.52	.56
91	CM-15-E-910	.45	.52	.56
100	CM-15-E-101	.45	.52	.56
110	CM-15-E-111	.45	.52	.56
120	CM-15-E-121	.45	.52	.56
130	CM-15-E-131	.45	.52	.56
150	CM-15-E-151	.45	.52	.56
160	CM-15-E-161	.50	.58	.63
180	CM-15-E-181	.50	.58	.63
200	CM-15-E-201	.50	.58	.63
220	CM-15-E-221	.55	.63	.69
240	CM-15-E-241	.55	.63	.69
250	CM-15-E-251	.55	.63	.69
270	CM-15-E-271	.60	.69	.75
300	CM-15-E-301	.60	.69	.75
330	CM-15-E-331	.65	.75	.81
360	CM-15-E-361	.70	.81	.88
390	CM-15-E-391	.70	.81	.88
430*	CM-15-E-431	.75	.86	.94
470*	CM-15-E-471	.80	.92	1.00
500*	CM-15-E-501	.80	.92	1.00
510*	CM-15-E-511	.80	.92	1.00

NOTES—\* Voltage Rating 300 VDCW.  
† Closest Tolerance  $\pm 0.5$  mmf.

#### SPECIFICATIONS NOTES:

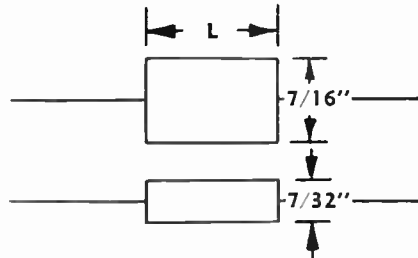
$\pm \frac{1}{2}$ % tolerance available above 100 mmf. at double  $\pm 5\%$  list price.

CM15, available "F" characteristic above 33 mmf.

CM19, 20 available "E" characteristic above 33 mmf.

CM19, 20 available "F" characteristic above 56 mmf.

### TYPE CM-19 & 20



L—CM-19—11/16"; CM-20—25/32"

500 VDCW

Cap. Mmf.	Type Designation	List Price Tolerance		
		±5% "J"	±2% "G"	±1% "F"
5	CM-20C-050	\$0.40		
10	CM-20C-100	.40		
12	CM-20C-120	.40		
15	CM-20C-150	.40		
18	CM-20C-180	.40		
20	CM-20C-200	.40		
22	CM-20C-220	.40		
24	CM-20C-240	.40		
27	CM-20C-270	.40	\$0.46	
30	CM-20C-300	.40	.46	
33	CM-20C-330	.40	.46	
36	CM-20C-360	.40	.46	
39	CM-20C-390	.40	.46	
43	CM-20C-430	.40	.46	
47	CM-20C-470	.40	.46	
50	CM-20C-500	.40	.46	\$0.50
51	CM-20C-510	.40	.46	.50
56	CM-20C-560	.40	.46	.50
62	CM-20C-620	.40	.46	.50
68	CM-20C-680	.40	.46	.50
75	CM-20C-750	.40	.46	.50
82	CM-20C-820	.40	.46	.50
91	CM-20C-910	.40	.46	.50
100	CM-20C-101	.40	.46	.50
110	CM-20C-111	.45	.52	.56
120	CM-20C-121	.45	.52	.56
130	CM-20C-131	.45	.52	.56
150	CM-20C-151	.45	.52	.56
160	CM-20C-161	.45	.52	.56
180	CM-20C-181	.45	.52	.56
200	CM-20D-201	.45	.52	.56
220	CM-20D-221	.45	.52	.56
240	CM-20D-241	.55	.63	.69
250	CM-20D-251	.55	.63	.69
270	CM-20D-271	.55	.63	.69
300	CM-20D-301	.55	.63	.69
330	CM-20D-331	.55	.63	.69
360	CM-20D-361	.55	.63	.69
390	CM-20D-391	.65	.75	.81
430	CM-20D-431	.65	.75	.81
470	CM-20D-471	.70	.81	.88
500	CM-20D-501	.70	.81	.88
510	CM-20D-511	.70	.81	.88
560	CM-20D-561	.75	.86	.94
620	CM-20D-621	.75	.86	.94
680	CM-20D-681	.80	.92	1.00
750	CM-20D-751	.80	.92	1.00
820	CM-20D-821	.85	.98	1.06
910	CM-20D-911	.85	.98	1.06
1000	CM-20D-102	.90	1.04	1.13
1100	CM-20D-112	.90	1.04	1.13
1200	CM-20D-122	1.00	1.15	1.25
1300	CM-20D-132	1.00	1.15	1.25
1500	CM-20D-152	1.10	1.27	1.38
1600	CM-20D-162	1.10	1.27	1.38
1800	CM-20D-182	1.20	1.38	1.50
2000	CM-20D-202	1.30	1.50	1.63
2200	CM-20D-222	1.40	1.61	1.75
2400	CM-20D-242	1.45	1.67	1.81
2500	CM-20D-252	1.50	1.73	1.88



# ARCO ELECTRONICS INC.

## ELMenco CAPACITORS

MAIN OFFICE  
ARCO ELECTRONICS INC.  
NEW YORK 13, N. Y.

ARCO ELECTRONICS INC.  
CHICAGO 5, ILLINOIS

ARCO ELECTRONICS INC.  
DALLAS 19, TEXAS

ARCO CAPACITORS INC.  
LOS ANGELES 35, CALIFORNIA

## MOLDED SILVERED MICA

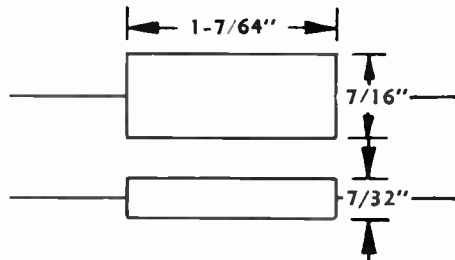
### TYPE CM-19 & 20

500 VDCW

Cap. Mmf.	Type Designation	List Price Tolerance		
		"J" ±5%	"G" ±2%	"F" ±1%
2700	CM-20D-272	1.60	1.84	2.00
3000	CM-20D-302	1.80	2.07	2.25
3300	CM-20D-332	1.90	2.19	2.38
3600*	CM-20D-362	1.90	2.19	2.38
3900*	CM-20D-392	2.00	2.30	2.50
4300*	CM-20D-432	2.10	2.42	2.63
4700*	CM-20D-472	2.20	2.53	2.75
5000*	CM-20D-502	2.30	2.65	2.88
5100*	CM-20D-512	2.30	2.65	2.88

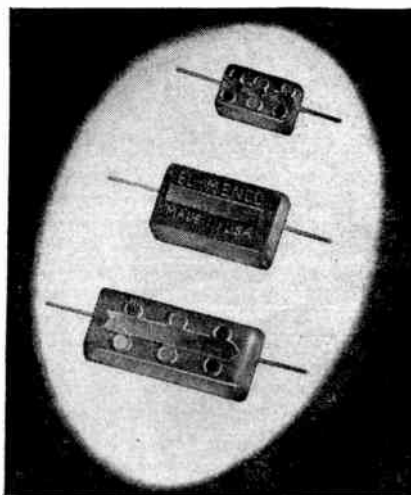
Capacities from 5 mmf. to 2700 mmf. can be supplied in CM-19 cases.

### TYPE CM-25

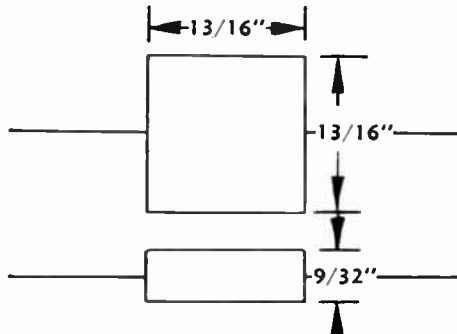


500 VDCW

Cap. Mmf.	Type Designation	List Price Tolerance		
		"J" ±5%	"G" ±2%	"F" ±1%
51	CM-25-E-510	\$0.40	\$0.46	\$0.50
56	CM-25-E-560	.40	.46	.50
62	CM-25-E-620	.40	.46	.50
68	CM-25-E-680	.40	.46	.50
75	CM-25-E-750	.40	.46	.50
82	CM-25-E-820	.40	.46	.50
91	CM-25-E-910	.40	.46	.50
100	CM-25-E-101	.40	.46	.50
110	CM-25-E-111	.45	.52	.56
120	CM-25-E-121	.45	.52	.56
130	CM-25-E-131	.45	.52	.56
150	CM-25-E-151	.45	.52	.56
160	CM-25-E-161	.45	.52	.56
180	CM-25-E-181	.45	.52	.56
200	CM-25-E-201	.45	.52	.56
220	CM-25-E-221	.45	.52	.56
240	CM-25-E-241	.55	.63	.69
250	CM-25-E-251	.55	.63	.69
270	CM-25-E-271	.55	.63	.69
300	CM-25-E-301	.55	.63	.69
330	CM-25-E-331	.55	.63	.69
360	CM-25-E-361	.55	.63	.69
390	CM-25-E-391	.65	.75	.81
430	CM-25-E-431	.65	.75	.81
470	CM-25-E-471	.70	.81	.88
500	CM-25-E-501	.70	.81	.88
510	CM-25-E-511	.70	.81	.88
560	CM-25-E-561	.75	.86	.94
620	CM-25-E-621	.80	.92	1.00
680	CM-25-E-681	.85	.98	1.06
750	CM-25-E-751	.90	1.04	1.13
820	CM-25-E-821	.95	1.09	1.19
910	CM-25-E-911	1.00	1.15	1.25
1000	CM-25-E-102	1.10	1.27	1.38
1100	CM-25-E-112	1.20	1.38	1.50
1200	CM-25-E-122	1.30	1.50	1.63
1300	CM-25-E-132	1.40	1.61	1.75
1500	CM-25-E-152	1.50	1.73	1.88
1600	CM-25-E-162	1.60	1.84	2.00
1800	CM-25-E-182	1.70	1.96	2.13
2000	CM-25-E-202	1.80	2.07	2.25



### TYPE CM-30



500 VDCW

Cap. Mmf.	Type Designation	List Price Tolerance		
		"J" ±5%	"G" ±2%	"F" ±1%
510	CM-30-E-511	\$0.70	\$0.81	\$0.88
560	CM-30-E-561	.75	.86	.94
620	CM-30-E-621	.75	.86	.94
680	CM-30-E-681	.80	.92	1.00
750	CM-30-E-751	.80	.92	1.00
820	CM-30-E-821	.85	.98	1.06
910	CM-30-E-911	.90	1.04	1.13
1000	CM-30-E-102	1.00	1.15	1.25
1100	CM-30-E-112	1.00	1.15	1.25
1200	CM-30-E-122	1.15	1.32	1.44
1300	CM-30-E-132	1.15	1.32	1.44
1500	CM-30-E-152	1.25	1.44	1.56
1600	CM-30-E-162	1.25	1.44	1.56
1800	CM-30-E-182	1.25	1.44	1.56
2000	CM-30-E-202	1.35	1.55	1.69
2200	CM-30-E-222	1.35	1.55	1.69
2400	CM-30-E-242	1.60	1.84	2.00
2500	CM-30-E-252	1.60	1.84	2.00
2700	CM-30-E-272	1.80	2.07	2.25
3000	CM-30-E-302	1.90	2.19	2.38
3300	CM-30-E-332	1.90	2.19	2.38
3600	CM-30-E-362	2.00	2.30	2.50
3900	CM-30-E-392	2.00	2.30	2.50
4300	CM-30-E-432	2.10	2.42	2.63
4700	CM-30-E-472	2.10	2.42	2.63
5000	CM-30-E-502	2.15	2.47	2.69
5100	CM-30-E-512	2.15	2.47	2.69
5600	CM-30-E-562	2.25	2.59	2.81
6200	CM-30-E-622	2.40	2.76	3.00



# ARCO ELECTRONICS INC.

## ELMENCO CAPACITORS

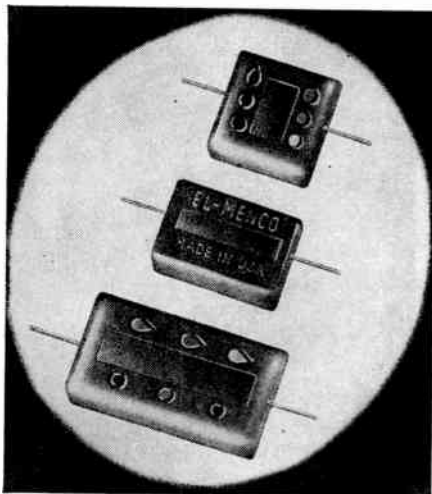
MAIN OFFICE  
ARCO ELECTRONICS INC.  
NEW YORK 13, N. Y.

ARCO ELECTRONICS INC.  
CHICAGO 5, ILLINOIS

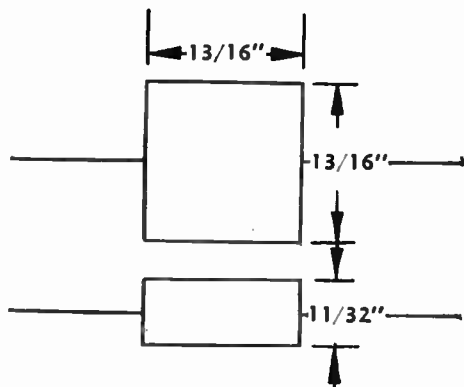
ARCO ELECTRONICS INC.  
DALLAS 19, TEXAS

ARCO CAPACITORS INC.  
LOS ANGELES 35, CALIFORNIA

### MOLDED SILVERED MICA



#### TYPE CM-35



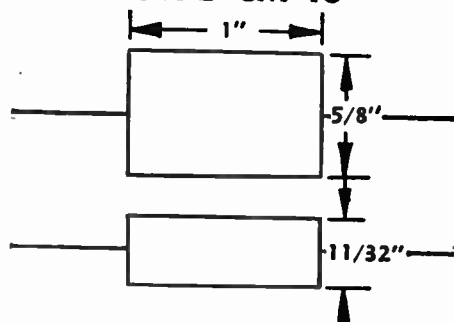
500 VDCW

Cap. Mmf.	Type Designation	List Price Tolerance		
		"J" ±5%	"G" ±2%	"F" ±1%
6800*	CM-35-E-682	\$2.65	\$3.05	\$3.31
7500*	CM-35-E-752	2.80	3.22	3.50
8200*	CM-35-E-822	3.00	3.45	3.75
9100*	CM-35-E-912	3.20	3.68	4.00
10000*	CM-35-E-103	3.50	4.03	4.38
12000*	CM-35-E-123	4.25	4.89	5.31
15000*	CM-35-E-153	5.00	5.75	6.25
6800	VCM-35-E-682	2.90	3.34	3.62
7500	VCM-35-E-752	3.05	3.51	3.81
8200	VCM-35-E-822	3.30	3.80	4.13
9100	VCM-35-E-912	3.50	4.03	4.38
10000	VCM-35-E-103	3.85	4.43	4.81

All capacities marked with \* are 300WV.

NOTE:—All above "SILVERED MICA" units can be supplied in "F" Characteristic at no extra cost. For ±1/2% Tolerance double the 5% List prices.

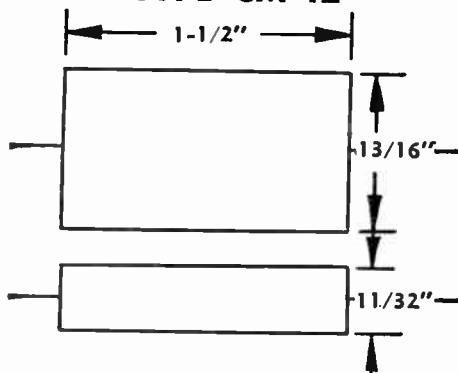
#### TYPE CM-40



500 VDCW

Cap. Mmf.	Type Designation	List Price Tolerance		
		"J" ±5%	"G" ±2%	"F" ±1%
2700	CM-40-E-272	\$1.90	\$2.19	\$2.38
3000	CM-40-E-302	2.05	2.36	2.56
3300	CM-40-E-332	2.05	2.36	2.56
3600	CM-40-E-362	2.10	2.42	2.63
3900	CM-40-E-392	2.15	2.47	2.69
4300	CM-40-E-432	2.15	2.47	2.69
4700	CM-40-E-472	2.15	2.47	2.69
5000	CM-40-E-502	2.25	2.59	2.81
5100	CM-40-E-512	2.25	2.59	2.81
5600	CM-40-E-562	2.50	2.88	3.13
6200	CM-40-E-622	2.90	3.34	3.63
6800	CM-40-E-682	3.30	3.80	4.13
7500	CM-40-E-752	3.65	4.20	4.56
8200	CM-40-E-822	3.85	4.43	4.81
9100	VCM-40-E-912	4.40	5.06	5.50
10000	VCM-40-E-103	4.40	5.06	5.50
9100*	CM-40-E-912	4.00	4.60	5.00
10000*	CM-40-E-103	4.00	4.60	5.00

#### TYPE CM-42



500 VDCW

Cap. Mmf.	Type Designation	List Price Tolerance		
		"J" ±5%	"G" ±2%	"F" ±1%
12000	CM-42-E-123	3.90	4.49	4.88
13000	CM-42-E-133	4.20	4.83	5.25
15000	CM-42-E-153	4.80	5.52	6.00
16000	CM-42-E-163	5.10	5.87	6.38
18000	CM-42-E-183	5.70	6.56	7.13
20000	CM-42-E-203	6.30	7.25	7.88
22000	CM-42-E-223	6.90	7.94	8.63
24000	CM-42-E-243	7.50	8.63	9.38
25000	CM-42-E-253	7.80	8.97	9.75
27000*	CM-42-E-273	7.50	8.63	9.38
30000*	CM-42-E-303	7.80	8.97	9.75
33000*	CM-42-E-333	8.50	9.78	10.63
36000*	CM-42-E-363	9.50	10.93	11.88
39000*	CM-42-E-393	10.50	12.08	13.13

NOTE:—All above "SILVERED MICA" units can be supplied in "F" Characteristic at no extra cost. For ±1/2% double the 1% list price.





# ARCO ELECTRONICS INC.

## ELMENCO CAPACITORS

MAIN OFFICE  
ARCO ELECTRONICS INC.  
NEW YORK 13, N. Y.

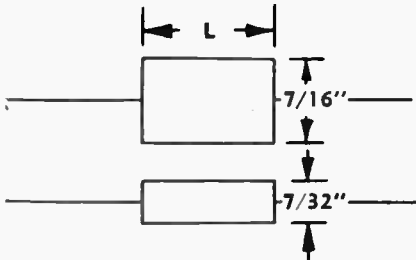
ARCO ELECTRONICS INC.  
CHICAGO 5, ILLINOIS

ARCO ELECTRONICS INC.  
DALLAS 19, TEXAS

ARCO CAPACITORS INC.  
LOS ANGELES 35, CALIFORNIA

### MOLDED FOIL MICA

#### TYPE CM-19 & 20



L—CM-19—11/16"; CM-20—25/32"

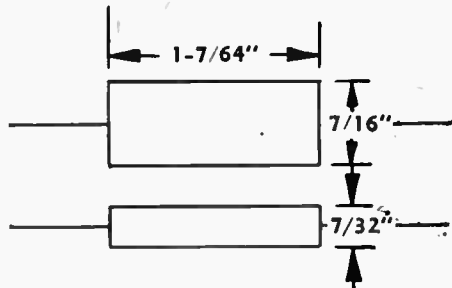
#### 500 VDCW

Cap. Mmf.	Type Designation	List Price Tolerance		
		"M" ±20%	"K" ±10%	"J" ±5%
5	CM-20B-050	\$0.30	\$0.33	
10	CM-20B-100	.30	.33	\$0.38
12	CM-20B-120	.30	.33	.38
15	CM-20B-150	.30	.33	.38
18	CM-20B-180	.30	.33	.38
20	CM-20B-200	.30	.33	.38
22	CM-20B-220	.30	.33	.38
24	CM-20B-240	.30	.33	.38
27	CM-20B-270	.30	.33	.38
30	CM-20B-300	.30	.33	.38
33	CM-20B-330	.20	.22	.25
36	CM-20B-360	.20	.22	.25
39	CM-20B-390	.20	.22	.25
43	CM-20B-430	.20	.22	.25
47	CM-20B-470	.20	.22	.25
50	CM-20B-500	.20	.22	.25
51	CM-20B-510	.20	.22	.25
56	CM-20B-560	.20	.22	.25
62	CM-20B-620	.20	.22	.25
68	CM-20B-680	.20	.22	.25
75	CM-20B-750	.20	.22	.25
82	CM-20B-820	.20	.22	.25
91	CM-20B-910	.20	.22	.25
100	CM-20B-101	.20	.22	.25
110	CM-20B-111	.20	.22	.25
120	CM-20B-121	.20	.22	.25
130	CM-20B-131	.25	.28	.31
150	CM-20B-151	.25	.28	.31
160	CM-20B-161	.25	.28	.31
180	CM-20B-181	.25	.28	.31
200	CM-20B-201	.25	.28	.31
220	CM-20B-221	.25	.28	.31
240	CM-20B-241	.30	.33	.38
250	CM-20B-251	.30	.33	.38
270	CM-20B-271	.30	.33	.38
300	CM-20B-301	.30	.33	.38
330	CM-20B-331	.30	.33	.38
360	CM-20B-361	.30	.33	.38
390	CM-20B-391	.30	.33	.38
430	CM-20B-431	.30	.33	.38
470	CM-20B-471	.30	.33	.38
500	CM-20B-501	.30	.33	.38
510	CM-20B-511	.30	.33	.38
560	CM-20B-561	.35	.39	.44
620	CM-20B-621	.35	.39	.44
680	CM-20B-681	.35	.39	.44
750	CM-20B-751	.35	.39	.44
820	CM-20B-821	.40	.44	.50
910	CM-20B-911	.45	.50	.56
1000	CM-20B-102	.45	.60	.56
1100	CM-20B-112	.50	.55	.63
1200	CM-20B-122	.50	.55	.63
1300	CM-20B-132	.50	.55	.63
1500	CM-20B-152	.60	.66	.75
1600	CM-20B-162	.60	.66	.75
1800	CM-20B-182	.70	.77	.88
2000	CM-20B-202	.75	.83	.94
2200	CM-20B-222	.80	.88	1.00
2400	CM-20B-242	.85	.94	1.06
2500	CM-20B-252	.90	.99	1.13

Cap. Mmf.	Type Designation	List Price Tolerance		
		"M" ±20%	"K" ±10%	"J" ±5%
2700	CM-20B-272	\$0.95	\$1.05	\$1.19
3000	CM-20B-302	1.00	1.10	1.25
3300	CM-20B-332	1.05	1.16	1.31
3600*	CM-20B-362	1.00	1.10	1.25
3900*	CM-20B-392	1.05	1.16	1.31
4300*	CM-20B-432	1.10	1.21	1.38
4700*	CM-20B-472	1.20	1.32	1.50
5000*	CM-20B-502	1.25	1.38	1.56
5100*	CM-20B-512	1.25	1.38	1.56

Capacities from 5 mmf. to 2700 mmf. can be supplied in CM-19 cases.

#### TYPE CM-25



#### 500 VDCW

Cap. Mmf.	Type Designation	List Price Tolerance	
		±10% only	
51	CM-25-B-510K		\$0.28
56	CM-25-B-560K		.28
62	CM-25-B-620K		.28
68	CM-25-B-680K		.28
75	CM-25-B-750K		.28
82	CM-25-B-820K		.28
91	CM-25-B-910K		.28
100	CM-25-B-101K		.28
110	CM-25-B-111K		.28
120	CM-25-B-121K		.28
130	CM-25-B-131K		.28
150	CM-25-B-151K		.28
160	CM-25-B-161K		.28
180	CM-25-B-181K		.28
200	CM-25-B-201K		.28
220	CM-25-B-221K		.28
240	CM-25-B-241K		.33
250	CM-25-B-251K		.33
270	CM-25-B-271K		.33
300	CM-25-B-301K		.33
330	CM-25-B-331K		.33
360	CM-25-B-361K		.33
390	CM-25-B-391K		.33
430	CM-25-B-431K		.33
470	CM-25-B-471K		.33
500	CM-25-B-501K		.33
510	CM-25-B-511K		.33
560	CM-25-B-561K		.39
620	CM-25-B-621K		.39
680	CM-25-B-681K		.39
750	CM-25-B-751K		.39
820	CM-25-B-821K		.44
910	CM-25-B-911K		.50
1000	CM-25-B-102K		.50
1100	CM-25-B-112K		.55
1200	CM-25-B-122K		.55
1300	CM-25-B-132K		.55
1500	CM-25-B-152K		.66
1600	CM-25-B-162K		.66
1800	CM-25-B-182K		.77
2000	CM-25-B-202K		.83



# ARCO ELECTRONICS INC.

## ELMenco CAPACITORS

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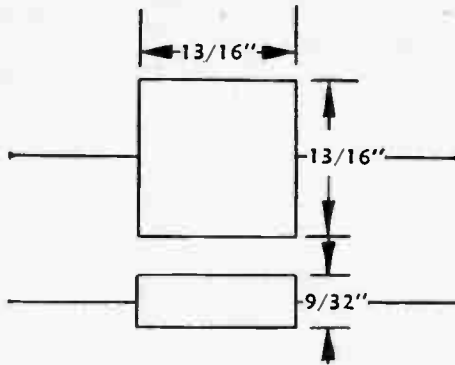
ARCO ELECTRONICS INC.  
CHICAGO 5, ILLINOIS

ARCO ELECTRONICS INC.  
DALLAS 19, TEXAS

ARCO CAPACITORS INC.  
LOS ANGELES 35, CALIFORNIA

### MOLDED FOIL MICA

#### TYPE CM-30



500 VDCW

Cap. Mmf.	Type Designation	List Price Tolerance		
		"M" ±20%	"K" ±10%	"J" ±5%
510	CM-30-B-511	\$0.30	\$0.36	\$0.39
560	CM-30-B-561	.30	.36	.39
620	CM-30-B-621	.30	.36	.39
680	CM-30-B-681	.30	.36	.39
750	CM-30-B-751	.30	.36	.39
820	CM-30-B-821	.30	.36	.39
910	CM-30-B-911	.30	.36	.39
1000	CM-30-B-102	.35	.39	.44
1100	CM-30-B-112	.35	.39	.44
1200	CM-30-B-122	.35	.39	.44
1300	CM-30-B-132	.35	.39	.44
1500	CM-30-B-152	.40	.44	.50
1600	CM-30-B-162	.40	.44	.50
1800	CM-30-B-182	.45	.50	.56
2000	CM-30-B-202	.45	.50	.56
2200	CM-30-B-222	.45	.50	.56
2400	CM-30-B-242	.50	.55	.63
2500	CM-30-B-252	.50	.55	.63
2700	CM-30-B-272	.50	.55	.63
3000	CM-30-B-302	.60	.66	.75
3300	CM-30-B-332	.60	.66	.75
3600	CM-30-B-362	.60	.66	.75
3900	CM-30-B-392	.65	.75	.85
4300	CM-30-B-432	.65	.75	.85
4700	CM-30-B-472	.65	.75	.85
5000	CM-30-B-502	.70	.81	.91
5100	CM-30-B-512	.70	.81	.91
5600	CM-30-B-562	.70	.81	.91
6200	CM-30-B-622	.90	1.04	1.17

#### TYPE CM-35

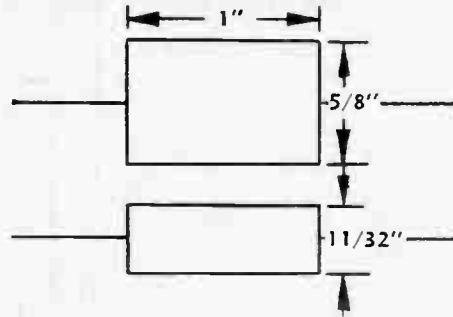
NOTE—Type CM-35 has same dimensions as type CM-30 above except that the thickness is 11/32".

500 VDCW

Cap. Mmf.	Type Designation	List Price Tolerance		
		"M" ±20%	"K" ±10%	"J" ±5%
6800*	CM-35-B-682	\$0.95	\$1.05	\$1.19
7500*	CM-35-B-752	1.00	1.10	1.25
8200*	CM-35-B-822	1.15	1.27	1.44
9100*	CM-35-B-912	1.15	1.27	1.44
10000*	CM-35-B-103	1.40	1.54	1.75
12000*	CM-35-B-123	1.60	1.76	2.00
15000*	CM-35-B-153	2.00	2.20	2.50
6800	VCM-35-B-682	1.05	1.16	1.31
7500	VCM-35-B-752	1.15	1.27	1.44
8200	VCM-35-B-822	1.30	1.43	1.62
9100	VCM-35-B-912	1.30	1.43	1.62
10000	VCM-35-B-103	1.55	1.71	1.94

All capacities marked with \* are 300WV.

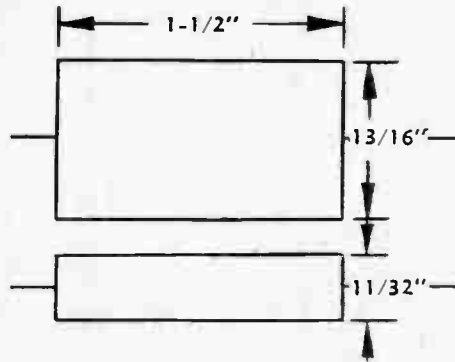
#### TYPE CM-40



500 VDCW

Cap. Mmf.	Type Designation	List Price Tolerance		
		"M" ±20%	"K" ±10%	"J" ±5%
2700	CM-40-B-272	\$0.55	\$0.63	\$0.69
3000	CM-40-B-302	.60	.69	.75
3300	CM-40-B-332	.65	.75	.81
3600	CM-40-B-362	.70	.81	.88
3900	CM-40-B-392	.75	.86	.94
4300	CM-40-B-432	.80	.92	1.00
4700	CM-40-B-472	.85	.98	1.06
5000	CM-40-B-502	.90	1.04	1.13
5100	CM-40-B-512	.90	1.04	1.13
5600	CM-40-B-562	1.00	1.15	1.25
6200	CM-40-B-622	1.05	1.21	1.31
6800	CM-40-B-682	1.15	1.32	1.44
7500	CM-40-B-752	1.30	1.50	1.63
8200	CM-40-B-822	1.40	1.61	1.75
9100	VCM-40-B-912	1.60	1.84	2.00
10000	VCM-40-B-103	1.70	1.96	2.13
9100*	CM-40-B-912	1.30	1.50	1.63
10000*	CM-40-B-103	1.50	1.73	1.88

#### TYPE CM-42



500 VDCW

Cap. Mmf.	Type Designation	List Price Tolerance		
		"M" ±20%	"K" ±10%	"J" ±5%
12000	CM-42-B-123	\$1.80	\$2.07	\$2.25
13000	CM-42-B-133	1.95	2.24	2.44
15000	CM-42-B-153	2.20	2.53	2.75
16000	CM-42-B-163	2.30	2.65	2.88
18000	CM-42-B-183	2.60	2.99	3.25
20000	CM-42-B-203	2.80	3.22	3.50
22000	CM-42-B-223	3.00	3.45	3.75
24000	CM-42-B-243	3.30	3.80	4.13
25000	CM-42-B-253	3.40	3.91	4.25
27000*	CM-42-B-273	3.10	3.57	3.88
30000*	CM-42-B-303	3.40	3.91	4.25
33000*	CM-42-B-333	3.65	4.20	4.56
36000*	CM-42-B-363	3.90	4.49	4.88
39000*	CM-42-B-393	4.20	4.83	5.25





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## ELMENCO CAPACITORS

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ARCO ELECTRONICS INC.  
DALLAS 19, TEXAS

ARCO CAPACITORS INC.  
LOS ANGELES 35, CALIFORNIA

# TELEVISION · TRANSMITTING · INDUSTRIAL HIGH VOLTAGE MICA CAPACITORS

DC WORKING VOLTAGES: FROM 1000 TO 2500 VOLTS — MOLDED IN CM-20, CM-35 AND CM-40 CASES

Demand for smaller units in higher voltages designed to meet the requirements for TELEVISION, POWER AMPLIFIERS, LOW POWER TRANSMITTERS, and various INDUSTRIAL Uses has increased. EL-MENCO designed and produced units listed below are especially adaptable to compact circuits where space is an important factor. Their acceptance has been overwhelming by the various manufacturers of TELEVISION RECEIVERS.

In many cases, these units will do the work of capacitors molded in CM-45, CM-50, and CM-55 cases without breaking down. NO SPECIAL MOUNTINGS ARE NECESSARY; just wire right into the circuit.

The capacitors are molded in low-loss bakelite and tested at double the branded voltage. They are tested for dielectric strength, insulation resistance, temperature coefficient, capacitance drift, susceptibility to humidity, and length of life, according to RCM Standards. All units are wax-dipped for protection against salt water immersion.

### VCM-20

Type Designation	Cap. Mnfr.	5000vdc Test 2500vdc Wkg. List Price	3000vdc Test 1500vdc Wkg. List Price	2000vdc Test 1000vdc Wkg. List Price
VCM-20-B-050	5	\$0.35	\$0.35	\$0.30
VCM-20-B-100	10	.35	.35	.30
VCM-20-B-120	12	.35	.35	.30
VCM-20-B-150	15	.35	.35	.30
VCM-20-B-180	18	.35	.35	.30
VCM-20-B-200	20	.35	.35	.30
VCM-20-B-220	22	.35	.35	.30
VCM-20-B-240	24	.35	.35	.30
VCM-20-B-270	27	.35	.35	.30
VCM-20-B-300	30	.40	.35	.30
VCM-20-B-330	33	.40	.35	.30
VCM-20-B-360	36	.40	.35	.30
VCM-20-B-390	39	.40	.35	.30
VCM-20-B-430	43	.40	.35	.30
VCM-20-B-470	47	.40	.35	.30
VCM-20-B-500	50	.40	.35	.30
VCM-20-B-510	51	.40	.35	.30
VCM-20-B-560	56	.40	.35	.30
VCM-20-B-620	62	.40	.35	.30
VCM-20-B-680	68	.45	.35	.30
VCM-20-B-750	75	.50	.35	.30
VCM-20-B-820	82	.50	.35	.30
VCM-20-B-910	91	.50	.40	.35
VCM-20-B-101	100	.55	.40	.35
VCM-20-B-111	110	.60	.40	.35
VCM-20-B-121	120	.60	.40	.35
VCM-20-B-131	130	.60	.40	.35
VCM-20-B-151	150	.65	.40	.35
VCM-20-B-161	160	.70	.40	.35
VCM-20-B-181	180	.70	.40	.35
VCM-20-B-201	200	.80	.45	.40
VCM-20-B-221	220	.85	.45	.40
VCM-20-B-241	240	.85	.45	.40
VCM-20-B-251	250	.55	.40	.40
VCM-20-B-271	270	.55	.40	.40
VCM-20-B-301	300		.60	.45
VCM-20-B-331	330		.60	.45
VCM-20-B-361	360		.60	.45
VCM-20-B-391	390		.65	.45
VCM-20-B-431	430		.65	.50
VCM-20-B-471	470		.70	.50
VCM-20-B-501	500		.70	.50
VCM-20-B-511	510		.70	.50
VCM-20-B-561	560		.80	.55
VCM-20-B-621	620			.55
VCM-20-B-681	680			.60
VCM-20-B-751	750			.60
VCM-20-B-821	820			.65
VCM-20-B-911	910			.70
VCM-20-B-102	1000			.75
VCM-20-B-112	1100			.80
VCM-20-B-122	1200			.85
VCM-20-B-132	1300			.90

### VCM-35 & VCM-40

Type Designation	Cap. Mnfr.	5000vdc Test 2500vdc Wkg. List Price	3000vdc Test 1500vdc Wkg. List Price	2000vdc Test 1000vdc Wkg. List Price
VCM-35-B-241	240	\$0.60		
VCM-35-B-251	250	.60		
VCM-35-B-271	270	.60		
VCM-35-B-301	300	.65		
VCM-35-B-331	330	.65		
VCM-35-B-361	360	.75		
VCM-35-B-391	390	.80		
VCM-35-B-431	430	.80		
VCM-35-B-471	470	.80		
VCM-35-B-501	500	.85		
VCM-35-B-511	510	.85		
VCM-35-B-561	560	.90		
VCM-35-B-621	620	.95		
VCM-35-B-681	680	1.05	\$0.75	
VCM-35-B-751	750	1.10	.75	
VCM-35-B-821	820	1.15	.85	
VCM-35-B-911	910	1.35	.90	
VCM-35-B-102	1000	1.40	.90	
VCM-35-B-112	1100	1.40	.95	\$0.60
VCM-35-B-122	1200	1.50	1.10	.65
VCM-35-B-132	1300	1.65	1.15	.65
VCM-35-B-152	1500	1.85	1.30	.75
VCM-35-B-162	1600	2.00	1.30	.80
VCM-35-B-182	1800		1.45	.80
VCM-35-B-202	2000		1.60	.85
VCM-35-B-222	2200		1.70	.95
VCM-35-B-242	2400		1.80	1.05
VCM-35-B-272	2700			1.05
VCM-35-B-302	3000			1.15
VCM-35-B-332	3300			1.20
VCM-35-B-362	3600			1.35
VCM-35-B-392	3900			1.40
VCM-35-B-432	4300			1.50
VCM-35-B-472	4700			1.65
VCM-35-B-502	5000			1.75
VCM-35-B-512	5100			1.75
VCM-35-B-562	5600			2.00
VCM-42-B-622	6200			2.10
VCM-42-B-682	6800			2.20
VCM-42-B-752	7500			2.30
VCM-42-B-822	8200			2.40
VCM-42-B-912	9100			2.60
VCM-42-B-103	10000			2.80
VCM-42-B-123	12000			3.00
VCM-42-B-133	13000			3.50
VCM-42-B-153	15000			4.00
VCM-42-B-163	16000			4.50

All units listed above in "A" or "B" Characteristic at list price. Standard Tolerance  $\pm 20\%$ . For 10% units add 15% to above prices. Closer tolerances in "C", "D", "E" & "F" Characteristic in silvered mica in tolerances of 5%, 2% and 1% can be supplied and will be quoted upon request.

Case Size Dimensions:

VCM-20 25/32" x 7/16" x 7/32"  
VCM-35 13/16" x 13/16" x 11/32"  
VCM-40 1" x 5/8" x 11/32"  
VCM-42 1 1/2" x 13/16" x 11/32"

TURN TO P-1172 FOR INFORMATION ON OUR SPECIAL HIGH-VOLTAGE KIT

Please Specify Voltage Rating When Ordering



# ARCO ELECTRONICS INC.

## ELMenco CAPACITORS

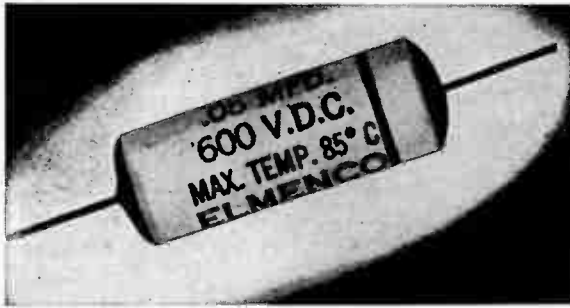
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DALLAS 19, TEXAS

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LOS ANGELES 35, CALIFORNIA

# PAPER DIELECTRIC CAPACITORS CP TYPE



### MINERAL OIL IMPREGNATION NON INDUCTIVE WINDING SYNTHETIC RESIN END SEALS — STEATITE CASE

The Steatite tube and baked synthetic resin end-fill provide a seal which rivals that of hermetically sealed construction, resulting in a dependability and longevity previously unequalled. Whether in operation or on the shelf, this paper tubular capacitor will maintain its excellent characteristics for years.

#### DIMENSIONS FOR CP TYPE CAPACITORS

	Max. Diameter	Max. Length
CP-1	23/64"	1-1/8"
CP-2	27/64"	1-3/8"
CP-3	31/64"	1-3/8"
CP-4	9/16"	1-5/8"
CP-5	3/4"	2"
CP-6	51/64"	2"

El-Menco CP type paper tubular capacitors are sealed into Steatite Tubes which serve to insulate the capacitor electrically as well as against moisture and heat. The capacitor insert is impregnated with Mineral Oil, thereby assuring long life at 85° C operating conditions. This feature insures successful operation at the high ambient temperatures existing in small, compact enclosures.

The Non-Inductively wound paper and foil units are sealed in the Ceramic Tubes by means of baked Synthetic Resin End Fills which cannot melt at any conceivable operating temperature. The end fills will not dissolve in wax, permitting the capacitors to be potted without damage to the insert. Leads are of tinned copper 2 1/4" long.

Part numbers can be read as follows: First one or two numbers indicate voltage rating in hundreds of volts. CP indicates type of capacitor. Next number between the dashes indicates case size. Last three digits indicate capacity, the first two being significant figures and the last the decimal multiplier.

Cap. Mfd.	1600 VDCW		1000 VDCW		600 VDCW		400 VDCW		200 VDCW	
	Part No.	List Price	Part No.	List Price	Part No.	List Price	Part No.	List Price	Part No.	List Price
.001	16CP-2-102	\$0.50	10CP-1-102	\$0.40	6CP-1-102	\$0.25				
.0015	16CP-2-152	.50	10CP-1-152	.40	6CP-1-152	.25				
.002	16CP-2-202	.50	10CP-1-202	.40	6CP-1-202	.25				
.0022	16CP-2-222	.50	10CP-1-222	.40	6CP-1-222	.25				
.0025			10CP-2-252	.40	6CP-1-252	.25				
.003	16CP-3-302	.50	10CP-2-302	.40	6CP-1-302	.25				
.0033	16CP-3-332	.50	10CP-2-332	.40	6CP-1-332	.25				
.004	16CP-3-402	.50	10CP-2-402	.40	6CP-1-402	.25				
.0047	16CP-3-472	.50	10CP-2-472	.40	6CP-1-472	.25				
.005	16CP-3-502	.50	10CP-2-502	.40	6CP-1-502	.25				
.006	16CP-4-602	.55	10CP-2-602	.40	6CP-2-602	.25				
.0068	16CP-4-682	.55	10CP-2-682	.40	6CP-2-682	.30				
.007	16CP-4-702	.55								
.0075	16CP-4-752	.55	10CP-2-752	.40	6CP-2-752	.30				
.008	16CP-4-802	.55								
.01	16CP-4-103	.55	10CP-2-103	.45	6CP-2-103	.30	4CP-1-103	\$0.25		
.015	16CP-5-153	.60	10CP-3-153	.45	6CP-2-153	.30	4CP-2-153	.25		
.02	16CP-5-203	.65	10CP-4-203	.45	6CP-3-203	.30	4CP-2-203	.25		
.022	16CP-5-223	.65	10CP-4-223	.45	6CP-3-223	.30	4CP-2-223	.30		
.025			10CP-4-253	.45	6CP-4-253	.35	4CP-3-253	.30		
.03	16CP-5-303	.65	10CP-4-303	.45	6CP-4-303	.35	4CP-3-303	.30		
.033			10CP-4-333	.55	6CP-4-333	.35	4CP-3-333	.30		
.04	16CP-6-403	.70	10CP-4-403	.55	6CP-4-403	.35	4CP-4-403	.30		
.047			10CP-4-473	.55	6CP-4-473	.40	4CP-4-473	.30		
.05	16CP-6-503	.75	10CP-4-503	.55	6CP-4-503	.40	4CP-4-503	.30		
.056			10CP-4-563	.60	6CP-4-563	.40	4CP-4-563	.30		
.068			10CP-5-683	.65	6CP-5-683	.45	4CP-4-683	.35		
.075			10CP-5-753	.65	6CP-5-753	.45	4CP-4-753	.35		
.1					6CP-5-104	.45	4CP-4-104	.35	2CP-4-104	\$0.35
.15					6CP-5-154	.55	4CP-5-154	.45	2CP-4-154	.40
.2					6CP-6-204	.65	4CP-6-204	.55	2CP-5-204	.45
.22					6CP-6-224	.70	4CP-6-224	.55	2CP-5-224	.45
.25					6CP-6-254	.70	4CP-6-254	.55	2CP-5-254	.45
.33									2CP-6-334	.55
.47									2CP-6-474	.70
.5									2CP-6-504	.70



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# TRIMMERS

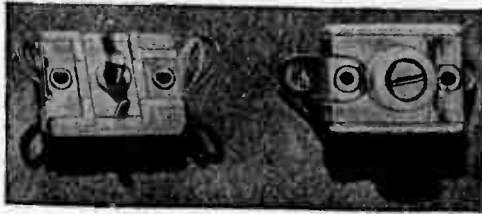
The base is made of the lowest dielectric loss ceramic material available and the mica is clear India Ruby.

The soldering lugs may be bent in any position without affecting capacity setting due to the rigid construction of adjusting plates.

EL-MENCO TRIMMING CONDENSERS are treated for resistance to humidity and for permanence of capacity setting.

Trimmers shown here are standard sizes and capacities.

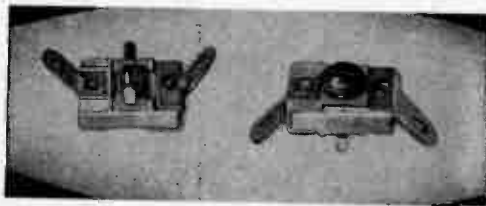
Voltage 350 VDCT — 175 VDCW.



TYPE 46 STANDARD TRIMMER 3/4" x 3/8"

### TYPE 46—STANDARD TRIMMER

NUMBER PART	PLATES NUMBER OF	GUARANTEED RANGE		LIST PRICE
		At Tight Cap. Will Be More Than MMF.	At 3 Turns Open Cap. Will Be Less Than MMF.	
460	1 1/4 Pl.	15	1.5	\$0.35
461	1 3/4 Pl.	30	2.7	.35
462	2 Pl.	80	5	.40
463	3 Pl.	180	9	.45
464	4 Pl.	280	25	.50
465	5 Pl.	380	50	.55
466	6 Pl.	480	80	.60
467	7 Pl.	580	110	.70
468	8 Pl.	680	140	.75
469	9 Pl.	780	170	.80



TYPE 40 MINIATURE TRIMMER 3/8" x 9/16"

### TYPE 40—MINIATURE TRIMMER

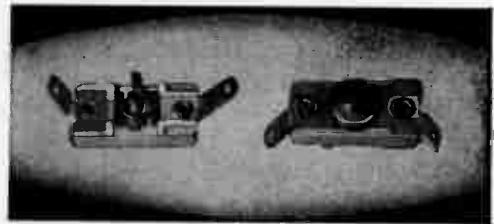
NUMBER PART	PLATES NUMBER OF	GUARANTEED RANGE		LIST PRICE
		At Tight Cap. Will Be More Than MMF.	At 3 Turns Open Cap. Will Be Less Than MMF.	
400	1 1/4 Pl.	7	0.9	\$0.40
402	2 Pl.	20	1.5	.45
403	3 Pl.	35	3	.50
404	4 Pl.	60	8	.55



### NOW AVAILABLE:

A complete Type 46 trimmer assembly with mounting bracket and adjusting shaft for ease of tuning. Can be supplied as pictured from stock or with construction variations to order.

**LIST PRICE: ADD 45c TO LIST PRICE OF TRIMMER ALONE**



TYPE 42 MIDGET TRIMMER 3/8" x 3/4"

### TYPE 42—MIDGET TRIMMER

NUMBER PART	PLATES NUMBER OF	GUARANTEED RANGE		LIST PRICE
		At Tight Cap. Will Be More Than MMF.	At 3 Turns Open Cap. Will Be Less Than MMF.	
420	1 1/4 Pl.	12	1	\$0.40
421	1 3/4 Pl.	25	2	.40
422	2 Pl.	40	4	.40
423	3 Pl.	100	7	.45
424	4 Pl.	150	14	.50
425	5 Pl.	200	24	.60
426	6 Pl.	250	37	.65
427	7 Pl.	300	55	.70
428	8 Pl.	350	70	.80
429	9 Pl.	400	90	.85

**Metal Mounting Brackets  
For These Trimmers Can Be  
Supplied From Stock**

	LIST PRICE
Bracket for mounting 2 Trimmers . . . . .	\$0.10
Bracket for mounting 3 Trimmers . . . . .	.12
Bracket for mounting 4 Trimmers . . . . .	.14
Bracket for mounting 5 Trimmers . . . . .	.16
Bracket for mounting 6 Trimmers . . . . .	.18



# ARCO ELECTRONICS INC.

## ELMENCO CAPACITORS

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ARCO CAPACITORS INC.  
LOS ANGELES 35, CALIFORNIA

### Single and Dual PADDERS

EL-MENCO PADDING CONDENSERS have been acclaimed by engineers as the finest development in adjustable mica condensers.

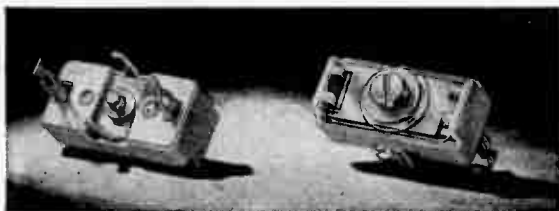
The construction is such as to completely enclose and protect the delicate edges of the mica films, made of the finest quality clear India ruby mica.

The phosphor bronze adjusting plates assure permanent resilience and freedom from mechanical fatigue. All parts are heavily plated to resist corrosion.

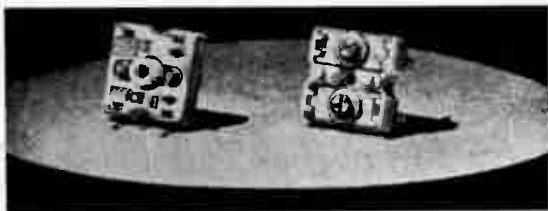
#### TYPE 30 500 Volts DC Flash-Test — 250 WVDC

PART NUMBER	NUMBER OF PLATES	GUARANTEED RANGE		LIST PRICE
		At 1½ Inch Pounds Cap. Will Be More Than MMF.	At 2½ Turns Open Cap. Will Be Less Than MMF.	
302	2 Pl.	130	15	\$0.80
303	3 Pl.	340	65	.85
304	4 Pl.	550	100	.90
305	5 Pl.	760	190	1.00
306	6 Pl.	970	275	1.10
307	7 Pl.	1180	350	1.20
308	8 Pl.	1390	450	1.25
309	9 Pl.	1600	550	1.35
310	10 Pl.	1890	650	1.45
311	11 Pl.	2110	780	1.55
312	12 Pl.	2330	880	1.65
313	13 Pl.	2605	1150	1.75
314	14 Pl.	2830	1300	1.85
315	15 Pl.	3055	1400	1.95

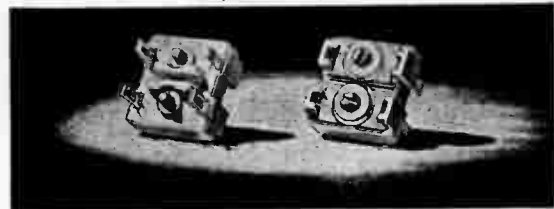
Screw is insulated from top plate by mica washer. Above maximum capacity values are based on using 1½ to 1¾ Mil Mica films.



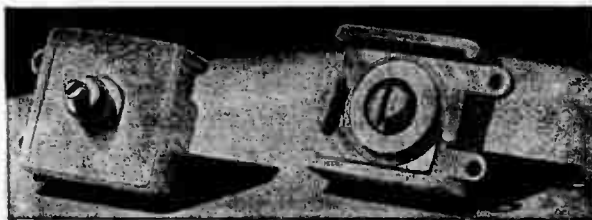
TYPE 58 PADDER 1" x 15/32"



TYPE 50 DUAL PADDER  
(will fit any size shield having dimensions exceeding 1-1/16" x 1-1/16")



TYPE 60 DUAL PADDER  
(will fit any size shield having dimensions exceeding ¾" x ¾")



TYPE 30 AND TYPE 30-M PADDER 7/8" x 15/16"

#### TYPE 30-M 1000 Volts DC Flash-Test — 500 Working Volts DC

PART NUMBER	NUMBER OF PLATES	GUARANTEED RANGE		LIST PRICE
		At 1½ Inch Pounds Cap. Will Be More Than MMF.	At 2½ Turns Open Cap. Will Be Less Than MMF.	
302-M	2 Pl.	120	15	\$0.80
303-M	3 Pl.	320	65	.90
304-M	4 Pl.	500	100	.95
305-M	5 Pl.	690	180	1.05
306-M	6 Pl.	880	265	1.15
307-M	7 Pl.	1070	340	1.25
308-M	8 Pl.	1260	425	1.30
309-M	9 Pl.	1415	525	1.40
310-M	10 Pl.	1600	615	1.50
311-M	11 Pl.	1785	730	1.60
312-M	12 Pl.	1970	800	1.70
313-M	13 Pl.	2155	1000	1.80
314-M	14 Pl.	2340	1100	1.90
315-M	15 Pl.	2525	1200	2.00

Screw is insulated from top plate by mica washer. Above maximum capacity values are based on using 2 to 2¼ Mil Mica.

PART NUMBER	NUMBER OF PLATES	GUARANTEED RANGE		LIST PRICE
		At Tight Cap. Will Be More Than MMF.	At 2 Turns Open Cap. Will Be Less Than MMF.	
582	2 Pl.	80	7.5	\$0.40
583	3 Pl.	160	19	.45
584	4 Pl.	240	50	.50

◀ TYPE 58 Padder is a single variable trimmer section provided with a two-pronged staple mounting for attachment to bracket or chassis. Base is made of lowest loss steatite and the mica is India Ruby.

PART NUMBER	NUMBER OF PLATES	GUARANTEED RANGE		LIST PRICE
		At Tight Cap. Will Be More Than MMF.	At 2 Turns Open Cap. Will Be Less Than MMF.	
502	2 Pl.	80	7.5	\$0.60
503	3 Pl.	160	19	.70
504	4 Pl.	240	50	.80

◀ TYPE 50 Dual Padders provide two variable trimmers mounted on a single base. This unit is designed as a tuning component for I.F. transformers; and as such, may be snap-in mounted along with the transformer coil in any size shield having dimensions exceeding 1¼" x 1¼".

PART NUMBER	NUMBER OF PLATES	GUARANTEED RANGE		LIST PRICE
		At Tight Cap. Will Be More Than MMF.	At 2 Turns Open Cap. Will Be Less Than MMF.	
602	2 Pl.	55	7	\$0.50
603	3 Pl.	100	15	.60
604	4 Pl.	160	35	.70

◀ TYPE 60 Dual Padders provide two variable trimmers mounted on a single base. This unit is designed as a tuning component for I.F. transformers; and as such, may be snap-in mounted along with the transformer coil in any size shield having dimensions exceeding ¾" x ¾".

See Page P-1166 for Mica Trimmer Capacitors



# ARCO ELECTRONICS INC.

## ELMENCO CAPACITORS

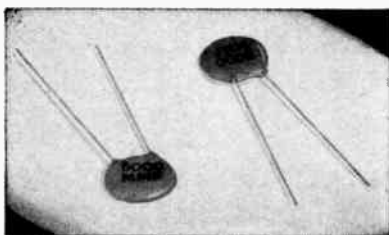
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DALLAS 19, TEXAS

ARCO CAPACITORS INC.  
LOS ANGELES 35, CALIFORNIA

## CERAMIC CAPACITORS



### SILVER HIGH "K" DISC

Reduced self-inductance due to flat design makes these units particularly adaptable to V.H.F. applications.

Cap. Mmf.	Type Designation	List Price (Min. Guar. Cap.)	List Price (±20% Tol.)
100	CCD-101	.25	.25
120	CCD-121	.25	.25
180	CCD-181	.25	.25
220	CCD-221	.25	.25
270	CCD-271	.25	.25
300	CCD-301	.25	.25
330	CCD-331	.25	.25
390	CCD-391	.25	.25
470	CCD-471	.25	.25
500	CCD-501	.25	.25
560	CCD-561	.25	.25
680	CCD-681	.25	.25
750	CCD-751	.25	.25
820	CCD-821	.25	.25
1000	CCD-102	.25	.25
1200	CCD-122	.25	.25
1500	CCD-152	.25	.25
2000	CCD-202	.25	.30
2200	CCD-222	.25	.30
2700	CCD-272	.25	.30
3000	CCD-302	.30	.30
3300	CCD-332	.30	.30
3900	CCD-392	.30	.30
4700	CCD-472	.30	.30
5000	CCD-502	.30	.30
5600	CCD-562	.30	.35
6800	CCD-682	* .30	.40
8200	CCD-822	* .35	.45
10000	CCD-103	* .35	.45
12000	CCD-123	* .40	
15000	CCD-153	* .50	

\* Tolerance +80%  
-20%

#### CASE SIZES:

100-1500	MMF	— .29 in. max. diam.
2000-5000	MMF	— .55 in. max. diam.
5600-15000	MMF	— .66 in. max. diam.

NOTE: Add letter "M" to part number to specify ±20% tolerance: i.e. — 1000 MMF ±20% would be CCD-102M.

Use primarily for coupling and by-pass in RF and higher frequency circuits, ELMENCO ceramic capacitors are wax impregnated with low-loss phenolic coating. Insulation resistance far exceeds the 10,000 megohm minimum requirements. Voltage rating is 1500VDC, 500VDCW. 90% relative humidity test for 100 hours. Radial leads are 1¼" minimum No. 22 tinned copper wire.

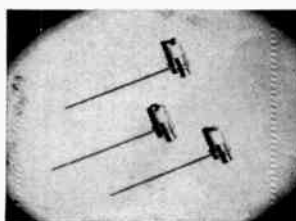
### N-750 DISC

Negative temperature coefficient ceramics for compensation and reduction of temperature drift.

TYPE DESIGNATION	CAP. MMF.	LIST PRICE (±20% TOL.)	LIST PRICE (±10% TOL.)
CCDN-470	47	\$0.40	\$0.50
CCDN-560	56	.40	.50
CCDN-620	62	.40	.50
CCDN-680	68	.40	.50
CCDN-750	75	.40	.50
CCDN-820	82	.40	.50
CCDN-101	100	.40	.50
CCDN-121	120	.40	.50
CCDN-151	150	.40	.50

Capacity and tolerance stamped on capacitor. Maximum Dimensions: .550" diam. — .150" thickness.

### VARIABLE CERAMIC TRIMMER

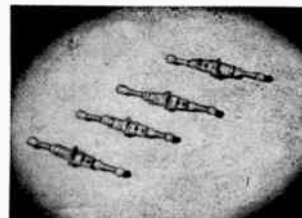


Adjustable ceramic trimmer capacitor for high frequency applications. Silvered Steatite tubes ¾" in length provide capacity ranges listed below upon insertion of 6-32 screw.

PART No.	CAP. RANGE MMF.	LIST PRICE
CV-1	0.5 - 3	\$0.35
CV-2	1 - 4	.35
CV-3	2 - 6	.35

### FEED THRU CAPACITORS

Compact rugged ceramic feed through capacitors are designed for high frequency coupling with a minimum of inductive reactance through elimination of wire leads. These units are three dot RMA coded and rated at 500VDCW.



PART No.	CAP. (MMF.) (Guar. Min. Val.)	LIST PRICE
CCF-501	500	\$0.40
CCF-102	1000	.40
CCF-152	1500	.40
CCF-202	2000	.40





# ARCO ELECTRONICS INC.

## ELMENCO CAPACITORS

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LOS ANGELES 35, CALIFORNIA

### ARCO CM-15 MINIATURE MICA CAPACITOR KIT #1

FOR EXPERIMENTAL WORK



THESE MINIATURES FIT INTO THE SMALLEST AREA CAPACITOR SIZE (9/32" x 1/2" x 3/16")

SPECIAL KIT LIST PRICE

ONLY **\$90<sup>00</sup>**

**DON'T GET CAUGHT SHORT!**

**ALWAYS HAVE THE CORRECT CAPACITY ON HAND!**

This Handy Kit consists of 46 most commonly used Capacitors...five of each capacity as listed on page P-128 packed in individual tuck boxes, properly identified for permanent use.

The complete set of capacitors amounts to \$111.50 at list prices. You get the entire set for only \$90.00.

**COMPARE THE COST!**



#### THESE KITS CONTAIN FIVE EACH OF THE FOLLOWING ELMENCO MICA CAPACITORS (500 V D C W)

CM20 Cap. mmf.	CM20 Cap. mmf.	CM20 Cap. mmf.	CM20 Cap. mmf.	CM30 Cap. mmf.	CM35 Cap. mmf.
5	39	120	390	1100	3600
10	43	130	430	1200	3900
12	47	150	470	1300	4300
15	51	160	510	1500	4700
18	56	180	560	1600	5100
20	62	200	620	1800	5600
22	68	220	680	2000	6200
24	75	240	750	2200	6800*
27	82	270	820	2400	7500*
30	91	300	910	2700	8200*
33	100	330	1000	3000	9100*
36	110	360	3300	3300	10000*

\*300VDCW PER JAN-C-5 SPECIFICATIONS



JAN-C-5

#### ARCO SILVERED MICA KIT #3

SPECIAL KIT LIST PRICE **\$325**

Purchased individually the total list price value of the capacitors contained in this kit would be **\$385**

This kit contains the complete range of ELMENCO silvered molded mica capacitors from 5 mmf. to 10,000 mmf. manufactured in accordance with JAN-C-5 specifications. All units are of letters "C", "D" or "E" characteristics as specified and letter "J" (5%) tolerance and are JAN color coded.

SPECIAL KIT LIST PRICE

**\$140**

Purchased individually the total list price value of the capacitors contained in this kit would be **\$15840**



JAN-C-5

#### ARCO REG. FOIL MICA KIT #2

This kit contains the complete range of ELMENCO regular foil molded mica capacitors from 5 mmf. to 10,000 mmf. manufactured in accordance with JAN-C-5 specifications. All units are of the letter "B" characteristics and letter "K" (10%) tolerance and are JAN color coded.



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LOS ANGELES 35, CALIFORNIA

## ARCO CM20 HI-VOLTAGE CAPACITOR KIT #4

This Kit contains 10 EACH of the following HIGH VOLTAGE CAPACITORS, Tolerance  $\pm 20\%$

CAP. MMF.	WKG. VOLT.	CAP. MMF.	WKG. VOLT.	CAP. MMF.	WKG. VOLT.
5	2500	56	2500	270	1500
10	2500	62	2500	300	1000
12	2500	68	2500	330	1000
15	2500	75	1500	360	1000
18	2500	82	1500	390	1000
20	2500	91	1500	430	1000
22	2500	100	1500	470	1000
24	2500	110	1500	500	1000
27	2500	120	1500	510	1000
80	2500	180	1500	560	1000
88	2500	150	1500	620	1000
86	2500	160	1500	680	1000
89	2500	180	1500	750	1000
48	2500	200	1500	820	1000
47	2500	220	1500	910	1000
50	2500	240	1500	1000	1000
51	2500	250	1500		

SPECIAL KIT LIST PRICE  
**\$189.50**

If purchased individually actual list price \$221.50



El-Menco High Voltage Capacitors are manufactured in accordance with MIL and RMA specifications for molded mica capacitors and are additionally designed to operate at higher voltages than normally expected of units of this size. They are ideally suited for use in high voltage, low power circuits, particularly where space requirements are an important factor. Axial wire leads provide simplicity of wiring through elimination of added mounting devices. All units are molded in low-loss phenolic cases and are wax-dipped for protection against salt-water immersion.

## ARCO TYPE 46 TRIMMER KIT #5



A complete stock of trimmers and padders is provided in these compact, easily handled, and readily accessible kits. Always have a full line of El-Menco trimmers and padders available for immediate use.

Provides a capacity range from  $1\frac{1}{2}$  to 780 mmfd. Twenty-four units of each size available in type 46 trimmers (see P-136). The total list price for all units included in the kit is \$130.80.

Yet you may have this complete kit for only

**Special Kit List Price \$100.00**

## ARCO TYPE 30 PADDER KIT #6



Provides a capacity range from 15 to 3055 mmfd. (30M:15 to 2525 mmfd.)

Twelve units of each size available in type 30 or type 30M (see P-137).

The total list price for all units included in the kit is \$223.80.

Yet you may have this complete kit for only

**Special Kit List Price \$170.00**



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## ARCO BY-PASS CAPACITOR KIT #9

### EL-MENCO STEATITE PAPER TUBULAR CAPACITORS

At low cost, a practical assortment of fast moving sizes for service replacement

#### CONTENTS

4 ea. — .001 — 600V	3 ea. — .02 — 600V
3 ea. — .002 — 600V	3 ea. — .03 — 600V
3 ea. — .003 — 600V	3 ea. — .047 — 600V
4 ea. — .005 — 600V	6 ea. — .05 — 600V
6 ea. — .01 — 600V	4 ea. — .1 — 600V

List Price  
**\$11<sup>95</sup>**



Total list value of capacitors \$12.50 plus a handy plastic container FREE.

## ARCO 1000 VOLT PAPER TUBULAR CAPACITOR KIT #8

SPECIAL KIT LIST PRICE  
**\$27.50**

Purchased individually the total list price value of the capacitors contained in this kit would be — **\$34<sup>75</sup>**



This Kit contains 5 EACH of the following PAPER TUBULAR CAPACITOR SIZES

PART NUMBER	CAPACITY MFD.	WORKING VOLTAGE
10CP-1-102	.001	1000
10CP-1-152	.0015	1000
10CP-1-202	.002	1000
10CP-1-252	.0025	1000
10CP-2-302	.003	1000
10CP-2-332	.0033	1000
10CP-2-402	.004	1000
10CP-2-472	.0047	1000
10CP-2-502	.005	1000
10CP-2-602	.006	1000
10CP-2-752	.0075	1000
10CP-2-103	.01	1000
10CP-3-153	.015	1000
10CP-4-203	.02	1000
10CP-4-253	.025	1000
10CP-4-333	.033	1000
10CP-4-503	.05	1000

El-Menco CP type paper tubular capacitors are sealed in impervious steatite ceramic tubes through use of synthetic resin end fills which are waterproof and will not melt at any conceivable operating temperature. The non-inductively wound paper and foil inserts are mineral oil impregnated. This combination of fine quality material and construction insures long life at high ambient temperatures, indefinite shelf-life and trouble-free operation under the most adverse conditions.

## ARCO STANDARD PAPER TUBULAR CAPACITOR KIT #7

SPECIAL KIT LIST PRICE  
**\$37<sup>50</sup>**

Purchased individually the total list price value of the capacitors would be — **\$40<sup>50</sup>**



This Kit contains 5 EACH of the following PAPER TUBULAR CAPACITOR SIZES

PART NUMBER	CAPACITY MFD.	WORKING VOLTAGE
6CP-1-102	.001	600
6CP-1-152	.0015	600
6CP-1-202	.002	600
6CP-1-222	.0022	600
6CP-1-252	.0025	600
6CP-1-302	.003	600
6CP-1-332	.0033	600
6CP-1-402	.004	600
6CP-1-472	.0047	600
6CP-1-502	.005	600
6CP-2-602	.006	600
6CP-2-682	.0068	600
6CP-2-752	.0075	600
6CP-2-103	.01	600
6CP-2-153	.015	600
6CP-3-203	.02	600
6CP-3-223	.022	600
6CP-4-303	.03	600
6CP-4-333	.033	600
6CP-4-403	.04	600
6CP-4-473	.047	600
6CP-4-503	.05	600
6CP-5-104	.1	600
4CP-6-254	.25	400
2CP-6-504	.5	200



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## ARCO DM-15 KIT #10

This handy kit consists of five of each DM-15 capacity as listed on Page P-133 packed in individual transparent plastic snap boxes, properly identified for ease of handling.

**SPECIAL KIT  
LIST PRICE**  
**\$95<sup>00</sup>**

Purchased individually the total list price value of the capacitors contained in this kit would be — **\$10331**

## ARCO DUR-MICA KIT #11

This Kit contains five each of the following listed DUR-MICA capacitors, all 500VDWC and  $\pm 5\%$  tolerance; or  $\pm 0.5$  mmf., whichever is greater.

**SPECIAL KIT  
LIST PRICE**  
**\$250<sup>00</sup>**

Purchased individually the total list price value of the capacitors contained in this kit would be . . . **\$28635**

Packed in individual transparent plastic snap boxes, properly identified for ease of handling.



Cap. mmf.	Type Desig.	Cap. mmf.	Type Desig.	Cap. mmf.	Type Desig.	Cap. mmf.	Type Desig.
2	DM15-020M	62	DM15-620J	360	DM19-361J	2000	DM20-202J
5	DM15-050K	68	DM15-680J	390	DM19-391J	2200	DM20-222J
10	DM15-100J	75	DM15-750J	430	DM19-431J	2400	DM20-242J
12	DM15-120J	82	DM15-820J	470	DM19-471J	2700	DM20-272J
15	DM15-150J	91	DM15-910J	510	DM19-511J	3000	DM20-302J
18	DM15-180J	100	DM15-101J	560	DM19-561J	3300	DM20-332J
20	DM15-200J	110	DM15-111J	620	DM19-621J	3600	DM20-362J
22	DM15-220J	120	DM15-121J	680	DM20-681J	3900	DM20-392J
24	DM15-240J	130	DM15-131J	750	DM20-751J	4300	DM20-432J
27	DM15-270J	150	DM15-151J	820	DM20-821J	4700	DM30-472J
30	DM15-300J	160	DM19-161J	910	DM20-911J	5100	DM30-512J
33	DM15-330J	180	DM19-181J	1000	DM20-102J	5600	DM30-562J
36	DM15-360J	200	DM19-201J	1100	DM20-112J	6200	DM30-622J
39	DM15-390J	220	DM19-221J	1200	DM20-122J	6800	DM30-682J
43	DM15-430J	240	DM19-241J	1300	DM20-132J	7500	DM30-752J
47	DM15-470J	270	DM19-271J	1500	DM20-152J	8200	DM30-822J
51	DM15-510J	300	DM19-301J	1600	DM20-162J	9100	DM30-912J
56	DM15-560J	330	DM19-331J	1800	DM20-182J	10000	DM30-103J



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ARCO ELECTRONICS INC.  
NEW YORK 13, N. Y.

ARCO ELECTRONICS INC.  
CHICAGO 5, ILLINOIS

ARCO ELECTRONICS INC.  
DALLAS 19, TEXAS

ARCO CAPACITORS INC.  
LOS ANGELES 35, CALIFORNIA

### ARCO 1600 V-BUFFER CAPACITOR KIT #12

#### ELMenco Steatite Paper Tubular Capacitors

**SPECIAL LIST PRICE**  
**\$14<sup>75</sup>**

ACTUAL LIST VALUE  
OF CAPACITORS  
IF PURCHASED  
INDIVIDUALLY  
**\$15.60**

**PLUS A HANDY PLASTIC CONTAINER FREE!**

#### CONTENTS

2 ea. — .001 — 1600V	3 ea. — .007 — 1600V
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				2 ea. 005 1600V	2 ea. 006 1600V



A low cost, practical assortment of fast moving 1600V-Bufferers for service replacement!

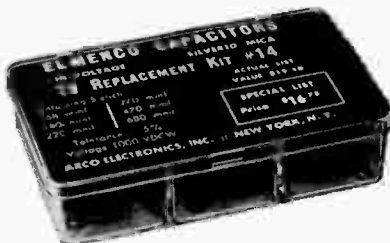


### ARCO TV HI-VOLTAGE REPLACEMENT KIT #14

- All Silvered Mica
- All 1000 Working Volts
- All  $\pm 5\%$  Tolerance
- All Capacities, Tolerance and Voltages Imprinted On Each Unit
- Handy Compact Plastic Container

Actual List Value  
**\$19.50**

**SPECIAL LIST PRICE**  
**\$16<sup>75</sup>**



CONTAINS 5 EA. OF  
68 mmf. 270 mmf.  
180 mmf. 470 mmf.  
220 mmf. 680 mmf.



### ARCO MINIATURE DM-15 CAPACITOR STOCK PACKAGE

Distinctive Steel Cabinet With Plastic Pull-Out Drawers Supplied FREE With DM-15 Package.

**SPECIAL KIT LIST PRICE**  
**\$596**

Purchased individually the total list price value of the capacitors contained in this package would be . . . . . **\$715**








A complete stock of DM-15 capacitors (fifty-one items) totaling 2100 capacitors; fifty each of the most used values and 25 each of the others. Capacity range is 1-820 mmf., tolerance  $\pm 5\%$  or  $\pm 0.5$  mmf., whichever is greater.

#### ATTENTION — JOBBERS, ENGINEERS

We have expanded our facilities to make up any special stock or kit requirements of any size for your special individual needs.

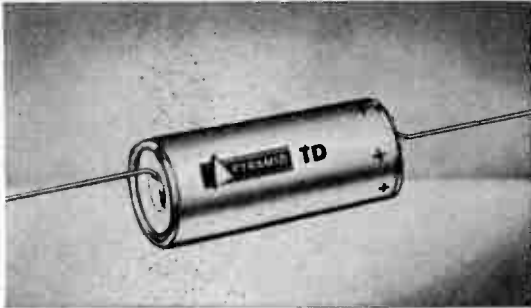
# Barco, Inc.

MILWAUKEE 1, WISCONSIN

	CATALOG NO.	CAPACITY -20% + 60%	WORKING VOLTAGE	LIST PRICE	BODY SIZE (actual) Tolerances: Dia. $\pm 1/64$ , length $\pm 1/32$ Leads: 1-1/8 in. minimum.
<b>TYPE 0</b>	*P3-1.25	1.25 mfd.	3 v dc	\$0.85	 1/8 dia. x 15/32 length
	P3-2I	2 mfd.	3 v dc	1.00	
	*P6-1	1 mfd.	6 v dc	0.85	
	*P12-1	1 mfd.	12 v dc	1.00	
	P25-.6	0.6 mfd.	25 v dc	1.00	
	P70-.25	0.25 mfd.	70 v dc	1.00	
<b>TYPE 1/2</b>	PT1.5-6	6 mfd.	1 1/2 v dc	\$0.85	 1/8 dia. x 5/8 length
	*PT4-4	4 mfd.	4 v dc	0.85	
	*PT8-2	2 mfd.	8 v dc	1.00	
	PT12-1	1 mfd.	12 v dc	1.00	
	PT50-.25	0.25 mfd.	50 v dc	1.00	
	PT70-.1	0.1 mfd.	70 v dc	1.00	
<b>TYPE 3/4</b>	*PX3-10I	10 mfd.	3 v dc	\$0.85	 11/64 dia. x 15/32 length
	*PX6-8I	8 mfd.	6 v dc	0.85	
	*P12-5I	5 mfd.	12 v dc	0.85	
	*PX25-2.5I	2.5 mfd.	25 v dc	0.85	
	P70-1	1 mfd.	70 v dc	0.85	
<b>TYPE I-IA</b>	*PT6-2	2 mfd.	6 v dc	\$0.70	 11/64 dia. x 9/16 length ① Body size is 13/64 x 11/16 in. ② Body size is 11/64 x 3/4 in.
	PT6-4	4 mfd.	6 v dc	0.70	
	PT6-8	8 mfd.	6 v dc	0.70	
	PT12-2	2 mfd.	12 v dc	0.70	
	*PS12-3I	3 mfd.	12 v dc	0.70	
	*P25-2.5I	2.5 mfd.	25 v dc	0.70	
<b>TYPE II</b>	PT3-32I	32 mfd.	3 v dc	\$0.75	 1/4 dia. x 3/4 length ③ Body size is 1/4 x 11/16 in.
	*P3-40I	40 mfd.	3 v dc	0.75	
	*P6-25	25 mfd.	6 v dc	0.75	
	P9-20I	20 mfd.	9 v dc	0.75	
	*P12-16	16 mfd.	12 v dc	0.75	
	*P25-8I	8 mfd.	25 v dc	0.75	
	*P40-5	5 mfd.	40 v dc	0.75	
	*P70-3	3 mfd.	70 v dc	0.75	
	<b>TYPE III</b>	*P3-100	100 mfd.	3 v dc	
*P6-80I		80 mfd.	6 v dc	1.00	
*P12-50I		50 mfd.	12 v dc	1.00	
*P25-25I		25 mfd.	25 v dc	1.00	
P40-16		16 mfd.	40 v dc	1.00	
*P70-10I		10 mfd.	70 v dc	1.00	
<b>TYPE IV</b>	P3-200	200 mfd.	3 v dc	\$1.25	 23/64 dia. x 1-9/32 length
	P6-160	160 mfd.	6 v dc	1.25	
	P12-100I	100 mfd.	12 v dc	1.25	
	*P25-50I	50 mfd.	25 v dc	1.25	
	P40-30	30 mfd.	40 v dc	1.25	
	P70-20	20 mfd.	70 v dc	1.25	
<b>TYPE V</b>	PT3-500	500 mfd.	3 v dc	\$1.25	 7/16 dia. x 1-1/8 length ④ Body size is 7/16 x 1-3/8 in. ⑤ Body size is 7/16 x 1-5/8 in.
	PT50-25I	25 mfd.	50 v dc	1.25	
	PT150-8I	8 mfd.	150 v dc	1.25	
	PT150-20I	20 mfd.	150 v dc	1.25	

\* Indicates fastest selling items which should be stocked heavily.

I Designates insulated covering available; add I to catalog number if desired (I insulated only).



**TYNEE-DRY ELECTROLYTIC CAPACITORS**

Tyne-Dry single-capacitor units, with 3-inch bare-wire leads. Designed for 85° C. operation. Each unit sealed in metal tubular case. Supplied with insulating cardboard sleeve. Low leakage. Long shelf life. Top quality in minimum space.

TYPE

**T  
D**

**TD SINGLE-CAPACITOR UNITS**

Catalog Number	Cap. in UF	Size in Inches* Diam. Lgth.	List Price
<b>6 VOLTS DC WORKING</b>			
TD-50-6	50.	1/2 1 1/8	.95
TD-100-6	100.	1/2 1 5/8	1.20
TD-250-6	250.	5/8 1 5/8	1.35
TD-500-6	500.	5/8 1 5/8	1.55
TD-1000-6	1,000.	3/4 2	1.90
TD-1500-6	1,500.	3/4 2	2.10
TD-2000-6	2,000.	1 2	2.30
<b>15 VOLTS DC WORKING</b>			
TD-100-15	100.	5/8 1 1/4	1.25
TD-250-15	250.	5/8 1 5/8	1.55
TD-500-15	500.	3/4 2	1.75
TD-1000-15	1,000.	7/8 2	2.30
<b>25 VOLTS DC WORKING</b>			
TD-2-25	2.	3/4 1 1/8	.90
TD-4-25	4.	3/4 1 1/8	1.00
TD-5-25	5.	3/4 1 1/8	1.00
TD-10-25	10.	3/4 1 1/8	1.00
TD-25-25	25.	1/2 1 1/8	1.00
TD-50-25	50.	5/8 1 1/4	1.10
TD-100-25	100.	5/8 1 5/8	1.35
TD-250-25	250.	7/8 2	1.70
TD-500-25	500.	7/8 2	2.30
<b>50 VOLTS DC WORKING</b>			
TD-1-50	1.	3/4 1 1/8	.90
TD-2-50	2.	3/4 1 1/8	.90
TD-4-50	4.	3/4 1 1/8	1.00
TD-5-50	5.	3/4 1 1/8	1.00
TD-10-50	10.	3/4 1 1/8	1.00
TD-25-50	25.	5/8 1 1/4	1.05
TD-50-50	50.	5/8 1 1/4	1.20
TD-100-50	100.	3/4 1 5/8	1.40
TD-150-50	150.	3/4 1 5/8	1.55
TD-250-50	250.	7/8 1 5/8	1.75

Catalog Number	Cap. in UF	Size in Inches* Diam. Lgth.	List Price
<b>150 VOLTS DC WORKING</b>			
TD-4-150	4.	3/4 1 1/8	1.00
TD-8-150	8.	5/8 1 1/4	1.05
TD-10-150	10.	5/8 1 1/4	1.05
TD-12-150	12.	5/8 1 1/4	1.10
TD-16-150	16.	5/8 1 1/4	1.15
TD-20-150	20.	5/8 1 1/4	1.20
TD-30-150	30.	5/8 1 1/2	1.30
TD-40-150	40.	3/4 1 5/8	1.35
TD-50-150	50.	3/4 1 5/8	1.40
TD-80-150	80.	7/8 1 5/8	1.60
TD-100-150	100.	7/8 2	1.75
TD-150-150	150.	1 2 1/2	1.90
TD-200-150	200.	1 3	2.20
TD-250-150	250.	1 3	2.45
TD-300-150	300.	1 3 3/4	2.55
<b>200 VOLTS DC WORKING</b>			
TD-100-200	100.	1 3	2.20
TD-200-200	200.	1 4	2.55
<b>250 VOLTS DC WORKING</b>			
TD-4-250	4.	1/2 1 1/8	1.00
TD-8-250	8.	5/8 1 1/4	1.15
TD-10-250	10.	5/8 1 1/4	1.20
TD-12-250	12.	5/8 1 1/4	1.25
TD-16-250	16.	5/8 1 1/2	1.30
TD-20-250	20.	5/8 1 1/2	1.35
TD-30-250	30.	3/4 1 5/8	1.45
TD-40-250	40.	7/8 1 5/8	1.55
TD-60-250	60.	7/8 2	1.80
<b>300 VOLTS DC WORKING</b>			
TD-150-300	150.	1 4 1/4	3.25
<b>350 VOLTS DC WORKING</b>			
TD-8-350	8.	5/8 1 5/8	1.20
TD-12-350	12.	5/8 1 5/8	1.30
TD-16-350	16.	3/4 1 5/8	1.40

Catalog Number	Cap. in UF	Size in Inches* Diam. Lgth.	List Price
TD-20-350	20.	3/4 1 5/8	1.45
TD-30-350	30.	7/8 2	1.65
TD-40-350	40.	1 2	1.75
TD-60-350	60.	1 2 1/2	1.95
TD-80-350	80.	1 2 1/2	2.15
<b>450 VOLTS DC WORKING</b>			
TD-2-450	2.	5/8 1 1/4	1.10
TD-8-450	8.	5/8 1 1/2	1.25
TD-4-450	4.	5/8 1 1/4	1.15
TD-12-450	12.	3/4 1 5/8	1.35
TD-10-450	10.	3/4 1 5/8	1.30
TD-16-450	16.	3/4 2	1.40
TD-20-450	20.	7/8 2	1.55
TD-30-450	30.	1 2	1.70
TD-40-450	40.	1 2 1/2	1.80
TD-50-450	50.	1 3	2.10
TD-80-450	80.	1 4	2.80
TD-100-450	100.	1 3 3/4	3.10
<b>500 VOLTS DC WORKING</b>			
TD-8-500	8.	7/8 1 5/8	1.30
TD-10-500	10.	7/8 1 5/8	1.40
TD-12-500	12.	7/8 1 5/8	1.40
TD-20-500	20.	1 2	1.60
TD-30-500	30.	1 2 1/2	1.75
<b>600 VOLTS DC WORKING</b>			
TD-8-600	8.	7/8 2 3/4	1.40
TD-10-600	10.	7/8 2 3/4	1.45
TD-12-600	12.	7/8 2 3/4	1.50
TD-16-600	16.	1 3 3/4	1.65
TD-20-600	20.	1 3 3/4	1.70
<b>700 VOLTS DC WORKING</b>			
TD-8-700	8.	7/8 2 3/4	1.50
TD-10-700	10.	7/8 2 3/4	1.55
TD-12-700	12.	1 3 3/4	1.60
TD-16-700	16.	1 3 3/4	1.75

\* For overall size add 1/16" to diameter and 3/16" to length.

**MET-CAN ELECTROLYTIC CAPACITORS**

DC dry electrolytic capacitors. Assembled in screw-base metal containers for maximum protection against humidity. 8-inch flexible-wire insulated leads at one end. Supplied with pal-nut for mounting.

TYPE

**M  
C**



**MC SINGLE-CAPACITOR UNITS**

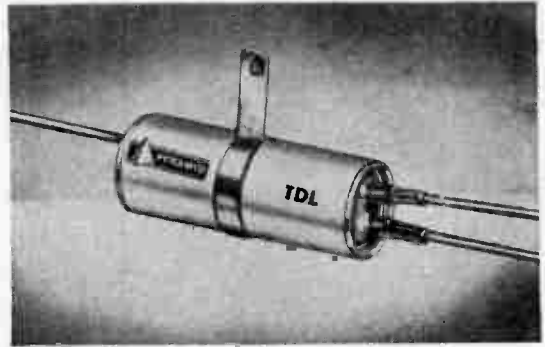
Catalog Number	Cap. in UF	Size in Inches Diameter Length	List Price
<b>450 VOLTS DC WORKING</b>			
MC-8-450	8.	1 3/8 3 1/8	2.20
MC-16-450	16.	1 3/8 3 1/8	2.45
MC-30-450	30.	1 3/8 3 1/8	3.00
<b>600 VOLTS DC WORKING</b>			
MC-8-600	8.	1 3/8 3 1/8	3.15
MC-16-600	16.	1 3/8 3 1/8	3.75
MC-20-600	20.	1 3/8 3 1/8	3.95
<b>MC DUAL-CAPACITOR UNITS</b>			
<b>COMMON NEGATIVE</b>			
MC-D8-450CN	8-8	1 3/8 3 1/8	3.00
MC-D16-450CN	16-16	1 3/8 3 1/8	3.55
MC-D20-450CN	20-20	1 3/8 3 1/8	4.10



**TYPE TYNEE-DRY ELECTROLYTIC CAPACITORS**

**T  
D  
L**

Tynee-Dry dual -and triple-capacitor units with 8-inch flexible-wire insulated leads. Designed for 85° C. operation. Each unit sealed in metal tubular case. Supplied with riveted radial mounting bracket over insulating cardboard sleeve. Low leakage. Long shelf life. Top quality in minimum space.



**TDL DUAL-CAPACITOR UNITS**

Stock Number	Catalog Number	Cap. in UF	Size in Inches* Diameter	Length	List Price
<b>25 VOLTS DC WORKING</b>					
TDL-D-1	TDL-D-25	10-10	3/4	1 5/8	1.40
<b>50 VOLTS DC WORKING</b>					
TDL-D-2	TDL-D10-50	10-10	3/4	1 5/8	1.40
<b>150 VOLTS DC WORKING</b>					
TDL-D-3	TDL-D20-150	20-20	3/4	1 5/8	1.65
TDL-D-4	TDL-D30-150	30-30	3/4	2	1.80
TDL-D-5	TDL-4020-150	40-20	3/4	2	1.75
TDL-D-6	TDL-4030-150	40-30	3/4	2	1.80
TDL-D-7	TDL-D40-150	40-40	3/4	2	1.85
TDL-D-8	TDL-5030-150	50-30	3/4	2	1.95
TDL-D-9	TDL-D50-150	50-50	7/8	2	2.10
TDL-D-10	TDL-8030-150	80-30	7/8	2	2.20
TDL-D-11	TDL-8040-150	80-40	1	2	2.25
TDL-D-12	TDL-8050-150	80-50	1	2	2.30
TDL-D-13	TDL-D80-150	80-80	1	2 1/2	2.60
TDL-D-14	TDL-10050-150	100-50	1	3	2.35
TDL-D-15	TDL-D100-150	100-100	1	3	3.20
TDL-D-16	TDL-2005-150	200-5	1	3 1/2	2.70

Stock Number	Catalog Number	Cap. in UF	Size in Inches* Diameter	Length	List Price
TDL-D-30	TDL-4020-450	40-20	1	3 1/2	2.95
TDL-D-31	TDL-D40-450	40-40	1	3 3/4	3.40
TDL-D-32	TDL-5030-450	50-30	1	4	3.40

**TDL TRIPLE-CAPACITOR UNITS**

Stock Number	Catalog Number	Cap. in UF	Size in Inches* Diameter	Length	List Price
<b>150 VOLTS DC WORKING</b>					
TDL-T-1	TDL-T20-150	20-20-20	1	2	2.15
TDL-T-2	TDL-T30-150	30-30-30	1	2	2.30
TDL-T-3	TDL-403020-150	40-30-20	1	2	2.35
TDL-T-4	TDL-404020-150	40-40-20	1	2	2.35
TDL-T-5	TDL-T40-150	40-40-40	1	2	2.45
TDL-T-6	TDL-503020-150	50-30-20	1	2	2.35
TDL-T-7	TDL-804020-150	80-40-20	1	2	2.75
<b>250 VOLTS DC WORKING</b>					
TDL-T-8	TDL-754010-250	75-40-10	1	3	3.45
<b>450 VOLTS DC WORKING</b>					
TDL-T-9	TDL-T16-450	16-16-16	1	3	3.10

**TDL TRIPLE-CAPACITOR UNITS, MIXED SECTIONS**

**250 VOLTS DC WORKING**

Stock Number	Catalog Number	Cap. in UF	Size in Inches* Diameter	Length	List Price
TDL-D-17	TDL-D8-250	8-8	3/4	1 5/8	1.60
TDL-D-18	TDL-D16-250	16-16	3/4	1 5/8	1.60
TDL-D-19	TDL-D20-250	20-20	3/4	2	1.85
TDL-D-20	TDL-D30-250	30-30	7/8	2	2.00
TDL-D-21	TDL-4020-250	40-20	7/8	2	2.15
TDL-D-22	TDL-D40-250	40-40	1	2	2.15
TDL-D-23	TDL-8010-250	80-10	1	2	2.55

**450 VOLTS DC WORKING**

Stock Number	Catalog Number	Cap. in UF	Size in Inches* Diameter	Length	List Price
TDL-D-24	TDL-D8-450	8-8	7/8	1 5/8	1.70
TDL-D-25	TDL-816-450	8-16	7/8	2	2.00
TDL-D-26	TDL-D10-450	10-10	7/8	2	1.85
TDL-D-27	TDL-D16-450	16-16	1	2	2.20
TDL-D-28	TDL-D20-450	20-20	1	2 1/2	2.50
TDL-D-29	TDL-D30-450	30-30	1	3	3.00

Stock Number	Catalog Number	Cap. in UF	Volts DC Working	Length* in Inches	List Price
<b>DIAMETER: 1"</b>					
TDL-T-10	TDL-8332	80-30-300	150-150-10	3	3.05
TDL-T-11	TDL-222	20-20-20	150-150-20	2	2.05
TDL-T-12	TDL-432	40-30-20	150-150-25	2	2.20
TDL-T-13	TDL-442	40-40-20	150-150-25	2	2.25
TDL-T-14	TDL-4412	40-40-100	150-150-25	2 1/2	2.45
TDL-T-15	TDL-532	50-30-20	150-150-25	2	2.25
TDL-T-16	TDL-5312	50-30-100	150-150-25	2 1/2	2.55
TDL-T-17	TDL-5322	50-30-200	150-150-25	2 1/2	2.75
TDL-T-18	TDL-552	50-50-20	150-150-25	2 1/2	2.50
TDL-T-19	TDL-8212	80-20-100	150-150-25	2 1/2	2.75
TDL-T-20	TDL-44225	40-40-20	250-250-25	2 1/2	2.90
TDL-T-21	TDL-22245	20-20-20	450-450-25	2 1/2	2.90

\* For overall size add 1/16" to diameter and 3/16" to length.

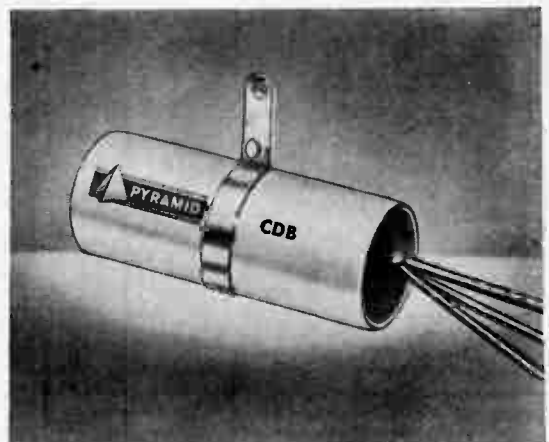
**CARTRIJ-DRY ELECTROLYTIC CAPACITORS**

DC dry electrolytic capacitors assembled in wax-filled, impregnated cardboard tubes. 8-inch flexible leads at one end. Assembled mounting strap. Low leakage. Long shelf life.

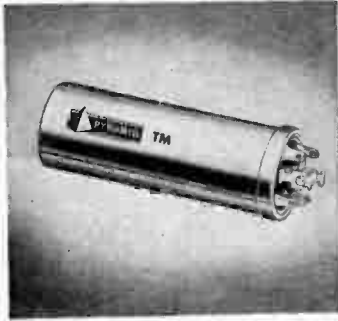
**TYPE**

**C  
D  
B**

Catalog Number	Cap. in UF	Volts DC Working	Size In Inches Diam. Lgth.	List Price
<b>DUAL-CAPACITOR UNITS (Common Negative)</b>				
CDB-D-1014	150-100	300-300	1 3/8 4 3/4	5.55
<b>TRIPLE CAPACITOR UNITS (Common Negative)</b>				
CDB-T-1015	200-250-10	150-150-150	1 3/8 4 1/8	3.95
<b>TRIPLE UNITS, MIXED SECTIONS (Common Negative)</b>				
CDB-T-1002	80-30-20	150-150-25	1 2 3/4	2.75
CDB-T-1009	100-200-40	300-200-200	1 3/8 4 1/2	4.75
CDB-T-1011	120-40-100	300-250-50	1 3/8 4 1/8	4.50
<b>QUADRUPLE-CAPACITOR UNITS (Common Negative)</b>				
CDB-Q-1003	20-20-10-10	350-350-350-350	1 1/8 3 1/2	4.10
CDB-Q-4422	40-40-20-20	450-450-450-450	1 1/2 4 3/4	5.45
<b>QUADRUPLE UNITS, MIXED SECTIONS (Com. Negative)</b>				
CDB-Q-1013	70-30-30-20	150-150-150-15	1 3 1/2	3.65
CDB-Q-1001	40-40-20-20	150-150-150-25	1 3	3.10
CDB-Q-1008	140-5-200-30	350-350-200-200	1 1/2 5	5.45
CDB-Q-1005	20-120-40-100	450-300-350-50	1 1/2 4 1/2	5.50







**TWIST-MOUNT  
 ELECTROLYTIC CAPACITORS**

Designed for 85° C. operation. Type TM available in single-, dual-, triple-, and quadruple-capacitor units. Assembled in aluminum containers providing maximum protection against moisture. Easy to mount: supplied complete with metal and Bakelite mounting plates. Low leakage. Long shelf life. Extremely compact. Highly dependable. For use in applications where high temperatures, voltage surges, and ripple currents are encountered; as in radio and television receivers, amplifiers, and similar equipment. For mounting hardware, see page 8 on layout or equivalent in masters.

TYPE

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**TM SINGLE-CAPACITOR UNITS**

Stock Number	Catalog Number	Cap. in UF	Size in Diameter	Inches Length	List Price	Stock Number	Catalog Number	Cap. in UF	Size in Diameter	Inches Length	List Price
<b>6 VOLTS DC WORKING</b>						<b>TMS-34</b>	<b>TM-150-250</b>	<b>150.</b>	<b>1 3/8</b>	<b>2 1/2</b>	<b>3.10</b>
<b>TMS-1</b>	<b>TM-1000-6</b>	<b>1,000.</b>	<b>1 3/8</b>	<b>2</b>	<b>1.90</b>	<b>TMS-75</b>	<b>TM-200-250</b>	<b>200.</b>	<b>1 3/8</b>	<b>3 1/2</b>	<b>3.50</b>
<b>TMS-2</b>	<b>TM-2000-6</b>	<b>2,000.</b>	<b>1 3/8</b>	<b>2</b>	<b>2.55</b>	<b>300 VOLTS DC WORKING</b>					
<b>10 VOLTS DC WORKING</b>						<b>TMS-35</b>	<b>TM-15-300</b>	<b>15.</b>	<b>1</b>	<b>2</b>	<b>1.60</b>
<b>TMS-3</b>	<b>TM-3000-10</b>	<b>3,000.</b>	<b>1 3/8</b>	<b>2 1/2</b>	<b>2.90</b>	<b>TMS-36</b>	<b>TM-30-300</b>	<b>30.</b>	<b>1</b>	<b>2</b>	<b>1.75</b>
<b>15 VOLTS DC WORKING</b>						<b>TMS-37</b>	<b>TM-40-300</b>	<b>40.</b>	<b>1</b>	<b>2 1/2</b>	<b>1.90</b>
<b>TMS-4</b>	<b>TM-1000-15</b>	<b>1,000.</b>	<b>1</b>	<b>2 1/2</b>	<b>2.55</b>	<b>TMS-38</b>	<b>TM-50-300</b>	<b>50.</b>	<b>1</b>	<b>2 1/2</b>	<b>2.05</b>
<b>TMS-5</b>	<b>TM-2000-15</b>	<b>2,000.</b>	<b>1 3/8</b>	<b>2 1/2</b>	<b>3.45</b>	<b>TMS-39</b>	<b>TM-80-300</b>	<b>80.</b>	<b>1</b>	<b>3</b>	<b>2.55</b>
<b>TMS-6</b>	<b>TM-3000-15</b>	<b>3,000.</b>	<b>1 3/8</b>	<b>3</b>	<b>3.50</b>	<b>TMS-40</b>	<b>TM-100-300</b>	<b>100.</b>	<b>1</b>	<b>3</b>	<b>2.90</b>
<b>TMS-7</b>	<b>TM-4000-15</b>	<b>4,000.</b>	<b>1 3/8</b>	<b>3 1/2</b>	<b>3.75</b>	<b>TMS-41</b>	<b>TM-125-300</b>	<b>125.</b>	<b>1 3/8</b>	<b>3</b>	<b>3.50</b>
<b>25 VOLTS DC WORKING</b>						<b>TMS-42</b>	<b>TM-150-300</b>	<b>150.</b>	<b>1 3/8</b>	<b>3</b>	<b>3.50</b>
<b>TMS-8</b>	<b>TM-50-25</b>	<b>50.</b>	<b>1</b>	<b>2</b>	<b>1.40</b>	<b>350 VOLTS DC WORKING</b>					
<b>TMS-9</b>	<b>TM-100-25</b>	<b>100.</b>	<b>1</b>	<b>2</b>	<b>1.60</b>	<b>TMS-43</b>	<b>TM-15-350</b>	<b>15.</b>	<b>1</b>	<b>2</b>	<b>1.65</b>
<b>TMS-73</b>	<b>TM-250-25</b>	<b>250.</b>	<b>1</b>	<b>2</b>	<b>1.90</b>	<b>TMS-44</b>	<b>TM-30-350</b>	<b>30.</b>	<b>1</b>	<b>2 1/2</b>	<b>1.90</b>
<b>TMS-10</b>	<b>TM-500-25</b>	<b>500.</b>	<b>1</b>	<b>2 1/2</b>	<b>2.55</b>	<b>TMS-45</b>	<b>TM-40-350</b>	<b>40.</b>	<b>1</b>	<b>2 1/2</b>	<b>2.00</b>
<b>TMS-11</b>	<b>TM-1000-25</b>	<b>1,000.</b>	<b>1 3/8</b>	<b>2</b>	<b>3.55</b>	<b>TMS-46</b>	<b>TM-50-350</b>	<b>50.</b>	<b>1</b>	<b>3</b>	<b>2.10</b>
<b>50 VOLTS DC WORKING</b>						<b>TMS-47</b>	<b>TM-80-350</b>	<b>80.</b>	<b>1 3/8</b>	<b>3 1/2</b>	<b>2.85</b>
<b>TMS-12</b>	<b>TM-100-50</b>	<b>100.</b>	<b>1</b>	<b>2</b>	<b>1.65</b>	<b>TMS-48</b>	<b>TM-125-350</b>	<b>125.</b>	<b>1 3/8</b>	<b>3</b>	<b>3.95</b>
<b>TMS-13</b>	<b>TM-150-50</b>	<b>150.</b>	<b>1</b>	<b>2</b>	<b>1.80</b>	<b>400 VOLTS DC WORKING</b>					
<b>TMS-14</b>	<b>TM-250-50</b>	<b>250.</b>	<b>1</b>	<b>2 1/2</b>	<b>2.00</b>	<b>TMS-49</b>	<b>TM-10-400</b>	<b>10.</b>	<b>1</b>	<b>2</b>	<b>1.50</b>
<b>TMS-15</b>	<b>TM-500-50</b>	<b>500.</b>	<b>1 3/8</b>	<b>2</b>	<b>2.65</b>	<b>TMS-50</b>	<b>TM-20-400</b>	<b>20.</b>	<b>1</b>	<b>2</b>	<b>1.75</b>
<b>TMS-16</b>	<b>TM-1000-50</b>	<b>1,000.</b>	<b>1 3/8</b>	<b>3 1/2</b>	<b>3.75</b>	<b>TMS-51</b>	<b>TM-40-400</b>	<b>40.</b>	<b>1</b>	<b>3</b>	<b>2.00</b>
<b>150 VOLTS DC WORKING</b>						<b>TMS-52</b>	<b>TM-80-400</b>	<b>80.</b>	<b>1 3/8</b>	<b>2 1/2</b>	<b>2.95</b>
<b>TMS-17</b>	<b>TM-20-150</b>	<b>20.</b>	<b>1</b>	<b>2</b>	<b>1.45</b>	<b>450 VOLTS DC WORKING</b>					
<b>TMS-18</b>	<b>TM-30-150</b>	<b>30.</b>	<b>1</b>	<b>2</b>	<b>1.55</b>	<b>TMS-53</b>	<b>TM-10-450</b>	<b>10.</b>	<b>1</b>	<b>2</b>	<b>1.55</b>
<b>TMS-19</b>	<b>TM-40-150</b>	<b>40.</b>	<b>1</b>	<b>2</b>	<b>1.60</b>	<b>TMS-54</b>	<b>TM-15-450</b>	<b>15.</b>	<b>1</b>	<b>2</b>	<b>1.70</b>
<b>TMS-20</b>	<b>TM-50-150</b>	<b>50.</b>	<b>1</b>	<b>2</b>	<b>1.65</b>	<b>TMS-55</b>	<b>TM-20-450</b>	<b>20.</b>	<b>1</b>	<b>2</b>	<b>1.80</b>
<b>TMS-21</b>	<b>TM-80-150</b>	<b>80.</b>	<b>1</b>	<b>2</b>	<b>1.85</b>	<b>TMS-56</b>	<b>TM-30-450</b>	<b>30.</b>	<b>1</b>	<b>2 1/2</b>	<b>1.95</b>
<b>TMS-22</b>	<b>TM-100-150</b>	<b>100.</b>	<b>1</b>	<b>2</b>	<b>2.00</b>	<b>TMS-57</b>	<b>TM-40-450</b>	<b>40.</b>	<b>1</b>	<b>3</b>	<b>2.05</b>
<b>TMS-23</b>	<b>TM-120-150</b>	<b>120.</b>	<b>1</b>	<b>2 1/2</b>	<b>2.10</b>	<b>TMS-58</b>	<b>TM-50-450</b>	<b>50.</b>	<b>1</b>	<b>3</b>	<b>2.35</b>
<b>TMS-24</b>	<b>TM-140-150</b>	<b>140.</b>	<b>1</b>	<b>3</b>	<b>2.15</b>	<b>TMS-59</b>	<b>TM-60-450</b>	<b>60.</b>	<b>1 3/8</b>	<b>2 1/2</b>	<b>2.60</b>
<b>TMS-25</b>	<b>TM-150-150</b>	<b>150.</b>	<b>1</b>	<b>3</b>	<b>2.15</b>	<b>TMS-60</b>	<b>TM-80-450</b>	<b>80.</b>	<b>1 3/8</b>	<b>3</b>	<b>3.05</b>
<b>TMS-26</b>	<b>TM-200-150</b>	<b>200.</b>	<b>1 3/8</b>	<b>2 1/2</b>	<b>2.45</b>	<b>TMS-61</b>	<b>TM-100-450</b>	<b>100.</b>	<b>1 3/8</b>	<b>3</b>	<b>3.50</b>
<b>TMS-27</b>	<b>TM-300-150</b>	<b>300.</b>	<b>1 3/8</b>	<b>3</b>	<b>2.80</b>	<b>TMS-62</b>	<b>TM-150-450</b>	<b>150.</b>	<b>1 3/8</b>	<b>4</b>	<b>4.20</b>
<b>250 VOLTS DC WORKING</b>						<b>500 VOLTS DC WORKING</b>					
<b>TMS-74</b>	<b>TM-5-250</b>	<b>5.</b>	<b>1</b>	<b>2</b>	<b>1.35</b>	<b>TMS-66</b>	<b>TM-10-500</b>	<b>10.</b>	<b>1</b>	<b>2</b>	<b>1.60</b>
<b>TMS-28</b>	<b>TM-15-250</b>	<b>15.</b>	<b>1</b>	<b>2</b>	<b>1.55</b>	<b>TMS-67</b>	<b>TM-20-500</b>	<b>20.</b>	<b>1</b>	<b>2 1/2</b>	<b>1.85</b>
<b>TMS-29</b>	<b>TM-20-250</b>	<b>20.</b>	<b>1</b>	<b>2</b>	<b>1.60</b>	<b>TMS-68</b>	<b>TM-30-500</b>	<b>30.</b>	<b>1</b>	<b>3</b>	<b>2.00</b>
<b>TMS-30</b>	<b>TM-30-250</b>	<b>30.</b>	<b>1</b>	<b>2</b>	<b>1.70</b>	<b>TMS-69</b>	<b>TM-40-500</b>	<b>40.</b>	<b>1</b>	<b>3 1/2</b>	<b>2.50</b>
<b>TMS-31</b>	<b>TM-40-250</b>	<b>40.</b>	<b>1</b>	<b>2</b>	<b>1.80</b>	<b>TMS-70</b>	<b>TM-80-500</b>	<b>80.</b>	<b>1 3/8</b>	<b>3 1/2</b>	<b>3.20</b>
<b>TMS-32</b>	<b>TM-60-250</b>	<b>60.</b>	<b>1</b>	<b>2 1/2</b>	<b>2.05</b>	<b>TMS-71</b>	<b>TM-90-500</b>	<b>90.</b>	<b>1 3/8</b>	<b>3 1/2</b>	<b>3.50</b>
<b>TMS-33</b>	<b>TM-80-250</b>	<b>80.</b>	<b>1</b>	<b>3</b>	<b>2.15</b>	<b>525 VOLTS DC WORKING</b>					
						<b>TMS-72</b>	<b>TM-10-525</b>	<b>10.</b>	<b>1</b>	<b>2</b>	<b>1.70</b>

**TM DUAL-CAPACITOR UNITS**

Stock Number	Catalog Number	Cap. in UF	Size in Diameter	Inches Length	List Price	Stock Number	Catalog Number	Cap. in UF	Size in Diameter	Inches Length	List Price
<b>10 VOLTS DC WORKING</b>						<b>TMD-11</b>	<b>TM-D40-150</b>	<b>40-40</b>	<b>1</b>	<b>2</b>	<b>1.90</b>
<b>TMD-1</b>	<b>TM-200</b>	<b>1,000-500</b>	<b>1 3/8</b>	<b>2</b>	<b>4.00</b>	<b>TMD-12</b>	<b>TM-5030-150</b>	<b>50-30</b>	<b>1</b>	<b>2</b>	<b>2.00</b>
<b>15 VOLTS DC WORKING</b>						<b>TMD-13</b>	<b>TM-D50-150</b>	<b>50-50</b>	<b>1</b>	<b>2</b>	<b>2.15</b>
<b>TMD-2</b>	<b>TM-D1000-15</b>	<b>1,000-1,000</b>	<b>1</b>	<b>3</b>	<b>4.40</b>	<b>TMD-14</b>	<b>TM-6020-150</b>	<b>60-20</b>	<b>1</b>	<b>2</b>	<b>2.00</b>
<b>25 VOLTS DC WORKING</b>						<b>TMD-15</b>	<b>TM-D60-150</b>	<b>60-60</b>	<b>1</b>	<b>2 1/2</b>	<b>2.35</b>
<b>TMD-3</b>	<b>TM-D40-25</b>	<b>40-40</b>	<b>1</b>	<b>2</b>	<b>1.60</b>	<b>TMD-16</b>	<b>TM-8040-150</b>	<b>80-40</b>	<b>1</b>	<b>2 1/2</b>	<b>2.30</b>
<b>TMD-4</b>	<b>TM-15050-25</b>	<b>150-50</b>	<b>1</b>	<b>2</b>	<b>1.90</b>	<b>TMD-18</b>	<b>TM-D80-150</b>	<b>80-80</b>	<b>1</b>	<b>3</b>	<b>2.65</b>
<b>50 VOLTS DC WORKING</b>						<b>TMD-17</b>	<b>TM-8050-150</b>	<b>80-50</b>	<b>1</b>	<b>2 1/2</b>	<b>2.40</b>
<b>TMD-5</b>	<b>TM-D50-50</b>	<b>50-50</b>	<b>1</b>	<b>2</b>	<b>1.70</b>	<b>TMD-87</b>	<b>TM-2028</b>	<b>100-30</b>	<b>1 3/8</b>	<b>2 1/2</b>	<b>2.25</b>
<b>150 VOLTS DC WORKING</b>						<b>TMD-19</b>	<b>TM-D100-150</b>	<b>100-100</b>	<b>1 3/8</b>	<b>2 1/2</b>	<b>3.00</b>
<b>TMD-6</b>	<b>TM-D20-150</b>	<b>20-20</b>	<b>1</b>	<b>2</b>	<b>1.70</b>	<b>TMD-20</b>	<b>TM-201</b>	<b>200-125</b>	<b>1 3/8</b>	<b>3</b>	<b>3.75</b>
<b>TMD-7</b>	<b>TM-3015-150</b>	<b>30-15</b>	<b>1</b>	<b>2</b>	<b>1.75</b>	<b>TMD-21</b>	<b>TM-D200-150</b>	<b>200-200</b>	<b>1 3/8</b>	<b>3</b>	<b>4.00</b>
<b>TMD-8</b>	<b>TM-D30-150</b>	<b>30-30</b>	<b>1</b>	<b>2</b>	<b>1.85</b>	<b>200 VOLTS DC WORKING</b>					
<b>TMD-9</b>	<b>TM-4020-150</b>	<b>40-20</b>	<b>1</b>	<b>2</b>	<b>1.80</b>	<b>TMD-22</b>	<b>TM-D60-200</b>	<b>60-60</b>	<b>1 3/8</b>	<b>2</b>	<b>2.55</b>
<b>TMD-10</b>	<b>TM-4030-150</b>	<b>40-30</b>	<b>1</b>	<b>2</b>	<b>1.85</b>	<b>250 VOLTS DC WORKING</b>					
						<b>TMD-23</b>	<b>TM-D10-250</b>	<b>10-10</b>	<b>1</b>	<b>2</b>	<b>1.70</b>
						<b>TMD-24</b>	<b>TM-D20-250</b>	<b>20-20</b>	<b>1</b>	<b>2</b>	<b>1.90</b>

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**PYRAMID ELECTRIC COMPANY • NORTH BERGEN, NEW JERSEY**  
**THE BIG NAME IN CAPACITORS AND SELENIUM RECTIFIERS TODAY**

**TM DUAL-CAPACITOR UNITS (Continued)**

Stock Number	Catalog Number	Cap. in UF	Size in Diameter	Inches Length	List Price	Stock Number	Catalog Number	Cap. in UF	Size in Diameter	Inches Length	List Price
TMD-25	TM-D30-250	30-30	1	2	2.30	TMD-43	TM-D40-400	40-40	1 3/8	3	3.40
TMD-26	TM-4020-250	40-20	1	2 1/2	2.30	TMD-44	TM-D60-400	60-60	1 3/8	3	4.40
TMD-27	TM-D40-250	40-40	1	3	2.55	TMD-45	TM-8010-400	80-10	1 3/8	3	3.40
TMD-28	TM-D150-250	150-150	1 3/8	4	5.15	TMD-91	TM-2035	120-40	1 3/8	4	5.25
TMD-88	TM-2025	200-200	1 3/8	4	6.40						
<b>300 VOLTS DC WORKING</b>						<b>450 VOLTS DC WORKING</b>					
TMD-29	TM-D20-300	20-20	1	2	2.05	TMD-46	TM-D4-450	4-4	1	2	1.55
TMD-30	TM-D30-300	30-30	1 3/8	2 1/2	2.50	TMD-47	TM-D10-450	10-10	1	2	1.90
TMD-31	TM-D40-300	40-40	1 3/8	2 1/2	3.00	TMD-48	TM-D15-450	15-15	1	2 1/2	2.25
TMD-32	TM-D60-300	60-60	1 3/8	2 1/2	3.40	TMD-49	TM-2010-450	20-10	1	2 1/2	2.25
TMD-104	TM-2042	80-40	1 3/8	3	3.55	TMD-50	TM-D20-450	20-20	1	3	2.55
TMD-33	TM-D80-300	80-80	1 3/8	3	4.05	TMD-51	TM-3010-450	30-10	1	3	2.50
TMD-34	TM-12020-300	120-20	1 3/8	3	4.00	TMD-52	TM-D30-450	30-30	1 3/8	2 1/2	3.05
						TMD-53	TM-4020-450	40-20	1 3/8	2 1/2	3.00
<b>350 VOLTS DC WORKING</b>						<b>500 VOLTS DC WORKING</b>					
TMD-35	TM-D20-350	20-20	1	2 1/2	2.30	TMD-54	TM-D40-450	40-40	1 3/8	3	3.45
TMD-36	TM-3020-350	30-20	1	3	2.60	TMD-55	TM-6020-450	60-20	1 3/8	3	3.55
TMD-37	TM-D30-350	30-30	1	3	2.90	TMD-56	TM-6040-450	60-40	1 3/8	3	3.95
TMD-38	TM-D40-350	40-40	1 3/8	2 1/2	2.95	TMD-57	TM-8010-450	80-10	1 3/8	3	3.60
TMD-39	TM-5030-350	50-30	1 3/8	2 1/2	3.15	TMD-58	TM-8040-450	80-40	1 3/8	3 1/2	4.35
TMD-40	TM-D80-350	80-80	1 3/8	3	4.70	TMD-59	TM-D80-450	80-80	1 3/8	4	4.75
TMD-89	TM-2030	100-80	1 3/8	3 1/2	4.90						
TMD-90	TM-2032	160-10	1 3/8	3 1/2	4.25						
<b>400 VOLTS DC WORKING</b>						<b>500 VOLTS DC WORKING</b>					
TMD-41	TM-D15-400	15-15	1	2	2.25	TMD-60	TM-D10-500	10-10	1	2 1/2	1.95
TMD-42	TM-3010-400	30-10	1	2	2.35	TMD-61	TM-D20-500	20-20	1 3/8	2 1/2	2.85
						TMD-62	TM-2036	40-10	1 3/8	3	3.15
						TMD-63	TM-D40-500	40-40	1 3/8	3 1/2	4.40
						TMD-64	TM-6040-500	60-40	1 3/8	3 1/2	4.60
						TMD-93	TM-2037	80-50	1 3/8	3 1/2	5.10

**TM DUAL MIXED SECTIONS**

Stock Number	Catalog Number	Cap. in UF	Volts DC Working	Size in Diameter	Inches Lgth.	List Price	Stock Number	Catalog Number	Cap. in UF	Volts DC Working	Size in Diameter	Inches Lgth.	List Price
TMD-64	TM-2001	250-1,000	10-6	1 3/8	2	2.85	TMD-74	TM-2010	40-20	450-25	1	3	2.45
TMD-94	TM-2038	50-500	150-5	1	3	2.45	TMD-75	TM-2011	80-20	450-25	1 3/8	3	3.40
TMD-65	TM-2002	50-150	150-25	1	2	2.05	TMD-101	TM-2026	20-25	450-50	1	2 1/2	2.80
TMD-66	TM-2003	40-20	150-50	1	2	1.70	TMD-76	TM-2012	80-50	450-50	1 3/8	3	3.75
TMD-67	TM-2021	40-20	250-25	1	2	2.00	TMD-102	TM-2027	100-50	450-50	1 3/8	3	3.75
TMD-68	TM-2004	40-25	250-50	1	2	2.05	TMD-77	TM-2013	20-100	450-100	1 3/8	2 1/2	2.90
TMD-69	TM-2005	100-150	250-50	1 3/8	3	3.65	TMD-78	TM-2041	30-40	450-150	1 3/8	2	2.50
TMD-96	TM-2034	200-5	300-150	1 3/8	3	3.55	TMD-103	8M-2033	20-200	450-250	1 3/8	3	4.50
TMD-97	TM-2024	60-10	300-200	1	3	2.65	TMD-79	TM-2015	20-80	450-350	1 3/8	3	3.60
TMD-98	TM-2040	20-60	300-250	1	3	2.75	TMD-80	TM-2016	40-10	450-350	1 3/8	2	2.60
TMD-70	TM-2006	20-20	350-25	1	2	1.90	TMD-81	TM-2022	80-50	500-50	1 3/8	3 1/2	3.80
TMD-71	TM-2007	40-20	350-25	1	2 1/2	2.35	TMD-82	TM-2017	60-80	500-150	1 3/8	3 1/2	3.75
TMD-99	TM-2031	40-100	400-50	1	3 1/2	2.70	TMD-83	TM-2018	40-50	500-200	1 3/8	2 1/2	3.30
TMD-100	TM-2041	60-80	400-250	1 3/8	3 1/2	3.45	TMD-84	TM-2023	15-20	500-300	1	2 1/2	2.30
TMD-72	TM-2008	10-20	450-25	1	2	1.70	TMD-85	TM-2019	20-100	500-300	1 3/8	3	3.90
TMD-73	TM-2009	20-20	450-25	1	2	2.00							

**TM TRIPLE-CAPACITOR UNITS**

Stock Number	Catalog Number	Cap. in UF	Size in Diameter	Inches Length	List Price	Stock Number	Catalog Number	Cap. in UF	Size in Diameter	Inches Length	List Price
<b>25 VOLTS DC WORKING</b>						<b>350 VOLTS DC WORKING</b>					
TMT-1	TM-T20-25	20-20-20	1	2	1.95	TMT-24	TM-602010-300	60-20-10	1 3/8	2 1/2	3.45
TMT-2	TM-T40-25	40-40-40	1	2	2.15	TMT-25	TM-802010-300	80-20-10	1 3/8	2 1/2	3.80
						TMT-26	TM-1206040-300	120-60-40	1 3/8	4	5.75
<b>50 VOLTS DC WORKING</b>						<b>400 VOLTS DC WORKING</b>					
TMT-3	TM-T30-50	30-30-30	1	2	2.15	TMT-31	TM-T10-400	10-10-10	1	2 1/2	2.40
<b>150 VOLTS DC WORKING</b>						<b>450 VOLTS DC WORKING</b>					
TMT-4	TM-T20-150	20-20-20	1	2	2.30	TMT-32	TM-T10-450	10-10-10	1	2 1/2	2.60
TMT-5	TM-303010-150	30-30-10	1	2	2.30	TMT-33	TM-151510-450	15-15-10	1	3	2.95
TMT-6	TM-402010-150	40-20-10	1	2	2.35	TMT-34	TM-T20-450	20-20-20	1 3/8	2 1/2	3.60
TMT-7	TM-402020-150	40-20-20	1	2	2.40	TMT-35	TM-T30-450	30-30-30	1 3/8	3 1/2	4.35
TMT-8	TM-403020-150	40-30-20	1	2	2.50	TMT-36	TM-401010-450	40-10-10	1 3/8	3	3.35
TMT-9	TM-T40-150	40-40-40	1	2 1/2	2.60	TMT-37	TM-403020-450	40-30-20	1 3/8	3	4.30
TMT-162	TM-3126	50-40-10	1	2 1/8	2.55	TMT-38	TM-404010-450	40-40-10	1 3/8	3	4.20
TMT-10	TM-T50-150	50-50-50	1	3	3.00	TMT-39	TM-404020-450	40-40-20	1 3/8	3	4.45
TMT-11	TM-604020-150	60-40-20	1	2 1/2	2.75	TMT-40	TM-T40-450	40-40-40	1 3/8	3 1/2	4.90
TMT-12	TM-704040-150	70-40-40	1	3	2.75	TMT-41	TM-602020-450	60-20-20	1 3/8	3 1/2	4.60
TMT-13	TM-804020-150	80-40-20	1	2 1/2	2.90	TMT-42	TM-603010-450	60-30-10	1 3/8	3	4.50
TMT-14	TM-T80-150	80-80-80	1 3/8	3	3.75	TMT-43	TM-804020-450	80-40-20	1 3/8	4	5.40
TMT-15	TM-1208040-150	120-80-40	1 3/8	3	3.80						
TMT-163	TM-3145	120-120-40	1 3/8	3 1/2	4.05						
<b>250 VOLTS DC WORKING</b>						<b>500 VOLTS DC WORKING</b>					
TMT-16	TM-151510-250	15-15-10	1	2	2.45	TMT-45	TM-T10-500	10-10-10	1	3	2.70
TMT-17	TM-202010-250	20-20-10	1	2	2.50	TMT-46	TM-303020-500	30-30-30	1 3/8	3	4.45
TMT-18	TM-302010-250	30-20-10	1	2 1/2	2.70	TMT-47	TM-401010-500	40-10-10	1 3/8	3	3.90
TMT-19	TM-402010-250	40-20-10	1 3/8	2	2.85	TMT-48	TM-404010-500	40-40-10	1 3/8	4	5.05
TMT-20	TM-402020-250	40-20-20	1	3	2.90						
TMT-21	TM-808060-250	80-80-60	1 3/8	3 1/2	4.90						

**PYRAMID ELECTRIC COMPANY • NORTH BERGEN, NEW JERSEY**  
 THE BIG NAME IN CAPACITORS AND SELENIUM RECTIFIERS TODAY



**TM TRIPLE MIXED SECTIONS**

Stock Number	Catalog Number	Cap. in UF	Volts DC Working	Size in Inches Diam.	Lgth.	List Price	Stock Number	Catalog Number	Cap. in UF	Volts DC Working	Size in Inches Diam.	Lgth.	List Price
TMT-49	TM-3069	100-50-25	100-25-25	1	3	2.65	TMT-105	TM-3080	15-15-40	400-400-25	1	2½	2.80
TMT-50	TM-3001	20-250-100	150-15-15	1½	2	2.90	TMT-106	TM-3036	20-20-20	400-400-25	1	3	2.85
TMT-51	TM-3097	40-25-130	150-25-15	1	3	2.35	TMT-107	TM-3037	20-10-40	400-400-50	1	3	2.65
TMT-166	TM-3147	15-15-1200	150-150-2	1	2	3.00	TMT-108	TM-3081	30-10-150	400-400-50	1¾	2½	3.40
TMT-52	TM-3067	30-20-100	150-150-10	1	2	2.40	TMT-185	TM-3142	40-10-200	400-400-50	1¾	3½	3.85
TMT-53	TM-3003	30-30-200	150-150-10	1	2	2.50	TMT-109	TM-3038	80-40-150	400-400-50	1¾	4	5.25
TMT-54	TM-3070	40-20-250	150-150-10	1	2	2.70	TMT-186	TM-3155	100-10-20	400-400-50	1¾	3½	4.50
TMT-168	TM-3139	90-40-400	150-150-10	1	3	3.60	TMT-187	TM-3144	100-10-80	400-400-350	1¾	4½	5.20
TMT-55	TM-3004	20-20-20	150-150-25	1	2	2.20	TMT-188	TM-3132	20-500-500	450-25-25	1¾	3½	5.25
TMT-56	TM-3005	30-30-20	150-150-25	1	2	2.30	TMT-110	TM-3083	30-100-25	450-25-25	1¾	2	3.00
TMT-57	TM-3006	40-20-20	150-150-25	1	2	2.30	TMT-189	TM-3156	80-100-20	450-50-50	1¾	3	4.25
TMT-58	TM-3007	40-20-100	150-150-25	1	2	2.50	TMT-111	TM-3107	10-50-100	450-150-25	1	3	2.75
TMT-59	TM-3008	40-200-200	150-150-25	1	2½	2.70	TMT-112	TM-3108	40-40-130	450-150-50	1¾	3	3.75
TMT-60	TM-3009	40-30-20	150-150-25	1	2	2.35	TMT-113	TM-3109	40-100-50	450-150-50	1¾	2½	3.95
TMT-61	TM-3010	40-40-20	150-150-25	1	2	2.40	TMT-114	TM-3089	40-90-50	450-150-150	1¾	3	4.00
TMT-169	TM-3149	40-40-200	150-150-25	1	3	2.85	TMT-115	TM-3110	20-60-100	450-250-25	1¾	2½	3.65
TMT-62	TM-3011	50-30-20	150-150-25	1	2	2.50	TMT-116	TM-3090	20-40-10	450-250-250	1¾	2	3.15
TMT-63	TM-3012	50-30-100	150-150-25	1	2½	2.70	TMT-117	TM-3111	10-40-20	450-300-150	1¾	2	3.10
TMT-64	TM-3013	50-50-20	150-150-25	1	2½	2.65	TMT-118	TM-3039	20-15-10	450-300-300	1	3½	2.85
TMT-65	TM-3014	60-20-20	150-150-25	1	2	2.55	TMT-119	TM-3112	10-10-20	450-350-25	1	2	2.30
TMT-66	TM-3015	60-40-20	150-150-25	1	2½	2.65	TMT-190	TM-3129	10-100-25	450-350-25	1¾	3	4.05
TMT-67	TM-3016	80-40-20	150-150-25	1	2½	2.80	TMT-120	TM-3113	30-40-50	450-350-25	1	4½	3.70
TMT-170	TM-3134	100-40-300	150-150-25	1¾	2½	3.80	TMT-121	TM-3040	20-80-100	450-350-50	1¾	3½	4.50
TMT-68	TM-3017	120-60-20	150-150-25	1¾	2½	3.35	TMT-191	TM-3157	20-80-50	450-350-300	1¾	3	3.40
TMT-171	TM-3125	60-140-200	200-150-150	1¾	4	5.30	TMT-122	TM-3065	40-50-50	450-350-300	1¾	3½	4.85
TMT-69	TM-3071	30-20-20	200-200-25	1	2	2.55	TMT-192	TM-3127	50-80-10	450-350-350	1¾	3½	4.75
TMT-172	TM-2123	60-5-20	200-200-50	1	3	2.50	TMT-123	TM-3116	30-50-40	450-400-25	1¾	3	3.95
TMT-70	TM-3018	100-10-40	200-200-50	1¾	2	3.15	TMT-124	TM-3044	10-30-30	450-400-300	1¾	2½	3.35
TMT-71	TM-3098	80-40-50	250-150-50	1¾	2½	3.30	TMT-125	TM-3045	10-10-20	450-450-25	1	2	2.40
TMT-72	TM-3019	15-15-20	250-250-25	1	2	2.35	TMT-126	TM-3046	15-15-20	450-450-25	1	2½	2.70
TMT-73	TM-3072	20-15-20	250-250-25	1	2	2.35	TMT-127	TM-3047	20-10-20	450-450-25	1	2½	2.70
TMT-74	TM-3020	30-30-20	250-250-25	1	3	2.80	TMT-128	TM-3048	20-15-20	450-450-25	1	3	2.90
TMT-75	TM-3021	70-70-20	250-250-50	1¾	3	3.90	TMT-129	TM-3049	20-20-20	450-450-25	1	3	3.05
TMT-173	TM-3150	90-90-20	250-250-50	1¾	3	4.60	TMT-130	TM-3050	30-30-20	450-450-25	1¾	2½	3.55
TMT-76	TM-3073	40-20-10	250-250-150	1¾	2	2.70	TMT-131	TM-3051	30-30-150	450-450-25	1¾	3	4.05
TMT-77	TM-3099	100-60-20	300-150-25	1¾	3	4.20	TMT-132	TM-3052	40-20-20	450-450-25	1¾	2½	3.50
TMT-174	TM-3136	100-200-60	300-150-150	1¾	4	5.35	TMT-133	TM-3053	40-40-20	450-450-25	1¾	3	3.95
TMT-78	TM-3066	30-30-20	300-250-25	1	3	3.15	TMT-134	TM-3084	40-40-40	450-450-25	1¾	3	2.45
TMT-175	TM-3151	200-60-20	300-250-250	1¾	4	5.80	TMT-135	TM-3054	80-10-125	450-450-25	1¾	2½	4.45
TMT-79	TM-3023	20-20-20	300-300-25	1	2½	2.75	TMT-136	TM-3055	80-40-100	450-450-25	1¾	4	5.05
TMT-80	TM-3075	40-15-20	300-300-25	1	2½	2.95	TMT-137	TM-3086	10-10-40	450-450-50	1	2½	2.50
TMT-81	TM-3076	30-30-25	300-300-50	1	3	2.90	TMT-138	TM-3085	20-10-50	450-450-50	1	3	2.85
TMT-176	TM-3137	100-10-60	300-300-50	1¾	2½	4.05	TMT-139	TM-3087	30-30-40	450-450-50	1¾	3	3.65
TMT-177	TM-3141	140-10-200	300-300-150	1¾	4½	4.90	TMT-140	TM-3056	40-10-100	450-450-50	1¾	3	4.30
TMT-82	TM-3024	10-10-15	300-300-250	1	2	2.45	TMT-141	TM-3057	40-40-100	450-450-50	1¾	3½	4.30
TMT-178	TM-3152	4-100-40	350-25-25	1	2	2.25	TMT-142	TM-3088	10-10-50	450-450-100	1¾	2	2.65
TMT-83	TM-3100	20-50-100	350-100-75	1	3	3.10	TMT-143	TM-3058	30-20-30	450-450-150	1¾	2½	3.50
TMT-179	TM-1353	125-5-100	350-200-75	1¾	3½	5.30	TMT-144	TM-3059	40-40-40	450-450-150	1¾	3½	4.10
TMT-84	TM-3101	10-50-100	350-150-50	1	3	2.85	TMT-145	TM-3060	40-10-80	450-450-200	1¾	3	3.90
TMT-85	TM-3102	50-10-500	350-250-5	1¾	2½	3.60	TMT-146	TM-3117	15-10-120	450-450-300	1¾	3½	4.50
TMT-86	TM-3079	30-20-10	350-350-250	1	3	3.00	TMT-147	TM-3091	15-15-10	450-450-300	1	3	2.90
TMT-180	TM-3124	10-80-25	350-300-25	1	3½	3.65	TMT-148	TM-3092	15-5-15	450-450-350	1	3	2.85
TMT-87	TM-3103	30-30-20	350-300-25	1	3	3.15	TMT-149	TM-3093	20-20-60	450-450-350	1¾	3	4.05
TMT-181	TM-3131	40-40-30	350-300-250	1¾	2½	4.30	TMT-150	TM-3094	40-40-10	450-450-350	1¾	2	3.30
TMT-88	TM-3025	10-10-20	350-350-25	1	2	3.25	TMT-193	TM-3130	60-40-20	450-450-400	1¾	3½	5.05
TMT-89	TM-3026	15-10-20	350-350-25	1	2	2.50	TMT-194	TM-3158	20-50-20	475-50-25	1	3	2.75
TMT-90	TM-3027	15-15-20	350-350-25	1	2	2.70	TMT-195	TM-3159	10-100-40	475-200-50	1¾	2½	3.30
TMT-91	TM-3028	20-10-20	350-350-25	1	2	2.55	TMT-196	TM-3160	40-40-100	475-250-100	1¾	3	4.10
TMT-92	TM-3029	20-20-20	350-350-25	1	2½	2.80	TMT-197	TM-3143	10-100-25	475-350-25	1¾	3	3.35
TMT-93	TM-3030	30-10-20	350-350-25	1	2½	3.05	TMT-198	TM-3140	20-10-5	475-350-150	1	2½	3.15
TMT-94	TM-3077	30-20-20	350-350-25	1	3	3.10	TMT-199	TM-3161	10-4-40	475-350-250	1¾	2	2.75
TMT-95	TM-3031	30-30-20	350-350-25	1¾	2	3.40	TMT-200	TM-3162	10-45-100	475-450-200	1¾	3	4.20
TMT-96	TM-3032	40-40-25	350-350-25	1¾	2½	3.60	TMT-151	TM-3114	10-100-40	500-200-50	1¾	2½	3.35
TMT-97	TM-3078	40-40-50	350-350-25	1¾	2½	3.75	TMT-152	TM-3118	40-40-100	500-250-50	1¾	3	4.30
TMT-182	TM-3135	90-40-50	350-350-25	1¾	3½	4.55	TMT-153	TM-3119	20-20-40	500-300-25	1¾	2	3.10
TMT-98	TM-3033	10-5-150	350-350-50	1	3	2.70	TMT-201	TM-3163	20-40-100	500-300-25	1¾	2½	3.60
TMT-183	TM-3154	20-5-30	350-350-50	1	2	2.45	TMT-202	TM-3133	10-80-10	500-350-350	1¾	3	4.85
TMT-184	TM-3138	150-4-30	350-350-50	1¾	3½	4.25	TMT-154	TM-3115	40-40-25	500-400-50	1¾	3	4.30
TMT-99	TM-3034	40-20-10	350-350-150	1	3	3.20	TMT-155	TM-3061	10-10-100	500-500-50	1	3	2.85
TMT-100	TM-3035	30-10-20	350-350-250	1	3	3.05	TMT-156	TM-3095	20-10-100	500-500-50	1¾	3	3.30
TMT-101	TM-3104	60-40-20	400-300-25	1¾	3½	4.20	TMT-157	TM-3062	30-10-20	500-500-50	1¾	2½	3.10
TMT-102	TM-3105	10-40-10	400-300-150	1¾	2	2.90	TMT-158	TM-3063	40-40-100	500-500-200	1¾	4	5.85
TMT-103	TM-3082	80-20-10	400-300-300	1¾	3½	4.25	TMT-159	TM-3096	10-10-5	500-500-350	1	2½	2.50
TMT-104	TM-3106	10-50-30	400-350-25	1	3	3.10	TMT-160	TM-3064	20-20-60	500-500-400	1¾	3½	4.80





**TM QUADRUPLE MIXED SECTIONS (Continued)**

Stock Number	Catalog Number	Cap. in UF	Volts DC Working	Size in Inches Diam. Lgth.	List Price	Stock Number	Catalog Number	Cap. in UF	Volts DC Working	Size in Inches Diam. Lgth.	List Price
TMQ-166	TM-4169	10-100-10-100	475-300-300-25	1 3/8 3 1/2	4.90	TMQ-107	TM-4033	10-60-30-125	475-450-400-50	1 3/8 4	5.55
TMQ-167	TM-4170	20-80-20-10	475-300-300-300	1 3/8 3 1/2	5.00	TMQ-108	TM-4034	15-15-80-40	475-475-300-50	1 3/8 3	4.80
TMQ-104	TM-4106	10-40-80-100	475-350-200-50	1 3/8 3 1/2	4.80	TMQ-109	TM-4035	40-10-4-40	475-475-350-300	1 3/8 3	4.95
TMQ-168	TM-4171	20-40-80-100	475-350-300-100	1 3/8 4	5.60	TMQ-175	TM-4175	50-10-30-30	475-475-450-25	1 3/8 3	4.75
TMQ-169	TM-4172	10-30-5-80	475-350-350-50	1 3/8 2 1/2	3.70	TMQ-110	TM-4036	10-5-80-40	475-475-450-50	1 3/8 3	4.90
TMQ-170	TM-4122	30-130-10-20	475-350-350-350	1 3/8 5	6.10	TMQ-111	TM-4037	40-20-10-10	475-475-475-25	1 3/8 3	4.85
TMQ-171	TM-4112	10-40-100-10	475-400-50-30	1 3/8 2 1/2	4.00	TMQ-176	TM-4141	5-100-10-200	500-300-300-150	1 3/8 4	5.80
TMQ-172	TM-4142	10-40-4-100	475-400-350-50	1 3/8 2 1/2	3.70	TMQ-177	TM-4115	30-10-150-30	500-450-50-50	1 3/8 3	5.00
TMQ-173	TM-4173	10-40-100-10	475-400-350-50	1 3/8 2 1/2	4.00	TMQ-112	TM-4038	30-30-10-20	500-500-450-25	1 3/8 3 1/2	4.90
TMQ-105	TM-4032	10-10-80-50	474-450-200-60	1 3/8 3	3.85	TMQ-113	TM-4108	20-20-10-10	500-500-500-300	1 3/8 2 1/2	4.30
TMQ-174	TM-4174	25-20-20-100	475-450-300-50	1 1/2 3	4.60	TMQ-114	TM-4109	50-30-10-20	500-500-500-300	1 3/8 4	5.60
TMQ-106	TM-4107	25-20-40-100	475-450-300-50	1 3/8 3	4.95						



**PLUG-IN ELECTROLYTIC CAPACITORS**

Designed for 85° operation. Hermetically sealed in round aluminum containers. Provided with four pins (Nos. 1, 3, 5, 7) on standard octal base. Plugs into standard 8-pin octal socket. Ideally suited for any application where quick capacitor changes are required. Grounding lug supplied for grounding case to chassis. (In accordance with military standards, a low variable resistance exists between pin 1 (negative) and the case; to ground pin 1, a direct ground connection must be made from the corresponding lug on the socket.) For mounting rings, see page.

TYPE



Catalog Number	Cap. in UF	Volts DC Working	Size in Inches Diameter	Inches Length	List Price
<b>SINGLE-CAPACITOR UNITS</b>					
DO-100-350	100.	350	1 3/8	3	5.85
DO-10-450	10.	450	1 3/8	2 1/2	4.05
DO-20-450	20.	450	1 3/8	2 1/2	4.30
DO-40-450	40.	450	1 3/8	2 1/2	4.55
DO-80-450	80.	450	1 3/8	3 1/2	5.55
DO-40-500	40.	500	1 3/8	2 1/2	5.00
<b>DUAL-CAPACITOR UNITS</b>					
DO-D20-150	20-20	150	1 3/8	2 1/2	4.20
DO-D40-150	40-40	150	1 3/8	2 1/2	4.40
DO-D50-150	50-50	150	1 3/8	2 1/2	4.65
DO-D80-150	80-80	150	1 3/8	2 1/2	5.15
DO-D10-450	10-10	450	1 3/8	2 1/2	4.40
DO-D20-450	20-20	450	1 3/8	2 1/2	5.05

Catalog Number	Cap. in UF	Volts DC Working	Size in Inches Diameter	Inches Length	List Price
DO-D30-450	30-30	450	1 3/8	3	5.55
DO-D40-450	40-40	450	1 3/8	3 1/2	5.90
DO-D20-500	20-20	500	1 3/8	2 1/2	5.30
<b>TRIPLE-CAPACITOR UNITS</b>					
DO-T20-150	20-20-20	150	1 3/8	2 1/2	4.85
DO-T40-150	40-40-40	150	1 3/8	2 1/2	5.10
DO-T10-450	10-10-10	450	1 3/8	2 1/2	5.10
DO-T20-450	20-20-20	450	1 3/8	3	6.10
DO-3001	40-20-20	450-25	1 3/8	3	6.00
DO-T10-500	10-10-10	500	1 3/8	2 1/2	5.30
<b>QUADRUPLE-CAPACITOR UNITS</b>					
DO-4001	10-10-10-20	450-25	1 3/8	2 1/2	5.65
DO-4002	30-30-10-20	450-50	1 3/8	4 1/4	6.85

**HARDWARE FOR TYPE TM CAPACITORS**

Catalog Number	List Price	Purpose
<b>"TWIST-MOUNTER" WRENCH</b>		
TMW1	1.25	For mounting Type TM and TMH capacitors.
<b>BAKELITE WASHERS</b>		
823-1	.07	For 1"-diameter cans.
824-1	.07	For 1-3/8"-diameter cans.
<b>METAL WASHERS</b>		
823-8	.07	For 1"-diameter cans.
824-8	.07	For 1-3/8"-diameter cans.

Catalog Number	List Price	Purpose
<b>MOUNTING CLIPS (FUSE TYPE)</b>		
372-2	.15	For 1"-diameter cans.
372-3	.15	For 1-3/8"-diameter cans.
<b>INSULATING TUBES</b>		
A-266	.07	For 1"-diameter, 2"-length cans.
A-267	.07	For 1"-diameter, 2-1/2"-length cans.
A-283	.07	For 1"-diameter, 3"-length cans.
A-269	.07	For 1-3/8"-diameter, 2"-length cans.
A-270	.07	For 1-3/8"-diameter, 2-1/2"-length cans.
A-186	.07	For 1-3/8"-diameter, 3"-length cans.
A-258	.07	For 1-3/8"-diameter, 3-1/2"-length cans.
A-468	.07	For 1-3/8"-diameter, 4"-length cans.

**HARDWARE FOR GENERAL ELECTROLYTIC CAPACITOR MOUNTING**

Catalog Number	List Price	Purpose
<b>MOUNTING RINGS*</b>		
361-1	.10	For 1"-diameter cans.
358-2	.10	For 1-3/8"-diameter cans.
358-4	.15	For 1-1/2"-diameter cans.
362-1	.19	For 1-3/4"-diameter cans.
362-2	.23	For 2"-diameter cans.
362-3	.23	For 2-1/2"-diameter cans.
<b>RADIAL BRACKETS (CENTER MOUNTING)**</b>		
371-2	.07	For 1/4"-diameter tubulars.
371-4	.07	For 1/2"-diameter tubulars.
371-6	.07	For 3/8"-diameter tubulars.

Catalog Number	List Price	Purpose
371-7	.07	For 3/8"-diameter tubulars.
371-10	.07	For 1/2"-diameter tubulars.
371-12	.07	For 3/4"-diameter tubulars.
371-15	.07	For 1/2"-diameter tubulars.
371-16	.10	For 7/8"-diameter tubulars.
371-18	.10	For 1"-diameter tubulars.
371-20	.10	For 1-1/8"-diameter tubulars.
371-21	.10	For 1-1/4"-diameter tubulars.
371-23	.10	For 1-1/2"-diameter tubulars.
371-24	.10	For 1-3/4"-diameter tubulars.

\*For additional Electrolytic hardware, see page 10.  
 \*\*Where capacitor has sleeve, use overall diameter.



**PYRAMID ELECTRIC COMPANY • NORTH BERGEN, NEW JERSEY**  
**THE BIG NAME IN CAPACITORS AND SELENIUM RECTIFIERS TODAY**

TYPE

**METAL - ENCASED MOTOR - STARTING ELECTROLYTIC CAPACITORS**

**P  
A  
C**

An excellent Universal Motor - Starting Capacitor, assembled in a hermetically-sealed aluminum can, for greater protection, with an insulating outer cardboard sleeve. Easily mounted with PAC Mounting Hardware.

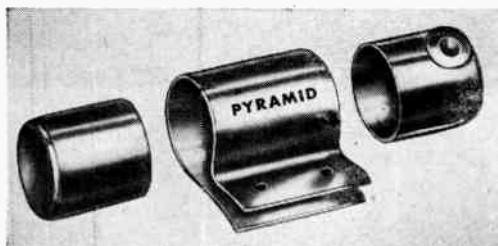


Catalog Number	Cap. in UF Min. Max.	Size in Inches Diam. Length	List Price
<b>110-125 VOLTS AC 60 CYCLES</b>			
PAC-1001	21 — 25	1 x 2 1/8	\$2.05
PAC-1002	25 — 30	1 x 2 1/8	2.10
PAC-1003	30 — 36	1 x 2 1/8	2.10
PAC-1004	36 — 43	1 x 2 1/8	2.10
PAC-1005	43 — 53	1 x 2 1/8	2.10
PAC-1006	47 — 56	1 x 2 1/8	2.10
PAC-1007	53 — 64	1 x 2 1/8	2.15
PAC-1008	64 — 77	1 x 2 1/8	2.25
PAC-1009	72 — 88	1 x 2 3/8	2.30
PAC-1010	88 — 108	1 x 2 3/8	2.60
PAC-1011	108 — 130	1 3/8 x 2 3/8	2.85
PAC-1012	124 — 149	1 3/8 x 2 3/8	2.95
PAC-1013	130 — 156	1 3/8 x 2 3/8	2.95
PAC-1014	145 — 175	1 3/8 x 2 3/8	3.20
PAC-1015	161 — 193	1 3/8 x 2 3/8	3.25
PAC-1016	189 — 227	1 3/8 x 2 3/8	3.75
PAC-1017	200 — 240	1 3/8 x 3 1/8	3.90
PAC-1018	216 — 259	1 3/8 x 3 1/8	4.05
PAC-1019	233 — 280	1 3/8 x 3 1/8	4.50
PAC-1020	243 — 292	1 3/8 x 4 1/8	4.70
PAC-1021	270 — 324	1 3/8 x 4 1/8	4.75
PAC-1022	324 — 388	1 3/8 x 4 1/8	5.40
PAC-1023	340 — 408	1 3/8 x 4 1/8	5.55
PAC-1024	378 — 440	1 3/8 x 4 1/8	6.00
PAC-1025	400 — 480	1 3/8 x 4 1/8	6.05
PAC-1026	430 — 516	1 3/8 x 4 1/8	6.95
PAC-1027	460 — 552	1 3/8 x 4 1/8	7.60
PAC-1028	540 — 648	1 3/8 x 4 1/8	8.15
PAC-1029	590 — 708	1 3/8 x 4 1/8	8.85

Catalog Number	Cap. in UF Min. Max.	Size in Inches Diam. Length	List Price
<b>125 VOLTS AC 60 CYCLES</b>			
PAC-1301	540 — 648	2 x 4 1/8	\$9.65
PAC-1302	590 — 708	2 x 4 1/8	10.40
<b>220 VOLTS AC 60 CYCLES</b>			
PAC-2201	21 — 25	1 3/8 x 2 3/8	\$4.40
PAC-2202	25 — 30	1 3/8 x 2 3/8	4.60
PAC-2203	30 — 36	1 3/8 x 2 3/8	4.90
PAC-2204	36 — 43	1 3/8 x 3 1/8	5.30
PAC-2205	43 — 53	1 3/8 x 3 1/8	5.55
PAC-2206	47 — 56	1 3/8 x 4 1/8	5.65
PAC-2207	53 — 64	1 3/8 x 4 1/8	5.75
PAC-2208	64 — 77	1 3/8 x 4 1/8	6.75
PAC-2209	72 — 88	1 3/8 x 4 1/8	7.00
PAC-2210	88 — 108	1 3/8 x 4 1/8	7.65
PAC-2211	108 — 130	1 3/8 x 4 1/8	8.60
PAC-2212	124 — 149	2 x 4 1/8	11.00
PAC-2213	130 — 156	2 x 4 1/8	11.30
PAC-2214	145 — 175	2 x 4 1/8	11.85
<b>330 VOLTS AC 60 CYCLES</b>			
PAC-3201	21 — 25	1 3/8 x 3 1/8	\$4.90
PAC-3202	25 — 30	1 3/8 x 4 1/8	5.10
PAC-3203	30 — 36	1 3/8 x 4 1/8	5.35
PAC-3204	36 — 43	1 3/8 x 4 1/8	5.65
PAC-3205	43 — 53	1 3/8 x 4 1/8	5.95
PAC-3206	47 — 56	1 3/8 x 4 1/8	6.50
PAC-3207	53 — 64	1 3/8 x 4 1/8	6.75
PAC-3208	64 — 77	2 x 4 1/8	7.85
PAC-3209	72 — 88	2 x 4 1/8	8.15

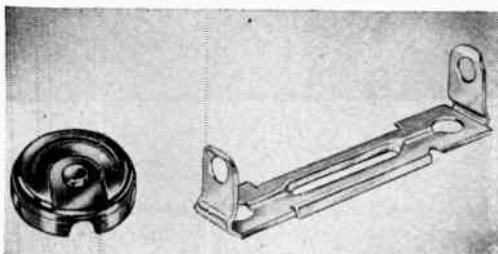
**HARDWARE FOR TYPE PBC CAPACITORS**

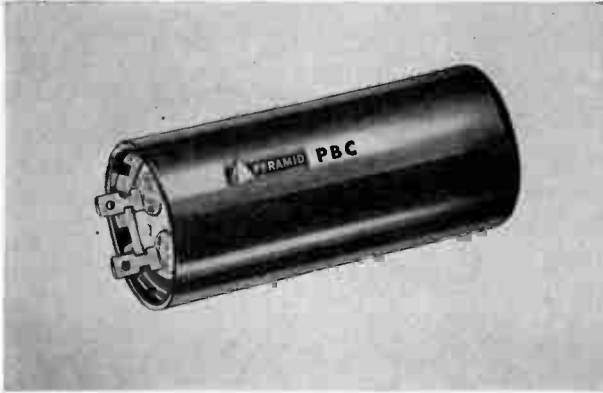
END CAP, PLAIN			MOUNTING BRACKET		
Catalog Number	Capacitor Diameter*	List Price	Catalog Number	Size of Capacitor Diam. Length	List Price
PACP-2	1 3/8"	.35	PACB-3	1 3/8" x 2 3/8"	\$.60
PACP-3	1 3/8"	.35	PACB-4	1 3/8" x 3 1/8"	.60
PACP-4	2"	.40	PACB-5	1 3/8" x 4 1/8"	.60
<b>END CAP W/GROMMET</b>			PACB-6	1 3/8" x 4 1/8"	.60
PACG-2	1 3/8"	.35	PACB-7	2" x 4 1/8"	.60
PACG-3	1 3/8"	.40	* Add 1/16" to diameter, and 3/8" to length for insulating sleeve.		
PACG-4	2"	.45			



**HARDWARE FOR TYPE PAC CAPACITORS**

END CAP			MOUNTING BRACKETS		
Catalog Number	Capacitor Diameter	List Price	Catalog Number	Size of Capacitor Diam. Length	List Price
PCB-1 (lead hole on top)	1 3/8"	\$.25	PB-2	1 3/8" x 3 3/8"	\$.35
PCB-2 (lead hole on bot.)	1 3/8"	.25	PB-3	1 3/8" x 3 3/8"	.35
PBC-3 (lead hole on top)	1 3/8"	.30	PB-4	1 3/8" x 4 3/8"	.40
PCB-4 (lead hole on bot.)	1 3/8"	.30			





**PLASTIC-ENCASED MOTOR-STARTING ELECTROLYTIC CAPACITORS**

TYPE

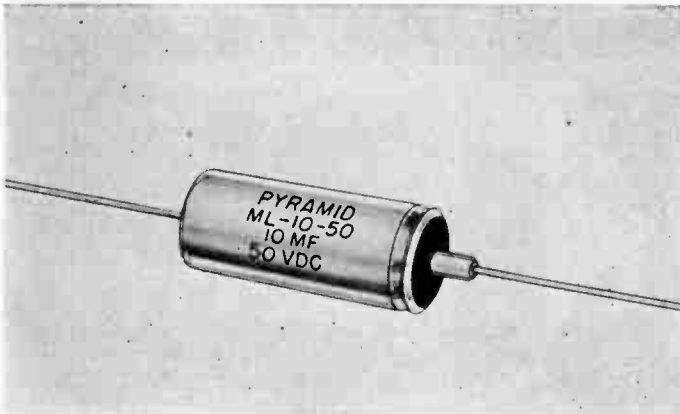
**P  
B  
C**

A better replacement for the original motor-starting capacitors of the same type. Assembled in a moulded plastic case for protection against moisture, grease, dirt, etc. Mounted simply and easily on any motor, with PBC Mounting Hardware.

Catalog Number	Cap. in UF Min. Max.	Size in Inches Diam. Lgth.	List Price
<b>110-125 VOLTS AC 60 CYCLES</b>			
PBC-1101	43 — 53	1 1/16 x 2 3/4	\$2.10
PBC-1102	53 — 64	1 1/16 x 2 3/4	2.15
PBC-1103	64 — 77	1 1/16 x 2 3/4	2.25
PBC-1104	72 — 88	1 1/16 x 2 3/4	2.30
PBC-1105	88 — 108	1 1/16 x 2 3/4	2.60
PBC-1106	108 — 130	1 1/16 x 2 3/4	2.85
PBC-1107	124 — 149	1 1/16 x 2 3/4	2.95
PBC-1108	130 — 156	1 1/16 x 2 3/4	2.95
PBC-1109	145 — 175	1 1/16 x 2 3/4	3.20
PBC-1110	161 — 193	1 1/16 x 3 3/8	3.25
PBC-1111	189 — 227	1 1/16 x 3 3/8	3.75
PBC-1112	216 — 259	1 1/16 x 3 3/8	4.05
PBC-1113	233 — 280	1 1/16 x 3 3/8	4.50
PBC-1114	243 — 292	1 1/16 x 3 3/8	4.70
PBC-1115	270 — 324	1 1/16 x 3 3/8	4.75
PBC-1116	340 — 408	1 1/16 x 3 3/8	\$5.55
PBC-1117	378 — 440	1 1/16 x 3 3/8	6.00
PBC-1118*	400 — 480	1 1/16 x 3 3/8	6.05

Catalog Number	Cap. in UF Min. Max.	Size in Inches Diam. Lgth.	List Price
<b>125 VOLTS AC 60 CYCLES</b>			
PBC-1201	340 — 408	1 1/16 x 4 3/8	6.50
PBC-1202	378 — 440	1 1/16 x 4 3/8	6.75
<b>220 VOLTS AC 60 CYCLES</b>			
PBC-2201	25 — 30	1 1/16 x 2 3/4	4.60
PBC-2202	30 — 36	1 1/16 x 3 3/8	4.90
PBC-2203	36 — 43	1 1/16 x 3 3/8	5.30
PBC-2204	43 — 53	1 1/16 x 3 3/8	5.55
PBC-2205	53 — 64	1 1/16 x 3 3/8	5.75
PBC-2206	64 — 77	1 1/16 x 3 3/8	6.75
PBC-2207	72 — 88	1 1/16 x 3 3/8	7.00
PBC-2208	88 — 108	1 1/16 x 4 3/8	7.65

\* 110 Volts AC 60 Cycles Only



**MINIATURE ELECTROLYTIC CAPACITORS**

TYPE

**M  
L**

Designed for 65° C. operation. Hermetically sealed in aluminum cases. Low leakage and long shelf life. Ideally suited for transistorized radio receivers, hearing aids, portable TV sets, and miniaturized circuit requirements.

Catalog Number	Cap. in UF	Size in Inches Diam. Lgth.	List Price
<b>3 VOLTS DC WORKING</b>			
ML20-3	20.	1/4 x 5/8	1.00
ML50-3	50.	3/8 x 3/4	1.05
ML75-3	75.	3/8 x 3/4	1.10
ML100-3	100.	3/8 x 3/4	1.20
<b>6 VOLTS DC WORKING</b>			
ML1-6	1.	3/16 x 5/8	1.00
ML2-6	2.	3/16 x 5/8	1.00
ML4-6	4.	3/16 x 5/8	1.00
ML5-6	5.	3/16 x 5/8	1.00
ML6-6	6.	1/4 x 5/8	1.00
ML8-6	8.	1/4 x 5/8	1.05
ML10-6	10.	1/4 x 5/8	1.05
ML20-6	20.	1/4 x 3/4	1.05
ML30-6	30.	1/4 x 3/4	1.10
ML40-6	40.	3/8 x 5/8	1.10

Catalog Number	Cap. in UF	Size in Inches Diam. Lgth.	List Price
ML50-6	50.	3/8 x 5/8	1.10
ML75-6	75.	3/8 x 5/8	1.20
<b>15 VOLTS DC WORKING</b>			
ML1-15	1.	3/16 x 5/8	1.00
ML2-15	2.	3/16 x 5/8	1.00
ML4-15	4.	1/4 x 5/8	1.00
ML5-15	5.	1/4 x 5/8	1.05
ML6-15	6.	1/4 x 5/8	1.05
ML8-15	8.	1/4 x 5/8	1.10
ML10-15	10.	1/4 x 5/8	1.10
ML20-15	20.	3/8 x 5/8	1.15
ML30-15	30.	3/8 x 5/8	1.20
ML40-15	40.	3/8 x 5/8	1.25
<b>25 VOLTS DC WORKING</b>			
ML1-25	1.	3/16 x 5/8	1.05
ML2-25	2.	3/16 x 5/8	1.05

Catalog Number	Cap. in UF	Size in Inches Diam. Lgth.	List Price
ML4-25	4.	1/4 x 5/8	1.10
ML5-25	5.	1/4 x 5/8	1.10
ML6-25	6.	1/4 x 5/8	1.10
ML8-25	8.	1/4 x 5/8	1.15
ML10-25	10.	3/8 x 5/8	1.15
ML20-25	20.	3/8 x 3/4	1.20
ML30-25	30.	3/8 x 3/4	1.25
<b>50 VOLTS DC WORKING</b>			
ML1-50	1.	1/4 x 5/8	1.05
ML2-50	2.	1/4 x 5/8	1.10
ML4-50	4.	3/8 x 5/8	1.15
ML5-50	5.	3/8 x 5/8	1.20
ML6-50	6.	3/8 x 5/8	1.25
ML8-50	8.	3/8 x 3/4	1.30
ML10-50	10.	3/8 x 3/4	1.40
ML20-50	20.	3/8 x 3/4	1.50

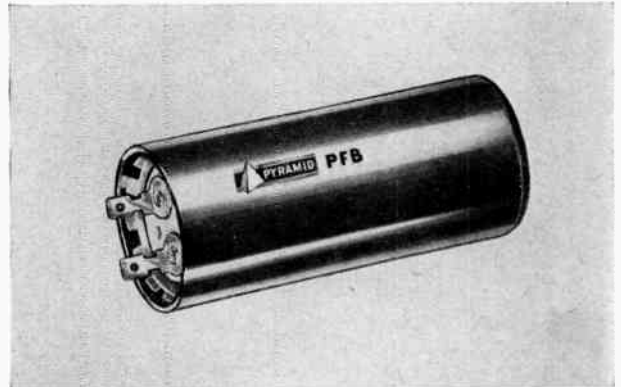


**PYRAMID ELECTRIC COMPANY • NORTH BERGEN, NEW JERSEY**  
**THE BIG NAME IN CAPACITORS AND SELENIUM RECTIFIERS TODAY**

**TYPE HIGH CAPACITANCE LOW-VOLTAGE ELECTROLYTIC CAPACITORS**

**P** Pyramid's PFB is the ideal electrolytic capacitor for use in applications where high-capacitance at low-voltage is required.

**F** Designed for 85° C. operation. Assembled in hermetically sealed round plastic cases. For use in applications requiring high capacitance at low working voltages, as in motion-picture sound equipment. For mounting rings, see page 8. Mounting Ring No. 371-24 \$.10.



Catalog Number	Cap. in UF	Can Size in Inches* Diam.	Length	List Price
<b>10 VOLTS DC WORKING</b>				
PFB-500-10	500	1 1/4	2 3/4	\$3.10
PFB-1000-10	1000	1 1/4	2 3/4	3.55
PFB-1500-10	1500	1 1/4	2 3/4	3.75
PFB-2000-10	2000	1 1/4	2 3/4	3.95
PFB-3000-10	3000	1 1/4	3 3/8	4.35
PFB-4000-10	4000	1 1/4	4 3/8	4.75
PFB-5000-10	5000	1 1/4	4 3/8	5.15
PFB-6000-10	6000	1 1/4	4 3/8	7.50
<b>12 VOLTS DC WORKING</b>				
PFB-500-12	500	1 1/4	2 3/4	3.20
PFB-1000-12	1000	1 1/4	2 3/4	3.75
PFB-1500-12	1500	1 1/4	2 3/4	3.95
PFB-2000-12	2000	1 1/4	3 3/8	4.15
PFB-2500-12	2500	1 1/4	3 3/8	4.85
PFB-3000-12	3000	1 1/4	4 3/8	5.05
PFB-4000-12	4000	1 1/4	4 3/8	5.25
PFB-6000-12	6000	2 1/4	4 3/4	9.35
<b>15 VOLTS DC WORKING</b>				
PFB-500-15	500	1 1/4	2 3/4	3.25
PFB-1000-15	1000	1 1/4	2 3/4	3.80
PFB-1500-15	1500	1 1/4	2 3/4	4.00

Catalog Number	Cap. in UF	Can Size in Inches* Diam.	Length	List Price
PFB-2000-15	2000	1 1/4	3 3/8	4.70
PFB-3000-15	3000	1 1/4	4 3/8	5.15
PFB-4000-15	4000	1 1/4	4 3/8	8.10
PFB-6000-15	6000	2 1/4	4 3/4	10.00
<b>18 VOLTS DC WORKING</b>				
PFB-500-18	500	1 1/4	2 3/4	3.35
PFB-1000-18	1000	1 1/4	2 3/4	3.90
PFB-2000-18	2000	1 1/4	3 3/8	4.90
PFB-4000-18	4000	1 1/4	4 3/8	8.45
<b>20 VOLTS DC WORKING</b>				
PFB-500-20	500	1 1/4	2 3/4	3.40
PFB-1000-20	1000	1 1/4	3 3/8	4.10
PFB-2000-20	2000	1 1/4	4 3/8	5.20
PFB-4000-20	4000	2 1/4	4 3/4	8.75
<b>25 VOLTS DC WORKING</b>				
PFB-500-25	500	1 1/4	2 3/4	3.55
PFB-1000-25	1000	1 1/4	3 3/8	4.80
PFB-2000-25	2000	1 1/4	4 3/8	5.75
PFB-3000-25	3000	1 1/4	4 3/8	8.00
PFB-4000-25	4000	2 1/4	4 3/4	9.50
PFB-5000-25	5000	2 1/4	4 3/4	11.50

Catalog Number	Cap. in UF	Can Size in Inches* Diam.	Length	List Price
<b>30 VOLTS DC WORKING</b>				
PFB-500-30	500	1 1/4	3 3/8	3.60
PFB-1000-30	1000	1 1/4	4 3/8	4.90
PFB-2000-30	2000	1 1/4	4 3/8	8.00
PFB-3000-30	3000	2 1/4	4 3/4	8.95
PFB-4000-30	4000	2 1/4	4 3/4	10.50
<b>35 VOLTS DC WORKING</b>				
PFB-500-35	500	1 1/4	3 3/8	3.70
PFB-1000-35	1000	1 1/4	4 3/8	5.00
PFB-2000-35	2000	1 1/4	4 3/8	7.40
PFB-3000-35	3000	2 1/4	4 3/4	9.50
<b>40 VOLTS DC WORKING</b>				
PFB-500-40	500	1 1/4	3 3/8	3.80
PFB-1000-40	1000	1 1/4	4 3/8	6.50
PFB-2000-40	2000	1 1/4	4 3/8	9.00
PFB-3000-40	3000	2 1/4	4 3/4	10.50
<b>50 VOLTS DC WORKING</b>				
PFB-500-50	500	1 1/4	3 3/8	3.90
PFB-1000-50	1000	1 1/4	4 3/8	7.00
PFB-2000-50	2000	1 1/4	4 3/8	10.00
PFB-3000-50	3000	2 1/4	4 3/4	11.50

**TYPE MOLDED TUBULAR PAPER CAPACITORS**

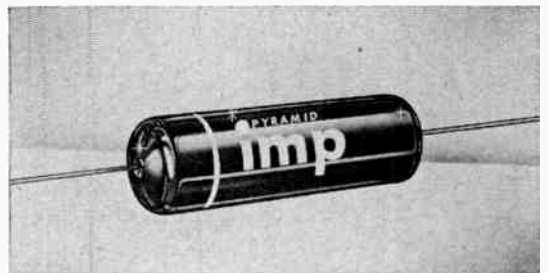
**I  
M  
P**

Noninductive extended-foil section molded in nonflammable thermosetting plastic. High insulation resistance. Excellent power factor. Withstands standard RETMA Humidity-resistance Test. Extremely rugged. Very long life.

Temperature Rating:  
 -40°C. to +100°C.

Standard Tolerance:

.0001-.001 UF: -25% to +60%  
 .0011-.009 UF: -20% to +40%  
 .01-1.0 UF: -20% to +20%



Catalog Number	Cap in UF	Size in Inches Diameter	Length	List Price
<b>200 VOLTS DC WORKING</b>				
IMP2-S2	.02	3/8	1 1/4	.25
IMP2-S47	.047	3/8	1 1/4	.30
IMP2-S5	.05	3/8	1 1/4	.30
IMP2-P1	.1	1/2	1 1/4	.35
IMP2-P15	.15	1/2	1 1/2	.35
IMP2-P25	.25	5/8	1 7/8	.45
IMP2-P47	.47	5/8	1 7/8	.60
IMP2-P5	.5	5/8	1 7/8	.60
IMP2-1	1.	3/4	2 1/4	.85
<b>400 VOLTS DC WORKING</b>				
IMP4-S1	.01	3/8	1	.25
IMP4-S2	.02	3/8	1 1/4	.25
IMP4-S22	.022	3/8	1 1/4	.25
IMP4-S25	.025	3/8	1 1/4	.25
IMP4-S3	.03	3/8	1 1/4	.25
IMP4-S4	.04	3/8	1 1/4	.30
IMP4-S47	.047	3/8	1 1/4	.30
IMP4-S5	.05	3/8	1 1/4	.30

Catalog Number	Cap in UF	Size in Inches Diameter	Length	List Price
IMP4-S68	.068	1/2	1 1/2	.35
IMP4-P1	.1	1/2	1 1/2	.35
IMP4-P15	.15	5/8	1 7/8	.40
IMP4-P22	.22	5/8	1 7/8	.40
IMP4-P25	.25	5/8	1 7/8	.45
IMP4-P47	.47	3/4	2 1/4	.60
IMP4-P5	.5	3/4	2 1/4	.60
<b>600 VOLTS DC WORKING</b>				
IMP6-T1	.0001	3/8	1	.25
IMP6-T25	.00025	3/8	1	.25
IMP6-T4	.0004	3/8	1	.25
IMP6-T5	.0005	3/8	1	.25
IMP6-D1	.001	3/8	1	.25
IMP6-D15	.0015	3/8	1	.25
IMP6-D2	.002	3/8	1	.25
IMP6-D22	.0022	3/8	1	.25
IMP6-D3	.003	3/8	1	.25
IMP6-D33	.0033	3/8	1	.25
IMP6-D4	.004	3/8	1	.25
IMP6-D47	.0047	3/8	1	.25

Catalog Number	Cap. in UF	Size in Inches Diameter	Length	List Price
IMP6-D5	.005	3/8	1	.25
IMP6-D6	.006	3/8	1 1/4	.30
IMP6-D68	.0068	3/8	1 1/4	.30
IMP6-D8	.008	3/8	1 1/4	.30
IMP6-S1	.01	3/8	1 1/4	.30
IMP6-S15	.015	3/8	1 1/4	.30
IMP6-S2	.02	3/8	1 1/4	.30
IMP6-S22	.022	3/8	1 1/4	.30
IMP6-S3	.03	3/8	1 1/4	.35
IMP6-S33	.033	1/2	1 1/2	.35
IMP6-S4	.04	1/2	1 1/2	.40
IMP6-S47	.047	1/2	1 1/2	.40
IMP6-S5	.05	1/2	1 1/2	.40
IMP6-S6	.06	5/8	1 7/8	.45
IMP6-S68	.068	5/8	1 7/8	.45
IMP6-P1	.1	5/8	1 7/8	.45
IMP6-P2	.2	3/4	2 1/4	.55
IMP6-P22	.22	3/4	2 1/4	.55
IMP6-P25	.25	3/4	2 1/4	.55
CT6-P5*	.5	1 1/4	2 3/4	.80

\*Supplied in mineral-oil impregnated ceramic-case units.







**PYRAMID ELECTRIC COMPANY • NORTH BERGEN, NEW JERSEY**  
**THE BIG NAME IN CAPACITORS AND SELENIUM RECTIFIERS TODAY**

**BATHTUB-TYPE OIL-PAPER CAPACITORS**

**TYPE**  
**P**  
**D**  
**M**

Section assembled in hermetically sealed tin-coated drawn-shell container. Mineral-oil impregnated and filled. Lug-type terminal seals. Meets electrical requirements of MIL-C-25A.

Temperature Rating: —55°C. to +85°C.  
 Standard Tolerance: —10% to +20%

**PDM VARIATIONS**

PDM Similar to MIL Type CP53, with terminals on side. To order: see Catalog Listing. Example: PDM4-S5 — \$1.85.

PDMT (CP54) With terminals on top. To order: add T after PDM. Example: PDMT4-S5 — \$1.85.

PDMB (CP55) With terminals on the bottom. To order: add B after PDM. Example: PDMB4-S5 — \$1.85.

1 1/2 x 1                      2 1/8  
 2 x 1 3/4                    2 3/8  
 2 x 2                         2 3/8

Distance between Mounting Hole Centers  
 Length x Width                      Distance

**PDM SINGLE-CAPACITOR UNITS**

Catalog Number	Cap. in UF	Length	Size in Inches Width	Height	List Price
<b>400 VOLTS DC WORKING</b>					
PDM4-S5	.05	1 1/2	1	3/4	1.85
PDM4-P1	.1	1 1/2	1	3/4	1.95
PDM4-P25	.25	1 1/2	1	3/4	2.20
PDM4-P5	.5	1 1/2	1	7/8	2.35
PDM4-1	1.0	2	1 3/4	7/8	3.35
PDM4-2	2.0	2	2	1 1/8*	4.30
<b>600 VOLTS DC WORKING</b>					
PDM6-S5	.05	1 1/2	1	3/4	2.85
PDM6-P1	.1	1 1/2	1	3/4	2.95
PDM6-P25	.25	1 1/2	1	3/4	3.10
PDM6-1	1.0	1 1/2	1	1	3.30
PDM6-P5	.5	2	1 3/4	7/8	3.75
PDM6-2	2.0	2	2	1 1/8*	4.90
<b>1,000 VOLTS DC WORKING</b>					
PDM10-S5	.05	1 1/2	1	3/4	3.00
PDM10-P1	.1	1 1/2	1	3/4	3.15
PDM10-P25	.25	1 1/2	1	7/8	3.20
PDM10-P5	.5	2	1 3/4	7/8	3.55
PDM10-1	1.0	2	2	1 1/8*	4.40

**METAL TUBULAR OIL-PAPER CAPACITORS**

**TYPE**  
**P**  
**I**  
**T**  
**M**

Noninductively wound section assembled in hermetically sealed metal tubular case. Mineral-oil impregnated and filled. Neoprene-Bakelite end-discs. Meets electrical requirements of MIL-C-25A.

Temperature Rating: —55°C. to +85°C.  
 Standard Tolerance: —10% to +20%

**PTIM VARIATIONS**

PTIM Basic type similar to MIL Type CP25. To order: see Catalog Listing. Example: PTIM6-D3 — \$.80.

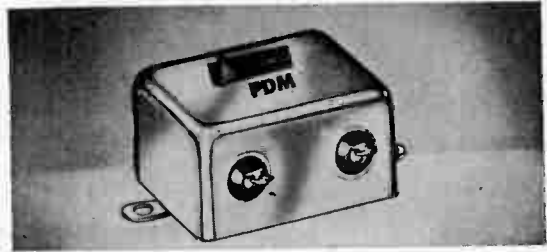
PTIMV (CP26) With insulating plastic sleeve. To order: add V after PTIM — 1/8" to Diameter — 1/8" to Length — \$.20 to List Price. Example: PTIMV6-D3 — \$1.00.

4PTIM (CP27) With riveted radial bracket. To order: add 4 before PTIM — \$.10 to List Price. Example: 4PTIM6-D3 — \$.90.

4PTIMV (CP28) With insulating plastic sleeve and riveted radial bracket. To order: add 4 before and V after PTIM — \$.30 to List Price. Example: 4PTIMV6-D3 — \$1.10.

7PTIM (CP29) With soldered tangential bracket. To order: add 7 before PTIM — \$.40 to List Price. Example: 7PTIM6-D3 — \$1.20.

Catalog Number	Cap. in UF	Size in Inches Diameter	Length	List Price
<b>600 VOLTS DC WORKING</b>				
PTIM6-D3	.003	3/8	1 1/8	.90
PTIM6-D5	.005	3/8	1 1/8	.80
PTIM6-D6	.006	3/8	1 1/8	.80
PTIM6-S1	.01	3/8	1 1/8	.80
PTIM6-S2	.02	3/8	1 1/8	.80



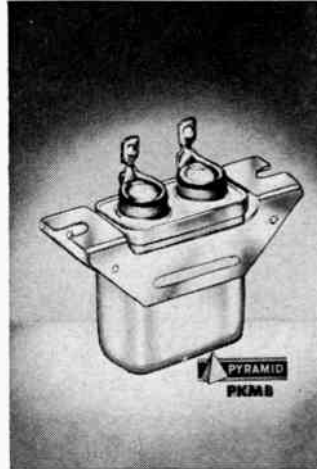
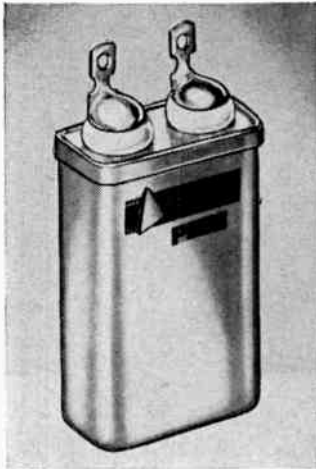
**PDM DUAL-CAPACITOR UNITS**

Catalog Number	Cap. in UF	Length	Size in Inches Width	Height	List Price
<b>400 VOLTS DC WORKING</b>					
2PDM4-S5	.05-.05	1 1/2	1	3/4	2.95
2PDM4-P1	.1-.1	1 1/2	1	3/4	3.05
2PDM4-P25	.25-.25	1 1/2	1	1 1/8	3.30
2PDM4-P5	.5-.5	2	1 3/4	7/8	3.85
2PDM4-1	1.0-1.0	2	2	1 1/8*	4.80
<b>600 VOLTS DC WORKING</b>					
2PDM6-S5	.05-.05	1 1/2	1	3/4	3.65
2PDM6-P1	.1-.1	1 1/2	1	3/4	3.70
2PDM6-P25	.25-.25	1 1/2	1	1	3.75
2PDM6-P5	.5-.5	2	1 3/4	7/8	4.30
2PDM6-1	1.0-1.0	2	2	1 1/8*	5.30
<b>1,000 VOLTS DC WORKING</b>					
2PDM10-S5	.05-.05	1 1/2	1	3/4	3.85
2PDM10-P1	.1-.1	1 1/2	1	1 1/8	4.00
2PDM10-P25	.25-.25	2	1 3/4	7/8	4.20
2PDM10-P5	.5-.5	2	2	1 1/8	5.50
<b>PDM TRIPLE-CAPACITOR UNITS</b>					
<b>400 VOLTS DC WORKING</b>					
3PDM4-P1	.1-.1-.1	1 1/2	1	3/4	3.75
3PDM4-P25	.25-.25-.25	2	1 3/4	7/8	4.40
3PDM4-P5	.5-.5-.5	2	2	1	5.10
<b>600 VOLTS DC WORKING</b>					
3PDM6-P1	.1-.1-.1	1 1/2	1	3/4	4.20
3PDM6-P25	.25-.25-.25	2	1 3/4	7/8	4.75
3PDM6-P5	.5-.5-.5	2	2	1	5.75
<b>1,000 VOLTS DC WORKING</b>					
3PDM10-P1	.1-.1-.1	2	1 3/4	7/8	4.60
3PDM10-P25	.25-.25-.25	2	2	1 1/8	5.50

\* Add 1/8" to Height when ordering these units with top or bottom terminals.



Catalog Number	Cap. in UF	Size in Inches Diameter	Length	List Price
<b>1,000 VOLTS DC WORKING</b>				
PTIM10-D3	.003	3/8	1 1/8	.95
PTIM10-D5	.005	3/8	1 1/8	.95
PTIM10-D6	.006	3/8	1 1/8	.95
PTIM10-S1	.01	3/8	1 1/8	.95
PTIM10-S2	.02	3/8	1 1/8	1.05
PTIM10-S5	.05	3/8	1 1/8	1.10
PTIM10-P1	.1	3/4	1 7/8	1.35
PTIM10-P25	.25	1	2 1/8	1.85
PTIM10-P5	.5	1	3 1/8	2.65
<b>1,600 VOLTS DC WORKING</b>				
PTIM16-D3	.003	3/4	1 1/8	1.00
PTIM16-D5	.005	3/4	1 1/8	1.00
PTIM16-D6	.006	3/4	1 1/8	1.00
PTIM16-S1	.01	3/4	1 1/8	1.05
PTIM16-S2	.02	3/4	1 1/8	1.15
PTIM16-S5	.05	3/4	2 1/8	1.20
PTIM16-P1	.1	1	2 1/8	2.00



# PKM

## SMALL-BASE OIL-PAPER CAPACITORS

Section assembled in hermetically sealed tin-coated container. Mineral-oil impregnated and filled. Lug-type terminal seals. Suitable for use in compact equipment. Meets electrical requirements of MIL-C-25A.

Temperature Rating:  
 -55° C. to +85° C.  
 Standard Tolerance:  
 -10% to +20%

### PKM VARIATIONS

PKM Basic type similar to MIL Type CP61. To order: see Catalog Listing. Example: PKM4-S5 — \$2.90.

PKMF Similar to CP61 with CP06F footed bracket. To order: add F after PKM. Example: PKMF4-S5 — \$2.90.

PKMS Similar to CP61 with CP06S spade

Catalog Number	Cap. in UF	Size in Inches Lgth. Width Hght.	List Price
<b>400 VOLTS DC WORKING</b>			
PKM4-S5	.05	1 1/8 x 3/8 x 1 1/8	2.90
PKM4-P1	.1	1 1/8 x 3/8 x 1 1/8	3.15
PKM-P25	.25	1 1/8 x 3/8 x 1 3/8	3.20
PKM4-P5	.5	1 1/8 x 3/8 x 1 5/8	3.25
PKM4-1	1.0	1 1/8 x 3/8 x 2 1/2	3.65

bracket. To order: add S after PKM. Example: PKMF4-S5 — \$2.90.

PKMT Similar to CP63 with channel bracket on end opposite terminals. To order: add T after PKM. Example: PKMT 4-S5 — \$2.90.

PKMB Similar to CP65 with channel bracket on same end as terminals. To order: add B after PKM. Example: PKMB4-S5 — \$2.90.

Catalog Number	Cap. in UF	Size in Inches Lgth. Width Hght.	List Price
<b>600 VOLTS DC WORKING</b>			
PKM6-S5	.05	1 1/8 x 3/8 x 1 1/8	3.10
PKM6-P1	.1	1 1/8 x 3/8 x 1 1/8	3.20
PKM6-P25	.25	1 1/8 x 3/8 x 1 5/8	3.25
PKM6-P5	.5	1 1/8 x 3/8 x 2	3.35
PKM6-1	1.0	1 1/8 x 3/8 x 2 1/2	3.75

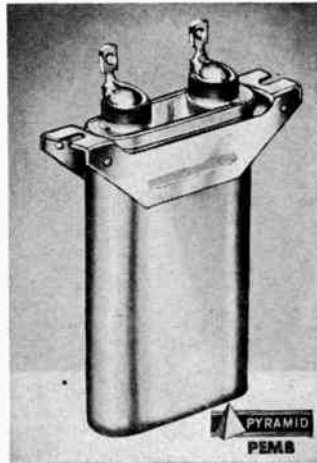
PKMT, PKMB Channel Bracket Dimensions:  
 Overall Length: 2 1/8".

Overall Width: 3/8".

Length bet. Mounting Slot Centers: 1-1/8".

Mounting Slot Width: 3/32".

Catalog Number	Cap. in UF	Size in Inches Lgth. Width Hght.	List Price
<b>1,000 VOLTS DC WORKING</b>			
PKM10-S5	.05	1 1/8 x 3/8 x 1 1/8	3.15
PKM10-P1	.1	1 1/8 x 3/8 x 1 3/8	3.25
PKM10-P25	.25	1 1/8 x 3/8 x 2	3.35
PKM10-P5	.5	1 1/8 x 3/8 x 2 1/2	3.65



# PEM

## SMALL-BASE OIL-PAPER CAPACITORS

Section assembled in hermetically sealed tin-coated container. Mineral-oil impregnated and filled. Lug-type terminal seals. Suitable for use in compact equipment. Meets electrical requirements of MIL-C-25A.

Temperature Rating:  
 -55° C. to +85° C.  
 Standard Tolerance:  
 -10% to +20%

### PEM VARIATIONS

PEM Basic type. To order: see Catalog Listing. Example: PEM6-S5 — \$3.10.

PEMT Similar to MIL Type CP67, with channel bracket on end opposite terminals. To order: add T after PEM. Example: PEMT6-S5 — \$3.10.

PEM10-S5

Catalog Number	Cap. in UF	Size in Inches L. W. H.	List Price
<b>Pem Single-Capacitor Units</b>			
<b>600 VOLTS DC WORKING</b>			
PEM6-S5	.05	1 1/8 x 3/8 x 1 1/8	3.10
PEM6-P1	.1	1 1/8 x 3/8 x 1 1/8	3.20
PEM6-P25	.25	1 1/8 x 3/8 x 1 1/2	3.25
PEM6-P5	.5	1 1/8 x 3/8 x 2	3.35
PEM6-1	1.0	1 1/8 x 3/8 x 2 1/2	3.75
<b>1,000 VOLTS DC WORKING</b>			
PEM10-S5	.05	1 1/8 x 3/8 x 1 1/8	3.15
PEM10-P1	.1	1 1/8 x 3/8 x 1 1/8	3.25

PEMB Similar to CP69, with channel bracket on same end as terminals. To order: add B after PEM. Example: PEMB6-S5 — \$3.10.

PEMT, PEMB Channel Bracket Dimensions:  
 Overall Length: 2 1/8".

Catalog Number	Cap. in UF	Size in Inches L. W. H.	List Price
PEM10-P5	.5	1 1/8 x 3/8 x 2 1/2	3.65
PEM10-P5	.5	1 1/8 x 3/8 x 1 1/8	3.25

### Pem Dual-Capacitor Units

Catalog Number	Cap. in UF	Size in Inches L. W. H.	List Price
<b>600 VOLTS DC WORKING</b>			
2PEM6-S5	.05-.05	1 1/8 x 3/8 x 1 1/8	4.20
2PEM6-P1	.1-.1	1 1/8 x 3/8 x 1 1/2	4.30
2PEM6-P25	.25-.25	1 1/8 x 3/8 x 2	4.55
8PEM6-P5	.5-.5	1 1/8 x 3/8 x 2 1/2	4.95

Catalog Number	Cap. in UF	Size in Inches L. W. H.	List Price
<b>1,000 VOLTS DC WORKING</b>			
2PEM10-S5	.05-.05	1 1/8 x 3/8 x 1 1/8	4.55

Overall Width: 3/8" (max.).

Length between Mounting Slot Centers: 2 1/8".

Mounting Slot Width: 3/32".

Catalog Number	Cap. in UF	Size in Inches L. W. H.	List Price
2PEM10-P1	.1-.1	1 1/8 x 3/8 x 1 1/2	4.90
2PEM10-P25	.25-.25	1 1/8 x 3/8 x 2 1/2	5.00

### Pem Triple-Capacitor Units

Catalog Number	Cap. in UF	Size in Inches L. W. H.	List Price
<b>600 VOLTS DC WORKING</b>			
3PEM6-S5	.05-.05-.05	1 1/8 x 3/8 x 1 1/8	5.00
3PEM6-P1	.1-.1-.1	1 1/8 x 3/8 x 1 1/2	5.60
3PEM6-P25	.25-.25-.25	1 1/8 x 3/8 x 2 1/2	5.95

Catalog Number	Cap. in UF	Size in Inches L. W. H.	List Price
<b>1,000 VOLTS DC WORKING</b>			
3PEM10-S5	.05-.05-.05	1 1/8 x 3/8 x 1 1/2	5.90
3PEM10-P1	.1-.1-.1	1 1/8 x 3/8 x 2	6.10



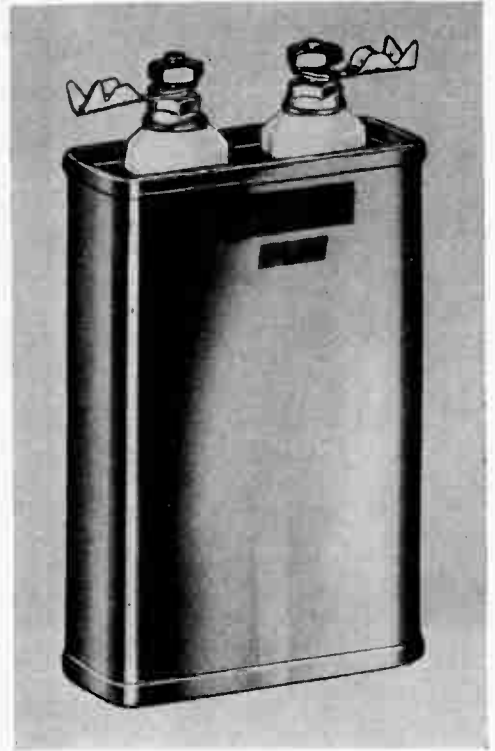
**HIGH-VOLTAGE OIL-PAPER CAPACITORS**

**TYPE PLM** Section assembled in lacquer-finished terneplate case. Mineral-oil impregnated and filled. Ceramic terminal insulators with screw studs. Designed for heavy-duty continuous service. Fulfills the exacting requirements of power-supply and filter applications. Meets electrical requirements of characteristic "E" under MIL-C-25A. For higher voltage ratings and other information, write to Pyramid Sales Engineering Dept.

Temperature Rating: —55° C. to +85° C.  
 Standard Tolerance: +10%.

**PLM VARIATIONS**

- PLM Basic type similar to MIL Type CP70. To order: see Catalog Listing. Example: PLM6-P5 — \$4.70.
- PLMF Similar to CP 70 with CP075 footed bracket. To order: add F after PLM. Example: PLMF6-P5 — \$4.70.
- PLMS Similar to CP70 with CP07S spade bracket. To order: add S after PLM. Example: PLMS6-P5 — \$4.70.
- PLMU With universal mounting bracket. To order: add U after PLM. Example: PLMU6-P5 — \$4.70.
- PLMR With riveted solder-lub MIL Type B terminals (furnished only through 2,000 VDCW rating). To order: add R after PLM. Example: PLMR6-P5 — \$4.70.



Catalog Number	Cap. in UF	Case Size in Inches			List Price
		Length	Width	Height	
<b>600 VOLTS DC WORKING</b>					
PLM6-P5	.5	1 1/4	1 1/4	1 5/8	4.70
PLM6-1	1.0	1 1/4	1 1/4	2 1/4	5.80
PLM6-2	2.0	1 3/4	1 1/4	3 1/4	7.15
PLM6-3	3.0	1 3/4	1 1/4	4 3/4	8.25
PLM6-4	4.0	2 1/2	1 3/4	3 1/2	9.00
PLM6-5	5.0	2 1/2	1 3/4	4 1/4	10.50
PLM6-6	6.0	2 1/2	1 3/4	4 3/4	11.30
PLM6-8	8.0	3 3/4	1 1/4	4 1/4	13.50
PLM6-10	10.0	3 3/4	1 3/4	4	15.00
<b>1,000 VOLTS DC WORKING</b>					
PLM10-P1	.1	1 1/4	1 1/4	1 5/8	4.15
PLM10-P25	.25	1 1/4	1 1/4	1 5/8	4.70
PLM10-P5	.5	1 1/4	1 1/4	2 1/4	5.00
PLM10-1	1.0	1 3/4	1 1/4	2 7/8	6.35
PLM10-2	2.0	1 3/4	1 1/4	4 3/4	8.25
PLM10-3	3.0	2 1/2	1 3/4	4 1/4	9.50
PLM10-4	4.0	2 1/2	1 3/4	4 3/4	10.50
PLM10-5	5.0	3 3/4	1 1/4	4 3/4	12.50
PLM10-6	6.0	3 3/4	1 3/4	4	14.00
PLM10-8	8.0	3 3/4	1 3/4	4 3/4	15.00
PLM10-10	10.0	3 3/4	2 1/4	4 3/4	16.75
PLM10-12	12.0	3 3/4	2 1/4	5 1/8	18.15
PLM10-15	15.0	3 3/4	3 3/4	4 3/4	20.00
<b>1,500 VOLTS DC WORKING</b>					
PLM15-P5	.5	1 3/4	1 1/4	2 7/8	6.25
PLM15-1	1.0	1 3/4	1 1/4	4 3/4	7.50
PLM15-2	2.0	2 1/2	1 3/4	4 3/4	10.50
PLM15-3	3.0	3 3/4	1 1/4	4 3/4	12.50
PLM15-4	4.0	3 3/4	1 1/2	4 3/4	14.00
PLM15-5	5.0	3 3/4	2 1/4	4 1/2	15.00
PLM15-6	6.0	3 3/4	2 1/4	4 3/4	17.00
PLM15-8	8.0	3 3/4	2 1/2	4 3/4	21.00
PLM15-10	10.0	3 3/4	3 3/4	5 1/8	25.00
PLM15-12	12.0	3 3/4	3 3/4	5 1/2	27.25
PLM15-15	15.0	4 3/4	3 3/4	5 1/8	30.00
<b>2,000 VOLTS DC WORKING</b>					
PLM20-P1	.1	1 3/4	1 1/4	2 1/4	6.50

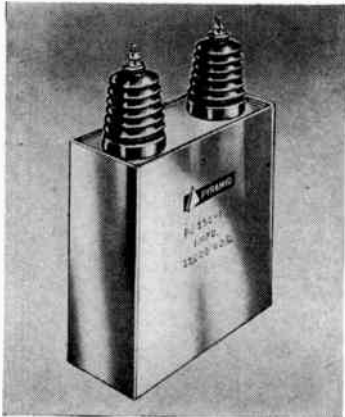
Catalog Number	Cap. in UF	Case Size in Inches			List Price
		Length	Width	Height	
PLM20-P25	.25	1 3/4	1 1/4	2 7/8	7.00
PLM20-P5	.5	1 3/4	1 1/4	3 7/8	7.50
PLM20-1	1.0	2 1/2	1 3/4	4 1/4	9.00
PLM20-2	2.0	3 3/4	1 1/4	4 3/4	10.75
PLM20-3	3.0	3 3/4	1 3/4	4 3/4	13.25
PLM20-4	4.0	3 3/4	2 1/4	5 1/8	15.00
PLM20-5	5.0	3 3/4	3 3/4	4 3/4	16.75
PLM20-6	6.0	3 3/4	3 3/4	5 1/2	20.00
PLM20-8	8.0	4 3/4	3 3/4	5 1/8	25.00
PLM20-10	10.0	4 3/4	3 3/4	6	30.50
PLM20-12	12.0	4 3/4	3 3/4	7 1/2	33.00
<b>2,500 VOLTS DC WORKING</b>					
PLM25-P5	.5	2 1/2	1 3/4	3 7/8	11.50
PLM25-1	1.0	3 3/4	1 3/4	3 1/4	13.00
PLM25-2	2.0	3 3/4	2 1/4	4 3/4	21.50
PLM25-4	4.0	4 3/4	3 3/4	4 3/8	30.00
PLM25-10	10.0	4 3/4	3 3/4	8 1/2	75.00
<b>3,000 VOLTS DC WORKING</b>					
PLM30-P1	.1	1 3/4	1 1/4	2 7/8	14.00
PLM30-P25	.25	2 1/2	1 3/4	3 1/2	15.00
PLM30-P5	.5	2 1/2	1 3/4	4 3/4	17.00
PLM30-1	1.0	3 3/4	2 1/4	4 1/2	20.00
PLM30-2	2.0	3 3/4	3 3/4	4 3/4	25.00
PLM30-4	4.0	4 3/4	3 3/4	5 1/2	36.50
<b>4,000 VOLTS DC WORKING</b>					
PLM40-P1	.1	3 3/4	2 1/4	2 3/4	25.00
PLM40-P25	.25	3 3/4	2 1/4	2 3/4	26.50
PLM40-P5	.5	3 3/4	2 1/4	4 3/4	30.00
PLM40-1	1.0	3 3/4	3 3/4	4 3/4	36.50
PLM40-2	2.0	4 3/4	3 3/4	6	46.50
PLM40-4	4.0	4 3/4	3 3/4	9 5/8	67.00
<b>5,000 VOLTS DC WORKING</b>					
PLM50-P5	.5	3 3/4	2 1/4	5 1/8	33.00
PLM50-1	1.0	4 3/4	3 3/4	5 1/8	42.00
PLM50-2	2.0	4 3/4	3 3/4	8 1/2	53.50



**TYPE PJ HIGH-VOLTAGE OIL-PAPER CAPACITORS**

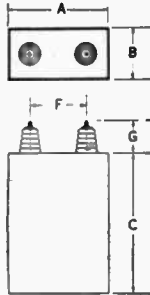
TYPE

**P  
J**



Section assembled in container of heavy gage steel, welded oil tight and hot tinned. Mineral oil impregnated and mineral oil filled. Case and terminals are bonded together. Low leakage current and negligible capacity change over wide range of operating temperature. For higher voltage and other information write to Pyramid Sales Engineering Department.

Temperature Range: —55° C. to +85° C.  
 Capacity Tolerance: —5% to +15%.



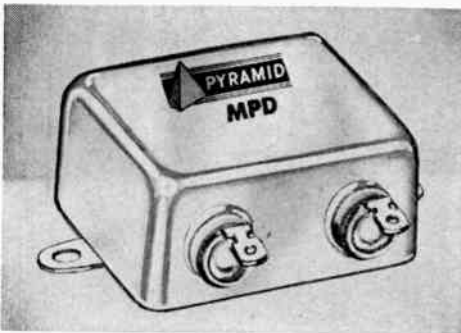
Catalog Number	Cap. in UF	Size in In.		(See Dimens'1 Drawing)			List Price
		A	B	C	F	G	
<b>6,000 VOLTS DC WORKING</b>							
PJ60-2	2	8	4	11	4 1/2	2 1/2	150.00
PJ60-4	4	12	4	11	6	2 1/2	184.00
PJ60-5	5	12	6	11	6	2 1/2	208.00
PJ60-6	6	12	6	11	6	2 1/2	233.00
PJ60-10	10	12	6	16	6	2 1/2	290.00
<b>7,500 VOLTS DC WORKING</b>							
PJ75-P5	.5	8	4	11	4 1/2	2 1/2	83.00
PJ75-1	1	8	4	11	4 1/2	2 1/2	108.00
PJ75-2	2	12	4	11	6	2 1/2	166.00
PJ75-4	4	12	6	13	6	2 1/2	250.00
PJ75-6	6	12	7 1/2	15	6	2 1/2	300.00

Catalog Number	Cap. in UF	Size in In.		(See Dimens'1 Drawing)			List Price
		A	B	C	F	G	
<b>10,000 VOLTS DC WORKING</b>							
PJ100-P5	.5	8	4	11	4 1/2	2 1/2	175.00
PJ100-1	1	12	4	11	6	2 1/2	217.00
PJ100-2	2	12	6	11	6	2 1/2	275.00
PJ100-4	4	12	7 1/2	16	6	2 1/2	336.00
PJ100-5	5	12	8	18	6	2 1/2	368.00
<b>12,500 VOLTS DC WORKING</b>							
PJ125-P5	.5	12	4	11	6	2 1/2	184.00
PJ125-1	1	12	6	11	6	2 1/2	233.00
PJ125-2	2	12	6	16	6	2 1/2	292.00
PJ125-5	5	12	12	18	6	2 1/2	551.00
<b>15,000 VOLTS DC WORKING</b>							
PJ150-P25	.25	8	4	11	4 1/2	4 3/4	175.00
PJ150-P5	.5	12	4	11	6	4 3/4	208.00
PJ150-1	1	12	6	13	6	4 3/4	292.00
PJ150-2	2	12	8	18	6	4 3/4	384.00
PJ150-3	3	12	11	18	6	4 3/4	526.00
<b>20,000 VOLTS DC WORKING</b>							
PJ200-P25	.25	12	4	11	4 1/2	4 3/4	208.00
PJ200-P5	.5	12	6	13	6	4 3/4	267.00
PJ200-1	1	12	8	18	6	4 3/4	359.00
PJ200-1.5	1.5	12	12	18	6	4 3/4	484.00
<b>25,000 VOLTS DC WORKING</b>							
PJ250-P25	.25	12	6	11	6	4 3/4	292.00
PJ250-P5	.5	12	7 1/2	16	6	4 3/4	317.00
PJ250-P75	.75	12	11	16	6	4 3/4	400.00
PJ250-1	1	12	12	18	6	4 3/4	475.00

**BATHTUB-TYPE METALLIZED PAPER CAPACITORS**

TYPE

**M  
P  
D  
K  
•  
M  
P  
D  
M**



Extended-foil section assembled in hermetically sealed typical bath-type case. Lug-type terminal seals. Basic Type MPDK impregnated in microcrystalline mineral wax. Basic Type MPDM impregnated in mineral oil. Self-healing. Low r-f impedance. Excellent power factor over a wide temperature range. (For High-temperature Type MPDR, see page 18.)

Temperature Rating: —55° C. to +85° C.  
 Operating: 0% at +55° C. 30% at +85° C.  
 Standard Tolerance: ±20%.

**MPDK, MPDM VARIATIONS**

MPDK-MPDM Basic types with terminals on side. To order: see Catalog Listing. Example: MPDK1.5-3 — \$5.10.  
 MPDKT-MPDMT With terminals on top. To order: add T after MPDK or MPDM. Example: MPDKT1.5-3 — \$5.10.  
 MPDKB-MPDMB With terminals on bottom. To order: add T after MPDK or MPDM. Example: MPDKB1.5-3 — \$5.10.

**Distance between Mounting Hole Centers:**

Length x Width	Distance
1 1/4 x 1	2 1/8
1 1/4 x 1 1/4	2 1/8
2 x 1 3/4	2 3/8
2 x 2	2 3/8

Catalog Number	Cap. in UF	Length	Size in Inches Width	Height	List Price
<b>MPDK-MPDM SINGLE-CAPACITOR UNITS</b>					
<b>150 VOLTS DC WORKING</b>					
MPDK1.5-3	3.0	1 1/4	1	3/4	5.10
MPDK1.5-4	4.0	1 1/4	1	7/8	5.75
MPDK1.5-6	6.0	1 1/4	1 1/4	7/8	6.10
MPDK1.5-8	8.0	2	1 3/4	7/8	8.40
MPDK1.5-10	10.0	2	1 3/4	7/8	9.70
MPDK1.5-12	12.0	2	2	1	11.00
<b>200 VOLTS DC WORKING</b>					
MPDK2-P5	.5	1 1/4	1	3/4	3.30
MPDK2-1	1.0	1 1/4	1	3/4	3.55
MPDK2-2	2.0	1 1/4	1	3/4	4.45
<b>400 VOLTS DC WORKING</b>					
MPDM4-P25	.25	1 1/4	1	3/4	3.35
MPDM4-P5	.5	1 1/4	1	3/4	3.55
MPDM4-1	1.0	1 1/4	1	7/8	3.95
MPDM4-2	2.0	2	1 3/4	7/8	4.90
MPDM4-4	4.0	2	2	1 1/8	7.85
<b>600 VOLTS DC WORKING</b>					
MPDM6-P1	.1	1 1/4	1	3/4	3.50
MPDM6-P25	.25	1 1/4	1	3/4	3.55

Catalog Number	Cap. in UF	Length	Size in Inches Width	Height	List Price
<b>MPDK-MPDM DUAL-CAPACITOR UNITS</b>					
<b>150 VOLTS DC WORKING</b>					
2MPDK1.5-4	4.0 -4.0	2	2	7/8	9.00
2MPDK1.5-6	6.0 -6.0	2	2	1	11.50
<b>200 VOLTS DC WORKING</b>					
2MPDK2-1	1.0 -1.0	1 1/4	1	3/4	5.00
2MPDK2-2	2.0 -2.0	1 1/4	1	7/8	6.30
<b>400 VOLTS DC WORKING</b>					
2MPDM4-P25	.25 - .25	1 1/4	1	3/4	3.80
2MPDM4-P5	.5 - .5	1 1/4	1	7/8	4.35
2MPDM4-1	1.0 -1.0	2	1 3/4	7/8	5.50
2MPDM4-2	2.0 -2.0	2	2	1 1/8	8.10
<b>600 VOLTS DC WORKING</b>					
2MPDM6-P1	.1 - .1	1 1/4	1	3/4	4.10
2MPDM6-P25	.25 - .25	1 1/4	1	3/4	4.95
2MPDM6-P5	.5 - .5	1 1/4	1 1/4	7/8	5.70
2MPDM6-1	1.0 -1.0	2	2	1	6.60



**PYRAMID ELECTRIC COMPANY • NORTH BERGEN, NEW JERSEY**  
**THE BIG NAME IN CAPACITORS AND SELENIUM RECTIFIERS TODAY**

**METAL-CAN METALLIZED PAPER CAPACITORS**

TYPE

**M M** Extended-foil section assembled in hermetically sealed metal tubular case. Glass-to-metal end-seals. Basic Type MP GK impregnated in microcrystalline mineral wax. Basic Type M PGM impregnated in mineral oil. 1 5/8 inch minimum lead length. Self-healing. Low r-f impedance. Excellent power factor over a wide temperature range. (For High-temperature Type MPGR, see page 17)

Temperature Rating: —55° C. to +85° C.  
 Derating: 0% at +55° C. 30% at +85° C.  
 Standard Tolerance: ±20%.



**MPGK, MPMG VARIATIONS**

**MPGK-MPMG** Basic types with grounded case. To order: see Catalog Listing. Example: MPGK1.5-3 — \$4.60

**MPGK-MPMGIM** With floating case. To order: add 1 after MPG — 1/8" to Length — \$.75 to List Price. Example: MPGK1.5-3 — \$5.35

**MPGKV-MPMGV** With insulating plastic sleeve. To order: add V after MPGK or MPMG — 1/8" to Diameter — 1/8" to Length — \$.20 to List Price. Example: PGKV1.5-3 — \$4.80

**3MPGK-3MPGM** With threaded end bushing. To order: add 3 before MPGK or MPMG — \$.80 to List Price. Example: 3MPGK1.5-3 — \$5.40

**6MPGK-6MPGM** With soldered transverse bracket. To order: add 6 before MPGK or MPMG — \$.40 to List Price. Example: 6MPGK1.5-3 — \$5.00

**7MPGK-7MPGM** With soldered tangential bracket. To order: add 7 before MPGK or MPMG — \$.40 to List Price. Example: 7MPGK1.5-3 — \$5.00

Catalog Number	Cap. in UF	Size in Inches Diam.	Size in Inches Lgth.	List Price
<b>150 VOLTS DC WORKING</b>				
MPGK1.5-3	3.0	.750	1 3/4	4.60
MPGK1.5-4	4.0	1.000	1 3/4	5.00
MPGK1.5-6	6.0	1.000	1 3/4	5.85
MPGK1.5-8	8.0	1.000	2 1/4	6.65
<b>200 VOLTS DC WORKING</b>				
MPGK2-S1	.01	.235	3/4	2.05
MPGK2-S2	.02	.235	3/4	2.10
MPGK2-S3	.03	.235	3/4	2.10
MPGK2-S4	.04	.235	3/4	2.10
MPGK2-S47	.047	.235	3/4	2.10
MPGK2-S5	.05	.235	3/4	2.10
MPGK2-S68	.068	.312	3/4	2.15
MPGK2-P1	.1	.312	3/4	2.15
MPGK2-P15	.15	.312	1 1/4	2.35
MPGK2-P2	.2	.312	1 1/4	2.35
MPGK2-P22	.22	.312	1 1/4	2.35
MPGK2-P25	.25	.312	1 1/4	2.35
MPGK2-P33	.33	.400	1 1/4	2.40
MPGK2-P47	.47	.400	1 1/4	2.40
MPGK2-P5	.5	.400	1 1/4	2.40
MPGK2-P68	.68	.562	1 1/4	2.65

Catalog Number	Cap. in UF	Size in Inches Diam.	Size in Inches Lgth.	List Price
MPGK2-1	1.0	.562	1 1/4	2.65
MPGK2-1.5	1.5	.562	1 3/4	2.85
MPGK2-2	2.0	.562	1 3/4	3.95
<b>400 VOLTS DC WORKING</b>				
MPGM4-S1	.01	.235	3/4	2.15
MPGM4-S2	.02	.235	3/4	2.15
MPGM4-S22	.022	.235	3/4	2.15
MPGM4-S3	.03	.312	3/4	2.20
MPGM4-S33	.033	.312	3/4	2.20
MPGM4-S4	.04	.312	3/4	2.20
MPGM4-S47	.047	.400	3/4	2.20
MPGM4-S5	.05	.400	3/4	2.25
MPGM4-S68	.068	.400	1 1/4	2.25
MPGM4-P1	.1	.400	1 1/4	2.45
MPGM4-P15	.15	.500	1 1/4	2.45
MPGM4-P2	.2	.500	1 1/4	2.45
MPGM4-P22	.22	.562	1 1/4	2.45
MPGM4-P25	.25	.562	1 1/4	2.75
MPGM4-P33	.33	.562	1 1/4	2.75
MPGM4-P47	.47	.562	1 3/4	2.75
MPGM4-P5	.5	.562	1 3/4	3.05
MPGM4-P68	.68	.670	1 3/4	3.05
MPGM4-1	1.0	.670	2 1/4	3.05

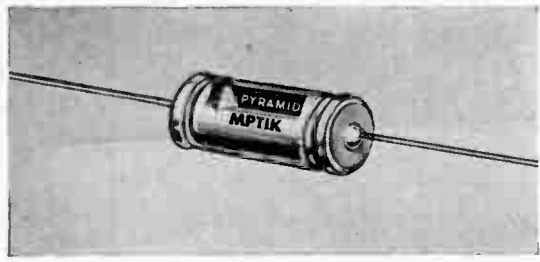
Catalog Number	Cap. in UF	Size in Inches Diam.	Size in Inches Lgth.	List Price
MPGM4-2	2.0	1.000	2 1/4	4.65
<b>600 VOLTS DC WORKING</b>				
MPGM6-S1	.01	.235	3/4	2.15
MPGM6-S15	.015	.312	3/4	2.20
MPGM6-S2	.02	.312	3/4	2.20
MPGM6-S22	.022	.312	3/4	2.20
MPGM6-S3	.03	.312	3/4	2.20
MPGM6-S33	.033	.400	3/4	2.20
MPGM6-S4	.04	.400	3/4	2.25
MPGM6-S47	.047	.400	3/4	2.25
MPGM6-S5	.05	.400	3/4	2.25
MPGM6-S68	.068	.400	1 1/4	2.30
MPGM6-P1	.1	.500	1 1/4	2.30
MPGM6-P15	.15	.500	1 1/4	2.70
MPGM6-P2	.2	.562	1 1/4	2.70
MPGM6-P22	.22	.562	1 1/4	2.70
MPGM6-P25	.25	.562	1 1/4	2.7C
MPGM6-P33	.33	.562	1 3/4	3.00
MPGM6-P47	.47	.670	1 3/4	3.00
MPGM6-P5	.5	.670	1 3/4	3.00
MPGM6-P68	.68	.670	2 1/4	3.65
MPGM6-1	1.0	.750	2 1/4	3.65
MPGM6-1.5	1.5	1.000	2 1/4	4.30

**METAL-TUBE METALLIZED PAPER CAPACITORS**

**M M**  
**P P**  
**T T**  
**I I**  
**K M**

Extended-foil section assembled in hermetically sealed metal tubular case. Span-over synthetic rubber end-discs. Basic Type MPTIK impregnated in microcrystalline mineral wax. Basic Type MPTIM impregnated in mineral oil. 1 5/8 inch minimum lead length. Self-healing. Low r-f impedance. Excellent power factor over a wide temperature range.

Temperature Rating: —55° C. to +85° C.  
 Derating: 0% at +55° C. 30% at +85° C.  
 Standard Tolerance: —20% to +30%.



**MPTIK-MPTIM VARIATIONS**

**MPTIK-MPTIM** Basic types with floating case. To order: see Catalog Listing. Example: MPTIK1.5-3 — \$3.35.

**MPTK-MPTM** With grounded case. To order: delete 1 after MPT — subtract 1/8" from Length. Example: MPTK1.5-3.

**MPTIKV-MPTIMV** With insulating plastic sleeve. To order: add V after MPTIK or MPTIM — 1/8" to Diameter — 1/8" to Length — \$.20 to List Price. Example: PTIKV1.5-3 — \$3.55.

**4MPTIK-4MPTIM** With riveted radial bracket. To order: add 4 before MPTIK or MPTIM — \$.10 to List Price. Example: 4MPTIK1.5-3 — \$3.45.

**4MPTIKV-4MPTIMV** With insulating plastic sleeve and riveted radial bracket. To order: add 4 before and V after MPTIK or MPTIM — \$.30 to List Price. Example: 4MPTIKV1.5-3 — \$3.65.

**7MPTIK-7MPTIM** With soldered tangential bracket. To order: add 7 before MPTIK or MPTIM — \$.40 to List Price. Example: 7MPTIK1.5-3 — \$3.75.

Catalog Number	Cap. in UF	Size in Inches Diam.	Size in Inches Lgth.	List Price
<b>150 VOLTS DC WORKING</b>				
MPTIK1.5-3	3.0	3/4	1 1/2	3.35
MPTIK1.5-4	4.0	7/8	1 1/2	4.35
MPTIK1.5-6	6.0	1	1 1/2	5.30
<b>200 VOLTS DC WORKING</b>				
MPTIK2-S1	.05	3/8	1 1/4	1.40
MPTIK2-P1	.1	3/8	1 1/4	1.45
MPTIK2-P25	.25	1/2	1 1/4	1.60
MPTIK2-P5	.5	1/2	1 1/4	1.70

Catalog Number	Cap. in UF	Size in Inches Diam.	Size in Inches Lgth.	List Price
MPTIK2-1	1.0	5/8	1 1/4	2.10
MPTIK2-2	2.0	5/8	1 1/4	2.60
<b>400 VOLTS DC WORKING</b>				
MPTIM4-S3	.03	3/8	1 1/4	1.35
MPTIM4-S5	.05	3/8	1 1/4	1.45
MPTIM4-P1	.1	3/4	1 1/4	1.60
MPTIM4-P25	.25	5/8	1 1/4	1.80
MPTIM4-P5	.5	5/8	1 1/4	2.00
MPTIM4-1	1.0	3/4	2 1/4	3.50
MPTIM4-2	2.0	1	2 1/4	3.60

Catalog Number	Cap. in UF	Size in Inches Diam.	Size in Inches Lgth.	List Price
<b>600 VOLTS DC WORKING</b>				
MPTIM6-S1	.01	3/8	1 1/4	1.35
MPTIM6-S2	.02	3/8	1 1/4	1.45
MPTIM6-S3	.03	3/8	1 1/4	1.50
MPTIM6-S5	.5	1/2	1 1/4	1.55
MPTIM6-P1	.1	1/2	1 1/4	1.70
MPTIM6-P25	.25	5/8	1 1/4	2.00
MPTIM6-P5	.5	1/2	1 1/4	1.55
MPTIM6-1	1.0	1 1/4	2 1/4	3.00
MPTIM6-2	2.0	1 1/4	2 1/4	4.00



TYPE

**BATH-TUB HI-TEMP METALLIZED PAPER CAPACITORS**

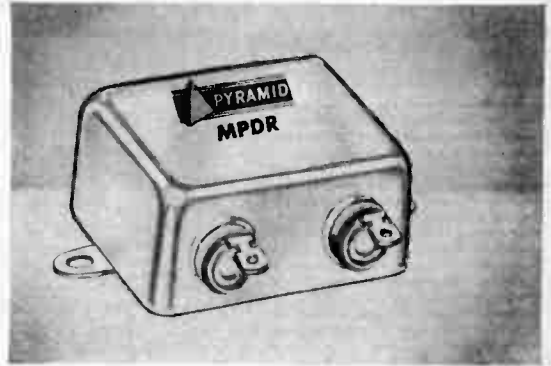
**M  
P  
D  
R**

Extended-foil section assembled in hermetically sealed tinned bathtub type case. Impregnated in solid thermosetting resin. Vitrified ceramic (or glass) lug-type terminal seals. Self-healing, low r-f impedance. Excellent power factor over a very wide temperature range.

Temperature Rating: -55° C. to +125° C.  
 Derating: 0% at +100° C. 25% at +125° C.  
 Standard Tolerance: ±20%.

**MPDR VARIATIONS**

MPDR With terminals on side. To order: see Catalog Listing. Example: MPDR1.5-3 — \$8.10.  
 MPDR With terminals on top. To order: add T after MPDR. Example: MPDR1.5-3 — \$8.10  
 MPDR With terminals on bottom. To order: add B after MPDR. Example: MPDRB1.5-3 — \$8.10



**MPDR SINGLE-CAPACITORS UNITS**

Catalog Number	Cap. in UF	Size in Inches			List Price
		L.	W.	H.	
<b>150 VOLTS DC WORKING</b>					
MPDR1.5-3	3.0	1 1/8	1	3/4	8.10
MPDR1.5-4	4.0	1 1/8	1	7/8	8.65
MPDR1.5-5	5.0	1 1/8	1	7/8	8.95
MPDR1.5-6	6.0	1 1/8	1 1/4	7/8	9.15
MPDR1.5-8	8.0	2	1 3/4	7/8	12.60
MPDR1.5-10	10.0	2	1 3/4	7/8	14.55
MPDR1.5-12	12.0	2	1 3/4	7/8	16.50

Catalog Number	Cap. in UF	Size in Inches			List Price
		L.	W.	H.	
<b>200 VOLTS DC WORKING</b>					
MPDR2-P5	.5	1 1/8	1	3/4	4.95
MPDR2-1	1.0	1 1/8	1	3/4	5.35
MPDR2-2	2.0	1 1/8	1	3/4	6.70
<b>400 VOLTS DC WORKING</b>					
MPDR4-P25	.25	1 1/8	1	3/4	5.05
MPDR4-P5	.5	1 1/8	1	3/4	5.35
MPDR4-1	1.0	1 1/8	1	7/8	5.95

Catalog Number	Cap. in UF	Size in Inches			List Price
		L.	W.	H.	
MPDR4-2	2.0	2	1 3/4	7/8	7.35
MPDR4-3	3.0	2	1 3/4	1	9.75
MPDR4-4	4.0	2	2	1 1/8	11.80
<b>600 VOLTS DC WORKING</b>					
MPDR6-P1	.1	1 1/8	1	3/4	5.25
MPDR6-P25	.25	1 1/8	1	3/4	5.35
MPDR6-P5	.5	1 1/8	1	3/4	6.00
MPDR6-1	1.0	1 1/8	1 1/4	7/8	7.35
MPDR6-2	2.0	2	2	7/8	9.40

TYPE

**METAL-CAN-HI-TEMP METALLIZED PAPER CAPACITORS**

**M  
P  
G  
R**

Extended-foil construction assembled in hermetically sealed metal tubular case. Impregnated in solid thermosetting resin. Glass-to-metal end-seals. 1—5/8 inch minimum lead length. Self-healing. Low r-f impedance. Excellent power factor over a very wide temperature range.



Temperature Rating: -55° C. to +125° C.  
 Derating: 0% at +100° C. 25% at +125° C.  
 Standard Tolerance: ±20%.

**MPGR VARIATIONS**

MPGR Basic type with grounded case. To order: see Catalog Listing. Example: MPGR2-S1 — \$3.15  
 MPGR With floating case. To order: add I after MPGR — 1/8" to Length — \$.75 to List Price. Example: MPGR2-S1 — \$3.90  
 MPGR With insulating plastic sleeve. To order: add V after MPGR — 1/8" to Diameter — 1/8" to Length — \$.20 to List Price. Example: MPGRV2-S1 — \$3.35

3MPGR With threaded end bushing. To order: add 3 before MPGR — \$.80 to List Price. Example: 3MPGR2-S1 — \$3.95  
 6MPGR With soldered transverse bracket. To order: add 6 before MPGR — \$.40 to List Price. Example: 6MPGR2-S1 — \$3.55  
 7MPGR With soldered tangential bracket. To order: add 7 to MPGR — \$.40 to List Price. Example: 7MPGR2-S1 — \$3.55

Catalog Number	Cap. in UF	Size in Inches		List Price
		Diam.	Lgth.	
<b>200 VOLTS DC WORKING</b>				
MPGR2-S1	.01	.235	1 1/8	3.15
MPGR2-S15	.015	.235	1 1/8	3.15
MPGR2-S2	.02	.235	1 1/8	3.15
MPGR2-S22	.022	.235	1 1/8	3.15
MPGR2-S33	.033	.235	1 1/8	3.15
MPGR2-S4	.04	.235	1 1/8	3.15
MPGR2-S47	.047	.235	1 1/8	3.15
MPGR2-S5	.05	.235	1 1/8	3.15
MPGR2-S68	.068	.312	1 1/8	3.25
MPGR2-P1	.1	.312	1 1/8	3.25
MPGR2-P15	.15	.312	1 1/8	3.55
MPGR2-P2	.2	.312	1 1/8	3.55
MPGR2-P22	.22	.312	1 1/8	3.55
MPGR2-P25	.25	.312	1 1/8	3.55
MPGR2-P33	.33	.400	1 1/8	3.60
MPGR2-P47	.47	.400	1 1/8	3.60
MPGR2-P5	.5	.400	1 1/8	3.60
MPGR2-P68	.68	.562	1 1/8	4.00
MPGR2-1	1.0	.562	1 1/8	4.00
MPGR2-2	2.0	.562	1 3/4	5.95

Catalog Number	Cap. in UF	Size in Inches		List Price
		Diam.	Lgth.	
<b>400 VOLTS DC WORKING</b>				
MPGR4-S1	.01	.235	1 1/8	3.15
MPGR4-S15	.015	.235	1 1/8	3.25
MPGR4-S2	.02	.235	1 1/8	3.25
MPGR4-S22	.022	.312	1 1/8	3.25
MPGR4-S33	.033	.312	1 1/8	3.25
MPGR4-S4	.04	.312	1 1/8	3.30
MPGR4-S47	.047	.312	1 1/8	3.30
MPGR4-S5	.05	.312	1 1/8	3.30
MPGR4-S68	.068	.400	1 1/8	3.40
MPGR4-P1	.1	.400	1 1/8	3.40
MPGR4-P15	.15	.500	1 1/8	3.70
MPGR4-P2	.2	.500	1 1/8	3.70
MPGR4-P22	.22	.500	1 1/8	3.70
MPGR4-P25	.25	.500	1 1/8	3.70
MPGR4-P33	.33	.562	1 1/4	4.15
MPGR4-P47	.47	.562	1 3/4	4.15
MPGR4-P5	.5	.562	1 3/4	4.15
MPGR4-P68	.68	.670	1 3/4	4.60
MPGR4-1	1.0	.670	2 1/4	4.60
MPGR4-2	2.0	1.000	2 1/4	7.00

Catalog Number	Cap. in UF	Size in Inches		List Price
		Diam.	Lgth.	
<b>600 VOLTS DC WORKING</b>				
MPGR6-S1	.01	.235	1 1/8	3.25
MPGR6-S15	.015	.312	1 1/8	3.30
MPGR6-S2	.02	.312	1 1/8	3.30
MPGR6-S22	.022	.312	1 1/8	3.30
MPGR6-S33	.033	.400	1 1/8	3.30
MPGR6-S4	.04	.400	1 1/8	3.40
MPGR6-S47	.047	.400	1 1/8	3.40
MPGR6-S5	.05	.400	1 1/8	3.40
MPGR6-S68	.068	.400	1 1/8	3.45
MPGR6-P1	.1	.400	1 1/8	3.45
MPGR6-P15	.15	.500	1 1/8	4.05
MPGR6-P2	.2	.562	1 1/4	4.05
MPGR6-P22	.22	.562	1 1/4	4.05
MPGR6-P25	.25	.562	1 1/4	4.05
MPGR6-P33	.33	.562	1 3/4	4.50
MPGR6-P47	.47	.670	1 3/4	4.50
MPGR6-P5	.5	.670	1 3/4	4.50
MPGR6-P68	.68	.670	2 1/4	5.00
MPGR6-1	1.0	.750	2 1/4	5.45
MPGR6-1.5	1.5	1.000	2 1/4	6.60



**PYRAMID ELECTRIC COMPANY • NORTH BERGEN, NEW JERSEY**  
**THE BIG NAME IN CAPACITORS AND SELENIUM RECTIFIERS TODAY**

TYPE  
**M  
T  
R**

**KRAFT-TUBE HI-TEMP METALLIZED PAPER CAPACITORS**

Extended-foil section assembled in a special kraft tube. Impregnated in solid thermosetting resin. Plastic end-seals. Overall coating of highly moisture-resistant wax. 1% inch minimum lead length. Self-healing. Low r-f impedance. Excellent power factor over a wide temperature range.

Temperature Rating: —40° C. to +100° C.  
Standard Tolerance: —20% to +30%.



Catalog Number	Cap. in UF	Size in inches Diam.	Lgth.	List Price
<b>200 VOLTS DC WORKING</b>				
MTR2-S1	.01	1/4	2 3/32	1.00
MTR2-S2	.02	1/4	2 3/32	1.00
MTR2-S3	.03	1/4	2 3/32	1.00
MTR2-S5	.05	1/4	2 3/32	1.00
MTR2-P1	.1	3/8	2 3/32	1.05
MTR2-P25	.25	3/8	2 3/32	1.35
MTR2-P5	.5	3/8	1 1/8	1.60
MTR2-1	1.0	3/8	1 1/8	1.95
MTR2-2	2.0	3/8	1 1/8	2.70

Catalog Number	Cap. in UF	Size in inches Diam.	Lgth.	List Price
<b>400 VOLTS DC WORKING</b>				
MTR4-S1	.01	1/4	2 3/32	1.05
MTR4-S2	.02	1/4	2 3/32	1.05
MTR4-S3	.03	1/2	2 3/32	1.05
MTR4-S5	.05	3/8	2 3/32	1.05
MTR4-P1	.1	1 1/8	1 1/8	1.20
MTR4-P25	.25	1 1/8	1 1/8	1.50
MTR4-P5	.5	1 1/8	1 1/8	1.75
MTR4-1	1.0	3/4	1 13/16	2.40
MTR4-2	2.0	7/8	2 3/8	3.35

Catalog Number	Cap. in UF	Size in inches Diam.	Lgth.	List Price
<b>600 VOLTS DC WORKING</b>				
MTR6-S1	.01	1/4	2 3/32	1.05
MTR6-S2	.02	1 1/32	2 3/32	1.05
MTR6-S3	.03	3/8	2 3/32	1.20
MTR6-S5	.05	3/8	2 3/32	1.20
MTR6-P1	.1	1 1/32	1 1/8	1.35
MTR6-P25	.25	5/8	1 1/8	1.65
MTR6-P5	.5	1 1/16	1 1/8	2.20
MTR6-1	1.0	2 1/32	1 13/16	2.70
MTR6-2	2.0	1 1/2	2 3/8	3.65



**HERMETICALLY SEALED subminiature**

**TUBULAR PAPER CAPACITORS for 125° C operation at full rating**

Pyramid "GLASSEAL" capacitors are subminiature metal cased tubular units which have been designed to meet severe and rigid operating requirements, especially where an important design consideration is limited space.

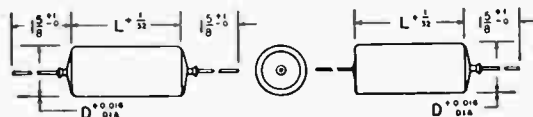
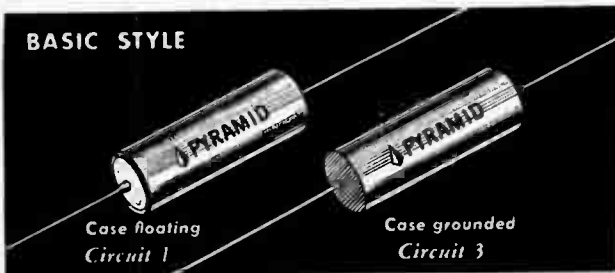
"GLASSEALS" have proven themselves to be unsurpassed in reliability over the entire operating temperature range from —55° C to +125° C. Rigid inspection throughout the manufacturing processes assure their continued excellence.

Pyramid "GLASSEALS" are available in a variety of impregnants, and internal constructions hermeti-

The listing below indicates those types and values normally available from Pyramid's Authorized Industrial Distributors' stocks. All are BASIC STYLE—Floating case—

**Type PGIX — Inserted Tab Construction**

MIL-C-25-1B DESIGNATION	Catalog Number	Capacity in μf	VWDC	Size Diam.	Lgth.	List Price
CP04A1KB104	PGIX1-P1	.1	100	.312	7/8	\$3.70
CP04A1KB474	PGIX1-P47	.47	100	.562	1 1/8	4.35
CP04A1KC104	PGIX2-P1	.1	200	.400	7/8	3.85
CP04A1KC474	PGIX2-P47	.47	200	.562	1 3/8	4.65
CP04A1KE104	PGIX4-P1	.1	400	.400	1 3/8	4.15
CP04A1KE224	PGIX4-P22	.22	400	.562	1 3/8	4.65
CP04A1KE474	PGIX4-P47	.47	400	.670	1 7/8	5.40
CP04A1KF102	PGIX6-D1	.001	600	.235	3/4	3.60
CP04A1KF222	PGIX6-D22	.0022	600	.235	3/4	3.60
CP04A1KF472	PGIX6-D47	.0047	600	.235	3/4	3.70
CP04A1KF682	PGIX6-D68	.0068	600	.235	3/4	3.70
CP04A1KF103	PGIX6-S1	.01	600	.312	7/8	3.80
CP04A1KF223	PGIX6-S22	.022	600	.312	7/8	3.85
CP04A1KF473	PGIX6-S47	.047	600	.400	1 1/8	4.05
CP04A1KF683	PGIX6-S68	.068	600	.400	1 3/8	4.25
CP04A1KF104	PGIX6-P1	.1	600	.562	1 1/8	4.50
CP04A1KF224	PGIX6-P22	.22	600	.562	1 7/8	5.00
CP04A1KF474	PGIX6-P47	.47	600	.750	2 1/8	5.85



cally sealed with glass-to-metal end seals in non-magnetic metal tubular cases. They are available in many mounting styles. See Engineering Catalog PG-3 for full details. Pyramid "GLASSEALS" are manufactured in accordance with MIL-C-25/1B and may be secured with MIL designations CP04, 05, 08, 09, 10 and 11 whenever required.

STANDARD TOLERANCE: ±20%

**Type EPGIX — Extended Foil Construction**

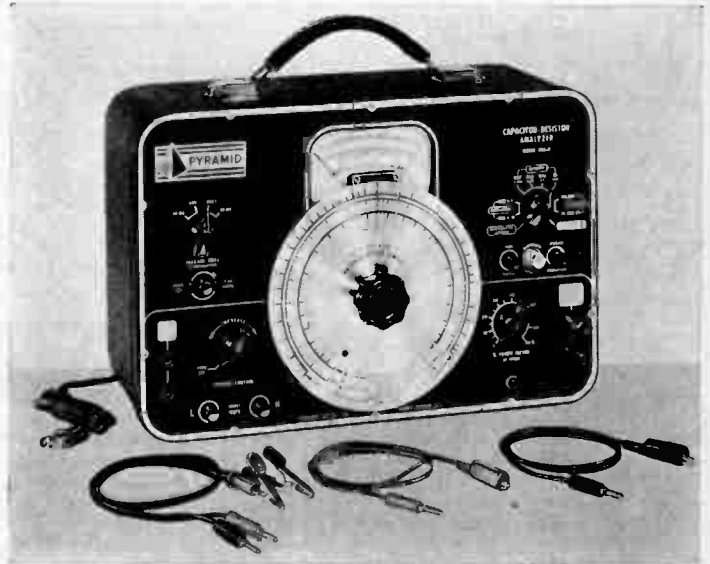
MIL-C-25-1B DESIGNATION	Catalog Number	Capacity in μf	VWDC	Size Diam.	Lgth.	List Price
CP08A1KB103	EPGIX1-S1	.01	100	.235	3/4	\$3.60
CP08A1KB473	EPGIX1-S47	.047	100	.312	7/8	3.80
CP08A1KB104	EPGIX1-P1	.1	100	.400	7/8	3.90
CP08A1KB334	EPGIX1-P33	.33	100	.562	1 1/8	4.45
CP08A1KB474	EPGIX1-P47	.47	100	.562	1 3/8	4.70
CP08A1KE333	EPGIX4-S33	.033	400	.400	7/8	4.10
CP08A1KE473	EPGIX4-S47	.047	400	.400	1 1/8	4.15
CP08A1KE224	EPGIX4-P22	.22	400	.562	1 5/8	5.05
CP08A1KF102	EPGIX6-D1	.001	600	.235	3/4	3.75
CP08A1KF222	EPGIX6-D22	.0022	600	.235	3/4	3.75
CP08A1KF472	EPGIX6-D47	.0047	600	.312	7/8	3.95
CP08A1KF103	EPGIX6-S1	.01	600	.312	7/8	4.00
CP08A1KF223	EPGIX6-S22	.022	600	.400	7/8	4.15
CP08A1KF473	EPGIX6-S47	.047	600	.400	1 3/8	4.35
CP08A1KF104	EPGIX6-P1	.1	600	.562	1 3/8	4.80
CP08A1KF224	EPGIX6-P22	.22	600	.670	1 5/8	5.65
CP08A1KF474	EPGIX6-P47	.47	600	.750	2 3/8	6.45



# The **NEW PYRAMID** Model **CRA-2** **CAPACITOR-RESISTOR-ANALYZER**

## FEATURES

1. "Quick Check" in circuit test for the following: Open Circuits, Short Circuits, Intermittents, High RF Impedance, High Power Factor.
2. Check the following speedily and accurately: Capacitance, Power Factor, Resistance, Insulation-Resistance, Leakage Current, Continuity.
3. Precision meter for accurate readings of leakage current, applied voltage and insulation resistance.
4. Combination Wien and Wheatstone bridge.
5. Accurate vacuum-tube ohmmeter circuit.
6. Parts of the highest quality are used. Wire and wiring meet military specifications.



**\$92.50**  
DEALER NET

## GENERAL DATA

Pyramid Electric Company introduces the CRA-2, Capacitor-Resistor Analyzer, a versatile, up to date, moderately priced test instrument. The CRA-2 is the perfect multi-purpose analyzer for the technician, serviceman and engineer, in industrial and military electronics, black and white, and color television, and all related fields.

The guesswork has been removed from circuit trouble shooting. When making leakage-current measurements, the values are read directly from the meter while the rated operating voltage is applied to the capacitor. A vacuum-tube ohmmeter circuit displays accurate insulation-resistance values on the meter for

many types of capacitors. The extended range calibrated power factor control permits power factor measurements of electrolytic capacitors rated as low as 6 volts DC working and as high as 600 volts DC working. The special "QUICK CHECK" circuits perform rapid "IN CIRCUIT" test for short, open, intermittent high RF impedance and high power factor without removing or disconnecting the component from its operating circuit.

Write to the Pyramid Electric Company, North Bergen, N. J., for further technical and distributor information.



LIST PRICE  
**\$9.50**

## SUPERIOR LINE FILTER

## Model F-22

Ideal for use with all factory, office, and home appliances which generate severe radio interference. Utilizes two L-C Pi-type filter sections, one in each side of the power line. Effective both on standard-broadcast or short-wave frequencies.

Assembled in a steel case, 3½" x 3¼" x 4⅛". Attractive durable brown wrinkle finish. Mounts with two holes on 4¼" centers. Equipped with binding post for connection to ground. Rated 5 amperes at 125 volts AC DC.

# **ASTRON**®

# Capacitors

**ASTRON CORPORATION**  
EAST NEWARK, N. J.

### MINIMITE\* TYPE MM

Miniature Metal-Cased Tubular Electrolytics

"SM"\* Safety Margin Construction



- Hermetically sealed aluminum-cased tubulars. Small and light. Ideal for under-chassis mounting in compact, tight assemblies.
- Designed to withstand high surge voltages and high ripple currents. Stable capacitance characteristics. Long service life.
- Exceptionally low leakage. Terminal tab connections provide permanent low-resistance contact for life of the unit.
- Outer insulating tube. Duals have centered mounting strap, and 3 leads (common negative).
- #20 bare wire leads, 3" long.
- Widely specified for original equipment and as popular replacements with quality-minded servicemen.

#### SINGLE MINIMITE (2 leads)

Cat. No.	Cap. Mf.	WVDC	† Dia x L.	List Price
MM-500-6	500	6	3/4 x 1 1/2	\$1.55
MM-1000-6	1000	6	7/8 x 2 1/4	1.90
MM-500-15	500	15	7/8 x 2 1/4	1.75
MM-1000-15	1000	15	1 x 2 1/2	2.30
MM-10-25	10	25	3/8 x 1 1/8	1.00
MM-25-25	25	25	3/8 x 1 1/8	1.00
MM-50-25	50	25	3/8 x 1 1/8	1.10
MM-100-25	100	25	3/8 x 1 1/8	1.35
MM-250-25	250	25	3/8 x 1 1/8	1.70
MM-500-25	500	25	1 x 2 1/2	2.40
MM-4-50	4	50	1/2 x 1 1/8	.95
MM-10-50	10	50	3/8 x 1 1/8	1.00
MM-25-50	25	50	3/8 x 1 1/8	1.00
MM-50-50	50	50	3/8 x 1 1/8	1.20
MM-100-50	100	50	3/8 x 1 1/8	1.40
MM-4-150	4	150	1/2 x 1 1/8	1.00
MM-8-150	8	150	3/8 x 1 1/8	1.05
MM-16-150	16	150	3/8 x 1 1/8	1.15
MM-20-150	20	150	3/8 x 1 1/8	1.20
MM-30-150	30	150	3/8 x 1 1/8	1.30
MM-40-150	40	150	3/8 x 1 1/8	1.35
MM-50-150	50	150	3/8 x 1 1/8	1.40
MM-80-150	80	150	3/8 x 2 1/8	1.60
MM-100-150	100	150	3/8 x 2 1/8	1.75
MM-150-150	150	150	1 x 2 1/2	1.90
MM-8-250	8	250	3/8 x 1 1/8	1.15
MM-16-250	16	250	3/8 x 1 1/8	1.30
MM-20-250	20	250	3/8 x 1 1/8	1.35
MM-40-250	40	250	3/8 x 1 1/8	1.55
MM-8-350	8	350	3/8 x 1 1/8	1.20
MM-10-350	10	350	3/8 x 1 1/8	1.25
MM-20-350	20	350	3/8 x 1 1/8	1.45
MM-4-450	4	450	3/8 x 1 1/8	1.15
MM-8-450	8	450	3/8 x 1 1/8	1.25
MM-10-450	10	450	3/8 x 1 1/8	1.30
MM-12-450	12	450	3/8 x 1 1/8	1.35
MM-16-450	16	450	3/8 x 1 1/8	1.40
MM-20-450	20	450	3/8 x 2 1/8	1.55
MM-30-450	30	450	1 x 2 1/2	1.70
MM-40-450	40	450	1 x 2 1/2	1.80
MM-80-450	80	450	1 1/2 x 3 1/2	2.80
MM-8-500	8	500	3/8 x 2 1/8	1.30
MM-16-500	16	500	1 x 2 1/2	1.50
MM-20-500	20	500	1 x 2 1/2	1.60

#### †† DUAL MINIMITE

(3 leads, Common Negative)

MM-2x20-150	20+20	150	3/8 x 1 1/2	\$1.55
MM-2x30-150	30+30	150	3/8 x 1 1/2	1.80
MM-2x40-150	40+40	150	3/8 x 2 1/4	1.85
MM-5030-150	50+30	150	3/8 x 2 1/4	1.95
MM-2x50-150	50+50	150	1/2 x 2 1/2	2.10
MM-8040-150	80+40	150	1 x 2 1/2	2.20
MM-2x8-450	8+8	450	3/8 x 2 1/8	1.80
MM-2x10-450	10+10	450	3/8 x 2 1/8	1.85
MM-168-450	16+8	450	1 x 2 1/2	1.95
MM-2x16-450	16+16	450	1 x 2 1/2	2.25
MM-2x20-450	20+20	450	1 x 2 1/2	2.50
MM-2x40-450	40+40	450	1 x 2 1/2	3.40

†Dimensions are for metal tubes. Add 3/8" to diameter and 1/2" to length for dimensions over cardboard insulating tubes.

†† Supplied with radial mounting strap.

\*TRADE MARK

### TYPE ET

Subminiature Electrolytics

"SM"\* Safety Margin Construction



- Industry's widest range of values.
- Conservative ratings in subminiature cases.
- Hermetically sealed for reliable operation in all climates.
- Dependable 85°C. operation.
- Stable capacitance characteristics due to extremely pure foil and special high-gain etch process.
- Exceptionally low leakage current.
- Low-resistance terminal tab connection.

Cat. No.	Rating Cap.	Volts	Size	List Price Each
ET-25-3	25	3	3/8 x 1 1/8	\$0.85
ET-50-3	50	3	3/8 x 1 1/8	.95
ET-100-3	100	3	3/8 x 1 1/8	1.10
ET-150-3	150	3	3/8 x 1 1/8	1.10
ET-200-3	200	3	3/8 x 1 1/8	1.25
ET-300-3	300	3	3/8 x 1 1/8	1.30
ET-5-6	5	6	3/8 x 1 1/8	.80
ET-25-6	25	6	3/8 x 1 1/8	.85
ET-50-6	50	6	3/8 x 1 1/8	.95
ET-75-6	75	6	3/8 x 1 1/8	1.00
ET-100-6	100	6	3/8 x 1 1/8	1.20
ET-125-6	125	6	3/8 x 1 1/8	1.20
ET-50-15	50	15	3/8 x 1 1/8	1.00
ET-100-15	100	15	3/8 x 1 1/8	1.25
ET-5-25	5	25	3/8 x 1 1/8	1.00
ET-10-25	10	25	3/8 x 1 1/8	1.00
ET-20-25	20	25	3/8 x 1 1/8	1.00
ET-25-25	25	25	3/8 x 1 1/8	1.00
ET-50-25	50	25	3/8 x 1 1/8	1.10
ET-1-50	1	50	3/8 x 1 1/8	.90
ET-2-50	2	50	3/8 x 1 1/8	.90
ET-4-50	4	50	3/8 x 1 1/8	1.00
ET-5-50	5	50	3/8 x 1 1/8	1.00
ET-10-50	10	50	3/8 x 1 1/8	1.00
ET-15-50	15	50	3/8 x 1 1/8	1.00
ET-20-50	20	50	3/8 x 1 1/8	1.05
ET-25-50	25	50	3/8 x 1 1/8	1.05
ET-10-90	10	90	3/8 x 1 1/8	1.10
ET-5-100	5	100	3/8 x 1 1/8	1.00
ET-10-100	10	100	3/8 x 1 1/8	1.00
ET-1-150	1	150	3/8 x 1 1/8	1.00
ET-2-150	2	150	3/8 x 1 1/8	1.00
ET-4-150	4	150	3/8 x 1 1/8	1.00
ET-5-150	5	150	3/8 x 1 1/8	1.00
ET-8-150	8	150	3/8 x 1 1/8	1.05
ET-10-150	10	150	3/8 x 1 1/8	1.05
ET-12-150	12	150	3/8 x 1 1/8	1.10
ET-4-250	4	250	3/8 x 1 1/8	1.00

\*TRADE MARK

### TYPE ES

Cardboard-Cased Electrolytics



- ASTRON-improved design. Long service life. Electrically and mechanically superior to similar-appearing units.
- Dual and triple-section units. Can be used in place of costlier metal-can types of equal rating in television, radio, radio-phonos and other equipment. 65°C. operation.
- Sections wrapped in plastic film. Lasting protection from moisture, humidity, severest climatic conditions. High-melting-point wax fill.
- Centered radial mounting strap. Plastic insulated wire leads, 6" long. Color coding on tubes.
- Overall wax coating for added protection against moisture and humidity.

#### DUAL UNITS (Common Negative)

Cat. No.	Cap. Mf./WVDC	D. x L.	List Price
ESD-155	20+20/150	3/8 x 2 1/2	\$1.85
ESD-160	30+30/150	3/8 x 2 1/2	1.80
ESD-165	40+40/150	1 x 2 1/2	1.85
ESD-170	50+30/150	1 x 2 1/2	1.95
ESD-175	50+50/150	1 x 3	2.10
ESD-190	80+40/150	1 1/2 x 3	2.25
ESD-255	20+20/250	3/8 x 2 1/2	1.85
ESD-455	20+20/450	1 1/4 x 3 1/4	2.50
ESD-475	40+40/450	1 1/2 x 3 1/4	3.40

#### TRIPLE UNITS (Common Negative)

Cat. No.	Cap. Mf./WVDC	D. x L.	Price
EST-555	20+20+20/150	1 x 2 1/2	\$2.20
EST-570	40+30+20/150	1 x 2 1/2	2.35
EST-575	40+40+20/150	1 x 3	2.35
EST-585	60+40+20/150	1 x 3 1/2	2.40
EST-595	80+40+20/150	1 1/4 x 3 1/4	2.50
EST-610	40+10/150+20/25	1 x 2 1/2	1.95
EST-620	40+30/150+20/25	1 x 2 1/2	2.30
EST-625	40+40/150+40/25	1 x 3 1/4	2.40
EST-640	50+30/150+100/25	1 x 3 1/4	2.50
EST-655	50+30/150+200/10	1 x 3 1/4	2.55



# ASTRON

# Capacitors

**ASTRON CORPORATION**  
EAST NEWARK, N. J.

(continued)

**TYPE EY**Twist-Prong Electrolytics  
"SM"\* Safety Margin Construction**QUADRUPLE UNITS**

Cat. No.	Cap. Mf./WVDC	Dia x Length	Price
EYQ-2000	40-10-20-10/300	1 3/4 x 2 1/2	\$4.55
EYQ-2003	80-40-20-10/350	1 3/4 x 3 1/2	5.20
EYQ-2005	30-30-20-30/400	1 3/4 x 3 1/2	4.85
EYQ-2007	50-40-30-20/400	1 3/4 x 4	5.65
EYQ-2010	80-10-10-10/100	1 3/4 x 3 1/2	4.70
EYQ-2015	10-10-10-10/150	1 3/4 x 2	3.35
EYQ-2020	20-10-10-10/450	1 3/4 x 2 1/2	3.70
EYQ-2025	20-20-20-20/450	1 3/4 x 3	4.70
EYQ-2027	20-60-20-20/450	1 3/4 x 3 1/2	5.65
EYQ-2030	30-15-15-15/450	1 3/4 x 3	4.45
EYQ-2035	30-30-15-10/450	1 3/4 x 3 1/2	4.70
EYQ-2040	50-20-20/100	1 3/4 x 3	4.45
EYQ-2042	40-40-4-4/450	1 3/4 x 3 1/2	4.65
EYQ-2044	40-40-40-40/450	1 3/4 x 4 1/2	6.45
EYQ-2045	10-10-10-10/475	1 3/4 x 2	3.50
EYQ-2050	40-20-10-10/475	1 3/4 x 3 1/2	5.10
EYQ-2055	40-40-40/150+20 25	1 3/4 x 2	3.15
EYQ-2060	80-60-10/250+20 150	1 3/4 x 3	5.10
EYQ-2065	100-10-10/250+100 50	1 3/4 x 3	5.15
EYQ-2070	60-40-20/300+50 25	1 3/4 x 2 1/2	4.70
EYQ-2075	40-40-10/300+20 150	1 3/4 x 2 1/2	4.90
EYQ-2077	150-40-10/300+100/50	1 3/4 x 4	5.90
EYQ-2080	40-20-20/350+25 25	1 3/4 x 2 1/2	4.25
EYQ-2085	40-40-10/350+10 25	1 3/4 x 3	5.20
EYQ-2090	40-10-10/350+150 50	1 3/4 x 3 1/2	5.70
EYQ-2095	20-20-20/400+20 25	1 3/4 x 2 1/2	3.85
EYQ-2097	80-60-15/400+60/50	1 3/4 x 3	6.25
EYQ-2105	10-10-10/150+20 25	1 3/4 x 2	3.15
EYQ-2110	10-10-10/450+10/150	1 3/4 x 2	3.15
EYQ-2115	20-10-10/450+100/25	1 3/4 x 2 1/2	3.70
EYQ-2120	20-20-20/450+20 25	1 3/4 x 2 1/2	4.15
EYQ-2125	20-20-20/450+100 50	1 3/4 x 3	4.55
EYQ-2130	30-30-15/450+50 50	1 3/4 x 3	4.15
EYQ-2135	30-30-20/450+20 25	1 3/4 x 3	4.65
EYQ-2140	40-10-10/450+250 25	1 3/4 x 3 1/2	4.25
EYQ-2145	40-10-10/450+10/350	1 3/4 x 3	3.90
EYQ-2150	40-15-10/450+20 25	1 3/4 x 3	4.10
EYQ-2153	40-20-20/450+20 25	1 3/4 x 3 1/2	4.60
EYQ-2155	40-20-20/450+40 25	1 3/4 x 3	4.65
EYQ-2160	40-30-10/450+20 25	1 3/4 x 3 1/2	4.60
EYQ-2163	40-10-10/450+100/100	1 3/4 x 4	5.35
EYQ-2165	40-40-10/450+25/50	1 3/4 x 4	4.70
EYQ-2170	60-10-10/450+20/150	1 3/4 x 3 1/2	4.60
EYQ-2175	20-20-10/475+10/300	1 3/4 x 3	4.30
EYQ-2180	40-20-10/475+10/25	1 3/4 x 3 1/2	4.85
EYQ-2185	40-10/100+80-10/250	1 3/4 x 3 1/2	4.70
EYQ-2190	10-10/450+20-20/25	1 3/4 x 2	2.95
EYQ-2195	20-20-20/450+20 25	1 3/4 x 2	3.60
EYQ-2197	40-10/450+35-10/350	1 3/4 x 4	4.50
EYQ-2200	40-10/450+30-30/350	1 3/4 x 4 1/2	5.90
EYQ-2202	60-10/300+10/75+10/25	1 3/4 x 2	3.60
EYQ-2203	60-10/350+60/200+20/150	1 3/4 x 3 1/2	5.00
EYQ-2205	10-3/4/75+80/450+40/50	1 3/4 x 4	4.95
EYQ-2210	15-15/75+80/500+40/50	1 3/4 x 3 1/2	4.80
EYQ-2215	10/450+120-80/500+40/50	1 3/4 x 4	5.25
EYQ-2220	10/450+60-10/350+25/25	1 3/4 x 3 1/2	4.60
EYQ-2222	10/450+100-10/350+20/25	1 3/4 x 3 1/2	5.25
EYQ-2225	20/450+80-20/200+50/50	1 3/4 x 3	4.15
EYQ-2227	25/450+100-10/300+50/50	1 3/4 x 3	5.25
EYQ-2230	35/500+80-10/350+10/50	1 3/4 x 3 1/2	4.50
EYQ-2235	100/300+30/500+10/450+80-20/25	1 3/4 x 4	4.50
EYQ-2237	30/500+10/450+80-20/25	1 3/4 x 3	4.20
EYQ-2240	120/300+20/250+100/50+20/25	1 3/4 x 3 1/2	5.05
EYQ-2245	200/300+20/250+100/50+20 25	1 3/4 x 4 1/2	5.45
EYQ-2250	10/450+10/300+60/200+100/50	1 3/4 x 2 1/2	3.80
EYQ-2255	20/450+20/100+20/350+20/25	1 3/4 x 3	3.80
EYQ-2260	80/450+10/100+30/300+40/150	1 3/4 x 4 1/2	5.25
EYQ-2263	20/300+20-8-4/250	1 3/4 x 2	3.10
EYQ-2265	10/475+60/450+80/200+50/60	1 3/4 x 3	3.85
EYQ-2270	10/475+60/450+30/100+125/50	1 3/4 x 4	5.45
EYQ-2275	20/475+40/300+100/50+80/25	1 3/4 x 3	4.50
EYQ-2280	25/475+20/150+40/300+100/50	1 3/4 x 3 1/2	4.95

**ACCESSORIES FOR TYPE EY**

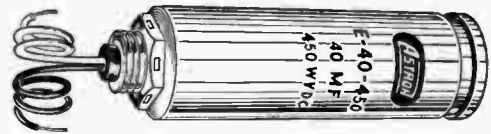
Part Number	Item	Description	List Price
EYP-1	Metal Mtg. Plate	for 1" can	\$0.07
EYP-2	Phenolic Mtg. Plate	for 1" can	.07
EYP-3	Metal Mtg. Plate	for 1 3/4" can	.07
EYP-4	Phenolic Mtg. Plate	for 1 3/4" can	.07
EYP-101	Insulating Tube	1" x 2 1/2"	.15
EYP-102	Insulating Tube	1" x 3"	.15
EYP-103	Insulating Tube	1" x 3 1/2"	.15
EYP-104	Insulating Tube	1" x 2"	.15
EYP-201	Insulating Tube	1 3/4" x 2 1/2"	.15
EYP-202	Insulating Tube	1 3/4" x 3"	.15
EYP-203	Insulating Tube	1 3/4" x 3 1/2"	.15
EYP-204	Insulating Tube	1 3/4" x 4"	.15
EYP-205	Insulating Tube	1 3/4" x 4 1/2"	.15
EYP-206	Insulating Tube	1 3/4" x 4 1/2"	.15

\*TRADE MARK

The MASTER — 2nd Edition

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TRADE DISCOUNT APPLIES TO LIST PRICES ONLY

**TYPE E**Metal Screw-Base Electrolytics  
"SM"\* Safety Margin Construction**SINGLE UNITS (2 leads)**

Cat. No.	Mf.	WVDC	D. x L.	Price
E-8-450	8	450	1 3/8 x 3 1/2	\$2.20
E-12-450	12	450	1 3/8 x 3 1/2	2.40
E-16-450	16	450	1 3/8 x 3 1/2	2.45
E-20-450	20	450	1 3/8 x 3 1/2	2.75
E-30-450	30	450	1 3/8 x 3 1/2	3.00
E-40-450	40	450	1 3/8 x 3 1/2	3.15

**High Voltage Series Wound Units**

Cat. No.	Mf.	WVDC	D. x L.	Price
E-4-600	4	600	1 3/8 x 3 1/2	\$2.95
E-8-600	8	600	1 3/8 x 3 1/2	3.15
E-16-600	16	600	1 3/8 x 3 1/2	3.75

**DUAL UNITS (4 leads)  
and TRIPLE UNITS (6 leads)**

Cat. No.	Mf.	WVDC	D. x L.	Price
E-2x8-450	8+8	450	1 3/8 x 3 1/2	\$3.00
E-2x16-450	16+16	450	1 3/8 x 3 1/2	3.55
E-3x8-450	8+8+8	450	1 3/8 x 3 1/2	5.00

**TYPE ED**MIL-C-62 Case Styles CE 61, 62, 63, 64  
Electrolytic Bath tub Case Capacitors

Cat. No.	Cap. MF	List Price	
ED-100-15	15 VOLTS		
	100	4.75	
	25 VOLTS		
ED-25-25	25	4.50	
	ED-50-25	50	4.60
	ED-75-25	75	4.75
ED-25-50	50 VOLTS		
	25	4.55	
	ED-50-50	50	4.70
ED-10-100	100 VOLTS		
	10	4.55	
	ED-25-100	25	4.75
ED-10-150	150 VOLTS		
	10	4.55	
	ED-20-150	20	4.70
ED-10-200	200 VOLTS		
	10	4.65	
	ED-15-200	15	4.75
ED-10-250	250 VOLTS		
	10	4.70	
	ED-12-250	12	4.75
ED-10-300	300 VOLTS		
	10	4.75	
	ED-8-350	350 VOLTS	
ED-6-400	8	4.70	
	ED-6-400	400 VOLTS	
	6	4.70	
ED-4-450	450 VOLTS		
	4	4.65	

(All items listed are furn. in case size 1 1/8 x 1 3/8 in accord. with MIL-C-62)

\*TRADE MARK

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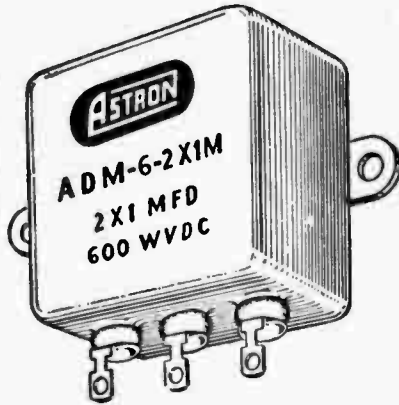




# Capacitors

**ASTRON CORPORATION**  
EAST NEWARK, N. J.

**MIL TYPE**  
CP53  
CP54  
CP55  
Char. E



**TYPE ADM**  
**Bathtub Paper Capacitors**  
85°C. Operation

- Non-inductively wound. Mineral oil impregnated and filled. Hermetically sealed.
- Operating temperature range —55°C. to +85°C.
- Built to comply with strict requirements of MIL-C-25A. Silicone rubber compression-seal lug terminals. Completely immersion-proof.

- Single units have two terminals; duals have three terminals (one common); triple units have three terminals (case common).
- Standard position of Type ADM terminals is on side (MIL-C-25A Style CP53). Available also with terminals on top (ASTRON Type ADMT or MIL Style CP54) and bottom terminals (ASTRON Type ADMB or MIL Style CP55).
- Cap. Tolerance: ±20%.

Cat. No.	Cap. Mf.	L. x W. x H.	Mtg. Ctr.	List Price
<b>100 VOLTS DC WORKING</b>				
ADM-1-1M	1.0	1 1/2 x 1 x 7/8	2 1/2	\$3.15
ADM-1-2M	2.0	2 x 1 1/4 x 7/8	2 1/2	4.50
ADM-1-4M	4.0	2 x 2 x 1 1/8	2 1/2	6.40
<b>200 VOLTS DC WORKING</b>				
ADM-2-5	.5	1 1/2 x 1 x 7/8	2 1/2	2.45
ADM-2-1M	1.0	2 x 1 1/4 x 7/8	2 1/2	3.00
ADM-2-2M	2.0	2 x 2 x 1	2 1/2	3.95
<b>400 VOLTS DC WORKING</b>				
ADM-4-5	.5	1 1/2 x 1 x 7/8	2 1/2	2.65
ADM-4-1M	1.0	2 x 1 1/4 x 7/8	2 1/2	3.15
ADM-4-3x5	.5-.5-.5	2 x 2 x 1 1/8	2 1/2	4.50
<b>600 VOLTS DC WORKING</b>				
ADM-6-05	.05	1 1/2 x 1 x 3/4	2 1/2	2.60
ADM-6-1	.1	1 1/2 x 1 x 3/4	2 1/2	2.65
ADM-6-25	.25	1 1/2 x 1 x 3/4	2 1/2	2.80
ADM-6-5	.5	1 1/2 x 1 x 1	2 1/2	3.00
ADM-6-1M	1.0	2 x 1 1/4 x 1	2 1/2	3.40
ADM-6-2M	2.0	2 x 2 x 1 1/8	2 1/2	4.55
ADM-6-2x05	.05-.05	1 1/2 x 1 x 3/4	2 1/2	3.30
ADM-6-2x1	.1-.1	1 1/2 x 1 x 3/4	2 1/2	3.35
ADM-6-2x25	.25-.25	1 1/2 x 1 x 1	2 1/2	3.40
ADM-6-2x5	.5-.5	2 x 1 1/4 x 1	2 1/2	3.90
ADM-6-2x1M	1.0-1.0	2 x 2 x 1 1/8	2 1/2	4.80
ADM-6-3x05	.05-.05-.05	1 1/2 x 1 x 3/4	2 1/2	3.45
ADM-6-3x1	.1-.1-1	1 1/2 x 1 x 3/4	2 1/2	3.80
ADM-6-3x25	.25-.25-.25	2 x 1 1/4 x 7/8	2 1/2	4.30
ADM-6-3x5	.5-.5-.5	2 x 2 x 1 1/8	2 1/2	5.20
<b>1000 VOLTS DC WORKING</b>				
ADM-10-05	.05	1 1/2 x 1 x 3/4	2 1/2	2.75
ADM-10-1	.1	1 1/2 x 1 x 3/4	2 1/2	2.85
ADM-10-25	.25	1 1/2 x 1 x 3/4	2 1/2	2.95
ADM-10-5	.5	2 x 1 1/4 x 7/8	2 1/2	3.20
ADM-10-1M	1.0	2 x 2 x 1 1/8	2 1/2	4.00
ADM-10-2x05	.05-.05	1 1/2 x 1 x 3/4	2 1/2	3.50
ADM-10-2x1	.1-.1	1 1/2 x 1 x 3/4	2 1/2	3.60
ADM-10-2x25	.25-.25	2 x 1 1/4 x 7/8	2 1/2	3.80
ADM-10-2x5	.5-.5	2 x 2 x 1 1/8	2 1/2	4.95
ADM-10-3x05	.05-.05-.05	1 1/2 x 1 x 3/4	2 1/2	4.00
ADM-10-3x1	.1-.1-1	2 x 1 1/4 x 7/8	2 1/2	4.15
ADM-10-3x25	.25-.25-.25	2 x 2 x 1 1/8	2 1/2	5.00

\* For top or bottom terminals, case height is 1 1/4".



**METEOR\* TYPE ADZ**

**Bathtub Capacitors**  
125°C. Operation

**MIL TYPE**  
CP53  
CP54 Char. K  
CP55

- Designed for operation at temperatures up to 125°C. without voltage derating.
- Excellent capacitance stability, less than 5% change over entire range —65°C. to +125°C. achieved by use of ASTRON-developed X-250\* impregnant.
- Temperature characteristics exceed MIL specifications for Characteristic K.
- Compact sizes in handy, easy-mounting bathtub cases. Glass-to-metal sealed lug-type terminals. Positive immersion proof seal.
- Standard position of terminals is on side (ASTRON Type ADZ or MIL Style CP53). Available also with terminals on top (ASTRON Type ADZT or MIL Style CP54); bottom terminals (ASTRON Type ADZB or MIL Style CP55).
- Standard Capacitance Tolerance: ±20%.

Cat. No.	Cap. Mf.	L. x W. x H.	Mtg. Ctr.	List Price
<b>200 VOLTS DC WORKING</b>				
ADZ-2-5	.5	1 1/2 x 1 x 7/8	2 1/2	\$5.45
ADZ-2-1M	1.0	2 x 1 1/4 x 7/8	2 1/2	5.85
ADZ-2-2M	2.0	2 x 2 x 1	2 1/2	7.40
<b>400 VOLTS DC WORKING</b>				
ADZ-4-05	.05	1 1/2 x 1 x 3/4	2 1/2	4.50
ADZ-4-1	.1	1 1/2 x 1 x 3/4	2 1/2	4.80
ADZ-4-25	.25	1 1/2 x 1 x 3/4	2 1/2	5.20
ADZ-4-5	.5	1 1/2 x 1 x 7/8	2 1/2	5.90
ADZ-4-1M	1.0	2 x 1 1/4 x 7/8	2 1/2	6.80
<b>600 VOLTS DC WORKING</b>				
ADZ-6-05	.05	1 1/2 x 1 x 3/4	2 1/2	5.10
ADZ-6-1	.1	1 1/2 x 1 x 3/4	2 1/2	5.80
ADZ-6-25	.25	1 1/2 x 1 x 3/4	2 1/2	5.90
ADZ-6-5	.5	1 1/2 x 1 x 1	2 1/2	7.05
ADZ-6-1M	1.0	2 x 1 1/4 x 1	2 1/2	7.95
ADZ-6-2M	2.0	2 x 2 x 1 1/8	2 1/2	9.50

CAPACITANCE TOLERANCE: ±20% (M). Other tolerances are available. †Case ht. (C dim.) 1 1/4" for top terminals (ADZT) or bot. terminals (ADZB)



**TYPE AXM**

**MIL C-25 TYPE**  
(CP70 (B Terminal) Char. E)

**Terneplate "Squeeze Seam"**  
**Case with Space Bolt**  
**Brackets**

Cat. No.	Cap. MF	L. x W. x H.	List Price
<b>600 VOLTS DC WORKING</b>			
AXM 6-25	.25	1 1/2 x 1 1/8 x 1 1/2	5.30
AXM 6-5	.5	1 1/2 x 1 1/8 x 2 1/4	5.30
AXM 6-1M	1.0	1 1/2 x 1 1/8 x 2 1/4	6.70
AXM 6-2M	2.0	1 1/2 x 1 1/8 x 3 1/4	8.30
AXM 6-4M	4.0	2 1/2 x 1 1/8 x 3 3/8	10.65
AXM 6-6M	6.0	3 3/4 x 1 1/4 x 3 3/8	13.35
AXM 6-8M	8.0	3 3/4 x 1 1/4 x 4 1/4	15.95
AXM 6-10M	10.0	3 3/4 x 1 1/4 x 4	17.95
<b>1000 VOLTS DC WORKING</b>			
AXM 10-1	.1	1 1/2 x 1 1/8 x 1 5/8	4.65
AXM 10-25	.25	1 1/2 x 1 1/8 x 2 1/4	5.30
AXM 10-5	.5	1 1/2 x 1 1/8 x 2 1/4	5.65
AXM 10-1M	1.0	1 1/2 x 1 1/8 x 2 3/4	7.35
AXM 10-2M	2.0	1 1/2 x 1 1/8 x 3 1/4	9.65
AXM 10-4M	4.0	3 3/4 x 1 1/4 x 3 3/8	12.30
AXM 10-6M	6.0	3 3/4 x 1 1/4 x 4	16.65
AXM 10-8M	8.0	3 3/4 x 1 1/4 x 4 3/4	17.95



# Capacitors

**ASTRON CORPORATION**  
EAST NEWARK, N. J.

## METEOR\* SUBMINIATURE PAPER CAPACITORS

Far 125°C. Operation without voltage derating

- Amazingly small sizes, compact and light-weight units.
- Highly dependable operation at temperatures up to 125°C. without voltage derating.
- Exceptional capacitance stability, less than 5% change, over entire temperature range of -65°C. to +125°C. due to use of ASTRON-developed high-temperature impregnant X-250\*.
- High insulation resistance, low power factor, unusually low resonance loss. High test voltage indicates extra margin of safety in operation.
- Built to exceed stringent requirements of Specification MIL-C-25A for styles CP04-05-08-09-10-11 (ASTRON Types AQ, TQF, and variations); and styles CP53-54-55, Characteristic K (ASTRON Type ADZ, bathtub).
- Positive hermetic closure of the metal cases is assured by glass-to-metal solder seal terminals.
- Tubulars supplied in a variety of construction and mounting styles to meet your specific needs: extended foil or inserted tab; capacitor section grounded to case or insulated from case; plastic outer sleeve; with soldered-on tangential or L-type bracket; screw neck mounting style; or stud-base mounting style.



### MIL TYPE CP08 and CP09

#### METEOR\* TYPE AQ Glass-to-Metal Sealed SUBMINIATURE TUBULARS

- No voltage derating necessary over entire operating temperature range —65°C. to +125°C.
- Extended foil, non-inductively wound construction offers extremely small size and lowest possible resonant losses in low and high voltage applications.
- Excellent capacitance-temperature stability, long life.
- Available in a variety of construction styles to meet your specific needs, as follows:

#### CAPACITOR SECTION GROUNDED TO CASE (Glass-to-Metal terminal at one end):

- AQ (MIL Style CP08):** Basic unit. Sizes and list prices as shown. Uninsulated body.
- AQP (MIL Style CP09):** Basic AQ unit with plastic outer sleeve (P) for insulated body. Add  $\frac{3}{16}$ " to diameter and length of AQ sizes listed. Add 15¢ to AQ list prices.
- AQ-A:** Basic AQ unit with soldered-on tangential mounting bracket "A" on uninsulated body. Case sizes as listed for AQ. Add 40¢ to AQ list prices.
- AQ-B:** Basic AQ unit with soldered-on L-type bracket "B" on uninsulated body. Case sizes as listed for AQ. Add 40¢ to AQ list prices.
- AQS:** Screw neck mounting type. Uninsulated body. Available in same ratings as AQ. Minimum case diameter .400". Add 80¢ to AQ list prices.
- AQV:** Stud base mounting type. Uninsulated body. Available in same ratings and case sizes as AQ. Add 60¢ to AQ list prices.

#### CAPACITOR SECTION INSULATED FROM CASE (Glass-to-Metal terminal both ends):

- AQF (MIL Style CP08):** Basic unit in "floating" construction. Add  $\frac{3}{16}$ " to length of AQ sizes listed. Uninsulated body. Add \$1.00 to AQ list prices.
- AQFP (MIL Style CP09):** Basic AQF unit with plastic outer sleeve (P) for insulated body. Add  $\frac{3}{16}$ " to diameter and  $\frac{1}{2}$ " to length of AQ sizes listed. Add \$1.15 to AQ list prices.
- AQF-A:** Basic AQF unit with soldered-on tangential mounting bracket "A" on uninsulated body. Add  $\frac{3}{16}$ " to length of AQ sizes listed. Add \$1.40 to AQ list prices.
- AQF-B:** Basic AQF unit with soldered-on L-type bracket "B" on uninsulated body. Add  $\frac{3}{16}$ " to AQ sizes listed. Add \$1.40 to AQ list prices.
- AQFS:** Screw neck mounting type. Uninsulated body. Available in same ratings as AQ. Minimum case diameter is .400". Add  $\frac{3}{16}$ " to case length of AQ sizes listed. Add \$1.80 to AQ list prices.

\*TRADE MARK

Cat. No. Cap. Mf. Dia. x Length List Price

#### 100 VOLTS DC WORKING

AQ-1-001	.001	.235x	1 1/2	2.30
AQ-1-0015	.0015	.235x	1 1/2	2.30
AQ-1-0022	.0022	.235x	1 1/2	2.30
AQ-1-0033	.0033	.235x	1 1/2	2.30
AQ-1-0047	.0047	.235x	1 1/2	2.30
AQ-1-01	.01	.235x	1 1/2	2.40
AQ-1-015	.015	.235x	1 1/2	2.45
AQ-1-022	.022	.312x	1 1/2	2.55
AQ-1-033	.033	.312x	1 1/2	2.60
AQ-1-047	.047	.312x	1 1/2	2.60
AQ-1-068	.068	.400x	1 1/2	2.70
AQ-1-1	.1	.400x	1 1/2	2.70
AQ-1-15	.15	.400x1 1/8	1 1/2	2.80
AQ-1-22	.22	.400x1 1/8	1 1/2	2.95
AQ-1-27	.27	.562x1 1/8	1 1/2	3.20
AQ-1-33	.33	.562x1 1/8	1 1/2	3.30
AQ-1-47	.47	.562x1 1/8	1 1/2	3.55
AQ-1-56	.56	.562x1 1/8	1 1/2	3.70
AQ-1-68	.68	.562x1 1/8	1 1/2	3.80
AQ-1-1M	1.0	.670x1 1/8	1 1/2	4.35

#### 200 VOLTS DC WORKING

AQ-2-001	.001	.235x	1 1/2	2.40
AQ-2-0015	.0015	.235x	1 1/2	2.40
AQ-2-0022	.0022	.235x	1 1/2	2.40
AQ-2-0033	.0033	.235x	1 1/2	2.45
AQ-2-0047	.0047	.235x	1 1/2	2.45
AQ-2-0068	.0068	.235x	1 1/2	2.45
AQ-2-01	.01	.312x	1 1/2	2.65
AQ-2-015	.015	.312x	1 1/2	2.65
AQ-2-022	.022	.312x	1 1/2	2.70
AQ-2-033	.033	.312x	1 1/2	2.70
AQ-2-047	.047	.400x	1 1/2	2.80
AQ-2-056	.056	.400x	1 1/2	2.85
AQ-2-068	.068	.400x	1 1/2	2.85
AQ-2-1	.1	.400x1 1/8	1 1/2	2.85
AQ-2-15	.15	.400x1 1/8	1 1/2	3.10
AQ-2-22	.22	.562x1 1/8	1 1/2	3.35
AQ-2-27	.27	.562x1 1/8	1 1/2	3.50
AQ-2-33	.33	.562x1 1/8	1 1/2	3.60
AQ-2-47	.47	.562x1 1/8	1 1/2	3.90
AQ-2-56	.56	.670x1 1/8	1 1/2	4.25
AQ-2-68	.68	.670x1 1/8	1 1/2	4.35
AQ-2-1M	1.0	.750x2 1/8	1 1/2	4.65

#### 300 VOLTS DC WORKING

AQ-3-001	.001	.235x	1 1/2	2.45
AQ-3-0015	.0015	.235x	1 1/2	2.45
AQ-3-0022	.0022	.235x	1 1/2	2.45
AQ-3-0033	.0033	.235x	1 1/2	2.50
AQ-3-0047	.0047	.235x	1 1/2	2.50
AQ-3-01	.01	.312x	1 1/2	2.70
AQ-3-015	.015	.312x	1 1/2	2.80
AQ-3-022	.022	.312x	1 1/2	2.80
AQ-3-033	.033	.400x	1 1/2	2.85
AQ-3-047	.047	.400x	1 1/2	2.85
AQ-3-068	.068	.400x1 1/8	1 1/2	2.90
AQ-3-1	.1	.400x1 1/8	1 1/2	3.05
AQ-3-15	.15	.562x1 1/8	1 1/2	3.35
AQ-3-22	.22	.562x1 1/8	1 1/2	3.60
AQ-3-27	.27	.562x1 1/8	1 1/2	3.65
AQ-3-33	.33	.562x1 1/8	1 1/2	3.75
AQ-3-47	.47	.670x1 1/8	1 1/2	3.85
AQ-3-56	.56	.750x2 1/8	1 1/2	4.20
AQ-3-68	.68	.750x2 1/8	1 1/2	4.35
AQ-3-1 M	1.0	.750x2 1/8	1 1/2	4.60

#### 400 VOLTS DC WORKING

AQ-4-001	.001	.235x	1 1/2	2.55
AQ-4-0015	.0015	.235x	1 1/2	2.55
AQ-4-0022	.0022	.235x	1 1/2	2.55
AQ-4-0033	.0033	.235x	1 1/2	2.55
AQ-4-0047	.0047	.312x	1 1/2	2.75
AQ-4-0068	.0068	.312x	1 1/2	2.75
AQ-4-01	.01	.312x	1 1/2	2.80
AQ-4-015	.015	.312x	1 1/2	2.80
AQ-4-022	.022	.400x	1 1/2	2.90
AQ-4-033	.033	.400x	1 1/2	2.90
AQ-4-047	.047	.400x1 1/8	1 1/2	3.00
AQ-4-068	.068	.400x1 1/8	1 1/2	3.10
AQ-4-1	.1	.562x1 1/8	1 1/2	3.35
AQ-4-15	.15	.562x1 1/8	1 1/2	3.60
AQ-4-22	.22	.562x1 1/8	1 1/2	3.85
AQ-4-27	.27	.670x1 1/8	1 1/2	4.10
AQ-4-33	.33	.670x1 1/8	1 1/2	4.35
AQ-4-47	.47	.750x2 1/8	1 1/2	4.65

#### 600 VOLTS DC WORKING

AQ-6-001	.001	.235x	1 1/2	2.55
AQ-6-0015	.0015	.235x	1 1/2	2.55
AQ-6-0022	.0022	.235x	1 1/2	2.55
AQ-6-0033	.0033	.312x	1 1/2	2.75
AQ-6-0047	.0047	.312x	1 1/2	2.75
AQ-6-0068	.0068	.312x	1 1/2	2.80
AQ-6-01	.01	.312x	1 1/2	2.80
AQ-6-015	.015	.400x	1 1/2	2.95
AQ-6-022	.022	.400x	1 1/2	3.00
AQ-6-033	.033	.400x1 1/8	1 1/2	3.00
AQ-6-047	.047	.400x1 1/8	1 1/2	3.20
AQ-6-068	.068	.562x1 1/8	1 1/2	3.45
AQ-6-1	.1	.562x1 1/8	1 1/2	3.60
AQ-6-15	.15	.562x1 1/8	1 1/2	3.95
AQ-6-22	.22	.670x1 1/8	1 1/2	4.50
AQ-6-27	.27	.750x2 1/8	1 1/2	4.65
AQ-6-33	.33	.750x2 1/8	1 1/2	4.75
AQ-6-47	.47	.750x2 1/8	1 1/2	5.10

Standard Tolerance  $\pm 20\%$ .

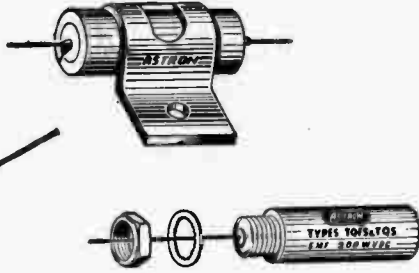


# Capacitors

**ASTRON CORPORATION**  
EAST NEWARK, N. J.

**METEOR\* TYPE TQF**  
**Glass-to-Metal Sealed**  
**SUBMINIATURE TUBULARS**

**125°C. Operation**



**MIL TYPE**

**CP04**  
**CP05**  
**CP10**  
**CP11**

- Inserted tab construction provides smallest paper-foil capacitors available. Ideal where resonant losses are secondary to small size.
- No voltage derating necessary over entire operating temperature range —65°C. to +125°C.
- Excellent capacitance stability over entire temperature range.
- Available in a variety of construction styles to meet your specific needs, as follows:

**CAPACITOR SECTION INSULATED FROM CASE**  
(Glass-to-Metal terminal both ends):

- TQF (MIL Style CP04):** Basic unit in "floating" construction. Sizes and list prices as shown. Uninsulated body.
- TQFP (MIL Style CP05):** Basic TQF unit with plastic outer sleeve (P) for insulated body. Add  $\frac{1}{8}$ " to diameter and length of TQF sizes listed. Add 15¢ to list price.
- TQF-A (MIL Style CP10):** Basic TQF unit with soldered-on tangential mounting bracket "A" on uninsulated body. Case sizes as listed for TQF. Add 40¢ to TQF list prices.
- TQF-B:** Basic TQF unit with soldered-on L-type mounting bracket "B" on uninsulated body. Case sizes as listed for TQF. Add 40¢ to TQF list prices.
- TQFS (MIL Style CP11):** Screw neck mounting type. Uninsulated body. Available in same ratings as TQF. Minimum case diameter is .400". Add 80¢ to TQF list prices.

**CAPACITOR SECTION GROUNDED TO CASE**  
(Glass-to-Metal terminal at one end):

- TQ (MIL Style CP04):** Basic grounded unit. Deduct  $\frac{1}{8}$ " from length of TQF sizes listed. Uninsulated body. Deduct \$1.00 from TQF list prices.
- TQP (MIL Style CP05):** Basic TQ unit with plastic outer sleeve (P) for insulated body. Add  $\frac{1}{8}$ " to diameter of TQF sizes listed. Deduct 85¢ from TQF list prices.
- TQ-A (MIL Style CP10):** Basic TQ unit with soldered-on tangential mounting bracket "A" on uninsulated body. Deduct  $\frac{1}{8}$ " from length of TQF sizes listed. Deduct 60¢ from TQF list prices.
- TQ-B:** Basic TQ unit with soldered-on L-type bracket "B" on uninsulated body. Deduct  $\frac{1}{8}$ " from length of TQF sizes listed. Deduct 60¢ from TQF list prices.
- TQS (MIL Style CP11):** Screw neck mounting type. Uninsulated body. Available in same ratings as TQF listed. Minimum case diameter .400". Deduct  $\frac{1}{8}$ " from length of TQF sizes listed. Deduct 20¢ from TQF list prices.
- TQV:** Stud base mounting type. Uninsulated body. Available in same ratings as TQF listed. Deduct  $\frac{1}{8}$ " from TQF sizes. Deduct 40¢ from TQF list prices.

\*TRADE MARK

Cat. No.	Cap. Mf.	Dia. x Length	List Price	400 VOLTS DC WORKING			
<b>100 VOLTS DC WORKING</b>				TQF-4-001	.001	.235x $\frac{3}{4}$	3.60
TQF-1-001	.001	.235x $\frac{3}{4}$	3.35	TQF-4-0015	.0015	.235x $\frac{3}{4}$	3.60
TQF-1-0015	.0015	.235x $\frac{3}{4}$	3.35	TQF-4-0022	.0022	.235x $\frac{3}{4}$	3.60
TQF-1-0022	.0022	.235x $\frac{3}{4}$	3.35	TQF-4-0033	.0033	.235x $\frac{3}{4}$	3.60
TQF-1-0033	.0033	.235x $\frac{3}{4}$	3.35	TQF-4-0047	.0047	.235x $\frac{3}{4}$	3.60
TQF-1-0047	.0047	.235x $\frac{3}{4}$	3.35	TQF-4-0068	.0068	.235x $\frac{3}{4}$	3.60
TQF-1-0068	.0068	.235x $\frac{3}{4}$	3.35	TQF-4-01	.01	.235x $\frac{3}{4}$	3.65
TQF-1-01	.01	.235x $\frac{3}{4}$	3.40	TQF-4-015	.015	.235x $\frac{7}{8}$	3.80
TQF-1-015	.015	.235x $\frac{3}{4}$	3.40	TQF-4-022	.022	.312x $\frac{7}{8}$	3.80
TQF-1-022	.022	.235x $\frac{3}{4}$	3.40	TQF-4-027	.027	.312x $\frac{7}{8}$	3.85
TQF-1-027	.027	.235x $\frac{3}{4}$	3.45	TQF-4-033	.033	.312x $\frac{7}{8}$	3.85
TQF-1-033	.033	.235x $\frac{3}{4}$	3.45	TQF-4-047	.047	.400x $\frac{7}{8}$	3.95
TQF-1-047	.047	.312x $\frac{7}{8}$	3.60	TQF-4-068	.068	.400x1 $\frac{1}{2}$	4.05
TQF-1-068	.068	.312x $\frac{7}{8}$	3.65	TQF-4-1	.1	.400x1 $\frac{3}{8}$	4.15
TQF-1-1	.1	.312x $\frac{7}{8}$	3.70	TQF-4-15	.15	.562x1 $\frac{1}{2}$	4.40
TQF-1-15	.15	.400x $\frac{7}{8}$	3.75	TQF-4-22	.22	.562x1 $\frac{1}{2}$	4.65
TQF-1-22	.22	.400x1 $\frac{1}{2}$	3.85	TQF-4-27	.27	.562x1 $\frac{7}{8}$	4.90
TQF-1-27	.27	.400x1 $\frac{1}{2}$	3.95	TQF-4-33	.33	.562x1 $\frac{7}{8}$	4.90
TQF-1-33	.33	.400x1 $\frac{3}{8}$	4.00	TQF-4-47	.47	.670x1 $\frac{7}{8}$	5.40
TQF-1-47	.47	.562x1 $\frac{1}{2}$	4.35	TQF-4-56	.56	.750x2 $\frac{1}{2}$	5.55
TQF-1-68	.68	.562x1 $\frac{1}{2}$	4.60	TQF-4-68	.68	.750x2 $\frac{1}{2}$	5.75
TQF-1-1M	1.0	.562x1 $\frac{7}{8}$	4.90	TQF-4-1M	1.0	1 x1 $\frac{7}{8}$	6.50
<b>200 VOLTS DC WORKING</b>				<b>600 VOLTS DC WORKING</b>			
TQF-2-001	.001	.235x $\frac{3}{4}$	3.45	TQF-6-001	.001	.235x $\frac{3}{4}$	3.60
TQF-2-0015	.0015	.235x $\frac{3}{4}$	3.45	TQF-6-0015	.0015	.235x $\frac{3}{4}$	3.60
TQF-2-0022	.0022	.235x $\frac{3}{4}$	3.45	TQF-6-0022	.0022	.235x $\frac{3}{4}$	3.60
TQF-2-0033	.0033	.235x $\frac{3}{4}$	3.50	TQF-6-0033	.0033	.235x $\frac{3}{4}$	3.70
TQF-2-0047	.0047	.235x $\frac{3}{4}$	3.50	TQF-6-0047	.0047	.235x $\frac{3}{4}$	3.70
TQF-2-0068	.0068	.235x $\frac{3}{4}$	3.50	TQF-6-0068	.0068	.235x $\frac{3}{4}$	3.70
TQF-2-01	.01	.235x $\frac{3}{4}$	3.55	TQF-6-01	.01	.312x $\frac{7}{8}$	3.80
TQF-2-015	.015	.235x $\frac{3}{4}$	3.55	TQF-6-015	.015	.312x $\frac{7}{8}$	3.85
TQF-2-022	.022	.235x $\frac{3}{4}$	3.55	TQF-6-022	.022	.312x $\frac{7}{8}$	3.85
TQF-2-027	.027	.312x $\frac{7}{8}$	3.65	TQF-6-027	.027	.400x $\frac{7}{8}$	3.85
TQF-2-033	.033	.312x $\frac{7}{8}$	3.70	TQF-6-033	.033	.400x $\frac{7}{8}$	4.00
TQF-2-047	.047	.312x $\frac{7}{8}$	3.75	TQF-6-047	.047	.400x1 $\frac{1}{2}$	4.05
TQF-2-068	.068	.312x $\frac{7}{8}$	3.80	TQF-6-068	.068	.400x1 $\frac{1}{2}$	4.25
TQF-2-1	.1	.400x $\frac{7}{8}$	3.85	TQF-6-1	.1	.562x1 $\frac{1}{2}$	4.50
TQF-2-15	.15	.400x1 $\frac{1}{2}$	3.90	TQF-6-15	.15	.562x1 $\frac{3}{8}$	4.65
TQF-2-22	.22	.400x1 $\frac{1}{2}$	4.10	TQF-6-22	.22	.562x1 $\frac{7}{8}$	5.00
TQF-2-27	.27	.562x1 $\frac{1}{2}$	4.30	TQF-6-27	.27	.670x1 $\frac{1}{2}$	5.35
TQF-2-33	.33	.562x1 $\frac{1}{2}$	4.40	TQF-6-33	.33	.670x1 $\frac{7}{8}$	5.55
TQF-2-47	.47	.562x1 $\frac{1}{2}$	4.65	TQF-6-47	.47	.750x2 $\frac{1}{2}$	5.85
TQF-2-68	.68	.562x1 $\frac{7}{8}$	4.95	TQF-6-68	.68	1 x1 $\frac{7}{8}$	6.15
TQF-2-1M	1.0	.670x1 $\frac{7}{8}$	5.45	Standard Tolerance $\pm 20\%$ .			
<b>300 VOLTS DC WORKING</b>							
TQF-3-001	.001	.235x $\frac{3}{4}$	3.50				
TQF-3-0015	.0015	.235x $\frac{3}{4}$	3.50				
TQF-3-0022	.0022	.235x $\frac{3}{4}$	3.50				
TQF-3-0033	.0033	.235x $\frac{3}{4}$	3.55				
TQF-3-0047	.0047	.235x $\frac{3}{4}$	3.55				
TQF-3-0068	.0068	.235x $\frac{3}{4}$	3.55				
TQF-3-01	.01	.235x $\frac{3}{4}$	3.60				
TQF-3-015	.015	.235x $\frac{3}{4}$	3.60				
TQF-3-022	.022	.312x $\frac{7}{8}$	3.75				
TQF-3-027	.027	.312x $\frac{7}{8}$	3.75				
TQF-3-033	.033	.312x $\frac{7}{8}$	3.75				
TQF-3-047	.047	.312x $\frac{7}{8}$	3.80				
TQF-3-068	.068	.400x $\frac{7}{8}$	3.90				
EQF-3-1	.1	.400x1 $\frac{1}{2}$	3.95				
TQF-3-15	.15	.400x1 $\frac{1}{2}$	4.10				
EQF-3-22	.22	.562x1 $\frac{1}{2}$	4.40				
TQF-3-27	.27	.562x1 $\frac{1}{2}$	4.55				
TQF-3-33	.33	.562x1 $\frac{3}{8}$	4.65				
TQF-3-47	.47	.562x1 $\frac{7}{8}$	4.90				
TQF-3-68	.68	.670x1 $\frac{7}{8}$	5.40				
TQF-3-1M	1.0	.750x2 $\frac{1}{2}$	5.80				





# Capacitors

**ASTRON CORPORATION**  
EAST NEWARK, N. J.

## METALITE®

**Metallized Paper Capacitors for 65°C. and 85°C. Operation**

### METALITE CAPACITORS

#### Feature:

- Ultra-compact sizes. Light weight. Ideal for miniaturization applications, and portable, mobile and airborne equipment.
- As much as 75% reduction in size over conventional paper-foil capacitors.
- Self-healing — the ability to withstand high dielectric stresses. METALITE capacitors can be subjected to momentary overvoltages and surges over and over again without danger of permanent failure.
- Temperature Range (Metal cased units) -65°C. to +85°C.; (cardboard cased Type ML) -55°C. to +65°C.
- Excellent RF characteristics. Low RF impedance due to small sizes and short current path. Low power factor.
- Wide variety of applications: RF and audio bypass circuits, noise suppression filters and systems, instruments, and various types of communication equipment where small size, light weight and the self-healing feature are especially desirable characteristics to meet specific circuit requirements.
- Interchangeability with standard paper-foil capacitor designs when operated within published ratings and circuit requirements.

### METALITE® TYPE MQC

85°C. Operation



#### Glass-to-Metal Sealed SUBMINIATURE TUBULARS

- Smallest paper capacitor type available.
- Temperature Range —65°C. to +85°C.
- Non-inductively wound. Mineral wax impregnated and filled. Tinned, non-ferrous metal cases.
- Capacitor section grounded to case (Type MQC) with glass-to-metal terminal at one end. Available also with capacitor section insulated from case (Type MQCF) with glass-to-metal terminal at each end.
- Lead length 1 3/4" minimum. Standard capacitance tolerance: ±20%.

#### CAPACITOR SECTION GROUNDED TO CASE (Glass-to-metal terminal at one end):

**MQC:** Basic unit. Uninsulated body. Sizes and list prices as shown.

**MQCP:** Basic MQC unit with plastic outer sleeve (P) for insulated body. Add 3/8" to diameter and length of MQC sizes listed. Add 15¢ to MQC list prices.

**MQC-A:** Basic MQC unit with soldered-on tangential mounting bracket "A" on un-insulated body. Case sizes as listed for MQC. Add 40¢ to MQC list prices.

**MQC-B:** Basic MQC unit with soldered-on L-type bracket "B" on un-insulated body. Case sizes as listed for MQC. Add 40¢ to MQC list prices.

**MQCS:** Screw neck mounting type. Uninsulated body. Available in same ratings as MQC. Minimum case diameter .100". Add 50¢ to MQC list prices.

**MQV:** Stud base mounting type. Uninsulated body. Available in same ratings and case sizes as MQC. Add 80¢ to MQC list prices.

#### CAPACITOR SECTION INSULATED FROM CASE (Glass-to-metal terminal each end):

**MQCF:** Basic unit in "floating" construction. Add 3/8" to length of MQC sizes listed. Uninsulated body. Add 50¢ to MQC list prices.

**MQCFP:** Basic MQCF unit with plastic outer sleeve (P) for insulated body. Add 3/8" to diameter and 3/8" to length of MQC sizes listed. Add 65¢ to MQC list prices.

**MQCF-A:** Basic MQCF unit with soldered-on tangential mounting bracket "A" on un-insulated body. Add 3/8" to length of MQC sizes listed. Add 40¢ to MQC list prices.

**MQCF-B:** Basic MQCF unit with soldered-on L-type bracket "B" on un-insulated body. Add 3/8" to length of MQC sizes listed. Add 90¢ to MQC list prices.

**MQCFS:** Screw neck mounting type. Uninsulated body. Available in same ratings as MQC. Minimum case diameter .400". Add 3/8" to case length of MQC sizes listed. Add \$1.00 to MQC list prices.

Cat. No.	Cap. Mf.	Dia. x Length	List Price
<b>150 VOLTS DC WORKING</b>			
MQC-1.5-4M	4.0	1 x1 3/8	5.00
MQC-1.5-6M	6.0	1 x1 3/8	5.85
MQC-1.5-8M	8.0	1 x2 1/4	6.65
<b>200 VOLTS DC WORKING</b>			
MQC-2-01	.01	.235x 3/8	\$2.05
MQC-2-02	.02	.235x 3/8	2.10
MQC-2-033	.033	.235x 3/8	2.10
MQC-2-04	.04	.235x 3/8	2.10
MQC-2-05	.05	.235x 3/8	2.10
MQC-2-1	.1	.312x 3/8	2.15
MQC-2-15	.15	.400x 3/8	2.20
MQC-2-2	.2	.400x 3/8	2.30
MQC-2-25	.25	.400x 3/8	2.35
MQC-2-33	.33	.400x1 1/8	2.40
MQC-2-5	.5	.400x1 1/8	2.40
MQC-2-68	.68	.562x1 1/8	2.55
MQC-2-1M	1.0	.562x1 1/8	2.65
MQC-2-1.5M	1.5	.562x1 1/8	2.85
MQC-2-2M	2.0	.562x1 1/8	3.95
<b>400 VOLTS DC WORKING</b>			
MQC-4-01	.01	.235x 3/8	2.10
MQC-4-02	.02	.235x 3/8	2.15
MQC-4-03	.03	.312x 3/8	2.15
MYC-4-04	.04	.312x1 1/8	2.20
MQC-4-05	.05	.312x1 1/8	2.20
MQC-4-1	.1	.400x1 1/8	2.25
MQC-4-15	.15	.562x1 1/8	2.35
MQC-4-2	.2	.562x1 1/8	2.40
MQC-4-25	.25	.562x1 1/8	2.45
MQC-4-33	.33	.562x1 1/8	2.55
MQC-4-5	.5	.562x1 3/8	2.75
MQC-4-68	.68	.670x1 3/8	2.95
MQC-4-1M	1.0	.670x2 1/8	3.05
MQC-4-1.5M	1.5	1 x2 1/4	4.10
MQC-4-2M	2.0	1 x2 1/4	4.65
MQC-4-4M	4.0	1 1/8 x2 1/4	6.85
<b>600 VOLTS DC WORKING</b>			
MQC-6-01	.01	.235x 3/8	2.15
MQC-6-015	.015	.312x 3/8	2.15
MQC-6-02	.02	.312x 3/8	2.15
MQC-6-03	.03	.312x 3/8	2.20
MQC-6-04	.04	.312x1 1/8	2.25
MQC-6-05	.05	.312x1 1/8	2.25
MQC-6-1	.1	.400x1 1/8	2.30
MQC-6-15	.15	.562x1 1/8	2.45
MQC-6-22	.22	.562x1 1/8	2.65
MQC-6-25	.25	.562x1 1/8	2.70
MQC-6-33	.33	.670x1 1/8	2.85
MQC-6-5	.5	.670x1 3/8	3.00
MQC-6-68	.68	.670x2 1/8	3.45
MQC-6-1M	1.0	.750x2 1/8	3.65
MQC-6-2M	2.0	1 x2 1/4	5.15
STANDARD CAPACITANCE TOLERANCE:			±20%.

### METALITE® TYPE ML

Cardboard Tubulars

65°C. Operation



- Temperature Range —55°C. to +65°C.
- Microcrystalline hydrocarbon wax impregnated.

- Sturdy, wax-impregnated cardboard tubes. Strong terminal connections, metal end caps. Units can be point-to-point connected and supported by own leads.

- Wire leads 1 1/2" long.

- Overall mineral wax coating for added protection against moisture and humidity.

- Standard capacitance tolerance: —20% +30%.

Cat. No.	Cap. Mf.	Dia. x Length	List Price
<b>200 VOLTS DC WORKING</b>			
ML-2-01	.01	3/8 x 3/8	\$0.65
ML-2-02	.02	3/8 x 3/8	.65
ML-2-03	.03	3/8 x 3/8	.65
ML-2-05	.05	3/8 x 3/8	.65
ML-2-1	.1	3/8 x 3/8	.70
ML-2-25	.25	1/2 x 3/8	.90
ML-2-5	.5	1/2 x 1 1/8	1.05
ML-2-1M	1.0	3/8 x 1 1/8	1.30
ML-2-2M	2.0	3/8 x 1 1/8	1.80
<b>400 VOLTS DC WORKING</b>			
ML-4-01	.01	3/8 x 3/8	.70
ML-4-02	.02	3/8 x 3/8	.70
ML-4-03	.03	3/8 x 3/8	.70
ML-4-05	.05	3/8 x 3/8	.70
ML-4-1	.1	1/2 x 1 1/8	.80
ML-4-25	.25	1/2 x 1 1/8	1.00
ML-4-5	.5	3/8 x 1 1/8	1.15
ML-4-1M	1.0	3/8 x 2 1/8	1.60
<b>600 VOLTS DC WORKING</b>			
ML-6-01	.01	3/8 x 3/8	.70
ML-6-02	.02	3/8 x 3/8	.70
ML-6-03	.03	3/8 x 3/8	.80
ML-6-05	.05	3/8 x 3/8	.80
ML-6-1	.1	1/2 x 1 1/8	.90
ML-6-25	.25	3/8 x 1 1/8	1.10
ML-6-5	.5	3/8 x 1 1/8	1.45
ML-6-1M	1.0	3/8 x 2 1/8	1.80
STANDARD CAPACITANCE TOLERANCE:			—20% +30%.



# Capacitors

**ASTRON CORPORATION**  
EAST NEWARK, N. J.

## METALITE® TYPE MRF Metal Cased Tubulars

85°C. Operation



### CAPACITOR SECTION INSULATED FROM CASE:

- MRF: Basic unit. Sizes and list prices as shown.
- MRF-P: Basic MRF unit with plastic outer sleeve (P). Add  $\frac{1}{8}$ " to length and  $\frac{1}{8}$ " to diameter of MRF listed. Add 15¢ to MRF list prices.
- MRF-Y: Basic MRF unit with riveted radial mounting strap "Y." Case sizes as listed for MRF. Add 10¢ to MRF list prices.
- MRF-P-Y: Basic MRF unit with riveted radial mounting strap "Y" over plastic insulating sleeve (P). Add  $\frac{1}{8}$ " to length and  $\frac{1}{8}$ " to diameter of MRF listed. Add 25¢ to MRF list prices.
- MRF-A: Basic MRF unit with tangential soldered-on mounting bracket "A." Case sizes as listed for MRF. Add 40¢ to MRF list prices.

### CAPACITOR SECTION GROUNDED TO CASE:

- MRG: Basic style in grounded construction. Deduct  $\frac{1}{8}$ " from MRF sizes listed. Same list prices as MRF.
- MRG-P: Basic MRG unit with plastic outer sleeve (P). Add  $\frac{1}{8}$ " to length and  $\frac{1}{8}$ " to diameter of MRF units listed. Add 15¢ to MRF list prices.
- MRG-Y: Basic MRG unit with riveted radial mounting strap "Y." Deduct  $\frac{1}{8}$ " from MRF sizes listed. Add 10¢ to MRF list prices.
- MRG-P-Y: Basic MRG unit with riveted radial mounting strap "Y" over plastic insulating sleeve (P). Add  $\frac{1}{8}$ " to length and  $\frac{1}{8}$ " to diameter of MRF listed. Add 25¢ to MRF list prices.
- MRG-A: Basic MRG unit with tangential soldered-on mounting bracket "A." Deduct  $\frac{1}{8}$ " from length of MRF sizes listed. Add 40¢ to MRF list prices.

- Temperature Range -65°C. to +85°C.
- Mineral wax impregnated and filled.
- Hermetically sealed. Neoprene-phenolic end discs.
- Type MRF supplied with capacitor section insulated from case. Also available with section grounded to case (Type MRG).
- Lead length 1 1/4" minimum.
- Standard capacitance tolerance:  $\pm 20\%$ .

Cat. No.	Cap. Mf.	Dia. x Length	List Price
<b>150 VOLTS DC WORKING</b>			
MRF-1.5-4M	4.0	1 x 1 1/8	\$4.35
MRF-1.5-6M	6.0	1 x 1 1/8	5.30
MRF-1.5-8M	8.0	1 1/4 x 1 1/8	6.10
MRF-1.5-10M	10.0	1 1/4 x 1 1/8	7.20
<b>200 VOLTS DC WORKING</b>			
MRF-2-05	.05	3/4 x 7/8	1.40
MRF-2-1	.1	3/4 x 7/8	1.45
MRF-2-25	.25	3/4 x 7/8	1.60
MRF-2-5	.5	3/2 x 1 1/8	1.70
MRF-2-1M	1.0	.670 x 1 1/8	2.10
MRF-2-2M	2.0	.670 x 1 1/8	2.60
<b>400 VOLTS DC WORKING</b>			
MRF-4-03	.03	3/4 x 7/8	1.35
MRF-4-05	.05	3/4 x 7/8	1.45
MRF-4-1	.1	3/4 x 1 1/8	1.60
MRF-4-25	.25	.670 x 1 1/8	1.80
MRF-4-5	.5	.670 x 1 1/8	2.00
MRF-4-1M	1.0	1 x 2 1/8	3.60
MRF-4-2M	2.0	1 x 2 1/8	4.80
MRF-4-3M	3.0	1 1/4 x 2 1/8	5.90
MRF-4-4M	4.0	1 1/4 x 2 1/8	
<b>600 VOLTS DC WORKING</b>			
MRF-6-01	.01	3/4 x 7/8	1.35
MRF-6-02	.02	3/4 x 7/8	1.45
MRF-6-03	.03	3/4 x 7/8	1.50
MRF-6-05	.05	3/4 x 7/8	1.55
MRF-6-1	.1	3/4 x 1 1/8	1.70
MRF-6-2	.2	.670 x 1 1/8	1.90
MRF-6-25	.25	.670 x 1 1/8	2.00
MRF-6-5	.5	.670 x 1 1/8	2.40
MRF-6-1M	1.0	1 x 2 1/8	3.00
MRF-6-2M	2.0	1 1/4 x 2 1/8	4.00
MRF-6-3M	3.0	1 1/4 x 2 1/8	5.30

Standard capacitance tolerance:  $\pm 20\%$   
Other tolerances are available.

## METALITE® TYPE MD Bathtub Capacitors

85°C. Operation



- Units meet MIL tests for moisture resistance, thermal cycle immersion and vibration.
- Single units have two terminals; dual units have three terminals, one terminal common negative.
- Standard position of terminals on side. Also available with terminals on top (Type MDT) or bottom (Type MDB).
- Standard capacitance tolerance:  $\pm 20\%$ .

- Compact sizes. Light weight. Up to 75% reduction in sizes over conventional paper-foil capacitors.
- Temperature Range -65°C. to +85°C.
- Space-saving metallized paper dielectric makes possible wider choice of high capacitance ratings than ever before obtainable in bathtub cases.
- Hermetically sealed. Silicone rubber compression seal lug terminals.

Cat. No.	Cap. Mf.	L. x W. x H.	Mtg. Ctr.	List Price
<b>150 VOLTS DC WORKING</b>				
MD-1.5-4M	4.0	1 3/4 x 1 x 3/8	2 1/4	5.75
MD-1.5-6M	6.0	2 x 1 1/4 x 3/8	2 3/8	6.10
MD-1.5-8M	8.0	2 x 2 x 3/8	2 3/8	8.40
MD-1.5-10M	10.0	2 x 2 x 3/8	2 3/8	9.70
MD-1.5-12M	12.0	2 x 2 x 1/2	2 3/8	11.00
MD-1.5-16M	16.0	2 x 2 x 1 1/8	2 3/8	13.50
MD-1.5-18M	18.0	2 x 2 x 1 1/8	2 3/8	15.00
MD-1.5-2x4M	4.0-4.0	2 x 2 x 3/8	2 3/8	9.00
MD-1.5-2x6M	6.0-6.0	2 x 2 x 1/2	2 3/8	11.50
<b>200 VOLTS DC WORKING</b>				
MD-2-5	.5	1 3/4 x 1 x 3/8	2 1/4	\$3.30
MD-2-1M	1.0	1 3/4 x 1 x 3/8	2 1/4	3.55
MD-2-2M	2.0	1 3/4 x 1 x 3/8	2 1/4	4.45
MD-2-2x1M	1.0-1.0	1 3/4 x 1 x 3/8	2 1/4	5.00
MD-2-2x2M	2.0-2.0	1 3/4 x 1 x 3/8	2 1/4	6.30
<b>400 VOLTS DC WORKING</b>				
MD-4-25	.25	1 3/4 x 1 x 3/8	2 1/4	3.35
MD-4-5	.5	1 3/4 x 1 x 3/8	2 1/4	3.55
MD-4-1M	1.0	1 3/4 x 1 x 3/8	2 1/4	3.95
MD-4-2M	2.0	2 x 1 1/4 x 3/8	2 3/8	4.90
MD-4-4M	4.0	2 x 2 x 1 1/8	2 3/8	7.85
MD-4-6M	6.0	2 x 2 x 1 1/8	2 3/8	9.50
MD-4-2x5	.5-.5	1 3/4 x 1 x 3/8	2 1/4	4.35
MD-4-2x1M	1.0-1.0	2 x 1 1/4 x 3/8	2 3/8	5.50
MD-4-2x2M	2.0-2.0	2 x 2 x 1 1/8	2 3/8	8.10
<b>600 VOLTS DC WORKING</b>				
MD-6-1	.1	1 3/4 x 1 x 3/8	2 1/4	3.50
MD-6-25	.25	1 3/4 x 1 x 3/8	2 1/4	3.55
MD-6-5	.5	1 3/4 x 1 x 3/8	2 1/4	4.25
MD-6-1M	1.0	2 x 1 1/4 x 3/8	2 3/8	4.90
MD-6-2M	2.0	2 x 2 x 1 1/8	2 3/8	6.25
MD-6-3M	3.0	2 x 2 x 1 1/8	2 3/8	7.75
MD-6-4M	4.0	2 x 2 x 1 1/8	2 3/8	9.75
MD-6-2x25	.25-.25	1 3/4 x 1 x 3/8	2 1/4	4.95
MD-6-2x5	.5-.5	1 3/4 x 1 1/4 x 3/8	2 3/8	5.70
MD-6-2x1M	1.0-1.0	2 x 2 x 1 1/8	2 3/8	6.60

STANDARD CAPACITANCE TOLERANCE:  $\pm 20\%$ .

## METALITE® TYPE MXJ in Terneplate Cases

85°C. Operation



- Most extensive range of capacitance ratings ever offered in Style CP70 cases.
- Temperature range -65°C. to +85°C.
- Mineral wax impregnated and filled.
- Hermetically sealed. Silicone rubber compression seal lug terminals. Units meet MIL tests for moisture resistance, thermal cycle immersion and vibration.
- Spade bolt "J" brackets supplied with each unit for convenient, rigid mounting.
- Standard capacitance tolerance:  $\pm 20\%$ .

<b>500 VOLTS DC WORKING</b>				
MXJ-6-1M	1.0	1 3/4 x 1 x 1 1/8	2	13.75
MXJ-6-2M	2.0	1 3/4 x 1 x 2 1/8	2	16.75
MXJ-6-4M	4.0	1 3/4 x 1 x 3 1/8	2	22.90
MXJ-6-6M	6.0	1 3/4 x 1 x 4 1/8	2	26.25
MXJ-6-8M	8.0	2 1/4 x 1 1/4 x 3 1/8	2 3/8	30.45
MXJ-6-10M	10.0	2 1/4 x 1 1/4 x 4 1/8	2 3/8	34.35
MXJ-6-15M	15.0	3 1/4 x 1 1/4 x 4 1/8	4	41.50
MXJ-6-20M	20.0	3 1/4 x 1 1/4 x 4 1/8	4	56.20

STANDARD CAPACITANCE TOLERANCE:  $\pm 20\%$ . Other tolerances are available.

Cat. No.	Cap. Mf.	L. x W. x H.	Mtg. Ctr.	List Price
<b>100 VOLTS DC WORKING</b>				
MXJ-1-100M	100.0	3 3/4 x 1 1/4 x 1 1/8	4	\$98.50
<b>150 VOLTS DC WORKING</b>				
MXJ-1.5-4M	4.0	1 3/4 x 1 x 1 1/8	2	14.00
MXJ-1.5-10M	10.0	1 3/4 x 1 x 2 1/8	2	20.75
MXJ-1.5-12M	12.0	1 3/4 x 1 x 2 7/8	2	22.00
MXJ-1.5-15M	15.0	1 3/4 x 1 x 3 1/8	2	26.75
MXJ-1.5-20M	20.0	1 3/4 x 1 x 3 7/8	2	31.50
MXJ-1.5-25M	25.0	2 1/4 x 1 1/4 x 3 1/8	2 3/8	37.00
MXJ-1.5-30M	30.0	2 1/4 x 1 1/4 x 3 7/8	2 3/8	42.00
MXJ-1.5-50M	50.0	2 1/4 x 1 1/4 x 4 1/8	2 3/8	59.00
<b>400 VOLTS DC WORKING</b>				
MXJ-4-2M	2.0	1 3/4 x 1 x 2 1/8	2	14.00
MXJ-4-4M	4.0	1 3/4 x 1 x 2 7/8	2	19.00
MXJ-4-6M	6.0	1 3/4 x 1 x 3 1/8	2	23.25
MXJ-4-8M	8.0	1 3/4 x 1 x 3 7/8	2	28.50
MXJ-4-10M	10.0	2 1/4 x 1 1/4 x 3 1/8	2 3/8	30.50
MXJ-4-20M	20.0	2 1/4 x 1 1/4 x 3 7/8	2 3/8	50.50
MXJ-4-30M	30.0	3 1/4 x 1 1/4 x 4 1/8	4	63.50



# Capacitors

**ASTRON CORPORATION**  
EAST NEWARK, N. J.

## NEW COMET\* TYPE MBP

Molded Plastic Metallized Paper Tubulars

125°C. Operation



- First, molded plastic metallized paper tubular capacitor . . . ever!
- Tough, metallized paper capacitor sections for miniature size, self-healing characteristics, light weight and dependable operation.
- Impervious immersion-proof shell is unaffected by any heat and/or moisture condition.
- Exclusive bonded seal locks out environmental effects . . . locks in performance.
- Solid thermosetting impregnant for reliable operation over temperature range of -65°C. to ±125°C. . . . vacuum impregnation guarantees uniformity of units.
- Firmly implanted leads won't pull or melt out . . . makes soldering in tight places easy!

Cat. No.	Cap. Mf.	Dia. x Length	List Price
MBP-2-01	.01	3/8 x 1	\$.65
MBP-2-02	.02	3/8 x 1	.65
MBP-2-03	.03	3/8 x 1	.65
MBP-2-047	.047	3/8 x 1	.65
MBP-2-05	.05	3/8 x 1	.65
MBP-2-1	.1	3/8 x 1	.70
MBP-2-2	.2	3/8 x 1 1/4	.80
MBP-2-25	.25	3/8 x 1 1/4	.90
MBP-2-33	.33	7/8 x 1 1/4	.95
MBP-2-47	.47	1/2 x 1 1/8	1.05
MBP-2-5	.5	1/2 x 1 1/8	1.05
MBP-2-68	.68	1/2 x 1 5/8	1.20
MBP-2-1M	1.0	5/8 x 1 7/8	1.30
MBP-2-2M	2.0	5/8 x 1 7/8	1.80
MBP-4-01	.01	3/8 x 1	.70
MBP-4-02	.02	3/8 x 1	.70
MBP-4-03	.03	3/8 x 1	.70
MBP-4-047	.047	3/8 x 1 1/4	.70
MBP-4-05	.05	3/8 x 1 1/4	.70
MBP-4-1	.1	7/8 x 1 1/4	.80
MBP-4-2	.2	1/2 x 1 1/8	.90
MBP-4-25	.25	1/2 x 1 1/8	1.00
MBP-4-33	.33	5/8 x 1 1/8	1.10
MBP-4-47	.47	5/8 x 1 1/8	1.15
MBP-4-5	.5	5/8 x 1 1/8	1.15
MBP-6-01	.01	3/8 x 1	.70
MBP-6-02	.02	3/8 x 1	.70
MBP-6-03	.03	3/8 x 1 1/4	.80
MBP-6-047	.047	3/8 x 1 1/4	.80
MBP-6-05	.05	3/8 x 1 1/4	.80
MBP-6-068	.068	7/8 x 1 1/4	.85
MBP-6-1	.1	1/2 x 1 1/8	.90
MBP-6-2	.2	5/8 x 1 1/8	1.00
MBP-6-25	.25	5/8 x 1 1/8	1.10

\*TRADE MARK

## METALITE® HY-MET\* TYPE MLL

Cardboard Tubulars

85°C. Operation



- Sturdy cardboard cased units. Temperature Range -55° to +100°C. Solid thermosetting impregnant.
- Exceptional strength. Metal end caps. Units can be point-to-point connected and supported by own leads. Leads 1 1/2" minimum length.
- Overall mineral wax coat provides added protection against moisture and humidity.
- Standard capacitance tolerance: -20% +30%.

### 200 VOLTS DC WORKING

Cat. No.	Cap. Mf.	Dia. x Length	List Price
MLL-2-01	.01	3/8 x 5/8	\$1.00
MLL-2-02	.02	3/8 x 5/8	1.00
MLL-2-03	.03	3/8 x 5/8	1.00
MLL-2-05	.05	3/8 x 5/8	1.00
MLL-2-1	.1	3/8 x 5/8	1.05
MLL-2-25	.25	1 1/2 x 5/8	1.35
MLL-2-5	.5	1 1/2 x 1 1/8	1.60
MLL-2-1M	1.0	1 3/8 x 1 1/8	1.95
MLL-2-2M	2.0	5/8 x 1 5/8	2.70

### 400 VOLTS DC WORKING

Cat. No.	Cap. Mf.	Dia. x Length	List Price
MLL-4-01	.01	3/8 x 5/8	1.05
MLL-4-02	.02	3/8 x 5/8	1.05
MLL-4-03	.03	3/8 x 5/8	1.05
MLL-4-05	.05	1 1/2 x 5/8	1.05
MLL-4-1	.1	1 1/2 x 1 1/8	1.20
MLL-4-25	.25	1 3/8 x 1 1/8	1.50
MLL-4-5	.5	5/8 x 1 5/8	1.75
MLL-4-1M	1.0	3 3/4 x 2 1/8	2.40

### 600 VOLTS DC WORKING

Cat. No.	Cap. Mf.	Dia. x Length	List Price
MLL-6-01	.01	3/8 x 5/8	1.05
MLL-6-02	.02	3/8 x 5/8	1.05
MLL-6-03	.03	1 1/2 x 5/8	1.20
MLL-6-05	.05	1 1/2 x 5/8	1.20
MLL-6-1	.1	1 1/2 x 1 1/8	1.35
MLL-6-25	.25	5/8 x 1 1/8	1.65
MLL-6-5	.5	3 3/4 x 1 5/8	2.20
MLL-6-1M	1.0	3 3/4 x 2 1/8	2.70

CAPACITANCE TOLERANCE: -20% +30%.

\*TRADE MARK

# ASTRON<sup>®</sup> Capacitors

**ASTRON CORPORATION**  
EAST NEWARK, N. J.

**METALITE<sup>®</sup> HY-MET\* TYPE MTL**  
Subminiature Bathtub Capacitors  
125°C. Operation



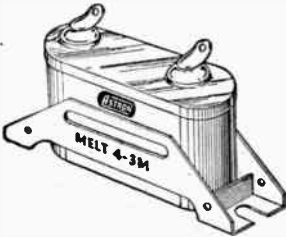
- Popular, handy bathtub case in tiny 1 1/8" x 1" base size and minimum case heights.
- Solid thermosetting impregnant enables operation up to 125°C. Temperature Range —65°C. to +125°C.
- Excellent RF characteristics due to non-inductive extended foil construction and extremely small capacitor sections.
- Ideal for all types of miniaturized equipment and tight assemblies to meet extreme minimum weight and size, long life, and high temperature operation requirements.
- Hermetically sealed. Glass-to-metal sealed lug terminals.
- Capacitance tolerance: ±20%.

\*TRADE MARK

**METALITE<sup>®</sup> HY-MET\* TYPE MEL**

**Compact Seamless Cases**

125°C. Operation



- High-temperature, high-capacitance, single and dual units designed to fit tight, narrow chassis space.
- Higher capacitance than ever before achieved in MIL Style CP67-69 containers due to use of space saving metallized paper sections.
- Temperature Range —65°C. to +125°C. due to use of solid thermosetting impregnant.
- Hermetically sealed. Glass-to-metal sealed lug terminals. Convenient bracket mounting.
- Single units have two terminals; dual units have three terminals (one common negative).
- Standard style is Type MELT (with top terminals) for mounting on chassis surface, for through-the-chassis terminal connections, with terminals on bottom, specify Type MELB.
- Capacitance tolerance: ±20%.

\*TRADE MARK

**METALITE<sup>®</sup> HY-MET\* TYPE MQL**

**Glass-to-Metal Sealed SUBMINIATURE TUBULARS**

125°C. Operation



- Smallest paper capacitors available for the given ratings.
- Solid thermosetting impregnant. Temperature Range: —65°C. to +125°C.
- Tinned, non-ferrous metal cases. Hermetically sealed.
- Non-inductively wound. Capacitor section grounded to case, glass-to-metal seal terminal at one end. Available also with section insulated from case with glass-to-metal terminal at each end (Type MQLF).

**CAPACITOR SECTION GROUNDED TO CASE (Glass-to-metal terminal at one end):**

- MQL:** Basic unit, Uninsulated body. Sizes and list prices as shown.
- MQLP:** Basic MQL unit with plastic outer sleeve (P) for insulated body. Add  $\frac{1}{8}$ " to diameter and length of MQL sizes listed. Add 15¢ to MQL list prices.
- MQL-A:** Basic MQL unit with soldered-on tangential mounting bracket "A" on uninsulated body. Case sizes as listed for MQL. Add 40¢ to MQL list prices.
- MQL-B:** Basic MQL unit with soldered-on L-type bracket "B" on uninsulated body. Case sizes as listed for MQL. Add 40¢ to MQL list prices.
- MQLS:** Screw neck mounting type. Uninsulated body. Available in same ratings as MQL. Minimum case diameter .400". Add 50¢ to MQL list prices.
- MQLV:** Stud base mounting type. Uninsulated body. Same ratings and case sizes as MQL. Add 60¢ to MQL list prices.

**CAPACITOR SECTION INSULATED FROM CASE (Glass-to-metal terminal each end):**

- MQLF:** Basic unit in "floating" construction. Add  $\frac{1}{8}$ " to length of MQL sizes listed. Uninsulated body. Add 50¢ to MQL list prices.
- MQLFP:** Basic MQLF unit with plastic outer sleeve (P) for insulated body. Add  $\frac{1}{8}$ " to diameter and  $\frac{1}{8}$ " to length of MQL sizes listed. Add 65¢ to MQL list prices.
- MQLF-A:** Basic MQLF unit with soldered-on tangential mounting bracket "A" on uninsulated body. Add  $\frac{1}{8}$ " to length of MQL sizes listed. Add 90¢ to MQL list prices.
- MQLF-B:** Basic MQLF unit with soldered-on L-type bracket "B" on uninsulated body. Add  $\frac{1}{8}$ " to length of MQL sizes listed. Add 90¢ to MQL list prices.
- MQLFS:** Screw neck mounting type. Uninsulated body. Same ratings as MQL. Minimum case diameter .400". Add  $\frac{1}{8}$ " to case length of MQL sizes listed. Add \$1.00 to MQL list prices.

\*TRADE MARK

Cat. No.	Cap. Mf.	L. x W. x H.	List Price
<b>200 VOLTS DC WORKING</b>			
MTL-2-1	.1	1 1/8 x 1 x 1/2	\$4.35
MTL-2-25	.25	1 1/8 x 1 x 1/2	4.65
MTL-2-5	.5	1 1/8 x 1 x 1/2	5.45
MTL-2-1M	1.0	1 1/8 x 1 x 1/2	5.85
MTL-2-2M	2.0	1 1/8 x 1 x 1 1/4	7.40
<b>400 VOLTS DC WORKING</b>			
MTL-4-1	.1	1 1/8 x 1 x 1/2	5.35
MTL-4-25	.25	1 1/8 x 1 x 1/2	5.55
MTL-4-5	.5	1 1/8 x 1 x 1 1/4	5.90
<b>600 VOLTS DC WORKING</b>			
MTL-6-1	.1	1 1/8 x 1 x 1/2	5.80
MTL-6-25	.25	1 1/8 x 1 x 1/2	5.90
MTL-6-5	.5	1 1/8 x 1 x 1 1/4	7.05

STANDARD CAPACITANCE TOLERANCE: ±20%. Other tolerances are available.

Cat. No.	Cap. Mf.	L. x W. x H.	Price
<b>SINGLE UNITS — 2 terminals</b>			
<b>150 VOLTS DC WORKING</b>			
MELT-1.5-3M	3.0	1.788x.619x1 1/4	\$ 8.75
MELT-1.5-4M	4.0	1.788x.619x2	9.85
MELT-1.5-6M	6.0	1.788x.619x2 1/2	11.85
<b>200 VOLTS DC WORKING</b>			
MELT-2-2M	2.0	1.788x.619x1	7.45
<b>400 VOLTS DC WORKING</b>			
MELT-4-5	.5	1.788x.619x1	8.60
MELT-4-1M	1.0	1.788x.619x1 1/4	9.00
MELT-4-2M	2.0	1.788x.619x2 1/2	10.20
MELT-4-3M	3.0	1.788x.619x2 3/4	12.40
<b>600 VOLTS DC WORKING</b>			
MELT-6-5	.5	1.788x.619x1	7.15
MELT-6-1M	1.0	1.788x.619x1 1/4	8.80
MELT-6-2M	2.0	1.788x.619x2 1/2	12.10
<b>DUAL UNITS — 3 terminals</b>			
<b>200 VOLTS DC WORKING</b>			
MELT-2-2x1M	1.0-1.0	1.788x.619x1	8.25
MELT-2-2x2M	2.0-2.0	1.788x.619x2	10.75
<b>400 VOLTS DC WORKING</b>			
MELT-4-2x1M	1.0-1.0	1.788x.619x2 1/4	11.10
<b>600 VOLTS DC WORKING</b>			
MELT-6-2x1M	1.0-1.0	1.788x.619x2 3/4	13.75

CAPACITANCE TOLERANCE: ±20%. \*Add  $\frac{1}{8}$ " to height for bracket.

Cat. No.	Cap. Mf.	Dia. x Length	List Price
<b>150 VOLTS DC WORKING</b>			
MQL-1.5-4M	4.0	1 x 1 3/4	\$ 7.00
MQL-1.5-6M	6.0	1 x 2 1/4	8.20
MQL-1.5-8M	8.0	1 x 2 3/4	9.35
<b>200 VOLTS DC WORKING</b>			
MQL-2-01	.01	.235x 3/4	3.10
MQL-2-022	.022	.235x 3/4	3.15
MQL-2-033	.033	.235x 3/4	3.15
MQL-2-047	.047	.235x 3/4	3.15
MQL-2-05	.05	.235x 3/4	3.15
MQL-2-068	.068	.312x 3/4	3.25
MQL-2-1	.1	.312x 3/4	3.25
MQL-2-15	.15	.312x 3/4	3.30
MQL-2-22	.22	.312x 3/4	3.45
MQL-2-25	.25	.312x 3/4	3.55
MQL-2-35	.35	.400x 3/4	3.85
MQL-2-47	.47	.400x 3/4	3.60
MQL-2-5	.5	.400x 3/4	3.60
MQL-2-68	.68	.500x 3/4	3.75
MQL-2-1M	1.0	.562x 3/4	4.00
MQL-2-2M	2.0	.562x 3/4	5.95
<b>400 VOLTS DC WORKING</b>			
MQL-4-01	.01	.235x 3/4	3.15
MQL-4-022	.022	.235x 3/4	3.25
MQL-4-033	.033	.312x 3/4	3.25
MQL-4-047	.047	.312x 3/4	3.30
MQL-4-05	.05	.312x 3/4	3.30
MQL-4-068	.068	.400x 3/4	3.35
MQL-4-1	.1	.400x 3/4	3.40
MQL-4-22	.22	.500x 3/4	3.60
MQL-4-25	.25	.500x 3/4	3.70
MQL-4-33	.33	.562x 3/4	3.85
MQL-4-47	.47	.562x 3/4	4.10
MQL-4-5	.5	.562x 3/4	4.10
MQL-4-68	.68	.670x 3/4	4.45
MQL-4-1M	1.0	.670x 3/4	4.60
MQL-4-2M	2.0	1 x 2 1/4	7.00
<b>600 VOLTS DC WORKING</b>			
MQL-6-01	.01	.235x 3/4	3.25
MQL-6-022	.022	.312x 3/4	3.30
MQL-6-033	.033	.400x 3/4	3.35
MQL-6-047	.047	.400x 3/4	3.40
MQL-6-05	.05	.400x 3/4	3.40
MQL-6-068	.068	.400x 3/4	3.40
MQL-6-1	.1	.400x 3/4	3.45
MQL-6-15	.15	.500x 3/4	3.85
MQL-6-22	.22	.562x 3/4	3.80
MQL-6-25	.25	.562x 3/4	4.05
MQL-6-33	.33	.562x 3/4	4.35
MQL-6-47	.47	.670x 3/4	4.50
MQL-6-5	.5	.670x 3/4	4.60
MQL-6-68	.68	.670x 3/4	5.00
MQL-6-1M	1.0	.750x 3/4	5.45
MQL-6-2M	2.0	1 x 2 1/4	7.75

STANDARD CAPACITANCE TOLERANCE: ±20%. Other tolerances are available.

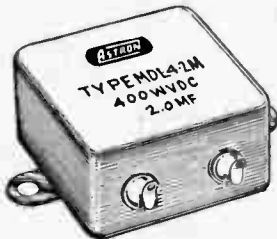


# Capacitors

**ASTRON CORPORATION**  
EAST NEWARK, N. J.

## METALITE® HY-MET\* TYPE MDL Bathtub Capacitors

125°C. Operation



- Higher capacitance ratings than ever before offered in same size MIL Style CP53-55 cases in conventional paper-foil types.
- Solid thermosetting plastic impregnant enables operation to 125°C. Temperature Range: -65°C. to +125°C.
- Hermetically sealed. Lug type glass-to-metal sealed terminals.
- Standard position of terminals is on side. Can be supplied with top terminals (Type MDLT) or bottom terminals (Type MDLB).
- Standard capacitance tolerance: ±20%.

\*TRADE MARK

Cat. No.	Cap. Mf.	L. x W. x H.	List Price
<b>150 VOLTS DC WORKING</b>			
MDL-1.5-3M	3.0	1 3/4 x 1 x 7/8	\$ 8.10
MDL-1.5-4M	4.0	1 3/4 x 1 x 7/8	8.65
MDL-1.5-5M	5.0	1 3/4 x 1 x 7/8	8.95
MDL-1.5-6M	6.0	1 3/4 x 1 1/4 x 7/8	9.15
MDL-1.5-8M	8.0	2 x 1 3/4 x 3/4	12.60
MDL-1.5-10M	10.0	2 x 1 3/4 x 3/4	14.55
MDL-1.5-12M	12.0	2 x 2 x 7/8	16.50
MDL-1.5-15M	15.0	2 x 2 x 1	19.85
MDL-1.5-18M	18.0	2 x 2 x 1 1/4	22.50
MDL-1.5-20M	20.0	2 x 2 x 1 1/2	25.10

Cat. No.	Cap. Mf.	L. x W. x H.	List Price
<b>200 VOLTS DC WORKING</b>			
MDL-2-1	.1	1 3/4 x 1 x 3/4	3.95
MDL-2-25	.25	1 3/4 x 1 x 3/4	4.25
MDL-2-5	.5	1 3/4 x 1 x 3/4	4.95
MDL-2-1M	1.0	1 3/4 x 1 x 3/4	5.35
MDL-2-2M	2.0	1 3/4 x 1 x 3/4	6.70

Cat. No.	Cap. Mf.	L. x W. x H.	List Price
<b>400 VOLTS DC WORKING</b>			
MDL-4-1	.1	1 3/4 x 1 x 3/4	4.85
MDL-4-25	.25	1 3/4 x 1 x 3/4	5.05
MDL-4-5	.5	1 3/4 x 1 x 3/4	5.35
MDL-4-1M	1.0	1 3/4 x 1 x 3/4	5.95
MDL-4-2M	2.0	2 x 1 3/4 x 1 1/8	7.35
MDL-4-3M	3.0	2 x 1 3/4 x 1 1/8	9.75
MDL-4-4M	4.0	2 x 2 x 1	11.80
MDL-4-5M	5.0	2 x 2 x 1 1/4	13.20
MDL-4-6M	6.0	2 x 2 x 1 1/2	14.00

Cat. No.	Cap. Mf.	L. x W. x H.	List Price
<b>600 VOLTS DC WORKING</b>			
MDL-6-1	.1	1 3/4 x 1 x 3/4	5.25
MDL-6-25	.25	1 3/4 x 1 x 3/4	5.35
MDL-6-5	.5	1 3/4 x 1 x 3/4	6.40
MDL-6-1M	1.0	1 3/4 x 1 1/4 x 7/8	7.35
MDL-6-2M	2.0	2 x 2 x 7/8	9.40
MDL-6-3M	3.0	2 x 2 x 1 1/8	11.65
MDL-6-4M	4.0	2 x 2 x 1 1/8	14.65

STANDARD CAPACITANCE TOLERANCE:  
±20%. OTHER TOLERANCES ARE AVAILABLE

## METALITE® HY-MET\* TYPE MXLJ In Terneplate Cases

125°C. Operation



\*TRADE MARK

- Higher capacitance than ever before achieved in MIL Style CP70 cases, due to use of metallized paper sections.
- Temperature range -65°C. to +125°C. due to use of solid thermosetting impregnant.
- Hermetically sealed. Glass-to-metal sealed lug terminals.
- Exceptionally small sizes for the given ratings. Size reductions of 50% to 75% over equal ratings in conventional paper-foil units.
- Spade bolt "J" brackets supplied with each unit for convenient, rigid mounting.
- Standard capacitance tolerance: ±20%.

Cat. No.	Cap. Mf.	L. x W. x H.	List Price
<b>150 VOLTS DC WORKING</b>			
MXLJ-1.5-4M	4.0	1 3/4 x 1 x 1 1/8	\$15.30
MXLJ-1.5-10M	10.0	1 3/4 x 1 x 2 1/8	22.75
MXLJ-1.5-12M	12.0	1 3/4 x 1 x 2 1/8	24.10
MXLJ-1.5-15M	15.0	1 3/4 x 1 x 3 3/8	29.35
MXLJ-1.5-20M	20.0	1 3/4 x 1 x 4 1/8	34.55
MXLJ-1.5-25M	25.0	2 1/2 x 1 1/8 x 3	40.60
MXLJ-1.5-30M	30.0	2 1/2 x 1 1/8 x 3 1/8	46.10
MXLJ-1.5-50M	50.0	2 1/2 x 1 1/8 x 4 1/8	64.80

Cat. No.	Cap. Mf.	L. x W. x H.	List Price
<b>400 VOLTS DC WORKING</b>			
MXLJ-4-2M	2.0	1 3/4 x 1 x 2 1/8	15.30
MXLJ-4-4M	4.0	1 3/4 x 1 x 2 7/8	20.80
MXLJ-4-6M	6.0	1 3/4 x 1 x 3 3/8	25.50
MXLJ-4-8M	8.0	1 3/4 x 1 x 4 1/8	29.90
MXLJ-4-10M	10.0	2 1/2 x 1 1/8 x 3 7/8	33.45
MXLJ-4-20M	20.0	2 1/2 x 1 1/8 x 4 1/8	55.45
MXLJ-4-30M	30.0	3 3/4 x 1 1/4 x 4 1/8	69.75

Cat. No.	Cap. Mf.	L. x W. x H.	List Price
<b>600 VOLTS DC WORKING</b>			
MXLJ-6-1M	1.0	1 3/4 x 1 x 1 1/8	15.05
MXLJ-6-2M	2.0	1 3/4 x 1 x 2 1/8	18.35
MXLJ-6-4M	4.0	1 3/4 x 1 x 3 3/8	25.10
MXLJ-6-6M	6.0	1 3/4 x 1 x 4 1/8	28.80
MXLJ-6-8M	8.0	2 1/2 x 1 1/8 x 3 7/8	33.40
MXLJ-6-10M	10.0	2 1/2 x 1 1/8 x 4 1/8	37.70
MXLJ-6-15M	15.0	3 3/4 x 1 1/4 x 4 1/8	45.55
MXLJ-6-20M	20.0	3 3/4 x 1 1/4 x 4 1/4	61.70

STANDARD CAPACITANCE TOLERANCE:  
±20%. Other tolerances are available.



# ELECTRONIC FABRICATORS, INC.

New York 12, New York

## Capacitor Section Insulated From Case (Glass-to-Metal Terminal at each end)

	STYLE AND DESCRIPTION	Add to List Price
Uninsulated Body Body sizes shown in listings.	Z—internally insulated (floating construction) as listed.	—
	V—with tangential soldered-on bracket.	\$ .40
	W—screw neck mounting type. Available in all ratings as for Z. Min. case dia. is .400".	1.00
Insulated Body Add 1/16" to dia. and length of Z sizes listed.	Y—internally insulated (floating construction) with plastic outer sleeve.	.15



STYLE A



STYLE V



STYLE B



STYLE W



STYLE C



STYLE Y



STYLE D



STYLE Z

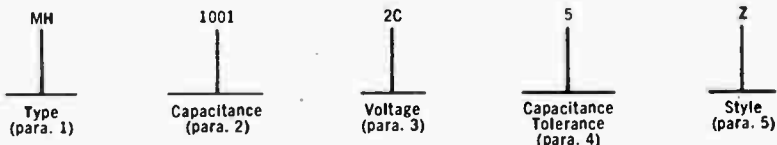
## Capacitor Section Grounded to Case (Glass-to-Metal Terminal at one end)

	STYLE AND DESCRIPTION	Add to List Price
Uninsulated Body Deduct 1/16" from length of units listed.	A—grounded construction.	—
	D—with tangential soldered on bracket.	\$ .40
	C—screw neck mounting type. Available in all ratings as for Type Z. Min. case dia. is .400".	1.00
Insulated Body Add 1/16" to dia. of sizes listed.	B—grounded construction, with plastic outer sleeve.	.15

NOTE: All above styles are available in solder-lug terminals instead of axial leads, and should be designated by the letter "L" after the basic style designating letter. (See prints and nomenclature.)

Add to List Price.....\$ .20 Per Terminal

## NOMENCLATURE



1. **TYPE** The type is identified by a two or three letter symbol in accordance with Table I. The general shape of the case and additional specific details other than case size are specified in style prints. Each type designation includes a family of case sizes.

2. **CAPACITANCE** The nominal capacitance value expressed in micro-micro-farads is identified by a four-digit number; the first two digits represent significant figures and the last digit specifies the number of zeros to follow.

3. **VOLTAGE** The d.c. working voltage for continuous operation at the maximum high temperature for each type as indicated in Table I, is identified by a combination of a single numeral and a single letter in accordance with Table II.

4. **CAPACITANCE TOLERANCE** The capacitance tolerance in percentage is identified by a single numeral in accordance with Table III.

5. **STYLE** The style is identified by a single letter which is an identification as to the terminal, the circuit, and the general shape of the case in accordance with detailed drawing (see style prints).

## NOMENCLATURE TABLES — TYPE

Symbol	Dielectric Material	Case Description	Temperature Range
MC	Mylar*	Impregnated Cardboard Tube	-60°C to +85°C
MH	Mylar*	Hermetically Sealed	-60°C to +85°C
MHM	Mylar*	Hermetically Sealed	-60°C to +100°C
MHH	Mylar*	Hermetically Sealed	-60°C to +125°C
MHX	Mylar*	Hermetically Sealed	-60°C to +150°C
PC	Polystyrene	Impregnated Cardboard Tube	-65°C to +85°C
PH	Polystyrene	Hermetically Sealed	-65°C to +85°C
TH	Teflon*	Hermetically Sealed	-60°C to +200°C

\*DuPont Trademark

## VOLTAGE RATING

Symbol	D.C. Voltage Rating at Maximum High Temperature	Symbol	D.C. Voltage Rating at Max. High Temperature
5X	50	5C	500
1C	100	6C	600
3L	150	7C	700
2C	200	8C	800
5L	250	9C	900
3C	300	1M	1000
4C	400	2S	1200

## CAPACITANCE TOLERANCE

Symbol	Capacitance Tolerance
1	± 1%
2	± 2%
5	± 5%
9	± 10%
0	± 20%







**EFCON**

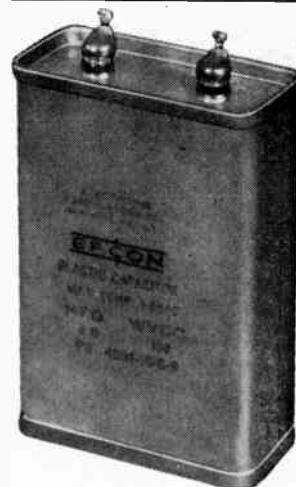
capacitors in rectangular containers

# "POLYSTYRENE" and "MYLAR"

## \*EFCON TYPE PH STYLE N SIZE CHART

\*Polystyrene dielectric capacitors in upright, rectangular, hermetically sealed containers. Standard units are provided with two glass terminals with solder lug attached.

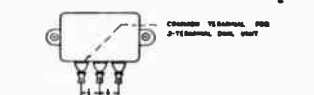
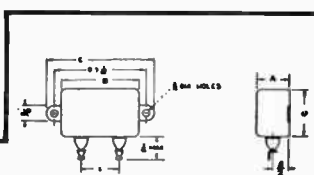
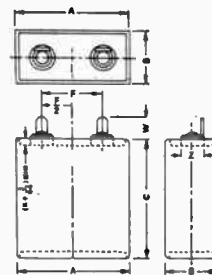
CAP.	100 VOLTS		200 VOLTS		400 VOLTS	
	BASE	HEIGHT	BASE	HEIGHT	BASE	HEIGHT
.27						
.33						
.47						
.56						
.68			1-13/16x1-1/16	2-1/4	1-13/16x1-1/16	2-1/4
.82			1-13/16x1-1/16	2-1/4	1-13/16x1-1/16	2-1/4
1.0			1-13/16x1-1/16	2-1/4	1-13/16x1-1/16	2-1/4
1.2			1-13/16x1-1/16	2-1/4	2-1/2x1-13/16	3-1/2
1.5	1-13/16x1-1/16	2-1/4	1-13/16x1-1/16	2-7/8	3-3/4x1-1/4	3-7/8
2.0	1-13/16x1-1/16	2-1/4	2-1/2x1-3/16	3-7/8	3-3/4x1-1/4	3-7/8
3.0	1-13/16x1-1/16	3-1/4	3-3/4x1-1/4	3-1/4	3-3/4x2-1/4	4-1/2
4.0	2-1/2x1-3/16	3-1/2	3-3/4x1-1/4	4-1/4	3-3/4x3-3/16	4-1/2
5.0	2-1/2x1-3/16	3-7/8	3-3/4x1-3/4	3-1/4	3-3/4x3-3/16	5-1/8
6.0	2-1/2x1-3/16	4-3/4	3-3/4x1-3/4	3-1/4	4-9/16x3-3/4	4-3/4
7.0	3-3/4x1-1/4	3-7/8	3-3/4x3-3/16	4-1/2	4-9/16x3-3/4	5-1/2
8.0	3-3/4x1-1/4	3-7/8	3-3/4x3-3/16	4-1/2	4-9/16x3-3/4	5-1/2
9.0	3-3/4x1-1/4	4-3/4	3-3/4x3-3/16	5-1/8	4-9/16x3-3/4	7
10.0	3-3/4x1-1/4	4-3/4	3-3/4x3-3/16	5-1/8	4-9/16x3-3/4	7



## \*EFCON TYPE MH STYLE N SIZE CHART

\*Mylar dielectric capacitors in upright, rectangular, hermetically sealed containers. Standard units are provided with two glass terminals with solder lug attached.

CAP.	200 VOLTS		400 VOLTS		600 VOLTS	
	BASE	HEIGHT	BASE	HEIGHT	BASE	HEIGHT
.68					1-13/16x1-1/16	1-5/8
.82					1-13/16x1-1/16	2-1/4
1.0					1-13/16x1-1/16	2-1/4
1.2			1-13/16x1-1/16	2-1/4	1-13/16x1-1/16	2-1/4
1.5			1-13/16x1-1/16	2-1/4	1-13/16x1-1/16	2-7/8
2.0			1-13/16x1-1/16	2-1/4	1-13/16x1-1/16	3-1/4
2.5	1-13/16x1-1/16	2-1/4	1-13/16x1-1/16	2-7/8	2-1/2x1-3/16	3-1/2
3.0	1-13/16x1-1/16	2-1/4	1-13/16x1-1/16	2-7/8	2-1/2x1-3/16	3-1/2
4.0	1-13/16x1-1/16	2-1/4	2-1/2x1-3/16	2-1/2	3-3/4x1-3/4	3-7/8
5.0	1-13/16x1-1/16	3-1/4	2-1/2x1-3/16	3-1/2	3-3/4x1-3/4	4
6.0	1-13/16x1-1/16	3-1/4	2-1/2x1-3/16	3-1/2	3-3/4x1-3/4	4
7.0	1-13/16x1-1/16	3-7/8	3-3/4x1-3/4	3-7/8	3-3/4x2-1/4	3-3/8
8.0	3-3/4x1-1/4	3-1/4	3-3/4x1-3/4	3-7/8	3-3/4x2-1/4	3-3/8
9.0	3-3/4x1-1/4	3-7/8	3-3/4x1-3/4	4-3/4	3-3/4x3-3/16	4-1/2
10.0	3-3/4x1-1/4	3-7/8	3-3/4x1-3/4	4-3/4	3-3/4x3-3/16	4-1/2



## \*EFCON TYPE MH STYLE T SIZE CHART

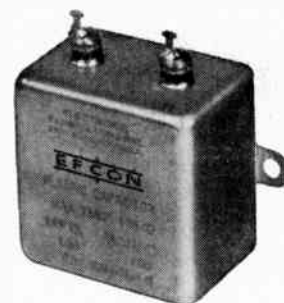
\*Mylar dielectric capacitors in hermetically sealed bath-tub style cases with two glass terminals.

CAP.	VOLTAGE	SIZE LxWxH
4.0	200	2x2x1-1/4
2.0	400	2x2x1-1/4
.68	600	1-3/4x1-1/4x7/8
.82	600	1-3/4x1-1/4x1
1.0	600	2x2x1-1/4

## \*EFCON TYPE PH STYLE T SIZE CHART

\*Polystyrene dielectric capacitors in hermetically sealed bath-tub style cases with two glass terminals.

CAP.	VOLTAGE	SIZE LxWxH
2.0	100	2x2x1-1/4
.68	200	1-3/4x1-1/4x7/8
.82	200	1-3/4x1-1/4x1
1.0	200	2x2x1-1/4
.56	400	1-3/4x1-1/4x7/8
.68	400	1-3/4x1-1/4x1
.82	400	2x2x1-1/4
.27	600	1-3/4x1-1/4x7/8
.33	600	2x2x7/8
.39	600	2x2x1
.47	600	2x2x1-1/4



Prices on request

**ELECTRONIC FABRICATORS, INC.**

New York 12, New York

\*Dupont trademark



# PLANET SALES CORPORATION

BLOOMFIELD, NEW JERSEY

## Universal Replacement Type Capacitors

### "LYTICAP"

#### Single Section Electrolytics — Type "L"

Hermetically sealed in aluminum tubes, covered with red Kraftboard insulating jackets — tinned brass leads, guaranteed for one year.

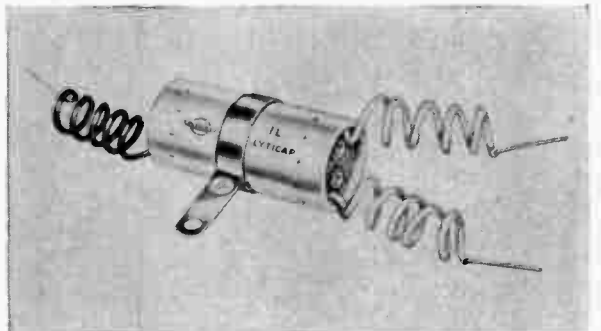


CAT. NO.	MFD.	SIZE*	LIST PRICE
<b>500 WVDC</b>			
L-5-500	5	3/4 x 1 5/8	\$1.25
L-10-500	10	7/8 x 2 1/8	1.35
L-20-500	20	1 x 2 3/8	1.60
L-30-500	30	1 x 2 7/8	1.75
<b>450 WVDC</b>			
L-4-450	4	5/8 x 1 5/8	1.15
L-8-450	8	3/4 x 1 7/8	1.25
L-10-450	10	3/4 x 1 5/8	1.30
L-12-450	12	7/8 x 1 5/8	1.35
L-16-450	16	7/8 x 2 1/8	1.40
L-20-450	20	1 x 2 1/8	1.55
L-30-450	30	1 x 2 3/8	1.70
L-40-450	40	1 x 2 7/8	1.80
L-50-450	50	1 1/4 x 2 1/8	2.10
L-60-450	60	1 1/4 x 2 1/8	2.40
L-80-450	80	1 3/8 x 2 1/8	2.80
<b>350 WVDC</b>			
L-8-350	8	5/8 x 1 5/8	1.20
L-16-350	16	7/8 x 1 5/8	1.40
L-20-350	20	7/8 x 1 5/8	1.45
L-30-350	30	7/8 x 2 1/8	1.65
L-40-350	40	1 x 2 1/8	1.75
<b>250 WVDC</b>			
L-5-250	5	5/8 x 1 5/8	1.00
L-10-250	10	5/8 x 1 5/8	1.20
L-20-250	20	3/4 x 1 5/8	1.35
L-24-250	24	3/4 x 1 5/8	1.35
L-30-250	30	3/4 x 1 5/8	1.45
L-40-250	40	7/8 x 1 3/4	1.55
<b>150 WVDC</b>			
L-5-150	5	5/8 x 1 1/8	\$1.00
L-8-150	8	1/2 x 1 3/8	1.05
L-10-150	10	1/2 x 1 3/8	1.05
L-16-150	16	5/8 x 1 3/8	1.15
L-20-150	20	5/8 x 1 3/8	1.20
L-30-150	30	3/4 x 1 3/8	1.30

CAT. NO.	MFD.	SIZE*	LIST PRICE
<b>150 WVDC (Cont'd)</b>			
L-40-150	40	3/4 x 1 5/8	1.35
L-50-150	50	3/4 x 2 1/8	1.40
L-80-150	80	7/8 x 2 1/8	1.60
L-100-150	100	7/8 x 2 3/8	1.75
L-150-150	150	1 x 2 1/8	1.90
<b>50 WVDC</b>			
L-1-50	1	1/2 x 1 1/8	.90
L-3-50	3	1/2 x 1 1/8	.90
L-5-50	5	1/2 x 1 1/8	1.00
L-10-50	10	1/2 x 1 1/8	1.00
L-25-50	25	1/2 x 1 5/8	1.05
L-50-50	50	5/8 x 1 5/8	1.20
L-100-50	100	3/4 x 1 5/8	1.40
L-150-50	150	7/8 x 1 5/8	1.55
L-250-50	250	1 x 2 1/8	1.75
<b>25 WVDC</b>			
L-10-25	10	1/2 x 1 1/8	1.00
L-25-25	25	1/2 x 1 5/8	1.00
L-50-25	50	5/8 x 1 5/8	1.10
L-100-25	100	3/4 x 1 5/8	1.35
L-250-25	250	7/8 x 2 1/8	1.70
L-500-25	500	1 x 2 3/8	2.30
<b>12 WVDC</b>			
L-100-12	100	5/8 x 1 7/8	1.20
L-250-12	250	3/4 x 2 1/8	1.45
L-500-12	500	7/8 x 2 3/8	1.70
<b>6 WVDC</b>			
L-500-6	500	3/4 x 1 5/8	1.55
L-1000-6	1000	7/8 x 2 1/8	1.90
L-1500-6	1500	7/8 x 2 3/8	2.10
L-2000-6	2000	1 x 2 3/8	2.30
<b>3 WVDC</b>			
L-1000-3	1000	7/8 x 2 1/8	1.80
L-1500-3	1500	7/8 x 2 1/8	2.10
L-2000-3	2000	1 x 2 3/8	2.30

#### Dual Section Electrolytics — Type "IL"

Hermetically sealed in aluminum tubes with completely flexible leads. U/L Approved, plastic coated leads are rivetted directly to the condenser end disc, eliminating the use of rigid terminal risers, allowing capacitor to fit into smaller space, and eliminating lead breakage. IL capacitors have wrap around mounting strap and are common negative, guaranteed for one year.



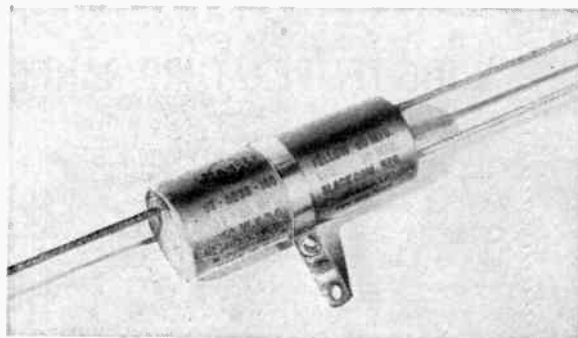
CAT. NO.	MFD.	SIZE*	LIST PRICE
<b>450 WVDC</b>			
IL-2x8-450	8+ 8	7/8 x 2 1/8	\$1.70
IL-2x20-450	20+20	1 x 2 1/8	2.50
IL-2x30-450	30+30	1 1/4 x 2 1/8	3.00
IL-2x40-450	40+40	1 3/8 x 2 1/8	3.40

\* Dimensions are for metal tubes. Add 1/16" to diameter and 1/8" to length for over-all dimensions over cardboard insulating tube.

CAT. NO.	MFD.	SIZE*	LIST PRICE
<b>150 WVDC</b>			
IL-2x20x150	20+20	3/4 x 1 5/8	1.65
IL-2x30-150	30+30	7/8 x 1 5/8	1.80
IL-4020-150	40+20	7/8 x 1 5/8	1.75
IL-2x40-150	40+40	7/8 x 2 1/8	1.85
IL-5030-150	50+30	7/8 x 2 1/8	1.95
IL-2x50-150	50+50	1 x 2 1/8	2.10
IL-8040-150	80+40	1 x 2 3/8	2.25

# PLANET SALES CORPORATION

BLOOMFIELD, NEW JERSEY



## Universal Replacement Type Capacitors

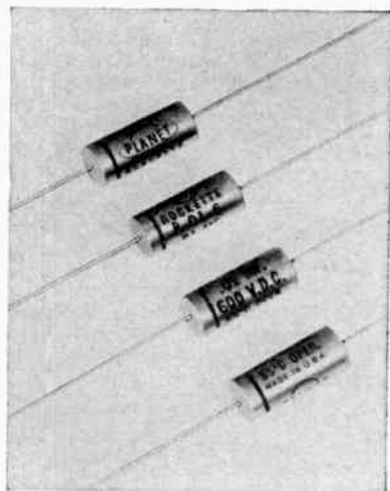
### Cardboard Tube Electrolytics — Type "CT"

Constructed in strong red cardboard tubes, wax impregnated — long insulated stranded leads of U/L approved wire — high temperature wax end-fill — wrap around mounting strap. Guaranteed for one year.

CAT. NO.	MFD.	WVDC	SIZE	LIST PRICE
<b>DUAL UNITS — COMMON NEGATIVE</b>				
CT-2x20-150	20+20	150	3/4 x 2 1/2	\$1.65
CT-2x30-150	30+30	150	7/8 x 2 1/2	1.80
CT-4020-150	40+20	150	7/8 x 2 1/2	1.75
CT-2x40-150	40+40	150	1 x 2 1/2	1.85
CT-5030-150	50+30	150	1 x 2 1/2	1.95
CT-2x50-150	50+50	150	1 x 3	2.10
CT-8040-150	80+40	150	1 x 3 1/4	2.25

CAT. NO.	MFD.	WVDC	SIZE	LIST PRICE
<b>DUAL UNITS — SEPARATE NEGATIVE</b>				
CT-2x20-150-SS	20+20	150	1 x 2 3/8	2.05

CAT. NO.	MFD.	WVDC	SIZE	LIST PRICE
<b>TRIPLE UNITS — COMMON NEGATIVE</b>				
CT-3x20-150	20+20+20	150	1 x 2 1/2	\$2.20
CT-302520-150	30+25+20	150	1 x 2 1/2	2.25
CT-402020-150	40+20+20	150	1 x 3	2.25
CT-403020-150	40+30+20	150	1 x 3	2.35
CT-404020-150	40+40+20	150	1 x 3	2.40
CT-3x40-150	40+40+40	150	J x 3 1/4	2.45
CT-503020-150	50+30+20	150	1 x 3	2.45
CT-302	30+20/20	150/25	1 x 2 1/2	2.10
CT-303	40+30/20	150/25	1 x 3	2.20
CT-304	50+50/20	150/25	1 x 3 1/4	2.50
CT-305	50+30/20	150/25	1 x 3	2.35



## All Purpose Paper Capacitors "ROCKETTES"

Planet ROCKETTES are impregnated and jacketed with a HARD-as-ROCK plastic which will not dry out, shrink away from the leads nor develop fissures nor cracks, thus guaranteeing against the entrance of moisture and guaranteeing good shelf life and long service life. The coiled heads of the leads are securely soldered to the foil, which is imbedded in the same plastic used as an impregnant, making it impossible for them to work loose or pull out. ROCKETTES have exceptionally high insulation resistance which is maintained proportionately over the entire temperature range of  $-30^{\circ}$  to  $+85^{\circ}$  C.

CAT. NO.	MFD.	SIZE	LIST PRICE
<b>600 WVDC</b>			
R-001-6	.001	1 1/2 x 1	\$.25
R-002-6	.002	1 1/2 x 1	.25
R-003-6	.003	3/8 x 1	.25
R-004-6	.004	3/8 x 1	.25
R-0047-6	.0047	3/8 x 1	.25
R-005-6	.005	3/8 x 1	.25
R-006-6	.006	3/8 x 1	.25
R-01-6	.01	7/8 x 1	.40
R-02-6	.02	7/8 x 1 1/4	.30
R-03-6	.03	7/8 x 1 1/2	.35
R-04-6	.04	1 1/2 x 1 1/2	.35
R-047-6	.047	1 1/2 x 1 3/8	.40
R-05-6	.05	1 1/2 x 1 3/8	.40
R-1-6	.1	1 1/2 x 1 3/8	.45

CAT. NO.	MFD.	SIZE	LIST PRICE
<b>600 WVDC (Cont'd)</b>			
R-2-6	.2	1 1/2 x 2	.55
R-25-6	.25	1 1/2 x 2	.55
R-5-6	.5	1 1/2 x 2 1/8	.80
<b>1600 WVDC</b>			
R-001-16	.001	7/8 x 1 1/8	.55
R-002-16	.002	3/8 x 1 1/8	.55
R-003-16	.003	7/8 x 1 1/4	.55
R-005-16	.005	1/2 x 1 1/4	.55
R-0075-16	.0075	7/8 x 1 1/4	.60
R-008-16	.008	7/8 x 1 1/4	.60
R-01-16	.01	7/8 x 1 1/2	.60
R-02-16	.02	7/8 x 1 3/4	.60
R-05-16	.05	1 1/2 x 2	.70

# VITRAMON<sup>®</sup>

## CAPACITORS

MINIATURE • RUGGED  
LOW LOSS • LOW NOISE  
STABLE • VAPORPROOF  
WIDE TEMPERATURE RANGE

The biggest names in electronics use VITRAMON capacitors in guided missiles, jet ignition, proximity fuses and in radar, servo, guidance, fire control, telemetering and carrier telephone systems.

If substitutes are not good enough . . . if you need the best . . . write today!

There are many kinds of capacitors . . . some stable . . . or rugged . . . or vaporproof . . . or tiny . . . some very good at averting loss or noise . . . or efficient over a wide temperature range. Some capacitors combine two, or even three of these features.

### "VITRAMON" Capacitors Give You All 7

Only two materials go into "VITRAMON" Capacitors . . . porcelain enamel for the dielectric and encasing insulation . . . fine-silver for the electrodes. Perfectly bonded, the two become, effectively, one homogenous unit —

### Only "VITRAMON" Gives You All 7

#### "VITRAMON" Capacitors

##### AXIAL-LEAD SERIES

##### CUSTOMER NET PRICES EACH

Capacity Value	1-49	50-99	100-499	500-999
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##### 5% Tolerance Only

.5-43 mmf.	.57	.45	.38	.35
47-91 mmf.	.74	.58	.49	.45
100-200 mmf.	.83	.65	.55	.50
220-430 mmf.	1.05	.83	.69	.63
470-620 mmf.	1.25	.96	.83	.76
680-910 mmf.	1.74	1.38	1.16	1.05
1000-2000 mmf.	1.98	1.57	1.32	1.20
2200-3000 mmf.	4.63	4.41	2.95	2.85
3300-4300 mmf.	5.03	4.86	3.35	3.30
4700-6800 mmf.	5.91	5.71	3.94	3.89

##### 2% Tolerance Only

.5-43 mmf.	.71	.56	.48	.44
47-91 mmf.	.92	.73	.62	.57
100-200 mmf.	1.05	.82	.69	.63
220-430 mmf.	1.30	1.04	.87	.79
470-620 mmf.	1.56	1.20	1.04	.95
680-910 mmf.	2.18	1.73	1.45	1.32
1000-2000 mmf.	2.48	1.96	1.65	1.50
2200-3000 mmf.	5.70	5.40	3.95	3.90
3300-4300 mmf.	6.27	6.06	4.18	4.13
4700-6800 mmf.	7.40	7.15	4.93	4.88

##### 1% Tolerance Only

.5-43 mmf.	.80	.63	.54	.49
47-91 mmf.	1.03	.81	.69	.63
100-200 mmf.	1.17	.91	.77	.70
220-430 mmf.	1.49	1.16	.97	.89
470-620 mmf.	1.76	1.34	1.17	1.07
680-910 mmf.	2.45	1.93	1.63	1.47
1000-2000 mmf.	2.78	2.19	1.85	1.68
2200-3000 mmf.	6.50	6.25	4.45	4.40
3300-4300 mmf.	7.05	6.82	4.70	4.65
4700-6800 mmf.	8.28	8.00	5.52	5.47

**VITRAMON**  
INCORPORATED



### Stable over a Wide Temperature range.

The solid block of "quality crockery" in which the silver electrodes are immersed makes "VITRAMON" Capacitors both Rugged and vaporproof.

Pure materials plus perfect bonding combine to eliminate both Loss and Noise.

Finally . . . their unique construction allows for "layering" the electrodes so that much greater active dielectric area can be squeezed into the same cubic content . . . They're Miniature.



Two materials — a monolithic block of porcelain enamel and fine-silver electrodes — fused into one strong, stable, efficient and effectively homogenous unit.

### TOLERANCES

Standard Tolerance is  $\pm 5\%$  of nominal, with a minimum of  $\pm 0.25$  mmf. Closer tolerances are available as detailed in the Price List at the left.

### CAPACITIES

Capacities available from stock range from 0.5 mmf to 6800 mmf, as measured at 1 mc.

### LEADS

Leads are of tinned copper, high-temperature brazed to the Capacitors to withstand 5 pounds of axial pull, and 2 pounds of pull at 90°, subsequently reversed 180°. This strength is maintained through 200° C, and soft-soldered connection may be made as close as 1/8-inch to the body. For the two smaller-size bodies, leads are No. 22 wire; on the two larger bodies No. 20 wire is used. All provide maximum resistance to corrosion.

### MARKINGS

The Capacity and Voltage Rating of every "Vitramon" capacitor are indicated by numerals, and all are identified by the "Vitramon" Trade Mark.

### - A / R SERIES

In addition to the Axial-Lead Series shown here, the new Axial/Radial-Lead Series has been developed to meet broader applications. It is interchangeable with the -A Series, and it offers the following features: (1) unitized electrode/lead construction, plus (2) better adaptability to both axial- and radial-lead applications.

### Catalog Capacity No. (mmf)

#### 500 VDCW

CY13C0R5J-A	0.5
CY13C1R0J-A	1.0
CY13C1R5J-A	1.5
CY13C2R2J-A	2.2
CY13C2R7J-A	2.7

#### 300 VDCW

CY13C3R0J-A	3.0
CY13C3R3J-A	3.3
CY13C3R6J-A	3.6
CY13C3R9J-A	3.9
CY13C4R3J-A	4.3
CY13C4R7J-A	4.7
CY13C5R1J-A	5.1
CY13C5R6J-A	5.6
CY13C6R2J-A	6.2
CY13C6R8J-A	6.8

#### 500 VDCW

CY13C7R5J-A	7.5
CY13C8R2J-A	8.2
CY13C9R1J-A	9.1
CY13C100J-A	10
CY13C110J-A	11
CY13C120J-A	12
CY13C130J-A	13
CY13C150J-A	15
CY13C160J-A	16

#### 300 VDCW

CY13C180J-A	18
CY13C200J-A	20
CY13C220J-A	22
CY13C240J-A	24
CY13C270J-A	27
CY13C300J-A	30
CY13C330J-A	33
CY13C360J-A	36
CY13C390J-A	39
CY13C430J-A	43
CY13C470J-A	47

#### 500 VDCW

CY13C510J-A	51
CY13C560J-A	56
CY13C620J-A	62
CY13C680J-A	68
CY13C750J-A	75

#### 300 VDCW

CY13C820J-A	82
CY13C910J-A	91
CY13C101J-A	100
CY13C111J-A	110
CY13C121J-A	120
CY13C131J-A	130
CY13C151J-A	150
CY13C161J-A	160
CY13C181J-A	180
CY13C201J-A	200

#### 300 VDCW

CY13C221J-A	220
CY13C241J-A	240
CY13C271J-A	270
CY13C301J-A	300

### Catalog Capacity No. (mmf)

#### 500 VDCW

CY17C221J-A	220
CY17C241J-A	240
CY17C271J-A	270
CY17C301J-A	300
CY17C331J-A	330
CY17C361J-A	360
CY17C391J-A	390
CY17C431J-A	430
CY17C471J-A	470

#### 300 VDCW

CY17C511J-A	510
CY17C561J-A	560
CY17C621J-A	620
CY17C681J-A	680
CY17C751J-A	750
CY17C821J-A	820
CY17C911J-A	910
CY17C102J-A	1000

#### 500 VDCW

CY22C511J-A	510
CY22C561J-A	560
CY22C621J-A	620
CY22C681J-A	680
CY22C751J-A	750
CY22C821J-A	820
CY22C911J-A	910
CY22C102J-A	1000

#### 300 VDCW

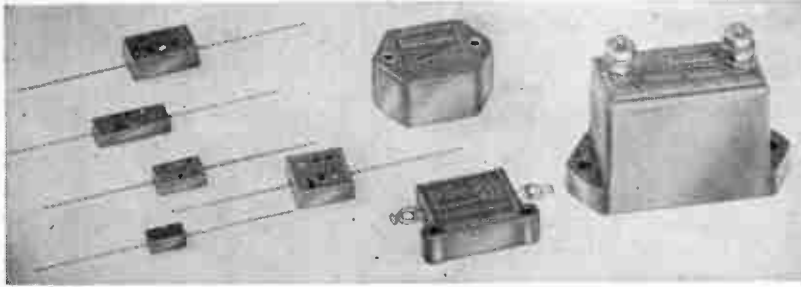
CY22C112J-A	1100
CY22C122J-A	1200
CY22C132J-A	1300
CY22C152J-A	1500
CY22C162J-A	1600
CY22C182J-A	1800
CY22C202J-A	2000
CY22C220J-A	2200
CY22C242J-A	2400

#### 500 VDCW

CY32C112J-A	1100
CY32C122J-A	1200
CY32C132J-A	1300
CY32C152J-A	1500
CY32C162J-A	1600
CY32C182J-A	1800
CY32C202J-A	2000
CY32C222J-A	2200
CY32C242J-A	2400
CY32C272J-A	2700
CY32C302J-A	3000
CY32C332J-A	3300

#### 300 VDCW

CY32C362J-A	3600
CY32C392J-A	3900
CY32C432J-A	4300
CY32C472J-A	4700
CY32C512J-A	5100
CY32C562J-A	5600
CY32C622J-A	6200
CY32C682J-A	6800

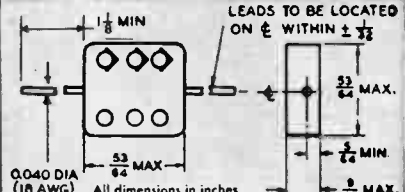
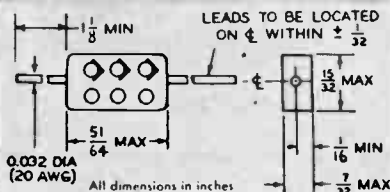
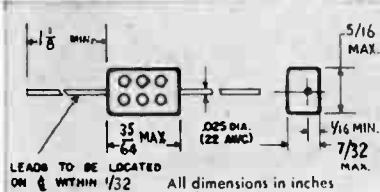


# MICAMOLD MICA Capacitors

## TYPE CM-15 Silvered Mica

## TYPE CM-20 Silvered Mica

## TYPE CM-30 Silvered Mica



### 500 VDCW

CAP. $\mu\mu\text{f}$	TYPE DESIGNATION	LIST PRICE TOLERANCE		
		"J" $\pm 5\%$	"G" $\pm 2\%$	"F" $\pm 1\%$
1	CM-15-C-010†	\$0.40		
2	CM-15-C-020†	.40		
3	CM-15-C-030†	.40		
5	CM-15-C-050†	.40		
10	CM-15-C-100	.40		
12	CM-15-C-120	.40		
15	CM-15-C-150	.40		
18	CM-15-C-180	.40		
20	CM-15-C-200	.40		
22	CM-15-C-220	.40		
24	CM-15-E-240	.40		
27	CM-15-E-270	.40	\$0.46	
30	CM-15-E-300	.40	.46	
33	CM-15-E-330	.40	.46	
36	CM-15-E-360	.40	.46	
39	CM-15-E-390	.40	.46	
43	CM-15-E-430	.40	.46	
47	CM-15-E-470	.40	.46	
50	CM-15-E-500	.40	.46	\$0.50
51	CM-15-E-510	.40	.46	.50
56	CM-15-E-560	.40	.46	.50
62	CM-15-E-620	.40	.46	.50
68	CM-15-E-680	.40	.46	.50
75	CM-15-E-750	.40	.46	.50
82	CM-15-E-820	.45	.52	.56
91	CM-15-E-910	.45	.52	.56
100	CM-15-E-101	.45	.52	.56
110	CM-15-E-111	.45	.52	.56
120	CM-15-E-121	.45	.52	.56
130	CM-15-E-131	.45	.52	.56
150	CM-15-E-151	.45	.52	.56
160	CM-15-E-161	.50	.58	.63
180	CM-15-E-181	.50	.58	.63
200	CM-15-E-201	.50	.58	.63
220	CM-15-E-221	.55	.63	.69
240	CM-15-E-241	.55	.63	.69
250	CM-15-E-251	.55	.63	.69
270	CM-15-E-271	.60	.69	.75
300	CM-15-E-301	.60	.69	.75
330	CM-15-E-331	.65	.75	.81
360	CM-15-E-361	.70	.81	.88
390	CM-15-E-391	.70	.81	.88
430*	CM-15-E-431	.75	.86	.94
470*	CM-15-E-471	.80	.92	1.00
500*	CM-15-E-501	.80	.92	1.00
510*	CM-15-E-511	.80	.92	1.00

\*Voltage Rating 300VDCW.

†Closest Tolerance  $\pm 0.5 \mu\mu\text{f}$ .

### SPECIFICATIONS NOTES:

$\pm 1/2\%$  tolerance available above 100  $\mu\mu\text{f}$ . at double  $\pm 5\%$  price.

CM19, 20 available "E" characteristic above 33  $\mu\mu\text{f}$ .

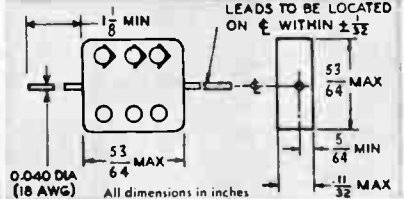
### 500 VDCW

CAP. $\mu\mu\text{f}$	TYPE DESIGNATION	LIST PRICE TOLERANCE		
		"J" $\pm 5\%$	"G" $\pm 2\%$	"F" $\pm 1\%$
5	CM-20-C-050	\$0.40		
10	CM-20-C-100	.40		
12	CM-20-C-120	.40		
15	CM-20-C-150	.40		
18	CM-20-C-180	.40		
20	CM-20-C-200	.40		
22	CM-20-C-220	.40		
24	CM-20-C-240	.40		
27	CM-20-C-270	.40	\$0.46	
30	CM-20-C-300	.40	.46	
33	CM-20-C-330	.40	.46	
36	CM-20-C-360	.40	.46	
39	CM-20-C-390	.40	.46	
43	CM-20-C-430	.40	.46	
47	CM-20-C-470	.40	.46	
50	CM-20-C-500	.40	.46	\$0.50
51	CM-20-C-510	.40	.46	.50
56	CM-20-C-560	.40	.46	.50
62	CM-20-C-620	.40	.46	.50
68	CM-20-C-680	.40	.46	.50
75	CM-20-C-750	.40	.46	.50
82	CM-20-C-820	.40	.46	.50
91	CM-20-C-910	.40	.46	.50
100	CM-20-C-101	.40	.46	.50
110	CM-20-C-111	.45	.52	.56
120	CM-20-C-121	.45	.52	.56
130	CM-20-C-131	.45	.52	.56
150	CM-20-C-151	.45	.52	.56
160	CM-20-C-161	.45	.52	.56
180	CM-20-C-181	.45	.52	.56
200	CM-20-D-201	.45	.52	.56
220	CM-20-D-221	.45	.52	.56
240	CM-20-D-241	.55	.63	.69
250	CM-20-D-251	.55	.63	.69
270	CM-20-D-271	.55	.63	.69
300	CM-20-D-301	.55	.63	.69
330	CM-20-D-331	.55	.63	.69
360	CM-20-D-361	.55	.63	.69
390	CM-20-D-391	.65	.75	.81
430	CM-20-D-431	.65	.75	.81
470	CM-20-D-471	.70	.81	.88
500	CM-20-D-501	.70	.81	.88
510	CM-20-D-511	.70	.81	.88
560	CM-20-D-561	.75	.86	.94
620	CM-20-D-621	.75	.86	.94
680	CM-20-D-681	.80	.92	1.00
750	CM-20-D-751	.80	.92	1.00
820	CM-20-D-821	.85	.98	1.06
910	CM-20-D-911	.85	.98	1.06
1000	CM-20-D-102	.90	1.04	1.13
1100	CM-20-D-112	.90	1.04	1.13
1200	CM-20-D-122	1.00	1.15	1.25
1300	CM-20-D-132	1.00	1.15	1.25
1500	CM-20-D-152	1.10	1.27	1.38
1600	CM-20-D-162	1.10	1.27	1.38
1800	CM-20-D-182	1.20	1.38	1.50
2000	CM-20-D-202	1.30	1.50	1.63

### 500 VDCW

CAP. $\mu\mu\text{f}$	TYPE DESIGNATION	LIST PRICE TOLERANCE		
		"J" $\pm 5\%$	"G" $\pm 2\%$	"F" $\pm 1\%$
510	CM-30-E-511	\$0.70	\$0.81	\$0.88
560	CM-30-E-561	.75	.86	.94
620	CM-30-E-621	.75	.86	.94
680	CM-30-E-681	.80	.92	1.00
750	CM-30-E-751	.80	.92	1.00
820	CM-30-E-821	.85	.98	1.06
910	CM-30-E-911	.90	1.04	1.13
1000	CM-30-E-102	1.00	1.15	1.25
1100	CM-30-E-112	1.00	1.15	1.25
1200	CM-30-E-122	1.15	1.32	1.44
1300	CM-30-E-132	1.15	1.32	1.44
1500	CM-30-E-152	1.25	1.44	1.56
1600	CM-30-E-162	1.25	1.44	1.56
1800	CM-30-E-182	1.25	1.44	1.56
2000	CM-30-E-202	1.35	1.55	1.69
2200	CM-30-E-222	1.35	1.55	1.69
2400	CM-30-E-242	1.60	1.84	2.00
2500	CM-30-E-252	1.60	1.84	2.00
2700	CM-30-E-272	1.80	2.07	2.25
3000	CM-30-E-302	1.90	2.19	2.38
3300	CM-30-E-332	1.90	2.19	2.38
3600	CM-30-E-362	2.00	2.30	2.50
3900	CM-30-E-392	2.00	2.30	2.50
4300	CM-30-E-432	2.10	2.42	2.63
4700	CM-30-E-472	2.10	2.42	2.63
5000	CM-30-E-502	2.15	2.47	2.69
5100	CM-30-E-512	2.15	2.47	2.69
5600	CM-30-E-562	2.25	2.59	2.81
6200	CM-30-E-622	2.40	2.76	3.00

## TYPE CM-35 Silvered Mica



### 500 VDCW

CAP. $\mu\mu\text{f}$	TYPE DESIGNATION	LIST PRICE TOLERANCE		
		"J" $\pm 5\%$	"G" $\pm 2\%$	"F" $\pm 1\%$
6800*	CM-35-E-682	\$2.65	\$3.05	\$3.31
7500*	CM-35-E-752	2.80	3.22	3.50
8200*	CM-35-E-822	3.00	3.45	3.75
9100*	CM-35-E-912	3.20	3.68	4.00
10000*	CM-35-E-103	3.50	4.03	4.38
12000*	CM-35-E-123	4.25	4.89	5.31
15000*	CM-35-E-153	5.00	5.75	6.25
6800	VCM-35-E-682	2.90	3.34	3.62
7500	VCM-35-E-752	3.05	3.51	3.81
8200	VCM-35-E-822	3.30	3.80	4.13
9100	VCM-35-E-912	3.50	4.03	4.38
10000	VCM-35-E-103	3.85	4.43	4.81

All capacities marked with \* are 300VWV.

NOTE: For  $\pm 1/2\%$  tolerance, double the 5% list prices.



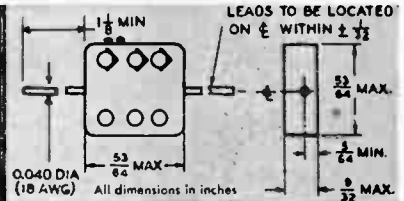
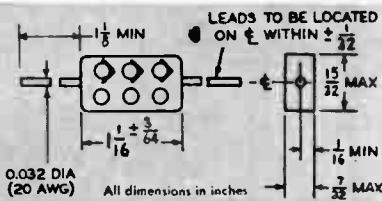
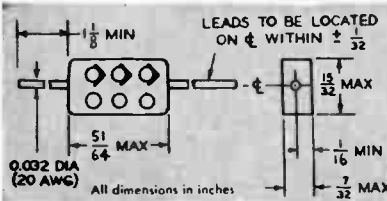
**MICAMOLD SALES..**

**completely stocked for immediate delivery**

**TYPE CM-20 Foil Mica**

**TYPE CM-25 Foil Mica**

**TYPE CM-30 Foil Mica**

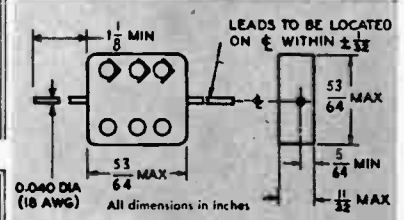


500 VDCW				
CAP. $\mu\mu\text{f}$	TYPE DESIGNATION	LIST PRICE TOLERANCE		
		"M" $\pm 20\%$	"K" $\pm 10\%$	"J" $\pm 5\%$
5	CM-20-B-050	\$0.30	\$0.33	
10	CM-20-B-100	.30	.33	\$0.38
12	CM-20-B-120	.30	.33	.38
15	CM-20-B-150	.30	.33	.38
18	CM-20-B-180	.30	.33	.38
20	CM-20-B-200	.30	.33	.38
22	CM-20-B-220	.30	.33	.38
24	CM-20-B-240	.30	.33	.38
27	CM-20-B-270	.30	.33	.38
30	CM-20-B-300	.30	.33	.38
33	CM-20-B-330	.20	.22	.25
36	CM-20-B-360	.20	.22	.25
39	CM-20-B-390	.20	.22	.25
43	CM-20-B-430	.20	.22	.25
47	CM-20-B-470	.20	.22	.25
50	CM-20-B-500	.20	.22	.25
51	CM-20-B-510	.20	.22	.25
56	CM-20-B-560	.20	.22	.25
62	CM-20-B-620	.20	.22	.25
68	CM-20-B-680	.20	.22	.25
75	CM-20-B-750	.20	.22	.25
82	CM-20-B-820	.20	.22	.25
91	CM-20-B-910	.20	.22	.25
100	CM-20-B-101	.20	.22	.25
110	CM-20-B-111	.20	.22	.25
120	CM-20-B-121	.20	.22	.25
130	CM-20-B-131	.25	.28	.31
150	CM-20-B-151	.25	.28	.31
160	CM-20-B-161	.25	.28	.31
180	CM-20-B-181	.25	.28	.31
200	CM-20-B-201	.25	.28	.31
220	CM-20-B-221	.25	.28	.31
240	CM-20-B-241	.30	.33	.38
250	CM-20-B-251	.30	.33	.38
270	CM-20-B-271	.30	.33	.38
300	CM-20-B-301	.30	.33	.38
330	CM-20-B-331	.30	.33	.38
360	CM-20-B-361	.30	.33	.38
390	CM-20-B-391	.30	.33	.38
430	CM-20-B-431	.30	.33	.38
470	CM-20-B-471	.30	.33	.38
500	CM-20-B-501	.30	.33	.38
510	CM-20-B-511	.30	.33	.38
560	CM-20-B-561	.35	.39	.44
620	CM-20-B-621	.35	.39	.44
680	CM-20-B-681	.35	.39	.44
750	CM-20-B-751	.35	.39	.44
820	CM-20-B-821	.40	.44	.50
910	CM-20-B-911	.45	.50	.56
1000	CM-20-B-102	.45	.50	.56
1100	CM-20-B-112	.50	.55	.63
1200	CM-20-B-122	.50	.55	.63
1300	CM-20-B-132	.50	.55	.63
1500	CM-20-B-152	.60	.66	.75
1600	CM-20-B-162	.60	.66	.75
1800	CM-20-B-182	.70	.77	.88
2000	CM-20-B-202	.75	.83	.94

500 VDCW			
CAP. $\mu\mu\text{f}$	TYPE DESIGNATION	LIST PRICE TOLERANCE	
		$\pm 10\%$ ONLY	
51	CM-25-B-510K	\$0.28	
56	CM-25-B-560K	.28	
62	CM-25-B-620K	.28	
68	CM-25-B-680K	.28	
75	CM-25-B-750K	.28	
82	CM-25-B-820K	.28	
91	CM-25-B-910K	.28	
100	CM-25-B-101K	.28	
110	CM-25-B-111K	.28	
120	CM-25-B-121K	.28	
130	CM-25-B-131K	.28	
150	CM-25-B-151K	.28	
160	CM-25-B-161K	.28	
180	CM-25-B-181K	.28	
200	CM-25-B-201K	.28	
220	CM-25-B-221K	.28	
240	CM-25-B-241K	.33	
250	CM-25-B-251K	.33	
270	CM-25-B-271K	.33	
300	CM-25-B-301K	.33	
330	CM-25-B-331K	.33	
360	CM-25-B-361K	.33	
390	CM-25-B-391K	.33	
430	CM-25-B-431K	.33	
470	CM-25-B-471K	.33	
500	CM-25-B-501K	.33	
510	CM-25-B-511K	.33	
560	CM-25-B-561K	.39	
620	CM-25-B-621K	.39	
680	CM-25-B-681K	.39	
750	CM-25-B-751K	.39	
820	CM-25-B-821K	.44	
910	CM-25-B-911K	.50	
1000	CM-25-B-102K	.50	
1100	CM-25-B-112K	.55	
1200	CM-25-B-122K	.55	
1300	CM-25-B-132K	.55	
1500	CM-25-B-152K	.66	
1600	CM-25-B-162K	.66	
1800	CM-25-B-182K	.77	
2000	CM-25-B-202K	.83	

500 VDCW				
CAP. $\mu\mu\text{f}$	TYPE DESIGNATION	LIST PRICE TOLERANCE		
		"M" $\pm 20\%$	"K" $\pm 10\%$	"J" $\pm 5\%$
510	CM-30-B-511	\$0.30	\$0.36	\$0.39
560	CM-30-B-561	.30	.36	.39
620	CM-30-B-621	.30	.36	.39
680	CM-30-B-681	.30	.36	.39
750	CM-30-B-751	.30	.36	.39
820	CM-30-B-821	.30	.36	.39
910	CM-30-B-911	.30	.36	.39
1000	CM-30-B-102	.35	.39	.44
1100	CM-30-B-112	.35	.39	.44
1200	CM-30-B-122	.35	.39	.44
1300	CM-30-B-132	.35	.39	.44
1500	CM-30-B-152	.40	.44	.50
1600	CM-30-B-162	.40	.44	.50
1800	CM-30-B-182	.45	.50	.56
2000	CM-30-B-202	.45	.50	.56
2200	CM-30-B-222	.45	.50	.56
2400	CM-30-B-242	.50	.55	.63
2500	CM-30-B-252	.50	.55	.63
2700	CM-30-B-272	.50	.55	.63
3000	CM-30-B-302	.60	.66	.75
3300	CM-30-B-332	.60	.66	.75
3600	CM-30-B-362	.60	.66	.75
3900	CM-30-B-392	.65	.75	.85
4300	CM-30-B-432	.65	.75	.85
4700	CM-30-B-472	.65	.75	.85
5000	CM-30-B-502	.70	.81	.91
5100	CM-30-B-512	.70	.81	.91
5600	CM-30-B-562	.70	.81	.91
6200	CM-30-B-622	.90	1.04	1.17

**TYPE CM-35 Foil Mica**



500 VDCW				
CAP. $\mu\mu\text{f}$	TYPE DESIGNATION	LIST PRICE TOLERANCE		
		"M" $\pm 20\%$	"K" $\pm 10\%$	"J" $\pm 5\%$
6800*	CM-35-B-682	.95	1.05	1.19
7500*	CM-35-B-752	1.00	1.10	1.25
8200*	CM-35-B-822	1.15	1.27	1.44
9100*	CM-35-B-912	1.15	1.27	1.44
10000*	CM-35-B-103	1.40	1.54	1.75
12000*	CM-35-B-123	1.60	1.76	2.00
15000*	CM-35-B-153	2.00	2.20	2.50
6800	VCM-35-B-682	1.05	1.16	1.31
7500	VCM-35-B-752	1.15	1.27	1.44
8200	VCM-35-B-822	1.30	1.43	1.62
9100	VCM-35-B-912	1.30	1.43	1.62
10000	VCM-35-B-103	1.55	1.71	1.94

All capacities marked with \* are 300WV.

**NON-STANDARD CAPACITORS**

To meet the ever increasing demands for non-standard capacitors, Micamold Electronic Sales, Inc. stocks large quantities of capacitors not listed in the Mica section. Thus, immediate delivery of almost any non-standard capacitor can be made. These capacitors, though not listed, are manufactured to meet or exceed MIL-C-5A specifications. The price of any non-standard capacitor will be the same as the list price of the next highest standard capacity value catalogued.



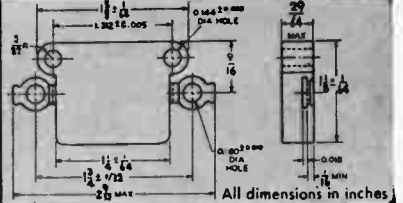
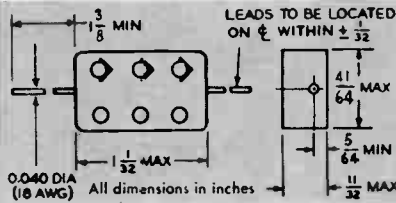
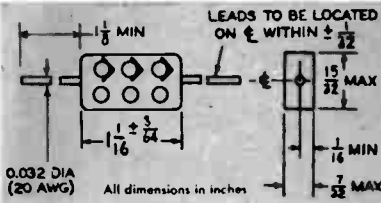
**MICAMOLD SALES ..**

**equipped to ship to you within 24 hours**

**TYPE CM-25 Silvered Mica**

**TYPE CM-40 Foil Mica**

**TYPE CM-50 Foil Mica**



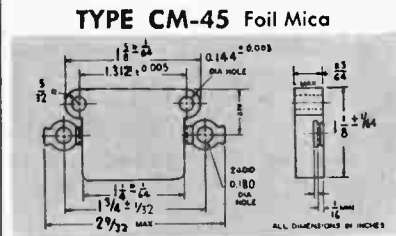
500 VDCW			LIST PRICE TOLERANCE		
CAP. $\mu\mu\text{f}$	TYPE DESIGNATION	$\pm 5\%$	$\pm 2\%$	$\pm 1\%$	
51	CM-25-E-510	\$0.40	\$0.46	\$0.50	
56	CM-25-E-560	.40	.46	.50	
62	CM-25-E-620	.40	.46	.50	
68	CM-25-E-680	.40	.46	.50	
75	CM-25-E-750	.40	.46	.50	
82	CM-25-E-820	.40	.46	.50	
91	CM-25-E-910	.40	.46	.50	
100	CM-25-E-101	.40	.46	.50	
110	CM-25-E-111	.45	.52	.56	
120	CM-25-E-121	.45	.52	.56	
130	CM-25-E-131	.45	.52	.56	
150	CM-25-E-151	.45	.52	.56	
160	CM-25-E-161	.45	.52	.56	
180	CM-25-E-181	.45	.52	.56	
200	CM-25-E-201	.45	.52	.56	
220	CM-25-E-221	.45	.52	.56	
240	CM-25-E-241	.55	.63	.69	
250	CM-25-E-251	.55	.63	.69	
270	CM-25-E-271	.55	.63	.69	
300	CM-25-E-301	.55	.63	.69	
330	CM-25-E-331	.55	.63	.69	
360	CM-25-E-361	.55	.63	.69	
390	CM-25-E-391	.65	.75	.81	
430	CM-25-E-431	.65	.75	.81	
470	CM-25-E-471	.70	.81	.88	
500	CM-25-E-501	.70	.81	.88	
510	CM-25-E-511	.70	.81	.88	
560	CM-25-E-561	.75	.86	.94	
620	CM-25-E-621	.80	.92	1.00	
680	CM-25-E-681	.85	.98	1.06	
750	CM-25-E-751	.90	1.04	1.13	
820	CM-25-E-821	.95	1.09	1.19	
910	CM-25-E-911	1.00	1.15	1.25	
1000	CM-25-E-102	1.10	1.27	1.38	
1100	CM-25-E-112	1.20	1.38	1.50	
1200	CM-25-E-122	1.30	1.50	1.63	
1300	CM-25-E-132	1.40	1.61	1.75	
1500	CM-25-E-152	1.50	1.73	1.88	
1600	CM-25-E-162	1.60	1.84	2.00	
1800	CM-25-E-182	1.70	1.96	2.13	
2000	CM-25-E-202	1.80	2.07	2.25	

500 VDCW			LIST PRICE TOLERANCE		
CAP. $\mu\mu\text{f}$	TYPE DESIGNATION	$\pm 20\%$	$\pm 10\%$	$\pm 5\%$	
2700	CM-40-B-272	\$0.55	\$0.63	\$0.69	
3000	CM-40-B-302	.60	.69	.75	
3300	CM-40-B-332	.65	.75	.81	
3600	CM-40-B-362	.70	.81	.88	
3900	CM-40-B-392	.75	.86	.94	
4300	CM-40-B-432	.80	.92	1.00	
4700	CM-40-B-472	.85	.98	1.06	
5000	CM-40-B-502	.90	1.04	1.13	
5100	CM-40-B-512	.90	1.04	1.13	
5600	CM-40-B-562	1.00	1.15	1.25	
6200	CM-40-B-622	1.05	1.21	1.31	
6800	CM-40-B-682	1.15	1.32	1.44	
7500	CM-40-B-752	1.30	1.50	1.63	
8200	CM-40-B-822	1.40	1.61	1.75	
9100	VCM-40-B-912	1.60	1.84	2.00	
10000	VCM-40-B-103	1.70	1.96	2.13	
9100*	CM-40-B-912	1.30	1.50	1.63	
10000*	CM-40-B-103	1.50	1.73	1.88	

2500 VDCW			LIST PRICE TOLERANCE*		
CAP. $\mu\mu\text{f}$	TYPE DESIGNATION	$\pm 10\%$	$\pm 5\%$	$\pm 2\%$	
2000	CM-50-B-202	\$4.15	\$4.77	\$6.23	
2200	CM-50-B-222	4.40	5.06	6.60	
2400	CM-50-B-242	4.60	5.29	6.90	
2700	CM-50-B-272	4.75	5.49	7.14	
3000	CM-50-B-302	5.10	5.87	7.65	
3300	CM-50-B-332	5.20	5.98	7.80	
3600	CM-50-B-362	5.45	6.27	8.18	
3900	CM-50-B-392	5.70	6.56	8.55	
4300	CM-50-B-432	6.00	6.90	9.00	
4700	CM-50-B-472	6.30	7.25	9.45	
5100	CM-50-B-512	6.50	7.48	9.75	

1200 VDCW			LIST PRICE TOLERANCE*		
CAP. $\mu\mu\text{f}$	TYPE DESIGNATION	$\pm 10\%$	$\pm 5\%$	$\pm 2\%$	
5600	CM-50-B-562	3.30	3.80	4.95	
6200	CM-50-B-622	3.60	4.14	5.40	
6800	CM-50-B-682	3.80	4.37	5.70	
7500	CM-50-B-752	4.10	4.72	6.15	
8200	CM-50-B-822	4.45	5.12	6.68	
9100	CM-50-B-912	4.80	5.52	7.20	
10000	CM-50-B-103	5.10	5.87	7.65	

All capacities marked with \* are 300WV.



**GOVERNMENT INSPECTION**

Micamold capacitors are approved for use in all types of military equipment. Facilities are available for the inspection of capacitors by government inspectors. Orders requiring inspection will be shipped immediately upon completion of inspection procedures. Avoid costly delays by expediting necessary papers through your local government inspector.

2500 VDCW			LIST PRICE TOLERANCE*		
CAP. $\mu\mu\text{f}$	TYPE DESIGNATION	$\pm 10\%$	$\pm 5\%$	$\pm 2\%$	
50	CM-45-B-500	\$1.90	\$2.19	\$2.85	
100	CM-45-B-101	1.90	2.19	2.85	
200	CM-45-B-201	1.90	2.19	2.85	
300	CM-45-B-301	2.25	2.59	3.38	
400	CM-45-B-401	2.30	2.65	3.45	
500	CM-45-B-501	2.40	2.76	3.60	
750	CM-45-B-751	2.60	2.99	3.90	
1000	CM-45-B-102	2.80	3.22	4.20	
1500	CM-45-B-152	3.55	4.08	5.33	
1800	CM-45-B-182	4.00	4.60	6.00	
2000	CM-45-B-202	2.40	2.76	3.60	
2200	CM-45-B-222	2.60	2.99	3.90	
2400	CM-45-B-242	2.75	3.16	4.13	
2700	CM-45-B-272	2.90	3.36	4.35	
3000	CM-45-B-302	3.05	3.51	4.58	
3300	CM-45-B-332	3.05	3.51	4.58	
3600	CM-45-B-362	3.05	3.51	4.58	
3900	CM-45-B-392	1.50	1.73	2.25	
4300	CM-45-B-432	1.55	1.78	2.33	
4700	CM-45-B-472	1.55	1.78	2.33	
5100	CM-45-B-512	1.60	1.84	2.40	
5600	CM-45-B-562	1.65	1.90	2.48	
6200	CM-45-B-622	1.75	2.01	2.63	
6800	CM-45-B-682	1.85	2.13	2.78	
7500	CM-45-B-752	1.90	2.19	2.85	
8200	CM-45-B-822	2.00	2.30	3.00	
9100	CM-45-B-912	2.10	2.42	3.15	
10000	CM-45-B-103	2.15	2.47	3.23	

\*Standard Tolerance  $\pm 10\%$ .

*Immediate Delivery*

Micamold Electronic Sales, Inc. stocks millions of capacitors for immediate delivery and has tremendous quantities of capacitors in the process of manufacture at all times. All capacitors listed are types most frequently used by the electronic industry and are heavily stocked so that delivery can be made immediately upon receipt of an order. Many other types of capacitors are manufactured by Micamold and can be supplied with a minimum of delay.

**No Order Too Large or Too Small!**

**YOUR INQUIRIES ARE INVITED!**



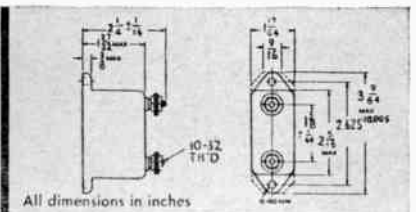
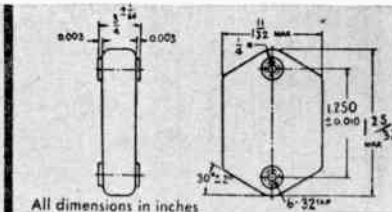
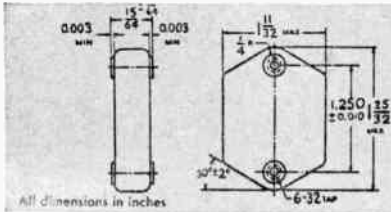
**MICAMOLD ..**

**capacitor pioneers with 33 years of experience**

**TYPE CM-55 Foil Mica**

**TYPE CM-60 Foil Mica**

**TYPE CM-70 Foil Mica**



**2500 VDCW**

CAP. μμf	TYPE DESIGNATION	LIST PRICE TOLERANCE*		
		"K" ±10%	"J" ±5%	"G" ±2%
500	CM-55-B-501	\$2.55	\$2.93	\$3.83
1000	CM-55-B-102	2.90	3.36	4.35
1500	CM-55-B-152	3.55	4.08	5.33
2000	CM-55-B-202	4.25	4.89	6.38
3000	CM-55-B-302	5.10	5.87	7.65

**1200 VDCW**

5000	CM-55-B-502	3.30	3.80	4.95
7500	CM-55-B-752	3.90	4.49	5.88
10000	CM-55-B-103	4.70	5.41	7.05
12000	CM-55-B-123	5.25	6.04	7.88
15000	CM-55-B-153	5.80	6.67	8.70

**600 VDCW**

20000	CM-55-B-203	3.55	4.08	5.33
22000	CM-55-B-223	3.85	4.43	5.78
24000	CM-55-B-243	4.05	4.66	6.08
27000	CM-55-B-273	4.30	4.95	6.45
30000	CM-55-B-303	4.55	5.23	6.83
33000	CM-55-B-333	5.20	5.98	7.80

\*Standard Tolerance ±10%.  
Also available in characteristics C, D and E at extra cost.

**2500 VDCW**

CAP. μμf	TYPE DESIGNATION	LIST PRICE TOLERANCE*		
		"K" ±10%	"J" ±5%	"G" ±2%
5000	CM-60-B-502	\$6.20	\$7.13	\$9.30
7500	CM-60-B-752	6.85	7.88	10.28
10000	CM-60-B-103	7.50	8.63	11.25
12000	CM-60-B-123	7.80	8.97	11.70
15000	CM-60-B-153	8.05	9.26	12.08

**1200 VDCW**

20000	CM-60-B-203	7.05	8.13	10.58
22000	CM-60-B-223	7.35	8.45	11.03
24000	CM-60-B-243	7.60	8.74	11.40
27000	CM-60-B-273	7.85	9.03	11.78
30000	CM-60-B-303	8.10	9.32	12.15
33000	CM-60-B-333	8.35	9.60	12.53

**600 VDCW**

36000	CM-60-B-363	4.15	4.77	6.23
39000	CM-60-B-393	5.10	5.87	7.65
43000	CM-60-B-433	6.05	6.96	9.08
47000	CM-60-B-473	6.80	7.82	10.20

\*Standard Tolerance ±10%.  
Also available in characteristics C, D, E and F to 22,000 μμf and in characteristics C, D and E to 47,000 μμf at extra cost.

**5000 VDCW**

CAP. μμf	TYPE DESIGNATION	LIST PRICE TOLERANCE*	
		"J" %5±	"G" ±2%
500	CM-70-B-501	17.30	20.76
1000	CM-70-B-102	17.30	20.76
1500	CM-70-B-152	17.30	20.76
2000	CM-70-B-202	17.30	20.76
2400	CM-70-B-242	17.30	20.76

**3000 VDCW**

2700	CM-70-B-272	17.30	20.76
3000	CM-70-B-302	17.30	20.76
5000	CM-70-B-502	17.30	20.76
7500	CM-70-B-752	17.30	20.76

**2000 VDCW**

10000	CM-70-B-103	17.30	20.76
15000	CM-70-B-153	17.30	20.76
20000	CM-70-B-203	17.30	20.76

**1500 VDCW**

24000	CM-70-B-243	17.30	20.76
27000	CM-70-B-273	17.30	20.76
30000	CM-70-B-303	17.30	20.76
33000	CM-70-B-333	17.30	20.76
36000	CM-70-B-363	17.30	20.76

39000	CM-70-B-393	17.30	20.76
43000	CM-70-B-433	17.30	20.76
47000	CM-70-B-473	17.30	20.76
51000	CM-70-B-513	17.30	20.76

**1000 VDCW**

75000	CM-70-B-753	17.30	20.76
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**500 VDCW**

100000	CM-70-B-104	19.20	23.04
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\*Standard Tolerance ±5%.  
Also available in characteristics C, D and E at extra cost.

## GOVERNMENT INSPECTION

Micamold capacitors are approved for use in all types of military equipment. Facilities are available for the inspection of capacitors by government inspectors. Orders requiring inspection will be shipped immediately upon completion of inspection procedures. Avoid costly delays by expediting necessary papers through your local government inspector.

# IMMEDIATE DELIVERY

To give you the fast service you need . . . with no costly delays or work stoppages . . . Micamold Electronic Sales Inc. stock millions of capacitors ready for immediate delivery! All types of capacitors are constantly being manufactured to insure a complete stock at all times.

The capacitors listed, types most frequently used by the electronics industry, are available immediately . . . **WHATEVER THE SIZE OF YOUR ORDER!** Micamold manufactures many other types and styles of capacitors . . . and can be supplied with a minimum of delay.

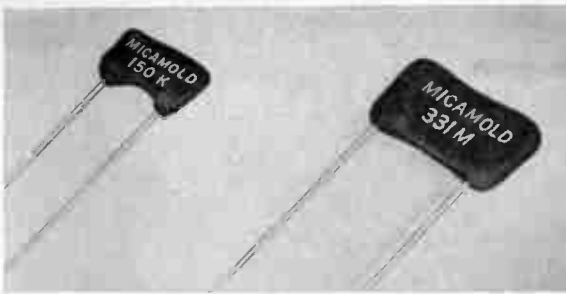


**WRITE - WIRE - PHONE YOUR JOBBER**

**MICAMOLD ELECTRONIC SALES INC.**

Brooklyn 37, N. Y.





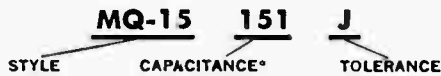
# MICAMOLD MICAP<sup>®</sup>

ENCAPSULATED MICA

## Capacitors

Micamold Micaps are silvered mica capacitors having the same mica capacitor sections as the Micamold molded styles CM-15 and CM-20. They differ in that they are hermetically sealed by a dip coating method and have radial wire leads instead of axial leads. This latter feature results in a shorter RF current path and greater ease of installation, making them specially suitable for use in printed circuitry. Micamold Micaps are smaller than the comparable molded types and are particularly applicable in the development of miniature equipment.

### TYPE DESIGNATION TO BE IN FOLLOWING FORM:

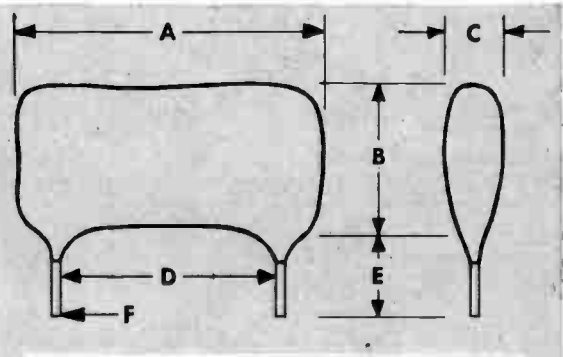


<sup>o</sup>The nominal capacitance value expressed in microfarads is identified by a three-digit number; the first two digits represent significant figures and the last digit specifies the number of zeros that follow.

### TYPE MQ-15 500 VDCW

CAP. μmf	TYPE DESIGNATION	LIST PRICE TOLERANCE			
		"K" ±10%	"J" ±5%	"G" ±2%	"F" ±1%
1	MQ-15-010†	\$0.25			
2	MQ-15-020†	.25			
3	MQ-15-030†	.25			
5	MQ-15-050†	.25			
10	MQ-15-100	.25	\$0.28		
12	MQ-15-120	.25	.28		
15	MQ-15-150	.25	.28		
18	MQ-15-180	.25	.28		
20	MQ-15-200	.25	.28		
22	MQ-15-220	.25	.28		
24	MQ-15-240	.25	.28		
27	MQ-15-270	.25	.28	\$0.33	
30	MQ-15-300	.25	.28	.33	
33	MQ-15-330	.25	.28	.33	
36	MQ-15-360	.25	.28	.33	
39	MQ-15-390	.25	.28	.33	
43	MQ-15-430	.25	.28	.33	
47	MQ-15-470	.25	.28	.33	
50	MQ-15-500	.25	.28	.33	\$0.40
51	MQ-15-510	.25	.28	.33	.40
56	MQ-15-560	.25	.28	.33	.40
62	MQ-15-620	.25	.28	.33	.40
68	MQ-15-680	.25	.28	.33	.40
75	MQ-15-750	.25	.28	.33	.40
82	MQ-15-820	.25	.28	.33	.40
91	MQ-15-910	.25	.28	.33	.40
100	MQ-15-101	.25	.28	.33	.40
110	MQ-15-111	.30	.33	.39	.48
120	MQ-15-121	.30	.33	.39	.48
130	MQ-15-131	.30	.33	.39	.48
150	MQ-15-151	.30	.33	.39	.48
160	MQ-15-161	.35	.39	.46	.56
180	MQ-15-181	.35	.39	.46	.56
200	MQ-15-201	.35	.39	.46	.56
220	MQ-15-221	.40	.44	.52	.64
240	MQ-15-241	.40	.44	.52	.64
250	MQ-15-251	.40	.44	.52	.64
270	MQ-15-271	.45	.50	.59	.72
300	MQ-15-301	.45	.50	.59	.72
330	MQ-15-331	.50	.55	.65	.80
360	MQ-15-361	.50	.55	.65	.80
390	MQ-15-391	.55	.61	.72	.88
430*	MQ-15-431	.55	.61	.72	.88
470*	MQ-15-471	.60	.66	.78	.96
500*	MQ-15-501	.60	.66	.78	.96
510*	MQ-15-511	.60	.66	.78	.96
560*	MQ-15-561	.65	.72	.85	1.04
620*	MQ-15-621	.70	.77	.91	1.12
680*	MQ-15-681	.75	.83	.98	1.20
750*	MQ-15-751	.80	.88	1.04	1.28
820*	MQ-15-821	.85	.94	1.11	1.36

All capacities marked with \* are 300WV.  
†Closest tolerance ± .5MMF.

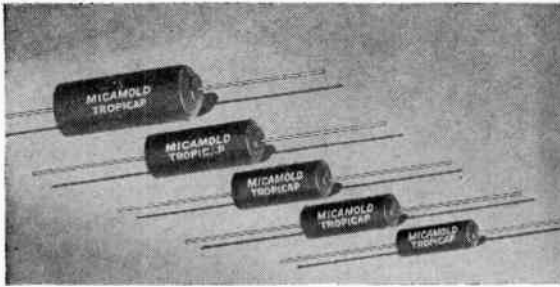


STYLE	A	B	C	D	E	F
MQ-15	1/16"	1 1/2"	1/32"	1/4"	1 1/2"	#22AWG
MO-19	3/16"	1 1/2"	1/16"	1 1/2"	1 1/2"	#20AWG

ALL DIMENSIONS ARE NOMINAL

### TYPE MO-19 500 VDCW

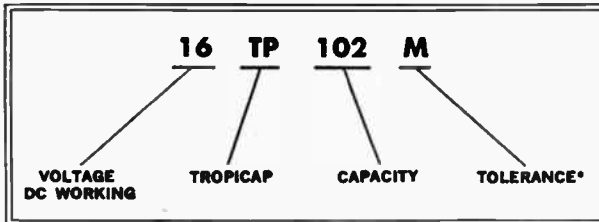
CAP. μmf	TYPE DESIGNATION	LIST PRICE TOLERANCE			
		"K" ±10%	"J" ±5%	"G" ±2%	"F" ±1%
430	MO-19-431	\$0.45	\$0.50	\$0.54	\$0.68
470	MO-19-471	.50	.55	.60	.75
500	MO-19-501	.50	.55	.60	.75
510	MO-19-511	.50	.55	.60	.75
560	MO-19-561	.55	.61	.66	.83
620	MO-19-621	.55	.61	.66	.83
680	MO-19-681	.60	.66	.72	.90
750	MO-19-751	.60	.66	.72	.90
820	MO-19-821	.60	.66	.72	.90
910	MO-19-911	.65	.72	.78	.98
1000	MO-19-102	.70	.77	.84	1.05
1100	MO-19-112	.70	.77	.84	1.05
1200	MO-19-122	.75	.83	.90	1.13
1300	MO-19-132	.80	.88	.96	1.20
1500	MO-19-152	.85	.94	1.02	1.28
1600	MO-19-162	.90	.99	1.08	1.35
1800	MO-19-182	1.00	1.10	1.20	1.50
2000	MO-19-202	1.10	1.21	1.32	1.65



# MICAMOLD TROPICAP<sup>®</sup> MOLDED TUBULAR PAPER *Capacitors*

Micamold developed and introduced the first molded paper capacitors in 1935, and has since supplied HUNDREDS OF MILLIONS to the industry.

Micamold now introduces its new TROPICAP<sup>®</sup> molded tubular paper capacitor which is the finest ever developed. The TROPICAPS are distinguished by their hermetic sealing that affords protection from exposure to high humidity or even total immersion. The case is non-flammable and is not injured by severe mechanical or thermal shocks. These capacitors have a long life at maximum temperature rating of 85°C.



\*Standard Tolerance: ±20%

For Tolerance of ±10%, specify K instead of M, and add 10% to list price.

### 200 VDCW

CAP. $\mu\mu\text{f}$	TYPE DESIGNATION	SIZE DIAM. X LENGTH	LIST PRICE
.1	2-TP-104	$\frac{3}{16}$ x $1\frac{1}{4}$	\$0.35
.15	2-TP-154	$\frac{1}{2}$ x $1\frac{1}{2}$	.40
.25	2-TP-254	$\frac{5}{16}$ x $1\frac{3}{4}$	.40
.47	2-TP-474	$\frac{3}{8}$ x $1\frac{3}{4}$	.70

### 400 VDCW

CAP. $\mu\mu\text{f}$	TYPE DESIGNATION	SIZE DIAM. X LENGTH	LIST PRICE
.01	4-TP-103	$\frac{1}{8}$ x $1\frac{1}{2}$	.25
.015	4-TP-153	$\frac{3}{16}$ x $1\frac{1}{2}$	.25
.02	4-TP-203	$\frac{1}{4}$ x $1\frac{1}{2}$	.25
.025	4-TP-253	$\frac{5}{16}$ x $1\frac{1}{2}$	.30
.03	4-TP-303	$\frac{3}{8}$ x $1\frac{1}{2}$	.30
.04	4-TP-403	$\frac{1}{2}$ x $1\frac{1}{2}$	.30
.047	4-TP-473	$\frac{5}{16}$ x $1\frac{1}{2}$	.30
.05	4-TP-503	$\frac{1}{2}$ x $1\frac{1}{2}$	.30
.06	4-TP-603	$\frac{1}{2}$ x $1\frac{1}{2}$	.35
.1	4-TP-104	$\frac{1}{2}$ x $1\frac{1}{2}$	.35
.15	4-TP-154	$\frac{3}{4}$ x $1\frac{3}{4}$	.40
.2	4-TP-204	$\frac{3}{4}$ x $1\frac{3}{4}$	.40

### 600 VDCW

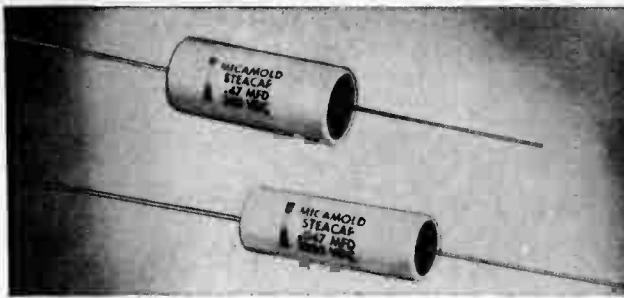
CAP. $\mu\mu\text{f}$	TYPE DESIGNATION	SIZE DIAM. X LENGTH	LIST PRICE
.001	6-TP-102	$\frac{1}{16}$ x $1\frac{1}{2}$	.25
.0015	6-TP-152	$\frac{1}{8}$ x $1\frac{1}{2}$	.25
.002	6-TP-202	$\frac{3}{16}$ x $1\frac{1}{2}$	.25
.0025	6-TP-252	$\frac{1}{4}$ x $1\frac{1}{2}$	.25
.003	6-TP-302	$\frac{5}{16}$ x $1\frac{1}{2}$	.25
.004	6-TP-402	$\frac{3}{8}$ x $1\frac{1}{2}$	.25
.005	6-TP-502	$\frac{1}{2}$ x $1\frac{1}{2}$	.25
.006	6-TP-602	$\frac{5}{16}$ x $1\frac{1}{2}$	.25
.007	6-TP-702	$\frac{3}{8}$ x $1\frac{1}{2}$	.30
.008	6-TP-802	$\frac{1}{2}$ x $1\frac{1}{2}$	.30
.01	6-TP-103	$\frac{3}{8}$ x $1\frac{1}{4}$	.30
.015	6-TP-153	$\frac{1}{2}$ x $1\frac{1}{4}$	.30
.02	6-TP-203	$\frac{5}{16}$ x $1\frac{1}{4}$	.30
.025	6-TP-253	$\frac{1}{2}$ x $1\frac{1}{4}$	.35
.03	6-TP-303	$\frac{3}{4}$ x $1\frac{1}{4}$	.35
.04	6-TP-403	$\frac{1}{2}$ x $1\frac{1}{2}$	.35
.047	6-TP-473	$\frac{1}{2}$ x $1\frac{1}{2}$	.40
.05	6-TP-503	$\frac{3}{4}$ x $1\frac{3}{4}$	.40
.06	6-TP-603	$\frac{3}{4}$ x $1\frac{3}{4}$	.45
.1	6-TP-104	$\frac{3}{4}$ x $1\frac{3}{4}$	.45

### 1000 VDCW

CAP. $\mu\mu\text{f}$	TYPE DESIGNATION	SIZE DIAM. X LENGTH	LIST PRICE
.001	10-TP-102	$\frac{1}{8}$ x $1\frac{1}{2}$	\$0.50
.0015	10-TP-152	$\frac{3}{16}$ x $1\frac{1}{2}$	.50
.002	10-TP-202	$\frac{1}{4}$ x $1\frac{1}{2}$	.50
.0025	10-TP-252	$\frac{5}{16}$ x $1\frac{1}{2}$	.50
.003	10-TP-302	$\frac{3}{8}$ x $1\frac{1}{2}$	.50
.004	10-TP-402	$\frac{1}{2}$ x $1\frac{1}{2}$	.50
.005	10-TP-502	$\frac{3}{8}$ x $1\frac{1}{2}$	.50
.006	10-TP-602	$\frac{1}{2}$ x $1\frac{1}{2}$	.50
.007	10-TP-702	$\frac{3}{8}$ x $1\frac{1}{2}$	.50
.008	10-TP-802	$\frac{1}{2}$ x $1\frac{1}{2}$	.50
.01	10-TP-103	$\frac{3}{8}$ x $1\frac{1}{4}$	.50
.015	10-TP-153	$\frac{1}{2}$ x $1\frac{1}{4}$	.50
.02	10-TP-203	$\frac{1}{2}$ x $1\frac{1}{4}$	.50
.025	10-TP-253	$\frac{3}{4}$ x $1\frac{1}{4}$	.50
.03	10-TP-303	$\frac{1}{2}$ x $1\frac{1}{2}$	.50
.04	10-TP-403	$\frac{3}{8}$ x $1\frac{3}{4}$	.50
.047	10-TP-473	$\frac{1}{2}$ x $1\frac{3}{4}$	.60
.05	10-TP-503	$\frac{3}{4}$ x $1\frac{3}{4}$	.60
.06	10-TP-603	$\frac{3}{4}$ x $1\frac{3}{4}$	.60

### 1600 VDCW

CAP. $\mu\mu\text{f}$	TYPE DESIGNATION	SIZE DIAM. X LENGTH	LIST PRICE
.001	16-TP-102	$\frac{1}{8}$ x $1\frac{1}{2}$	.65
.0015	16-TP-152	$\frac{3}{16}$ x $1\frac{1}{2}$	.65
.002	16-TP-202	$\frac{1}{4}$ x $1\frac{1}{2}$	.65
.0025	16-TP-252	$\frac{5}{16}$ x $1\frac{1}{2}$	.65
.003	16-TP-302	$\frac{3}{8}$ x $1\frac{1}{2}$	.65
.004	16-TP-402	$\frac{1}{2}$ x $1\frac{1}{2}$	.65
.005	16-TP-502	$\frac{3}{8}$ x $1\frac{1}{2}$	.65
.006	16-TP-602	$\frac{1}{2}$ x $1\frac{1}{2}$	.65
.007	16-TP-702	$\frac{3}{8}$ x $1\frac{1}{2}$	.65
.008	16-TP-802	$\frac{1}{2}$ x $1\frac{1}{2}$	.65
.01	16-TP-103	$\frac{3}{8}$ x $1\frac{1}{4}$	.70
.015	16-TP-153	$\frac{1}{2}$ x $1\frac{1}{4}$	.70
.02	16-TP-203	$\frac{5}{16}$ x $1\frac{1}{4}$	.70
.025	16-TP-253	$\frac{3}{4}$ x $1\frac{1}{4}$	.70
.03	16-TP-303	$\frac{1}{2}$ x $1\frac{1}{2}$	.70



# MICAMOLD STEACAP<sup>®</sup> TUBULAR PAPER Capacitors

Micamold Steacaps are paper capacitors encased in steatite tubes, sealed with thermo-setting end fills. The terminal seals will not soften or leak at temperatures considerably above the operating range of 85°C. Steacaps are especially suitable for use in tropical, hot, humid and other severe climates where other types of paper capacitors will fail. The steatite tube and thermo-setting end seals insure long shelf-life and dependability in operation.

### 200 VDCW

CAP. μμf	TYPE DESIGNATION	SIZE* DIAM. X LENGTH	LIST PRICE
.1	2-SP-104	1/2 x 1 1/4	\$0.35
.15	2-SP-154	3/4 x 1 3/4	.40
.2	2-SP-204	3/4 x 1 3/4	.45
.25	2-SP-254	3/4 x 1 3/4	.45
.5	2-SP-504	3/4 x 2	.75

### 400 VDCW

CAP. μμf	TYPE DESIGNATION	SIZE* DIAM. X LENGTH	LIST PRICE
.01	4-SP-103	3/8 x 1	.25
.015	4-SP-153	3/8 x 1 1/4	.25
.02	4-SP-203	3/8 x 1 1/4	.25
.025	4-SP-253	3/8 x 1 1/4	.25
.03	4-SP-303	3/8 x 1 3/4	.30
.04	4-SP-403	3/8 x 1 3/4	.30
.05	4-SP-503	3/8 x 1 3/4	.30
.06	4-SP-603	3/8 x 1 3/4	.35
.1	4-SP-104	1/2 x 1 1/4	.35
.15	4-SP-154	3/4 x 1 1/4	.45
.2	4-SP-204	3/4 x 1 3/4	.55
.25	4-SP-254	3/4 x 1 3/4	.55
.5	4-SP-504	1 x 1 3/4	.80

### 600 VDCW

CAP. μμf	TYPE DESIGNATION	SIZE* DIAM. X LENGTH	LIST PRICE
.001	6-SP-102	3/8 x 1	\$0.25
.0015	6-SP-152	3/8 x 1	.25
.002	6-SP-202	3/8 x 1	.25
.0025	6-SP-252	3/8 x 1	.25
.003	6-SP-302	3/8 x 1	.25
.004	6-SP-402	3/8 x 1	.25
.005	6-SP-502	3/8 x 1	.25
.006	6-SP-602	3/8 x 1 1/4	.25
.007	6-SP-702	3/8 x 1 1/4	.30
.008	6-SP-802	3/8 x 1 1/4	.30
.01	6-SP-103	1/2 x 1 1/4	.30
.015	6-SP-153	3/4 x 1 1/4	.30

### 600 VDCW (Cont.)

CAP. μμf	TYPE DESIGNATION	SIZE* DIAM. X LENGTH	LIST PRICE
.02	6-SP-203	1/2 x 1 1/4	.30
.025	6-SP-253	1/2 x 1 1/4	.35
.03	6-SP-303	3/4 x 1 1/4	.35
.04	6-SP-403	3/4 x 1 1/4	.35
.05	6-SP-503	3/4 x 1 1/4	.40
.06	6-SP-603	3/4 x 1 1/4	.45
.1	6-SP-104	1/2 x 1 3/4	.45
.15	6-SP-154	3/4 x 1 3/4	.55
.2	6-SP-204	3/4 x 1 3/4	.65
.25	6-SP-254	3/4 x 2	.75
.5	6-SP-504	1 1/4 x 2 3/4	1.25

### 1000 VDCW

CAP. μμf	TYPE DESIGNATION	SIZE* DIAM. X LENGTH	LIST PRICE
.001	10-SP-102	3/8 x 1	.40
.0015	10-SP-152	3/8 x 1	.40
.002	10-SP-202	3/8 x 1	.40
.0025	10-SP-252	3/8 x 1	.40
.003	10-SP-302	3/8 x 1	.40
.004	10-SP-402	3/8 x 1	.40
.005	10-SP-502	3/8 x 1 1/4	.40
.006	10-SP-602	3/8 x 1 1/4	.40
.007	10-SP-702	3/8 x 1 1/4	.40
.008	10-SP-802	3/8 x 1 1/4	.45
.01	10-SP-103	1/2 x 1 1/4	.45
.015	10-SP-153	3/4 x 1 1/4	.45
.02	10-SP-203	3/4 x 1 1/4	.45
.025	10-SP-253	3/4 x 1 1/4	.45
.03	10-SP-303	3/4 x 1 1/4	.45
.04	10-SP-403	3/4 x 1 3/4	.55
.05	10-SP-503	3/4 x 1 3/4	.55

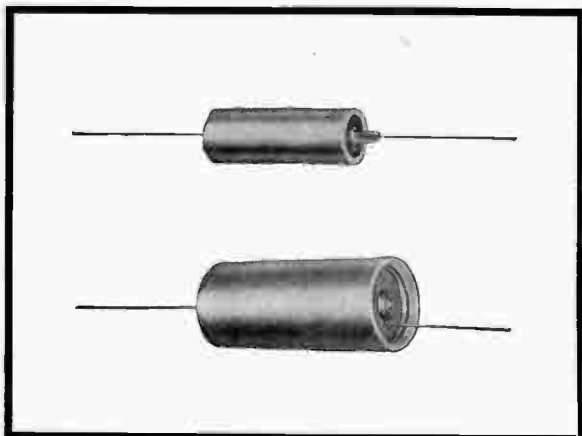
\*Diameter Dimensions ±1/32".  
Length Dimensions ±1/16".  
Standard Tol. ±20%.  
For Tolerance of 10%, add 10% to list price.



**MICAMOLD SALES** speeds your order to you immediately



## "JETS" ELECTROLYTIC TUBULARS



" J E T S "

Tube "Jets" are tubular electrolytic capacitors hermetically sealed into aluminum containers with plastic sleeves.

They are constructed with utmost compactness and are self-supported by means of rigged tinned leads. The larger sizes may be further supported by a metal strap furnished on order.

**NEGATIVE TERMINAL IS GROUNDED TO CAN.**

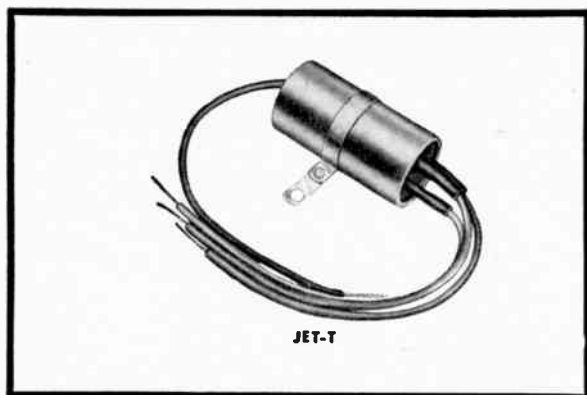
**TEMPERATURE RANGE:** to +85°C; except  
500 VDC +65°C

JET	Cat. No.	Cap. Mfd.	Can Size—Inches Diam. x Length	List Price	Net Price
<b>3 W.V.D.C.</b>					
JET 25-3	25		3/8 x 1 1/16	\$.85	\$.51
JET 50-3	50		3/8 x 1 1/16	.95	.57
<b>6 W.V.D.C.</b>					
JET 5-6	5		3/8 x 1 1/16	.80	.48
JET 25-6	25		3/8 x 1 1/16	.85	.51
JET 50-6	50		3/8 x 1 1/16	.95	.57
JET 100-6	100		1/2 x 1 1/16	1.20	.72
JET 250-6	250		1/2 x 1 1/16	1.35	.81
JET 500-6	500		3/4 x 1 1/16	1.55	.93
JET 1000-6	1000		3/8 x 2	1.90	1.14
JET 2000-6	2000		1 x 2 1/2	2.30	1.38
<b>15 W.V.D.C.</b>					
JET 100-15	100		1/2 x 1 1/16	1.25	.75
JET 2501	250		3/4 x 1 1/16	1.55	.93
JET 5001	500		3/8 x 2	1.75	1.05
JET 10001	1000		1 x 2	2.30	1.38
JET 20001	2000		1 x 3	3.20	1.92
<b>25 W.V.D.C.</b>					
JET 10-25	10		3/8 x 1 1/16	1.00	.60
JET 20-25	20		3/8 x 1 1/16	1.00	.60
JET 25-25	25		3/8 x 1 1/16	1.00	.60
JET 50-25	50		1/2 x 1 1/16	1.10	.66
JET 100-25	100		1/2 x 1 1/16	1.35	.81
JET 2502	250		3/8 x 1 1/16	1.70	1.02
JET 5002	500		1 x 2	2.30	1.38
<b>50 W.V.D.C.</b>					
JET 1-50	1		3/8 x 1 1/16	.90	.54
JET 2-50	2		3/8 x 1 1/16	.90	.54
JET 4-50	4		3/8 x 1 1/16	1.00	.60
JET 5-50	5		3/8 x 1 1/16	1.00	.60
JET 10-50	10		3/8 x 1 1/16	1.00	.60
JET 25-50	25		1/2 x 1 1/16	1.05	.63
JET 1005	100		3/4 x 2	1.40	.84
JET 1505	150		3/8 x 2	1.55	.93
JET 2505	250		1 x 2	1.75	1.05
JET 5005	500		1 x 3	2.40	1.44

JET	Cat. No.	Cap. Mfd.	Can Size—Inches Diam. x Length	List Price	Net Price
<b>90 W.V.D.C.</b>					
JET 10-90	10		1/2 x 1 1/16	\$1.10	\$.66
JET 16-90	16		1/2 x 1 1/16	1.10	.66
<b>150 W.V.D.C.</b>					
JET 4-150	4		3/8 x 1 1/16	1.00	.60
JET 8-150	8		1/2 x 1 1/16	1.05	.63
JET 10-150	10		1/2 x 1 1/16	1.05	.63
JET 12-150	12		1/2 x 1 1/16	1.10	.66
JET 16-150	16		1/2 x 1 1/16	1.15	.69
JET 20-150	20		1/2 x 1 1/16	1.20	.72
JET 2515	25		3/4 x 1 1/16	1.25	.75
JET 3015	30		3/4 x 1 1/16	1.30	.78
JET 4015	40		3/4 x 1 1/16	1.35	.81
JET 5015	50		3/8 x 1 1/16	1.40	.84
JET 6015	60		3/8 x 2	1.50	.90
JET 8015	80		3/8 x 2	1.60	.96
JET 10015	100		1 x 2 1/2	1.75	1.05
JET 15015	150		1 x 3	1.90	1.14
JET 20015	200		1 x 3	2.20	1.32
JET 30015	300		1 x 4 1/16	2.55	1.53
<b>250 W.V.D.C.</b>					
JET 4-250	4		1/2 x 1 1/16	1.00	.60
JET 8-250	8		1/2 x 1 1/16	1.15	.69
JET 12-250	12		1/2 x 1 1/16	1.25	.75
JET 1625	16		3/4 x 1 1/16	1.30	.78
JET 2025	20		3/4 x 1 1/16	1.35	.81
JET 3025	30		3/8 x 1 1/16	1.45	.87
JET 4025	40		3/8 x 2	1.55	.93
JET 5025	50		1 x 2	1.70	1.02
JET 6025	60		1 x 2 1/2	1.80	1.08
<b>350 W.V.D.C.</b>					
JET 435	4		3/8 x 1 1/16	1.05	.63
JET 835	8		3/8 x 1 1/16	1.20	.72
JET 1235	12		3/4 x 1 1/16	1.30	.78
JET 1635	16		3/8 x 1 1/16	1.40	.84
JET 2035	20		3/8 x 1 1/16	1.45	.87
JET 3035	30		1 x 2	1.65	.99
JET 4035	40		1 x 2 1/2	1.75	1.05
JET 5035	50		1 x 2 1/2	1.85	1.11
JET 6035	60		1 x 2 1/2	1.95	1.17
JET 8035	80		1 x 3 1/16	2.10	1.26
JET 10035	100		1 x 4 1/16	2.30	1.38
<b>450 W.V.D.C.</b>					
JET 145	1		3/8 x 1 1/16	1.10	.66
JET 245	2		3/8 x 1 1/16	1.10	.66
JET 445	4		3/8 x 1 1/16	1.15	.69
JET 845	8		3/4 x 1 1/16	1.25	.75
JET 1045	10		3/4 x 1 1/16	1.30	.78
JET 1245	12		3/4 x 1 1/16	1.35	.81
JET 1645	16		3/8 x 2	1.40	.84
JET 2045	20		3/8 x 2	1.55	.93
JET 3045	30		1 x 2 1/2	1.70	1.02
JET 4045	40		1 x 2 1/2	1.80	1.08
JET 6045	60		1 x 3 1/16	2.35	1.41
JET 8045	80		1 x 4 1/16	2.80	1.68
JET 10045	100		1 x 4 1/16	3.20	1.92
<b>500 W.V.D.C.</b>					
JET 450	4		3/8 x 1 1/16	1.20	.72
JET 850	8		3/4 x 1 1/16	1.30	.78
JET 1250	12		3/8 x 2	1.40	.84
JET 1650	16		1 x 2	1.50	.90
JET 2050	20		1 x 2	1.60	.96
JET 3050	30		1 x 2 1/2	1.75	1.05
<b>JET-H</b>					
JET-H	Cat. No.	Cap. Mfd.	OVERALL Size—Inches Diam. x Length	List Price	Net Price
<b>600 W.V.D.C.</b>					
JET-H 604	4		15/16 x 2 1/16	\$1.95	\$1.17
JET-H 608	8		15/16 x 3 1/16	2.10	1.26
JET-H 610	10		15/16 x 3 1/16	2.20	1.32
JET-H 612	12		1 1/16 x 3 1/16	2.40	1.44
JET-H 616	16		1 1/16 x 3 1/16	2.55	1.53
JET-H 620	20		1 1/16 x 3 1/16	2.70	1.62
<b>700 W.V.D.C.</b>					
JET-H 708	8		15/16 x 3 1/16	2.20	1.32
JET-H 710	10		1 1/16 x 3 1/16	2.35	1.41
JET-H 712	12		1 1/16 x 3 1/16	2.45	1.47
JET-H 716	16		1 1/16 x 4 1/16	2.65	1.59



# MULTI-SECTION TUBULAR ELECTROLYTICS



JET-T

A series of compact, tubular METAL-CASED, CARDBOARD SLEEVED electrolytics—specially sealed against heat and humidity.

**Featuring—**

- ◆ Direct-to-terminal internal lead construction reduces possibility of shorts. (Pure aluminum wires crimped securely together with outer leads within aluminum stud terminals.)
- ◆ New high-insulation vinylite covered leads—generous 7 inches long.
- ◆ Sections sealed in aluminum tube for protection against moisture getting in, or electrolyte drying out.
- ◆ Wax impregnated cardboard outer insulation sleeve.
- ◆ Rubber diaphragm-type vent insures ideal vent action under all conditions.
- ◆ **IDEAL FOR OPERATION AT TEMPERATURES UP TO 85° C.**

**JET-D — Dual Common Negative**

JET-D Cat. No.	Cap. Mfd.	D.C. W. Volts	Con't Size—Inches Dia. x Lgth.	List Price	Net Price
JET-D 2202	20-20	25	3/8 x 1 1/16	\$1.40	\$.84
JET-D 1115	10-10	50	3/8 x 1 1/16	1.40	.84
JET-D 2115	20-10	150	3/8 x 1 1/16	1.55	.93
JET-D 2215	20-20	150	3/8 x 1 1/16	1.65	.99
JET-D 3215	30-20	150	7/8 x 1 1/16	1.70	1.02
JET-D 3315	30-30	150	7/8 x 1 1/16	1.80	1.08
JET-D 4215	40-20	150	7/8 x 1 1/16	1.75	1.05
JET-D 4315	40-30	150	7/8 x 2	1.80	1.08
JET-D 4415	40-40	150	7/8 x 2	1.85	1.11
JET-D 5315	50-30	150	7/8 x 2	1.95	1.17
JET-D 5515	50-50	150	1 x 2	2.10	1.26
JET-D 8415	80-40	150	1 x 2 1/2	2.25	1.35
JET-D 8515	80-50	150	1 x 2 1/2	2.30	1.38
*JET-D 0183.7	100-50	150	1 x 3	3.00	1.80
*JET-D 101015	100-100	150	1 x 3	3.20	1.92
*JET-O 0196	200-5	150	1 x 3 1/2	2.65	1.59
JET-D 8025	8-8	250	3/8 x 1 1/16	1.60	.96
JET-D 16825	16-8	250	3/8 x 2	1.70	1.02
JET-D 16025	16-16	250	7/8 x 2	1.80	1.08
JET-D 2225	20-20	250	1 x 1 1/16	1.85	1.11
JET-D 3325	30-30	250	1 x 2 1/2	2.25	1.35
*JET-D 7V225	75-20	250	1 x 3	2.60	1.56
*JET-D 0242	80-10	250	1 x 3	2.55	1.53
*JET-D 0246	120-80	250	1 1/2 x 3 1/2	4.00	2.40
*JET-D 0286	150-100	300	1 3/8 x 4 1/2	5.25	3.15
*JET-D 0334	140-5	350	1 1/2 x 4 1/2	4.15	2.49
JET-D 8045	8-8	450	7/8 x 1 1/16	1.70	1.02
JET-D 16845	16-8	450	1 x 2 1/2	2.00	1.20
JET-D 16045	16-16	450	1 x 2 1/2	2.25	1.35
*JET-D 2245	20-20	450	1 x 3	2.50	1.50
*JET-D 3345	30-30	450	1 1/2 x 3 1/2	3.00	1.80
*JET-D 4445	40-40	450	1 x 4 1/2	3.40	2.04
*JET-D 0576	60, 125	200, 50	1 x 3	3.25	1.95
JET-D 0646	20, 100	450, 25	1 x 2 1/2	2.20	1.32
*JET-D 0652	40, 50	450, 50	1 x 3 1/2	3.00	1.80
*JET-D 0722	80, 100	450, 50	1 1/2 x 3 1/2	3.75	2.25
*JET-D 0707	30, 50	450, 200	1 1/2 x 2 1/2	2.85	1.71

†For OVERALL size add 1/16" to Diam. and 3/16" to Length.  
All above Packed—5 Units per Carton, except those marked (\*) which are individual Carton Packed.

**JET-T — Triple-Common Negative**

JET-T Cat. No.	Cap. Mfd.	D.C. W. Volts	Con't Size—Inches Dia. x Lgth.	List Price	Net Price
JET-T 22215	20-20-20	150	7/8 x 1 1/16	\$2.20	\$1.32
JET-T 32V215	30-25-20	150	7/8 x 2	2.25	1.35
JET-T 33315	30-30-30	150	1 x 2	2.35	1.41
JET-T 42215	40-20-20	150	1 x 1 1/16	2.25	1.35
JET-T 43215	40-30-20	150	1 x 2	2.35	1.41
JET-T 44215	40-40-20	150	1 x 2	2.35	1.41
JET-T 44415	40-40-40	150	1 x 2 1/2	2.45	1.47
JET-T 53215	50-30-20	150	1 x 2	2.45	1.47
*JET-T 84215	80-40-20	150	1 x 3	2.75	1.65
*JET-T 0126.3	150-150-150	150	1 1/2 x 4 1/2	4.75	2.85
*JET-T 7V4125	75-40-10	250	1 1/2 x 3	3.45	2.07
*JET-T 0185	40-40-40	300	1 1/2 x 3	4.60	2.76
*JET-T 0196	120-40-10	300	1 1/2 x 3 1/2	4.85	2.91
*JET-T 0235	60-60-5	350	1 1/2 x 3 1/2	4.25	2.55
*JET-T 11145	10-10-10	450	1 x 2 1/2	2.45	1.47
*JET-T 16745	16-16-16	450	1 1/2 x 3	3.10	1.86
JET-T 4415X25	40-40, 250	150, 10	1 x 2 1/2	2.60	1.56
JET-T 5315X20	50-30, 200	150, 10	1 x 2 1/2	2.55	1.53
JET-T 5315C	50-30, 20	150, 25	1 x 1 1/16	2.35	1.41
JET-T 5515C	50-50, 20	150, 25	1 x 2 1/2	2.50	1.50
JET-T 8415C	80-40, 20	150, 25	1 x 2 1/2	2.65	1.59
JET-T 3215C10	30-20, 100	150, 25	1 x 2	2.35	1.41
JET-T 2215C	20-20, 20	150, 25	7/8 x 1 1/16	2.05	1.23
JET-T 3315C	30-30, 20	150, 25	7/8 x 2	2.20	1.32
JET-T 4215C	40-20, 20	150, 25	1 x 1 1/16	2.15	1.29
JET-T 4315C	40-30, 20	150, 25	1 x 1 1/16	2.20	1.32
JET-T 4415C	40-40, 20	150, 25	1 x 1 1/16	2.25	1.35
JET-T 5315C10	50-30, 100	150, 25	1 x 2 1/2	2.45	1.47
*JET-T 5315C25	50-30, 250	150, 25	1 x 3	3.10	1.86
JET-T 8215C10	80-20, 100	150, 25	1 x 2 1/2	2.75	1.65
JET-T 2225C	20-20, 20	250, 25	1 x 2	2.25	1.35
JET-T 4225C	40-20, 20	250, 25	1 x 2 1/2	2.55	1.53
JET-T 4425C	40-40, 20	250, 25	1 x 2 1/2	2.90	1.74
*JET-T 0733	80-10, 100	300, 50	1 1/2 x 3 1/2	4.05	2.43
*JET-T 0878	140-5, 200	350, 200	1 1/2 x 4 1/2	6.70	4.02
*JET-T 2245C	20-20, 20	450, 25	1 x 3	2.90	1.74
*JET-T 1238	5, 80-40	450, 400	1 1/2 x 3 1/2	4.55	2.73
*JET-T 1411	30, 50, 100	450, 150, 25	1 1/2 x 3	3.70	2.22

**JET-Q — Quadruple-Common Negative**

JET-Q Cat. No.	Cap. Mfd.	D.C. W. Volts	Con't Size—Inches Dia. x Lgth.	List Price	Net Price
*JET-Q 111145	10-10-10-10	450	1 x 3	\$3.20	\$1.92
*JET-Q 222245	20-20-20-20	450	1 1/2 x 4 1/2	4.50	2.70
*JET-Q 0125	20-20-20-10	450	1 1/2 x 3 1/2	4.25	2.55
*JET-Q 0170.5	40-20-20-10	450	1 1/2 x 3 1/2	4.70	2.82
*JET-Q 0174	40-40-20-20	450	1 1/2 x 4 1/2	5.45	3.27
JET-Q 33215C	30-30-20, 20	150, 25	1 x 2	2.90	1.74
JET-Q 42215C	40-20-20, 20	150, 25	1 x 2	2.85	1.71
JET-Q 44315C	40-40-30, 20	150, 25	1 x 2 1/2	3.00	1.80
JET-Q 53215C	50-30-20, 20	150, 25	1 x 2 1/2	3.05	1.83
*JET-Q 55315C	50-50-50, 20	150, 25	1 x 3	3.45	2.07
*JET-Q 0789.4	140-5, 200-30	300, 150	1 1/2 x 4 1/2	5.15	3.09
*JET-Q 0385	120-40-40, 10	300, 250	1 1/2 x 3 1/2	6.20	3.72
*JET-Q 22245C	20-20-20, 20	450, 25	1 1/2 x 3 1/2	4.05	2.43
*JET-Q 0695.3	10, 20-20, 10	450, 350	1 1/2 x 3	3.50	2.10
*JET-Q 0789.5	80-60, 40, 20	350, 300, 150	1 1/2 x 3 1/2	5.90	3.54
*JET-Q 0925	140, 5, 200-30	350, 300, 200	1 1/2 x 4 1/2	7.45	4.59
*JET-Q 8005	80-10, 40, 100	400, 300, 50	1 1/2 x 3 1/2	5.45	3.27
*JET-Q 0926.5	10, 80, 40-40	450, 300, 250	1 1/2 x 3 1/2	4.95	2.97
*JET-Q 0954	10, 80, 40, 100	450, 300, 250, 50	1 1/2 x 3 1/2	4.80	2.88
JET-Q 0954.5	20, 120, 40, 100	450, 300, 250, 50	1 1/2 x 4 1/2	6.15	3.69

**TEJ — Dual SEPARATE Section**

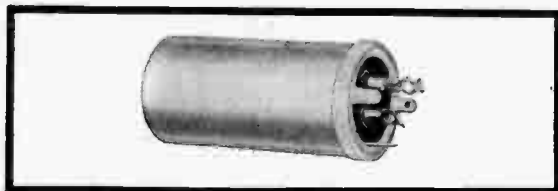
Type TEJ Capacitors are dual units in CARDBOARD TUBE containers with wax-filled ends. Capacities, voltages and polarity of the leads are clearly defined by color coding stamped on the tube casing.

TEMPERATURE RANGE: 10 to +65°C.

TEJ Cat. No.	Cap. Mfd.	D.C. W. Volts	OVERALL Size—Inches Dia. x Lgth.	List Price	Net Price
*TEJ 221555	20-20	150	1 1/2 x 2 1/2	\$1.65	\$.99
*TEJ 331555	30-30	150	1 x 2 1/2	1.80	1.08
*TEJ 421555	40-20	150	1 x 2 1/2	1.75	1.05
*TEJ 441555	40-40	150	1 1/2 x 2 1/2	1.85	1.11
*TEJ 531555	50-30	150	1 1/2 x 2 1/2	1.95	1.17
*JET 531555	50-50	150	1 1/2 x 3 1/2	2.10	1.26
*TEJ 841555	80-40	150	1 1/2 x 3 1/2	2.25	1.35



## TWIST-PRONG BASE ELECTROLYTICS



TOBE TD types are small round-can TWIST-PRONG electrolytic units. Each is furnished with a bakelite and a metal mounting washer.

TDX types are especially designed for SELENIUM RECTIFIER circuit applications. ONLY THIS TYPE SHOULD BE USED FOR THIS SERVICE.

TEMP. RANGE: to 475 V.D.C.W. +85°C.  
over 475 V.D.C.W. +65°C.

### ★ PREFERRED TYPE SINGLE SECTION

Single Section Cap./Volts	Rotational Stock No.	Size—Ins. Dia. x Lgth.	List Price	Net Price
10 Ohms 30 CPS.	TDA0010	3/4 x 2	\$2.50	\$1.50
.5 Ohms 15,750 CPS.	TDA0020	1 x 2	2.75	1.65
1 Ohms 60 CPS.	TDA0030	1 1/4 x 3	3.50	2.10
★ 2000/6	TDA0040	1 1/4 x 2	2.55	1.53
3000/10	TDA0050	1 3/4 x 2 1/2	3.65	2.19
★ 225/13	TDA0053	3/4 x 2	1.75	1.05
★ 1000/13	TDA0060	1 x 2 1/2	2.55	1.53
★ 2000/15	TDA0070	1 1/4 x 2 1/2	3.45	2.07
★ 3000/15	TDA0080	1 1/4 x 3	3.50	2.10
★ 40/23	TDA0090	3/4 x 2	1.35	.81
100/23	TDA0100	3/4 x 2	2.00	1.20
500/23	TDA0110	1 x 2 1/2	3.20	1.92
★ 500/23	TDA0120	1 x 2	2.55	1.53
★ 1000/23	TDA0130	1 1/4 x 2	3.55	2.13
★ 100/30	TDA0140	3/4 x 2	1.65	.99
★ 150/30	TDA0150	1 x 2	1.80	1.08
★ 500/30	TDA0160	1 1/4 x 2	2.65	1.59
★ 1000/30	TDA0170	1 1/4 x 3 3/4	3.75	2.25
★ 1500/30	TDA0174	1 1/4 x 4 1/8	3.85	2.31
★ 30/130	TDA0180	3/4 x 2	1.55	.93
40/130	TDA0190	1 x 2	2.00	1.20
40/130	TDXA0191	3/4 x 2	2.00	1.20
★ 50/130	TDA0200	1 x 2	1.65	.99
60/130	TDA0220	1 x 2	2.20	1.32
80/130	TDA0230	1 x 2	2.30	1.38
★ 80/130	TDXA0231	1 x 2	1.85	1.11
100/130	TDA0240	1 x 2 1/2	2.50	1.50
★ 100/130	TDXA0241	1 x 2 1/2	2.00	1.20
★ 120/130	TDXA0248	1 x 2 1/2	2.05	1.23
★ 120/130	TDA0250	1 1/4 x 2	2.05	1.23
150/130	TDA0260	1 x 3	2.70	1.62
★ 150/130	TDXA0261	1 x 3	2.15	1.29
★ 200/130	TDXA0262	1 1/4 x 2 1/2	2.45	1.47
★ 200/130	TDXA0262.1	1 x 3 3/4	2.45	1.47
★ 300/130	TDXA0263	1 1/4 x 3	2.80	1.68
80/200	TDXA0265	1 1/4 x 2	2.45	1.47
★ 120/200	TDXA0265.3	1 1/4 x 2	2.80	1.68
150/200	TDXA0266	1 1/4 x 2 1/2	3.50	2.10
★ 20/230	TDA0270	3/4 x 2	1.60	.96
30/230	TDA0280	1 x 2	2.15	1.29
40/230	TDA0290	1 x 2	2.25	1.35
★ 40/230	TDXA0291	1 x 2	1.80	1.08
60/230	TDA0300	1 x 2 1/2	2.55	1.53
80/230	TDA0310	1 x 3	2.70	1.62
★ 100/230	TDXA0312	1 x 3	2.70	1.62
★ 150/230	TDXA0313	1 1/4 x 2 1/2	3.10	1.86
★ 200/230	TDXA0318	1 1/4 x 3	3.95	2.37
50/300	TDA0320	1 x 2 1/2	2.55	1.53
60/300	TDXA0324	1 x 2 1/2	2.65	1.59
80/300	TDA0330	1 x 3	3.20	1.92
★ 80/300	TDXA0331	1 x 3	2.55	1.53
★ 100/300	TDA0340	1 1/4 x 3	2.90	1.74
★ 100/300	TDA0350	1 x 3 3/4	2.90	1.74
★ 150/300	TDXA0355	1 1/4 x 3	3.50	2.10

### SINGLE SECTION

Single Section Cap./Volts	Rotational Stock No.	Size—Ins. Dia. x Lgth.	List Price	Net Price
15/350	TDA0360	1 x 2	\$2.05	\$1.23
★ 30/350	TDA0370	1 x 2	1.90	1.14
★ 40/350	TDA0380	1 x 2 1/2	2.00	1.20
★ 50/350	TDA0390	1 x 3	2.10	1.26
80/350	TDA0400	1 1/4 x 2 1/2	3.55	2.13
★ 80/350	TDXA0401	1 1/4 x 2 1/2	2.80	1.68
125/350	TDA0410	1 3/4 x 3	4.55	2.73
★ 125/350	TDXA0411	1 3/4 x 3	3.65	2.19
★ 150/350	TDXA0415	1 3/4 x 3 3/4	3.95	2.37
80/400	TDA0420	1 1/4 x 3	3.70	2.22
★ 10/450	TDA0430	1 x 2	1.55	.93
*10/450	TDA0440	3/4 x 2	1.95	1.17
15/450	TDA0450	1 x 2	2.15	1.29
★ 20/450	TDA0460	1 x 2	1.80	1.08
★ 30/450	TDA0470	1 x 2 1/2	1.95	1.17
★ 40/450	TDA0480	1 x 3	2.05	1.23
★ 50/450	TDA0490	1 x 3 3/4	2.35	1.41
★ 60/450	TDA0500	1 3/4 x 2 1/2	2.60	1.56
★ 80/450	TDA0510	1 3/4 x 3	3.05	1.83
★ 100/450	TDA0512	1 3/4 x 3	3.45	2.07
★ 125/450	TDA0514	1 3/4 x 4 1/8	3.75	2.25
★ 40/475	TDA0516	1 1/4 x 2	2.50	1.50
★ 10/300	TDA0520	1 x 2	1.60	.96
★ 20/300	TDA0530	1 x 2 1/2	1.85	1.11
25/300	TDA0532	1 x 2 1/2	2.45	1.47
30/300	TDA0540	1 x 3	2.50	1.50
★ 30/300	TDXA0541	1 x 3	2.00	1.20
★ 40/300	TDA0550	1 x 3 3/4	2.50	1.50
★ 80/300	TDA0560	1 1/4 x 3 3/4	3.20	1.92
★ 90/300	TDA0570	1 1/4 x 3 3/4	3.50	2.10

### DUAL SECTION

Single Section Cap./Volts	Rotational Stock No.	Size—Ins. Dia. x Lgth.	List Price	Net Price
.5 Ohms 15,750 CPS.	TDB0010	1 1/4 x 2	4.90	2.94
2.5 Ohms 60 CPS.	TDB0020	1 1/4 x 2	4.80	2.88
1000-500 6 VNP	TDB0030	1 x 3 3/4	4.40	2.64
★ 1000-1000/15	TDB0040	1 1/4 x 2 1/2	4.40	2.64
★ 1000-1000/15	TDB0045	1 x 2	3.15	1.89
★ 500-100 20	TDB0050	1 x 2	1.80	1.08
20-20/23	TDB0060	1 x 2	2.00	1.20
40-40/25	TDB0070	1 x 2	2.40	1.44
150-50/23	TDB0080	1 x 2	1.70	1.02
★ 50-50/30	TDB0085	1 x 2	2.10	1.26
★ 100-100/30	TDB0090	1 x 2	2.15	1.29
20-20/130	TDXB0091	1 x 2	1.70	1.02
★ 30-20/130	TDB0100	1 x 2	2.20	1.32
30-30/150	TDB0110	1 x 2	1.85	1.11
★ 40-20/130	TDB0120	1 x 2	1.80	1.08
★ 40-30/130	TDB0130	1 x 2	1.85	1.11
40-40/150	TDB0140	1 x 2	2.40	1.44
★ 40-40/150	TDXB0141	1 x 2	1.90	1.14
★ 50-30/130	TDB0150	1 x 2	2.00	1.20
50-50/150	TDB0160	1 x 2 1/2	2.70	1.62
★ 50-50/150	TDXB0161	1 x 2 1/2	2.15	1.29
★ 60-60/130	TDXB0165	1 x 3	2.35	1.41
★ 75-75/130	TDB0170	1 x 3	2.60	1.56
80-40/130	TDBC180	1 x 2 1/2	2.90	1.74
★ 80-40/150	TDXB0181	1 x 2 1/2	2.30	1.38
★ 80-80/130	TDXB0183	1 1/4 x 2	2.65	1.59
100-100/150	TDXB0184	1 3/4 x 2 1/2	4.05	2.43
★ 125-100/150	TDXB0184.5	1 1/4 x 2 1/2	3.50	2.10
150-150/130	TDXB0185	1 1/4 x 3	4.40	2.64
200-5/150	TDB0186	1 1/4 x 2 1/2	3.40	2.04
★ 200-125/150	TDXB0187	1 1/4 x 3 3/4	3.75	2.25
★ 200-150/150	TDXB0188	1 1/4 x 3 3/4	3.75	2.25
★ 200-200/130	TDXB0189	1 1/4 x 3 3/4	4.00	2.40
★ 60-60/200	TDB0190	1 1/4 x 2	2.55	1.53
★ 100-100/200	TDXB0194	1 1/4 x 3	3.50	2.10
★ 200-5/200	TDXB0196	1 1/4 x 2 1/2	2.70	1.62
10-10/230	TDB0200	1 x 2	2.15	1.29
★ 20-20/230	TDB0210	1 x 2	1.90	1.14
30-30/250	TDB0220	1 x 2 1/2	2.90	1.74



# TWIST-PRONG BASE ELECTROLYTICS

## ★ PREFERRED TYPE DUAL SECTION

Single Section Cap./Volts	Rotational Stock No.	Size—Ins. Dia. x Lgth.	List Price	Net Price
40-20/250	TDBO230	1 x 2½	\$2.75	\$1.65
40-40/250	TDBO240	1 x 3	3.20	1.92
★ 40-40/250	YDXBO241	1 x 3	2.50	1.50
80-40/250	YDXBO243	1¾ x 2½	3.75	2.25
★ 150-150/250	TDBO250	1¾ x 4½	5.15	3.09
★ 200-200/250	YDXBO252	1¾ x 4½	6.10	3.66
40-40/300	YDXBO254	1 x 3	3.75	2.25
50-50/300	TDBO260	1¾ x 2½	4.20	2.52
80-40/300	YDXBO264	1¾ x 2½	4.45	2.67
★ 80-80/300	TDBO270	1¾ x 3	4.05	2.43
★ 120-20/300	TDBO280	1¾ x 3	4.00	2.40
120-40/300	TDBO282	1¾ x 3¾	5.45	3.27
★ 200-80/300	TDBO286	1¾ x 3¾	5.25	3.15
★ 150-15/350	TDBO290	1 x 2	2.25	1.35
20-20/350	TDBO300	1 x 2½	2.90	1.74
★ 30-30/350	TDBO310	1 x 3	2.90	1.74
★ 50-30/350	TDBO320	1¾ x 2½	3.15	1.89
★ 80-20/350	TDBO322	1 x 3¾	3.50	2.10
★ 80-20/350	TDBO324	1¾ x 2½	3.50	2.10
★ 80-40/350	TDBO326	1¾ x 3	3.95	2.37
★ 80-80/350	TDBO330	1¾ x 3¾	4.70	2.82
★ 90-40/350	TDBO331	1¾ x 3	4.30	2.58
★ 100-100/350	TDBO332	1¾ x 4½	6.15	3.69
★ 160-10/350	TDBO334	1¾ x 3¾	4.30	2.58
★ 40-120/400	TDBO336	1¾ x 4½	5.25	3.15
60-60/400	TDBO340	1¾ x 3¾	5.50	3.30
80-10/400	TDBO350	1¾ x 3	4.25	2.55
★ 80-60/400	TDBO354	1¾ x 3¾	4.85	2.91
★ 80-80/400	TDBO356	1¾ x 4½	4.95	2.97
4-4/450	TDBO360	1 x 2	2.05	1.23
★ 5-5/450	TDBO362	1 x 2	1.60	.96
★ 10-10/450	TDBO370	1 x 2	1.90	1.14
15-10/450	TDBO374	1 x 2½	2.55	1.53
★ 15-15/450	TDBO380	1 x 2½	2.25	1.35
★ 20-10/450	TDBO390	1 x 2½	2.25	1.35
★ 20-20/450	YDBO400	1 x 3	2.55	1.53
★ 30-10/450	TDBO410	1 x 3	2.50	1.50
30-10/450	TDBO420	1¾ x 2	3.00	1.80
★ 30-30/450	TDBO430	1¾ x 2½	3.05	1.83
40-5/450	YDBO436	1 x 3	3.20	1.92
★ 40-20/450	TDBO440	1¾ x 2½	3.00	1.80
★ 40-40/450	TDBO450	1¾ x 3	3.45	2.07
★ 50-50/450	YDXBO455	1¾ x 3	3.85	2.31
★ 60-20/450	TDBO460	1¾ x 3	3.55	2.13
★ 60-40/450	TDBO462	1¾ x 3¾	3.95	2.37
60-60/450	TDBO464	1¾ x 3¾	5.65	3.39
★ 80-10/450	TDBO470	1¾ x 3	3.60	2.16
★ 80-20/450	TDBO473	1¾ x 3¾	3.90	2.34
★ 80-40/450	TDBO480	1¾ x 3¾	4.35	2.61
★ 100-40/450	TDBO483	1¾ x 4½	4.85	2.91
★ 15-15/475	TDBO485	1 x 2½	2.35	1.41
★ 30-10/475	TDBO486	1¾ x 2	2.60	1.56
★ 40-10/475	TDBO487	1¾ x 2½	3.10	1.86
★ 80-50/475	TDBO489	1¾ x 4½	5.20	3.12
★ 10-10/500	TDBO490	1 x 2½	1.95	1.17
★ 20-20/500	TDBO500	1¾ x 2½	2.85	1.71
25-40/500	TDBO510	1¾ x 3	4.55	2.73
★ 30-10/500	TDBO520	1¾ x 2½	2.60	1.56
★ 40-40/500	TDBO530	1¾ x 3¾	4.40	2.64
★ 60-40/500	TDBO540	1¾ x 3¾	4.60	2.76
★ 250/10 1000/6	TDBO550	1¾ x 2	2.85	1.71
40/150 20/50	TDBO560	1 x 2	2.15	1.29
40/150 150/25	TDBO570	1 x 2	2.55	1.53
★ 50/150 500/3	TDBO574	1 x 2½	2.45	1.47
★ 150/150 100/25	TDBO575	1¾ x 2½	2.70	1.62
60/200 125/25	TDBO576	1 x 3	3.00	1.80
40/250 20/25	TDBO580	1 x 2	2.50	1.50
50/250 100/50	TDBO590	1¾ x 2	3.25	1.95
★ 100/250 150/50	TDBO600	1¾ x 3	3.65	2.19
★ 35/300 500/6	YDXBO603	1 x 2½	2.80	1.68
80/300 100/50	TDBO606	1¾ x 2½	3.95	2.37
★ 150/300 100/150	TDBO608	1¾ x 3¾	4.50	2.70
20/350 20/25	TDBO610	1 x 2	2.40	1.44
20/350 100/75	TDBO612	1 x 2½	2.80	1.68

## DUAL SECTION

Single Section Cap./Volts	Rotational Stock No.	Size—Ins. Dia. x Lgth.	List Price	Net Price
40/350 20/25	TDBO620	1 x 2½	\$2.95	\$1.77
★ 35/400 100/50	TDBO623	1 x 3	2.60	1.56
★ 100/400 30/50	TDBO626	1¾ x 3	3.90	2.34
★ 10/450 20/25	TDBO630	1 x 2	1.70	1.02
20/450 20/25	TDBO640	1 x 2	2.50	1.50
20/450 100/25	TDBO646	1 x 2½	2.75	1.65
40/450 20/25	TDBO650	1 x 3	3.05	1.83
40/450 50/50	TDBO652	1 x 3¾	3.75	2.25
80/450 20/25	TDBO660	1¾ x 3	4.25	2.55
10/450 100/50	TDBO670	1¾ x 2	2.55	1.53
★ 20/450 50/250	TDBO674	1 x 3	2.80	1.68
★ 20/450 80/350	TDBO680	1¾ x 3	3.65	2.19
★ 20/450 100/100	TDBO690	1¾ x 2	3.30	1.98
30/450 40/150	TDBO700	1¾ x 2	3.15	1.89
★ 30/450 200/150	TDBO705	1¾ x 3	3.50	2.10
★ 40/450 10/350	TDBO710	1¾ x 2	2.60	1.56
★ 50/450 100/50	TDBO715	1¾ x 2½	3.00	1.80
★ 80/450 50/50	TDBO720	1¾ x 3	3.50	2.10
★ 80/450 100/50	TDBO722	1¾ x 3¾	3.75	2.25
★ 20/475 100/400	TDBO726	1¾ x 4½	4.50	2.70
15/500 20/300	TDBO730	1 x 2½	2.90	1.74
20/500 100/300	TDBO740	1¾ x 3	4.95	2.97
40/500 50/200	TDBO750	1¾ x 2½	4.20	2.52
60/500 80/150	TDBO760	1¾ x 3¾	4.70	2.82
80/500 50/50	TDBO770	1¾ x 3¾	4.75	2.85

## TRIPLE SECTION

Single Section Cap./Volts	Rotational Stock No.	Size—Ins. Dia. x Lgth.	List Price	Net Price
★ 20-20-20/25	TDC0010	1 x 2	1.95	1.17
★ 40-40-40/25	TDC0020	1 x 2	2.15	1.29
30-30-30/50	TDC0030	1 x 2	3.25	1.95
20-20-20/150	TDC0040	1 x 2	3.55	2.13
★ 20-20-20/150	YDXC0041	1 x 2	2.30	1.38
30-30-10/150	TDC0050	1 x 2	3.55	2.13
★ 40-20-10/150	TDC0060	1 x 2	2.35	1.41
40-20-20/150	TDC0070	1 x 2	3.60	2.16
★ 40-20-20/150	YDXC0071	1 x 2	2.40	1.44
★ 40-30-20/150	TDC0080	1 x 2	2.50	1.50
★ 40-40-40/150	TDC0090	1 x 2½	2.60	1.56
★ 40-70-40/150	TDC0100	1 x 3	2.95	1.77
★ 50-40-10/150	TDC0103	1 x 2½	2.55	1.53
★ 50-50-50/150	YDXC0105	1 x 3	3.00	1.80
★ 60-40-20/150	TDC0110	1 x 2½	2.75	1.63
★ 70-15-15/150	TDC0113	1 x 2½	2.70	1.62
★ 80-40-20/150	TDC0120	1 x 3	2.90	1.74
80-80-80/150	YDXC0123	1¾ x 3	5.65	3.39
★ 120-80-40/150	YDXC0125	1¾ x 3	3.80	2.28
★ 120-120-40/150	YDXC0126	1¾ x 3	4.05	2.43
★ 200-100-60/150	YDXC0127	1¾ x 3¾	4.55	2.73
★ 200-150-150/150	YDXC0128	1¾ x 4½	7.50	4.50
★ 250-200-10/150	YDXC0129	1¾ x 4½	5.60	3.36
20-20-10/250	TDC0130	1 x 2	3.75	2.25
★ 20-20-20/250	TDC0132	1 x 2	2.60	1.56
30-20-10/250	TDC0140	1 x 2½	4.05	2.43
40-20-10/250	TDC0150	1¾ x 2	4.30	2.58
★ 40-20-20/250	TDC0160	1 x 3	2.90	1.74
★ 80-80-60/250	TDC0170	1¾ x 3¾	4.90	2.94
20-80-10/300	TDC0180	1¾ x 2½	5.70	3.42
★ 60-20-10/300	TDC0190	1¾ x 2½	3.45	2.07
★ 80-40-40/300	TDC0194	1¾ x 3	4.75	2.85
★ 120-50-40/300	TDC0200	1¾ x 4½	5.65	3.39
★ 10-10-10/350	TDC0210	1 x 2	2.40	1.44
20-20-10/350	TDC0220	1 x 3	4.45	2.67
★ 30-20-10/350	YDXC0225	1 x 3	3.25	1.95
★ 60-40-20/350	TDC0230	1¾ x 3	4.25	2.55
60-40-40/350	TDC0232	1¾ x 3¾	7.05	4.23
★ 60-50-50/350	TDC0234	1¾ x 3¾	4.90	2.94
★ 80-60-60/350	TDC0236	1¾ x 4½	5.55	3.33
★ 90-40-20/350	TDC0237	1¾ x 3¾	5.25	3.15
★ 100-100-10/350	TDC0238	1¾ x 4½	5.50	3.30
★ 80-20-10/400	TDC0239	1¾ x 3	4.30	2.58
★ 90-10-5/400	YDXC0239.2	1¾ x 3	4.40	2.64
★ 10-10-10/450	TDC0240	1 x 2½	2.60	1.56
15-15-10/450	TDC0250	1 x 3	4.45	2.67
★ 15-15-15/450	TDC0254	1 x 3	3.10	1.86



TWIST-PRONG BASE ELECTROLYTICS

★ PREFERRED TYPE TRIPLE SECTION

TRIPLE SECTION

Table with columns: Single Section Cap./Volts, Rotational Stock No., Size—Ins. Dia. x Lgth., List Price, Net Price, and another set of these columns for the TRIPLE SECTION products.









## MOUNTING HARDWARE



UNIVERSAL CLIPS



MOUNTING CLIPS



H  
MOUNTING RINGS



"C" CLAMPS



MOUNTING STRAPS



L

Part No.	Description	List Price	Sug- gested Resale
12125	Mounting Ring for 1 3/8" dia. Cans.....L....	\$.20	\$.12
13590	Mounting Ring for 2 1/2" dia. Cans.....L....	.50	.30
13591	Mounting Ring for 3" dia. Cans.....L....	.50	.30
14464	Mounting Ring for 2" dia. Cans.....L....	.50	.30
14582	Mounting Ring for 1" dia. Cans.....L....	.20	.12
15266	Mounting Ring for 3 1/2" dia. Cans.....L....	.50	.30
15591	Mounting Ring for 1 1/2" dia. Cans.....L....	.30	.18
16279	Tubular Mounting Straps, 3/16" ID.....	.15	.09
16280	Tubular Mounting Straps, 1/2" ID.....	.15	.09
16285	Tubular Mounting Straps, 1 1/16" ID.....	.15	.09
16693	Mounting Ring for 1 3/4" dia. Cans.....L....	.40	.24
17203	Tubular Mounting Straps, 9/16" ID.....	.15	.09
17516	Tubular Mounting Straps, 3/4" ID.....	.15	.09
17517	Tubular Mounting Straps, 3/4" ID.....	.15	.09
17842	Mounting Ring for 1" dia. Cans.....H....	.20	.12
17843	Mounting Ring for 1 3/8" dia. Cans.....H....	.20	.12
17844	Mounting Ring for 1 1/2" dia. Cans.....H....	.30	.18
17920	"C" Clamp for 3/8"-3/4" Cans or Tubulars....	.30	.18
17921	"C" Clamp for 7/8"-1" Cans or Tubulars....	.30	.18
18573	Mounting Ring for 1 1/4" dia. Cans.....H....	.20	.12
19213	Mounting Ring for 1 1/8" dia. Cans.....H....	.20	.12
19883	Metal Washer for 1".....	.14	.08
19884	Bakelite Washer for 1".....	.14	.08
19887	Metal Washer for 1 3/8".....	.14	.08
19888	Bakelite Washer for 1 3/8".....	.14	.08
19890	Metal Washer for 3/4".....	.14	.08
19891	Bakelite Washer for 3/4".....	.14	.08
21368-1	Mounting Clip for 3/8".....	.30	.18
21368-2	Mounting Clip for 1".....	.30	.18
21368-3	Mounting Clip for 1 3/8".....	.30	.18
22272	Wrench for Mounting Units.....	2.48	1.49
27886	Tubular Mounting Straps, 3/4" ID.....	.15	.09
28521-1	Insulating Tube for 3/4" x 2".....	.14	.08
28521-4	Insulating Tube for 1" x 2".....	.14	.08
28521-5	Insulating Tube for 1" x 2 1/2".....	.14	.08
28521-6	Insulating Tube for 1" x 3".....	.14	.08
28521-7	Insulating Tube for 1 3/8" x 2".....	.14	.08
28521-8	Insulating Tube for 1 3/8" x 2 1/2".....	.14	.08
28521-9	Insulating Tube for 1 3/8" x 3".....	.14	.08
28521-12	Insulating Tube for 1 3/8" x 3 3/8".....	.14	.08
28521-13	Insulating Tube for 1 3/8" x 4 1/2".....	.14	.08
28521-19	Insulating Tube for 1" x 3 3/8".....	.14	.08
30010-1	Universal Clips, 3/8"-3/16" Cans or Tubulars...	.30	.18
30010-2	Universal Clips, 1/2"-9/16" Cans or Tubulars...	.30	.18
30010-3	Universal Clips, 5/8"-11/16" Cans or Tubulars...	.30	.18
30010-4	Universal Clips, 3/4"-13/16" Cans or Tubulars...	.30	.18
30010-5	Universal Clips, 7/8"-15/16" Cans or Tubulars...	.30	.18
30010-6	Universal Clips, 1" -11/16" Cans or Tubulars...	.30	.18
30010-7	Universal Clips, 1 1/8"-1 1/16" Cans or Tubulars...	.30	.18
30035	Bakelite Washer for 1" in 1 3/8" Hole Mounting...	.14	.08
30036	Metal Washer for 1" in 1 3/8" Hole Mounting...	.14	.08

## HIGH-CAPACITY LOW-VOLTAGE ELECTROLYTICS



HL★

Type HL capacitors in round cardboard sleeved aluminum cans are designed for high capacity, low voltage applications, and are especially popular as replacements in motion picture sound equipment, and other low voltage circuits.

TEMPERATURE RANGE to +85°C.

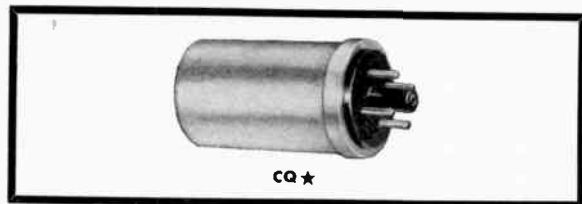
HL Cat. No.	Cap. Mfd.	D.C. W. Volts	Cap†† Size—Inches Dia. x Lgth.	List Price	Net Price
HL 1005	500	10	1 3/8 x 2 3/8	\$3.10	\$1.86
HL 1010	1000	10	1 3/8 x 2 3/8	3.55	2.13
HL 1015	1500	10	1 3/8 x 2 3/8	3.75	2.25
HL 1020	2000	10	1 3/8 x 2 3/8	3.95	2.37
HL 1030	3000	10	1 3/8 x 2 3/8	4.35	2.61
HL 1040	4000	10	1 3/8 x 4 1/8	4.75	2.85
HL 1050	5000	10	1 1/2 x 4 1/8	5.15	3.09
HL 1060	6000	10	1 3/4 x 4 1/8	7.50	4.50
HL 1205	500	12	1 3/8 x 2 3/8	3.20	1.92
HL 1210	1000	12	1 3/8 x 2 3/8	3.75	2.25
HL 1215	1500	12	1 3/8 x 2 3/8	3.95	2.37
HL 1220	2000	12	1 3/8 x 3 1/8	4.15	2.49
HL 1225	2500	12	1 3/8 x 3 1/8	4.85	2.91
HL 1230	3000	12	1 3/8 x 4 1/8	5.05	3.03
HL 1240	4000	12	1 1/2 x 4 1/8	5.25	3.15
HL 1260	6000	12	2 x 4 1/8	9.35	5.61
HL 1505	500	15	1 3/8 x 2 3/8	3.25	1.95
HL 1510	1000	15	1 3/8 x 2 3/8	3.80	2.28
HL 1515	1500	15	1 3/8 x 2 3/8	4.00	2.40
HL 1520	2000	15	1 3/8 x 3 1/8	4.70	2.82
HL 1530	3000	15	1 3/8 x 4 1/8	5.15	3.09
HL 1540	4000	15	1 1/2 x 4 1/8	8.10	4.86
HL 1560	6000	15	2 x 4 1/8	10.00	6.00
HL 1805	500	18	1 3/8 x 2 3/8	3.00	1.80
HL 1810	1000	18	1 3/8 x 2 3/8	3.90	2.34
HL 1820	2000	18	1 3/8 x 3 1/8	4.90	2.94
HL 1840	4000	18	1 1/2 x 4 1/8	8.45	5.07
HL 2005	500	20	1 3/8 x 2 3/8	3.40	2.04
HL 2010	1000	20	1 3/8 x 3 1/8	4.10	2.46
HL 2020	2000	20	1 3/8 x 4 1/8	5.20	3.12
HL 2040	4000	20	2 x 4 1/8	8.75	5.25
HL 2505	500	25	1 3/8 x 2 3/8	3.55	2.13
HL 2510	1000	25	1 3/8 x 3 1/8	4.80	2.88
HL 2520	2000	25	1 3/8 x 4 1/8	5.75	3.45
HL 2530	3000	25	1 3/8 x 4 1/8	8.00	4.80
HL 2540	4000	25	2 x 4 1/8	9.50	5.70
HL 2550	5000	25	2 1/2 x 4 1/8	11.00	6.60
HL 3005	500	30	1 3/8 x 3 1/8	3.60	2.16
HL 3010	1000	30	1 3/8 x 4 1/8	4.90	2.94
HL 3020	2000	30	1 3/8 x 4 1/8	7.40	4.44
HL 3030	3000	30	2 x 4 1/8	8.95	5.37
HL 3040	4000	30	2 1/2 x 4 1/8	10.50	6.30
HL 3505	500	35	1 3/8 x 3 1/8	3.70	2.22
HL 3510	1000	35	1 3/8 x 4 1/8	5.00	3.00
HL 3520	2000	35	1 3/8 x 4 1/8	8.00	4.80
HL 3530	3000	35	2 x 4 1/8	9.50	5.70
HL 3540	4000	35	2 1/2 x 4 1/8	11.00	6.60
HL 4005	500	40	1 3/8 x 3 1/8	3.80	2.28
HL 4010	1000	40	1 3/8 x 4 1/8	6.50	3.90
HL 4020	2000	40	1 3/8 x 4 1/8	9.00	5.40
HL 4030	3000	40	2 x 4 1/8	10.50	6.30
HL 4040	4000	40	2 1/2 x 4 1/8	11.50	6.90
HL 5005	500	50	1 3/8 x 3 1/8	3.90	2.34
HL 5010	1000	50	1 3/8 x 4 1/8	7.00	4.20
HL 5020	2000	50	1 3/8 x 4 1/8	9.10	5.46
HL 5030	3000	50	2 x 4 1/8	11.50	6.90
HL 5040	4000	50	2 1/2 x 4 1/8	12.50	7.50

★When JAN-C-62 units must be supplied, order according to specific CE type designations.

††For Overall Size add 1/16" to Diam. and 3/8" to Length.



## PLUG-IN ELECTROLYTIC



CQ ★

Type CQ Capacitors are hermetically sealed in round aluminum containers with a four-pin axial base. Ideally suited for experimental, testing, juke box, government communication receiver uses and applications where quick capacitor changes are required. Ground lugs are furnished with all multiple-section units for cathode connection.

**TEMPERATURE RANGE:** to  $+85^{\circ}\text{C}$ ; except,  $+65^{\circ}\text{C}$  at 500 V.D.C.W.

### SINGLES

CQ Cat. No.	Cap. Mfd.	D.C. W. Volts	Size—Inches Dia. x Lgth.	List Price	Net Price
CQ 1045	10	450	$1\frac{1}{2} \times 2\frac{1}{2}$	\$4.05	\$2.43
CQ 2045	20	450	$1\frac{1}{2} \times 2\frac{1}{2}$	4.30	2.58
CQ 4045	40	450	$1\frac{1}{2} \times 2\frac{1}{2}$	4.55	2.73
CQ 8045	80	450	$1\frac{1}{2} \times 3\frac{1}{2}$	5.55	3.33
CQ 4050	40	500	$1\frac{1}{2} \times 2\frac{1}{2}$	5.00	3.00

### DUALS

CQ 2215	20-20	150	$1\frac{1}{2} \times 2\frac{1}{2}$	4.20	2.52
CQ 4415	40-40	150	$1\frac{1}{2} \times 2\frac{1}{2}$	4.40	2.64
CQ 5515	50-50	150	$1\frac{1}{2} \times 2\frac{1}{2}$	4.65	2.79
CQ 8815	80-80	150	$1\frac{1}{2} \times 2\frac{1}{2}$	5.15	3.09
CQ 1145	10-10	450	$1\frac{1}{2} \times 2\frac{1}{2}$	4.40	2.64
CQ 2245	20-20	450	$1\frac{1}{2} \times 2\frac{1}{2}$	5.05	3.03
CQ 3345	30-30	450	$1\frac{1}{2} \times 3$	5.55	3.33
CQ 4445	40-40	450	$1\frac{1}{2} \times 3\frac{1}{2}$	5.90	3.54
CQ 2250	20-20	500	$1\frac{1}{2} \times 2\frac{1}{2}$	5.30	3.18

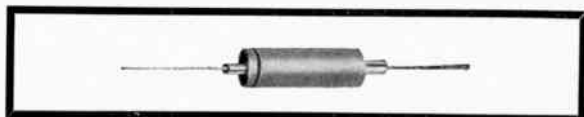
### TRIPLES

CQ 22215	20-20-20	150	$1\frac{1}{2} \times 2\frac{1}{2}$	4.85	2.91
CQ 44415	40-40-40	150	$1\frac{1}{2} \times 2\frac{1}{2}$	5.10	3.06
CQ 11145	10-10-10	450	$1\frac{1}{2} \times 2\frac{1}{2}$	5.10	3.06
CQ 22245	20-20-20	450	$1\frac{1}{2} \times 3$	6.10	3.66
CQ 4245C	40-20/20	450/25	$1\frac{1}{2} \times 3$	6.00	3.60
CQ 11150	10-10-10	500	$1\frac{1}{2} \times 2\frac{1}{2}$	5.30	3.18

### QUADRUPLES

CQ 11145C	10-10-10/20	450/25	$1\frac{1}{2} \times 2\frac{1}{2}$	5.65	3.39
CQ 33145C	30-30-10/20	450/50	$1\frac{1}{2} \times 4\frac{1}{4}$	6.85	4.11

## Ultra Small Aluminum-Cased Electrolytics



Type LE capacitors are ultra-small, compression sealed, aluminum foil units. They are housed in aluminum containers which in turn are covered by a skin-tight, clear plastic insulating sleeve. The tinned copper pigtails are securely anchored in crimped stud terminals.

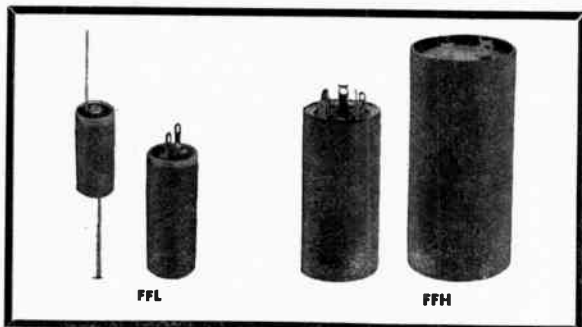
They are especially recommended for use in printed circuit assemblies, miniature radios, recorders, hearing aids, portable TV cameras and similar compact equipments.

**TEMPERATURE RANGE:**  $-20^{\circ}\text{C}$ . to  $+65^{\circ}\text{C}$ .

LE Cat. No.	Cap. Mfd.	WVDC	Can Size—Inches Diam. x Length	List Price	Net Price
LE 5-1	5	1	$\frac{3}{16} \times \frac{1}{2}$	\$1.25	\$0.75
LE 2-3	2	3	$\frac{3}{16} \times \frac{1}{2}$	1.25	.75
LE 10-3	10	3	$\frac{1}{4} \times \frac{3}{8}$	1.25	.75
LE 25-3	25	3	$\frac{1}{4} \times \frac{3}{8}$	1.25	.75
LE 40-3	40	3	$\frac{1}{4} \times \frac{3}{8}$	1.25	.75
LE 50-3	50	3	$\frac{1}{4} \times \frac{3}{8}$	1.25	.75
LE 110-3	110	3	$\frac{3}{8} \times \frac{3}{4}$	1.40	.84
LE 200-3	200	3	$\frac{3}{8} \times 1$	1.50	.90
LE 1-6	1	6	$\frac{3}{16} \times \frac{1}{2}$	1.25	.75

★ When JAN-C-62 units must be supplied, order according to specific CE type designations.

## PHOTOFLASH



FFL

FFH

FFH Cat. No.	Cap. Mfd.	D.C. W. Volts	OVERALL Size—Inches Dia. x Length	Watt Seconds	List Price	Net Price
FFH 1007 ①	2 x 50	450	$1\frac{1}{2} \times 3\frac{1}{4}$	10	\$5.50	\$3.30
FFH 10063 ②	200	450	$2\frac{1}{16} \times 4\frac{1}{2}$	20	6.85	4.11
FFH 10005 ③	200	500	$2\frac{1}{16} \times 4\frac{3}{8}$	25	10.50	6.30
FFH 10007 ④	300	450	$2\frac{1}{16} \times 4\frac{3}{8}$	30	10.50	6.30
FFH 10000 ⑤	300	450	$2\frac{1}{16} \times 4\frac{3}{8}$	30	11.50	6.90
FFH 10300 ⑥	400	450	$2\frac{1}{16} \times 4\frac{1}{2}$	40	17.95	10.77
FFH 10001 ⑦	525	450	$2\frac{1}{16} \times 4\frac{3}{8}$	53	22.60	13.56

FFL Cat. No.	Cap. Mfd.	D.C. W. Volts	OVERALL Size—Inches Dia. x Length	List Price	Net Price
FFL 10001 ⑧	40	150	$\frac{3}{4} \times 1\frac{1}{16}$	\$1.35	\$0.81
FFL 10077 ⑨	100	30	$1 \times 2\frac{1}{16}$	3.35	2.01
FFL 10062 ⑩	125	25	$\frac{3}{8} \times 1\frac{15}{16}$	1.35	.81
FFL 10067 ⑪	150	50	$\frac{3}{4} \times 1\frac{11}{16}$	1.35	.81
FFL 2525 ⑫	250	25	$1\frac{1}{16} \times 1\frac{1}{8}$	1.70	1.02

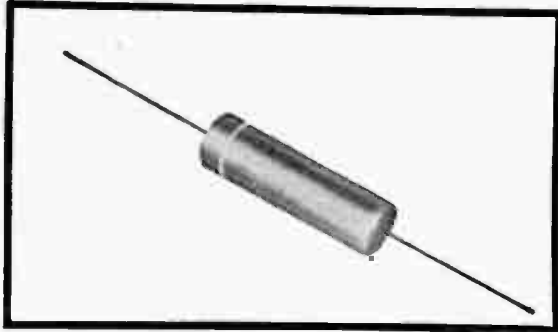
### PHYSICAL CHARACTERISTICS

- ① Aluminum Can—Cardboard Sleeve—Solder Lug Terms.—Twist Prong Mt.
- ② Aluminum Can—Cardboard Sleeve—Solder Lug Terms.
- ③ Bokelite Case—Solder Lug Terms.
- ④ Aluminum Can—Cardboard Sleeve—Screw Terms.
- ⑤ Bokelite Case—Screw Terms.
- ⑥ Aluminum Can—Tinned Wire Leads.
- ⑦ Aluminum Can—Solder Lug Terms.
- ⑧ Aluminum Can—Clip Mt. Terms.
- ⑨ Aluminum Can—Cardboard Sleeve—Mounting Strap

LE Cat. No.	Cap. Mfd.	WVDC	Can Size—Inches Diam. x Length	List Price	Net Price
LE 2-6	2	6	$\frac{3}{16} \times \frac{1}{2}$	\$1.25	\$0.75
LE 3-6	3	6	$\frac{3}{16} \times \frac{1}{2}$	1.25	.75
LE 4-6	4	6	$\frac{3}{16} \times \frac{3}{8}$	1.25	.75
LE 5-6	5	6	$\frac{3}{16} \times \frac{3}{8}$	1.25	.75
LE 8-6	8	6	$\frac{1}{4} \times \frac{3}{8}$	1.35	.81
LE 10-6	10	6	$\frac{1}{4} \times \frac{3}{8}$	1.35	.81
LE 15-6	15	6	$\frac{1}{4} \times \frac{3}{8}$	1.35	.81
LE 20-6	20	6	$\frac{1}{4} \times \frac{3}{8}$	1.35	.81
LE 25-6	25	6	$\frac{1}{4} \times \frac{3}{8}$	1.35	.81
LE 30-6	30	6	$\frac{3}{8} \times \frac{3}{8}$	1.40	.84
LE 40-6	40	6	$\frac{3}{8} \times \frac{3}{8}$	1.40	.84
LE 50-6	50	6	$\frac{3}{8} \times \frac{3}{8}$	1.40	.84
LE 60-6	60	6	$\frac{3}{8} \times \frac{3}{8}$	1.40	.84
LE 100-6	100	6	$\frac{3}{8} \times \frac{3}{8}$	1.50	.90
LE 10-10	10	10	$\frac{1}{4} \times \frac{3}{8}$	1.35	.81
LE 15-10	15	10	$\frac{1}{4} \times \frac{3}{8}$	1.35	.81
LE 25-10	25	10	$\frac{3}{8} \times \frac{3}{8}$	1.35	.81
LE 50-10	50	10	$\frac{3}{8} \times \frac{3}{4}$	1.45	.87
LE 100-10	100	10	$\frac{3}{8} \times 1$	1.60	.96
LE 5-15	5	15	$\frac{1}{4} \times \frac{3}{8}$	1.40	.84
LE 10-15	10	15	$\frac{1}{4} \times \frac{3}{8}$	1.40	.84
LE 20-15	20	15	$\frac{3}{8} \times \frac{3}{8}$	1.45	.87
LE 30-15	30	15	$\frac{3}{8} \times \frac{3}{8}$	1.50	.90
LE 5-25	5	25	$\frac{1}{4} \times \frac{3}{8}$	1.40	.84
LE 6-25	6	25	$\frac{1}{4} \times \frac{3}{8}$	1.40	.84
LE 10-25	10	25	$\frac{3}{8} \times \frac{3}{8}$	1.45	.87
LE 15-25	15	25	$\frac{3}{8} \times \frac{3}{8}$	1.45	.87
LE 20-25	20	25	$\frac{3}{8} \times \frac{3}{8}$	1.50	.90
LE 5-50	5	50	$\frac{1}{4} \times \frac{3}{8}$	1.45	.87
LE 10-50	10	50	$\frac{3}{8} \times \frac{3}{8}$	1.50	.90
LE 20-50	20	50	$\frac{3}{8} \times \frac{3}{8}$	1.50	.90



# "TOBEMITE" MOLDED PLASTIC TUBULARS



TOBE "TOBEMITES" are one of the toughest little capacitors ever offered servicemen for all types of television, auto radios, and other compact electronic equipment.

- ◆ Molded In Extra Hard Plastic
- ◆ Excellent Capacitance Stability
- ◆ Tested At Twice Rated Voltage
- ◆ Solidly Anchored Leads

TEMPERATURE RANGE: -40°C to +85°C.

TOB Cat. No.	Cap. Mfd.	Size—Inches Dia. & Length	List Price	Net Price
<b>200 V. D.C.</b>				
TOB 252	.02	1/4 x 1 1/16	\$.25	\$.15
TOB 255	.05	3/8 x 1 1/16	.25	.15
TOB 2P1	.1	3/8 x 1 1/16	.35	.21
TOB 2P25	.25	3/8 x 1 1/8	.45	.27
TOB 2P5	.5	3/8 x 1 1/8	.60	.36
TOB 2W1	1.0	3/8 x 2 1/4	.90	.54
<b>400 V. D.C.</b>				
TOB 451	.01	1/4 x 1 1/16	.25	.15
TOB 452	.02	3/8 x 1 1/16	.25	.15
TOB 4522	.022	3/8 x 1 1/16	.25	.15
TOB 4547	.047	3/8 x 1 1/16	.30	.18
TOB 455	.05	3/8 x 1 1/16	.30	.18
TOB 4568	.068	1/2 x 1 1/2	.35	.21
TOB 4P1	.1	1/2 x 1 1/2	.35	.21
TOB 4P15	.15	3/8 x 1 3/8	.35	.21
TOB 4P22	.22	3/8 x 1 3/8	.40	.24
TOB 4P25	.25	3/8 x 1 3/8	.45	.27
TOB 4P47	.47	3/8 x 2 1/4	.60	.36
TOB 4P5	.5	3/8 x 2 1/4	.60	.36
TOB 4W1	1.0	1 x 2 1/4	.90	.54
<b>600 V. D.C.</b>				
TOB 6T25	.00025	3/16 x 1"	.25	.15
TOB 6T5	.0005	1/4 x 3/4	.25	.15
TOB 6D1	.001	1/4 x 3/4	.25	.15
TOB 6D15	.0015	1/4 x 3/4	.25	.15
TOB 6D2	.002	1/4 x 3/4	.25	.15
TOB 6D22	.0022	1/4 x 3/4	.25	.15
TOB 6D3	.003	1/4 x 3/4	.25	.15
TOB 6D33	.0033	1/4 x 3/4	.25	.15
TOB 6D4	.004	1/4 x 1 1/16	.25	.15
TOB 6D47	.0047	1/4 x 1 1/16	.25	.15
TOB 6D5	.005	1/4 x 1 1/16	.25	.15

TOB Cat. No.	Cap. Mfd.	Size—Inches Dia. & Length	List Price	Net Price
<b>600 V. D.C. (Continued)</b>				
TOB 6D6	.006	1/4 x 1 1/16	.25	\$.15
TOB 6D68	.0068	1/4 x 1 1/16	.30	.18
TOB 6S1	.01	3/8 x 1 1/16	.30	.18
TOB 6S13	.015	3/8 x 1 1/16	.30	.18
TOB 6S2	.02	3/8 x 1 1/16	.30	.18
TOB 6S22	.022	3/8 x 1 1/16	.30	.18
TOB 6S25	.025	3/8 x 1 1/16	.30	.18
TOB 6S3	.03	3/8 x 1 1/16	.35	.21
TOB 6S4	.04	1/2 x 1 1/2	.35	.21
TOB 6S47	.047	1/2 x 1 1/2	.40	.24
TOB 6S5	.05	1/2 x 1 1/2	.40	.24
TOB 6S6	.06	3/8 x 1 3/8	.40	.24
TOB 6S68	.068	3/8 x 1 3/8	.40	.24
TOB 6P1	.10	3/8 x 1 3/8	.45	.27
TOB 6P25	.25	3/8 x 2 1/4	.55	.33
TOB 6P5	.5	1 x 2 1/4	.80	.48
<b>1000 V. D.C.</b>				
TOB 10D1	.001	1/4 x 1 1/16	.50	.30
TOB 10D15	.0015	1/4 x 1 1/16	.50	.30
TOB 10D2	.002	3/8 x 1 1/16	.50	.30
TOB 10D22	.0022	3/8 x 1 1/16	.50	.30
TOB 10D3	.003	3/8 x 1 1/16	.50	.30
TOB 10D33	.0033	3/8 x 1 1/16	.50	.30
TOB 10D4	.004	3/8 x 1 1/4	.50	.30
TOB 10D47	.0047	3/8 x 1 1/4	.50	.30
TOB 10D5	.005	3/8 x 1 1/4	.50	.30
TOB 10D55	.0055	3/8 x 1 1/4	.50	.30
TOB 10D6	.006	3/8 x 1 1/4	.50	.30
TOB 10D68	.0068	3/8 x 1 1/4	.50	.30
TOB 10D7	.007	3/8 x 1 1/4	.50	.30
TOB 10D75	.0075	3/8 x 1 1/4	.50	.30
TOB 10D8	.008	3/8 x 1 1/4	.50	.30
TOB 10S1	.01	3/8 x 1 1/4	.50	.30
TOB 10S15	.015	3/8 x 1 1/4	.50	.30
TOB 10S2	.02	1/2 x 1 1/2	.50	.30
TOB 10S25	.025	1/2 x 1 1/2	.50	.30
TOB 10S3	.03	1/2 x 1 1/2	.50	.30
TOB 10S4	.04	3/8 x 1 3/8	.50	.30
<b>1600 V. D.C.</b>				
TOB 16D1	.001	3/8 x 1 1/4	.65	.39
TOB 16D15	.0015	3/8 x 1 1/4	.65	.39
TOB 16D2	.002	3/8 x 1 1/4	.65	.39
TOB 16D22	.0022	3/8 x 1 1/4	.65	.39
TOB 16D3	.003	3/8 x 1 1/4	.65	.39
TOB 16D33	.0033	3/8 x 1 1/4	.65	.39
TOB 16D4	.004	3/8 x 1 1/4	.65	.39
TOB 16D47	.0047	3/8 x 1 1/4	.65	.39
TOB 16D5	.005	3/8 x 1 1/4	.65	.39
TOB 16D55	.0055	3/8 x 1 1/4	.65	.39
TOB 16D6	.006	3/8 x 1 1/4	.65	.39
TOB 16D68	.0068	3/8 x 1 1/4	.65	.39
TOB 16D7	.007	3/8 x 1 1/4	.65	.39
TOB 16D75	.0075	3/8 x 1 1/4	.65	.39
TOB 16D8	.008	3/8 x 1 1/4	.65	.39
TOB 16S1	.01	1/2 x 1 1/2	.70	.42
TOB 16S15	.015	1/2 x 1 1/2	.70	.42
TOB 16S2	.02	3/8 x 1 3/8	.70	.42
TOB 16S25	.025	3/8 x 1 3/8	.70	.42
TOB 16S3	.03	3/8 x 1 3/8	.70	.42
TOB 16S4	.04	3/8 x 1 3/8	.70	.42
<b>6000 V. D.C.</b>				
TOB 60T5	.0005	3/16 x 1 1/2	1.35	.81
TOB 60D1	.001	3/16 x 1 1/2	1.35	.81
TOB 60D5	.005	1 1/16 x 1 3/8	1.35	.81
<b>10,000 V. D.C.</b>				
TOB 100T5	.0005	1 1/16 x 1 3/8	1.50	.90
<b>12,500 V. D.C.</b>				
TOB 125T25	.00025	1 1/16 x 1 3/8	1.70	1.02



## PHENOLIC-CASED PRINTED CIRCUIT PAPER TUBULAR



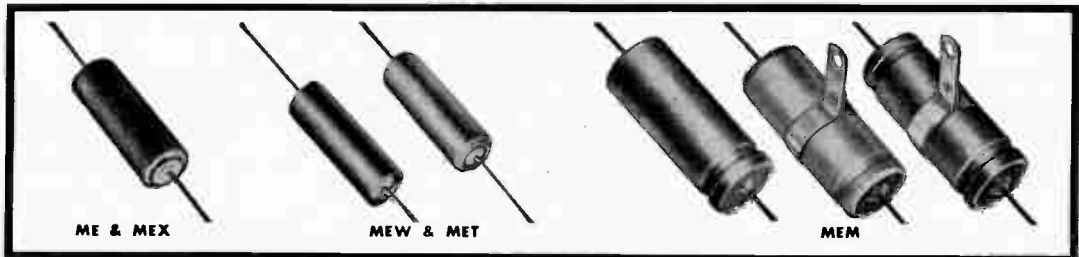
PB

- ◆ **PARALLEL LEAD WIRES:** May be plugged directly into printed circuit.
- ◆ **PRE-MOLDED PHENOLIC SHELL:** No distortion and no stresses are set up because capacitor section is not subjected to molding pressures.
- ◆ **WIDE TEMPERATURE RANGE:** Vikane impregnated units (rated at 600 WVDC) will withstand operating temperature from  $-55^{\circ}\text{C}$  to  $+100^{\circ}\text{C}$ . Units impregnated with HT compound (rated at 400 WVDC and 200 WVDC) will with-
- stand operating temperatures from  $-40^{\circ}\text{C}$  to  $+90^{\circ}\text{C}$ .
- ◆ **POLYKANE FILL:** Securely anchors leads, locks section in place and provides a barrier to moisture.
- ◆ **SOLID CONNECTIONS:** Leads are soldered directly to the extended fails for low resistance connections.
- ◆ **STRONG CONSTRUCTION:** Will withstand the extremes of soldering temperatures without damage to case material, moisture seal, lead connections or electrical performance.

PB Cat. No.	Cap. Mfd.	Size	List Price	Net Price
<b>200 V. D.C.</b>				
PB 2D68J	.0068	$\frac{3}{8} \times 1$	\$.30	<b>\$.18</b>
PB 251J	.01	$\frac{3}{8} \times 1$	.30	.18
PB 2515J	.015	$\frac{3}{8} \times 1\frac{1}{4}$	.30	.18
PB 2522J	.022	$\frac{3}{8} \times 1\frac{1}{4}$	.35	.21
PB 2533J	.033	$\frac{7}{16} \times 1\frac{1}{4}$	.35	.21
PB 2547J	.047	$\frac{1}{2} \times 1\frac{1}{4}$	.35	.21
PB 2568J	.068	$\frac{1}{2} \times 1\frac{1}{4}$	.35	.21
PB 2P1J	.10	$\frac{1}{2} \times 1\frac{1}{2}$	.40	.24
PB 2P15J	.15	$\frac{1}{2} \times 1\frac{1}{2}$	.45	.27
PB 2P22J	.22	$\frac{3}{8} \times 1\frac{1}{2}$	.50	.30
PB 2P33J	.33	$\frac{3}{8} \times 1\frac{1}{2}$	.55	.33
PB 2P47J	.47	$\frac{3}{8} \times 2\frac{1}{2}$	.65	.39
PB 2P68J	.68	$\frac{3}{8} \times 2\frac{1}{2}$	.70	.42
<b>600 V. D.C.</b>				
PB 6D1J	.001	$\frac{3}{8} \times 1$	.30	.18
PB 6D15J	.0015	$\frac{3}{8} \times 1$	.30	.18
PB 6D22J	.0022	$\frac{3}{8} \times 1$	.30	.18
PB 6D33J	.0033	$\frac{3}{8} \times 1$	.30	.18
PB 6D47J	.0047	$\frac{3}{8} \times 1$	.30	.18
PB 6D68J	.0068	$\frac{3}{8} \times 1$	.30	.18
PB 6S1J	.01	$\frac{3}{8} \times 1\frac{1}{4}$	.35	.21
PB 6S15J	.015	$\frac{7}{16} \times 1\frac{1}{4}$	.35	.21
PB 6S22J	.022	$\frac{7}{16} \times 1\frac{1}{4}$	.40	.24
PB 6S33J	.033	$\frac{1}{2} \times 1\frac{1}{4}$	.40	.24
PB 6S47J	.047	$\frac{1}{2} \times 1\frac{1}{2}$	.45	.27
PB 6S68J	.068	$\frac{3}{8} \times 1\frac{1}{2}$	.50	.30
PB 6P1J	.10	$\frac{3}{8} \times 1\frac{1}{2}$	.55	.33
PB 6P15J	.15	$\frac{3}{8} \times 2\frac{1}{2}$	.60	.36
PB 6P22J	.22	$\frac{3}{8} \times 2\frac{1}{2}$	.65	.39
PB 6P33J	.33	$\frac{3}{8} \times 2\frac{1}{2}$	.70	.42
*PB 4P47J	.47	$\frac{3}{8} \times 2\frac{1}{2}$	.70	.42

\*Rated at 400 V. D.C.

## COMPACT METALIZED-PAPER CAPACITORS



ME & MEX

MEW & MET

MEM

TOBE self-healing, metalized paper capacitors have better electrical characteristics and extra long service life. Units are light and compact.

"ME" units have bare wire leads securely anchored in metal end-caps, wax-impregnated and dip-sealed against humidity. All units are extended fail—non-inductive wound for low impedance at high frequencies, have high insulation resistance, low power factor and small capacity change with temperature and life.

"MEM" types are one piece metal tubular cased, pressure sealed by spin-aver a synthetic rubber gaskets.

"MEW" types are a high quality metalized paper capacitor, designed for smallest size and positive seal against moisture. They are hermetically sealed in metal cases with solder seal glass terminals. Especially recommended in military and commercial equipment where miniature size and light weight are paramount.

### METAL END-CAP "ME" CARDBOARD TUBULARS

TEMPERATURE RANGE:  $-40^{\circ}\text{C}$  to  $+60^{\circ}\text{C}$ .

ME Cat. No.	Cap. Mfd.	Voltage DCW	Size—Inches Diam. x Length	List Price	Net Price
ME 253	.05	200	$\frac{3}{8} \times \frac{3}{8}$	\$.65	<b>\$.39</b>
ME 2P1	.1	200	$\frac{3}{8} \times \frac{3}{8}$	.70	.42
ME 2P23	.25	200	$1\frac{1}{32} \times \frac{3}{8}$	.90	.54
ME 2P5	.5	200	$1\frac{1}{32} \times 1\frac{1}{8}$	1.05	.63
ME 2W1	1.0	200	$\frac{3}{8} \times 1\frac{1}{8}$	1.30	.78
ME 2W2	2.0	200	$\frac{3}{8} \times 2\frac{1}{8}$	1.80	1.08
ME 453	.05	400	$1\frac{1}{32} \times \frac{3}{8}$	.70	.42
ME 4P1	.1	400	$1\frac{1}{32} \times 1\frac{1}{8}$	.80	.48
ME 4P23	.25	400	$\frac{3}{8} \times 1\frac{1}{8}$	1.00	.60
ME 4P3	.5	400	$\frac{3}{8} \times 1\frac{3}{8}$	1.15	.69
ME 4W1	1.0	400	$1\frac{1}{32} \times 2\frac{1}{8}$	1.60	.96
ME 651	.01	600	$\frac{3}{8} \times \frac{3}{8}$	.70	.42
ME 6P1	.1	600	$1\frac{1}{32} \times 1\frac{1}{8}$	.90	.54
ME 6P23	.25	600	$\frac{3}{8} \times 1\frac{1}{8}$	1.10	.66
ME 6P3	.5	600	$\frac{3}{8} \times 1\frac{3}{8}$	1.45	.87
ME 6W1	1.0	600	$1\frac{1}{32} \times 2\frac{1}{8}$	1.80	1.08

(Continued next page)



# COMPACT METALIZED-PAPER CAPACITORS

(Cont'd from Page 11)

## ONE-PIECE METAL "MEM" TUBULARS (Ungrounded)

TEMPERATURE RANGE: -55°C to +95°C.

MEM Cat. No.	Cap. Mfd.	Voltage DCW	Size—Inches Diam. x Length	List Price	Net Price
MEM 1W4	4.0	150	1 x 1 <sup>31</sup> / <sub>64</sub>	\$4.35	\$2.61
MEM 1W6	6.0	150	1 x 1 <sup>31</sup> / <sub>64</sub>	5.30	3.18
MEM 255	.05	200	3/8 x 2 <sup>3</sup> / <sub>16</sub>	1.40	.84
MEM 2P1	.1	200	3/8 x 2 <sup>3</sup> / <sub>16</sub>	1.45	.87
MEM 2P25	.25	200	1/2 x 2 <sup>3</sup> / <sub>16</sub>	1.60	.96
MEM 2P5	.5	200	1/2 x 1 <sup>13</sup> / <sub>16</sub>	1.70	1.02
MEM 2W1	1.0	200	.670 x 1 <sup>13</sup> / <sub>16</sub>	2.10	1.26
MEM 2W2	2.0	200	.670 x 1 <sup>29</sup> / <sub>64</sub>	2.60	1.56
MEM 453	.03	400	3/8 x 2 <sup>3</sup> / <sub>16</sub>	1.40	.84
MEM 455	.05	400	1/2 x 2 <sup>3</sup> / <sub>16</sub>	1.45	.87
MEM 4P1	.1	400	1/2 x 1 <sup>13</sup> / <sub>16</sub>	1.60	.96
MEM 4P25	.25	400	.670 x 1 <sup>13</sup> / <sub>16</sub>	1.80	1.08
MEM 4P5	.50	400	.670 x 1 <sup>29</sup> / <sub>64</sub>	2.00	1.20
MEM 4W1	1.0	400	3/4 x 2 <sup>13</sup> / <sub>16</sub>	2.50	1.50
MEM 4W2	2.0	400	3/4 x 2 <sup>13</sup> / <sub>16</sub>	3.60	2.16
MEM 651	.01	600	3/8 x 2 <sup>3</sup> / <sub>16</sub>	1.40	.84
MEM 652	.02	600	3/8 x 2 <sup>3</sup> / <sub>16</sub>	1.45	.87
MEM 653	.03	600	3/8 x 2 <sup>3</sup> / <sub>16</sub>	1.50	.90
MEM 655	.05	600	1/2 x 2 <sup>3</sup> / <sub>16</sub>	1.55	.93
MEM 6P1	.1	600	1/2 x 1 <sup>13</sup> / <sub>16</sub>	1.70	1.02
MEM 6P25	.25	600	.670 x 1 <sup>13</sup> / <sub>16</sub>	2.00	1.20
MEM 6P5	.50	600	.670 x 1 <sup>29</sup> / <sub>64</sub>	2.40	1.44
MEM 6W1	1.0	600	3/4 x 2 <sup>13</sup> / <sub>16</sub>	3.00	1.80
MEM 6W2	2.0	600	1 1/4 x 2 <sup>13</sup> / <sub>16</sub>	4.00	2.40

\*Deduct 50¢ from List Price for Basic GROUNDED style.

## GLASS-METAL "MEW" END-SEALED TUBULARS (Ungrounded)

TEMPERATURE RANGE: -55°C to +95°C.

MEW Cat. No.	Cap. Mfd.	Voltage DCW	Size—Inches Diam. x Length	List Price	Net Price
MEW 1W4	4.0	150	1 x 1 <sup>3</sup> / <sub>4</sub>	\$6.60	\$3.96
MEW 1W6	6.0	150	1 x 1 <sup>3</sup> / <sub>4</sub>	7.60	4.56
MEW 1W8	8.0	150	1 1/8 x 1 <sup>3</sup> / <sub>4</sub>	8.80	5.28
MEW 1W10	10.0	150	1 1/4 x 1 <sup>3</sup> / <sub>4</sub>	10.15	6.09
MEW 251	.01	200	.235 x 3/4	2.55	1.53
MEW 252	.02	200	.235 x 3/4	2.60	1.56
MEW 253	.03	200	.235 x 3/4	2.60	1.56
MEW 255	.05	200	.235 x 3/4	2.60	1.56
MEW 2P1	.1	200	.312 x 3/4	2.65	1.59
MEW 2P25	.25	200	.312 x 1 1/16	2.85	1.71
MEW 2P5	.5	200	.400 x 1 1/16	2.90	1.74
MEW 2W1	1.0	200	.562 x 1 1/4	3.15	1.89
MEW 2W15	1.5	200	.562 x 1 3/4	3.35	2.01
MEW 2W2	2.0	200	.562 x 1 3/4	4.45	2.67
MEW 451	.01	400	.235 x 3/4	2.65	1.59
MEW 452	.02	400	.235 x 3/4	2.65	1.59
MEW 453	.03	400	.312 x 3/4	2.70	1.62
MEW 455	.05	400	.400 x 3/4	2.75	1.65
MEW 4P1	.1	400	.400 x 1 1/16	2.95	1.77
MEW 4P25	.25	400	.562 x 1 1/16	3.25	1.95
MEW 4P5	.5	400	.562 x 1 3/4	3.55	2.13
MEW 4W1	1.0	400	.670 x 2 1/4	3.55	2.13
MEW 4W15	1.5	400	1 x 1 3/4	4.25	2.55
MEW 4W2	2.0	400	1 x 2 1/4	6.20	3.72
MEW 4W3	3.0	400	1 1/4 x 2 1/4	7.00	4.20
MEW 4W4	4.0	400	1 1/4 x 2 1/4	8.25	4.95
MEW 651	.01	600	.312 x 3/4	2.65	1.59
MEW 652	.02	600	.312 x 3/4	2.70	1.62
MEW 653	.03	600	.400 x 3/4	2.70	1.62
MEW 655	.05	600	.400 x 3/4	2.75	1.65
MEW 6P1	.1	600	.500 x 1 1/16	2.80	1.68
MEW 6P25	.25	600	.562 x 1 1/4	3.20	1.92
MEW 6P5	.5	600	.670 x 1 3/4	3.50	2.10
MEW 6W1	1.0	600	.750 x 2 1/4	4.15	2.49
MEW 6W15	1.5	600	1 x 2 1/4	5.35	3.21
MEW 6W2	2.0	600	1 1/4 x 2 1/4	6.40	3.84
MEW 6W3	3.0	600	1 3/4 x 2 1/4	9.05	5.43

\*Deduct 50¢ from List Price for Basic GROUNDED style.

## High Temperature Metalized-Paper Capacitors

- **RESIN-IMPREGNATED:** This impregnant insures excellent electrical properties over long service life.
- **MOISTURE RESISTANT:** MET tubulars have the finest glass-to-metal solder seal terminals for maximum protection against moisture. MEX tubulars have RESIN-impregnated paper tubes, bonded securely to the RESIN fill. An external flash wax dip provides an increased moisture seal for extra long storage and service conditions under extremes of humidity.
- **NON-LEAKING:** RESIN is a special solid thermosetting plastic that will not soften, crack, or leak at the maximum temperature. No oil or wax is used internally with these units.

### "MEX" HIGH TEMPERATURE Paper-Cased TUBULARS

STANDARD TOLERANCE: +40 -20% to 1 mfd.  
+30 -20% over 1 mfd.

TEMP. RANGE: -35°C to +100°C

MEX Cat. No.	Cap. Mfd.	Voltage DCW	Size—Inches Dia. x Length	List Price	Net Price
MEX 255	.05	200	1/4 x 1 <sup>15</sup> / <sub>16</sub>	\$.65	\$.39
MEX 2P1	.10	200	5/16 x 1 <sup>15</sup> / <sub>16</sub>	.70	.42
MEX 2P25	.25	200	1 <sup>15</sup> / <sub>16</sub> x 1 <sup>15</sup> / <sub>16</sub>	.90	.54
MEX 2P5	.50	200	1 <sup>15</sup> / <sub>16</sub> x 1 1/8	1.05	.63
MEX 2W1	1.0	200	9/16 x 1 3/8	1.30	.78
MEX 2W2	2.0	200	5/8 x 1 1/2	1.80	1.08
MEX 455	.05	400	3/8 x 1 <sup>15</sup> / <sub>16</sub>	.70	.42
MEX 4P1	.10	400	3/8 x 1 1/8	.80	.48
MEX 4P25	.25	400	9/16 x 1 3/8	1.00	.60
MEX 4P5	.50	400	5/8 x 1 3/8	1.15	.69
MEX 4W1	1.0	400	1 <sup>11</sup> / <sub>16</sub> x 1 7/8	1.60	.96
MEX 4W2	2.0	400	7/8 x 2 3/8	2.20	1.32
MEX 651	.01	600	1/4 x 1 <sup>15</sup> / <sub>16</sub>	.70	.42
MEX 6P1	.10	600	1/4 x 1 1/8	.90	.54
MEX 6P25	.25	600	5/8 x 1 3/8	1.10	.66
MEX 6P5	.50	600	1 <sup>11</sup> / <sub>16</sub> x 1 1/2	1.45	.87
MEX 6W1	1.0	600	1 <sup>15</sup> / <sub>16</sub> x 1 7/8	1.80	1.08
MEX 6W2	2.0	600	1 x 2 3/8	2.50	1.50

### "MET" HIGH TEMPERATURE Metal-Cased TUBULARS STYLE BASIC (Ungrounded)

STANDARD TOLERANCE: +40 -20% to 1 mfd.  
+30 -20% over 1 mfd.

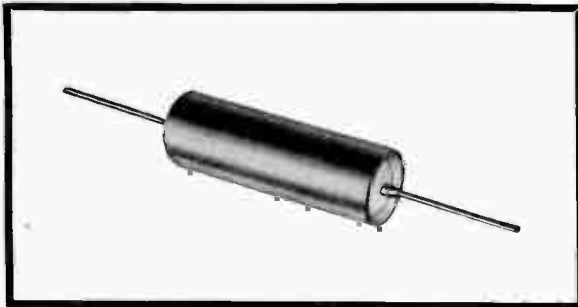
TEMP. RANGE -55°C to +130°C

MET Cat. No.	Cap. Mfd.	Voltage DCW	Size—Inches Diam. x Length	List Price	Net Price
MET 255	.05	200	.235 x 1 <sup>15</sup> / <sub>16</sub>	\$3.65	\$2.19
MET 2P1	.10	200	.312 x 1 <sup>15</sup> / <sub>16</sub>	3.75	2.25
MET 2P25	.25	200	.312 x 1 1/8	4.05	2.43
MET 2P5	.50	200	.400 x 1 1/8	4.10	2.46
MET 2W1	1.0	200	.562 x 1 1/4	4.50	2.70
MET 2W15	1.5	200	.562 x 1 3/4	6.45	3.87
MET 2W2	2.0	200	.562 x 1 3/4	6.45	3.87
MET 455	.05	400	.312 x 1 <sup>15</sup> / <sub>16</sub>	3.80	2.28
MET 4P1	.10	400	.400 x 1 1/8	3.90	2.34
MET 4P25	.25	400	.500 x 1 1/8	4.20	2.52
MET 4P5	.50	400	.562 x 1 3/8	4.65	2.79
MET 4W1	1.0	400	.670 x 2 3/8	5.10	3.06
MET 651	.01	600	.312 x 1 <sup>15</sup> / <sub>16</sub>	3.75	2.25
MET 6P1	.10	600	.400 x 1 1/8	3.95	2.37
MET 6P25	.25	600	.562 x 1 3/8	4.55	2.73
MET 6P5	.50	600	.670 x 1 15/16	5.00	3.00
MET 6W1	1.0	600	.750 x 2 3/8	6.00	3.60

\*Deduct 50¢ from List Price Basic GROUNDED style.



# MINIATURE METAL-CASED TUBULARS



Hermetically sealed in metal cases, with glass-to-metal seal terminals and available in a wide variety of mounting styles, impregnants, tolerances, and internal construction.

**STANDARD TOLERANCE:**  $\pm 20\%$

**TEMPERATURE RANGE:**

DMH	Stabilized Halowax	-40°C to + 85°C.
DMC	Mineral oil	-55°C to + 85°C.
DMU	Silicone fluid	-55°C to +125°C.
DMM	"Mylar" polyester film	-55°C to +160°C.

PRICES shown below are for **BASIC STYLE—UNGROUNDED**.

\*\*Registered Dupont trade mark.

## "BASIC" STYLE UNGROUNDED

DMH Cat. No.	Cap. Mfd.	V.D.C.W.	Size—Inches Dia. x Length	List Price	Net Price
DMH 1D1	.001	100	.175 x 3/4	\$2.25	<b>\$1.35</b>
DMH 1D47	.0047	100	.175 x 3/4	2.30	<b>1.38</b>
DMH 1S1	.01	100	.175 x 3/4	2.30	<b>1.38</b>
DMH 1S22	.022	100	.175 x 3/4	2.30	<b>1.38</b>
DMH 1S47	.047	100	.235 x 3/4	2.35	<b>1.41</b>
DMH 1P1	.1	100	.312 x 7/8	2.50	<b>1.50</b>
DMH 1P22	.22	100	.400 x 1 1/8	2.55	<b>1.53</b>
DMH 1P47	.47	100	.400 x 1 1/8	2.70	<b>1.62</b>
DMH 1W1	1.0	100	.562 x 1 1/2	3.20	<b>1.92</b>
DMH 2D1	.001	200	.235 x 3/4	2.35	<b>1.41</b>
DMH 2D47	.0047	200	.235 x 3/4	2.40	<b>1.44</b>
DMH 2S1	.01	200	.235 x 3/4	2.40	<b>1.44</b>
DMH 2S22	.022	200	.235 x 3/4	2.40	<b>1.44</b>
DMH 2S47	.047	200	.312 x 7/8	2.50	<b>1.50</b>
DMH 2P1	.1	200	.312 x 7/8	2.60	<b>1.56</b>
DMH 2P47	.47	200	.562 x 1 1/8	2.95	<b>1.77</b>
DMH 2W1	1.0	200	.562 x 1 1/8	3.30	<b>1.98</b>
DMH 4D1	.001	400	.235 x 3/4	2.40	<b>1.44</b>
DMH 4D47	.0047	400	.235 x 3/4	2.45	<b>1.47</b>
DMH 4S1	.01	400	.235 x 3/4	2.50	<b>1.50</b>
DMH 4S22	.022	400	.312 x 7/8	2.55	<b>1.53</b>
DMH 4S47	.047	400	.312 x 7/8	2.55	<b>1.53</b>
DMH 4P1	.1	400	.400 x 1 1/8	2.70	<b>1.62</b>
DMH 4P47	.47	400	.562 x 1 1/8	3.35	<b>2.01</b>
DMH 4W1	1.0	400	.750 x 2 1/8	3.90	<b>2.34</b>

DMC Cat. No.	Cap. Mfd.	V.D.C.W.	Size—Inches Dia. x Length	List Price	Net Price
DMC 1D1	.001	100	.175 x 3/4	\$2.30	<b>\$1.38</b>
DMC 1D47	.0047	100	.175 x 3/4	2.35	<b>1.41</b>
DMC 1S1	.01	100	.175 x 3/4	2.40	<b>1.44</b>
DMC 1S22	.022	100	.195 x 3/4	2.40	<b>1.44</b>
DMC 1S47	.047	100	.312 x 7/8	2.50	<b>1.50</b>
DMC 1P1	.1	100	.312 x 7/8	2.60	<b>1.56</b>
DMC 1P47	.47	100	.562 x 1 1/8	3.00	<b>1.80</b>
DMC 1W1	1.0	100	.562 x 1 1/8	3.40	<b>2.04</b>
DMC 2D1	.001	200	.235 x 3/4	2.40	<b>1.44</b>
DMC 2D47	.0047	200	.235 x 3/4	2.45	<b>1.47</b>
DMC 2S1	.01	200	.235 x 3/4	2.50	<b>1.50</b>
DMC 2S22	.022	200	.235 x 3/4	2.50	<b>1.50</b>
DMC 2S47	.047	200	.312 x 7/8	2.60	<b>1.56</b>
DMC 2P1	.1	200	.400 x 1 1/8	2.70	<b>1.62</b>
DMC 2P22	.22	200	.400 x 1 1/8	2.90	<b>1.74</b>
DMC 2P47	.47	200	.562 x 1 1/8	3.25	<b>1.93</b>

## DMC (cont'd)

DMC Cat. No.	Cap. Mfd.	V.D.C.W.	Size—Inches Dia. x Length	List Price	Net Price
DMC 2W1	1.0	200	.670 x 1 1/2	\$3.80	<b>\$2.28</b>
DMC 4D1	.001	400	.235 x 3/4	2.50	<b>1.50</b>
DMC 4D47	.0047	400	.235 x 3/4	2.50	<b>1.50</b>
DMC 4S1	.01	400	.235 x 3/4	2.55	<b>1.53</b>
DMC 4S22	.022	400	.312 x 7/8	2.65	<b>1.59</b>
DMC 4S47	.047	400	.400 x 7/8	2.75	<b>1.65</b>
DMC 4P1	.1	400	.400 x 1 1/8	2.90	<b>1.74</b>
DMC 4P22	.22	400	.562 x 1 1/8	3.25	<b>1.93</b>
DMC 4P47	.47	400	.670 x 1 1/8	3.75	<b>2.25</b>
DMC 6D1	.001	600	.235 x 3/4	2.50	<b>1.50</b>
DMC 6D47	.0047	600	.235 x 3/4	2.55	<b>1.53</b>
DMC 6S1	.01	600	.312 x 7/8	2.65	<b>1.59</b>
DMC 6S22	.022	600	.312 x 7/8	2.70	<b>1.62</b>
DMC 6S47	.047	600	.400 x 1 1/8	2.80	<b>1.68</b>
DMC 6P1	.1	600	.562 x 1 1/8	3.10	<b>1.86</b>
DMC 6P22	.22	600	.562 x 1 1/8	3.45	<b>2.07</b>
DMC 6P47	.47	600	.750 x 2 1/8	4.05	<b>2.43</b>

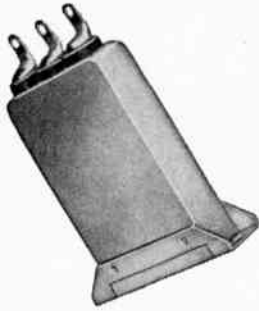
DMU Cat. No.	Cap. Mfd.	V.D.C.W.	Size—Inches Dia. x Length	List Price	Net Price
DMU 1D1	.001	100	.175 x 3/4	\$2.60	<b>\$1.56</b>
DMU 1D47	.0047	100	.175 x 3/4	2.60	<b>1.56</b>
DMU 1S1	.01	100	.175 x 3/4	2.65	<b>1.59</b>
DMU 1S22	.022	100	.195 x 3/4	2.65	<b>1.59</b>
DMU 1S47	.047	100	.312 x 7/8	2.80	<b>1.68</b>
DMU 1P1	.1	100	.312 x 7/8	2.90	<b>1.74</b>
DMU 1P47	.47	100	.562 x 1 1/8	3.35	<b>2.01</b>
DMU 1W1	1.0	100	.562 x 1 1/8	3.80	<b>2.28</b>
DMU 2D1	.001	200	.235 x 3/4	2.70	<b>1.62</b>
DMU 2D47	.0047	200	.235 x 3/4	2.75	<b>1.65</b>
DMU 2S1	.01	200	.235 x 3/4	2.80	<b>1.68</b>
DMU 2S22	.022	200	.235 x 3/4	2.80	<b>1.68</b>
DMU 2S47	.047	200	.312 x 7/8	2.90	<b>1.74</b>
DMU 2P1	.1	200	.400 x 7/8	3.00	<b>1.80</b>
DMU 2P22	.22	200	.400 x 1 1/8	3.20	<b>1.92</b>
DMU 2P47	.47	200	.562 x 1 1/8	3.60	<b>2.16</b>
DMU 2W1	1.0	200	.670 x 1 1/2	4.25	<b>2.55</b>
DMU 4D1	.001	400	.235 x 3/4	2.80	<b>1.68</b>
DMU 4D47	.0047	400	.235 x 3/4	2.80	<b>1.68</b>
DMU 4S1	.01	400	.235 x 3/4	2.85	<b>1.71</b>
DMU 4S22	.022	400	.312 x 7/8	2.95	<b>1.77</b>
DMU 4S47	.047	400	.400 x 7/8	3.05	<b>1.83</b>
DMU 4P1	.1	400	.400 x 1 1/8	3.25	<b>1.95</b>
DMU 4P22	.22	400	.562 x 1 1/8	3.60	<b>2.16</b>
DMU 4P47	.47	400	.670 x 1 1/8	4.20	<b>2.52</b>
DMU 6D1	.001	600	.235 x 3/4	2.80	<b>1.68</b>
DMU 6D47	.0047	600	.235 x 3/4	2.85	<b>1.71</b>
DMU 6S1	.01	600	.312 x 7/8	2.95	<b>1.77</b>
DMU 6S22	.022	600	.312 x 7/8	3.00	<b>1.80</b>
DMU 6S47	.047	600	.400 x 1 1/8	3.15	<b>1.89</b>
DMU 6P1	.1	600	.562 x 1 1/8	3.50	<b>2.10</b>
DMU 6P22	.22	600	.562 x 1 1/8	3.90	<b>2.34</b>
DMU 6P47	.47	600	.750 x 2 1/8	4.55	<b>2.73</b>

DMM Cat. No.	Cap. Mfd.	V.D.C.W.	Size—Inches Dia. x Length	List Price	Net Price
DMM 1S1	.01	100	.235 x 7/8	\$3.10	<b>\$1.86</b>
DMM 1S22	.022	100	.312 x 7/8	3.10	<b>1.86</b>
DMM 1S47	.047	100	.312 x 7/8	3.25	<b>1.93</b>
DMM 1P1	.1	100	.400 x 7/8	3.35	<b>2.01</b>
DMM 4D47	.0047	400	.235 x 7/8	3.25	<b>1.93</b>
DMM 4S1	.01	400	.312 x 7/8	3.30	<b>1.98</b>
DMM 4S22	.022	400	.400 x 7/8	3.40	<b>2.04</b>
DMM 4S47	.047	400	.400 x 1	3.55	<b>2.13</b>
DMM 4P1	.1	400	.562 x 1	3.75	<b>2.25</b>
DMM 4P22	.22	400	.562 x 1 1/8	4.20	<b>2.52</b>
DMM 4P47	.47	400	.670 x 1 1/8	4.85	<b>2.91</b>
DMM 4W1	1.0	408	.750 x 2 1/2	5.85	<b>3.51</b>
DMM 6D47	.0047	600	.312 x 1	3.30	<b>1.98</b>
DMM 6S1	.01	600	.312 x 1	3.40	<b>2.04</b>
DMM 6S22	.022	600	.400 x 1	3.50	<b>2.10</b>
DMM 6S47	.047	600	.400 x 1 1/8	3.65	<b>2.19</b>
DMM 6P1	.1	600	.562 x 1 1/8	4.05	<b>2.43</b>
DMM 6P22	.22	600	.670 x 1 1/8	4.50	<b>2.70</b>
DMM 6P47	.47	600	.750 x 2 1/8	5.30	<b>3.18</b>
DMM 6W1	1.0	600	1 x 2 1/2	7.00	<b>4.20</b>

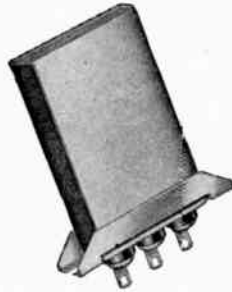




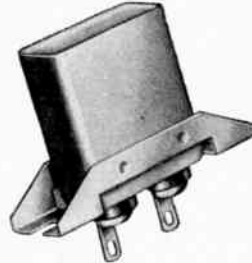
# METAL CASED PAPER CAPACITORS



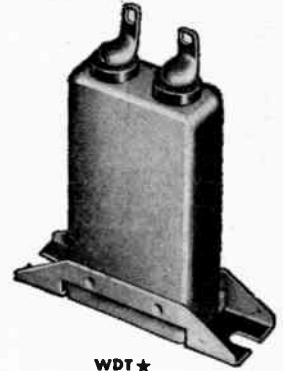
**YDT ★**  
(Similar to CP67)



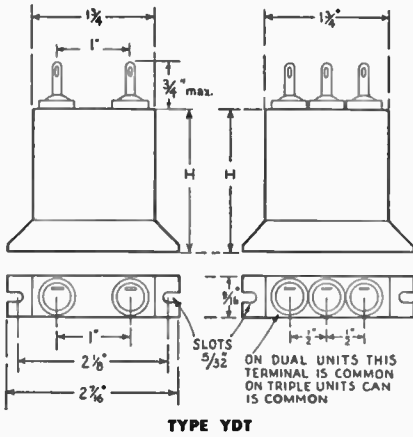
**YDB ★**  
(Similar to CP69)



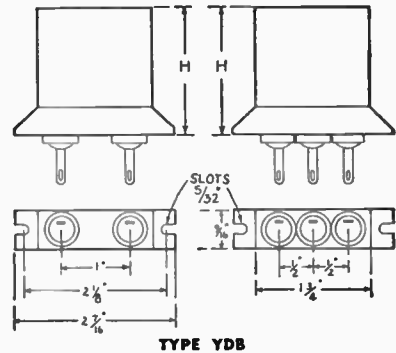
**WDB ★**  
(Similar to CP65)



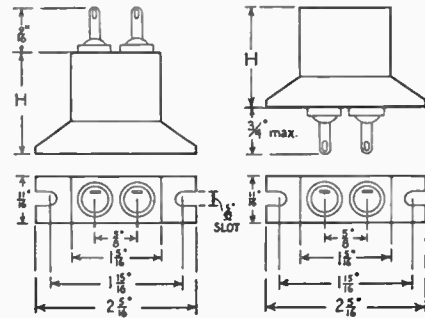
**WDT ★**  
(Similar to CP63)



**TYPE YDT**



**TYPE YDB**



**TYPE WDT**

**TYPE WDT**

Types YDT and YDB are oil impregnated and oil filled with non-inflammable, non-oxidizable liquid. They are especially suited for use in bypass, audio frequency coupling circuits and other applications. Units are sealed in drawn metal shell containers and provided with leakproof terminals either on top or bottom of the can containers. They will meet MIL-C-25A performance and test requirements.

**TEMPERATURE RANGE:** -55°C to +85°C.

**STANDARD TOLERANCE:** +20%, -10%.

Types WDT and WDB Capacitors are smaller size units of similar construction and electrical characteristics but only supplied in single section units with two terminals. These units are ideally suited for use in assemblies where space is limited and multiple units may be mounted close together. They will meet MIL-C-25A performance and test requirements.

**TEMPERATURE RANGE:** -55°C to +85°C.

**STANDARD TOLERANCE:** +20%, -10%.

YDB/YDT	Cat. No.	Cap. Mfd.	Case Size—Inches L. x W. x H.	List Price	Net Price
<b>600 V. D.C. Work.</b>					
YDB or YDT 6003		.05	1 3/4 x 3/16 x 1 1/16	\$3.60	\$2.16
YDB or YDT 610		.1	1 3/4 x 3/16 x 1 1/16	3.60	2.16
YDB or YDT 625		.25	1 3/4 x 3/16 x 1 1/2	3.85	2.31
YDB or YDT 650		.5	1 3/4 x 3/16 x 2	4.15	2.49
YDB or YDT 601		1.0	1 3/4 x 3/16 x 2 1/2	4.70	2.82
YDB or YDT 6203		.05-.05	1 3/4 x 3/16 x 1 1/16	3.65	2.19
YDB or YDT 6210		.1-.1	1 3/4 x 3/16 x 1 1/2	4.70	2.82
YDB or YDT 6225		.25-.25	1 3/4 x 3/16 x 2	4.70	2.82
YDB or YDT 6250		.5-.5	1 3/4 x 3/16 x 2 1/2	5.50	3.30
YDB or YDT 6303		.05-.05-.05	1 3/4 x 3/16 x 1 1/16	5.25	3.15
YDB or YDT 6310		.1-.1-.1	1 3/4 x 3/16 x 1 1/2	5.50	3.30
YDB or YDT 6325		.25-.25-.25	1 3/4 x 3/16 x 2 1/2	5.80	3.48
<b>1000 V. D.C. Work.</b>					
YDB or YDT 10003		.05	1 3/4 x 3/16 x 1 1/16	3.70	2.22
YDB or YDT 1010		.1	1 3/4 x 3/16 x 1 1/16	4.00	2.40
YDB or YDT 1025		.25	1 3/4 x 3/16 x 2	4.15	2.49
YDB or YDT 1050		.5	1 3/4 x 3/16 x 2 1/2	4.40	2.64
YDB or YDT 10203		.05-.05	1 3/4 x 3/16 x 1 1/16	4.40	2.64
YDB or YDT 10210		.1-.1	1 3/4 x 3/16 x 1 1/2	4.95	2.97
YDB or YDT 10225		.25-.25	1 3/4 x 3/16 x 2 1/2	5.25	3.15
YDB or YDT 10303		.05-.05-.05	1 3/4 x 3/16 x 1 1/2	5.80	3.48
YDB or YDT 10310		.1-.1-.1	1 3/4 x 3/16 x 2 1/2	6.35	3.81

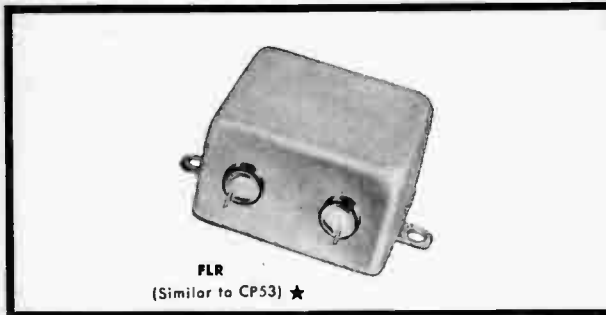
WDB/WDT	Cat. No.	Cap. Mfd.	Case Size—Inches L. x W. x H.	List Price	Net Price
<b>600 V. D.C. Work.</b>					
WDB or WDT 6003		.05	1 3/4 x 1 1/16 x 1 1/16	\$3.85	\$2.31
WDB or WDT 610		.1	1 3/4 x 1 1/16 x 1 1/16	4.15	2.49
WDB or WDT 625		.25	1 3/4 x 1 1/16 x 1 1/2	4.40	2.64
WDB or WDT 650		.5	1 3/4 x 1 1/16 x 2	4.70	2.82
WDB or WDT 601		1.0	1 3/4 x 1 1/16 x 2 1/2	5.25	3.15
<b>1000 V. D.C. Work.</b>					
WDB or WDT 10003		.05	1 3/4 x 1 1/16 x 1 1/16	4.15	2.49
WDB or WDT 1010		.1	1 3/4 x 1 1/16 x 1 1/16	4.15	2.49
WDB or WDT 1025		.25	1 3/4 x 1 1/16 x 2	4.40	2.64
WDB or WDT 1050		.5	1 3/4 x 1 1/16 x 2 1/2	4.40	2.64

★When MIL-C-25A units must be supplied, order according to specific CP type designations listed in TOBE Paper Capacitor Catalog No. 5403.

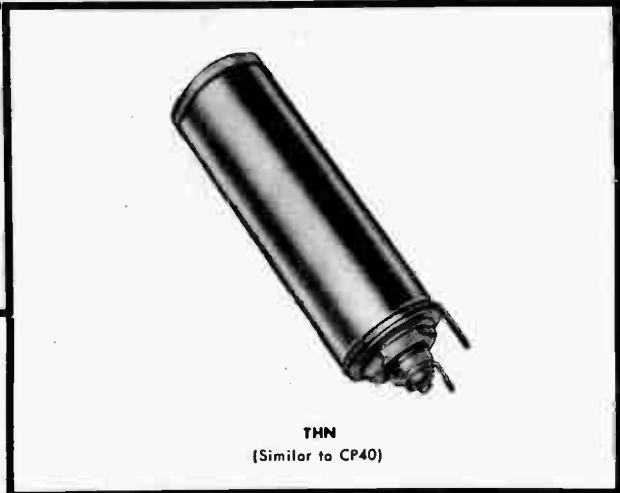


## METAL CASED PAPER CAPACITORS

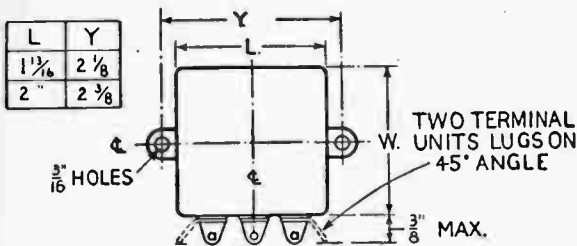
## THREADED NECK CAPACITORS



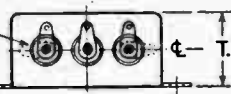
FLR  
(Similar to CP53) ★



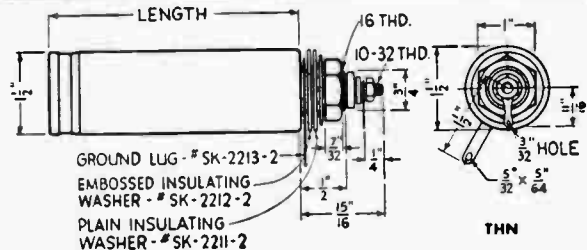
THN  
(Similar to CP40)



THIS TERMINAL COMMON ON DUAL UNITS  
CASE COMMON ON TRIPLE UNITS



FLR



THN

Type FLR oil-filled Bypass Capacitors are non-inductively wound and meet the need for dependable capacitors of fractional capacities that will operate efficiently in R.F. and A.F. bypass, audio frequency coupling under all humidity conditions. They are built to meet MIL-C-25A performance and test requirements and have been specially designed to fill the severe requirements of aircraft, submarine, marine and tropical applications.

TOBE type THN capacitors employ paper dielectric and are thoroughly oil impregnated and oil filled. Designed for through-chassis mounting. Case is grounded but may be isolated from chassis by means of insulating washer provided.

TEMPERATURE RANGE:  $-55^{\circ}\text{C}$  to  $+85^{\circ}\text{C}$ .

TEMPERATURE RANGE:  $-55^{\circ}\text{C}$  to  $+85^{\circ}\text{C}$ .

STANDARD TOLERANCE:  $\pm 20\%$ ,  $-10\%$ .

STANDARD TOLERANCE:  $\pm 20\%$ ,  $-10\%$ .

FLR	Cat. No.	Cap. Mfd.	Size—Inches Lgth. x Wid. x Thick.	List Price	Net Price
<b>600 V. D.C. Work.</b>					
FLR 6005		.05	$1\frac{13}{16} \times 1 \times \frac{3}{4}$	\$2.90	\$1.74
FLR 610		.1	$1\frac{13}{16} \times 1 \times \frac{3}{4}$	2.95	1.77
FLR 625		.25	$1\frac{13}{16} \times 1 \times \frac{3}{4}$	3.10	1.86
FLR 650		.5	$1\frac{13}{16} \times 1 \times \frac{3}{4}$	3.30	1.98
FLR 601		1.0	$2 \times 1\frac{1}{2} \times \frac{7}{8}$	3.75	2.25
FLR 602		2.0	$2 \times 2 \times 1\frac{1}{2}$	5.00	3.00
FLR 6205-3		.05-.05	$1\frac{13}{16} \times 1 \times \frac{3}{4}$	3.65	2.19
FLR 6210-3		.1-.1	$1\frac{13}{16} \times 1 \times \frac{3}{4}$	3.70	2.22
FLR 6225-3		.25-.25	$1\frac{13}{16} \times 1 \times \frac{3}{4}$	3.75	2.25
FLR 6250-3		.5-.5	$2 \times 1\frac{3}{4} \times \frac{7}{8}$	4.30	2.58
FLR 621-3		1.-1.	$2 \times 2 \times 1\frac{1}{2}$	5.30	3.18
FLR 6310		.1-.1-1	$1\frac{13}{16} \times 1 \times \frac{3}{4}$	4.20	2.52
FLR 6325		.25-.25-.25	$2 \times 1\frac{3}{4} \times \frac{7}{8}$	4.75	2.85
FLR 6350		.5-.5-.5	$2 \times 2 \times 1\frac{1}{2}$	5.75	3.45
<b>1000 V. D.C. Work.</b>					
FLR 10005		.05	$1\frac{13}{16} \times 1 \times \frac{3}{4}$	3.05	1.83
FLR 1010		.1	$1\frac{13}{16} \times 1 \times \frac{3}{4}$	3.15	1.89
FLR 1025		.25	$1\frac{13}{16} \times 1 \times \frac{3}{4}$	3.25	1.95
FLR 1050		.5	$2 \times 1\frac{3}{4} \times \frac{7}{8}$	3.55	2.13
FLR 1001		1.0	$2 \times 2 \times 1\frac{1}{2}$	4.40	2.64
FLR 10205-3		.05-.05	$1\frac{13}{16} \times 1 \times \frac{3}{4}$	3.85	2.31
FLR 10210-3		.1-.1	$1\frac{13}{16} \times 1 \times \frac{3}{4}$	4.00	2.40
FLR 10225-3		.25-.25	$2 \times 1\frac{3}{4} \times \frac{7}{8}$	4.20	2.52
FLR 10250-3		.5-.5	$2 \times 2 \times 1\frac{1}{2}$	5.45	3.27
FLR 10310		.1-.1-1	$2 \times 1\frac{3}{4} \times \frac{7}{8}$	4.60	2.76
FLR 10325		.25-.25-.25	$2 \times 2 \times 1\frac{1}{2}$	5.50	3.30

THN	Cat. No.	Cap. Mfd.	D.C. W. Volts	Size—Inches Lgth. x Diam.	List Price	Net Price
THN 6020		2	600	$2\frac{7}{8} \times 1\frac{1}{2}$	\$4.60	\$2.76
THN 6040		4	600	$4\frac{1}{2} \times 1\frac{1}{2}$	6.30	3.78
THN 10010		1	1000	$2\frac{7}{8} \times 1\frac{1}{2}$	4.20	2.52
THN 10020		2	1000	$4\frac{1}{2} \times 1\frac{1}{2}$	5.45	3.27
THN 15005		.5	1500	$2\frac{7}{8} \times 1\frac{1}{2}$	5.00	3.00
THN 15010		1	1500	$4\frac{1}{2} \times 1\frac{1}{2}$	5.45	3.27

TEMPERATURE RANGE:  $-55^{\circ}\text{C}$  to  $+85^{\circ}\text{C}$ .

STANDARD TOLERANCE:  $\pm 20\%$ ,  $-10\%$ .

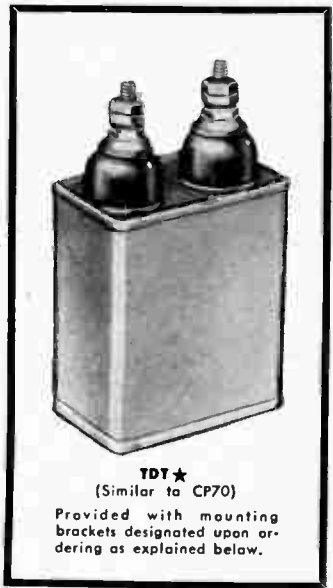
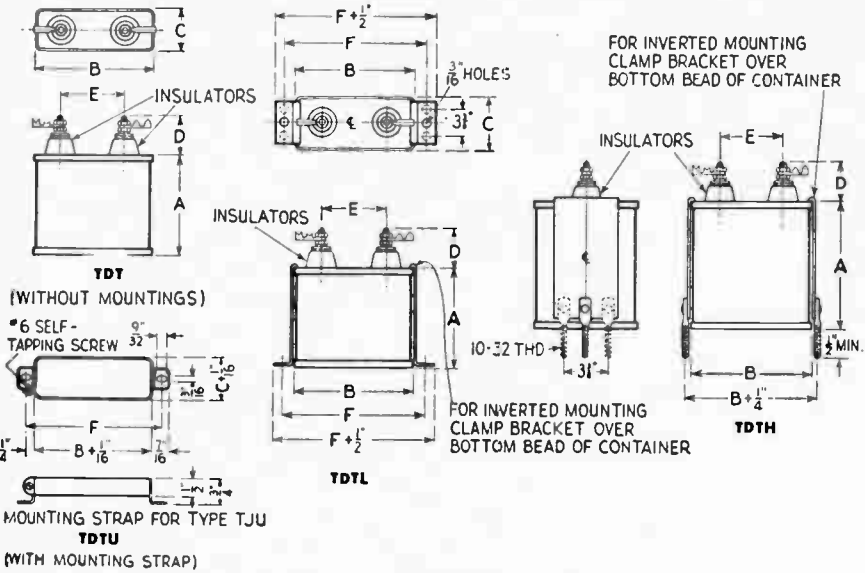
THND*	Cat. No.	Cap. Mfd.	D.C. W. Volts	Size—Inches Lgth. x Diam.	List Price	Net Price
THND 6020		2	600	$2\frac{7}{8} \times 1\frac{1}{2}$	\$5.40	\$3.24
THND 6040		4	600	$4\frac{1}{2} \times 1\frac{1}{2}$	7.10	4.26
THND 10010		1	1000	$2\frac{7}{8} \times 1\frac{1}{2}$	5.00	3.00
THND 10020		2	1000	$4\frac{1}{2} \times 1\frac{1}{2}$	6.30	3.78
THND 15005		.5	1500	$2\frac{7}{8} \times 1\frac{1}{2}$	5.85	3.51
THND 15010		1	1500	$4\frac{1}{2} \times 1\frac{1}{2}$	6.30	3.78

\*Type THND—Two solder lug terminals insulated from case. This type similar to CP41.

★When MIL-C-25A units must be supplied, order according to specific CP type designations listed in TOBE Paper Capacitor Catalog No. 5403.



# TRANSMITTING & INDUSTRIAL CAPACITORS



TYPE DESIGNATIONS—Type TDT (basic units) are without mountings. To order Types TDTH, TDTL or TDTU with mountings as shown above, use letter symbols of type mountings desired for Cat. No. as follows:

**TYPE TDT**—(Basic unit) without mountings.

**TYPE TDTH**—With screw spade-lug brackets.

**TYPE TDTL**—With mounting foot brackets.

**TYPE TDTU**—With universal mounting strap.

Prices below include mounting brackets or universal mounting strap when ordered according to these type numbers.

TEMPERATURE RANGE:  $-55^{\circ}\text{C}$  to  $+85^{\circ}\text{C}$ . STANDARD TOLERANCE:  $\pm 10\%$ .

TDT	Cat. No.	Cap. Mfd.	Dimensions—Inches						List Price	Net Price
			A	B	C	D	E	F		
<b>600 V. D.C. Working</b>										
TDT 650		.5	2 1/4	1 13/16	1 1/8	7/8	1 13/16	2 1/4	\$4.70	\$2.82
TDT 601		1	2 1/4	1 13/16	1 1/8	7/8	1 13/16	2 1/4	5.80	3.48
TDT 602		2	2 3/8	1 13/16	1 1/8	7/8	1 13/16	2 1/4	7.15	4.29
TDT 604		4	3 1/2	2 1/2	1 3/8	1	1 1/2	3	9.10	5.46
TDT 606		6	4 3/4	2 1/2	1 3/8	1	1 1/2	3	11.30	6.78
TDT 608		8	3 3/4	3 3/4	1 1/4	1	2	4 3/4	13.50	8.10
TDT 6010		10	4 3/4	3 3/4	1 1/4	1	2	4 3/4	15.15	9.09
<b>1000 V. D.C. Working</b>										
TDT 1010		.1	1 3/4	1 13/16	1 1/8	7/8	1 13/16	2 1/4	4.15	2.49
TDT 1025		.25	2 1/4	1 13/16	1 1/8	7/8	1 13/16	2 1/4	4.70	2.82
TDT 1030		.5	2 1/4	1 13/16	1 1/8	7/8	1 13/16	2 1/4	4.95	2.97
TDT 1001		1	2 1/4	1 13/16	1 1/8	7/8	1 13/16	2 1/4	6.35	3.81
TDT 1002		2	3 3/8	1 13/16	1 1/8	7/8	1 13/16	2 1/4	8.25	4.95
TDT 1004		4	4 3/4	2 1/2	1 3/8	1	1 1/2	3	10.45	6.27
TDT 1006		6	4 3/4	3 3/4	1 1/4	1	2	4 3/4	14.05	8.43
TDT 1008		8	3 3/4	3 3/4	1 1/4	1	2	4 3/4	15.15	9.09
TDT 10010		10	4 3/4	3 3/4	1 1/4	1	2	4 3/4	16.80	10.08
TDT 10012		12	4 1/2	3 3/4	1 1/4	1	2	4 3/4	18.15	10.89
TDT 10015		15	4 3/4	3 3/4	1 1/4	1	2	4 3/4	20.10	12.06
<b>1500 V. D.C. Working</b>										
TDT 1530		.5	2 3/4	1 13/16	1 1/8	7/8	1 13/16	2 1/4	6.35	3.81
TDT 1501		1	3 3/4	1 13/16	1 1/8	7/8	1 13/16	2 1/4	7.45	4.47
TDT 1502		2	4 1/4	2 1/2	1 3/8	1	1 1/2	3	10.20	6.12
TDT 1504		4	4 3/4	3 3/4	1 1/4	1	2	4 3/4	14.05	8.43
TDT 1506		6	4 3/4	3 3/4	1 1/4	1	2	4 3/4	17.05	10.23
TDT 1508		8	4 3/4	3 3/4	1 1/4	1	2	4 3/4	20.90	12.54
*TDT 15010		10	4 3/4	3 3/4	1 3/8	7/8	2	4 3/4	25.05	15.03
*TDT 15012		12	4 3/4	3 3/4	1 3/8	7/8	2	4 3/4	27.25	16.35
†*TDT 15015		15	4 3/4	4 3/8	3 3/4	7/8	2	4 3/4	30.00	18.00

TDTH	Cat. No.	Cap. Mfd.	Dimensions—Inches						List Price	Net Price
			A	B	C	D	E	F		
<b>2000 V. D.C. Working</b>										
TDT 2010		.1	2 1/2	2 1/2	1 3/8	7/8	1 1/8	3	\$6.60	\$3.96
TDT 2025		.25	2 1/2	2 1/2	1 3/8	7/8	1 1/8	3	7.15	4.29
TDT 2050		.5	2 3/4	2 1/2	1 3/8	7/8	1 1/8	3	7.45	4.47
TDT 2001		1	3 1/4	2 1/2	1 3/8	7/8	1 1/8	3	9.10	5.46
TDT 2002		2	4 1/4	3 3/4	1 3/8	1	2	4 3/4	10.75	6.45
TDT 2004		4	3 3/4	3 3/4	1 1/4	1	2	4 3/4	15.15	9.09
*TDT 2006		6	4 1/2	3 3/4	3 1/8	1 1/4	2	4 3/4	20.10	12.06
*TDT 2008		8	5 1/4	3 3/4	3 1/8	1 1/4	2	4 3/4	25.05	15.03
*TDT 20010		10	4 3/4	4 3/8	3 3/4	1 1/4	2	4 3/4	30.55	18.33
†*TDT 20012		12	5 1/2	4 3/8	3 3/4	1 1/4	2	4 3/4	33.30	19.98
<b>2500 V. D.C. Working</b>										
TDT 2550		.5	3 1/2	2 1/2	1 3/8	7/8	1 1/8	3	11.55	6.93
TDT 2501		1	3 1/4	3 3/4	1 3/8	7/8	2	4 3/4	13.20	7.92
TDT 2502		2	4 3/4	3 3/4	1 3/8	7/8	2	4 3/4	21.45	12.87
†*TDT 2504		4	4 3/8	4 3/8	3 3/4	7/8	2	4 3/4	30.00	18.00
†*TDT 25010		10	7	4 3/8	3 3/4	1 1/4	2	4 3/4	75.10	45.06
<b>3000 V. D.C. Working</b>										
TDT 3010		.1	2 1/2	2 1/2	1 3/8	7/8	1 1/8	3	14.05	8.43
TDT 3025		.25	2 3/4	2 1/2	1 3/8	7/8	1 1/8	3	14.85	8.91
TDT 3050		.5	4 1/4	2 1/2	1 3/8	7/8	1 1/8	3	16.80	10.08
TDT 3001		1	3 3/4	3 3/4	2 1/4	1 3/8	2	4 3/4	20.10	12.06
*TDT 3002		2	4 1/2	3 3/4	3 1/8	1 3/8	2	4 3/4	25.05	15.03
†*TDT 3004		4	4 3/4	4 3/8	3 3/4	1 3/8	2	4 3/4	36.85	22.11
<b>4000 V. D.C. Working</b>										
TDT 4010		.1	2 3/4	3 3/4	2 1/4	1 3/8	2	4 3/4	18.00	10.80
TDT 4025		.25	2 3/4	3 3/4	2 1/4	2	2	4 3/4	20.00	12.00
TDT 4050		.5	3 3/4	3 3/4	2 1/4	2	2	4 3/4	23.00	13.80
TDT 4001		1	5 1/4	3 3/4	2 1/4	1 3/8	2	4 3/4	29.00	17.40
†*TDT 4002		2	5 1/2	4 3/8	3 3/4	2	2	4 3/4	39.00	23.40
†*TDT 4004		4	8 1/2	4 3/8	3 3/4	2	2	4 3/4	66.85	40.11
<b>5000 V. D.C. Working</b>										
TDT 5050		.5	4 1/2	3 3/4	2 1/4	2	2	4 3/4	25.00	15.00
†*TDT 5001		1	4 3/4	4 3/8	3 3/4	1 3/8	2	4 3/4	34.00	20.40
†*TDT 5002		2	6	4 3/8	3 3/4	1 3/8	2	4 3/4	52.00	31.20
<b>6000 V. D.C. Working</b>										
TDT 6010		.1	2 3/4	3 3/4	2 1/4	2	1 3/4	4 3/4	27.00	16.20
†*TDT 6001		1	4 3/4	3 3/4	4 3/8	2	2	4 3/4	49.00	29.40

NOTES—\*Type TDTU units are not furnished in these sizes.  
† Types TDTL and TDTH units are furnished with two mounting holes or spade lugs 3 3/8" apart. All other units furnished with a single mounting hole or spade lug centered on each bracket.

For higher voltage units, to 25,000 v.d.c., write for data and prices.

\*When MIL-C-25A units must be supplied, order according to specific CP type designations listed in TOBE Paper Capacitor Catalog No. 5403.



# INSULATED RESISTORS

## TYPE BT FIXED COMPOSITION CARBON RESISTORS



More IRC Filament Type BT Resistors are used in the electronic industry than any other brand of fixed composition resistors. For original equipment, IRC BT's are by far the leading choice of Electronic Engineers. For replacement, Service Technicians favor IRC BT's over all other brands combined.

IRC's exclusive filament-type resistance element is combined with superior construction features to provide a stable resistor of extremely low operating temperature and excellent power dissipation in a compact, light weight, fully insulated unit.

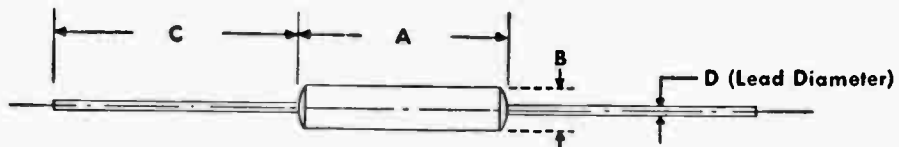
### COLOR CODING AND STAMPING

Resistance values are clearly indicated by standard EIA (formerly RETMA) Color Code. All resistors in Distributor Packages, except BTR, are individually stamped with value and wattage.

IRC TYPE NUMBER	BTR	BTS	BTA	BTB	BW-1/2	BW-1	BW-2
Element Style	Carbon Filament	Carbon Filament	Carbon Filament	Carbon Filament	Wire Wound	Wire Wound	Wire Wound
Equivalent MIL TYPE	RC09	RC20	RC30	RC41	RU3 Max. 470 ohms	RU4 Max. 2200 ohms	RU6 Max. 3300 ohms
MIL CHARACTERISTICS	BF, GF	BF, GF	BF, GF	BF, GF	B	B	
Rating in Watts 70° Ambient—BT 40° Ambient—BW	1/4	1/2	1	2	1/2	1	2
Minimum Resistance	10 Ohms	10 Ohms	10 Ohms	100 Ohms	0.24 Ohm	0.47 Ohm	1.0 Ohm
Maximum Resistance	22 Meg.	22 Meg.	22 Meg.	22 Meg.	820 Ohms	5100 Ohms	8200 Ohms
Rated Voltage	250V	350V	500V	500V			
Dimensions (Fig. 1)							
A—Body Length	3/8"	3/8"	3/8"	1 1/4"	5/8"	1 1/4"	1 3/4"
B—Body Diameter	3/32"	1/8"	1/4"	1/4"	3/16"	3/4"	21/64"
C—Lead Length	1 1/2 ± 1/8"	1 1/2 ± 1/8"	1 1/2 ± 1/8"	1 1/2 ± 1/8"	1 1/2 ± 1/8"	1 1/2 ± 1/8"	1 1/2 ± 1/8"
D—Lead Diameter	.028"	.032"	.040"	.043"	.032"	.036"	.036"
List Price							
10% Tolerance	\$0.17	\$0.17	\$0.25	\$0.33	.27-820Ω ±10% \$ .33	.47-4700Ω ±10% \$ .50	1-8200Ω ±10% \$ .67
5% Tolerance	\$0.33	\$0.33	\$0.50	\$0.67	.24-9.1Ω ±5% \$ .67	.47-4700Ω ±5% \$ .75	1-8200Ω ±5% \$ 1.00

NOTE: Consult your IRC Distributor for prices in lots of 100 and over per item.

Figure 1  
Dimensions



## TYPE BW INSULATED WIRE WOUND RESISTORS



Type BW's are exceptionally stable, inexpensive wire wound resistors for low range requirements. These small, completely insulated units are similar in appearance to insulated composition resistors but are readily identified by the double width of the first color code band.

The wire element is uniformly and tightly wound on an insulated core. Tinned, solid wire leads are keyed to the element by a specially designed terminal. Leads are anchored inside the insulation and cannot turn or pull loose.



# INSULATED RESISTORS

### STANDARD STOCK VALUES

BT and BW Insulated Resistors are available in EIA (formerly RETMA) Ranges within the maximum and minimum values for each type. Stock values are listed below.

#### STANDARD VALUES AT $\pm 10\%$ TOLERANCE

OHM	OHMS	OHMS	OHMS	OHMS	OHMS	OHMS	MEGS	MEGS
—	1.0	10	100	1,000	10K	100K	1.0	10
—	1.2	12	120	1,200	12K	120K	1.2	12
—	1.5	15	150	1,500	15K	150K	1.5	15
—	1.8	18	180	1,800	18K	180K	1.8	18
—	2.2	22	220	2,200	22K	220K	2.2	22
0.27	2.7	27	270	2,700	27K	270K	2.7	—
0.33	3.3	33	330	3,300	33K	330K	3.3	—
0.39	3.9	39	390	3,900	39K	390K	3.9	—
0.47	4.7	47	470	4,700	47K	470K	4.7	—
0.56	5.6	56	560	5,600	56K	560K	5.6	—
0.68	6.8	68	680	6,800	68K	680K	6.8	—
0.82	8.2	82	820	8,200	82K	820K	8.2	—

#### STANDARD VALUES AT $\pm 5\%$ TOLERANCE

OHM	OHMS	OHMS	OHMS	OHMS	OHMS	OHMS	MEGS	MEGS
—	1.0	10	100	1,000	10K	100K	1.0	10
—	1.1	11	110	1,100	11K	110K	1.1	11
—	1.2	12	120	1,200	12K	120K	1.2	12
—	1.3	13	130	1,300	13K	130K	1.3	13
—	1.5	15	150	1,500	15K	150K	1.5	15
—	1.6	16	160	1,600	16K	160K	1.6	16
—	1.8	18	180	1,800	18K	180K	1.8	18
—	2.0	20	200	2,000	20K	200K	2.0	20
—	2.2	22	220	2,200	22K	220K	2.2	22
0.24	2.4	24	240	2,400	24K	240K	2.4	—
0.27	2.7	27	270	2,700	27K	270K	2.7	—
0.30	3.0	30	300	3,000	30K	300K	3.0	—
0.33	3.3	33	330	3,300	33K	330K	3.3	—
0.36	3.6	36	360	3,600	36K	360K	3.6	—
0.39	3.9	39	390	3,900	39K	390K	3.9	—
0.43	4.3	43	430	4,300	43K	430K	4.3	—
0.47	4.7	47	470	4,700	47K	470K	4.7	—
0.51	5.1	51	510	5,100	51K	510K	5.1	—
0.56	5.6	56	560	5,600	56K	560K	5.6	—
0.62	6.2	62	620	6,200	62K	620K	6.2	—
0.68	6.8	68	680	6,800	68K	680K	6.8	—
0.75	7.5	75	750	7,500	75K	750K	7.5	—
0.82	8.2	82	820	8,200	82K	820K	8.2	—
0.91	9.1	91	910	9,100	91K	910K	9.1	—



# RESIST-O-CABINETS and RESIST-O-KITS

## ALL METAL RESIST-O-CABINETS



4 practical assortments of most frequently used IRC Resistors.  
4 "non-spill" drawers with 28 identified compartments. Attractive blue, yellow and silver finish. Designed for stacking. Cabinets measure 5 3/8" x 5 1/8" x 10 3/8".

1/2 WATT ASSORTMENT #4A 150 BW-1/2 and BTS 1/2 Watt Resistors. List Price \$25.50.		1 WATT ASSORTMENT #5A 125 BW-1 and BTA 1 Watt Resistors. List Price \$31.25.		2 WATT ASSORTMENT #3A 120 BW-2 and BTB 2 Watt Resistors. List Price \$39.60.		COMB. ASSORTMENT #6A 139 Insulated Resistors & Type DCF Tolerance Resistors. List Pr. \$31.65.				
QUANTITY	RANGE	QUANTITY	RANGE	QUANTITY	RANGE	RANGE	1/2 Watt	1 Watt	2 Watt	DCF
3	47 ohms	3	47 ohms	2	4.7 ohms	47 ohms	2	1	1	-
4	100 ohms	3	100 ohms	2	10 ohms	100 ohms	2	1	1	-
3	220 ohms	3	150 ohms	1	15 ohms	150 ohms	2	1	-	-
3	270 ohms	3	220 ohms	2	22 ohms	220 ohms	2	1	-	-
4	470 ohms	3	270 ohms	1	27 ohms	270 ohms	2	1	-	-
8	1,000 ohms	3	470 ohms	1	33 ohms	470 ohms	2	1	1	-
4	1,500 ohms	7	1,000 ohms	1	39 ohms	1,000 ohms	4	4	-	1
4	2,200 ohms	3	1,500 ohms	3	47 ohms	1,500 ohms	2	1	-	-
4	2,700 ohms	5	2,200 ohms	2	68 ohms	2,200 ohms	2	1	-	-
5	3,300 ohms	3	2,700 ohms	3	82 ohms	2,700 ohms	2	1	-	-
7	4,700 ohms	3	3,300 ohms	4	100 ohms	3,300 ohms	2	2	-	-
7	10K ohms	5	4,700 ohms	3	150 ohms	4,700 ohms	3	1	1	-
5	22K ohms	7	10K ohms	3	220 ohms	10K ohms	3	4	1	1
5	27K ohms	3	15K ohms	4	270 ohms	15K ohms	2	2	1	-
5	33K ohms	5	22K ohms	4	330 ohms	22K ohms	2	2	1	-
8	47K ohms	7	27K ohms	4	470 ohms	27K ohms	2	4	-	-
4	56K ohms	4	33K ohms	5	1,000 ohms	33K ohms	2	1	-	-
4	68K ohms	4	39K ohms	4	1,500 ohms	39K ohms	2	1	-	-
8	100K ohms	7	47K ohms	4	2,200 ohms	47K ohms	2	1	-	-
7	220K ohms	4	68K ohms	4	3,300 ohms	68K ohms	2	4	3	1
8	270K ohms	7	100K ohms	3	3,900 ohms	270K ohms	4	3	-	-
5	330K ohms	3	150K ohms	4	4,700 ohms	330K ohms	2	2	-	-
8	470K ohms	3	220K ohms	5	6,800 ohms	470K ohms	4	4	-	1
7	1.0 meg.	7	270K ohms	7	8,200 ohms	1.0 meg.	4	2	-	-
7	2.2 meg.	7	470K ohms	7	10K ohms	2.2 meg.	3	1	-	-
4	3.3 meg.	7	1.0 meg.	5	15K ohms	3.3 meg.	4	2	-	-
5	4.7 meg.	3	2.2 meg.	7	22K ohms	4.7 meg.	4	3	-	-
3	10.0 meg.	3	4.7 meg.	4	27K ohms	10.0 meg.	4	3	-	-
				7	47K ohms		4	4	-	1
				5	100K ohms		3	3	-	-
				3	220K ohms		2	1	-	-
				3	470K ohms		-	-	-	1
				4	1.0 meg.					

## RESIST-O-KITS



ALL METAL

Handy pocket-size metal kit of 1/2 or 1 watt BT Resistors. 10 compartments; lid snaps securely shut. Ranges marked on each resistor in Kit. Ideal for service calls. List Price \$7.50

### 1/2 WATT ASSORTMENT #7

45 BTS 1/2 Watt Resistors

\*indicates popular TV ranges.

QUANTITY	RANGE
4	1,000 ohms*
3	4,700 ohms*
4	10K ohms*
5	47K ohms*
6	100K ohms*
3	220K ohms*
5	270K ohms*
6	470K ohms*
5	1.0 meg*
4	2.2 meg*

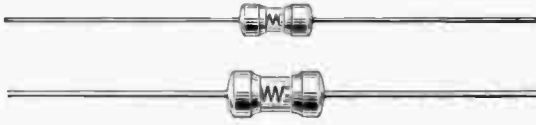
### 1 WATT ASSORTMENT #8

30 BTA 1 Watt Resistors

\*indicates popular TV ranges.

QUANTITY	RANGE
4	1,000 ohms*
2	2,200 ohms
2	4,700 ohms*
3	10K ohms*
2	27K ohms*
4	47K ohms*
4	100K ohms
2	270K ohms
4	470K ohms
3	1.0 meg*

## MICROSTAK SELENIUM DIODES



Type GA Microstak Diodes for use in low current circuits where very high back resistance and low forward resistance are required. Miniature selenium cells with outstanding performance characteristics, they are ideal for such applications as A. V. C., switching, blocking and bias supplies. Design and small size give high frequency performance not found in conventional cells — tests prove their successful performance in circuit applications up to 1 megacycle. Hermetically sealed to assure stable operation under high humidity, dust, fumes and changing pressures.

Dimensions: (Type 6GA1) Length of leads — 1½". Body length — .450". Diameter — .145". (Type 9GA1) Length of leads — 1½". Body length — .500". Diameter — .210".

### TYPE 6GA1

Stock No. 6GA1-2B. Minimum forward current (at 2 V.D.C.) is 0.5 M.A. and corresponding resistance, 4000 ohms. Maximum inverse current (at 20 V.D.C.) is 20 microamperes and corresponding resistance, 1 megohm. Peak inverse volts —36. Continuous inverse volts —22. Maximum A.C. input (RMS volts with resistive load only) —26. Temperature range is —55°C to +90°C. Shunt capacitance — approximately 25 mmf (measured with two plates back-to-back on 1000 cycle bridge).

List \$1.67

Stock No. 6GA1-3C. Minimum forward current (at 2 V.D.C.) is 1 M.A. and corresponding resistance, 2000 ohms. Maximum inverse current (at 20 V.D.C.) is 10 microamperes and corresponding resistance, 2 megohms.

List \$2.25

### TYPE 9GA1

Stock No. 9GA1-2B. Characteristics are the same as the 6GA1-2B.

List \$1.50

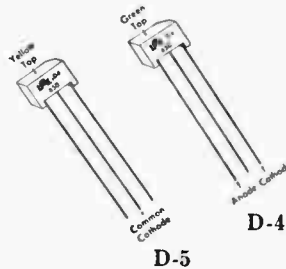
Stock No. 9GA1-3C. Characteristics are the same as the 6GA1-3C.

List \$2.04



## SELENIUM DIODES & FUSE RESISTORS

### IRC DUAL DIODES



New IRC Universal Selenium Dual Diodes for horizontal phase detectors and remote control in TV Receivers. Also used in radio control devices for model planes, and other circuits. Two basic types: (1) common

cathode; (2) series diodes. Sealed in plastic housing. Attractively packaged.

D4 (replaces former D1 and D2). Common cathode dual diode to replace the following Mfrs.' Parts: G.E. K115J510-1, -2; Hallicrafter 27C226; Hoffman 10031; Motorola 48K741255; Philco 34-8037-1-2.

List Price \$1.65

D5 (replaces former D3). Series connected dual diode to replace the following Mfrs.' Parts: Admiral 93A5-2; Citizenship Radio 34-8037; Magnavox 530045-1,-2; Motorola 48K741752; Webcor 65P124.

List Price \$1.65



NEW

### IRC TYPE FR FUSE RESISTOR

New IRC Fuse-Resistor. Modern design in rectangular ceramic shell. Equipped with plug-in terminals. Available in two popular resistance values. Attractively packaged.

FR5.6—Fuse-Resistors 5.6 ohms.....List \$ .75

FR7.5—Fuse-Resistor 7.5 ohms.....List \$ .75



# TYPE Q VOLUME CONTROLS



RADIO-TV TECHNICIANS'

## TYPE Q VOLUME CONTROL

IRC's Type Q Control is the basic control for servicing all sets. It is carefully engineered to meet most replacement requirements with a minimum stock. The quality appearance and "cushioned turn" of the Q Control assure customer satisfaction. Easier installation and dependable performance provide more profitable servicing.

### KNOB MASTER STANDARD FIXED SHAFT

Standard shaft is knurled, flatted and slotted and fits most knobs without alteration. For knurled or spring type push-on knobs, cut to length. For over-size, worn or web type knobs, split shaft slot lengthwise and spread ends. For positioned knobs, bend down control locating pins and rotate control base for correct knob position.

### 1/4" LONG BUSHING

Shorter bushing and compact 15/16" design suit Q Controls to all small sets, yet handle large set needs as well.

#### "Q" CONTROLS IN ORDER OF RESISTANCE

#### "Q" CONTROLS IN ORDER OF STOCK NUMBER

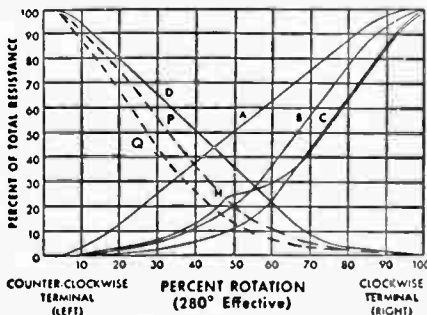
Ohms	Tap	Stock No.	T	Ohms	Tap	Stock No.	T	Stock No.	Ohms	Tap	T	Stock No.	Ohms	Tap	T
250		Q11-201	A	300K		Q11-131	A	Q11-103	500		A	Q11-133	500K		A
500		Q11-103	A	350K		Q11-132	A	Q11-105	750		A	Q13-133	500K		C
750		Q11-105	A	350K		Q13-132	C	Q17-105	750		S	Q13-133X	500K		S
750		Q17-105	P	350K	35K	Q17-132X	C	Q17-105X	750	250	S	Q14-133	500K		H
750	250	Q17-105X	S	350K	75K	Q18-132X	H	Q11-108	1000		H	Q17-133	500K		D
1000		Q11-108	A	500K		Q11-133	A	Q17-108	1000		P	Q17-133X	500K	25K	R
1000		Q17-108	A	500K		Q13-133	C	Q18-133X	1500		A	Q18-133X	500K	50K	S
1500		Q11-109	A	500K		Q14-133	D	Q18-133XX	1500		Q		500K	100K-	
1500		Q17-109	A	500K		Q17-133	D		1500		A		500K	200K-	
2000		Q11-110	A	500K		Q17-133X	S	Q11-110	2000		Q	Q18-133X	500K	250K	S
2000		Q17-110	A	500K	25K			Q17-110X	2000	250	S	Q11-134	600K		A
2000	250-500	Q17-110XX	S	500K	50K	Q18-133X	S	Q13-111	2500	500	A	Q11-136	750K		A
2500		Q13-111	C	500K	125K	Q19-133X	S	Q17-111	2500		Q	Q11-137	1.0M		A
2500		Q17-111	Q	500K	200K	Q18-133XX	S	Q13-112	3000		A	Q13-137	1.0M	250K	C
3000		Q11-112	A	800K		Q11-134	A	Q17-112	3000		Q	Q14-137	1.0M		D
3000		Q17-112	A	750K		Q11-136	A	Q11-114	5000		A	Q17-137	1.0M		Q
5000		Q11-114	A	1.0M		Q11-137	A	Q13-114	5000		A	Q17-137X	1.0M	35K	S
5000		Q13-114	C	1.0M		Q13-137	C	Q17-114	5000		Q	Q17-137XX	1.0M	50K-	
5000		Q17-114	A	1.0M		Q14-137	D	Q11-115	7500		A		100K		S
7500		Q11-115	A	1.0M		Q17-137	Q	Q11-116	10K		A	Q18-137X	1.0M		S
10K		Q11-116	A	1.0M		Q17-137X	S	Q13-116	10K		C	Q18-137XX	1.0M		S
10K		Q13-116	C	1.0M	35K	Q18-137X	S	Q14-116	10K		C	Q19-137X	1.0M	500K	S
10K		Q14-116	D	1.0M	100K	Q18-137X	S	Q17-116	10K		H	Q11-138	1.5M		S
10K		Q17-116	A	1.0M	250K	Q19-137X	S	Q13-118X	15K	10K	S	Q11-138	1.5M		A
15K	10K	Q13-118X	S	1.0M	500K	QVC-539X	S	Q13-118XX	15K	5K-	S	Q13-138X	1.5M	250K	S
15K	5K-	Q13-118XX	S	1.0M	50K-	Q17-137XX	S	Q17-118X	15K	10K	S	Q11-139	2.0M		A
15K	5K-	Q17-118X	S	1.0M	100K-	Q18-137XX	S	Q13-119	15K	5K-	S	Q13-139	2.0M		C
15K	5K-			1.0M	250K-			Q13-139X	15K	10K	S	Q13-139XX	2.0M	500K-	H
20K	10K	Q17-118XX	S	1.5M	500K			Q11-119	20K		A	Q13-139XX	2.0M	500K-	S
20K		Q11-119	A	1.5M		Q11-138	A	Q16-119	20K		S	Q17-139	2.0M		S
20K		Q16-119	A	2.0M	250K	Q13-138X	A	Q17-120	25K		A	Q17-139X	2.0M	150K	S
25K		Q11-120	A	2.0M		Q11-139	A	Q13-120	25K		C	Q18-139X	2.0M	1.0M	S
25K		Q13-120	C	2.0M		Q13-139	C	Q14-120	25K		D	Q18-139XX	2.0M	250K	S
25K		Q14-120	D	2.0M		Q17-139	Q	Q11-121	20K		A		600K		S
30K		Q11-121	A	2.0M	50K	Q19-139X	S	Q11-122	35K		A	Q19-139X	2.0M	50K	S
35K		Q11-122	A	2.0M	100K	Q17-139X	S	Q11-123	50K		A	Q11-140	3.0M		A
50K		Q11-123	A	2.0M	500K	Q13-139X	H	Q13-123	50K		C	Q13-140	3.0M		C
50K		Q13-123	C	2.0M	1.0M	Q18-139X	S	Q14-123	50K		D	Q13-140X	3.0M	900K	S
50K		Q14-123	D	2.0M	250K			Q11-125	75K		A	Q17-140	3.0M		Q
75K		Q11-125	A	500K		Q18-139XX	S	Q11-128	100K		A	Q18-140X	3.0M	1.5M	S
100K		Q11-128	A	2.0M	500K-	Q13-139XX	S	Q13-128	100K		A	Q11-141	5.0M		A
100K		Q13-128	C	1M		Q11-239	A	Q11-129	200K		A	Q12-141	5.0M		S
125K		Q11-228	A	2.5M		Q13-140	A	Q11-130	250K		A	Q13-141	5.0M		C
150K		Q11-328	A	3.0M		Q13-140	C	Q13-130	250K		C	Q17-141	5.0M		Q
150K	19K-39K	Q13-328	C	3.0M		Q17-140	Q	Q18-130X	250K	125K	S	Q11-142	7.5M		A
150K		Q17-328XX	S	3.0M	900K	Q13-140X	C	Q18-130X	250K	60K	S	Q11-201	250		A
200K		Q11-129	A	3.0M	1.5M	Q18-140X	S	Q18-130XX	250K	60K-	H	Q11-228	125K		A
250K		Q11-130	A	5.0M		Q11-141	A			120K	S	Q11-239	2.5M		A
250K		Q13-130	C	5.0M		Q12-141	S	Q11-131	300K		A	Q11-328	150K		A
250K	60K	Q18-130X	C	5.0M		Q13-141	C	Q11-132	350K		A	Q13-328	150K		C
250K	125K	Q13-130X	S	5.0M		Q17-141	Q	Q13-132	350K		C	Q17-328XX	150K	19K-	A
250K	60K	Q18-130XX	S	7.5M		Q11-142	A	Q17-132X	350K	35K	S		38K		S
250K	120K	Q18-130XX	S	10.0M		Q11-143	A	Q18-132X	350K	75K	H	QVC-539X	1.0M	500K	S

T—Taper M—Megohms P—Plain Controls—List \$1.40  
Tapped Controls—List \$2.05

#### SWITCHES FOR ABOVE

76-1 SPST ..... List \$.65  
76-2 DPST ..... List .65

#### STANDARD TAPERS FOR Q CONTROLS



- A—For Pots or Rheostats where resistance change is Uniform.
- B—Semi-log curve for tone or audio circuit control.
- C—Log curve—reverse taper for contrast and picture control circuits in television.
- D—Tapered at both ends for grid bias and antenna circuit control; where grid bias control is important to volume control.
- H—Tapped log curve for audio level control for automatic bass compensation.
- P—Semi-log curve—reverse taper for use in contrast and picture control circuits in television.
- Q—Log curve—reverse taper for use in contrast and picture control circuits in television.
- S—Special Taper—based on specific specifications.



**ASSEMBLE YOUR OWN  
STANDARD OR SPECIAL  
IRC Q CONTROLS**

For those who would like to use their IRC Base-Element stock for assembly of standard controls, the component parts are available. Plain Q Control assemblies with 1-Base-Element, 1-Interchangeable Fixed Shaft, 1-QCB Bushing and 1-QCC Cover. Switch type Q control assemblies with 1-Base-Element, 1-Interchangeable Fixed Shaft, 1-QCB Bushing and 1 of either 76-1 or 76-2 Switch.

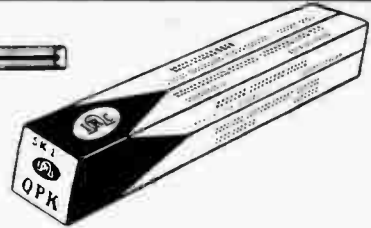
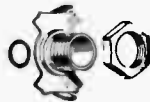
QCB-BUSHING— $\frac{3}{8}$ "-32 thread,  $\frac{1}{4}$ " long. Pkg. of 5.  
List Price \$0.55

QCC-COVER—For plain or tapped controls. Pkg. of 5.  
List Price \$0.85

IRC VOLUME CONTROL GROUNDING LUG—Same as supplied with IRC Type Q Controls. Fits  $\frac{3}{8}$ " bushing. Lug length from hole center— $1\frac{1}{2}$ ". Type QCL Grounding Lugs.  
Pkg. of 5. List Price \$0.20

STANDARD Q CONTROL LOCKNUT—Hex nut for  $\frac{3}{8}$ "-32 thread,  $\frac{1}{4}$ " across flats. Type QCN. Pkg. of 10.  
List Price \$0.30

New SK1 (QPK) Kit assembles above standard Q control parts with IRC base elements. Contents: AQ Knob Master Shaft, QCB Ground Plate/Bushing, QCC Universal Cover, R-1 Resilient Retainer Ring, QCN Mounting Nut.  
List Price \$0.85



**IRC**  
**Q CONTROL  
ACCESSORIES**

**Q CONTROL PARTS KITS**

Package of parts for assembly of specific Q Control types. Includes shaft, bushing and cover. Add desired Base-Element.

SK1—Formerly QPK, Includes AQ shaft for Q Control assembly.

SK2—Includes RQ shaft for RQ Control assembly.

SK3—Includes SQ shaft for SQ Control assembly.

Any SK Kit ..... List \$ .85

**16 INTERCHANGEABLE FIXED SHAFTS FOR Q CONTROLS**



**AQ**

Knob Master Shaft. Same as supplied in Type Q Controls. Flatted, grooved and knurled. 3" long. List Price \$0.55



**BQ**

Slotted or tongued. For remote control cables. Includes  $\frac{1}{4}$ " and  $1\frac{1}{8}$ " guide funnels and tongue. Approximately  $3\frac{1}{2}$ " long from mounting face.  $\frac{1}{4}$ " diameter. List Price \$1.25



**GQ**

Specially slotted with hole in bottom. For Philco sets. Slot  $\frac{1}{8}$ " x  $\frac{1}{8}$ " deep. Approximately  $1\frac{1}{4}$ " long from mounting face when installed in control.  $\frac{1}{4}$ " diameter. List Price \$0.75



**HQ**

Flatted, with groove for dial plate. For Delco, RCA, Sears-Roebuck and Westinghouse sets.  $\frac{3}{32}$ " deep flat.  $\frac{3}{32}$ " deep groove. Approximately  $1\frac{1}{4}$ " long from mounting face.  $\frac{1}{4}$ " diameter. List Price \$1.00



**JQ**

$\frac{1}{4}$ " diameter with .105" flat. For Zenith models where shaft must operate inside another shaft. Approximately  $4\frac{1}{4}$ " long from mounting face. List Price \$1.00



**KQ**

Special  $\frac{1}{4}$ " round with two concentric holes in end. For Motorola sets. Approximately  $1\frac{1}{2}$ " long from mounting face. List Price \$0.85



**LQ**

Short flat with groove and threaded hole in end. For Belmont and Montgomery-Ward sets.  $\frac{3}{32}$ " deep flat.  $\frac{3}{32}$ " deep groove. Approximately 1" long from mounting face.  $\frac{1}{4}$ " diameter. List Price \$1.25



**MQ**

Special double-flat, threaded for  $\frac{3}{8}$ " on end. For Belmont, Montgomery-Ward and Wells-Gardner sets. Has two concentric holes in end, the smaller being threaded. Approximately  $1\frac{1}{2}$ " long from mounting face. List Price \$1.25



**NQ**

Universal  $\frac{3}{8}$ " flatted and slotted shaft. Slot milled entire length of shaft except for thin web. Approximately 4" long from mounting face. List Price \$0.50



**PQ**

Universal  $\frac{1}{4}$ " full-round shaft approximately 3" long from mounting face. For  $\frac{1}{4}$ " or  $\frac{3}{8}$ " bushings.  $\frac{3}{8}$ " bushing included. List Price \$0.40



**RQ**

Very short screw-driver slot shaft. Slot,  $\frac{3}{16}$ " x  $\frac{1}{16}$ ". Approximately  $\frac{1}{2}$ " long from mounting face.  $\frac{1}{4}$ " diameter. For  $\frac{3}{8}$ " bushing only. Bushing included. List Price \$0.50



**SQ**

Combination finger knurl and screw-driver slot. Shaft knurled at end for  $\frac{1}{8}$ ". Screw-driver slot in end,  $\frac{3}{16}$ " x  $\frac{1}{16}$ ".  $\frac{1}{4}$ " diameter. Approximately  $\frac{3}{4}$ " long from mounting face. List Price \$0.50



**TQ**

Insulated shaft for use in television. Drive arm and shaft of insulating material. Used without retainer ring. 3" long from mounting face. Easily cut to required length.  $\frac{1}{4}$ " diameter. CANNOT BE USED WITH SWITCH. List Price \$0.65



**UQ**

Identical with BQ Shaft except for addition of friction clutch-drive arm. Used for remote control as in auto radios. List Price \$1.25



**VQ**

Special tongued shaft— $1\frac{1}{8}$ " long from mounting face, tongue  $\frac{3}{16}$ " wide,  $\frac{1}{2}$ " long, .050" thick. For Magnavox TV Receivers. List Price \$1.00



**WQ**

Special tongued shaft—1" long from mounting face, tongue  $\frac{1}{4}$ " wide,  $\frac{1}{2}$ " long, .062" thick. For Zenith TV Receivers. List Price \$1.00

**FOR QUICK, EASY CONVERSION TO "SPECIALS"  
WITH FIXED SHAFT SECURITY**

This feature adapts the Q Control to a "special" in 6 easy steps. (1) Remove control cover by bending up tabs. (2) Remove Resilient Retainer Ring with knife or pointed tool. (3) Remove standard shaft from control base. (4) Insert special shaft in base. (5) Roll new Ring into shaft groove. (6) Replace cover (or add switch).

IRC INTERCHANGEABLE FIXED SHAFTS ARE INDIVIDUALLY PACKAGED with complete instructions and extra Resilient Retainer Ring.



# Q CONTROL ACCESSORIES

## TAB MOUNT CONTROLS

Many recent TV sets use Tab Mount Controls. These are single controls without switch. They differ from standard controls in that bushing is omitted and mounting to chassis is made with two heavy twist-type mounting tabs.

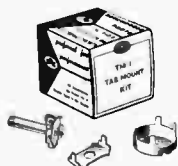
## IRC TAB-MOUNT KITS

Since assembly of Tab-Mount Controls is so simple, IRC supplies three 3-Part Tab-Mount Kits which will assemble with any standard plain or tapped IRC Base-Element to provide satisfactory Tab-Mount Controls. Each TM Kit includes a Tab-type Ground Plate, a control cover and a finger-knurled and screw-driver slotted shaft of appropriate length for universal replacement. Packaged with instruction sheet but without necessary Base-Element.

TM-1—IRC Tab-Mount Kit—Shaft  $\frac{1}{4}$ " long. List Price \$0.65

TM-2—IRC Tab-Mount Kit—Shaft  $\frac{3}{8}$ " long. List Price \$0.65

TM-3—IRC Tab-Mount Kit—Shaft 1" long. List Price \$0.65



## EXTENSION SHAFTS



These attach to regular shafts, thus extending length to any needed size. They frequently make it possible to use standard controls for "special" jobs

Type	Dimensions
Shaft 441.....	4" x $\frac{1}{4}$ " dia. x $\frac{1}{32}$ " flat
Shaft 442.....	4" x $\frac{1}{4}$ " dia. x $\frac{3}{32}$ " flat
Shaft 443.....	4" x $\frac{3}{8}$ " dia. x $\frac{1}{16}$ " flat
Shaft 444.....	8" x $\frac{1}{4}$ " dia. x $\frac{3}{32}$ " flat for 4" lengths

List Price \$0.45

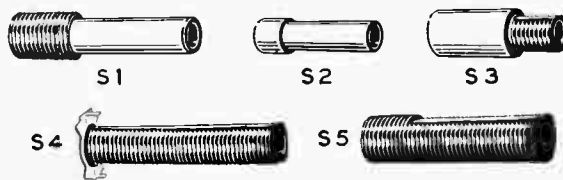
## SHAFT COUPLER

For use with standard controls to meet special shaft requirements. Two set screws give rigid connection.

TYPE C3—Plain coupler to couple  $\frac{1}{4}$ " shafts; insert allows coupling of  $\frac{1}{4}$ " shaft to  $\frac{3}{8}$ " shaft.

List Price \$0.35

## SLEEVE BUSHINGS



TYPE S1—For use with standard controls. List Price \$0.50

TYPE S2—To provide bearing for switching mechanism. List Price \$0.35

TYPE S3—For use with standard controls to set control back from chassis or mounting bracket.  $1\frac{1}{2}$ "— $\frac{1}{2}$ " dia. for 1" unthd. — $\frac{3}{8}$ " dia. for  $\frac{1}{2}$ ",  $\frac{3}{8}$ "—32 thd.—.344 flat. List Price \$0.65

TYPE S4—For use with concentric duals to provide  $\frac{1}{8}$ " dia. bushing.  $1\frac{1}{2}$ "— $\frac{1}{8}$ "—28 thd. full length—.375 db1. flat. List Price \$0.65

TYPE S5—For use with standard controls to provide  $\frac{1}{2}$ " dia. bushing.  $2\frac{1}{4}$ "— $\frac{1}{2}$ "—28 thd. full length—.437 flat. List Price \$0.65

# SPECIAL PURPOSE CONTROLS



Type QJ-3  
TV ATTENUATOR

- Reduces overloading effects on TV sets in strong signal areas.
- Diminishes interstation interference caused by nearby or powerful stations.
- Minimizes buzz due to high signal level in Inter-carrier systems.
- Permits easy adjustment of signal RIGHT AT SET.
- Frequently prevents mismatch of antenna load to set.

IRC's QJ-3 TV Attenuator permits ready adjustment of signal input to TV sets. In most cases, it corrects or substantially reduces such conditions as:—Adjacent channel interference, background picture on weaker stations, poor definition, picture and sound breaker. Also useful in service work—duplicating fringe area signals when shop is near strong local station. List Price \$3.65



Type LC-1  
LOUDNESS CONTROL

A continuously compensated control that boosts lows and highs as volume is decreased—maintains depth and brilliance even at whisper level. Type LC-1 replaces makeshift compensating units—tapped volume controls, stepped-type loudness controls, bass and treble boost circuits. Automatically maintains proper balance of all frequencies in the audio spectrum at any listening level. Simplicity itself—as easy to wire into an audio circuit as any standard three-terminal volume control. Complete instructions included, showing applications. Type 76-1 or 76-2 switch can be added to this control. List Price \$10.95

## 2 and 4 WATT WIRE WOUNDS

International Resistance Company's new Universal Wire Wound Control engineered to handle all 2-watt and 4-watt requirements, may be used as a replacement for former types W, WK, 4WK, and 4WS. Dimensions: 1 1/4" in diameter, 45/64" deep behind mounting face with-out switch; 1-7/32" with switch. Available in the following types:



**Type WPK (Technician's Replacement)**  
3/8-32 x 3/4" long bushing with popular Q Type Knob Master Shaft 3" long from mounting face.



**Type WPS (Technicians' Replacement)**  
3/8-32 x 3/4" long bushing with combination finger knurl and screwdriver slot shaft 3/4" long from mounting face.

### TYPE WM



**Type WM Universal Wire Wound Multisections.** Adds to WPK or WPS to make dual or triple section controls. Supplied assembled but may be assembled in field by use of WM Kit and desired WP Base Element. Switches cannot be used.

List Price \$1.65

### HIGH VOLTAGE CONTROLS



**TYPE HV**—A two-watt carbon element high voltage control for use in television receivers using picture tubes requiring electrostatic focus. Equipped with Knob Master Shaft. Diameter 2-11/64", depth behind panel 25/32", bushing 1/4", shaft length 3".

### TYPE HV

HV-15	15 Meg.	Linear	\$3.30
HV-25	25 Meg.	Linear	3.30

Plain Control—2 to 10,000 ohms	\$1.65
above 10,000 ohms	2.05
Tapped Control—10 to 200 ohms	2.20

Switches are available for use with all of the above types. Windings are not compensated and the resistance in approximately 15% rotation will be lost.

Switch type 76-11 SPST	List Price \$0.65
Switch type 76-12 DPST	List Price \$0.65

### STANDARD TAPERS

- L Taper—Left Hand Taper with approximately 15% of total resistance at 50% rotation when measured from Left Terminal to Center Terminal facing shaft end of control with terminals down.
- R Taper—Right Hand Taper with approximately 15% of total resistance at 50% rotation when measured from Right Terminal to Center Terminal facing shaft end of control with terminals down.
- U Taper—Standard Linear Taper.



**Type WP (Distributors' Industrial Control)**  
Constructed with 3/8-32 x 3/4" bushing and 1/2" diameter, full round shaft 3" long from mounting face.

### TYPE WPRL



A new line of IRC distributor industrial controls with short screw-driver slot shaft 1/2" diameter and approximately 1/2" long from mounting face, with 3/8" locking type bushing and locking nut. 10% resistance tolerance. Linear taper.

### STOCK VALUES OF TYPE WPK AND WPS CONTROLS

Ohms	Tap	Taper	Type WPK Control	Type WPS Control	Ohms	Tap	Taper	Type WPK Control	Type WPS Control
10	—	U	WPK10	—	750	—	S	—	—
10	5	U	—	WPS10X3	1000	—	U	WPK1000	WPS1000
15	7.5	U	—	WPS15X7.5	1350	—	U	WPK1350	—
20	—	U	WPK20	—	1350	—	R	WPK1350R	—
20	10	U	—	WPS20X10	1500	—	U	WPK1500	WPS1500
25	—	U	—	WPS25	1500	—	L	WPK1500L	—
25	12.5	U	—	WPS25X12.5	1500	500	S	—	—
30	—	U	WPK30	—	2000	—	U	WPK2000	WPS2000
30	15	U	—	WPS30X15	2000	—	L	WPK2000L	—
40	—	U	—	WPS40	2250	—	U	—	WPS2250
40	20	U	—	WPS40X20	2250	—	L	WPK2250L	WPS2250L
50	—	U	WPK50	—	2500	—	U	WPK2500	WPS2500
50	25	U	—	WPS50X25	2500	—	R	WPK2500R	—
60	—	U	—	WPS60	3000	—	U	WPK3000	—
60	—	U	—	WPS60X40	3000	—	R	—	WPS3000
80	—	U	—	—	3300	—	L	—	—
100	—	U	WPK100	—	4000	—	U	—	—
100	50	U	—	WPS100X50	4000	—	U	—	WPS4000
140	70	U	—	WPS140X70	4000	—	L	WPK4000L	WPS4000L
150	75	U	—	WPS150X75	5000	—	U	WPK5000	WPS5000
200	—	U	WPK200	—	5000	—	L	WPK5000L	—
200	100	U	—	WPS200X100	5000	—	R	—	—
250	—	U	WPK250	—	6000	—	U	WPK6000	—
300	—	U	WPK300	—	6000	—	L	WPK6000L	—
400	—	U	WPK400	—	7500	—	U	WPK7500	—
500	—	U	WPK500	—	7500	—	L	WPK7500L	—
500	—	L	—	WPS500	10000	—	U	WPK10000	—
600	—	U	WPK600	—	12500	—	U	WPK12500	—
650	—	U	WPK650	—	15000	—	U	WPK15000	—
750	—	U	WPK750	—	20000	—	U	WPK20000	—
750	—	L	WPK750L	—	25000	—	U	WPK25000	—
750	—	R	WPK750R	—	—	—	—	—	—

Type	List Price	Type	List Price
WPK, Plain Control—2-10,000 ohms	\$1.65	WPS, Plain Control—10-5,000 ohms	\$1.65
WPK, Above 10,000 ohms	2.05	WPS, Tapped Control—10-200 ohms	2.20



# UNIVERSAL WIRE WOUND CONTROLS

### STOCK VALUES OF TYPE WP AND WPRL CONTROLS AND MULTISECTIONS

Ohms	Taper	MAX. Current in Amps	Type WP	Type WPRL	Multisections
2	U (Lin.)	1.414	WP2	WPRL2	—
5	U	1.152	WP3	WPRL3	—
6	U	.895	WP5	WPRL5	—
8	U	.817	WP6	WPRL6	—
10	U	.707	WP8	WPRL8	—
15	U	.633	WP10	WPRL10	—
20	U	.517	WP15	WPRL15	—
25	U	.447	WP20	WPRL20	—
30	U	.400	WP25	WPRL25	—
40	U	.365	WP30	WPRL30	—
50	U	.316	WP40	WPRL40	—
60	U	.283	WP50	WPRL50	WM50
75	U	.258	WP60	WPRL60	—
100	U	.231	WP75	WPRL75	—
200	U	.200	WP100	WPRL100	WM100
250	U	.141	WP200	WPRL200	WM200
300	U	.126	WP250	WPRL250	WM250
400	U	.115	WP300	WPRL300	—
500	U	.100	WP400	WPRL400	—
750	U	.090	WP500	WPRL500	WM500
1,000	U	.073	WP750	WPRL750	—
1,500	U	.063	WP1000	WPRL1000	WM1000
2,000	U	.052	WP1500	WPRL1500	WM1500
2,500	U	.045	WP2000	WPRL2000	WM2000
3,000	U	.040	WP2500	WPRL2500	WM2500
4,000	U	.036	WP3000	WPRL3000	WM3000
5,000	U	.031	WP4000	WPRL4000	WM4000
7,500	U	.028	WP5000	WPRL5000	WM5000
10,000	U	.023	WP7500	WPRL7500	—
15,000	L	.016	—	—	WM7500L
20,000	U	.020	WP10000	WPRL10000	WM10000
25,000	U	.016	WP15000	WPRL15000	—
30,000	U	.014	WP20000	WPRL20000	—
35,000	U	.012	WP25000	WPRL25000	—

\* Maximum current is given for a single control operating at an ambient temperature of 40°C and mounted on a metal chassis. Multiple controls must be so derated that hot spot temperature (ambient plus temperature rise) will not exceed 110°C on any winding.

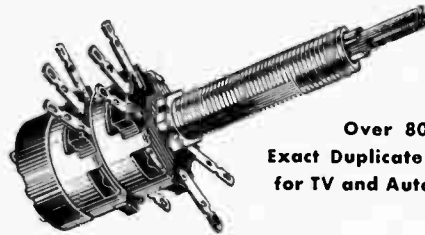
Type	List Price	Type	List Price	Type	List Price
WP, 2 to 10K Ohms	\$1.65	WM Multisection	\$1.65	76-12 (DPST)	\$0.65
WP, over 10K	2.05	76-11 (SPST)	.65	—	—
WPRL, 2 to 10K Ohms	2.00	—	—	—	—
WPRL, over 10K	2.40	—	—	—	—



# TELEVISION and AUTO SET CONTROLS

For those who prefer factory-assembled special controls, IRC provides an exceptionally broad line of over 800 Exact Duplicate Controls. Each control is specified closely to manufacturers' original control specifications—required. Carbon and wirewound elements are used for panel and rear sections as required.

The IRC Exact Duplicate Line now includes over 100 concentric dual controls for auto radios. Modern in



Over 800  
Exact Duplicate Controls  
for TV and Auto Radios

design, these new controls bring many unique and desirable features to provide convenience, economy and long life. The new IRC Printed-Silver Tone Switch eliminates contact fatigue—assures positive, no bump contact. Simple detent assures positive positioning independent of switch action. Control position feature of  $\frac{1}{16}$ " and  $\frac{1}{2}$ " bushings permits exact duplication of original. Short control depth fits most crowded locations. Power switches amply rated for both TV and Auto Radios. Consult S-012 Part Number Replacement Manual for needed controls.

## IRC CONCENTRIKIT ASSEMBLES EXACT DUPLICATE CONTROLS features quick assembly—no modification of parts.

### 14 Basic CONCENTRIKITS

IRC Concentrikits are the common parts to various types of Exact Duplicate Controls. When assembled with parts shown in IRC Parts Number Manual (Form S-012) or Auto Radio Replacement (Form S-031), they will produce any IRC Exact Duplicate TV or Auto Radio Controls. No cutting or filing of shafts or bushings—one minute assembly.

Concen- trikit	Control Depth	Panel Section	Rear Section	Bushing	Use	List Price
K-2	*	C	C	$\frac{3}{8}$ " x $\frac{3}{8}$ "	TV & Auto	\$0.90
K-3	*	W	C	$\frac{3}{8}$ " x $\frac{3}{8}$ "	TV	.90
K-4	*	C	C	$\frac{3}{8}$ " x $\frac{3}{4}$ "	TV (Motorola)	1.00
K-5	*	C	C	$\frac{3}{8}$ " x $\frac{1}{4}$ "	TV (Hallcrafters)	.90
K-6	**	C	C	$\frac{3}{8}$ " x $\frac{3}{8}$ "	TV & Auto	.90
K-7	**	C	C	$\frac{3}{8}$ " x $\frac{3}{8}$ "	TV	1.00
K-8	**	C	C	none	Auto	.50
K-9	**	TS	C	none	Auto	.30
K-10	**	W	W	$\frac{3}{8}$ " x $\frac{3}{8}$ "	TV	.90
K-11	**	W	C	$\frac{3}{8}$ " x $\frac{1}{4}$ "	TV	.90
K-12	**	C	W	$\frac{3}{8}$ " x $\frac{3}{8}$ "	TV	.90
K-13	**	W	W	$\frac{3}{8}$ " x $\frac{1}{4}$ "	TV	.90
K-14	**	W	W	$\frac{3}{8}$ " x $\frac{3}{4}$ "	TV	1.00
K-15	**	C	C	$\frac{3}{8}$ " x $\frac{1}{4}$ "	TV	.90

\*—Standard      \*\*—Short      C—Carbon      W—Wire  
TS—Tone Switch

### IRC Printed-Silver Tone Switch Elements

Sensational new development in concentric tone switch permits assembly of special Exact Duplicate Auto Radio Controls in field. Assembles like standard IRC Base Elements—no loose parts. Packed with detent-type panel cover. Consult Auto Radio Replacement (Form S-031) for other parts.

Stock No.	Description	List Price
BS1	4 Position Tone Switch Element for Ford	\$1.20
BS2	4 Position Tone Switch Element for Delco	1.20
BS3	3 Position Tone Switch Element for Philco	1.20
BS4	4 Position Tone Switch Element for Delco	1.20
BS5	4 Position Tone Switch Element for Lincoln and Mercury	1.20

### IRC EXACT DUPLICATE BUSHINGS featuring Adjustable Positioning

A wide assortment of Exact Duplicate Bushings provide easy, quick assembly of Auto Radio Controls without cutting, filing or modification. New adjustable ground plate permits positioning of flats or notched mounting face to duplicate original control positioning. Individually packaged.

Stock No.	Dimensions	Type	List Price
S6	$\frac{1}{8}$ " x $\frac{1}{8}$ "	Double-flat	\$0.85
S7	$\frac{1}{8}$ " x $\frac{1}{8}$ "	Double-flat	.85
S8	$\frac{1}{8}$ " x $\frac{1}{8}$ "	Double-flat	.85
S9	$\frac{1}{8}$ " x $\frac{1}{8}$ "	Double-flat	.85
S10	$\frac{1}{2}$ " x 0.2"	Single-flat	.85
S11	$\frac{1}{2}$ " x $\frac{1}{8}$ "	Single-flat	.85
S12	$\frac{1}{2}$ " x $\frac{1}{8}$ "	Single-flat	.85
S13	$\frac{1}{2}$ " x 1"	Single-flat	.85
S14	$\frac{1}{2}$ " x $\frac{1}{4}$ "	Single-flat	.85
S15	$\frac{1}{2}$ " x $\frac{1}{2}$ "	Single-flat	.85
S16	$\frac{1}{2}$ " x $1\frac{5}{8}$ "	Single-flat	.85
S17	$\frac{1}{2}$ " x $\frac{1}{8}$ "	Single-flat	.85
S18	$\frac{1}{2}$ " x 2"	Single-flat	.85
S19	$\frac{1}{2}$ " x $2\frac{1}{8}$ "	Single-flat	.85
S20	$\frac{1}{2}$ " x $2\frac{1}{4}$ "	Single-flat	.85
S21	$\frac{1}{2}$ " x $1\frac{1}{8}$ "	Notched	.85
S22	$\frac{1}{2}$ " x $1\frac{1}{8}$ "	Notched	.85
S23	$\frac{1}{2}$ " x $1\frac{1}{2}$ "	Notched	.85
S24	$\frac{1}{2}$ " x $1\frac{3}{8}$ "	Notched	.85
S25	$\frac{1}{2}$ " x $1\frac{1}{8}$ "	Notched	.85
S26	$\frac{1}{2}$ " x 1-17/32"	Notched	.85
S27	$\frac{1}{2}$ " x $1\frac{1}{4}$ "	Notched	.85
S28	$\frac{1}{2}$ " x $1\frac{3}{4}$ "	Notched	.85
S29	$\frac{1}{2}$ " x $1\frac{1}{2}$ "	Notched	.85
S30	$\frac{1}{2}$ " x $1\frac{3}{8}$ "	Notched	.85
S31	$\frac{1}{2}$ " x 2"	Notched	.85
S32	$\frac{1}{2}$ " x $2\frac{1}{8}$ "	Notched	.85
S33	$\frac{3}{8}$ " x $\frac{1}{4}$ "	—	.25
S34	$\frac{3}{8}$ " x $\frac{3}{8}$ "	—	.25
S35	$\frac{1}{2}$ " x 13/32"	Single-flat	.85
S36	$\frac{1}{2}$ " x $\frac{5}{8}$ "	Single-flat	.85
S37	$\frac{1}{2}$ " x $\frac{1}{2}$ "	Single-flat	.85
S38	$\frac{1}{2}$ " x 27/32"	Single-flat	.85
S39	$\frac{1}{2}$ " x $\frac{3}{4}$ "	Single-flat	.85
N1	Mounting Nut for $\frac{1}{8}$ " Bushings—Pkg. of 10		.55
N2	Mounting Nut for $\frac{1}{2}$ " Bushings—Pkg. of 10		.55

Base-Elements and Exact Duplicate Shafts for CONCENTRIKIT assembly are listed on 3 pages following →

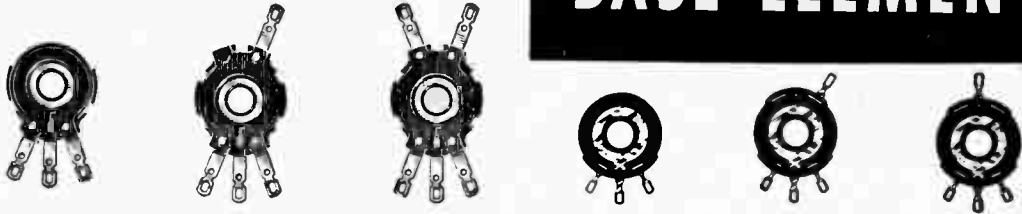
IRC Base-Elements are a revolutionary advance in concentric dual replacement. A relatively small stock at low investment provides wide coverage of electrical requirements of many concentric duals. Each unit is a complete molded control base with element, terminals and collector ring installed. There are no loose parts.

Two types of Base-Elements are available: Type B for panel or rear carbon sections and Type W for wire-wound panel or rear sections.

Two Base-Elements are required for each concentric dual.



# CONCENTRIKIT BASE ELEMENTS



## BASE ELEMENT STOCK VALUES

### CARBON AND WIREWOUND BASE-ELEMENTS BY RESISTANCE VALUE

Ohms	Tap	T	Stock No.	Ohms	Tap	T	Stock No.	Ohms	Tap	T	Stock No.	Ohms	Tap	T	Stock No.
10	—	U	W11-010	1350	—	U	W11-308	11.5K	—	Q	B17-117	500K	25K	S	B17-133X
10	5	U	W11-010X	1350	—	R	W17-308	12.5K	—	U	W11-217	500K	50K	S	B18-133X
15	7.5	U	W11-015X	1500	—	A	B11-109	15K	—	A	B11-118	500K	75K	S	B15-133X
20	—	U	W11-020	1500	—	U	W11-109	15K	—	U	W11-118	500K	125K	H	B13-133X
20	10	U	W11-020X	1500	—	L	W13-109	15K	—	S	B13-118X	500K	180K	S	B20-133X
25	—	U	W11-025	1500	185 &	Q	B17-109	15K	10K	S	B13-118X	500K	250K	S	B19-133X
25	12.5	U	W11-025X	1500	375 &	S	B17-109XX	15K	5000 &	S	B13-118XX	500K	100K &	S	B18-133XX
30	—	U	W11-030	2000	500	S	W17-109X	15K	5000	S	B17-118X	600K	—	A	B11-134
30	15	U	W11-030X	2000	—	A	B11-110	15K	5000 &	S	B17-118XX	750K	—	A	B11-136
40	—	U	W11-040	2000	—	U	W11-110	20K	10K	A	B11-119	1.0M	—	A	B11-137
40	20	U	W11-040X	2000	—	L	W13-110	20K	—	U	W11-119	1.0M	—	C	B13-137
50	—	U	W11-050	2000	550	Q	B17-110	20K	—	S	B16-119	1.0M	—	D	B14-137
50	25	U	W11-050X	2000	250 &	S	B17-110X	20K	—	U	W11-120	1.0M	—	Q	B17-137
60	—	U	W11-060	2250	500	S	B17-110XX	25K	—	A	B11-120	1.0M	35K	S	B17-137X
60	40	U	W11-060X	2250	—	U	W11-210	25K	—	U	W11-120	1.0M	100K	S	B18-137X
100	—	U	W11-084	2500	—	L	W13-210	25K	—	C	B13-120	1.0M	250K	H	B13-137X
100	50	U	W11-084X	2500	—	A	B11-111	25K	—	D	B14-120	1.0M	500K	S	B19-137X
140	70	U	W11-092X	2500	—	U	W11-111	30K	—	A	B11-121	1.0M	500K	S	BVCS39X
150	75	U	W11-094X	2500	—	C	B13-111	35K	—	A	B11-122	1.0M	50K &	S	B17-137XX
200	—	U	W11-100	2500	500	Q	B17-111	50K	—	A	B11-123	1.0M	100K	S	B18-137XX
200	100	U	W11-100X	2500	625	R	W17-111	50K	—	C	B13-123	—	250K &	S	B18-137XX
250	—	A	B11-201	3000	—	S	B17-111X	50K	—	D	B14-123	1.5M	—	A	B11-138
250	—	U	W11-201	3000	—	S	B27-111X	75K	—	A	B11-125	1.5M	—	C	B13-138
300	—	A	B11-102	3000	—	A	B11-112	100K	—	A	B11-128	1.5M	250K	S	B13-138X
300	—	U	W11-102	3000	150	U	W11-112	100K	—	C	B13-128	2.0M	—	A	B11-139
400	—	U	W11-202	3300	—	Q	B17-128	100K	—	Q	B17-128	2.0M	—	C	B13-139
500	—	A	B11-103	4000	—	R	W17-112	125K	—	A	B11-228	2.0M	—	Q	B17-139
500	—	U	W11-103	4000	—	S	B17-112X	150K	—	A	B11-228	2.0M	50K	S	B19-139X
500	—	L	W13-103	5000	—	L	W13-212	150K	—	A	B11-328	2.0M	150K	S	B17-139X
600	—	U	W11-104	5000	—	U	W11-113	150K	19K &	A	B11-328	2.0M	500K	H	Q13-139X
650	—	U	W11-204	5000	—	L	W13-113	150K	38K	S	B17-328XX	2.0M	1.0M	S	B18-139X
750	—	A	B11-105	5000	—	A	B11-114	200K	—	A	B11-129	2.0M	250K &	S	B18-139XX
750	—	U	W11-105	5000	1000	U	W11-114	250K	—	A	B11-130	2.0M	500K &	S	B13-139XX
750	—	L	W13-105	6000	—	C	B13-114	250K	—	A	B11-130	2.0M	1.0M	S	B13-139XX
750	—	P	B17-105	6000	—	L	W13-114	250K	60K	C	B13-130	2.5M	—	A	B11-239
750	—	R	W17-105	7500	—	Q	B17-114	250K	125K	H	B18-130X	3.0M	—	A	B11-140
750	250	S	B17-105X	7500	—	R	W17-114	250K	60K &	S	B13-130X	3.0M	—	C	B13-140
750	250	S	W17-105X	7500	—	S	B17-114X	250K	120K	S	B18-130XX	3.0M	900K	Q	B17-140
1000	—	A	B11-108	10K	—	U	W11-214	300K	—	A	B11-131	3.0M	1.5M	S	B18-140X
1000	—	U	W11-108	10K	—	L	W13-214	350K	—	A	B11-132	5.0M	—	A	B11-141
1000	—	P	B17-108	10K	—	U	W11-115	350K	—	C	B13-132	5.0M	—	S	B12-141
1000	150	S	B17-108X	10K	—	L	W13-115	350K	35K	C	B17-132X	5.0M	—	S	B12-241
1200	—	Q	B17-208	10K	—	U	W11-116	350K	75K	H	B18-132X	5.0M	—	C	B13-141
						A	B11-116	500K	—	A	B11-133	5.0M	—	Q	B17-141
						U	W11-116	600K	—	C	B13-133	7.5M	—	A	B11-142
						C	B13-116	600K	—	D	B14-133	10.0M	—	A	B11-143
						D	B14-116	500K	—	Q	B17-133				
						Q	B17-116	500K	—						

T—Taper M—Megchms

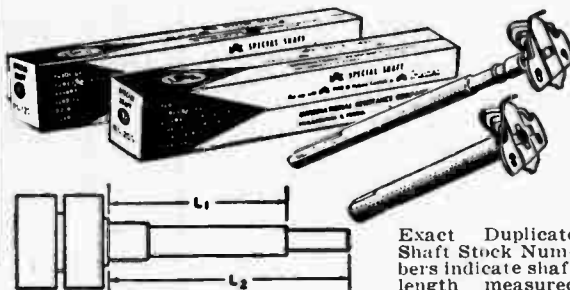
TYPE	BASE ELEMENTS	TYPE	BASE ELEMENTS
Plain Carbon Base Elements	List Price \$0.55	Plain Wire Wound Base Elements	List Price
Tapped Carbon Base Elements	1.20	above 10k ohms	1.20
Plain Wire Wound Base Elements		Tapped Wire Wound Base Elements	1.35
10k ohms and less	0.80		



# CONCENTRIKIT EXACT DUPLICATE SHAFTS

Save time—be assured of accurate fit! IRC now provides a complete line of Exact Duplicate Shafts for CONCENTRIKIT—factory-tailored for dependable mechanical fit. No filing, slotting, soldering or cutting required! Many shafts are flatted as well as slotted to provide wider replacement coverage. Each shaft is a complete assembly, including contactor. Factory-lubricated, packaged in cellophane and in individual carton.

## DEPENDABLE MECHANICAL FIT FOR YOUR TV REPLACEMENTS



Exact Duplicate Shaft Stock Numbers indicate shaft length measured from mounting

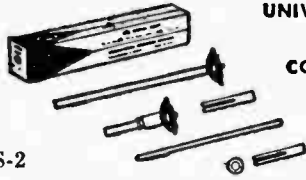
face when installed in control ( $L_1$  is Outer Shaft length;  $L_2$  is Inner Shaft length). First digit is number of whole inches in shaft length; remaining two digits indicate number of additional 32nds of an inch. Thus, P1-210 has shaft lengths of 2-10/32" or 2-5/16". Exception is Inner Shafts when used with K-3 CONCENTRIKIT where 3/32" should be subtracted to determine shaft length.

### EXACT DUPLICATE OUTER SHAFTS

Shaft Type	Slot Width-Depth	Flat Length	Round Knurled Band	Type Base Element	Concentrik
P1	1/8" x 3/8"	17/32"	—	Q	K-2, -4, -5
P2	1/16" x 1/2"	17/32"	—	Q	K-2, -4, -5
P3	1/8" x 3/8"	17/32"	—	W	K-3, -10, -11, -13, -14
P4	1/8" x 3/8"	3/4"	—	W	K-3, -10, -11, -13, -14
P5	1/16" x 5/8"	17/32"	—	W	K-3, -10, -11, -13, -14
P6	1/8" x 3/8"	11/16"	—	Q	K-2, -4, -5
P7	.120" x 3/8"	17/32"	—	Q	K-2, -4, -5
P8	—	—	1/8" wide	W	K-3, -10, -11, -13, -14
P9	—	—	1/8" wide	Q	K-2, -4, -5
P10	1/8" x 7/16"	17/32"	—	Q	K-2, -4, -5
P11	3/64" x 1/16"	—	—	Q	K-2, -4, -5
P12	1/8" x 3/16"	—	—	Q	K-2, -4, -5
P13	1/8" x 1/4"	—	—	Q	K-6, -7, -8, -12, -15
P14	1/8" x 3/16"	—	—	Q	K-6, -7, -8, -12, -15
P15	1/8" x 1/4"	—	—	Tone SW.	K-9
P16	.132" x 3/16"	—	—	Q	K-6, -7, -8, -12, -15
P17	1/8" x 3/8"	5/8"	—	Q	K-6, -7, -8, -12, -15
P18	3/64" x 1/16"	—	—	W	K-3, -10, -11, -13, -14
P19	3/64" x 1/16"	—	—	Q	K-6, -7, -8, -12, -15
P20	—	—	1/8" wide	Q	K-6, -7, -8, -12, -15
P21	1/8" x 7/16"	5/8"	—	Q	K-6, -7, -8, -12, -15

### EXACT DUPLICATE INNER SHAFTS

Shaft Type	Diam.	Slot Width - Depth	Flat Length	Round Knurled Band	Type Base Element	Concentrik
R1	.187"	1/16" x 1/2"	1/2"	—	Q	All but K-10, -12, -13, -14
R2	.202"	1/16" x 1/2"	1/2"	—	Q	All but K-10, -12, -13, -14
R3	.190"	20 Tooth Split Knurl (Zenith)	—	—	Q	All but K-10, -12, -13, -14
R4	.180"	Round and Slotted (Motorola)	—	—	Q	All but K-10, -12, -13, -14
R5	.187"	Rear Extension Type (RCA)	—	—	Q	All but K-10, -12, -13, -14
R6	.202"	Rear Extension Type (Dumont)	—	—	Q	All but K-10, -12, -13, -14
R7	.189"	18 Tooth Split Knurl (Zenith)	—	—	Q	All but K-10, -12, -13, -14
R8	.187"	1/16" x 1/2"	1/2"	—	W	K-10, -12, -13, -14 only
R9	.187"	1/16" x 1/2"	5/8"	—	Q	All but K-10, -12, -13, -14
R10	.187"	—	—	1/8" wide	W	K-10, -12, -13, -14 only
R11	.187"	—	—	1/8" wide	Q	All but K-10, -12, -13, -14
R12	.202"	—	—	7/32"	Q	All but K-10, -12, -13, -14
R13	.180"	Round with 5/8" deep slot (Motorola)	—	—	Q	All but K-10, -12, -13, -14
R14	.202"	1/16" x 1/2"	5/8"	—	Q	All but K-10, -12, -13, -14
R15	.202"	3/64" x 1/16"	—	—	Q	All but K-10, -12, -13, -14
R16	.187"	1/16" x 1/2"	25/32"	—	Q	All but K-10, -12, -13, -14
R17	.202"	1/16" x 1/2"	11/16"	—	Q	All but K-10, -12, -13, -14
R18	.202"	1/16" x 1/2"	1/2"	—	W	K-10, -12, -13, -14 only
R19	.202"	3/64" x 1/16"	—	—	W	K-10, -12, -13, -14 only
R20	.187"	3/64" x 1/16"	—	—	Q	All but K-10, -12, -13, -14
R21	.180"	1/16" x 5/8"	(Motorola)	—	Q	All but K-10, -12, -13, -14



KS-2

**UNIVERSAL SHAFTS  
FOR  
CONCENTRIKIT**

For use with CONCENTRIKITS in place of Exact Duplicate Shafts. Requires shaft modification to desired specification. KS-2 Shaft Kit is for controls in which both sections are carbon. Use with K-2, K-4 or K-5 CONCENTRIKIT. LIST PRICE \$1.30



**CONCENTRIKIT  
EXACT DUPLICATE SHAFTS**

**EXACT DUPLICATE SHAFTS**

Stock No.	Shaft Length	Stock No.	Shaft Length	Stock No.	Shaft Length	Stock No.	Shaft Length	Stock No.	Shaft Length	Stock No.	Shaft Length
R15-005	3/8"	P6-102	1 1/8"	P2-118	1 1/8"	R11-200	2"	P13-214	2 7/8"	P1-304	3 1/8"
R15-009	3/8"	P11-102	1 1/8"	P3-118	1 1/8"	R18-200	2"	P14-214	2 7/8"	R1-304	3 1/8"
R19-011	1 1/8"	P14-102	1 1/8"	P14-118	1 1/8"	R21-201	2 3/8"	P17-214	2 7/8"	P1-306	3 1/8"
P19-012	3/8"	P15-102	1 1/8"	P17-118	1 1/8"	P6-202	2 1/8"	R1-214	2 7/8"	R2-306	3 1/8"
P14-014	7/16"	P17-102	1 1/8"	R1-118	1 1/8"	P14-202	2 1/8"	R9-214	2 7/8"	R4-306	3 1/8"
R15-014	7/16"	R1-103	1 1/2"	R11-118	1 1/8"	R1-202	2 1/8"	R14-214	2 7/8"	P1-308	3 1/8"
R19-014	7/16"	R2-103	1 3/8"	R16-118	1 1/8"	R9-202	2 1/8"	R5-215	2 1/2"	P10-308	3 1/4"
P18-015	1 1/8"	P3-104	1 1/2"	R2-119	1 1/8"	P3-203	2 3/8"	P1-216	2 1/2"	R1-308	3 1/4"
P8-016	1 1/2"	P9-104	1 1/2"	R12-119	1 1/8"	R17-203	2 3/8"	R1-216	2 1/2"	R2-308	3 1/4"
P19-016	1 1/2"	P13-104	1 1/2"	P15-120	1 5/8"	P1-204	2 1/2"	R2-216	2 1/2"	R14-308	3 1/4"
P1-017	1 1/8"	P20-104	1 1/2"	P17-120	1 5/8"	P12-204	2 1/2"	R11-216	2 1/2"	P1-310	3 1/8"
R15-017	1 1/8"	P17-105	1 3/8"	P1-121	1 1/2"	P14-204	2 1/2"	R17-216	2 1/2"	P17-310	3 1/8"
P9-018	9/16"	R1-105	1 3/8"	P3-121	1 1/2"	P15-204	2 1/2"	P3-217	2 1/2"	R2-310	3 1/8"
P11-018	1 1/8"	R2-105	1 3/8"	P4-121	1 1/2"	R2-204	2 1/2"	P13-217	2 1/2"	R1-312	3 3/8"
P18-018	1 1/8"	P1-106	1 1/8"	P6-122	1 1/2"	R3-204	2 1/2"	P2-218	2 1/2"	R2-312	3 3/8"
P14-019	1 1/8"	P3-106	1 1/8"	P12-122	1 1/2"	R14-204	2 1/2"	P6-218	2 1/2"	R16-313	3 1/2"
P15-019	1 1/8"	P8-106	1 1/8"	P13-122	1 1/2"	R1-205	2 1/2"	P15-218	2 1/2"	P1-314	3 1/8"
P1-020	5/8"	P15-106	1 1/8"	P15-122	1 1/2"	R9-205	2 1/2"	R1-218	2 1/2"	R2-314	3 1/8"
P8-020	5/8"	R4-106	1 1/8"	R1-122	1 1/2"	R16-205	2 1/2"	R2-218	2 1/2"	R9-314	3 1/8"
P9-021	1 1/8"	R16-106	1 1/8"	R12-122	1 1/2"	P1-206	2 1/2"	R11-219	2 1/2"	P17-316	3 1/2"
P13-022	1 1/8"	R1-108	1 1/4"	P1-123	1 1/2"	P5-206	2 1/2"	P1-220	2 1/2"	R1-316	3 1/2"
P16-023	1 1/8"	R11-108	1 1/4"	P3-123	1 1/2"	P7-206	2 1/2"	R2-220	2 1/2"	R13-316	3 1/2"
P1-024	3/4"	R12-108	1 1/4"	P17-123	1 1/2"	P14-206	2 1/2"	R4-221	2 1/2"	P1-317	3 1/2"
P11-024	3/4"	P1-109	1 1/8"	P4-124	1 3/4"	P15-206	2 1/2"	P1-222	2 1/2"	R2-318	3 1/8"
P14-024	3/4"	P7-109	1 3/8"	P9-124	1 3/4"	R2-206	2 1/2"	P2-222	2 1/2"	P1-320	3 5/8"
P17-024	3/4"	R2-110	1 1/8"	R2-124	1 3/4"	R12-206	2 1/2"	P7-222	2 1/2"	R2-322	3 1/8"
R1-024	3/4"	R9-110	1 1/8"	R11-124	1 3/4"	R17-206	2 1/2"	R2-222	2 1/2"	R4-322	3 1/8"
P14-026	1 1/8"	P3-111	1 1/2"	P6-125	1 3/8"	R1-207	2 3/8"	R9-222	2 1/2"	R1-323	3 3/8"
P15-026	1 1/8"	R1-111	1 1/2"	P14-125	1 3/8"	P3-208	2 1/4"	R1-222	2 1/2"	R9-324	3 3/8"
R12-026	1 1/8"	P1-112	1 3/8"	P1-126	1 1/2"	P14-208	2 1/4"	P3-223	2 1/2"	P1-325	3 3/8"
P16-027	1 1/8"	P6-112	1 3/8"	P17-126	1 1/2"	R6-208	2 1/4"	R1-223	2 1/2"	R1-326	3 1/2"
P1-028	7/8"	P9-112	1 3/8"	R1-126	1 1/2"	R7-208	2 1/4"	R3-223	2 1/2"	R2-329	3 3/8"
P3-028	7/8"	P14-112	1 3/8"	P3-127	1 3/8"	R9-208	2 1/4"	P1-224	2 3/4"	R3-331	3 3/8"
P6-028	7/8"	P15-112	1 3/8"	R2-127	1 3/8"	R20-208	2 1/4"	P6-224	2 3/4"	R13-331	3 3/8"
P17-028	7/8"	P15-112	1 3/8"	R16-127	1 3/8"	P2-209	2 1/2"	P10-225	2 3/8"	P1-400	4"
R1-028	7/8"	R9-112	1 3/8"	P1-128	1 7/8"	P9-209	2 1/2"	P1-226	2 1/2"	P3-400	4"
R2-028	7/8"	R11-112	1 3/8"	P2-128	1 7/8"	R1-209	2 1/2"	P2-226	2 1/2"	R2-401	4 1/2"
R10-028	7/8"	R16-112	1 3/8"	P9-128	1 7/8"	R2-209	2 1/2"	P3-226	2 1/2"	P1-405	4 5/8"
R11-028	7/8"	P13-113	1 3/8"	P13-128	1 7/8"	P1-210	2 1/2"	R1-226	2 1/2"	P3-405	4 5/8"
R15-028	7/8"	R1-113	1 3/8"	R14-128	1 7/8"	P3-210	2 1/2"	R2-226	2 1/2"	R14-409	4 1/2"
P14-029	2 3/8"	P1-114	1 7/8"	P3-129	1 3/4"	P13-210	2 1/2"	R4-226	2 1/2"	R14-414	4 7/8"
P17-029	2 3/8"	P3-114	1 7/8"	P17-129	1 3/4"	R1-210	2 1/2"	P10-227	2 3/8"	R1-417	4 3/4"
R12-029	2 3/8"	P4-115	1 3/4"	R12-129	1 3/4"	R4-210	2 1/2"	R1-228	2 1/2"	R1-420	4 5/8"
P1-030	1 1/8"	P14-115	1 3/4"	P6-130	1 1/2"	P14-211	2 1/2"	R4-228	2 1/2"	R2-420	4 5/8"
P2-031	1 1/8"	P17-115	1 3/4"	P14-130	1 1/2"	R9-211	2 1/2"	P1-229	2 1/2"	P8-424	4 3/4"
P7-031	1 1/8"	R1-115	1 3/4"	P15-130	1 1/2"	R14-211	2 1/2"	R7-229	2 1/2"	R2-426	4 1/2"
P8-100	1"	R2-115	1 3/4"	R1-130	1 1/2"	P1-212	2 3/8"	R14-229	2 1/2"	R14-426	4 1/2"
R1-100	1"	R9-115	1 3/4"	P3-131	1 3/4"	P3-212	2 3/8"	R2-230	2 1/2"	R2-429	4 3/8"
P9-101	1 1/8"	P1-116	1 1/2"	R2-131	1 3/4"	P9-212	2 3/8"	P1-300	3"	R10-431	4 3/4"
P20-101	1 1/8"	P2-116	1 1/2"	R12-131	1 3/4"	R1-212	2 3/8"	P17-300	3"		
P1-102	1 1/8"	P3-116	1 1/2"	P1-200	2"	R2-212	2 3/8"	R1-300	3"		
		P9-116	1 1/2"	P2-200	2"	R4-212	2 3/8"	R2-300	3"		
		P13-116	1 1/2"	P6-200	2"	R7-212	2 3/8"	P1-302	3 1/8"		
		R14-116	1 1/2"	P13-200	2"	R8-213	2 1/2"	P6-302	3 1/8"		
		R2-117	1 3/4"	P15-200	2"	R20-213	2 3/8"	R14-302	3 1/8"		
		P1-118	1 3/4"	R1-200	2"	P2-214	2 7/8"	P14-303	3 3/8"		
				R2-200	2"	P3-214	2 7/8"				

LIST PRICE \$0.65



# DISTRIBUTOR CONTROLS FOR INDUSTRY



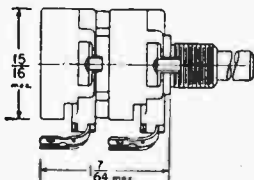
## MULTISECTIONS

IRC MULTISECTIONS are complete control sections that can be added like a switch to any Q, PQ, RQ or RQL Control. With these units, the Radio Technician or Engineer is provided with an endless variety of dual, triple or even quadruple controls. Duals assembled from IRC MULTISECTIONS will accommodate Type 76 switches. Available in a selection of 25 values, as shown in following table. Each MULTISECTION adds  $\frac{1}{8}$ " to basic control. LIST \$2.25

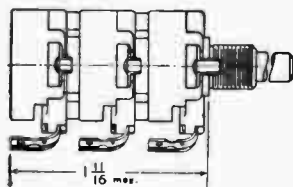
### TYPE RQL

IRC's new line of 10% tolerance Locking Type Bushing Controls. Screw-driver slot shaft  $\frac{1}{4}$ " diameter and approximately  $\frac{1}{2}$ " long from mounting face, with a  $\frac{3}{8}$ " split type bushing, and locking nut. LIST \$2.60

### MULTISECTION DIMENSIONS



DUAL CONTROL



TRIPLE CONTROL

## SINGLE CONTROLS



TYPE PQ



TYPE RQL



TYPE RQ

IRC Distributor Controls for Industry offer commercial users a wide selection of resistance values and two industrial shaft types. Shafts are fixed. This combination of wide selection of values and speedy Distributor delivery holds many advantages for industrial purchasers. These Industrial Controls are adaptations of the new, compact  $\frac{1}{8}$ " Q Control. Power rating is  $\frac{1}{2}$  watt, 500 volts maximum. Electrical rotation is the same with or without switch.  $\frac{3}{8}$ " bushing is brass and held to close tolerance for snug shaft fit.

Terminals are heavily tinned for easy soldering, and may be bent without becoming noisy. Two locating lugs are provided, either or both of which may be bent down if not needed. Molded base. Both Types PQ and RQ are supplied in standard tapers.

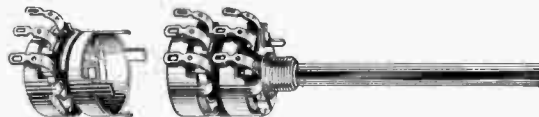
**TYPE PQ.** Full round  $\frac{1}{4}$ " shaft, approximately 3" from mounting face, with  $\frac{3}{8}$ " long bushing. Available in 33 stock values as shown. Regular IRC stock numbers are used with prefix PQ. LIST \$2.25

**TYPE RQ.** Very short screw-driver slot shaft,  $\frac{1}{4}$ " diameter and approximately  $\frac{1}{2}$ " long from mounting face with  $\frac{3}{8}$ " long bushing. Available in 33 values as shown. Regular IRC stock numbers are used with prefix RQ. LIST \$2.25

NOTE: Other distributor controls for industry—Types WP, WPRL—see page R-1255.

## DUALS AND TRIPLES

IRC Type PQ, RQ and RQL Industrial Controls are supplied as single controls. Dual Control and Triple Control combinations are available by adding IRC MULTISECTIONS.



## STANDARD VALUES

OHMS	TAPER	TYPE PQ	TYPE RQ	TYPE RQL	MULTISECTIONS
500	A	PQ11-103	RQ11-103	RQL11-103	M11-103
1,000	A	PQ11-108	RQ11-108	RQL11-108	M11-108
2,000	A	PQ11-110	RQ11-110	RQL11-110	M11-110
3,000	A	PQ11-112	RQ11-112	RQL11-112	M11-112
5,000	A	PQ11-114	RQ11-114	RQL11-114	M11-114
7,500	A	PQ11-115	RQ11-115	—	—
10K	A	PQ11-116	RQ11-116	RQL11-116	M11-116
10K	C	PQ13-116	RQ13-116	—	—
10K	D	PQ14-116	RQ14-116	—	—
10K	Q	—	—	—	M17-116
20K	A	PQ11-119	RQ11-119	RQL11-119	—
25K	A	PQ11-120	RQ11-120	RQL11-120	M11-120
25K	D	PQ14-120	RQ14-120	—	—
30K	A	PQ11-121	RQ11-121	RQL11-121	M11-121
50K	A	PQ11-123	RQ11-123	RQL11-123	M11-123
50K	C	PQ13-123	RQ13-123	RQL13-123	—
50K	D	PQ14-123	RQ14-123	—	—
100K	A	PQ11-128	RQ11-128	RQL11-128	M11-128
100K	C	PQ13-128	RQ13-128	—	M13-128
200K	A	PQ11-129	RQ11-129	RQL11-129	—
250K	A	PQ11-130	RQ11-130	RQL11-130	M11-130
250K	C	PQ13-130	RQ13-130	RQL13-130	M13-130
500K	A	PQ11-133	RQ11-133	RQL11-133	M11-133
500K	C	PQ13-133	RQ13-133	RQL13-133	M13-133
1.0 Meg.	A	PQ11-137	RQ11-137	RQL11-137	M11-137
1.0 Meg.	C	PQ13-137	RQ13-137	RQL13-137	M13-137
1.5 Meg.	A	PQ11-138	RQ11-138	RQL11-138	—
1.5 Meg.	C	—	—	—	M13-138
2.0 Meg.	A	PQ11-139	RQ11-139	RQL11-139	M11-139
2.0 Meg.	C	PQ13-139	RQ13-139	RQL13-139	M13-139
2.5 Meg.	A	PQ11-239	RQ11-239	RQL11-239	—
3.0 Meg.	A	PQ11-140	RQ11-140	RQL11-140	—
3.0 Meg.	C	PQ13-140	RQ13-140	—	M13-140
3.0 Meg.	Q	—	—	—	M17-140
5.0 Meg.	A	PQ11-141	RQ11-141	RQL11-141	M11-141
10.0 Meg.	A	PQ11-143	RQ11-143	RQL11-143	M11-143



IRC Power Wire Wounds are rugged resistors specially engineered for dependable heavy-duty performance. They are supplied in a variety of power ratings, resistance values, sizes and terminal types. In addition to the conventional tubular types, IRC also supplies: 4 watt completely insulated Type PW-4 with axial leads, and two new high temperature resistors rated at 7 and 10 watts. Type PW-7 and PW-10 are fully insulated in rectangular ceramic cases and have axial leads.



# FIXED POWER WIRE WOUND RESISTORS



## STOCK VALUES AND LIST PRICES

	Ohms	PW4 4 watts	PW7 7 watts	PW10 10 watts	1 3/4 A 10 watts	2D 20 watts	4 1/2 E 50 watts	6 1/2 E 80 watts	6 1/2 H 100 watts	10 1/2 H 200 watts
<b>TYPE PW-4</b> 4 WATTS 21/64" dia. by 1 3/4" long. Axial leads.	1	\$0.50	\$0.55	\$0.60	\$0.80	\$1.05	\$2.50	—	\$3.70	—
	2	.50	.55	.60	.80*	—	2.50	—	3.70	\$5.00*
	3	.50	.55	.60	.80*	—	2.50	—	3.70	5.00*
	4	.50	.55	.60	.80*	—	2.50	—	3.70	5.00*
	5	.50	.55	.60	.80	1.05	1.80	\$2.20*	2.65	5.00*
	7.5	—	—	.60	.80	—	—	—	—	—
<b>TYPE PW-7</b> 7 WATTS 3/8" by 11/32" by 1-25/64" long. Axial leads.	10	.50	.55	.60	.80	1.05	1.80	2.20*	2.65	3.55*
	15	.50	.55	.60	.80	—	—	—	—	—
	20	.50	.55	.60	.80	—	—	—	—	—
	25	.50	.55	.60	.80	1.05	1.80	2.20*	2.65	3.55*
	30	—	—	—	.80	—	—	—	—	—
	35	—	—	—	.80*	—	—	—	—	—
	40	—	—	—	.80*	—	—	—	—	—
	50	.90	.55	.60	.80	1.05	1.80	2.20*	2.65	—
<b>TYPE PW-10</b> 10 WATTS 3/8" by 11/32" by 1 1/8" long. Axial leads.	75	.50	.55	.60	.80	1.05	1.80	—	2.65	3.55*
	100	.50	.55	.60	.80	1.05	1.80	—	2.65	3.55*
	125	—	—	—	.80*	—	—	—	2.65	—
	150	.50	.55	.60	.80	1.05	1.80	—	2.65	3.55*
	200	.50	.55	.60	.80	1.05	1.80	2.20*	—	—
	225	—	—	—	.80*	—	—	—	—	—
	250	.50	.55	.60	.80	1.05	1.80	2.20*	2.65	—
<b>TYPE 1 3/4"</b> 10 WATTS 3/8" dia. by 1 3/4" long. Accommodate ZO brackets (not included, 12c list).	300	.50	.55	.60	.80	1.05	1.80	2.20*	2.65	3.55*
	350	—	—	—	.80	1.05*	—	—	—	—
	400	—	—	—	.80	1.05	—	—	—	—
	450	—	—	—	.80*	—	—	—	—	—
	500	.50	.55	.60	.80	1.05	1.80	2.20*	2.65	3.55*
	600	—	—	—	.80	—	—	—	—	—
	700	—	—	—	.80	1.05*	—	—	—	—
	750	.50	.55	.60	.80	1.05	1.80	2.20*	2.65	3.55*
	800	—	—	—	.80	1.05	1.80	—	—	—
<b>TYPE 2D</b> 20 WATTS 3/8" dia. by 2" long. Accommodate Z1 brackets (not included, 12c list).	900	—	—	—	.80	—	—	—	—	—
	1,000	.50	.55	.60	.80	1.05	1.80	—	2.65	3.55*
	1,100	—	—	—	.90*	—	—	—	—	—
	1,200	—	—	—	.90	1.10	—	—	—	—
	1,250	.50	.55	.60	.90	1.10	—	—	2.80	—
	1,500	.50	.55	.60	.90	1.10	1.90	2.30*	2.80	3.60*
	1,750	—	—	—	.90	1.10*	—	—	—	—
	2,000	.50	.55	.60	.90	1.10	1.90	2.30*	2.80	3.60*
	2,250	—	—	—	.90	1.10*	—	—	—	—
<b>TYPE 4 1/2 E</b> 50 WATTS 3/4" dia. by 4 1/8" long. Supplied with Z2 brackets.	2,500	.50	.55	.60	.90	1.10	1.90	2.30*	2.80	3.60*
	3,000	.50	.55	.60	.90	1.10	1.90	2.30*	2.80	3.60*
	3,300	—	.55	.60	.90	—	—	—	—	—
	3,500	—	—	—	.90	—	—	—	—	—
	3,900	—	.55	.60	—	—	—	—	—	—
	4,000	.50	.55	.60	.90	1.10	1.90	2.30*	—	—
	4,500	—	—	—	.90	1.10*	—	—	—	—
<b>TYPE 6 1/2 E</b> 80 WATTS 3/4" dia. by 6 1/2" long. Supplied with Z3 brackets.	5,000	.50	.55	.60	.90	1.10	1.90	2.30*	2.80	3.60*
	6,000	—	.55	.60	1.00	1.20	2.10	2.50*	—	—
	7,000	—	—	—	1.00	1.20	2.10*	—	—	—
	7,500	.50	.55	.60	1.00	1.20*	2.10	2.50*	3.00	3.90*
	8,000	—	—	—	1.00	1.20	2.10	2.50*	—	—
	8,200	.50	.55	.60	—	—	—	—	—	—
	8,500	—	—	—	1.00	1.20*	—	—	—	—
	9,000	—	—	—	1.00	1.20*	—	—	—	—
<b>TYPE 6 1/2 H</b> 100 WATTS 1 1/8" dia. by 6 1/8" long. Supplied with Z3 brackets.	10K	—	—	.60	1.00	1.20	2.10	2.50*	3.00*	3.90*
	11K	—	—	—	1.10*	1.30*	—	—	—	—
	12K	—	—	—	1.10	1.30*	2.30	—	—	—
	12.5K	—	—	—	1.10	1.30*	2.30	—	—	—
	15K	—	—	.60	1.10	1.30	2.30	2.70*	3.30	4.15*
	20K	—	—	.60	1.10	1.30	2.30	2.70*	3.30*	4.15*
	25K	—	—	.60	1.20	1.50	2.55	3.05*	3.50*	—
	30K	—	—	—	—	1.50	—	3.05*	3.50*	4.30*
<b>TYPE 10 1/2 H</b> 200 WATTS 1 1/8" dia. by 10 1/2" long. Supplied with Z3 brackets.	35K	—	—	—	—	1.50*	2.55	—	—	—
	40K	—	—	—	—	1.50	2.55	3.05*	3.50*	4.30*
	50K	—	—	—	—	1.75	2.85	3.15*	3.70*	4.40*
	60K	—	—	—	—	—	2.85	3.15*	3.70*	4.40*
	75K	—	—	—	—	—	3.20	3.55*	3.95*	4.70*
	100K	—	—	—	—	—	3.50	3.95*	4.20*	5.00*

\* Will be considered discontinued stock values upon consumption of present stocks.



# ADJUSTABLE POWER WIRE WOUND RESISTORS

IRC Power Wire Wounds are designed for continuous operation at full rated power. Derating is unnecessary even for the highest stock values. IRC Power Wire Wounds are full size, thus capable of efficiently handling greater wattage. Cooler performance assures longer resistor life, and safeguards critical components mounted adjacently. Clear, permanent markings show type, size, wattage, and resistance value; markings improve in legibility with temperature rise. Terminals are tin plated for easy soldering.



TYPE 1 3/4 AA



TYPE 4 1/2 EA

## STOCK VALUES AND LIST PRICES

Ohms	1 3/4 AA 10 watts	2 1/2 DA 25 watts	4 1/2 EA 50 watts	6 1/2 EA 80 watts	6 1/2 HA 100 watts	10 1/2 HA 200 watts
1	\$1.60	\$2.05	\$3.30	\$3.90*	\$5.00	\$6.25
2	1.60	2.05*	—	3.90*	5.00	6.25
3	1.60	2.05	—	—	5.00*	—
4	—	—	3.30*	3.90*	5.00*	6.25*
5	1.60	2.05	—	3.00*	3.95*	6.25
7.5	1.60*	2.05*	—	—	—	—
10	1.60	2.05	2.60	—	3.95	4.80
15	1.60*	2.05	—	—	—	—
20	1.60	2.05*	—	—	—	—
25	1.60	2.05	2.60	3.00*	3.95	4.80
50	1.60	2.05	2.60	3.00*	3.95	4.80
75	1.60	2.05	2.60	—	—	—
100	1.60	2.05	2.60	3.00*	3.95	4.80
150	1.60	2.05	2.60	—	—	—
200	1.60	2.05	2.60	3.00*	3.95	—
250	1.60	2.05	2.60	—	3.95	4.80
300	1.60	2.05	2.60	—	—	—
400	1.60*	2.05	—	3.00*	—	—
500	1.60	2.05	2.60	3.00*	3.95	4.80
750	1.60	2.05	2.60	3.00*	3.95	—
800	1.60*	2.05*	2.60*	3.00*	—	—
1,000	1.60	2.05	2.60	3.00*	3.95	4.80
1,250	1.70*	2.10*	2.70*	3.10*	—	—
1,500	1.70	2.10	2.70	3.10*	—	—
2,000	1.70	2.10	2.70	—	4.05	4.90
2,250	1.70*	2.10*	2.70*	3.10*	—	4.90
2,500	1.70	2.10	2.70	3.10*	—	—
3,000	1.70	2.10	2.70	3.10*	4.05	4.90
3,500	1.70*	2.10	2.70*	3.10*	—	—
4,000	1.70	2.10	2.70	3.10*	—	—
4,500	1.70*	2.10*	2.70*	3.10*	—	—
5,000	1.70	2.10	2.70	3.10*	—	—
6,000	1.80*	2.20*	2.90*	—	4.05	4.90
7,000	1.80*	2.20*	2.90*	3.30*	4.25*	—
7,500	1.80	2.20	—	3.30*	4.25*	—
8,000	1.80*	2.20*	2.90*	3.30*	4.25*	—
9,000	1.80*	2.20*	2.90*	3.30*	—	—
10K	1.80	2.20	2.90	3.30*	4.25	5.20
12K	—	2.30*	3.10*	3.50*	—	—
15K	—	2.30	3.10	3.50*	4.50	5.40*
20K	—	2.30	3.10	3.50*	4.50	5.40*
25K	—	2.50	3.40	3.90*	4.80	—
30K	—	—	3.40	3.90*	4.80*	5.50*
35K	—	—	—	3.90*	—	—
40K	—	—	3.40	3.90*	—	5.50*
45K	—	—	—	4.00*	—	—
50K	—	—	3.60	4.00*	5.00	5.70
60K	—	—	3.60*	4.00*	5.00*	5.70*
75K	—	—	4.05*	—	5.20*	—
80K	—	—	4.05*	4.40*	—	—
100K	—	—	4.30	4.75*	5.45	6.25

**TYPE 1 3/4 AA  
10 WATTS**  
1/8" dia. by 1 3/4" long.  
Accommodate Z0  
brackets (not included,  
12c list).

**TYPE 2 1/2 DA  
25 WATTS**  
1/8" dia. by 2 1/2" long.  
Supplied with Z1  
brackets.

**TYPE 4 1/2 EA  
50 WATTS**  
3/8" dia. by 4 1/2" long.  
Supplied with Z2  
brackets.

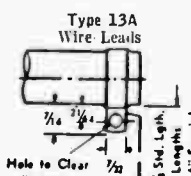
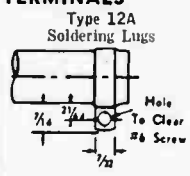
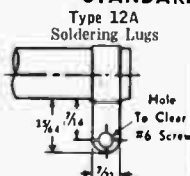
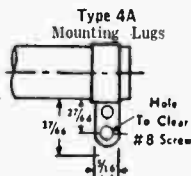
**TYPE 6 1/2 EA  
80 WATTS**  
3/8" dia. by 6 1/2" long.  
Supplied with Z2  
brackets.

**TYPE 6 1/2 HA  
100 WATTS**  
1 1/8" dia. by 6 1/2" long.  
Supplied with Z3  
brackets.

**TYPE 10 1/2 HA  
200 WATTS**  
1 1/8" dia. by 10 1/2"  
long. Supplied with Z3  
brackets.

\* Will be considered discontinued stock values upon consumption of present stocks.

### STANDARD TERMINALS



### TYPE X BANDS

Type "X" bands are furnished for 2 1/2 DA, 4 1/2 EA, 6 1/2 EA, 6 1/2 HA and 10 1/2 HA. Type 1 3/4 AA, because of its small size, is furnished with special adjustable band.

Resistor	Band	List
2 1/2 DA	X2	\$ .25
4 1/2 EA, 6 1/2 EA	X3	.25
6 1/2 HA, 10 1/2 HA	X4	.42
1 3/4 AA	SPECIAL BAND	
	A	.25

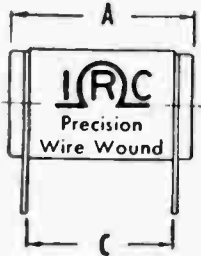
BRACKETS: Bracket holes are for 8-32 screws.



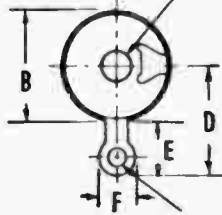
RADIAL LUG TYPE



# PRECISION WIRE WOUND RESISTORS



Clearance Hole for  
#6-32 Screw



3/32" Dia. Hole

Improved ceramic winding forms have high insulating qualities, high mechanical strength and low coefficient of expansion. Special winding technique, developed by IRC, eliminates shorted turns or strains in the winding.

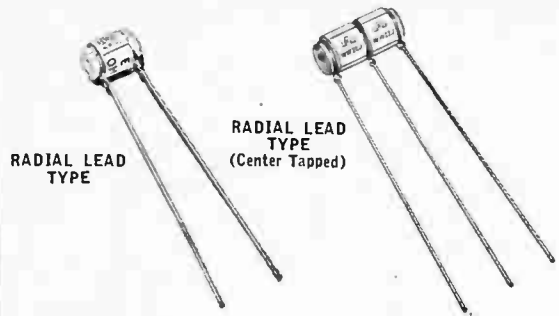
Improved insulation provides greater humidity protection and contributes to longer trouble-free service. Improved lug and lead terminals assure perfect electrical connections without strain on the windings, and are easily soldered.

## RADIAL LUG TYPE

IRC TYPE No.	WW2J	WW3J	WW4J	WW5J	WW8J	WW11J
Hycor Type Reference MIL-R-93A Style Old JAN-R-93 Style	None RB19 RB14	70L RB16 RB11	72L RB17 RB12	80L RB18 RB13	70L RB15 RB10	None RB16 RB11
Rating in Watts 65° C. Ambient Former MIL Rating	2 1	.50 .35	1 .50	1 .50	.50 .25	.50 .35
Maximum Volts	2000	400	700	1000	250	500
No. of Sections	8	2	4	4	1	2
Maximum Resistance .0015 Diameter Wire	4.0 Meg.	0.3 Meg.	0.75 Meg.	1.7 Meg.	0.29 Meg.	0.4 Meg.
Maximum Resistance .0009 Diameter Wire	20.0 Meg.	1.6 Meg.	4.0 Meg.	7.5 Meg.	1.5 Meg.	2.0 Meg.
Minimum Resistance (ohms)						
±0.05% Tolerance	25	25	25	25	25	25
±0.1% "	10	10	10	10	10	10
±0.25% "	5	5	5	5	5	5
±0.50% "	1	1	1	1	1	1
±1% "	0.1	0.1	0.1	0.1	0.5	0.1
Dimensions (inches)						
A Dimension	2 1/8	1 1/8	1	1 1/4	1 1/2	2 1/2
B Dimension	1 1/2	1 1/2	1 1/2	1 1/2	1 1/2	1 1/2
C Dimension	1 1/2	3/8	2 1/2	1 1/2	1 1/8	1 1/8
D Dimension	3/8	5/8	5/8	3/8	5/8	5/8
E Dimension	1/8	1/8	1/8	1/8	1/8	1/8
F Dimension	3/16	3/16	3/16	1/8	1/8	3/16



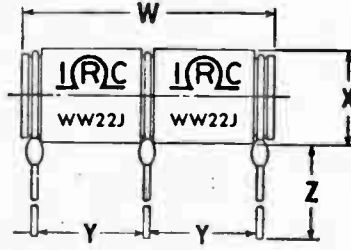
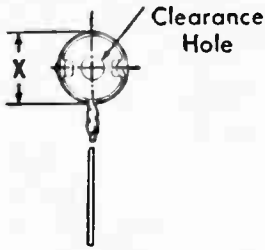
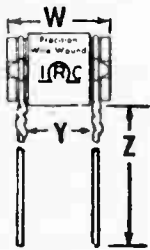
# PRECISION WIRE WOUND RESISTORS



IRC Precision Wire Wound Resistors are designed and manufactured to exacting standards necessary to insure consistent accuracy in critical applications.

The unencapsulated resistor types of the former Hycor ceramic bobbin line of resistors have been added to the IRC WW series resistor line (see following page). This results in presenting a more extended line of unencapsulated precision wire wound resistors to the industry.

These resistors are made on modern equipment from specially selected materials. High reliability is assured by maintaining rigid quality control procedures throughout all manufacturing stages.



## RADIAL LEAD TYPE

IRC TYPE No.	WW3J	WW4J	WW8J	WW10J	WW11J	WW20J	WW21J	WW22J (Center Tapped)	WW23J	WW24J (Center Tapped)
Hycor Type Reference	70W	72W	70W	52W	None	50W	53W	53WT	60W	72WT
Rating in Watts 65°C. Ambient Former MIL Rating	.50 .35	1 .50	.50 .25	.25 .15	.50 .35	.25 .15	.25 .15	.25† .15†	.50 .35	.50† .25†
Maximum Volts	400	700	250	150	500	150	300	150†	300	400†
No. of Sections	2	4	1	1	2	1	2	2	2	4
Maximum Resistance .0015 Diameter Wire	0.3 Meg.	0.75 Meg.	0.29 Meg.	40K	0.4 Meg.	35K	70K	35K†	225K	350K†
Maximum Resistance .0009 Diameter Wire	1.6 Meg.	4.0 Meg.	1.5 Meg.	0.215 Meg.	2.0 Meg.	150K	500K	250K†	1.5 Meg.	1.5 Meg.†
Minimum Resistance (ohms)										
±0.05% Tolerance	25	25	25	200	25	250	200	200†	25	25 †
±0.10% "	10	10	10	150	10	200	150	150†	10	10 †
±0.25% "	5	5	5	75	5	100	75	75†	5	5 †
±0.5% "	1	1	1	50	1	75	50	50†	1	1 †
±1.0% "	0.1	0.1	0.5	10	0.1	10	10	10†	0.5	0.1†
Dimensions										
Lead Diameter (AWG)	#20	#20	#20	#22	#20	#22	#22	#22	#20	#20
W Dimension	9/16"	1"	15/32"	13/32"	21/32"	5/16"	3/4"	3/4"	3/4"	1"
X Dimension	19/32"	19/32"	19/32"	9/32"	19/32"	1/4"	1/4"	1/4"	3/8"	1/2"
Y Dimension	3/8"	25/32"	5/16"	9/32"	7/16"	7/32"	21/32"	5/16"†	19/32"	13/32"†
Z Dimension	2 1/2*	2 1/2*	2 1/2*	2*	2 1/2*	2*	2*	2*	2 1/2*	2 1/2*
Clearance hole to fit	#6 Screw	#6 Screw	#6 Screw	#2 Screw	#6 Screw	#2 Screw	#2 Screw	#2 Screw	#6 Screw	#6 Screw

\* Lengths shown are standard. 2", 3" and 4" also available upon request.  
† Signifies per tapped section.

### IRC'S HYCOR ENCAPSULATED STYLES

Available in a wide selection of stock values are two styles of miniature encapsulated precision resistors with axial leads. IRC's Hycor types 128A and 208A offer guaranteed protection against excessively strong environmental conditions:

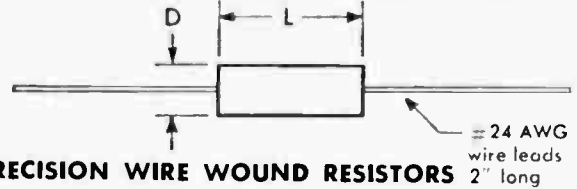
Standard Resistance Tolerance:  $\pm 1\%$   
 Stock Temperature Coefficient:  
 $\pm .0022\%$  per degree C.  
 Operating Temperatures:  
 $-65^{\circ}\text{C. to } +125^{\circ}\text{C.}$

HYCOR Type	RESISTANCE MIN.	RESISTANCE MAX.	COMM. WATTAGE	MAX. VOLTS	L LENGTH	D DIAM.
128A	1.0 ohm	50K	1/10	150	0.500	0.160
208A	1.0 ohm	250K	1/4	150	0.500	0.250





# PRECISION WIRE WOUND RESISTORS



### STANDARD STOCK VALUES — IRC PRECISION WIRE WOUND RESISTORS

**TYPE WW2J—1% Tolerance**

Stock Resistance Values	List Price	Stock Resistance Values	List Price
600K Ohms	\$14.15	1.5 Megohms	21.25
750K Ohms	16.65	2.0 Megohms	25.00
900K Ohms	18.35	2.5 Megohms	26.65
1.0 Megohm	20.00		

**TYPE WW3J—1% Tolerance**

Stock Resistance Values	List Price	Stock Resistance Values	List Price
0.1 Ohm	\$2.10	5,000 Ohms	2.25
0.2 Ohm	2.10	7,500 Ohms	2.25
0.5 Ohm	2.10	10K Ohms	2.25
1.0 Ohm	2.10	12.5K Ohms	2.85
5 Ohms	2.10	15K Ohms	2.85
10 Ohms	2.10	20K Ohms	2.85
25 Ohms	2.10	22.5K Ohms	2.85
50 Ohms	2.10	25K Ohms	2.85
100 Ohms	2.10	30K Ohms	2.85
200 Ohms	2.10	40K Ohms	2.85
250 Ohms	2.10	50K Ohms	2.85
300 Ohms	2.25	60K Ohms	3.35
500 Ohms	2.25	75K Ohms	3.35
1,000 Ohms	2.25	100K Ohms	3.35
1,500 Ohms	2.25	125K Ohms	3.90
2,000 Ohms	2.25	150K Ohms	3.90
2,500 Ohms	2.25	175K Ohms	3.90
3,000 Ohms	2.25	200K Ohms	3.90
3,500 Ohms	2.25	225K Ohms	4.55
4,000 Ohms	2.25		

**TYPE WW4J—1% Tolerance**

Stock Resistance Values	List Price	Stock Resistance Values	List Price
0.1 Ohm	\$2.20	10K Ohms	2.70
0.2 Ohm	2.20	12.5K Ohms	3.50
0.5 Ohm	2.20	15K Ohms	3.50
1.0 Ohm	2.20	20K Ohms	3.50
5 Ohms	2.20	22.5K Ohms	3.50
10 Ohms	2.20	25K Ohms	3.50
25 Ohms	2.20	30K Ohms	3.50
50 Ohms	2.20	40K Ohms	3.50
100 Ohms	2.20	50K Ohms	3.50
200 Ohms	2.35	60K Ohms	3.95
250 Ohms	2.35	75K Ohms	3.95
300 Ohms	2.35	100K Ohms	3.95
500 Ohms	2.35	125K Ohms	4.35
1,000 Ohms	2.35	150K Ohms	4.35
1,500 Ohms	2.55	175K Ohms	4.35
2,000 Ohms	2.55	200K Ohms	4.35
2,500 Ohms	2.55	225K Ohms	4.80
3,000 Ohms	2.55	250K Ohms	4.80
3,500 Ohms	2.55	300K Ohms	4.80
4,000 Ohms	2.55	400K Ohms	5.65
5,000 Ohms	2.55	500K Ohms	6.45
7,500 Ohms	2.70		

**TYPE WW5J—1% Tolerance**

Stock Resistance Values	List Price	Stock Resistance Values	List Price
600K Ohms	\$12.00	900K Ohms	12.90
750K Ohms	12.50	1.0 Megohm	13.35

**TYPE WW10J—1% Tolerance**

Stock Resistance Values	List Price	Stock Resistance Values	List Price
10 Ohms	\$2.25	4,000 Ohms	2.20
25 Ohms	2.25	5,000 Ohms	2.20
50 Ohms	2.25	7,500 Ohms	2.30
100 Ohms	2.15	10K Ohms	2.30
200 Ohms	2.15	12.5K Ohms	2.70
250 Ohms	2.15	15K Ohms	2.70
300 Ohms	2.15	20K Ohms	2.70
500 Ohms	2.15	25K Ohms	2.70
1,000 Ohms	2.15	30K Ohms	2.70
1,500 Ohms	2.20	40K Ohms	2.70
2,000 Ohms	2.20	50K Ohms	2.70
2,500 Ohms	2.20	60K Ohms	3.00
3,000 Ohms	2.20	75K Ohms	3.00
3,500 Ohms	2.20	100K Ohms	3.00

**TYPE 128A—1% Tolerance**

Stock Resistance Values	List Price	Stock Resistance Values	List Price
5 Ohms	\$3.17	2,000 Ohms	3.17
10 Ohms	3.17	2,500 Ohms	3.17
25 Ohms	3.17	3,000 Ohms	3.17
50 Ohms	3.17	5,000 Ohms	3.17
100 Ohms	3.17	10K Ohms	3.17
200 Ohms	3.17	15K Ohms	3.17
250 Ohms	3.17	20K Ohms	3.17
300 Ohms	3.17	25K Ohms	3.17
500 Ohms	3.17	30K Ohms	3.17
1,000 Ohms	3.17	40K Ohms	3.40
1,500 Ohms	3.17	50K Ohms	3.40

**TYPE 208A—1% Tolerance**

Stock Resistance Values	List Price	Stock Resistance Values	List Price
1 Ohm	\$2.77	5,000 Ohms	2.77
5 Ohms	2.77	10K Ohms	2.77
10 Ohms	2.77	15K Ohms	2.77
25 Ohms	2.77	20K Ohms	2.77
50 Ohms	2.77	25K Ohms	2.77
100 Ohms	2.77	30K Ohms	2.77
200 Ohms	2.77	40K Ohms	3.10
250 Ohms	2.77	50K Ohms	3.10
300 Ohms	2.77	60K Ohms	3.10
500 Ohms	2.77	75K Ohms	3.10
1,000 Ohms	2.77	100K Ohms	3.47
1,500 Ohms	2.77	125K Ohms	3.47
2,000 Ohms	2.77	150K Ohms	3.47
2,500 Ohms	2.77	200K Ohms	4.35
3,000 Ohms	2.77	250K Ohms	4.35
4,000 Ohms	2.77		

#### SPECIAL RESISTANCE TOLERANCES

Prices shown above cover resistance tolerance of  $\pm 1\%$ . Other tolerances, subject to minimum values shown on specification charts, are available on special order at increased prices; as follows:

#### ALL WWJ TYPES

Special Tolerance	Add to Prices Above
0.5%	5%
0.25%	10%
0.2%	15%
0.1%	25%
0.05%	100%

#### TYPES 128A and 208A

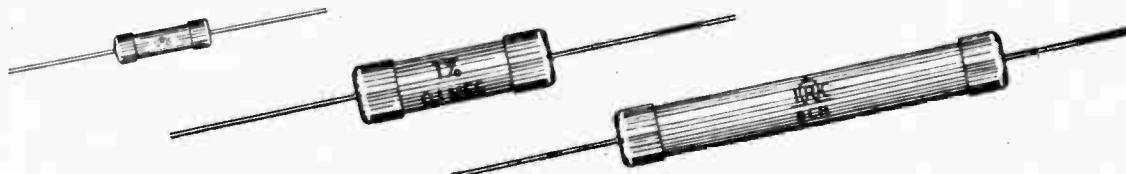
Special Tolerance	Add to Prices Above	Minimum Value Available 128A	208A
0.5%	.60	10 ohms	2 ohms
0.25%	.65	20 ohms	10 ohms
0.1%	.75	250 ohms	40 ohms
0.05%	Prices on request	—	—



# CLOSE TOLERANCE PRECISTORS

## TYPE DC DEPOSITED CARBON RESISTORS

**1% ACCURACY  
PRECISION PACKAGED  
1/2, 1 and 2 WATTS**



IRC Deposited Carbon Precision Resistors offer a unique combination of close tolerance, stability and economy. Pure crystalline carbon is bonded to selected ceramic cores to produce a resistor ideally suited to the requirements of instrumentation, advanced electronics and critical television circuits.

Deposited Carbon Precistors provide a combination of characteristics not found in any other resistor type. The wide range of values, accuracy, high stability, low voltage coefficient, excellent frequency characteristics, predictable temperature characteristics, high voltage rating, low noise level and small size of PRECISTORS make them superior for many popular applications.

IRC Type DC Deposited Carbon Precistors are available in three sizes: 1/2 watt (body size 1/8" x 3/8"), 1 watt (body size 1/4" x 3/4"), and 2 watts (body size 3/16" x 3/2"). Accuracy ±1% (25°C).

For complete protection against scratches, jars and surface injury IRC PRECISTORS are factory packed in capped plastic tubes. This special precision packaging also safeguards these close tolerance resistors against excessive handling.



### STOCK VALUES—TYPES DCC (1/2 WATT)—DCF (1 WATT)—DCH (2 WATTS)

OHMS	OHMS	OHMS	OHMS	OHMS	MEG	MEG
—	100	1000	10K	100K	1.0	10 <sup>FH</sup>
—	110	1100	11K	110K	1.1	11 <sup>H</sup>
—	120	1200	12K	120K	1.2	12 <sup>H</sup>
—	130	1300	13K	130K	1.3	13 <sup>H</sup>
—	150	1500	15K	150K	1.5	15 <sup>H</sup>
—	160	1600	16K	160K	1.6	16 <sup>H</sup>
—	180	1800	18K	180K	1.8	18 <sup>H</sup>
—	200	2000	20K	200K	2.0	20 <sup>H</sup>
—	220	2200	22K	220K	2.2 <sup>FH</sup>	22 <sup>H</sup>
—	240	2400	24K	240K	2.4 <sup>FH</sup>	24 <sup>H</sup>
—	250 <sup>F</sup>	2500 <sup>F</sup>	25K <sup>F</sup>	250K <sup>F</sup>	2.5 <sup>FH</sup>	—
—	270	2700	27K	270K	2.7 <sup>FH</sup>	27 <sup>H</sup>
—	300	3000	30K	300K	3.0 <sup>FH</sup>	30 <sup>H</sup>
—	330	3300	33K	330K	3.3 <sup>FH</sup>	—
—	360	3600	36K	360K	3.6 <sup>FH</sup>	—
—	390	3900	39K	390K	3.9 <sup>FH</sup>	—
—	400 <sup>F</sup>	4000 <sup>F</sup>	40K <sup>F</sup>	400K <sup>F</sup>	4.0 <sup>F</sup>	—
—	430	4300	43K	430K	4.3 <sup>FH</sup>	—
—	470	4700	47K	470K	4.7 <sup>FH</sup>	—
—	500 <sup>F</sup>	5000 <sup>F</sup>	50K <sup>F</sup>	500K	5.0 <sup>FH</sup>	—
51 <sup>C</sup>	510	5100	51K	510K <sup>FH</sup>	5.1 <sup>FH</sup>	—
56 <sup>C</sup>	560	5600	56K	560K	5.6 <sup>FH</sup>	—
62 <sup>C</sup>	620	6200	62K	620K	6.2 <sup>FH</sup>	—
68 <sup>C</sup>	680	6800	68K	680K	6.8 <sup>FH</sup>	—
75 <sup>C</sup>	750	7500	75K	750K	7.5 <sup>FH</sup>	—
82 <sup>C</sup>	820	8200	82K	820K	8.2 <sup>FH</sup>	—
91 <sup>C</sup>	910	9100	91K	910K	9.1 <sup>FH</sup>	—

C=DCC only

F=DCF only

H=DCH only

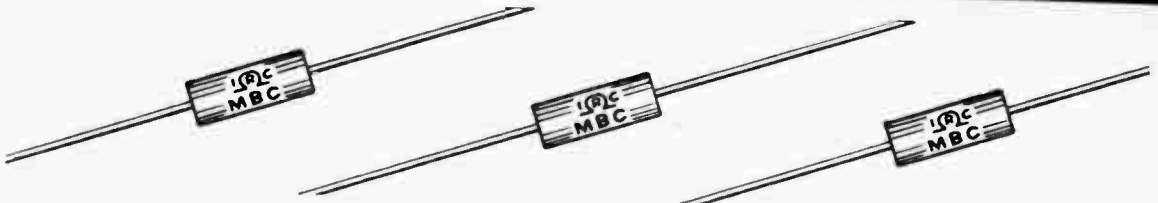
FH=DCF & DCH only

	List Price	Dealer Net		List Price	Dealer Net
DCC—51 ohms thru 2.0 meg	\$.67	\$.40	DCH—200 ohms thru 10 meg	\$1.20	\$.72
DCF—100 ohms thru 5.0 meg	1.00	.60	DCH—10.1 meg thru 30 meg	1.30	.78
DCF—5.1 meg thru 10 meg	1.10	.66			

**MOLDED  
BORON - CARBON  
PRECISTORS  
1% ACCURACY  
1/2 WATT**



**CLOSE TOLERANCE  
PRECISTORS**



**TYPE MBC**

IRC's Molded Boron-Carbon Precistor is a precision film type resistor that incorporates the added advantages of a fully insulated unit. The molded plastic housing provides complete mechanical protection, and minimizes the effect of moisture. Because of its greater heat dissipating capacity, load life characteristics for the Type MBC are improved over those of either boron or deposited carbon unmolded units.

**APPLICATIONS**

Type MBC Molded Boron-Carbons are particularly suited for applications where unmolded boron or deposited carbon units cannot be used due to the risk of mechanical damage to their coating, insulation breakdown, or high moisture change.

**SPECIFICATIONS**

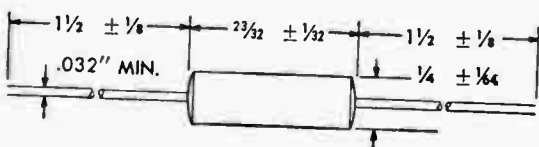
**WATTAGE RATING:** 1/2 watt at 40°C. ambient (per MIL-R-10509A), derated to 0 at 120°C.

**RESISTANCE VALUES:** 10 ohms to 510K ohms.

**TOLERANCE:** Standard tolerance is 1%.

**IDENTIFICATION:** Housing is distinctive green plastic. Type designation, resistance value and tolerance are stamped on each unit.

**DIMENSIONS:**



**STANDARD STOCK VALUES**

Ohms	Ohms	Ohms	Ohms	Ohms
10	100	1,000	10K	100K
11	110	1,100	11K	110K
12	120	1,200	12K	120K
13	130	1,300	13K	130K
15	150	1,500	15K	150K
16	160	1,600	16K	160K
18	180	1,800	18K	180K
20	200	2,000	20K	200K
22	220	2,200	22K	220K
24	240	2,400	24K	240K
27	270	2,700	27K	270K
30	300	3,000	30K	300K
33	330	3,300	33K	330K
36	360	3,600	36K	360K
39	390	3,900	39K	390K
43	430	4,300	43K	430K
47	470	4,700	47K	470K
51	510	5,100	51K	510K
56	560	5,600	56K	—
62	620	6,200	62K	—
68	680	6,800	68K	—
75	750	7,500	75K	—
82	820	8,200	82K	—
91	910	9,100	91K	—

Standard Values and Tolerance

List Price  
\$1.00

**TYPE BOC.** 1/2 watt unmolded Boron-Carbon Precistors, designated Type BOC are available on special order.



# INSULATED CHOKES

IRC Insulated Chokes are available in four sizes designated as types CL $\frac{1}{2}$ , CLA, CL1, and CL2. All four are fully insulated in molded phenolic housings for full protection against high humidity. The insulated housing also guards the winding from abrasion and physical damage, and prevents any possibility of shorting to chassis. Color coded for easy identification.

The wide range of size and characteristic combinations available permits accurate replacement with respect to space and electrical requirements.

### TYPE CL $\frac{1}{2}$ CHOKES

EIA (formerly RETMA) PREFERRED VALUES AND  $\pm 20\%$  TOLERANCES

Inductance (Microhenrys)	Approximate "Q" at Frequencies (Mc)	D. C. Resistance (Ohms)	Approximate Self-Resonant Frequency (Mc)	Current Rating (Milliamperes) (1)* (2)*	
† .22	20 @ 15	.24 $\pm 30\%$	505	1000	1500
† .27	19 @ 14	.33 $\pm 30\%$	455	850	1200
† .33	19 @ 14	.47 $\pm 30\%$	415	700	1000
† .39	18 @ 13	.51 $\pm 30\%$	380	700	950
† .47	17 @ 12	.70 $\pm 30\%$	345	600	800
† .56	17 @ 11	.98 $\pm 30\%$	315	500	700
† .68	16 @ 10	1.0 $\pm 30\%$	290	500	700
† .82	16 @ 9	1.5 $\pm 30\%$	260	400	550
† 1.0	16 @ 9	2.0 $\pm 30\%$	235	350	500



Type	Inductance (Microhenrys)	List Price
CL $\frac{1}{2}$	.22 to 1	\$0.35
CLA	.22 to 7.5	.35

### TYPE CLA CHOKES

EIA (formerly RETMA) PREFERRED VALUES AND 10% TOLERANCES

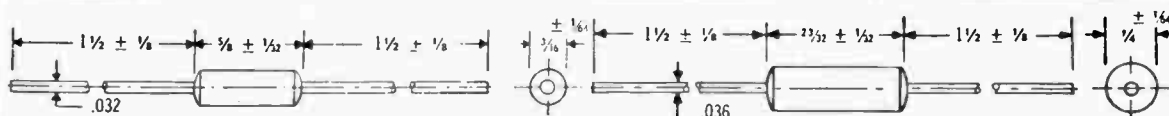
Inductance (Microhenrys)	Approximate "Q" at Frequencies (Mc)	D. C. Resistance (Ohms)	Approximate Self-Resonant Frequency (Mc)	Current Rating (Milliamperes) (1)* (2)*	
† .22	34 @ 15	.085 $\pm 30\%$	440	2600	3900
† .24	33 @ 15	.088 $\pm 30\%$	420	2300	3400
† .27	33 @ 14	.090 $\pm 30\%$	400	2200	3300
† .30	33 @ 14	.12 $\pm 30\%$	380	1900	2800
† .33	32 @ 14	.13 $\pm 30\%$	360	1800	2700
† .36	32 @ 13	.16 $\pm 30\%$	345	1600	2500
† .39	31 @ 13	.17 $\pm 30\%$	330	1600	2400
† .43	31 @ 12	.18 $\pm 30\%$	315	1500	2300
† .47	30 @ 12	.22 $\pm 30\%$	305	1400	2100
† .51	30 @ 11	.25 $\pm 30\%$	290	1300	2000
.56	30 @ 11	.26 $\pm 30\%$	275	1300	1900
† .62	29 @ 11	.34 $\pm 30\%$	265	1100	1700
.68	29 @ 10	.37 $\pm 30\%$	250	1100	1600
† .75	28 @ 10	.38 $\pm 30\%$	240	1000	1600
.82	27 @ 9	.49 $\pm 30\%$	230	950	1400
† .91	26 @ 9	.51 $\pm 30\%$	215	900	1400
1.0	26 @ 9	.66 $\pm 30\%$	205	800	1200
† 1.1	25 @ 8	.67 $\pm 30\%$	200	800	1200
1.2	24 @ 8	.68 $\pm 20\%$	190	800	1200
† 1.3	24 @ 8	.88 $\pm 20\%$	180	700	1050
1.5	23 @ 7	.94 $\pm 20\%$	170	650	1000
† 1.6	22 @ 7	1.2 $\pm 20\%$	165	600	900
1.8	22 @ 7	1.3 $\pm 20\%$	155	550	850
† 2.0	21 @ 6	1.4 $\pm 20\%$	145	550	850
2.2	20 @ 6	1.8 $\pm 20\%$	140	475	700
† 2.4	19 @ 5	1.9 $\pm 20\%$	135	475	700
2.7	19 @ 5	2.0 $\pm 20\%$	125	475	700
† 3.0	18 @ 5	2.6 $\pm 20\%$	120	400	600
3.3	18 @ 5	2.8 $\pm 20\%$	115	400	550
† 3.6	17 @ 5	3.7 $\pm 20\%$	110	350	500
† 3.9	17 @ 4.5	3.8 $\pm 20\%$	105	325	500
† 4.3	16 @ 4.5	4.5 $\pm 30\%$	100	300	450
† 4.7	15 @ 4.0	4.7 $\pm 30\%$	96	300	450
† 5.1	14 @ 4.0	4.9 $\pm 30\%$	92	300	450
† 5.6	13 @ 4.0	5.1 $\pm 30\%$	88	275	425
† 6.2	13 @ 3.5	5.4 $\pm 30\%$	84	275	425
† 6.8	12 @ 3.5	5.6 $\pm 30\%$	80	275	400

† Will be considered discontinued upon consumption of present stocks.

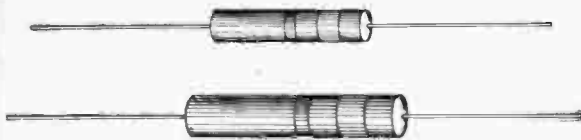
NOTE: Distributed capacitance approximately 0.59 micro-microfarads.

\* (1) Current which will cause resistance to increase approximately 10% due to temperature coefficient of copper wire.

\* (2) Current which will cause resistance to increase approximately 25% due to temperature coefficient of copper wire.







Type	INDUCTANCE (Microhenrys)	List Price
CL1	.47 to 10.0	\$0.35
CL1	11 to 24.0	.50
CL2	1.0 to 39	.67

### TYPE CL1 CHOKES

EIA (Formerly RETMA) PREFERRED VALUES AND 10% TOLERANCES

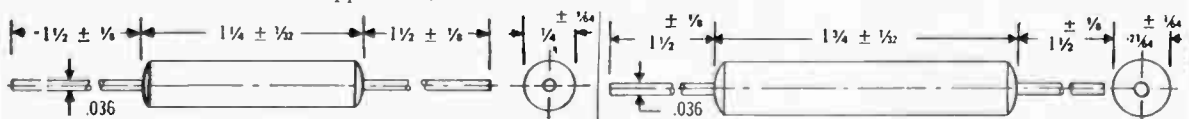
Inductance (Microhenrys)	Approximate "Q" at Frequency (Mc)	D. C. Resistance (Ohms)	Approximate Self-Resonant Frequency (Mc)	Current Rating (Milliamperes) (1)* (2)*
.47	35 @ 12	.14 ± 30%	330	1850 2900
† .51	34 @ 11	.15 ± 30%	315	1800 2800
† .56	34 @ 11	.16 ± 30%	300	1750 2700
† .62	33 @ 10	.16 ± 30%	285	1750 2700
† .75	33 @ 10	.23 ± 30%	260	1450 2300
.82	32 @ 9	.29 ± 30%	250	1300 2000
† .91	32 @ 9	.31 ± 30%	235	1250 1950
1.0	32 @ 9	.33 ± 30%	225	1200 1900
† 1.1	31 @ 8	.40 ± 30%	215	1100 1700
† 1.2	31 @ 8	.40 ± 20%	205	1100 1700
† 1.3	30 @ 8	.42 ± 20%	195	1050 1700
1.5	29 @ 7	.56 ± 20%	185	950 1450
† 1.6	29 @ 7	.59 ± 20%	180	900 1400
1.8	28 @ 7	.77 ± 20%	170	800 1250
† 2.0	27 @ 6	.82 ± 20%	160	750 1200
2.2	26 @ 6	.87 ± 20%	150	750 1150
† 2.4	25 @ 6	1.1 ± 20%	145	650 1050
2.7	25 @ 5	1.2 ± 20%	135	600 1000
† 3.0	24 @ 5	1.6 ± 20%	130	550 850
3.3	24 @ 5	1.7 ± 20%	125	500 850
† 3.6	23 @ 5	1.7 ± 20%	120	500 850
3.9	23 @ 4.5	2.3 ± 20%	115	450 750
† 4.3	22 @ 4.5	2.4 ± 20%	110	450 700
4.7	22 @ 4.0	2.5 ± 20%	105	450 700
† 5.1	21 @ 4.0	3.3 ± 20%	100	375 600
5.6	21 @ 4.0	3.4 ± 20%	95	375 600
† 6.2	20 @ 3.5	3.6 ± 20%	90	375 600
6.8	20 @ 3.5	4.7 ± 20%	86	325 550
† 7.5	19 @ 3.5	5.0 ± 20%	82	300 525
8.2	18 @ 3.0	5.2 ± 20%	79	300 500
† 9.1	18 @ 3.0	7.2 ± 20%	75	250 425
10	17 @ 3.0	7.5 ± 20%	71	250 425
† 11	17 @ 2.5	9.5 ± 20%	68	225 375
† 12	16 @ 2.5	9.9 ± 20%	65	225 375
† 13	15 @ 2.5	11 ± 30%	62	200 350
† 15	14 @ 2.5	12 ± 30%	58	200 325
† 16	13 @ 2.5	13 ± 30%	56	175 325
† 18	13 @ 2.0	14 ± 30%	53	175 300
† 20	12 @ 2.0	14 ± 30%	50	175 300
† 22	11 @ 2.0	15 ± 30%	48	175 300
† 24	10 @ 2.0	15 ± 30%	46	175 300

† Will be considered discontinued upon consumption of present stocks.

NOTE: Distributed capacitance approximately 0.59 micro-microfarads.

\* (1) Current which will cause resistance to increase approximately 10% due to temperature coefficient of copper wire.

\* (2) Current which will cause resistance to increase approximately 25% due to temperature coefficient of copper wire.



# INSULATED CHOKES

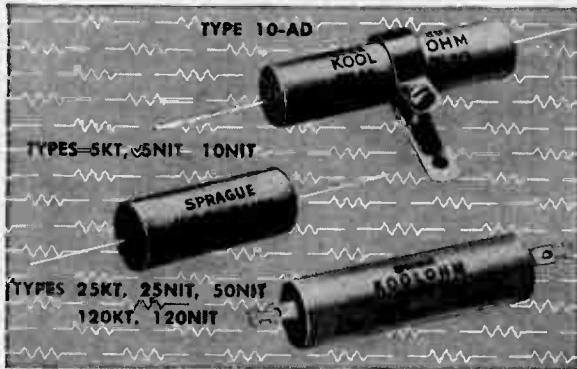
### TYPE CL2 CHOKES

EIA (Formerly RETMA) PREFERRED VALUES AND 10% TOLERANCES

Inductance (Microhenrys)	Approximate "Q" at Frequency (Mc)	D. C. Resistance (Ohms)	Approximate Self-Resonant Frequency (Mc)	Current Rating (Milliamperes) (1)* (2)*
† 1.0	31 @ 9	.26 ± 30%	230	1500 2700
† 1.1	30 @ 8	.35 ± 30%	215	1300 2400
† 1.2	30 @ 8	.37 ± 30%	210	1250 2300
† 1.3	30 @ 8	.38 ± 30%	200	1250 2200
† 1.5	29 @ 7	.52 ± 30%	185	1050 1900
† 1.6	28 @ 7	.53 ± 30%	180	1050 1900
† 1.8	28 @ 7	.65 ± 20%	170	950 1700
† 2.0	27 @ 6	.68 ± 20%	160	900 1700
† 2.2	27 @ 6	.71 ± 20%	155	900 1600
† 2.4	26 @ 6	.93 ± 20%	145	800 1450
† 2.7	25 @ 5	.97 ± 20%	140	750 1400
† 3.0	25 @ 5	1.3 ± 20%	130	650 1200
† 3.3	25 @ 5	1.3 ± 20%	125	650 1200
† 3.6	24 @ 5	1.4 ± 20%	120	650 1200
† 3.9	24 @ 4.5	1.8 ± 20%	115	550 1050
† 4.3	23 @ 4.5	1.9 ± 20%	110	550 1000
† 4.7	22 @ 4.0	2.0 ± 20%	105	550 1000
† 5.1	22 @ 4.0	2.6 ± 20%	100	475 850
† 5.6	21 @ 4.0	2.7 ± 20%	95	450 850
† 6.2	21 @ 3.5	3.7 ± 20%	90	400 700
† 6.8	20 @ 3.5	3.8 ± 20%	87	375 700
† 7.5	20 @ 3.5	4.0 ± 20%	83	375 700
† 8.2	19 @ 3.0	5.2 ± 20%	80	325 600
† 9.1	19 @ 3.0	5.5 ± 20%	75	325 600
† 10	18 @ 3.0	5.7 ± 20%	72	300 550
† 11	18 @ 3.0	7.6 ± 20%	69	275 500
† 12	17 @ 2.5	7.9 ± 20%	66	275 500
† 13	17 @ 2.5	8.2 ± 20%	63	250 475
† 15	16 @ 2.5	11 ± 20%	59	225 425
† 16	16 @ 2.5	11 ± 20%	57	225 425
† 18	15 @ 2.0	15 ± 20%	54	175 350
† 20	15 @ 2.0	16 ± 20%	51	175 350
† 22	14 @ 2.0	19 ± 30%	49	175 325
† 24	14 @ 2.0	20 ± 30%	46	150 300
† 27	13 @ 2.0	21 ± 30%	44	150 300
† 30	12 @ 1.5	22 ± 30%	42	150 300
† 33	12 @ 1.5	23 ± 30%	40	150 275
† 36	11 @ 1.5	24 ± 30%	38	150 225
† 39	11 @ 1.5	25 ± 30%	36	150 225

# SPRAGUE RESISTORS

## KOOLOHM® WIREWOUND RESISTORS



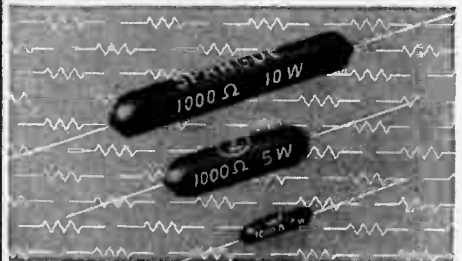
- Wound with wire which is insulated before winding with a flexible ceramic coating. Coating is impervious to 1000°C.
- Each resistor is "tropicalized" by a

- to inner resistance
- Insulated wire permits winding higher values in layers, which means much smaller physical sizes
- Insulated wire permits true "non-inductive" wound designs

Glazed ceramic outer coating and new type end seals for complete protection against all climatic conditions

- May be mounted anywhere — even flat against chassis or grounded parts
- Extremely high insulation resistance — 10,000 volts from surface of ceramic jacket elements.

## BLUE JACKET® WIREWOUND RESISTORS



- Dependable in Critical Equipment, Yet Priced Low Enough for Radio-TV Service Work
- Ideal for Point-to-point, Terminal Board, and Printed Chassis Wiring
- Will Meet MIL Performance Requirements with 35% to 50% Reduction in Size
- Crazeproof Vitreous Enamel Coating Guards Against Humidity and Prevents Failure from Electrolysis
- Hot Spot Rating of 300°C Rise above 40°C Ambient Temperature
- Standard Resistance Tolerances to 50 ohms, ±10%—over 50 ohms, ±5%.

### 5 WATTS TYPES 5KT & 5NIT 1 1/2" dia. x 1 1/2" long

Ohms	Max. Mo.	Max. Volts
5	1000	5.00
10	707	7.07
15	587	8.67
20	500	10
25	446	11
30	406	12
40	354	14
50	316	15
75	258	19
100	224	22
150	183	27
200	158	31
250	141	35
300	129	38
400	112	44
500	100	50
600	91	54
700	84	59
800	79	63
900	74	67
1000	70	70
1250	63	79
1500	57	86
1750	53	93
2000	50	100
2500	44	112
3000	40	123
4000	35	141
5000	31	158
6000*	28	173
7000*	26	187
7500*	25	194
8000*	25	200
9000*	23	212
10000*	22	224
12500*	20	250
14000*	18	265
15000*	18	274
20000*	15	333
25000*	14	354
30000*	13	387
35000*	12	418
40000*	11	447

### 10 WATTS TYPES 10KT & 10NIT 1 1/2" dia. x 1 1/2" long

Ohms	Max. Mo.	Max. Volts
5	1414	7.07
10	1000	10
15	830	12.3
20	707	14.1

### 25 WATTS TYPES 25KT & 25NIT 2 1/2" dia. x 2 1/2" long

Ohms	Max. Mo.	Max. Volts
100	316	31.6
150	259	38.7
200	223	44.6
250	200	50
300	182	54.7
400	158	63.3
500	141	70.7
600	129	77.6
700	119	84
750	115	86.9
800	112	89.5
900	105	95
1000	100	100
1250	89	112
1500	81	123
1750	75	133
2000	70	143
2500	63	158
3000	57	174
4000	50	200
5000	44	227
6000	41	245
7500	36	275
8000	35	283
9000	33	300
10000	32	316
12000*	29	346
14000*	26	384
15000*	25	400
17500*	24	419
20000*	21	475
25000*	20	500
30000*	18	555
35000*	17	591
40000*	16	632
50000*	14	700
60000*	13	780
70000*	12	840

### 10 WATTS ADJUSTABLE† TYPE 10-AD 1 1/2" dia. x 1 1/2" long

Ohms	Max. Mo.	Max. Volts
10	1000	10
25	630	15.8
50	447	22.4
100	316	31.6
150	259	38.7
200	223	44.6
250	200	50
300	182	54.7

### 50 WATTS TYPES 50KT & 50NIT 3/4" dia. x 4" long

Ohms	Max. Mo.	Max. Volts
400	158	63.3
500	141	70.7
750	115	86.9
1000	100	100
1500	81	123
2000	70	143
2500	63	158
3000	57	174
4000	50	200
5000	44	227
7500	36	275
10000	32	316

### 120 WATTS TYPES 120KT & 120NIT 1 1/2" dia. x 8 1/2" long

Ohms	Max. Amps.	Max. Volts
50	1.000	50
75	.816	61
100	.707	70
150	.577	86
200	.500	100
250	.477	111
300	.436	123
400	.377	158
500	.316	173
600	.289	193
750	.258	193
1000	.223	223
1500	.182	274
2000	.158	316
2500	.141	353
3000	.129	387
4000	.111	447
5000	.100	500
7500	.081	612
10000	.070	707
12000	.064	775
15000	.057	870
20000	.050	1000
25000	.044	1120
30000	.032	1580
75000	.026	1936
100000	.022	2238

### Ohms Max MA Ohms Max MA Ohms Max MA

TYPE 151E, 3 WATTS, 1 1/4" Max. D. x 1 1/4" Max. L.		
10	548	150
12	500	180
15	446	200
18	409	220
22	370	250
27	334	270
33	302	300
39	278	330
47	253	390
50	245	470
56	232	500
68	210	560
82	191	680
100	173	820
120	158	1000

### TYPE 27E, 5 WATTS, 1 1/4" Max. D. x 1 1/4" Max. L.

1	2236	225	150	2500	44
1.5	1928	250	141	3000	40
2	1581	300	129	3500	37
3	1356	350	122	4000	35
4	1118	400	112	4500	33
5	1000	450	106	5000	31
7.5	862	500	100	6000	28
10	707	600	91	7000	26
12	646	700	84	7500	25
15	587	750	82	8000	25
20	500	800	79	9000	23
25	447	900	74	10000	22
30	406	1000	70	12000	20
35	377	1100	67	14000	18
40	354	1200	64	15000	18
50	316	1250	63	17500	16
75	258	1500	57	20000	15
100	224	1750	53	22500	15
125	205	2000	50	25000	14
150	183	2250	47	30000	13

### TYPE 28E, 10 WATTS, 1 1/4" Max. D. x 1 1/4" Max. L.

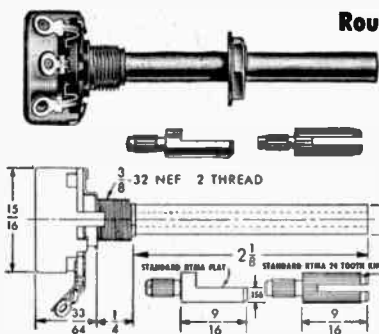
1	3162	400	158	6000	41
1.5	2701	450	148	7000	38
2	2236	500	141	7500	36
3	1918	600	129	8000	35
4	1581	700	119	8500	34
5	1414	750	115	9000	33
7.5	1252	800	112	10000	32
10	1000	900	105	11000	30
12	911	1000	100	12000	29
15	830	1100	95	12500	28
20	707	1200	91	13500	27
25	632	1250	89	14300	26
30	575	1450	82	15000	25
35	539	1500	81	16000	25
40	500	1750	75	17500	24
50	447	2000	71	18000	23
75	365	2250	67	20000	21
100	316	2500	63	22500	20
125	288	3000	57	25000	20
150	259	3300	55	30000	18
200	224	3500	54	35000	17
225	213	3900	51	40000	16
250	200	4000	50	45000	15
300	182	4500	47	45000	15
350	170	5000	45	50000	14

NOTE: ALL NIT TYPES ARE NON-INDUCTIVE

\*KT Types Only

†Adjustable Resistors Are Not Tropicalized

**Round Shaft Midgetrols**



Compact, 1/16" diameter carbon element control. Used in industrial electronic equipment; also, in control circuits of television sets, home radios, auto radios and audio amplifiers. AC-DC power switches are available which may be attached quickly and permanently. Has 2 1/8" long, 1/4" round brass shaft. 2 shaft-end knob adaptors for knurled, push-on knobs, and one hex nut furnished. List Price \$1.40 each.

**Dual Midgetrol Volume Controls and Accessories**



Mallory Midgetrol Volume Control Parts and Accessories enable the serviceman to duplicate the physical and electrical characteristics of hundreds of Concentric Shaft Dual Carbon Controls, Single Shaft Dual Carbon Controls and Concentric Shaft Dual Wire-Wound Carbon control combinations for fast replacement in TV, home and auto radio sets. Supplied as separate front and rear control sections, these parts are easy to assemble, practical and economical, and eliminate delays while waiting delivery of manufacturer's original controls. UF is 1/16" diameter carbon front section; UR is 1/16" carbon rear section; WF is wire-wound front section. A kit of standard assembly parts is supplied with each front section. For accessory fittings and switches, see page 2, Mallory Resistors and Controls Section, this catalog. Average mounting depth behind panel for a carbon dual is 1 1/4"; with switch, is 1 1/2".

Cat. No.	Ohms	Taper †	Cat. No.	Ohms	Taper †
U2	500M	4	U39	100M	1
U3	1M	2	U40	100M	2
U4	1M	4	U41	100M	4
U5	1500	2	U415	125M	4
U6	2M	4	U42	150M	2
U7	2500	2	U43	200M	4
U8	3M	4	U44	250M	1
U12	5M	1	U45	250M	2
U14	5M	4	U46	250M	4
U18	10M	1	U48	500M	1
U19	10M	2	U50	500M	4
U20	10M	4	U51	750M	1
U21	15M	1	U53	1 Meg.	1
U22	15M	2	U54	1 Meg.	4
U24	20M	1	U155	1.5 Meg.	4
U26	20M	4	U55	2 Meg.	1
U28	25M	2	U56	2 Meg.	4
U28A	25M	1	U255	2.5 Meg.	4
U29	25M	4	U57	3 Meg.	1
U33	50M	1	U59	3 Meg.	4
U34	50M	2	U65	5 Meg.	1
U35	50M	4	U67	5 Meg.	4
U36	75M	1	U82	10 Meg.	4

† See Explanation of Mallory Tapers, page 2, Mallory Resistors and Controls section, this catalog.

**Single Tapped Midgetrols—List Price \$2.05 Each**

Cat. No.	Ohms	Tap At	Cat. No.	Ohms	Tap At
UT-420	250M	50M	UT-443	1 Meg.	450M
UT-425	350M	70M	UT-450	2 Meg.	125M
UT-429	500M	50M	UT-448	2 Meg.	250M
UT-427	500M	100M	UT-454	2 Meg.	400M
UT-430	500M	150M	UT-449	2 Meg.	600M
UT-431	500M	225M	UT-451	2 Meg.	900M
UT-440	1 Meg.	200M	UT-457	3 Meg.	900M
UT-438	1 Meg.	300M			

**Double Tapped Midgetrols—List Price \$2.05 Each**

Catalog Number	Overall Resistance	Tap Resistance	
		Tap 1	Tap 2
UDT-283	500M	100M	200M
UDT-289	1 Meg.	250M	500M
UDT-291	1.5 Meg.	225M	500M
UDT-295	2.25 Meg.	250M	500M
UDT-296	2.25 Meg.	500M	1 Meg.

**Two Watt Wire-Wound Front Sections**

Catalog Number	Res. Ohms	List Price	Catalog Number	Res. Ohms	List Price
WF32	300	\$2.10	WF152-T52	1500 †	\$2.50
WF751	750	2.10	WF23	2000	2.10
WF751-T251	750*	2.50	WF252 †	2500	2.10
WF751-T52	750 †	2.50	WF252-T23	2500	2.50
WF13	1000	2.10	WF33	3000	2.10
WF13-T251	1000*	2.50	WF53	5000	2.10
WF152	1500	2.10	WF73	7000	2.10

\* Tapped at 250 ohms. † Tapped at 500 ohms.  
† Tapped at 2000 ohms.

Front Section List Price—\$2.20 Catalog Number	Rear Section List Price—\$1.10 Catalog Number	Resistance Ohms	Taper †
UF13L	UR13L	1000	4
UF13R		1000	2
UF152L	UR152L	1500	4
UF152R		1500	2
UF23L	UR23L	2000	4
UF23R		2000	2
UF252L	UR252L	2500	4
UF252R		2500	2
UF33L		3000	4
UF33R		3000	2
UF53R	UR352L	3500	4
UF53L	UR53R	5000	2
UF73R	UR53L	5000	4
		7000	2
UF14L	UR14R	10M	2
UF253R	UR14L	10M	4
UF253L		25M	2
UF34A	UR253L	25M	4
UF54A		30M	1
UF54L	UR54L	50M	1
UF753L		75M	4
UF15A		100M	1
UF15R	UR15R	100M	2
UF15L	UR15L	100M	4
UF254A	UR254A	250M	1
UF254L	UR254L	250M	4
UF254R	UR354A	350M	1
UF52L		500M	4
UF55A	UR55A	500M	1
UF55R		500M	2
UF55L	UR55L	500M	4
UF16A	UR16A	1 Meg.	1
UF16L	UR16L	1 Meg.	4
UF155A		1.5 Meg.	4
UF26A	UR26A	2 Meg.	1
UF26L	UR26L	2 Meg.	4
UF255L	UR255L	2.5 Meg.	4
	UR36A	3 Meg.	1
	UR56L	5 Meg.	4
UF46A		4 Meg.	1
UF106L		10 Meg.	1

† See Explanation of Mallory Tapers, page 2.

**Tapped Sections**

Front Section List Price—\$2.50 Catalog Number	Rear Section List Price—\$1.40 Catalog Number	Resistance Ohms	Tapped at
UF751-T52		750	500
UF252-T52		2500	500
UF252-T23		2500	2000
UF254-T753	UR254-T753	250M	75M
	UR354-T74	350M	70M
UF55-T54	UR55-T54	500M	50M
	UR55-T154	500M	150M
UF55-T254	UR55-T254	500M	250M
	UR16-T1253	1 Meg.	125M
UF16-T25	UR16-T25	1 Meg.	200M
UF16-T154		1 Meg.	150M
	UR16-T254	1 Meg.	250M
UF16-T35	UR16-T35	1 Meg.	300M
	UR26-T25	2 Meg.	200M
UF26-T55	UR26-T55	2 Meg.	500M
	UR26-T95	2 Meg.	900M

**For Midgetrol accessory parts, see Page 2, Mallory Resistors and Controls Section, this catalog.**

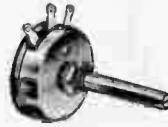
# Wire-Wound Controls and Pads • Control Accessories

P. R. MALLORY & CO., INC. • INDIANAPOLIS

P. R. MALLORY & CO. INC.  
**MALLORY**

## Midgetrol Accessory Parts

- DS-35**—Flatted split knurl shaft end. Special for Zenith. List Price \$0.50
- DS-36**—Special 3" extension shaft for tubular shaft Midgetrols and 2-watt, wire-wound controls. Also used for coupling a front and rear section together to make a single-shaft, dual control for oscilloscope and other push-pull amplifier service. Packaged with the DS-36 are two shaft-end knob adaptors, one knurled and slotted, one flatted. List Price \$0.50
- DS-37**— $\frac{3}{16}$ " diameter shafts for use with round-shaft Midgetrols to accommodate knobs requiring  $\frac{3}{16}$ " shaft. List Price \$0.50
- EB-158**—Special bushing.  $\frac{7}{16}$ "-28 thread,  $1\frac{1}{16}$ " long with  $\frac{3}{8}$ " milled double flat. List Price \$0.65
- EB-214**—Special bushing;  $\frac{1}{2}$ "-28 thread,  $2\frac{3}{16}$ " long with .403 milled flat. List Price \$0.65



## TV Focus Controls

These  $1\frac{1}{2}$ " diameter units are designed especially for focus control replacement in TV sets. They are 4 watt, wire-wound, and have a special taper. One control, plus accessories and complete instructions per display carton.

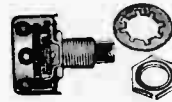
Catalog Number	Ohms Resistance (Maximum)	Type Element	Shaft Length	List Price
TVF140	1500	WW	2"	\$2.05
TVF143	2500	WW	2"	2.05

## Attachable Midgetrol Switches



Cat. No.	Description	List Price
US-26	Single Pole—Single Throw	\$.65
US-26T	Single Pole—Single Throw (with dummy terminal)	
US-27	Double Pole—Single Throw	.65
US-28	Single Pole—Double Throw	.80

## Television and Special Application Midgetrols



For use as exact replacement. Meet physical and electrical requirements for special applications. Equipped with fixed, knurled and screw driver-slotted phenolic shafts,  $\frac{1}{4}$ " in diameter and  $\frac{1}{4}$ " long. List Price \$1.40 each

Cat. No.	Ohms	Cat. No.	Ohms
SU-6	1500	SU-46	250M
SU-8	3M	SU-50	500M
SU-14	5M	SU-54	1 Meg.
SU-20	10M	SU-56	2 Meg.
SU-29	25M	SU-565	2.5 Meg.
SU-35	50M	SU-59	3 Meg.
SU-41	100M	SU-67	5 Meg.

All SU-No. 4—Linear Taper. (see Explanation of Mallory Tapers, page 2, Mallory Resistors and Controls section, this catalog).

## Explanation of Mallory Tapers

Taper Number 1 is a modified logarithmic left hand taper in the carbon type of control and an approximation to this logarithmic taper in the wire-wound type. This taper should always be used in shunt circuits, as in usual antenna and audio circuits, or where only the center and left hand terminals are used.

Taper Number 2 is a right hand logarithmic taper in the carbon and an approximation in the wire-wound type. Used in series circuits, as in cathode voltage controls, or where only the center and right hand terminals are used.

Taper Number 4 is a linear taper. Strictly speaking it is not a "taper" although commonly referred to as such. A linear "taper" is used wherever a control should be such that voltage change is proportional to the degree of rotation.

Taper Number 7 is made only in the wire-wound type of control and is a form of left hand taper. This taper is desirable for the antenna shunt plus bias control, wherein greater attenuation is obtained by increasing the bias voltage. The slight left taper then suffices to gradually reduce the signal to zero volume by the shunting action in the antenna circuit.

## Theater Speaker Controls



Designed for use with Motiograph, Simplex, International and other outdoor theater motion picture equipment. Quality constructed with pig-tail rotor connections and corrosion-resistant finish to assure long, noise-free life. Housed in  $1\frac{1}{16}$ " diameter metal case. Mounting nut supplied.

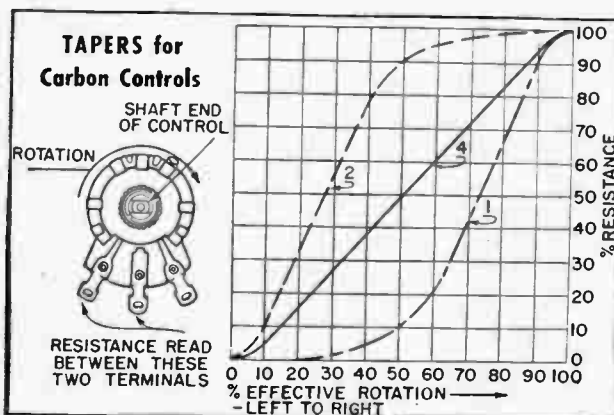
Cat. No.	Description	List Price
TSA-10	4-Ohm L Pad	\$2.20
TSA-35	35-ohm Potentiometer	1.65
TSA-6	6-ohm Potentiometer	1.65

## T and L Pad Attenuators

High quality attenuators having a peak audio rating of 15 watts and a continuous DC dissipation rating of 4 watts. Packaged with instructions, 366 knob, 395 dial plate and hex nut.



"T" Pad Attenuators List Price \$4.70 each Catalog Number	"L" Pad Attenuators List Price \$4.15 each Catalog Number	Ohms Impedance
T2	L2	2
T4	L4	4
T6	L6	6
T8	L8	8
T15	L15	15
T50	L50	50
T100	L100	100
T200	L200	200
T250	L250	250
T500	L500	500
T600	L600	600
T1000	L1000	1000
T2000	L2000	2000
T3000	L3000	3000
	L4000	4000

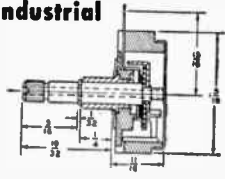




# Variable Wire-Wound Potentiometers and Rheostats

R. MALLORY & CO., INC. · INDIANAPOLIS

## Two Watt Wire-Wound TV and Industrial Potentiometers



For replacement of positioning, hold and focus controls in TV. Also ideal for industrial circuits up to 1500 volts AC. Completely enclosed in 1 1/8" diameter phenolic case. Thumb-knurled 1/4" diameter, 5/16" long, screw driver, slotted, insulated shaft. All have linear resistance change.

For special 3" extension shaft, DS-36, see page 7, Mallory Resistors and Controls Section, this catalog.

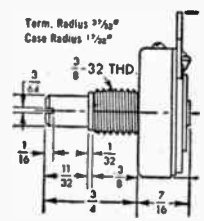
Cat. No.	Ohms Resistance	List Price	Cat. No.	Ohms Resistance	List Price
R2L	2	\$1.40	R50CT	50	\$2.05
R3L	3	1.40	R100L	100	1.40
R5L	5	1.40	R250L	250	1.40
R6L	6	1.40	R500L	500	1.40
R8L	8	1.40	R750L	750	1.40
R10L	10	1.40	R1000L	1000	1.55
R10CT	10	2.05	R1500L	1500	1.55
R15L	15	1.40	R2500L	2500	1.55
R20L	20	1.40	R3000L	3000	1.55
R20CT†	20	2.05	R5000L	5000	1.55
R25L	25	1.40	R7500L	7500	1.65
R30L	30	1.40	R10ML	10000	1.65
R30CT†	30	2.05	R15ML	15000	1.65
R50L	50	1.40	R20ML	20000	1.65

All R type are linear No. 4 taper (see Explanation of Mallory Tapers, page 7, Mallory Resistors and Controls section, this catalog).

## Attachable Switches for Above Controls

Cat. No.	Description	List Price
US30	Single Pole-Single Throw.....	\$0.65
US32	Double Pole-Single Throw.....	.80

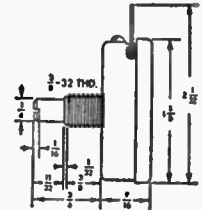
## Two Watt Wire-Wound Potentiometers and Rheostats



1 1/8" diameter. 1/2" diameter by 3/8" long shaft with screw driver slot. For use in test and special instruments, bias control and bridge circuits. Has grounded contact arm. Rheostat has "open" or "off" position—all have linear No. 4 taper (see Explanation of Mallory Tapers, page 2, Mallory Resistors and Controls section, this catalog). For Dial plate 393, see page 7, Mallory Resistors and Controls Section, this catalog.

Potentiometer		Rheostat			
Catalog Number	List Price	Catalog Number	List Price	Ohms	Cap. in Amperes
C6P	\$1.65	C6R	\$1.40	6	.58
C10P	1.65	C10R	1.40	10	.45
C15P	1.65	C15R	1.40	15	.37
C20P	1.65	C20R	1.40	20	.32
C30P	1.65	C30R	1.40	30	.26
C40P	1.65	C40R	1.40	40	.22
C50P	1.65	C50R	1.40	50	.2
C100P	1.65	C100R	1.40	100	.14
C200P	1.65			200	.1
C400P	1.65			400	.07
C1MP	1.65			1M	.045
C3MP	1.65			3M	.025
C5MP	2.20			5M	.02
C6MP	2.20			6M	.018
C10MP	2.20			10M	.014
C15MP	2.20			15M	.011

## Four Watt Wire-Wound Potentiometers and Rheostats



Four-watt, wire-wound controls designed especially for low voltage TV, test equipment, industrial and electronic applications. These controls are supplied with a 3/8" long bushing and have 1/4" round knurled screw driver slotted shafts 3/8" long. Overall case diameter is 1 1/2". Mounting radius, including solder lugs, is 1 1/4" and mounting depth is 3/8". Rheostat styles have "off" position. All have linear resistance change and insulated shaft. For Dial Plate No. 395, see page 7, Mallory Resistors and Controls Section, this catalog.

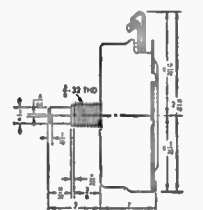
Potentiometer		Rheostat*			
Catalog Number	List Price	Catalog Number	List Price	Ohms	Cap. in Amperes
M1PK	\$1.65	M05RK	\$1.40	1/2	2.80
M3PK	1.65	M1RK	1.40	1	2.00
M6PK	1.65	M2RK	1.40	2	1.4
M10PK	1.65	M3RK	1.40	3	1.15
M15PK	1.65	M4RK	1.40	4	1.0
M20PK	1.65	M6RK	1.40	6	.82
M25PK	1.65	M10RK	1.40	10	.63
M30PK	1.65	M15RK	1.40	15	.52
M40PK	1.65	M20RK	1.40	20	.45
M50PK	1.65	M25RK	1.40	25	.40
M60PK	1.65	M30RK	1.40	30	.37
M75PK	1.65	M40RK	1.40	40	.32
M100PK	1.65	M50RK	1.40	50	.28
M200PK	1.65	M60RK	1.40	60	.26
M400PK	1.65	M75RK	1.40	75	.23
M500PK	1.65	M100RK	1.40	100	.20
M600PK	1.65			200	.14
M1MPK	1.65			400	.10
M1.5MPK	1.65			500	.09
M2MPK	1.65			600	.082
M2.5MPK	1.65			1M	.063
M3MPK	1.65			2M	.045
M4MPK	1.65			3M	.037
M5MPK	1.65			4M	.032
M10MPK	2.20			5M	.028
M15MPK	2.20			10M	.020
M20MPK	2.20			15M	.016
M25MPK	2.20			20M	.014
M30MPK	2.20			25M	.013
M40MPK	2.65			50M	.009
M50MPK	2.65			70M	.0075
M70MPK	2.65				
M75MPK	3.85				
M100MPK	3.85				

\* "Open" or "Off" position counter-clockwise.

### Center Tapped Potentiometer

Catalog Number	List Price	Ohms	Cap. in Amperes
MT10PK	\$2.20	10	.63
MT20PK	2.20	20	.45
MT30PK	2.20	30	.37

## Seven Watt Wire-Wound Potentiometers



Has 7-watt dissipation, grounded contact arm and linear resistance change. Metal case is 2 1/2" diameter, 3/8" deep. Shaft is 1/2" diameter and 3/8" long with screw driver slot. For Dial plate No. 399, see page 7, Mallory Resistors and Controls Section, this catalog.

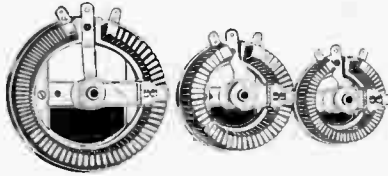
Catalog Number	Ohms	Capacity in Amperes	List Price
E5MP	5M	.042	\$4.20
E10MP	10M	.03	4.45
E20MP	20M	.021	4.60
E25MP	25M	.019	4.70
E50MP	50M	.0135	4.75
E75MP	75M	.011	4.90
E100MP	100M	.0095	5.00
E125MP	125M	.0085	5.00
E150MP	150M	.0078	5.10

# POWER RHEOSTATS

P. R. MALLORY & CO., INC. · INDIANAPOLIS

P. R. MALLORY & CO. INC.  
**MALLORY**

**Type "K"  
Vitreous  
Wire-Wound  
Power Rheostats  
and  
Potentiometers**



Mallory Power Rheostats and Potentiometers are used with Battery Chargers, Blue Print Machines, Dental and Medical Equipment, Fans, Film Printers, Generators, Motion Picture Projectors, Motors and other applications where it is desired to vary a stable current. Mallory Power Rheostats and Potentiometers are constructed by uniformly winding resistance wire into position and applying a protective coating of vitreous enamel. The element contact arm is hinged and under constant pressure to insure proper contact with the element at all times. Wattage ratings of 75, 225 and 500 are available, in addition to those below. A knob and dial plate are supplied with each rheostat.

**Type 25K—25 Watts**  
Outside Diameter—1<sup>9</sup>/<sub>16</sub>"  
Angle of Rotation—295°

Cat. No.	Ohms	Max. Current Amps.	Steps (Approx.)	List Price
25K1P	1	5.000	28	\$7.70
25K2P	2	3.540	28	6.80
25K3P	3	2.880	53	6.80
25K6P	6	2.040	51	6.80
25K8P	8	1.770	56	6.80
25K10P	10	1.580	54	6.80
25K15P	15	1.290	88	6.80
25K25P	25	1.000	117	6.80
25K35P	35	.845	129	6.80
25K50P	50	.707	149	6.80
25K75P	75	.575	174	6.80
25K100P	100	.500	184	6.80
25K125P	125	.447	187	6.80
25K175P	175	.378	178	6.80
25K250P	250	.316	200	6.80
25K350P	350	.267	227	6.80
25K500P	500	.222	256	6.80
25K750P	750	.182	303	6.80
25K1000P	1000	.155	318	7.70
25K1500P	1500	.129	310	7.70
25K2500P	2500	.100	405	7.70
25K3500P	3500	.084	432	8.15
25K5000P	5000	.070	471	8.15

**Type 50K—50 Watts**  
Outside Diameter—2<sup>1</sup>/<sub>2</sub>"  
Angle of Rotation—300°

Cat. No.	Ohms	Max. Current Amps.	Steps (Approx.)	List Price
50K.5P	.5	10.00	25	\$8.60
50K1P	1	7.07	37	8.60
50K2P	2	5.00	42	8.60
50K4P	4	3.54	66	7.70
50K6P	6	2.89	79	7.70
50K8P	8	2.50	84	7.70
50K12P	12	2.04	100	7.70
50K16P	16	1.76	106	7.70
50K22P	22	1.50	145	7.70
50K35P	35	1.19	145	7.70
50K50P	50	1.00	163	7.70
50K80P	80	.79	210	7.70
50K125P	125	.63	204	7.70
50K150P	150	.58	244	7.70
50K225P	225	.47	298	7.70
50K300P	300	.41	268	7.70
50K500P	500	.32	205	7.70
50K800P	800	.25	363	8.15
50K1000P	1000	.22	354	8.15
50K1600P	1600	.176	449	8.15
50K2500P	2500	.14	455	8.15
50K3500P	3500	.12	500	8.60
50K5000P	5000	.10	550	8.60
50K8000P	8000	.08	690	8.60

**Type 100K—100 Watts**  
Outside Diameter—3<sup>1</sup>/<sub>2</sub>"  
Angle of Rotation—300°

Cat. No.	Ohms	Max. Current Amps.	Steps (Approx.)	List Price
100K.5P	.5	14.20	30	\$12.85
100K1P	1	10.00	40	12.85
100K2P	2	7.07	42	12.85
100K3P	3	5.77	56	12.85
100K5P	5	4.47	59	12.85
100K7.5P	7.5	3.65	96	12.05
100K10P	10	3.16	101	12.05
100K16P	16	2.50	128	12.05
100K25P	25	2.00	160	12.05
100K50P	50	1.41	200	12.05
100K75P	75	1.15	240	12.05
100K100P	100	1.00	250	12.05
100K200P	200	.71	315	12.05
100K300P	300	.58	302	12.05
100K400P	400	.50	316	12.05
100K500P	500	.45	342	12.05
100K750P	750	.37	406	12.05
100K1000P	1000	.32	435	12.85
100K1500P	1500	.26	520	12.85
100K2000P	2000	.22	544	12.85
100K2500P	2500	.20	535	12.85
100K5000P	5000	.14	692	13.70
100K7500P	7500	.12	820	14.60
100K10000P	10000	.10	840	15.40

**Type 150K—150 Watts**  
Outside Diameter—4<sup>1</sup>/<sub>2</sub>"  
Angle of Rotation—305°

Cat. No.	Ohms	Max. Current Amps.	Steps (Approx.)	List Price
150K.5P	.5	17.30	31	\$16.35
150K1P	1	12.30	38	16.35
150K2P	2	8.66	51	16.35
150K3P	3	7.07	73	16.35
150K5P	5	5.48	77	16.35
150K7.5P	7.5	4.47	70	16.35
150K10P	10	3.87	145	15.40
150K15P	15	3.16	138	15.40
150K25P	25	2.45	142	15.40
150K35P	35	2.07	198	15.40
150K50P	50	1.73	182	15.40
150K75P	75	1.41	218	15.40
150K100P	100	1.22	229	15.40
150K150P	150	1.00	276	15.40
150K200P	200	.87	289	15.40
150K250P	250	.77	360	15.40
150K350P	350	.66	350	15.40
150K500P	500	.55	400	15.40
150K750P	750	.45	460	16.35
150K1250P	1250	.35	490	16.35
150K1800P	1800	.290	555	17.15
150K2250P	2250	.26	547	17.15
150K3000P	3000	.22	729	17.15
150K4500P	4500	.18	689	18.00
150K7500P	7500	.14	930	18.85
150K10000P	10000	.12	980	20.55

**Type 300K—300 Watts**  
Outside Diameter—6<sup>1</sup>/<sub>8</sub>"  
Angle of Rotation—315°

Cat. No.	Ohms	Max. Current Amps.	Steps (Approx.)	List Price
300K1P	1	17.30	48	\$23.15
300K2P	2	12.25	60	23.15
300K3P	3	10.00	64	23.15
300K4P	4	8.66	80	23.15
300K5P	5	7.75	80	23.15
300K7.5P	7.5	6.32	100	23.15
300K10P	10	5.48	139	23.15
300K15P	15	4.47	128	23.15
300K25P	25	3.46	182	23.15
300K50P	50	2.45	228	23.15
300K75P	75	2.00	271	23.15
300K100P	100	1.73	287	23.15
300K150P	150	1.41	338	23.15
300K200P	200	1.22	361	23.15
300K300P	300	1.00	427	23.15
300K400P	400	.87	460	23.15
300K700P	700	.66	555	23.15
300K900P	900	.58	564	23.15
300K1200P	1200	.50	605	23.15
300K1500P	1500	.45	755	23.15
300K1750P	1750	.41	691	23.15
300K2500P	2500	.35	785	23.15

Order by wattage and resistance. For example: A 25-watt 100 ohm unit is indicated by 25K100P. A 100-watt 12 ohm unit is 100K12P. Or, a 50-watt .5 ohm unit is 50K.5P . . . etc. Knobs and Dial Plates packaged with each unit.

See Resistor Hardware on Page 7

Mallory Page 4

**Mallory Fixed and Adjustable Vitreous Enamel Resistors**



Wire-wound, covered with a special, vitreous, non-alkaline, non-hygroscopic enamel coating which assures exceptional sealing and permanence of electrical characteristics. Adjust-

able types equipped with slider. 5 and 10 watt sizes have tinned-copper leads. All others supplied with mounting feet.

**Fixed Types**

**Type HHJ-5 Watt Rating**  
Tube Size 5/16" x 1"

Resistance Ohms						
1	10	40	250	700	1250	3500
1.5	12	50	300	750	1500	4000
2	15	75	350	800	1750	4500
3	20	100	400	900	2000	5000
4	25	125	450	1000	2250	
5	30	150	500	1100	2500	
7.5	35	200	600	1200	3000	

Ohms	List Price
1 Thru 1000	<b>\$0.74</b>
1100 Thru 5000	<b>.83</b>

**Type 1HJ-10 Watt Rating**  
Tube Size 5/16" x 1 1/4"

Resistance Ohms						
1	25	225	800	2500	8500	18000
2	30	250	900	3000	10000	20000
3	35	300	1000	3500	11000	22500
4	40	350	1100	4000	12000	25000
5	50	400	1200	4500	12500	30000
7.5	75	450	1250	5000	13500	35000
10	100	500	1500	6000	14300	40000
12	125	600	1750	7000	15000	45000
15	150	700	2000	7500	16000	50000
20	200	750	2250	8000	17500	

Ohms	List Price
1 Thru 1000	<b>\$0.83</b>
1100 Thru 5000	<b>.88</b>
6000 Thru 10000	<b>1.01</b>
11000 Thru 20000	<b>1.13</b>
22500 Thru 50000	<b>1.22</b>

**Type 2HJ-20 Watt Rating**  
Tube Size 7/16" x 2"

Resistance Ohms						
5	100	500	2000	4000	12500	40000
10	150	750	2250	4500	15000	50000
15	200	1000	2500	5000	20000	75000
25	250	1250	2750	6000	25000	100000
50	300	1500	3000	7500	30000	
75	400	1750	3500	10000	35000	

Ohms	List Price
5 Thru 1000	<b>\$1.05</b>
1250 Thru 5000	<b>1.07</b>
6000 Thru 10000	<b>1.23</b>
12500 Thru 20000	<b>1.32</b>
25000 Thru 40000	<b>1.51</b>
50000	<b>1.85</b>
75000 Thru 100000	<b>1.93</b>

**Type 5HJ-50 Watt Rating**  
Tube Size 5/16" x 4"

Resistance Ohms						
10	250	1500	7500	20000	50000	
25	500	2000	10000	25000	75000	
50	750	2500	12500	30000	100000	
100	1000	5000	15000	40000		

Ohms	List Price
10 Thru 5000	<b>\$1.93</b>
7500 Thru 10000	<b>2.11</b>
12500 Thru 20000	<b>2.33</b>
25000 Thru 40000	<b>2.56</b>
50000	<b>2.84</b>
75000	<b>3.21</b>
100000	<b>3.52</b>

**Type 10HJ-100 Watt Rating**  
Tube Size 3/4" x 6 1/2"

Resistance Ohms						
25	500	2000	10000	25000	50000	
50	750	2500	15000	30000	75000	
100	1000	5000	20000	40000	100000	
250	1500	7500				

Ohms	List Price
25 Thru 1000	<b>\$2.73</b>
1500 Thru 5000	<b>2.78</b>
7500 Thru 10000	<b>2.97</b>
15000 Thru 20000	<b>3.27</b>
25000 Thru 40000	<b>3.59</b>
50000	<b>3.71</b>
75000	<b>3.94</b>
100000	<b>4.18</b>

**Type 20HJ-200 Watt Rating**  
Tube Size 1 1/8" x 10 1/2"

Resistance Ohms						
25	100	750	2000	5000	20000	50000
50	250	1000	2500	7500	30000	75000
75	500	1500	3000	10000	40000	100000

Ohms	List Price
25 Thru 1000	<b>\$3.62</b>
1500 Thru 5000	<b>3.67</b>
7500 Thru 10000	<b>3.89</b>
20000	<b>4.13</b>
30000 Thru 40000	<b>4.29</b>
50000	<b>4.43</b>
75000	<b>4.68</b>
100000	<b>4.98</b>

**Adjustable Types**

**Type 1AV-10 Watt Rating**  
Tube Size 5/16" x 1 1/4"

Resistance Ohms						
1	15	150	500	1500	4000	8000
2	20	200	600	2000	4500	8500
3	25	250	750	2250	5000	9000
5	50	300	800	2500	6000	10000
7.5	75	350	1000	3000	7000	
10	100	400	1250	3500	7500	

Ohms	List Price
1 Thru 1000	<b>\$1.62</b>
1100 Thru 5000	<b>1.68</b>
6000 Thru 10000	<b>1.79</b>

**Type 2AV-25 Watt Rating**  
Tube Size 5/16" x 2"

Resistance Ohms						
1	25	200	750	2500	6000	20000
3	50	250	1000	3000	7500	25000
5	75	300	1250	3500	10000	
10	100	400	1500	4000	12000	
15	150	500	2000	5000	15000	

Ohms	List Price
1 Thru 1000	<b>\$2.02</b>
1250 Thru 5000	<b>2.07</b>
6000 Thru 10000	<b>2.23</b>
12000 Thru 20000	<b>2.29</b>
25000	<b>2.51</b>

**Type 5AV-50 Watt Rating**  
Tube Size 5/16" x 4"

Resistance Ohms						
5	75	250	1500	4000	15000	40000
10	100	500	2000	5000	20000	50000
25	150	750	2500	7500	25000	
50	200	1000	3000	10000	30000	

Ohms	List Price
5 Thru 1000	<b>\$2.61</b>
1500 Thru 5000	<b>2.72</b>
7500 Thru 10000	<b>2.89</b>
15000 Thru 20000	<b>3.11</b>
25000 Thru 40000	<b>3.39</b>
50000	<b>3.64</b>

**Type 10AV-100 Watt Rating**  
Tube Size 3/4" x 6 1/2"

Resistance Ohms						
50	2000	5000	15000	30000	50000	
100	2500	7500	20000	35000	75000	
500	3000	10000	25000	40000		
1000	4000					

Ohms	List Price
50 Thru 1000	<b>\$3.91</b>
2000 Thru 5000	<b>4.04</b>
7500 Thru 10000	<b>4.26</b>
15000 Thru 20000	<b>4.53</b>
25000 Thru 40000	<b>4.81</b>
50000	<b>5.03</b>
75000	<b>5.23</b>

**Type 20AV-200 Watt Rating**  
Tube Size 1 1/8" x 10 1/2"

Resistance Ohms						
50	1000	2500	20000	50000		
100	1500	5000	25000	75000		
500	2000	10000	30000			

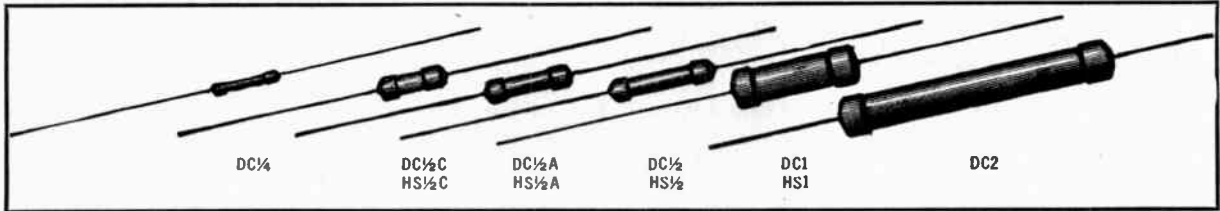
Ohms	List Price
50 Thru 1000	<b>\$4.81</b>
1500 Thru 5000	<b>4.90</b>
10000	<b>5.17</b>
20000	<b>5.41</b>
25000 Thru 30000	<b>5.53</b>
50000	<b>5.89</b>
75000	<b>5.96</b>

# DEPOSITED CARBON RESISTORS

P. R. MALLORY & CO., INC. · INDIANAPOLIS

P. R. MALLORY & CO. INC.  
**MALLORY**

## Types HS and DC Deposited Carbon Resistors



(Resistors illustrated are approximately 1/3 actual size)

### Type DC ± 1% Deposited Carbon Precision Resistors

Mallory Deposited Carbon Precision Resistors are designed primarily as low-cost replacements for expensive wire-wound resistors in high-quality laboratory instruments. Their unique operating characteristics also make them ideal for replacement or substitution in all radio, television, electronic, or electric circuitry where stability, close tolerance, low-noise, and low inductance are desired. Average shelf life change will not exceed 1/4% per year. One thousand hour load life test indicates a maximum change not exceeding ± 1%.

These resistors are formed of pure, crystalline-carbon particles deposited on specially compounded ceramic. Each Mallory Deposited Carbon Resistor is equipped with 1/2" tinned copper, axially-placed leads rigidly attached to silver plated brass end-caps. Baked moisture-resistant insulation is incorporated in construction for protection against humidity. Each resistor is calibrated at a nominal temperature of 25°C. and each has a negative temperature coefficient range of approximately .03% for low resistance values, through .08% for resistances exceeding 1 megohm.

Each unit is inspected according to requirements of accepted government specifications, and each is marked with resistance value, type and tolerance, except the smaller types which have a separate label.

Cat. No.	Wattage	Working Volts	Size (in inches) Dia. Length	Standard Value Resistance Range	List Price
DC 1/2 A	.50	350	1 1/4 x 1 9/32	41 ohms—2.2 Meg.	\$0.67
DC 1	1.00	500	1/2 x 1 5/32	41 ohms—4.5 Meg. 5.0 Meg.	1.00 1.10
DC 2	2.00	750	3/4 x 2 1/16	120 ohms—10 Meg.	1.20

Each of the three DC types is available in the following resistance values, within resistance ranges shown in the table above:

Ohms	Ohms	Ohms	Ohms	Ohms	Ohms	Ohms
50	464	2870	20.0 K	121.0 K	600.0 K	5.11 Meg.
56	500	3000	21.5 K	125.0 K	619.0 K	5.62 Meg.
62	511	3160	22.5 K	133.0 K	681.0 K	6.19 Meg.
68	562	3500	23.7 K	147.0 K	750.0 K	6.81 Meg.
75	600	3830	25.0 K	150.0 K	825.0 K	7.50 Meg.
83	619	4000	26.1 K	162.0 K	900.0 K	8.25 Meg.
91	681	4220	28.7 K	175.0 K	1.00 Meg.	9.09 Meg.
100	700	4640	30.0 K	178.0 K	1.10 Meg.	10.00 Meg.
110	50	5000	31.6 K	196.0 K	1.21 Meg.	11.00 Meg.
121	825	5110	34.8 K	200.0 K	1.33 Meg.	12.10 Meg.
133	909	5620	35.0 K	215.0 K	1.47 Meg.	13.30 Meg.
147	1000	6190	38.3 K	225.0 K	1.50 Meg.	14.70 Meg.
162	1100	6810	40.0 K	237.0 K	1.62 Meg.	16.20 Meg.
178	1210	7500	42.2 K	250.0 K	1.78 Meg.	17.80 Meg.
200	1330	8250	46.4 K	261.0 K	2.00 Meg.	19.60 Meg.
215	1470	9090	50.0 K	287.0 K	2.15 Meg.	21.50 Meg.
237	1500	10.0 K	51.1 K	300.0 K	2.37 Meg.	23.70 Meg.
250	1620	11.0 K	56.2 K	316.0 K	2.50 Meg.	26.10 Meg.
261	1780	12.1 K	60.0 K	348.0 K	2.61 Meg.	28.70 Meg.
287	1960	12.5 K	61.9 K	383.0 K	2.87 Meg.	31.60 Meg.
300	2000	13.3 K	68.1 K	400.0 K	3.16 Meg.	34.80 Meg.
316	2150	14.7 K	75.0 K	422.0 K	3.48 Meg.	38.30 Meg.
348	2200	15.0 K	82.5 K	464.0 K	3.83 Meg.	42.20 Meg.
383	2370	16.2 K	90.0 K	500.0 K	4.22 Meg.	46.40 Meg.
400	2500	17.8 K	100.0 K	511.0 K	4.64 Meg.	51.10 Meg.
422	2610	19.6 K	110.0 K	562.0 K	5.00 Meg.	

### Type HS ± 10% Deposited Carbon Resistors

For the first time the well-known advantages of high-stability low inductance, and small size of Mallory Deposited Carbon Resistors are available at moderate cost for use in many commercial applications where accuracy of resistance is of less importance than the consistency of operation over long periods of time and through many changes of temperature. Average shelf life change will not exceed 1/4% per year. One thousand hour load life test indicates a maximum change not exceeding ± 1%.

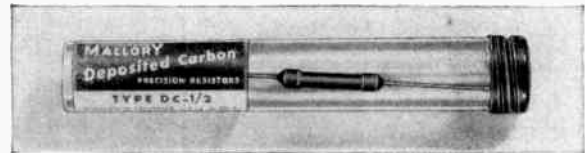
Television servicemen, laboratory technicians, and model shop engineers, in particular, will find these resistors ideal for critical television and other oscillator circuits where constancy of resistance is of utmost importance. The electrical and mechanical characteristics of HS types are exactly the same as similar DC types, with exception of the resistance tolerance which has been increased to ± 10% of the nominal value. The same quality and temperature coefficient, as featured in the DC types, is maintained throughout.

Cat. No.	Wattage	Working Volts	Size (in inches) Dia. Length	Standard Value Resistance Range	List Price
HS 1/2	.50	500	1 1/4 x 1 9/16	47 ohms—8.2 Meg.	\$0.35
HS 1/2 A	.50	350	1 1/4 x 1 9/32	10 ohms—3.3 Meg.	.40
HS 1/2 C	.50	350	1 1/4 x 1 9/32	10 ohms—1.2 Meg.	.45
HS 1	1.00	500	3/2 x 1 9/16	100 ohms—10 Meg.	.50

Each of the four HS types is available in the following RTMA resistance values, within resistance ranges shown in the chart above:

Ohms	Ohms	Ohms	Ohms	Ohms	Ohms
10	100	1 K	10 K	100 K	1 Meg.
12	120	1.2 K	12 K	120 K	1.2 Meg.
15	150	1.5 K	15 K	150 K	1.5 Meg.
18	180	1.8 K	18 K	180 K	1.8 Meg.
22	220	2.2 K	22 K	220 K	2.2 Meg.
27	270	2.7 K	27 K	270 K	2.7 Meg.
33	330	3.3 K	33 K	330 K	3.3 Meg.
39	390	3.9 K	39 K	390 K	3.9 Meg.
47	470	4.7 K	47 K	470 K	4.7 Meg.
56	560	5.6 K	56 K	560 K	5.6 Meg.
68	680	6.8 K	68 K	680 K	6.8 Meg.
82	820	8.2 K	82 K	820 K	8.2 Meg. 10 Meg.

When ordering specify type and resistance value desired.



All DC Types are packaged in this dust-free plastic tube, assuring adequate physical protection.

Note: Use of values listed in this catalog will save you time and money. However special values will be made to your specifications on your request.



**Yard-Ohm Resistance Kits**

Each Yard-Ohm Kit consists of the following: 1 yard spiral wound resistance wire; 1 yard insulated braid; 24 spiral wire leads. The kit is available in eight resistance values.

Dissipation—all types: ½ watt per inch.

List Price \$0.75 each

Catalog Number	Resistance Value (Ohms per Inch)	Carrying Capacity in Amperes	Catalog Number	Resistance Value (Ohms per Inch)	Carrying Capacity in Amperes
YO-1	1	.707	YO-50	50	.100
YO-5	5	.315	YO-100	100	.071
YO-10	10	.223	YO-250	250	.044
YO-25	25	.141	YO-500	500	.031

**Adjustable Mounting Brackets**

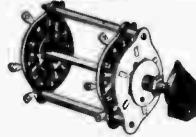
Cat. No.	Description	List Price
RB248	1¾" Mounting Centers (A)	\$0.25
RB249	2½" Mounting Centers (B)	.25
RB254	Universal	.25

**Shafts—Couplers—Bushings—Dial Plates**



Cat. No.	Description	List Price
EC240	For coupling two ¼" shafts or ¼" and ⅜"	\$0.75
EB247	(D)	.25
UB241	¾" Extension Bushing (F)	.95
178	Panel Bushing for ¼" shaft (G)	.75
RS242	½" and ⅜" Wrench (H)	.40
RS243	4" long x ¼" diameter x ⅜" flat (K)	.40
RS244	4" long x ¼" diameter x ⅜" flat (J)	.40
RS245	4" long x ⅜" diameter x ⅜" flat (L)	.45
369	2" long x ¼" diameter x slotted ⅜" (M)	.25
391	0-100 All Rheostats and Potentiometers (compromise scale) 2¼" (N)	.15
393	Increase Volume—All Rheostats and Potentiometers—1½" (N)	.25
395	0-10 For "C" Type Rheostats and Potentiometers—2¼" (N)	.25
396	0-10 For Standard Wire-Wound Controls with Plain cover; also "M" Type Rheostats and Potentiometers—2¼" (N)	.25
397	0-10 For Standard Wire-Wound Controls with switch type cover—2¼" (N)	.25
398	0-10 For Standard Carbon Controls with Plain cover—2¼" (N)	.25
399	0-10 For Standard Carbon Controls with switch type cover—2¼" (N)	.25
	0-10 For "E" Type Potentiometers—2¼" (N)	.25

**Two-Section, Five-Position "Hamswitch"®**



For meter or circuit switching in transmitters. Rated at 1000 volts AC up to 1500 volts DC. Two section, 5 position. 2¼" spacing between sections. 60° indexing between positions. Adjustable stop. Non-shorting type. Supplied with ⅜"-32 bushing, ¼" x 2" notched round shaft. Pointer knob and mounting hardware furnished. Requires ¾" mounting depth.

Catalog No. 151L List Price \$3.00

**Two-Section, Two-Circuit, Six-Position "Hamswitch"**



Coil and circuit rotary switch with 6 positions, 2 circuits and 2 sections (½" spacing) designed to short out automatically all unused positions. Ideal for test oscillator switching, band-switching or meter-switching uses. Phenolic insulated and equipped with ⅜"-32 bushing, ¼" x 2" notched round shaft and adjustable stop. Supplied with pointer knob and mounting hardware.

Catalog No. 152L List Price \$3.60

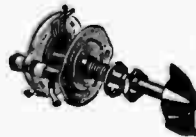
**Decade Switches**

Especially designed for use in the construction of capacitor and resistor decade instruments.

The unusual circuit arrangement of these switches permits real economies in the construction of precision resistor and capacitor decade assemblies since they require only 4 standard resistors or capacitors to complete a full decade of test values. Each switch is equipped with high grade phenolic insulation and heavily silvered contact members to assure excellent electrical stability. Adjustable stops are provided to permit interconnecting with other switches for multiple decade operation. One Mallory No. 366 bar knob and mounting nut furnished. Dial plates with 30 degree numeral spacing must be employed.

Catalog No. 153L Capacitor Decade Switch List Price \$3.65  
Catalog No. 154L Resistor Decade Switch List Price \$4.10

**Ceramic Section "Ham Band" Switches**



For use in transmitter plate circuits not exceeding 1000 volts DC with power up to 100 watts. Switches have 4 positions in 360° rotation with each section a single circuit. 90° indexing. All models are non-shorting. Ceramic insulation provides low losses at high frequencies. Equipped with double-contact tie points. A 2" mounting area is required. Two-section models have 1⅞" spacing, all others have 1". Switches are supplied with ¼" round shafts, 2" long, and ⅜"-32 bushings. Each switch is furnished with pointer knob and mounting hardware.

Catalog No. 155L List Price \$3.50

Catalog Number	Number of Gangs or Sections	Spacing Between Sections	Circuits Per Switch	List Price
161C	1		1	\$2.50
162C	2	1⅞"	2	3.80
163C	3	1"	3	5.25
164C	4	1"	4	6.60
165C	5	1"	5	7.50

**For the Best in Radio and TV Controls — Buy Mallory**



# RESISTORS

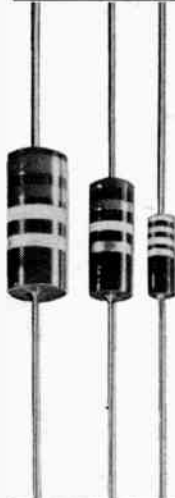
HIGH QUALITY  
FIXED COMPOSITION



# CAPACITORS

PAPER DIELECTRIC  
CUSTOM MANUFACTURED

## 5% and 10% TOLERANCE, 1/2, 1 and 2 WATT RATINGS



Fixed composition resistors of highest quality, feature permanent electrical characteristics, small physical size for a given wattage rating, great mechanical strength. Leads are differentially tempered—prevent sharp bends near the resistor body while still permitting easy forming to fit a particular wiring arrangement.

Resistor bodies are molded brown phenolic with coding in brilliant colors.

2W 1W 1/2W (ACTUAL SIZE)

These resistors are now supplied in attractive new containers. Three convenient sizes with pull-out sections accommodate standard quantities of 1/2, 1 and 2 watt resistors.

A G-H innovation, Gold and Silver container ends, permits instant identification of 5% or 10% tolerance units. Quantity, wattage and resistance values are also clearly printed on these ends. These attractive black and green containers with Gold and Silver ends provide a space-saving, functional shelf display.



CONVENIENT  
ATTRACTIVE  
PACKAGING

ONE-HALF, ONE AND TWO WATT RATINGS							
10	82	680	5600	47,000	390,000	3.3 meg.	
11	91	750	6200	51,000	430,000	3.6 "	
12	100	820	6800	56,000	470,000	3.9 "	
13	110	910	7500	62,000	510,000	4.3 "	
15	120	1000	8200	68,000	560,000	4.7 "	
16	130	1100	9100	75,000	620,000	5.1 "	
18	150	1200	10,000	82,000	680,000	5.6 "	
20	160	1300	11,000	91,000	750,000	6.2 "	
22	180	1500	12,000	100,000	820,000	6.8 "	
24	200	1600	13,000	110,000	910,000	7.5 "	
27	220	1800	15,000	120,000	1.0 meg.	8.2 "	
30	240	2000	16,000	130,000	1.1 "	9.1 "	
33	270	2200	18,000	150,000	1.2 "	10.0 "	
36	300	2400	20,000	160,000	1.3 "	11.0 "	
39	330	2700	22,000	180,000	1.5 "	12.0 "	
43	360	3000	24,000	200,000	1.6 "	13.0 "	
47	390	3300	27,000	220,000	1.8 "	15.0 "	
51	430	3600	30,000	240,000	2.0 "	16.0 "	
56	470	3900	33,000	270,000	2.2 "	18.0 "	
62	510	4300	36,000	300,000	2.4 "	20.0 "	
68	560	4700	39,000	330,000	2.7 "	22.0 "	
75	620	5100	43,000	360,000	3.0 "		

**5%**  
Tolerance

Available in 1 watt only

- 2.7 ohms
- 3.0 ohms
- 3.3 ohms
- 3.6 ohms
- 3.9 ohms
- 4.3 ohms
- 4.7 ohms
- 5.1 ohms
- 5.6 ohms
- 6.2 ohms
- 6.8 ohms
- 7.5 ohms
- 8.2 ohms
- 9.1 ohms

Standard packages, 50 resistors.

All Standard RTMA Values							
ONE-HALF, ONE AND TWO WATT RATINGS							
10	120	1500	18,000	220,000	2.7 meg.		
12	150	1800	22,000	270,000	3.3 "		
15	180	2200	27,000	330,000	3.9 "		
18	220	2700	33,000	390,000	4.7 "		
22	270	3300	39,000	470,000	5.6 "		
27	330	3900	47,000	560,000	6.8 "		
33	390	4700	56,000	680,000	8.2 "		
39	470	5600	68,000	820,000	10.0 "		
47	560	6800	82,000	1.0 meg.	12.0 "		
56	680	8200	100,000	1.2 "	15.0 "		
68	820	10,000	120,000	1.5 "	18.0 "		
82	1000	12,000	150,000	1.8 "	22.0 "		
100	1200	15,000	180,000	2.2 "			

**10%**  
Tolerance

Available in 1 watt only

- 2.7 ohms.
- 3.3 ohms.
- 3.9 ohms.
- 4.7 ohms.
- 5.6 ohms.
- 6.8 ohms.
- 8.2 ohms.

Standard packages, 50 resistors

## PAPER DIELECTRIC CAPACITORS

Custom-manufactured to customers specifications. Can be supplied in any practical capacity, working voltage and tolerance. Containers and terminal arrangements may be in accordance with customers drawings. Capacitors can be manufactured for AC or DC operation—impregnated with Wax, Tensoil or in the stable, highly superior oil impregnant, G-H PERMANOL.

# GIRARD - HOPKINS

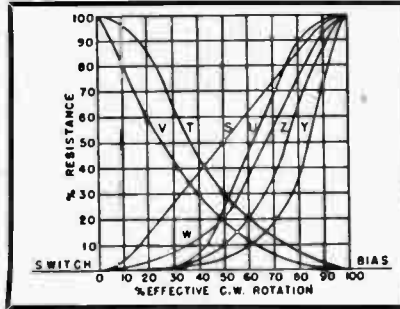
PRODUCTS OF  
**THE HOUSE OF RESISTORS®**



**RESISTORS • CONTROLS**  
**RESISTANCE DEVICES**

## COMPOSITION-ELEMENT CONTROLS

These "Pick-A-Shaft"™ and "Ad-A-Switch"™ controls will take any of the shafts listed on page R-24, including High Voltage Coupler and insulated shaft. Your choice of any one of the 12 shafts listed (this does not include insulated shaft) with each control. "A47F" and "A47" controls use "SWE" switches, shown on page R-24. Tolerances of these controls are in accord with RETMA standards — overall resistance tolerance of plus/minus 20% for all values up to and including 100K ohms; plus/minus 30% above 100K. Controls are available with factory-assembled shafts at no extra charge, by omitting prefix "A" from catalog number and designating type of shaft desired, when ordering. Example: 47-100K-S with FKS-1 shaft.



Graph Explanation:

- Taper S—Straight or uniform resistance change with rotation.
- Taper T—Right-hand 30% resistance at 50% of C.W. rotation.
- Taper U—Left-hand 1% resistance at 33 1/3% of C.W. rotation.
- Taper V—Right-hand 20% resistance at 50% of C.W. rotation.
- Taper W—Left-hand 20% resistance at 50% of C.W. rotation.
- Taper Z—Left-hand (log. audio) 10% resistance at 50% of C.W. rotation.
- Taper Y—Left-hand 5% resistance at 50% of C.W. rotation.

### SERIES "A47F"

#### 1/2 WATT TAPPED CONTROLS



SERIES A47F  
(INDUSTRIAL)  
SERIES 47F

These are the popular 1/8" dia. composition-element controls which are replacing the larger 1-1/4" dia. units, without sacrifice in rating or performance. Series "A47F" controls are field-assembled with the selected "Pick-A-Shaft"™ and "Ad-A-Switch"™, as stated above. Tolerances as above-stated. "A47F" controls have taps 1, 2, 3 located at 30%, 50% and 70% of rotation respectively. These controls are also available with factory-assembled shafts at no extra charge, by omitting prefix "A" from catalog number and designating the type of shaft desired when ordering. Example: 47F-200K with FN-3 shaft.

Cat. No.	Res. Ohms.	Tap No. 1 30%	Tap No. 2 50%	Tap No. 3 70%
A47F-50K	50K		25K	
A47F-200K	200K			100K
A47F-250K	250K			50K
A47F1-250K	250K		125K	
A47F-350K	350K	75K		
A47F1-350K	350K		75K	
A47F-500K	500K			100K
A47F1-500K	500K	25K		
A47F2-500K	500K			200K
A47F3-500K	500K		100K	
A47F4-500K	500K		50K	
A47F5-500K	500K		250K	
A47F-1 Meg.	1 Meg.	250K		
A47F1-1 Meg.	1 Meg.			200K
A47F2-1 Meg.	1 Meg.		50K	
A47F3-1 Meg.	1 Meg.		100K	
A47F4-1 Meg.	1 Meg.		225K	
A47F5-1 Meg.	1 Meg.		500K	
A47F-2 Meg.	2 Meg.	20K		
A47F1-2 Meg.	2 Meg.	5000		
A47F2-2 Meg.	2 Meg.	15K		
A47F3-2 Meg.	2 Meg.		1 Meg.	
A47F4-2 Meg.	2 Meg.		200K	
A47F5-2 Meg.	2 Meg.		400K	
A47F6-2 Meg.	2 Meg.		500K	
A47F-3 Meg.	3 Meg.		250K	

LIST PRICE \$2.05  
Standard Packing 10 per Carton.

\*Reg. U.S. Pat. Off.

### SERIES "A47" 1/2 WATT CONTROLS

Composition-element controls in the popular 1/8" dia. size. Series "A47" controls are field-assembled with the selected "Pick-A-Shaft"™ and "Ad-A-Switch"™, as stated above. Tolerances as above-stated. These controls are also available with factory-assembled shafts at no extra charge, by omitting prefix "A" from catalog number and designating the type shaft desired when ordering. Example: 47-100K-S with FKS-1/4 shaft.



SERIES A47  
(INDUSTRIAL)  
SERIES 47

CAT No.	OHMS	TAPER	CAT No.	OHMS	TAPER
A47-500-S	500	S	A47-75K-V	75K	V
A47-750-S	750	S	A47-100K-S	100K	S
A47-1000-S	1000	S	A47-100K-Z	100K	Z
A47-1500-S	1500	S	A47-150K-S	150K	S
A47-2000-S	2000	S	A47-200K-S	200K	S
A47-2500-S	2500	S	A47-250K-S	250K	S
A47-3000-S	3000	S	A47-250K-Z	250K	Z
A47-4000-S	4000	S	A47-300K-S	300K	S
A47-5000-S	5000	S	A47-500K-S	500K	S
A47-7500-S	7500	S	A47-500K-Z	500K	Z
A47-10K-S	10K	S	A47-750K-S	750K	S
A47-10K-V	10K	V	A47-750K-Z	750K	Z
A47-10K-W	10K	W	A47-1 Meg-S	1 Meg.	S
A47-10K-Z	10K	Z	A47-1 Meg-Z	1 Meg.	Z
A47-15K-S	15K	S	A47-1.5 Meg-S	1.5 Meg.	S
A47-15K-V	15K	V	A47-2 Meg-Z	2 Meg.	Z
A47-15K-W	15K	W	A47-2 Meg-S	2 Meg.	S
A47-20K-S	20K	S	A47-2.5 Meg-S	2.5 Meg.	S
A47-25K-S	25K	S	A47-3 Meg-S	3 Meg.	S
A47-25K-W	25K	W	A47-3 Meg-Z	3 Meg.	Z
A47-25K-V	25K	V	A47-4 Meg-S	4 Meg.	S
A47-30K-S	30K	S	A47-4 Meg-Z	4 Meg.	Z
A47-40K-S	40K	S	A47-5 Meg-Z	5 Meg.	Z
A47-50K-S	50K	S	A47-5 Meg-S	5 Meg.	S
A47-50K-W	50K	W	A47-7.5 Meg-S	7.5 Meg.	S
A47-50K-Z	50K	Z	A47-10 Meg-S	10 Meg.	S
A47-75K-S	75K	S			

LIST PRICE \$1.40

Standard Packing 10 per Carton.

### SERIES "AD47" 1/2-WATT DUAL CONTROLS

These composition-element controls are ganged together so that both sections are operated by a single shaft in corresponding rotation. Available with "Pick-A-Shaft"™ and "Ad-A-Switch"™ features, for audio, radio-TV and industrial applications. Controls take any shaft listed on page R-24, including High Voltage Coupler and Insulated Shafts. Your choice of 13 shafts listed (this does not include insulated shaft) with each control. Tolerances of plus/minus 20% up to and including 100K ohms; plus/minus 30% above 100K. Controls take Series SWE Switches. Items not listed are special; prices and information on request.

Cat. No.	Panel	Taper	Rear	Taper
AD47-50-S	50K	S	50K	S
AD47-100K-S	100K	S	100K	S
AD47-250K-S	250K	S	250K	S
AD47-250K-Z	250K	Z	250K	Z
AD47-500K-Z	500K	Z	500K	Z
AD47-1 Meg.-S	1 Meg.	S	1 Meg.	S
AD47-1 Meg.-Z	1 Meg.	Z	1 Meg.	Z
AD47-2 Meg.-S	2 Meg.	S	2 Meg.	S
AD47-2 Meg.-V	2 Meg.	V	2 Meg.	V
AD47-5 Meg.-S	5 Meg.	S	5 Meg.	S

LIST PRICE \$3.40

Standard Packing — Individual Carton



### WIRE-WOUND CONTROLS

These are "Pick-A-Shaft"\* controls which take any one of 12 shafts listed on page R-24 including High Voltage Coupler and insulated shaft. Your choice of any one of the 12 shafts listed (this does not include insulated shaft) with each control. Tolerances of these controls are in accordance with RETMA standards. Overall resistance

tolerance of plus/minus 10% for all values. All controls are linear. Available with factory-assembled shafts at no extra charge, by omitting the prefix "A" from the catalog number and designating the type of shaft desired when ordering. Example: 43-500 with FKS-1/4 shaft, or 43S-10K with FS-3 shaft and SPST switch.

#### SERIES "A43" and "A43S" 2-WATT CONTROLS



**SERIES A43  
(INDUSTRIAL)  
SERIES 43**



**SERIES A43S  
(INDUSTRIAL)  
SERIES 43S**

"A43" is without switch, while "A43S" has factory-attached SPST switch. When ordering "A43S" controls, specify type of switch. Controls with other than SPST switch are special. Prices and information on request.

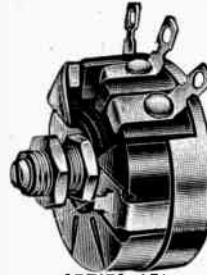
Without Switch Cat. No.	With SPST Switch Cat. No.	Res. Ohms	Without Switch Cat. No.	With SPST Switch Cat. No.	Res. Ohms
A43-5	A43S-5	5	A43-400	A43S-400	400
A43-10	A43S-10	10	A43-500	A43S-500	500
A43-20	A43S-20	20	A43-750	A43S-750	750
A43-25	A43S-25	25	A43-1,000	A43S-1,000	1,000
A43-30	A43S-30	30	A43-1,500	A43S-1,500	1,500
A43-40	A43S-40	40	A43-2,000	A43S-2,000	2,000
A43-50	A43S-50	50	A43-2,500	A43S-2,500	2,500
A43-75	A43S-75	75	A43-3,000	A43S-3,000	3,000
A43-100	A43S-100	100	A43-4,000	A43S-4,000	4,000
A43-150	A43S-150	150	A43-5,000	A43S-5,000	5,000
A43-200	A43S-200	200	A43-7,500	A43S-7,500	7,500
A43-300	A43S-300	300	A43-10K	A43S-10K	10K

LIST PRICE \$1.40 (Without Switch) — \$2.20 (With SPST Switch)

Standard Packing: 10 per Carton.

#### SERIES "A58" and "A58S" 3-WATT CONTROLS

"A58" is without switch, while "A58S" has factory-attached SPST switch. Available with factory-assembled shafts, at no extra charge, by omitting prefix "A" from catalog number, and designating type of shaft desired when ordering. Example: 58-50K with KSS-3 shaft, or 58S-25K with RS-3 shaft and SPST switch. Controls with other than SPST switch are special. Prices and information on request.



**SERIES A58  
(INDUSTRIAL)  
SERIES 58**



**SERIES A58S  
(INDUSTRIAL)  
SERIES 58S**

Without Switch Cat. No.	Res. Ohms	List Price	Without Switch Cat. No.	Res. Ohms	List Price
A58-1	1	\$1.40	A58-4000	4,000	\$1.40
A58-2	2	1.40	A58-5,000	5,000	1.40
A58-4	4	1.40	A58-7,500	7,500	1.40
A58-6	6	1.40	A58-10K	10K	1.40
A58-10	10	1.40	A58-15K	15K	1.80
A58-15	15	1.40	A58-20K	20K	1.80
A58-20	20	1.40	A58-25K	25K	1.80
A58-25	25	1.40	A58-30K	30K	2.45
A58-30	30	1.40	A58-40K	40K	2.45
A58-40	40	1.40	A58-50K	50K	2.45
A58-50	50	1.40			
A58-60	60	1.40			
A58-75	75	1.40			
A58-100	100	1.40			
A58-200	200	1.40			
A58-300	300	1.40			
A58-400	400	1.40			
A58-500	500	1.40			
A58-750	750	1.40			
A58-1,000	1,000	1.40			
A58-1,500	1,500	1.40			
A58-2,000	2,000	1.40			
A58-2,500	2,500	1.40			
A58-3,000	3,000	1.40			

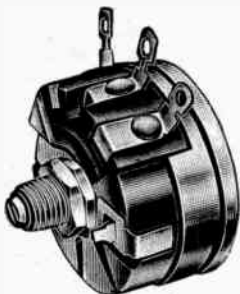
Standard Packing: 10 per Carton.

With SPST Switch Cat. No.	Res. Ohms	List Price	With SPST Switch Cat. No.	Res. Ohms	List Price
A58S-50	50	\$2.20	A58S-2,000	2,000	\$2.20
A58S-60	60	2.20	A58S-2,500	2,500	2.20
A58S-75	75	2.20	A58S-3,000	3,000	2.20
A58S-100	100	2.20	A58S-4,000	4,000	2.20
A58S-200	200	2.20	A58S-5,000	5,000	2.20
A58S-300	300	2.20	A58S-7,500	7,500	2.20
A58S-400	400	2.20	A58S-10K	10K	2.20
A58S-500	500	2.20	A58S-15K	15K	2.60
A58S-750	750	2.20	A58S-20K	20K	2.60
A58S-1,000	1,000	2.20	A58S-25K	25K	2.60
A58S-1,500	1,500	2.20	A58S-30K	30K	3.25
			A58S-40K	40K	3.25
			A58S-50K	50K	3.25

Standard Packing: 10 per Carton.

#### SERIES "A10" and "A10S" 4-WATT CONTROLS

"A10" is without switch, while "A10S" has factory-attached SPST switch. Also available with factory-assembled shaft at no extra charge, by omitting prefix "A" from catalog number. See above for examples. Controls with other than SPST switch are special. Price and information on request.



**SERIES A10  
(INDUSTRIAL)  
SERIES 10**

Without Switch Cat. No.	With SPST Switch Cat. No.	Res. Ohms	Without Switch List Price	With SPST Switch List Price	Without Switch Cat. No.	With SPST Switch Cat. No.	Res. Ohms	Without Switch List Price	With SPST Switch List Price
A10-1	A10S-1	1	\$2.05	\$2.85	A10-750	A10S-750	750	\$2.05	\$2.85
A10-2	A10S-2	2	2.05	2.85	A10-1,000	A10S-1,000	1,000	2.05	2.85
A10-4	A10S-4	4	2.05	2.85	A10-1,500	A10S-1,500	1,500	2.05	2.85
A10-6	A10S-6	6	2.05	2.85	A10-2,000	A10S-2,000	2,000	2.05	2.85
A10-10	A10S-10	10	2.05	2.85	A10-2,500	A10S-2,500	2,500	2.05	2.85
A10-15	A10S-15	15	2.05	2.85	A10-3,000	A10S-3,000	3,000	2.05	2.85
A10-20	A10S-20	20	2.05	2.85	A10-4,000	A10S-4,000	4,000	2.05	2.85
A10-25	A10S-25	25	2.05	2.85	A10-5,000	A10S-5,000	5,000	2.05	2.85
A10-30	A10S-30	30	2.05	2.85	A10-7,500	A10S-7,500	7,000	2.05	2.85
A10-40	A10S-40	40	2.05	2.85	A10-10K	A10S-10K	10K	2.05	2.85
A10-50	A10S-50	50	2.09	2.85	A10-15K	A10S-15K	15K	2.40	3.20
A10-60	A10S-60	60	2.05	2.85	A10-20K	A10S-20K	20K	2.40	3.20
A10-75	A10S-75	75	2.05	2.85	A10-25K	A10S-25K	25K	2.40	3.20
A10-100	A10S-100	100	2.05	2.85	A10-30K	A10S-30K	30K	3.05	3.85
A10-200	A10S-200	200	2.05	2.85	A10-40K	A10S-40K	40K	3.05	3.85
A10-300	A10S-300	300	2.05	2.85	A10-50K	A10S-50K	50K	3.05	3.85
A10-400	A10S-400	400	2.05	2.85	A10-75K	A10S-75K	75K	3.70	4.50
A10-500	A10S-500	500	2.05	2.85	A10-100K	A10S-100K	100K	3.70	4.50

\*Reg. U. S. Pat. Off.

Standard Packing: 10 per Carton.

PRODUCTS OF  
THE HOUSE OF RESISTORS®



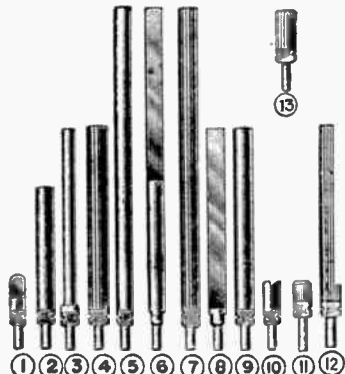
RESISTORS • CONTROLS  
RESISTANCE DEVICES

**SHAFTS and SWITCHES • BALLASTS • REGULATORS**

**SHAFTS FOR "PICK-A-SHAFT"\* CONTROLS**

For use with all Clarostat "Pick-A-Shaft" controls, either carbon or wire-wound. Your choice of shaft furnished with each control.

- (1) SS-1/2" length—(Male) to take female fitting.
- (2) RS-2—Round shaft, 2" long.
- (3) RS-3—Round shaft 3/4" dia., 3" long.
- (4) KRS-3—Knurled, split shaft, 3" long.
- (5) RS-5—Round shaft, 5" long.
- (6) FS-5—Flatted shaft, 5" long.
- (7) KRS-5—Knurled, split shaft, 5" long.
- (8) FS-3—Flatted shaft, 3" long.
- (9) RS-3—Round shaft, 3" long.
- (10) DFS-1/2—Double flatted Philco Type, 1/2" long.
- (11) FKS-1/2—Fine knurled slotted shaft, 1/2" long.
- (12) KFS-3—Knurled flatted shaft, 3" long.
- (13) FKS-1/2—Fine knurled slotted shaft, 1/2" long.



List Price, Each Shaft \$0.50

**HIGH VOLTAGE COUPLER**

High-voltage shaft unit for operation up to 10K volts. Attaches to any Clarostat "Pick-A-Shaft" control, composition-element or wire-wound. Also available as a factory-attached unit on order. For example: "47-500K-S" unit with factory-attached high voltage coupler, order as a "47-500K-S-HVC." Manufacturers Series 47 - 1/2 meg.-S-HVC.

- |                                    |                    |
|------------------------------------|--------------------|
| Cat. No.                           | List Price         |
| 59-186 Spacer and Bushing Assembly | \$1.25             |
| RN-3 Non-Metallic Shaft Round      | 3" long ..... 1.25 |

**BUSHINGS**

Two extension bushings for the make-up of automobile replacement controls. Series XB-1, 1/2" d. x 2 1/4" l.; Series XB-2, same length but 7/16" d. Threaded on outside full length with 28 thread; 1/32" flat milled full length. Threaded 3/8" x 32 on inside, one end, to depth of 1/2". Adaptable to any Clarostat control using 3/8" x 32 bushing.

List Price \$0.60

**SERIES "SWE" SWITCHES FOR "AD-A-SWITCH"\* CONTROLS**

For use with "A47" and "A47F" controls. Underwriters' Laboratories Inc. approved.

- | Cat. No. | Wiring  | List Price |
|----------|---|------------|
| SWE-12   | S.P.S.T. — Single Pole Single Throw, 5A.-125V. A.C.                             | \$0.65     |
| SWE-13   | S.P.S.T. — Single Pole Single Throw, 15A.-10V. D.C.                             | 1.00       |
| SWE-20   | D.P.S.T. — Double Pole Single Throw, 3A.-125V. A.C.                             | .75        |
| SWE-21   | Mod. D.P.S.T. one pole on, one off or with Jumper S.P.D.T., 3A.-125V. A.C.-D.C. | .75        |
| SWE-23   | D.P.S.T., 15A.-10V. D.C.  | 1.00       |
- Standard Packing: 10 per Carton.



U. S. Pat. 2,642,506

**SERIES "BE" 15/16" ROTARY SWITCH**

Underwriters' Laboratories Inc. approved

- | Cat. No.   | Wiring  | List Price |
|------------|---|------------|
| BE-12 SPST | — Single-Pole Single-Throw, 5A-125 V. A.C.                    | \$0.65     |
| BE-20 DPST | — Double-Pole Single-Throw, 3A-125 V. A.C.                    | 0.75       |
| BE-21      | — Double-Pole Single-Throw (Mod.) DPST 3A-125 V. A.C. or D.C. | 0.75       |

Mod. DPST has one pole "on," one pole "off"; or with Jumper it is SPDT.

Standard Packing—Individual Carton.



U. S. Pat. 2,642,506

\*Reg. U. S. Pat. Off.

**UNIVERSAL BALLAST**

Universal replacements for most standard tube types. Replacing tube types as listed below.

Universal Tube No.	Replaces AC-DC Tubes Beg. with Letters	Having Numbers From	Ending in Letter
10-23-A	BK, BL, K, L, M	10 to 23	A, B, C, D
10-23-E	BK, BL, K, L, M	10 to 23	E
10-23-F	BK, BL, K, L, M	10 to 23	F, G, H
23-55-A	BK, BL, K, L, M	23 to 55	A, B, C, D
23-55-E	BK, BL, K, L, M	23 to 55	E
23-55-F	BK, BL, K, L, M	23 to 55	F, G, H
80-92-A	BK, BL, K, L, M	80 to 92	A, B, C, D
80-92-E	BK, BL, K, L, M	80 to 92	E
80-92-F	BK, BL, K, L, M	80 to 92	F, G, H
92-105-A	BK, BL, K, L, M	92 to 105	A, B, C, D

List Price \$2.75

Standard Packing: Individual Carton.



**STANDARD BALLAST**

Exact replacements for resistor tube types.

Cat. No.	Cat. No.	Cat. No.	Cat. No.	Cat. No.	Cat. No.
BK-29-B	BM-49-B	K-49-H	K-80-B	L-49-D	M-80-B
BK-29-D	BM-55-B	K-55-A	K-82-B	L-49-H	
BK-32-D	K-36-D	K-55-B	K-86-B	L-55-B	10-610
BK-36-B	K-42-A	K-55-C	K-90-A		100-37
BK-36-D	K-42-A		K-90-B		
BK-36-H	K-42-AJ	K-55-D	K-92-A	L-55-C	100-76
BK-42-B	K-55-B	K-55-H		L-55-D	
BK-42-C	K-42-C	K-67-A	L-42-C		
BK-49-B	K-42-D	K-67-B	L-42-D	M-42-B	5459
BK-49-C				M-49-B	28602
BK-55-B	K-49-A	K-72-B	L-49-B	M-55-B	43X108
BK-67-BJ	K-49-C	K-74-B	L-49-C	M-55-H	
BL-42-D	K-49-D				

List Price \$2.25

Standard Packing: Individual Carton.

**TELEVISION BALLAST**

Specific TV receiver tube-type ballasts.

Motorola 17A470303	Belmont B9M 16067	Pilot 35-37
Motorola 17A485459	Belmont B9M 16534	Emerson 397021
Teleton TBR102D	Belmont B9M 15822	Emerson 397022
Teleton TBR103D	Belmont B9M 17571	Emerson 397023
Teleton TBR104D	Belmont B9M 18041	Emerson 397036
	Stewart Warner ST-507300	

List Price \$4.50

except 397036 List \$2.50

Standard Packing: Individual Carton.

These units act as protective fuses and are therefore expendable.

**RADIO AND TV LINE VOLTAGE REGULATORS**

A protective unit designed to minimize Line Voltage fluctuation from reaching radio or TV receivers. Will reduce voltage fluctuation from up to 140 volts down to approximately 110 volts. Plugs into outlet and provides plug-in for receiver.

Type No.	Rat. Watts	For sets consuming	List Price
O	50	up to 60 watts	\$3.00
A	100	60 to 100 watts	3.00
B	150	100 to 150 watts	3.00
C	200	150 to 200 watts	3.00
D	250	200 to 250 watts	3.00
TVA	300	200 to 300 watts	3.00
TVB	375	300 to 375 watts	3.50

Standard Packing — 10 per carton



**"FUZOHM"\* PLUG-IN FUSE-TYPE RESISTORS**

Protect TV components. Resistors will withstand repeatedly high surge currents without damage, but will fuse when surge becomes dangerous to expensive components. These units act as protective fuses and are therefore expendable.

Cat. No. FZ1—5.6 ohms

Cat. No. FZ1—7.5 ohms

List Price \$0.75



Pat. Pending

PRODUCTS OF  
**THE HOUSE OF RESISTORS®**



**RESISTORS • CONTROLS**  
**RESISTANCE DEVICES**

## POWER RHEOSTATS



U. S. Pat. 2,346,598

Clarostat Power Rheostats maintain their full power rating at settings as low as one-third rotation without excessive temperature rise. Standard overall resistance tolerance plus/minus 10%. Closer tolerances are available upon special order.

The metal cored winding is embedded in a cold-setting, inorganic cement and is thereby bonded to the ceramic body. Unit mounts through a single hole. A locking pin is provided for rear panel mounting.

### SERIES 25 — 25-WATT

Cat. No.	Total Res. Ohms	Max. Cur. at Total Res. Amps.	Max. Cur. Up to 1/3 Res. Amps.	List Price
25-1	1	5.000	7.500	\$6.45
25-2	2	3.536	5.304	5.70
25-3	3	2.887	4.330	5.70
25-6	6	2.041	3.062	5.70
25-8	8	1.768	2.652	5.70
25-10	10	1.581	2.372	5.70
25-15	15	1.291	1.936	5.70
25-25	25	1.000	1.500	5.70
25-35	35	.845	1.268	5.70
25-50	50	.707	1.061	5.70
25-75	75	.577	.866	5.70
25-100	100	.500	.750	5.70
25-125	125	.447	.671	5.70
25-175	175	.378	.567	5.70
25-250	250	.316	.474	5.70
25-350	350	.267	.401	5.70
25-500	500	.224	.335	5.70
25-750	750	.183	.274	5.70
25-1,000	1,000	.158	.237	6.45
25-1,500	1,500	.129	.194	6.45
25-2,500	2,500	.100	.150	6.45
25-3,500	3,500	.085	.127	6.80
25-5,000	5,000	.071	.107	7.15

Standard Packing: Individual Carton.

### SERIES 50 — 50-WATT

Cat. No.	Total Res. Ohms	Max. Cur. at Total Res. Amps.	Max. Cur. Up to 1/3 Res. Amps.	List Price
50-0.5	0.5	10.000	15.000	\$7.15
50-1	1	7.071	10.607	7.15
50-2	2	5.000	7.500	7.15
50-4	4	3.536	5.304	5.45
50-6	6	2.887	4.330	5.45
50-8	8	2.500	3.750	6.45
50-12	12	2.041	3.062	6.45
50-16	16	1.768	2.652	6.45
50-22	22	1.508	2.261	6.45
50-35	35	1.195	1.793	6.45
50-50	50	1.000	1.500	6.45
50-80	80	.791	1.186	6.45
50-125	125	.632	.949	6.45
50-150	150	.577	.866	6.45
50-225	225	.471	.707	6.45
50-300	300	.408	.612	6.45
50-500	500	.316	.474	6.45
50-800	800	.250	.375	6.80
50-1,000	1,000	.224	.335	6.80
50-1,600	1,600	.177	.265	6.80
50-2,500	2,500	.141	.212	6.80
50-3,500	3,500	.120	.179	7.15
50-5,000	5,000	.100	.150	7.15
50-8,000	8,000	.079	.118	8.60
50-10K	10K	.071	.106	8.60

Standard Packing: Individual Carton.

## AIRCRAFT-TYPE POWER RHEOSTATS

Basically the same unit as the 25 and 50 watt Power Rheostats, mechanically and electrically. Unit is encased in metal housing rendering it explosion-proof and moisture resistant.

Terminals are screw-type lugs plated to prevent corrosion. 25- and 50-watt power rheostats when encased in metal housing, are derated 50%.



U. S. Pat. 2,346,598

### SERIES AN-3155-25 (25-WATT)

Cat. No.	List Price
AN-3155-25-10	10 ohms \$8.00
AN-3155-25-11	11 ohms 8.00
AN-3155-25-15	15 ohms 8.00
AN-3155-25-25	25 ohms 8.00
AN-3155-25-50	50 ohms 8.00
AN-3155-25-75	75 ohms 8.00
AN-3155-25-100	100 ohms 8.00
AN-3155-25-200	200 ohms 9.35

Prices include AN-3220—2 knob.  
Standard Packing: Individual Carton.

### SERIES AN-3155-50 (50-WATT)

Cat. No.	List Price
AN-3155-50-5	5 ohms \$9.35
AN-3155-50-8	8 ohms 9.35
AN-3155-50-10	10 ohms 9.35
AN-3155-50-25	25 ohms 9.10
AN-3155-50-30	30 ohms 9.10
AN-3155-50-50	50 ohms 9.10
AN-3155-50-75	75 ohms 9.10
AN-3155-50-100	100 ohms 10.20
AN-3155-50-150	150 ohms 10.20
AN-3155-50-200	200 ohms 10.20

Prices include AN-3220—2 knob.  
Standard Packing: Individual Carton.

## RTV \* - IZE!

No need to guess, experiment, cultivate trouble, when replacing TV controls. Clarostat provides standard replace-

ments where feasible, and matched duplicate replacements where essential. Refer to RTV listings.

### SERIES 39 "HUMDINGER"\* WIRE-WOUND CONTROLS



Compact. Inexpensive. 2-watt rating. Screwdriver adjusted by slot in drive plate. Mounting ears. For hum balance, centering, hold and locking, linearity, AGC sensitivity, etc.

LIST PRICE \$0.65

Standard Packing: 10 per Carton.

Cat. No.	Total Res. Ohms	Min. Res. Ohms	Cat. No.	Total Res. Ohms	Min. Res. Ohms	Cat. No.	Total Res. Ohms	Min. Res. Ohms
39-5	5	—	39-500	500	—	39-1000-100	1,000	100
39-8	8	—	39-500-100	500	100	39-1500	1,500	—
39-50	50	—	39-600	600	—	39-2000	2,000	—
39-75	75	—	39-650	650	—	39-2000-100	2,000	100
39-100	100	—	39-700	700	—	39-3000	3,000	—
39-125	125	—	39-700-200	700	200	39-3000-700	3,000	700
39-150	150	—	39-800	800	—	39-4000	4,000	—
39-200	200	—	39-800-50	800	50	39-4000-350	4,000	350
39-300	300	—	39-1000	1,000	—	39-4000-1000	4,000	1000
						39-5000	5,000	—

\*Reg. U. S. Pat. Off.

PRODUCTS OF  
**THE HOUSE OF RESISTORS®**



**RESISTORS • CONTROLS**  
**RESISTANCE DEVICES**

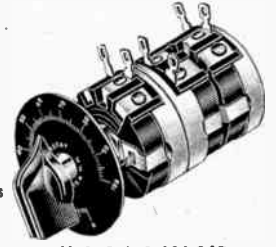
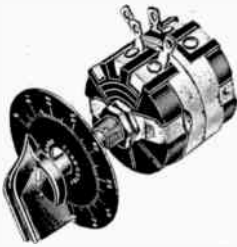
## SOUND-SYSTEM CONTROLS

For proper control of volume and tone alike, Clarostat offers a choice of several controls, such as L- and T-pads, output attenuators, and individual-speaker volume controls as used for drive-in theatre instal-

lations. These are not ordinary radio controls but rather sound-system controls designed and built for critical requirements.

### CONSTANT-IMPEDANCE CONTROLS

Self-compensating volume controls known as L-pads and T-pads for use in sound systems. Rated at 2½ watts DC, but will handle up to 10 watts audio. Continuous range from 0.5 to 30 decibels attenuation in 90% rotation. Last 10% affords infinite attenuation. With Clarostat constant-impedance L-pads and T-pads the input and output impedances of associated circuits can be kept within the limits of a constant required value. Knob and dial plate furnished with each control.



U. S. Pat. 2,434,248

CIT Cat. No.	CIL Cat. No.	Res. Ohms	CIT Cat. No.	CIL Cat. No.	Res. Ohms
CIT-4	CIL-4	4	CIT-200	CIL-200	200
CIT-6	CIL-6	6	CIT-250	CIL-250	250
CIT-8	CIL-8	8	CIT-500	CIL-500	500
CIT-15	CIL-15	15	CIT-600	CIL-600	600
CIT-50	CIL-50	50	CIT-1,000	CIL-1,000	1,000
CIT-100	CIL-100	100	CIT-2,000	CIL-2,000	2,000

CIT—LIST PRICE \$4.75

CIL—LIST PRICE \$4.25

Standard Packing: Individual Carton.

### CONSTANT IMPEDANCE OUTPUT ATTENUATORS

Series "CIB" rated at 10 watts, but will handle up to 30 watts in audio circuit. Linear attenuation provided in 3 decibel steps up to 24db, then 30db followed by infinity. Equipped with dial plate and bar knob. One-hole mounting, 3/8" bushing diameter, 1" shaft. This control has been developed to meet the need for a constant-impedance attenuator capable of handling considerable power without measurable insertion loss. Recommended as an output level control for power amplifiers, or as an input attenuator for individual or for a group of speakers in a public address system.



Cat. No.	Res. Ohms	Cat. No.	Res. Ohms
CIB-6	6	CIB-200	200
CIB-8	8	CIB-250	250
CIB-15	15	CIB-500	500
CIB-50	50	CIB-600	600

NET PRICE \$7.00

Standard Packing: Individual Carton.

### SPECIAL DRIVE-IN THEATRE L-PAD

To meet the needs of theater sound systems, more especially those of drive-in theaters, a special 8 ohm L-Pad is now available, containing two separate windings of 5 ohms and 40 ohms. Also 50 ohm linear rheostat and 35 ohm tapered rheostat, as listed. Units have 3/8-32 bushing 3/4" long, and 1 1/2" round shaft.



Cat. No. CM8727-1 8 ohm L-Pad	List Price \$2.75
Cat. No. CM17083 50 ohm linear rheostat	List Price \$2.00
Cat. No. CM17084 35 ohm tapered rheostat	List Price \$2.00

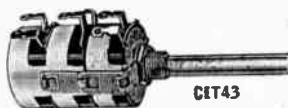
## SPACE-SAVER CONSTANT-IMPEDANCE ATTENUATORS

Characterized by reduced depth and diameter, these attenuators are ideal for use in remote control of speakers since they are small enough to be installed in standard electrical boxes in the home, office, stockroom, etc.

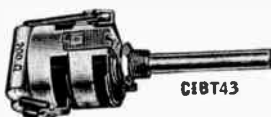
These controls are rated 2 watts D.C., but will handle up to 4 watts of audio, depending upon the type signal being handled. (As the frequency becomes constant, wattage reduces to 2 watts or the same as the D.C. rating).



CIL43



CIT43



CIBT43

Cat. No. CIL43 (L-Pad)	Cat. No. CIT43 (T-Pad)	Cat. No. CIBT43 (Bridged T-Pad)	Impedance
CIL43-4	CIT43-4	CIBT43-4	4 ohms
CIL43-6	CIT43-6	CIBT43-6	6 ohms
CIL43-8	CIT43-8	CIBT43-8	8 ohms
CIL43-15	CIT43-15	CIBT43-15	15 ohms
CIL43-50	CIT43-50	CIBT43-50	50 ohms
CIL43-100	CIT43-100	CIBT43-100	100 ohms
CIL43-200	CIT43-200	CIBT43-200	200 ohms
CIL43-250	CIT43-250	CIBT43-250	250 ohms
CIL43-500	CIT43-500	CIBT43-500	500 ohms

LIST PRICE CIL43 \$4.25 LIST PRICE CIT43 \$4.75

LIST PRICE CIBT43 \$5.50

Standard Packing — Individual Carton

- Attenuation range of 0 to 30 db over 90% of rotation, 60 db in remaining 10% of rotation. Attenuation will increase approximately linearly to 30 db with counter-clockwise rotation.

- Insertion loss less than 0.5 db.

- Input impedance within plus/ minus 20%.

- The CIT43 and CIBT43 (Bridged T Pad) have constant input and output impedances, while the CIL43 has constant impedance in the input only.

- Shafts and bushings are insulated from the circuit elements.

- Pads have 3/8-32 x 3/8" long bushing.

- 1/4" dia. round shafts 1 1/2" long beyond bushing.

- All pads supplied with bar knob and dial plates, as shown above.

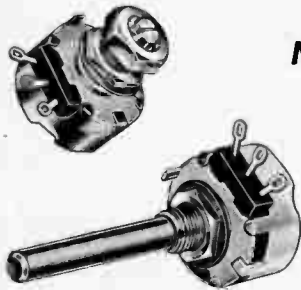
- Dia. 1 1/4". Depth of body from mounting surface: CIL43 — 1 1/8"; CIT43 — 1 1/4"; CIBT43 — 1 1/2".

PRODUCTS OF  
**THE HOUSE OF RESISTORS®**



**RESISTORS • CONTROLS**  
**RESISTANCE DEVICES**

**MOLDED COMPOSITION-ELEMENT POTENTIOMETERS**



A new 2-watt Molded Composition Element Potentiometer totally enclosed and sealed against moisture and other environmental. Meets the need for a high quality resistance device incorporating high-stability under extreme climatic and operational conditions. For use in critical applications, such as, test equipment, military requirements, computers, servo systems and industrial metering devices.

1 1/8" diameter and 3/8" deep, wiper assembly of one piece construction. Carbon to carbon contact insures exceptionally low noise level. Stainless steel shaft. Gold plated terminals.

Electrical tolerances are plus/minus 10% for all values up to 1 meg. 1 meg. and above plus/minus 20%.

Cat. No.	Cat. No.	Res. Ohms	Taper	Cat. No.	Cat. No.	Res. Ohms	Taper	"Z" TAPER
53C1	53C2			53C1	53C2			53C1-100K-Z
53C1-50-S	53C2-50-S	50	S	53C1-75K-S	53C2-75K-S	75K	S	53C1-250K-Z
53C1-100-S	53C2-100-S	100	S	53C1-100K-S	53C2-100K-S	100K	S	53C1-500K-Z
53C1-250-S	53C2-250-S	250	S	53C1-150K-S	53C2-150K-S	150K	S	53C1-1 Meg-Z
53C1-500-S	53C2-500-S	500	S	53C1-200K-S	53C2-200K-S	200K	S	53C1-2.5 Meg-Z
53C1-750-S	53C2-750-S	750	S	53C1-250K-S	53C2-250K-S	250K	S	
53C1-1000-S	53C2-1000-S	1000	S	53C1-500K-S	53C2-500K-S	500K	S	LIST PRICE \$3.75
53C1-1500-S	53C2-1500-S	1500	S	53C1-750K-S	53C2-750K-S	750K	S	
53C1-2000-S	53C2-2000-S	2000	S	53C1-1 Meg-S	53C2-1 Meg-S	1 Meg	S	REVERSED "Z" TAPER
53C1-2500-S	53C2-2500-S	2500	S	53C1-1.5 Meg-S	53C2-1.5 Meg-S	1.5 Meg	S	53C1-10K-RZ
53C1-5000-S	53C2-5000-S	5000	S	53C1-2 Meg-S	53C2-2 Meg-S	2 Meg	S	53C1-25K-RZ
53C1-7500-S	53C2-7500-S	7500	S	53C1-2.5 Meg-S	53C2-2.5 Meg-S	2.5 Meg	S	53C1-50K-RZ
53C1-10K-S	53C2-10K-S	10K	S	53C1-3 Meg-S	53C2-3 Meg-S	3 Meg	S	LIST PRICE \$3.75
53C1-15K-S	53C2-15K-S	15K	S	53C1-4 Meg-S	53C2-4 Meg-S	4 Meg	S	Standard Packing—Ind. Carton.
53C1-20K-S	53C2-20K-S	20K	S	53C1-5 Meg-S	53C2-5 Meg-S	5 Meg	S	Items not listed are special.
53C1-25K-S	53C2-25K-S	25K	S	53C1-10 Meg-S	53C2-10 Meg-S	10 Meg	S	Prices and information supplied upon request.
53C1-50K-S	53C2-50K-S	50K	S					

**SERIES "43C1" and "43C2" 2-WATT CONTROLS**

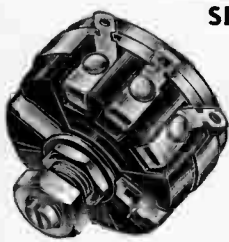
Electrical tolerance is plus/minus 5% for all ohmages. Independent linearity is to plus/minus 2%. All controls rated 2 watts.

43C1 Cat. No.	43C2 Cat. No.	Res. Ohms	43C1 Cat. No.	43C2 Cat. No.	Res. Ohms	43C1 Cat. No.	43C2 Cat. No.	Res. Ohms	43C1 Cat. No.	43C2 Cat. No.	Res. Ohms
43C1-5	43C2-5	5	43C1-100	43C2-100	100	43C1-1500	43C2-1500	1500	43C1-15K	43C2-15K	15K
43C1-10	43C2-10	10	43C1-150	43C2-150	150	43C1-2000	43C2-2000	2000	43C1-20K	43C2-20K	20K
43C1-20	43C2-20	20	43C1-200	43C2-200	200	43C1-2500	43C2-2500	2500	43C1-25K	43C2-25K	25K
43C1-25	43C2-25	25	43C1-300	43C2-300	300	43C1-3000	43C2-3000	3000	43C1-30K	43C2-30K	30K
43C1-30	43C2-30	30	43C1-400	43C2-400	400	43C1-4000	43C2-4000	4000	43C1-40K	43C2-40K	40K
43C1-40	43C2-40	40	43C1-500	43C2-500	500	43C1-5000	43C2-5000	5000	43C1-50K	43C2-50K	50K
43C1-50	43C2-50	50	43C1-750	43C2-750	750	43C1-7500	43C2-7500	7500			
43C1-75	43C2-75	75	43C1-1000	43C2-1000	1000	43C1-10K	43C2-10K	10K			

**LIST PRICES**

43C1-5 to 43C1-10K	\$2.05	43C1-30K to 43C1-50K	\$3.05	43C2-15K to 43C2-25K	\$3.80
43C1-15K to 43C1-25K	2.70	43C2-5 to 43C2-10K	3.40	43C2-30K to 43C2-50K	4.55

**SERIES 58C1 AND 58C2 3-WATT CONTROLS**



58C1 Cat. No.	58C2 Cat. No.	Res. Ohms	58C1 Cat. No.	58C2 Cat. No.	Res. Ohms
58C1-1	58C2-1	1	58C1-500	58C2-500	500
58C1-2	58C2-2	2	58C1-750	58C2-750	750
58C1-4	58C2-4	4	58C1-1000	58C2-1000	1000
58C1-6	58C2-6	6	58C1-1500	58C2-1500	1500
58C1-10	58C2-10	10	58C1-2000	58C2-2000	2000
58C1-15	58C2-15	15	58C1-2500	58C2-2500	2500
58C1-20	58C2-20	20	58C1-3000	58C2-3000	3000
58C1-25	58C2-25	25	58C1-5000	58C2-5000	5000
58C1-30	58C2-30	30	58C1-7500	58C2-7500	7500
58C1-40	58C2-40	40	58C1-10K	58C2-10K	10K
58C1-50	58C2-50	50	58C1-15K	58C2-15K	15K
58C1-60	58C2-60	60	58C1-20K	58C2-20K	20K
58C1-75	58C2-75	75	58C1-25K	58C2-25K	25K
58C1-100	58C2-100	100	58C1-30K	58C2-30K	30K
58C1-200	58C2-200	200	58C1-40K	58C2-40K	40K
58C1-300	58C2-300	300	58C1-50K	58C2-50K	50K
58C1-400	58C2-400	400			

**LIST PRICES**

58C1-1 to 58C1-10K	\$2.05	58C2-1 to 58C2-10K	\$3.40
58C1-15K to 58C1-25K	2.70	58C2-15K to 58C2-25K	3.80
58C1-30K to 58C1-50K	3.05	58C2-30K to 58C2-50K	4.55

**SERIES "10C1" and "10C2" 4-WATT CONTROLS**

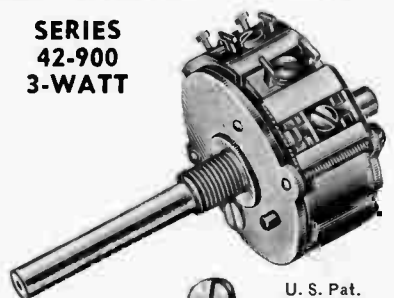
Electrical tolerance is plus/minus 5% for all ohmages. Independent linearity to plus/minus 1%. All controls rated 4 watts. 1 to 50K ohms available on special order. Prices and information on request.

10C1 Cat. No.	10C2 Cat. No.	Res. Ohms
10C1-75K	10C2-75K	75K
10C1-100K	10C2-100K	100K

**List Prices**

10C1	\$4.30	10C2	\$5.80
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**SERIES 42-900 3-WATT**



U. S. Pat. 2,676,226

Series 42-900 is a superlative-grade precision potentiometer with such features as selection of either limited or continuous rotation by simple manipulation; gold-plated bushings, terminals, screws; front and rear plates of green anodized aluminum; rear shaft extension for coupling to other potentiometers, switch, servos, etc. Wiring diagram on rear plate indicates terminal connections. Especially intended to meet the needs of your prototypes, laboratory testing, instrument-grade assemblies, etc.

Exceeds MIL-R-19 specifications where applicable.

Resistance	*Net Price
42-900—100K ohms	\$19.00
42-900—50K ohms	19.00
42-900—20K ohms	16.00
42-900—10K ohms	16.00
42-900—5000 ohms	14.00
42-900—2500 ohms	14.00
42-900—1000 ohms	14.00
42-900—500 ohms	14.00
42-900—100 ohms	14.00
42-900—50 ohms	14.00



PRODUCTS OF  
THE HOUSE OF RESISTORS®



RESISTORS • CONTROLS  
RESISTANCE DEVICES

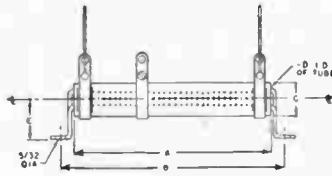
## "GREENOHM"\* WIRE-WOUND RESISTORS



**FIXED TYPES** Wire-wound resistors for most rugged applications. Will withstand tremendous overloads and temperature changes without altering resistance values or appearance. Wire windings on high grade ceramic tubing and coated with special inorganic cement. In accordance with RETMA standards, overall tolerances are  $\pm 5\%$  for resistors of 50 ohms and higher. For resistors of 49.9 ohms and lower, overall tolerances are  $\pm 10\%$ .

**ADJUSTABLE TYPES** Same electrically and mechanically as Fixed types, but incorporating sliding band or bands for tapping any desired resistance values. Slider band tightened by means of screw. In accordance with RETMA standards, overall tolerances are  $\pm 10\%$ .

### DIMENSIONS BY TYPES



SERIES	WATTS	A	B	C	D	E
PR-5-F	5	1	1-7/16	5/16	3/16	7/16
PR-10-F	10	1-3/4	2-3/16	5/16	3/16	7/16
PR-10-FB	10	1-3/4	2-3/16	5/16	3/16	7/16
PR-20-K	20	2	2-1/2	9/16	3/8	9/16
P-25-K	25	2-1/2	3	9/16	3/8	9/16
P-25-KA	25	2-1/2	3	9/16	3/8	9/16
K-40-N	40	3-1/2	4-1/8	3/4	1/2	7/8
K-50-N	50	4-1/2	5-1/8	3/4	1/2	7/8
K-50-NA	50	4-1/2	5-1/8	3/4	1/2	7/8
K-80-N	80	5-1/2	7-1/8	3/4	1/2	7/8
K-80-NA	80	5-1/2	7-1/8	3/4	1/2	7/8
K-100-W	100	6-1/2	7-1/8	1-1/8	3/4	1-1/8
K-100-WA	100	6-1/2	7-1/8	1-1/8	3/4	1-1/8
K-160-W	160	8-1/2	9-1/8	1-1/8	3/4	1-1/8
K-160-WA	160	8-1/2	9-1/8	1-1/8	3/4	1-1/8
K-200-W	200	10-1/2	11-1/8	1-1/8	3/4	1-1/8
K-200-WA	200	10-1/2	11-1/8	1-1/8	3/4	1-1/8

## FIXED RESISTORS

### 5-WATT SERIES PR-5-F

These resistors conform to RETMA specification for type RRW-125 and 128.

Ohms	Ohms	Ohms	Ohms
1	75	800	5,000
2	100	900	6,000
3	125	1,000	7,000
4	150	1,100	7,500
5	200	1,200	8,000
7.5	225	1,250	8,500
10	250	1,500	9,000
12	300	1,750	10K
15	350	2,000	
20	400	2,250	
25	450	2,500	
30	500	3,000	
35	600	3,500	
40	700	4,000	
50	750	4,500	

LIST PRICE \$0.55

Standard Packing — 10 per Carton.  
Mounting brackets supplied at extra cost.

### 25-WATT SERIES P-25-K

Ohms	Ohms	Ohms	Ohms
1	75	10K	
2	800	12K	
3	1,000	15K	
5	1,250	20K	
7.5	1,500	25K	
10	2,000	30K	
15	2,250	35K	
20	2,500	40K	
25	3,000	45K	
50	3,500	50K	
75	4,000	60K	
100	4,500	70K	
150	5,000	75K	
200	6,000	80K	
250	7,000	85K	
300	7,500	90K	
400	8,000	100K	
500	9,000		

LIST PRICES:

1 ohm to 5,000	\$0.85
6,000 to 15K ohms	.95
20K to 50K ohms	1.10
50K ohms	1.25
70K ohms	1.40
75K ohms	1.45
80K ohms	1.50
85K ohms	1.65
90K ohms	1.75
100K ohms	1.95

Mounting brackets at no extra cost.  
Standard Packing — Individually Boxed.

### 10-WATT SERIES PR-10-F

These resistors conform to military specifications for type RW29, and RETMA type RRW-126 and 129.

Ohms	Ohms	Ohms	Ohms
1	200	2,000	14.5K
2	225	2,250	15K
3	250	2,500	16K
4	300	3,000	17.5K
5	350	3,500	18K
7.5	400	4,000	20K
10	450	4,500	22.5K
12	500	5,000	25K
15	600	6,000	30K
20	700	7,000	35K
25	750	7,500	40K
30	800	8,000	50K
35	900	8,500	
40	1,000	9,000	
50	1,100	10K	
75	1,200	11K	
100	1,250	12K	
125	1,500	12.5K	
150	1,750	13.5K	

LIST PRICE \$0.60

Mounting brackets supplied at extra cost.  
Standard Packing — 10 per Carton.

### 40-WATT SERIES K-40-N

These resistors conform to RETMA specification for type RRW-131.

Res.	Res.	Res.	Res.
5	250	5,000	40K
10	300	6,000	50K
15	400	7,500	60K
20	500	8,500	70K
25	750	10K	80K
50	1,000	12.5K	90K
75	1,500	15K	100K
100	2,000	20K	125K
125	2,500	25K	150K
150	3,000	30K	175K
200	4,000	35K	200K

LIST PRICES:

5 ohms to 5,000 ohms	\$1.00
6,000 to 25K ohms	1.10
30K to 100K ohms	1.30
125K to 150K ohms	1.55
175K ohms	1.65
200K ohms	1.75

Mounting brackets at no extra cost.  
Standard Packing — Individually Boxed.

### 20-WATT SERIES PR-20-K

These resistors conform to RETMA specifications for type RRW-127.

Ohms	Ohms	Ohms	Ohms
5	850	7,000	70K
10	1,000	7,500	75K
25	1,200	8,000	80K
50	1,250	9,000	85K
75	1,500	10K	90K
100	1,750	12.5K	95K
150	1,850	15K	100K
200	2,000	20K	
250	2,250	25K	
300	2,500	30K	
350	2,750	35K	
400	3,000	40K	
500	3,500	45K	
650	4,000	50K	
700	4,500	55K	
750	5,000	60K	
800	6,000	65K	

LIST PRICES:

5 ohms to 15K ohms	\$0.70
20K to 50K ohms	.95
55K to 100K ohms	1.20

Mounting brackets supplied at extra cost.  
Standard Packing — 5 per Carton.

### 50-WATT SERIES K-50-N

These resistors conform to RETMA specification for type RRW-132.

Res.	Res.	Res.	Res.
1	500	5,000	35K
5	750	6,000	40K
10	1,000	7,500	50K
25	1,250	8,000	60K
50	1,500	9,000	70K
75	2,000	10K	75K
100	2,250	12K	80K
150	2,500	12.5K	100K
200	3,000	15K	125K
250	3,500	20K	150K
300	4,000	25K	175K
400	4,500	30K	200K

LIST PRICES:

1 ohm to 5,000	\$1.20
6,000 to 25K ohms	1.50
30K to 100K ohms	1.85
125K ohms	2.20
150K to 175K ohms	2.50
200K ohms	3.30

Mounting brackets supplied at no extra cost.  
Standard Packing — Individually Boxed.



## ADJUSTABLE RESISTORS

### 80-WATT SERIES K-80-N

Res.	Res.	Res.	Res.
5	500	4,500	25K
10	750	5,000	30K
25	1,000	6,000	35K
50	1,250	7,500	40K
75	1,500	8,000	50K
100	2,000	9,000	60K
150	2,250	10K	70K
200	2,500	12K	75K
250	3,000	12.5K	80K
300	3,500	15K	100K
400	4,000	20K	

**LIST PRICES:**

5 ohms to 5,000 ohms	\$1.40
6,000 to 25K ohms	1.65
30K to 50K ohms	1.95
60K to 75K ohms	2.20
80K ohms	2.30
100K ohms	2.50

### 100-WATT SERIES K-100-W

Res.	Res.	Res.	Res.
1	750	7,500	60K
5	1,000	8,000	70K
10	1,250	9,000	75K
25	1,500	10K	80K
50	2,000	12K	100K
75	2,250	12.5K	125K
100	2,500	15K	150K
150	3,000	20K	175K
200	3,500	25K	200K
250	4,000	30K	
300	4,500	35K	
400	5,000	40K	
500	6,000	50K	

**LIST PRICES:**

1 ohm to 2,500 ohms	\$1.95
3,000 to 4,000 ohms	2.05
4,500 to 25K ohms	2.15
30K to 50K ohms	2.75
60K to 75K ohms	3.05
80K ohms	3.15
100K ohms	3.30
125K ohms	3.40
150K ohms	3.60
175K ohms	3.70
200K ohms	4.15

### 160-WATT SERIES K-160-W

Res.	Res.	Res.	Res.
5	500	4,500	25K
10	750	5,000	30K
25	1,000	6,000	35K
50	1,250	7,500	40K
75	1,500	8,000	50K
100	2,000	9,000	60K
150	2,250	10K	70K
200	2,500	12K	75K
250	3,000	12.5K	80K
300	3,500	15K	100K
400	4,000	20K	125K
			150K

**LIST PRICES:**

5 ohms to 10K ohms	\$2.50
12K ohms	2.55
12.5K ohms	2.60
15K to 50K ohms	2.90
60K to 100K ohms	3.30
125K ohms	3.50
150K ohms	3.85

### 200-WATT SERIES K-200-W

Res.	Res.	Res.	Res.
5	500	4,500	25K
10	750	5,000	30K
25	1,000	6,000	35K
50	1,250	7,500	40K
75	1,500	8,000	50K
100	2,000	9,000	60K
150	2,250	10K	70K
200	2,500	12K	75K
250	3,000	12.5K	80K
300	3,500	15K	100K
400	4,000	20K	125K
			150K

**LIST PRICES:**

5 ohms to 10K ohms	\$2.75
12K ohms	3.05
12.5K ohms	3.15
15K to 100K ohms	3.30
125K to 150K ohms	4.15

### 10-WATT SERIES PR-10-FA

These resistors conform to military specification for type RW-29 and RETMA specification for type RRW-226.

Res.	Res.	Res.	Res.
1	75	750	4,000
2	100	800	4,500
3	150	1,000	5,000
5	200	1,250	6,000
7.5	250	1,500	7,000
10	300	2,000	7,500
15	350	2,250	8,000
20	400	2,500	8,500
25	500	3,000	9,000
50	600	3,500	10K

**LIST PRICE \$0.95**

### 100-WATT SERIES K-100-WA

These resistors conform to RETMA specification for type RRW-234.

Res.	Res.	Res.	Res.
1	300	5,000	35K
5	400	6,000	40K
10	500	7,000	45K
15	750	7,500	50K
20	1,000	8,000	60K
25	1,250	9,000	75K
50	1,500	10K	80K
75	2,000	12K	100K
100	2,500	15K	125K
150	3,500	20K	150K
200	4,000	25K	
250	4,500	30K	

**LIST PRICES:**

1 ohm to 2,500 ohms	\$2.20
3,500 to 25K ohms	2.50
30K to 50K ohms	3.05
60K to 75K ohms	3.30
80K to 125K ohms	3.85
150K ohms	4.15

### 160-WATT SERIES K-160-WA

These resistors conform to RETMA specification for type RRW-235.

Res.	Res.	Res.	Res.
5	300	4,500	25K
10	400	5,000	30K
15	500	6,000	35K
20	750	7,000	40K
25	1,000	7,500	45K
50	1,250	8,000	50K
75	1,500	9,000	60K
100	2,000	10K	75K
150	2,500	12K	80K
200	3,500	15K	100K
250	4,000	20K	125K
			150K

**LIST PRICES:**

5 ohms to 4,500	\$2.75
5,000 to 10K ohms	2.90
12K ohms	3.20
15K to 60K ohms	3.60
75K to 100K ohms	4.15
125K to 150K ohms	4.70

### 200-WATT SERIES K-200-WA

These resistors conform to military specification for type RW-47 and RETMA specification for type RRW-236.

Res.	Res.	Res.	Res.
5	300	4,500	20K
10	400	5,000	25K
15	500	6,000	30K
20	750	7,000	35K
25	1,000	7,500	40K
50	1,250	8,000	45K
75	1,500	9,000	50K
100	2,000	10K	60K
150	2,500	12K	75K
200	3,500	15K	80K
250	4,000		100K

**LIST PRICES:**

5 ohms to 4,500	\$3.30
5,000 ohms to 10K	3.60
12K ohms	3.85
15K ohms to 75K	4.15
80K ohms to 100K	4.70

### 25-WATT SERIES P-25-KA

Res.	Res.	Res.	Res.
1	75	1,000	5,000
2	100	1,250	6,000
3	150	1,500	7,000
5	200	2,000	7,500
7.5	250	2,250	8,000
10	300	2,500	9,000
15	400	3,000	10K
20	500	3,500	12K
25	750	4,000	15K
50	800	4,500	20K
			25K
			50K

**LIST PRICES:**

1 ohm to 5,000 ohms	\$1.05
6,000 to 15K ohms	1.20
20K to 25K ohms	1.40
50K ohms	1.65

### 50-WATT SERIES K-50-NA

These resistors conform to RETMA specification for type RRW-232.

Res.	Res.	Res.	Res.
1	250	4,000	20K
5	300	4,500	25K
10	400	5,000	30K
15	500	6,000	35K
20	750	7,000	40K
25	1,000	7,500	45K
50	1,250	8,000	50K
75	1,500	9,000	60K
100	2,000	10K	75K
150	2,500	12K	80K
200	3,500	15K	100K

**LIST PRICES:**

1 ohm to 5,000 ohms	\$1.65
6,000 to 25K ohms	1.95
30K to 50K ohms	2.20
60K to 100K ohms	2.75

### 80-WATT SERIES K-80-NA

These resistors conform to RETMA specification for type RRW-233.

Res.	Res.	Res.	Res.
5	300	4,500	20K
10	400	5,000	25K
15	500	6,000	30K
20	750	7,000	35K
25	1,000	7,500	40K
50	1,250	8,000	45K
75	1,500	9,000	50K
100	2,000	10K	60K
150	2,500	12K	75K
250	4,000		100K

**LIST PRICES:**

5 ohms to 5,000 ohms	\$1.95
6,000 to 25K ohms	2.20
30K to 50K ohms	2.50
60K to 100K ohms	3.05

Above adjustable resistors are supplied with mounting brackets at no extra cost.

Extra Slider Bands — \$0.30 each.

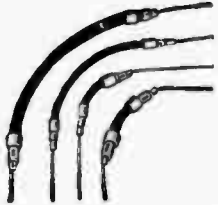
Standard Packing — Individually Boxed.

PRODUCTS OF  
**THE HOUSE OF RESISTORS®**



**RESISTORS • CONTROLS**  
**RESISTANCE DEVICES**

**"GLASOHM"\* FLEXIBLE RESISTORS**



Fixed wire-wound resistors on glass fibre core with flexible woven glass fiber casing. Made up to any length on order. A substitute for a wide range of carbon resistors. Standard types 1" long with 2" pigtail leads, 1/8" dia. RETMA color coded. RETMA overall tolerances are plus/minus 10%.

LIST PRICE \$0.35  
Standard Packing: 10 per carton.

Cat. No.	Ohms	Cat. No.	Ohms	Cat. No.	Ohms	Cat. No.	Ohms
FYG5	5	FYG75	75	FYG350	350	FYG850	850
FYG10	10	FYG100	100	FYG375	375	FYG900	900
FYG15	15	FYG125	125	FYG400	400	FYG1000	1000
FYG25	25	FYG150	150	FYG500	500	FYG1250	1250
FYG35	35	FYG200	200	FYG600	600	FYG1500	1500
FYG40	40	FYG225	225	FYG700	700	FYG1600	1600
FYG50	50	FYG250	250	FYG750	750	FYG1750	1750
FYG60	60	FYG300	300	FYG800	800	FYG2000	2000

**RESISTOR WALL-CARD KITS**

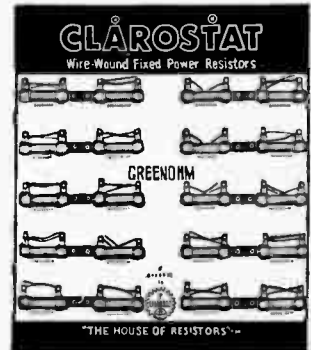
Handy wall-card kits holding different selections of popular ohmages in "Greenohm," "Greenohm Jr." and "Glasohm" resistors. Units readily slip off card and ohmage values show up for reordering. Card size: 10 1/2 x 12". Also serve as attention-getting silent salesmen.

Six carefully selected assortments, meeting widest range of standard service and other requirements. Considerable savings realized.

**"GREENOHM"\* RESISTOR KIT**

- GK-1—10-WATT "GREENOHM" RESISTORS. 20 popular ohmages—25 to 25K ohms. List Price: \$12.00
  - GK-2—2-WATT "GLASOHM" RESISTORS. 32 of the most popular ohmages. 5 to 2000 ohms. List Price: \$11.20
  - GK-3—5-WATT "GREENOHM Jr." RESISTORS. 36 popular ohmages. 1 ohm to 4000 ohms. List Price: \$21.60
  - GK-4—5-WATT "GREENOHM" RESISTORS. 54 popular ohmages. 1 ohm to 10K ohms. List Price: \$29.70
  - GK-5—10-WATT "GREENOHM Jr." RESISTORS. 50 popular ohmages. 1 ohm to 900 ohms. List Price: \$30.00
  - GK-6—10-WATT "GREENOHM" RESISTORS. 45 popular ohmages. 5 ohms to 50K ohms. List Price: \$27.00
- "FUZOHM" FUSE-TYPE RESISTORS also available in wall-card kits. 12 (7.5 ohm) units. GL-1. List Price: \$9.00.

Also with 12 (5.6 ohm) units. GL-2. List Price: \$9.00.



**POWER RESISTOR DECADE BOX**



The Resistance Decade Box Model No. 240C allows changing resistance at a flip of the switch in a working circuit. Any value obtainable from 1 ohm to 999,999 in steps of one ohm and at a maximum power rating of 225 watts using a maximum of 1000 volts D.C. or 660 volts A.C.

Resistance changing switches are of the type that prevents a resistance breakdown between steps, thus protecting delicate meters and measuring instruments in the circuit. Pointer knobs indicate at a glance the resistance value being used.

Clarostat "Greenohm" resistors are used

throughout. These are inorganic-cement-coated wire-wound power resistors. The resistors are mounted on rigid metal supports. A baffle plate separating the resistor bank from the switch assembly protects the latter against heat.

The heavy-gauge metal case is finished in frosted gray wrinkle, with an etched black-and-aluminum front panel. 13 in. long; 8 1/2 in. deep; 5 1/2 in. high. Weight, 11 lbs.

SUGGESTED USES: Resistance determination. Load Resistance. Meter Multiplier. Calibrating Meters. Providing any desired ohmage as a universal power resistor.

Decade No.	Maximum Current Ratings:	Resistance Tolerance	Decade No.	Maximum Current Ratings:	Resistance Tolerance
Decade No. 1	5 amp.	5%	Decade No. 4	.15 amp.	2%
Decade No. 2	1.5 amp.	2%	Decade No. 5	.05 amp.	2%
Decade No. 3	.5 amp.	2%	Decade No. 6	.005 amp.	2%
NET PRICE.....\$95.00					

**"GREENOHM JR."\* Wire-Wound Resistors**



Wire-wound power resistors on glass fiber core. Sealed in a cement-filled ceramic case. 1 1/2" axial pigtail leads. C4GJ, 1" l. x 1/8" d.; C7GJ, 1 1/4" l. x 1/8" d. Tolerance ±10%.

5-WATT SERIES C4GJ					10-WATT SERIES C7GJ				
Ohms	Ohms	Ohms	Ohms	Ohms	Ohms	Ohms	Ohms	Ohms	Ohms
1	12	50	250	700	1	25	225	800	2,500
2	15	75	300	750	2	30	250	900	3,000
3	20	100	350	800	3	35	300	1,000	3,500
4	25	125	400	900	4	40	350	1,100	4,000
5	30	150	450	1,000	5	50	400	1,200	4,500
7.5	35	200	500	2,000	7.5	75	450	1,250	5,000
10	40	225	600	3,000	10	100	500	1,500	6,000
				4,000	12	125	600	1,750	7,000
				4,000	15	150	700	2,000	8,000
					20	200	750	2,250	9,000

LIST PRICE \$0.60

Standard Packing—10 per Carton.

\*Reg. U. S. Pat. Off

PRODUCTS OF  
**THE HOUSE OF RESISTORS®**



**RESISTORS • CONTROLS**  
**RESISTANCE DEVICES**

**"FIXTOHM\*\*"**

**PRECISION RESISTORS**

**SERIES CVF**

**½-WATT RATING**  
**± 1% TOLERANCE**



These resistors are equivalent to Military types RN15 and RN20, and are approved for both types. Working voltage exceeds 350 volts.

\*Note—Values shown with asterisk are preferred Military values and are marked with Military style RN20 marking. They are packaged 8 to a carton. All values without asterisk have commercial marking and are packaged 10 to a carton.

51	*178	450	1300	9950	*1.96K	13.5K	*38.3K	*82.5K	200K	430K	*825K
*51.1	180	*464	1450	*1K	*2.15K	*14.7K	39K	85K	*215K	450K	850K
58	*198	470	1500	*1.1K	*2.37K	15K	40K	90K	220K	*464K	900K
*58.2	200	500	1600	4450	*2.61K	16K	*42.2K	*90.9K	225K	470K	*909K
*61.9	*215	510	1750	4500	*2.87K	*16.2K	43K	91K	*237K	500K	1M
62	220	*511	1800	4700	*3.16K	*17.5K	45K	*100K	*240K	510K	1.1M
68	225	550	2000	5000	*3.48K	*17.8K	*46.4K	*110K	250K	*511K	1.2M
*68.1	*237	560	2200	5100	*3.83K	18K	47K	120K	*261K	550K	1.21M
75.0	240	*562	2250	5500	*4.22K	*19.6K	50K	*121K	270K	560K	1.25M
82	250	600	2400	5600	*4.64K	20K	51K	125K	*287K	*562K	1.3M
*82.5	*261	*619	2500	5950	*5.11K	*21.5K	*51.1K	130K	300K	600K	1.33M
*90.9	270	620	2700	6000	*5.62K	22K	55K	*133K	*318K	*619K	1.47M
91	*287	*650	2850	6200	6.10K	*22.5K	56K	*147K	330K	620K	1.5M
*100	300	680	3000	6500	*6.81K	*23.7K	*56.2K	150K	*348K	650K	1.6M
*110	*316	*681	3300	6800	*7.50K	24K	60K	160K	350K	680K	1.62M
120	330	*750	3500	7000	*8.25K	25K	*61.9K	*162K	360K	*681K	1.78M
*121	*348	800	3600	7150	*9.09K	*26.1K	62K	175K	*383K	700K	1.8M
130	350	820	3900	8000	*10K	27K	65K	178K	390K	*750K	1.85M
*133	360	*825	4000	8200	*11K	*28.7K	68K	180K	400K	800K	2.0M
*147	*383	850	4300	*1.21K	12K	30K	*68.1K	*196K	*422K	820K	
150	390	900	8500	*1.33K	*12.1K	30.7K					
160	400	*908	8900	*1.47K	12.5K	33K					
*162	*422	1200	9000	*1.62K	13K	*34.8K					
175	430	1250	9100	*1.78K	*13.3K	36K					

LIST PRICE .....\$0.67

**SERIES CVC**

**1-WATT RATING**  
**± 1% TOLERANCE**



These resistors are equivalent to Military type RN25 and are approved under this type. Working voltage exceeds 500 volts.

\*Note—Values shown with asterisk are preferred Military values and are marked with Military style RN25 marking. They are packaged 8 to a carton. All values without asterisk have commercial marking and are packaged 10 to a carton.

100	330	820	3600	8500	15K	45K	125K	*383K	700K	2.0M	4.5M
*100	350	850	3900	8900	16K	47K	130K	390K	*750K	2.2M	4.7M
110	360	900	4000	8950	17.5K	50K	*147K	400K	2.225M	5.0M	5.1M
120	*383	1200	4300	9000	18K	51K	150K	430K	820K	2.4M	5.3M
130	390	1250	4450	9100	*19.6K	*51.1K	160K	450K	850K	2.5M	*5.11M
*147	400	1300	4500	9950	20K	55K	175K	470K	900K	*2.61M	5.5M
150	430	1450	4700	*1K	22K	56K	180K	500K	1M	2.7M	5.6M
160	450	1500	5000	*1.47K	22.5K	60K	*196K	510K	1.2M	*2.87M	6.0M
175	470	1600	5100	*1.96K	24K	62K	200K	*511K	1.25M	3.0M	6.2M
180	500	1750	5500	*2.61K	25K	65K	220K	550K	*1.3M	3.3M	6.5M
*196	510	1800	5600	*2.87K	*26.1K	68K	225K	560K	*1.47M	3.5M	6.8M
200	*511	2000	5950	*3.83K	27K	70K	240K	600K	1.5M	3.6M	7.0M
220	550	2250	6000	*5.11K	*28.7K	*75K	250K	620K	1.6M	*3.83M	8.0M
225	560	2400	6200	*7.50K	30K	80K	*261K	650K	1.8M	3.9M	8.2M
240	600	2500	6500	*10K	33K	82K	270K	680K	*1.96M	4.0M	8.5M
*250	620	2700	6800	12K	36K	85K	*287K	300K	4.3M	4.3M	9.0M
*261	650	2950	7000	*12.5K	*38.3K	90K					
270	680	3000	7450	13K	39K	91K					
*287	*750	3300	8000	13.5K	40K	*100K					
300	800	3500	8200	*14.7K	43K	120K					

LIST PRICES  
100 ohms to 5 Meg.....\$1.00  
5.1 Meg. to 9 Meg..... 1.10

**SERIES CVD**

**2-WATT RATING**  
**± 1% TOLERANCE**



These resistors are manufactured to Military Specifications for type RN30, and can be supplied with a certificate of compliance. They are not, however, approved for type RN30. Working voltage exceeds 750 volts.

\*Note—Values shown with asterisk are preferred Military values and are marked with Military style RN30 marking. They are packaged 8 to a carton. All values without asterisk have commercial marking and are packaged 10 to a carton.

100	450	1800	5600	16K	60K	250K	*750K	*2.61M	5.1M	9.0M	20.0M
110	470	2000	5950	17.5K	62K	270K	800K	2.7M	*5.11M	*10M	22.0M
120	500	2200	6000	18K	65K	300K	*825K	*2.87M	5.3M	11.0M	24.0M
130	510	2250	6200	20K	68K	330K	850K	6.8M	12.0M	12.0M	25.0M
150	550	2400	6500	22K	70K	350K	900K	3.3M	6.3M	12.1M	27.0M
160	560	2500	6800	22.5K	80K	360K	*1M	3.5M	6.2M	12.5M	30.0M
175	600	2700	7000	24K	82K	390K	1.2M	3.6M	6.5M	13.0M	33.0M
180	620	2950	7450	25K	85K	400K	1.25M	3.9M	6.8M	13.3M	36.0M
200	650	3000	8000	27K	90K	430K	1.3M	4.0M	7.0M	*14.7M	39.0M
220	680	3300	8200	30K	91K	450K	*1.47M	4.3M	*7.5M	15.0M	43.0M
225	800	3500	8500	33K	120K	470K	1.5M	4.5M	8.0M	16.0M	47.0M
240	*820	3600	8900	36K	130K	500K	1.6M	4.7M	8.2M	18.0M	50.1M
250	850	3900	8950	39K	150K	*511K	*1.8M	5.0M	8.5M	*19.6M	
270	900	4000	9000	40K	160K	550K	*2.0M				
300	1200	4300	9100	43K	175K	560K	2.15M				
330	1250	4450	9950	46K	180K	600K	*2.15M				
350	1300	4500	12K	47K	200K	620K	2.2M				
380	1450	4700	12.5K	50K	220K	650K	2.225M				
390	1500	5000	13K	51K	220K	650K	2.4M				
400	1600	5100	13.5K	55K	225K	680K	2.5M				
430	1750	5500	15K	56K	240K	700K					

LIST PRICES  
100 ohms to 10 Meg.....\$1.20  
11 Meg. to 20 Meg..... 1.30  
22 Meg. to 30 Meg..... 1.75  
33 Meg. to 50 Meg..... 2.00

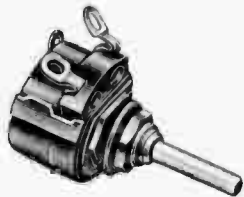
PRODUCTS OF  
**THE HOUSE OF RESISTORS®**



**RESISTORS • CONTROLS  
RESISTANCE DEVICES**

Clarostat offers through its Industrial Distributors a line of Miniaturized Components consisting of Composition-Element Potentiometers, Wire-Wound Potentiometers and Rotary Switches. In addition, also through its Industrial Distributors, Clarostat offers the Power Resistor Decade Box, Metal-Encased Power Rheostats, Molded Composition-Element 2-watt Potentiometers, Wire-Wound Precision Potentiometers for Prototypes, Wire-Wound Potentiometers for Laboratory and other specialized work, as well as a complete line of Deposited-Carbon Precision Resistors.

### SERIES 48M — 0.2 WATT MINIATURIZED COMPOSITION-ELEMENT POTENTIOMETERS



**INSULATION:** Breakdown test between terminals and ground for 1 minute  
1000v.a.c.; 350v.a.c. @ 3.4" Hg.

**RESISTANCE RANGE (Ohms):** Linear 200 to 5 Meg. Tapered 1500 to 2.5 Meg.

**RESISTANCE TOLERANCE:** Linear  $\pm 10\%$  above 100,000. Tapered  $\pm 20\%$  all val.

**TAPERS:** Linear. Left hand—10% resistance at 50% rotation. "Z"

**MECHANICAL AND ELECTRICAL ROTATION:** 300°  $\pm 3^\circ$

**EFFECTIVE ROTATION:** 300°  $\pm 3^\circ$

**SWITCHES:** SPST or DPST 0.5a. 25v.d.c.

**TORQUE (oz.-in.):** 0.5 to 6

**DUAL CONSTRUCTION:** Available



U. S. Pat. 2,706,760

Available in single or dual, standard or shaft locking bushing. Standard bushing potentiometers have  $\frac{1}{4}$ " x 32 NEF-2 x  $\frac{1}{4}$ " long bushing and  $\frac{1}{8}$ " dia. x  $\frac{1}{2}$ " long shaft beyond bushing. For single potentiometer order as Series 48M, plus the ohmage and taper. For dual order as Series D48M, plus the ohmage and taper (designate which is panel and rear if different).

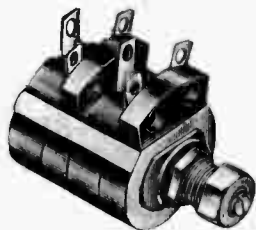
Shaft locking bushing potentiometers have  $\frac{1}{4}$ " x 32 NEF-2 x  $\frac{3}{8}$ " long bushing and  $\frac{1}{8}$ " dia. x  $\frac{1}{8}$ " long screwdriver slotted shaft. For single potentiometer with shaft locking

bushing order as Series 48M-9 plus the ohmage and taper. For dual with shaft locking bushing order as Series D48M-9, plus the ohmage and taper (designate which is panel and rear if different).

All potentiometers furnished with mounting nut  $\frac{1}{8}$ " thick x  $\frac{1}{8}$ " across flats, and one internal tooth lockwasher. Potentiometers with split locking bushings furnished with jam nut also.

**PRICE:** Due to the special nature of these units, prices and specific information will be sent upon request.

### SERIES 49M — 1.5 WATT MINIATURIZED WIRE-WOUND POTENTIOMETERS



**INSULATION:** Breakdown test between terminals and ground for 1 minute.  
1000v.a.c.; 500v.a.c. @ 3.4" Hg.

**RESISTANCE RANGE (Ohms):** Linear 1 to 20,000

**RESISTANCE TOLERANCE:** Linear  $\pm 5\%$ . Tapered Linear only.

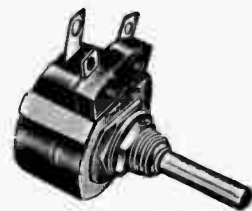
**MECHANICAL AND ELECTRICAL ROTATION:** 300°  $\pm 3^\circ$

**EFFECTIVE ROTATION:** 300°  $\pm 3^\circ$

**SWITCHES:** SPST or DPST 0.5a. 25v.d.c.

**TORQUE (oz.-in.):** 0.5 to 3

**DUAL CONSTRUCTION:** Available



U. S. Pat. 2,706,760

Available in single or dual, standard or shaft locking bushing. Standard bushing potentiometers have  $\frac{1}{4}$ " x 32 NEF-2 x  $\frac{1}{4}$ " long bushing and  $\frac{1}{8}$ " dia. x  $\frac{1}{2}$ " long shaft beyond bushing. For single potentiometer order as Series 49M, plus the ohmage. For dual order as Series D49M, plus the ohmage (designate which is panel and rear if different).

Shaft locking bushing potentiometers have  $\frac{1}{4}$ " x 32 NEF-2 x  $\frac{3}{8}$ " long bushing and  $\frac{1}{8}$ " dia. x  $\frac{1}{8}$ " long screwdriver slotted shaft. For single potentiometer with shaft locking

bushing order as Series 49M-9, plus the ohmage. For dual with shaft locking bushing order as Series D49M-9, plus the ohmage (designate which is panel and rear if different). All potentiometers furnished with mounting nut  $\frac{1}{8}$ " thick x  $\frac{1}{8}$ " across flats, and one internal tooth lockwasher. Potentiometers with shaft locking bushings furnished with jam nut also.

**PRICE:** Due to the special nature of these units, prices and specific information will be sent upon request.

### SERIES BHM — MINIATURIZED ROTARY SELECTOR SWITCH

**CURRENT RATING:** 50 Millamps, at 300 volts  
a.c. or d.c.  
500 Millamps, at 30 volts a.c. or d.c.

**PROTECTION:** All moving parts and contact mechanisms are totally enclosed and switch is sealed, which protects it from dust and atmospheric conditions.

**FINISH:** Nickel Plating.

**BUSHING:**  $\frac{3}{8}$ " x 32 NEF-2 Thread.  $\frac{3}{8}$ " Long.

**SHAFT:**  $\frac{1}{4}$ " diameter round 1" beyond bushing.



U. S. Pat. 2,463,945

Cat. No.	Description
BHM-SP12P-S	Single Pole 12 Positions—Shorting
BHM-SP12P-NS	Single Pole 12 Positions—Non-Shorting
BHM-2P6P-S	2 Pole 6 Positions—Shorting
BHM-2P6P-NS	2 Pole 6 Positions—Non-Shorting
BHM-3P4P-S	3 Pole 4 Positions—Shorting
BHM-3P4P-NS	3 Pole 4 Positions—Non-Shorting
BHM-4P3P-S	4 Pole 3 Positions—Shorting
BHM-4P3P-NS	4 Pole 3 Positions—Non-Shorting

Meets or exceeds test paragraph 4.5.3 through 4.5.13 of MIL-S-3786.

Due to the special nature of these units, prices and specific information will be sent upon request.



Manufacturers of  
**THERMISTORS**  
and **VARISTORS**

# THERMISTORS

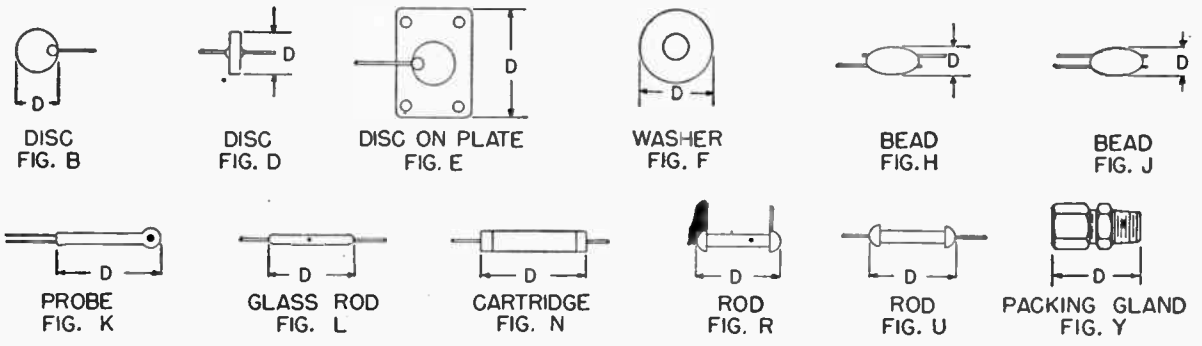
**Victory Engineering Corporation**  
Union, New Jersey

VECO Code No.	Resistance at 25°C	Fig. Type	Approx. Dim. "D"	Approx. Res. Ratio 0°C to 50°C	Net Price	VECO Code No.	Resistance at 25°C	Fig. Type	Approx. Dim. "D"	Approx. Res. Ratio 0°C to 50°C	Net Price	VECO Code No.	Resistance at 25°C	Fig. Type	Approx. Dim. "D"	Approx. Res. Ratio 0°C to 50°C	Net Price
05E1	5 ± 10%	B	1.0	6.95	2.00	32A12	2,000 ± 20%	J	.043	7.3	2.70	43A5	30,000 ± 20%	H	.043	7.5	3.70
11E1	10 ± 10%	B	1.0	6.95	2.00	32A13	2,000 ± 20%	H	.043	7.3	2.80	43A11	30,000 ± 20%	K	.5	7.5	4.20
11X1	10 ± 10%	F	.770	6.95	2.00	32A24	2,000 ± 10%	K	2.0	7.3	4.85	43R1	31,500 ± 10%	U	.875	9.1	1.80
12X10	15 ± 10%	F	.770	6.95	2.00	32A46	2,000 ± 25%	L	.5	5.8	5.28	44A1	35,000 ± 25%	N	1.25	4.5	2.10
12E1	25 ± 10%	B	1.0	6.95	2.00	32A48	2,000 ± 25%	H	.014	5.6	2.90	45A1	50,000 ± 20%	K	2.0	9.1	4.20
13X3	31.5 ± 10%	F	.770	6.95	2.00	33A3*	2,800 ± 25%	L	.15	5.8	15.80	45A2	50,000 ± 20%	J	.043	9.1	3.60
14X2	38 ± 10%	F	.770	6.95	2.00	33D2	3,000 ± 10%	D	.2	9.1	2.00	45A11	50,000 ± 20%	K	.5	9.1	4.20
15D1	50 ± 10%	B	1.0	9.1	2.00	33S1	3,150 ± 10%	U	.875	7.1	1.80	45B2	50,000 ± 40%	N	1.25	9.1	3.00
21D2	100 ± 10%	B	.770	9.1	2.00	34A1	3,500 ± 15%	J	.014	7.3	5.40	45B7	50,000 ± 20%	H	.026	9.1	3.70
21E2	100 ± 10%	B	.4	6.95	2.00	34A2	3,500 ± 15%	H	.014	7.3	5.50	45R1	50,000 ± 10%	U	1.0	9.1	1.80
21W1	100 ± 10%	F	.770	9.1	2.00	34A3	3,500 ± 30%	K	2.0	7.3	2.90	46A2	60,500 ± 29%	N	1.25	4.5	2.50
21W4	130 ± 10%	F	.770	9.1	2.00	35A1	5,000 ± 20%	J	.043	7.3	3.60	47A1	71,000 ± 30%	J	.039	9.5	3.25
22W2	180 ± 10%	F	.770	9.1	2.00	35A2	5,000 ± 20%	H	.043	7.3	3.70	49A1	85,000 ± 25%	N	1.25	4.5	2.10
22X1	150 ± 10%	F	2.15	6.95	3.00	35A3	5,000 ± 20%	K	2.0	7.3	4.20	51A1	100,000 ± 15%	K	2.0	10.3	2.85
23D7	295 ± 10%	B	.4	9.1	2.00	35A11	5,000 ± 20%	K	.5	7.3	4.20	51A2	100,000 ± 15%	J	.043	10.3	2.70
23E3	310 ± 10%	D	.2	6.95	2.10	35D2	5,000 ± 10%	B	1	9.1	2.40	51A3	100,000 ± 15%	H	.043	10.3	2.80
23W1	315 ± 10%	F	.770	9.1	2.00	35S1	6,300 ± 10%	U	.875	7.1	1.80	51A11	100,000 ± 15%	K	.5	10.3	3.00
24W1	415 ± 10%	F	.770	9.1	2.00	37A1	7,000 ± 20%	L	.438	7.3	5.00	51R1	100,000 ± 10%	U	1.625	9.1	1.80
25A2	500 ± 20%	H	.088	5.6	3.20	37A3*	7,000 ± 20%	H	.023	7.3	7.95	51R2	100,000 ± 10%	R	.5	9.1	2.00
25E2	500 ± 10%	B	.1	6.95	2.40	38C1	8,000 ± 20%	J	.014	7.3	3.70	52A1	170,000 ± 50%	J	.043	10.4	1.65
27D1	725 ± 5%	E	1.25	9.1	6.00	38C2	8,000 ± 20%	H	.014	7.3	3.80	55A1	500,000 ± 20%	K	2.0	11.5	4.60
28D1	760 ± 5%	E	1.25	9.1	6.00	38S1	8,000 ± 10%	U	.875	7.1	1.80	55A2	500,000 ± 20%	J	.043	11.5	4.00
31A1	1,250 ± 30%	H	.014	5.6	2.90	41A1	10,000 ± 20%	K	2.0	7.5	4.20	55A3	500,000 ± 20%	H	.043	11.5	4.10
31A2	1,000 ± 20%	J	.043	7.3	3.60	41A2	10,000 ± 20%	J	.043	7.5	3.60	55A11	500,000 ± 20%	K	.5	11.5	4.60
31A3	1,000 ± 20%	H	.043	7.3	3.70	41A3	10,000 ± 20%	H	.043	7.5	3.70	61A1	1 Meg ± 25%	K	2.0	14.0	4.60
31A6	1,000 ± 20%	K	2.0	7.3	4.20	41A11	10,000 ± 20%	K	.5	7.5	4.20	61A2	1 Meg ± 25%	J	.043	14.0	4.00
31A11	1,000 ± 20%	K	.5	7.3	4.20	41D2	10,000 ± 10%	B	.1	9.1	2.40	61A3	1 Meg ± 25%	H	.043	14.0	4.10
31D3	1,000 ± 10%	B	.4	9.1	2.00	41S1	10,000 ± 10%	U	1.625	7.1	1.80	61A11	1 Meg ± 25%	K	.5	14.0	4.60
31D4	1,000 ± 10%	D	.2	9.1	2.00	41S2	10,000 ± 10%	R	.5	7.1	1.80	65A1	5.4 Meg ± 32%	P	1.5	17.0	6.00
31D7	1,200 ± 10%	D	.2	9.1	2.10	42A2*	15,000 ± 16%	L	.15	7.5	17.50	71A2	12 Meg ± 20%	L	.438	20.0	6.00
31D10	1,000 ± 10%	B	.2	9.1	2.00	43A1	30,000 ± 25%	J	.014	7.5	4.10	A819	Stainless Steel packing gland for standard probes, Neoprene sealant. Fig. Y				4.00
31W1	1,100 ± 10%	F	.215	9.1	3.00	43A2	30,000 ± 25%	H	.014	7.5	4.20	A820	Stainless Steel packing gland for standard probes, Lava sealant. Fig. Y				5.00
32A1	2,000 ± 20%	K	2.0	7.3	2.85	43A3	30,000 ± 20%	K	2.0	7.5	4.20						
32A3	2,000 ± 25%	L	.4	5.6	7.20	43A4	30,000 ± 20%	J	.043	7.5	3.60						
32A11	2,000 ± 20%	K	.5	7.3	3.00												

All probe diameters are 0.1" max.  
\* Indicates indirectly heated type.

**NOTES**

If desired, mounting hardware available.  
// Cycleweld coated.



**EXPERIMENTOR'S KITS**

Designed to acquaint the experimenter, technician, engineer, designer, etc., with a variety of VECO thermistor and varistor applications.

Net Price \$5.00  
(\$15.00 value)

**M-168 EXPERIMENTOR'S KIT INCLUDES:**

- 2 - Bead thermistors
- 2 - Washer thermistors
- 2 - Disc thermistors with leads
- 1 - Washer varistor
- 1 - Form showing typical circuitry
- 1 - Form showing specific characteristics of units in kit

Net Price \$10.00  
(\$22.00 value)

**M-168A EXPERIMENTOR'S DELUXE KIT INCLUDES:**

- 2 - Bead thermistors
- 2 - Washer thermistors
- 2 - Disc thermistors with leads
- 1 - Rod thermistor
- 1 - Probe thermistor
- 2 - Washer varistors
- 1 - Form showing typical circuitry
- 1 - Form showing specific characteristics of units in kit
- 1 - Set, miscellaneous mounting hardware

Victory Engineering Corporation operates under Bell System patents on a cross license agreement with Western Electric Company.

Order your copy of the VECO THERMISTOR AND VARISTOR DATA BOOK containing historical background, technical data, typical circuitry, curves, and other valuable information. Price \$1.00.

Complete TECHNICAL CATALOG OF VECO PRODUCTS available upon request from your jobber.

PRICES SUBJECT TO CHANGE WITHOUT NOTICE.

SAFEST FOR SERVICING  
FIRST IN COMPONENTS RESEARCH



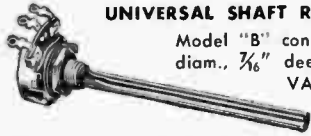
Centralab

## CONTROLS

### UNIVERSAL SHAFT RADIOHMS®

Model "B" controls, carbon, 1/2 watt, 1/16" diam., 3/16" deep. Breakdown voltage 900 VAC-RMS to ground. Shaft 1/4" diam. 3 3/8" long from mfg. surface; UNIVERSAL fluted

knurled type — will fit knurl, shallow flat, deep flat, slotted, or round applications. Bushing 3/8" long, 3/8"—32 thrd. equipped with lock washer and mounting nut. Can easily be converted to switch type by merely snapping on a "KB" switch listed below.



### ADASHAFT® RADIOHMS®

Model "AB" controls are identical to Model B controls in every respect except for attachable shaft construction



thru use of patented stub, screwdriver slot shaft 1/16" long from mfg. surface. This stub can be used as is or extended by using any one of the 12 AK shaft styles shown below. Can easily be converted to switch type by snapping on a "KB" switch also listed below.

### PLAIN TYPE

Ohms. Max. Resistance	Model B Taper	Model B Cat. No.	Model AB Cat. No.	Ohms. Max. Resistance	Model B Taper	Model B Cat. No.	Model AB Cat. No.	Ohms. Max. Resistance	Model B Taper	Model B Cat. No.	Model AB Cat. No.
200	C-1	B-2	AB-2	20,000	C-5	B-23	AB-23	1/2 Meg.	C-6	B-616	AB-616
500	C-1	B-4	AB-4	20,000	C-6	B-24	AB-24	1/2 Meg.	C-7	B-617	AB-617
750	C-5	B-415	AB-415	25,000	C-1	B-26	AB-26	750,000	C-1	B-66	AB-66
1,000	C-1	B-5	AB-5	25,000	C-4	B-29	AB-29	1 Meg.	C-1	B-69	AB-69
1,000	C-5	B-505	AB-505	25,000	C-5	B-27	AB-27	1 Meg.	C-2	B-70	AB-70
1,500	C-5	B-515	AB-515	25,000	C-6	B-28	AB-28	1 Meg.	C-4	B-744	AB-744
2,000	C-1	B-6	AB-6	50,000	C-1	B-31	AB-31	1 Meg.	C-5	B-68	AB-68
2,500	C-1	B-7	AB-7	50,000	C-2	B-32	AB-32	1 Meg.	C-7	B-697	AB-697
2,500	C-5	B-705	AB-705	50,000	C-5	B-34	AB-34	1.5 Meg.	C-1	B-742	AB-742
3,000	C-1	B-8	AB-8	75,000	C-1	B-35	AB-35	2 Meg.	C-1	B-75	AB-75
4,000	C-1	B-9	AB-9	75,000	C-5	B-36	AB-36	2 Meg.	C-2	B-76	AB-76
5,000	C-1	B-10	AB-10	100,000	C-1	B-40	AB-40	2 Meg.	C-5	B-77	AB-77
5,000	C-2	B-11	AB-11	100,000	C-2	B-41	AB-41	2.5 Meg.	C-1	B-83	AB-83
5,000	C-5	B-12	AB-12	150,000	C-1	B-43	AB-43	3 Meg.	C-1	B-84	AB-84
7,500	C-1	B-13	AB-13	150,000	C-2	B-44	AB-44	3 Meg.	C-2	B-85	AB-85
10,000	C-1	B-14	AB-14	200,000	C-1	B-46	AB-46	3 Meg.	C-5	B-855	AB-855
10,000	C-2	B-15	AB-15	250,000	C-1	B-50	AB-50	4 Meg.	C-1	B-86	AB-86
10,000	C-4	B-18	AB-18	250,000	C-2	B-51	AB-51	4 Meg.	C-2	B-862	AB-862
10,000	C-5	B-17	AB-17	250,000	C-5	B-52	AB-52	5 Meg.	C-1	B-87	AB-87
10,000	C-6	B-16	AB-16	1/2 Meg.	C-1	B-59	AB-59	5 Meg.	C-2	B-88	AB-88
15,000	C-5	B-19	AB-19	1/2 Meg.	C-2	B-60	AB-60	7 Meg.	C-7	B-89	AB-89
15,000	C-6	B-20	AB-20	1/2 Meg.	C-4	B-58	AB-58	10 Meg.	C-1	B-98	AB-98
20,000	C-1	B-22	AB-22	1/2 Meg.	C-5	B-61	AB-61				

### SINGLE TAP

Ohms. Max. Resis.	Taper	Tap	Model BT Cat. No.	Model ABT Cat. No.
50,000	C-11	Tap-25K	BT-33	ABT-33
100,000	C-11	Tap-50K	BT-39	ABT-39
200,000	C-11	Tap-100K	BT-47	ABT-47
250,000	C-11	Tap-125K	BT-53	ABT-53
250,000	C-12	Tap-50K	BT-54	ABT-54
250,000	C-13	Tap-75K	BT-55	ABT-55
250,000	C-16	Tap-125K-62 1/2% Rot.	BT-56	ABT-56
350,000	C-12	Tap-70K	BT-57	ABT-57
1/2 Meg.	C-11	Tap-250K	BT-65	ABT-65
1/2 Meg.	C-12	Tap-100K	BT-66	ABT-66
1/2 Meg.	C-13	Tap-150K	BT-67	ABT-67
1/2 Meg.	C-15	Tap-50K-50% Rot.	BT-63	ABT-63
1/2 Meg.	C-16	Tap-250K-62 1/2% Rot.	BT-64	ABT-64
1/2 Meg.	C-17	Tap-50K-37 1/2% Rot.	BT-62	ABT-62
1 Meg.	C-11	Tap-500K	BT-71	ABT-71
1 Meg.	C-12	Tap-200K	BT-72	ABT-72
1 Meg.	C-13	Tap-300K	BT-73	ABT-73
1 Meg.	C-16	Tap-500K-62 1/2% Rot.	BT-74	ABT-74
1 Meg.	C-17	Tap-100K	BT-7417	ABT-7417
2 Meg.	C-11	Tap-1 Meg.	BT-78	ABT-78
2 Meg.	C-12	Tap-400K	BT-79	ABT-79
2 Meg.	C-13	Tap-600K	BT-80	ABT-80
2 Meg.	C-15	Tap-200K	BT-81	ABT-81
2 Meg.	C-16	Tap-1 Meg.-62 1/2% Rot.	BT-82	ABT-82
3 Meg.	C-15	Tap-300K-50% Rot.	BT-8515	ABT-8515
3 Meg.	C-17	Tap-300K-37 1/2% Rot.	BT-8517	ABT-8517

### DUAL TAP TYPE

Ohms. Max. Resistance	Taps	Catalog Number	Catalog Number
15,000	Taps- 5K and 10K	BT-154	ABT-154
250,000	Taps-50K and 125K	BT-155	ABT-155
250,000	Taps-41K and 82K	BT-156	ABT-156
1/2 meg.	Taps-82K and 165K	BT-159	ABT-159
1/2 meg.	Taps-100K and 250K	BT-160	ABT-160
1 meg.	Taps-165K and 330K	BT-164	ABT-164
1 meg.	Taps-200K and 500K	BT-165	ABT-165
1.5 meg.	Taps-250K and 500K	BT-167	ABT-167
2 megs.	Taps-250K and 500K	BT-174	ABT-174
2 megs.	Taps-400K and 1 meg.	BT-175	ABT-175
2.5 megs.	Taps-300K and 625K	BT-176	ABT-176

### MODEL B SWITCH TYPE RADIOHMS

Factory assembled switch type units are universal D.P.S.T., for S.P.S.T., D.P.S.T., or 3 wire usage

Ohms Max. Resistance	Taper	Catalog Number
1/2 Meg	C2	B-60-S
1 Meg	C2	B-70-S

### CONTROL PRICES

B-60 and B-70	List Price	\$1.30
B-60-S and B-70-S	List Price	2.05
All Other B-Units	List Price	1.40
All BT Units	List Price	2.05
AB-60 and AB-70	List Price	1.15
All Other AB Units	List Price	1.25
All ABT Units	List Price	1.90

## CONTROLS (Cont'd)

### TYPE KB "FASTATCH" SWITCHES

Circuit	AC Rating	DC Rating	Cat. No.	List Price
SPST	5 amp., 125 v.a.c.	12 amp., 12 v.d.c.	KB-1	\$ .65
DPST	5 amp., 125 v.a.c.	12 amp., 12 v.d.c.	KB-2	.65
SPDT	5 amp., 125 v.a.c.	12 amp., 12 v.d.c.	KB-3	.85
SPST	5 amp., 125 v.a.c.	12 amp., 12 v.d.c.	*KB-6	.75
SPST	8 amp., 125 v.a.c.	20 amp., 12 v.d.c.	KB-4	1.00
DPST	8 amp., 125 v.a.c.	20 amp., 12 v.d.c.	KB-7	1.25

\*(With Dummy Lug)

### SWITCH SHIELDS

For use with Switch Type units where AC shielding is required, space permitting; or where required by Underwriters' Lab. Packaged 5 per carton.....CAT. NO. KB-5

### AB-100 ADASHAFT CONTROL KIT

The AB-100 kit contains 14 AB Adashaft controls, 6 rear switches, 18 assorted shafts and 2 couplers; and is packed in a sturdy transparent plastic box with hinged lid for easy use. This kit will fit into your tool box and is made up of the 14 most active movers by actual sales.

Ohms Resist.	Taper	Catalog No.	Quantity
½ Meg	C-2	AB-60	3
1 Meg	C-2	AB-70	3
1 Meg	C-1	AB-69	1
2 Meg	C-2	AB-76	1
5 Meg	C-1	AB-87	1
5,000	C-1	AB-10	1
10,000	C-1	AB-14	1
50,000	C-1	AB-31	1
100K	C-1	AB-40	1
½ Meg	C-1	AB-59	1

List Price \$26.50

### ADASHAFT SHAFTS — COUPLERS — SHAFT EXTENSIONS

Cat. No.	Description	List Price Per Pkg.
AK-1	Fingertip knurl and screwdriver slot ¾" long from bushing.	\$0.75/5
AK-2	1 1/8" long from bushing, with .078"-wide slot.....	1.50/5
AK-3	Universal fluted mill full length, 3" long from bushing ....	.75/5
AK-4	Split knurl shaft 3 3/8" long from bushing .....	1.25/5
AK-7	3" long from bushing with full length .156" flat .....	1.25/5
AK-8	3/16" diameter, full round, 2 1/8" long from bushing .....	1.50/5
AK-9	1/4" diameter, full round, 3 1/4" long from bushing.....	1.50/5
AK-10	10" long from bushing, with flat mill .216" x 4 3/16".....	3.00/5
AK-11	Universal, including split knurl, flat, and slot, 4" long from bushing.....	1.25/5
AK-16	Coupler adaptable to 1/4" and 1/8" or 1/4" and 3/16" shafts...	2.50/5
AK-19	Insulating nylon, 2 1/16" long from bushing .....	3.25/5
AK-21	Shaft extension 4" long, 1/4" diam., .218" flat .....	3.50/5
AK-22	Shaft extension 4" long, 1/4" diam., .154" flat .....	3.50/5
AK-23	Shaft extension 4" long, 3/16" diam., .172" flat.....	3.50/5
AK-24	1/4" diameter, full round, 3/8" long .....	1.25/5
AK-25	1/4" diameter, flatted to .218", 3/8" long.....	1.25/5
AK-26	Adapter bushing, 3/8"-32 thd. to 7/16"-28 thd., with nuts and lockwasher .....	.75 ea.
AK-28	Auto adapter bushing, 3/8" to 7/16"-28 thd., with nuts and lockwasher.....	.75 ea.
AK-30	Grounding lug, grounds bushing to terminal .....	.50/doz.



### SNAP-TITE® RADIOHMS® For speed-servicing of "hidden" or TV rear controls

The revolutionary new Centralab control with amazing time-saving features:

- SNAP-TITE is installed by just pushing it into the chassis mounting hole. It holds itself in place.
- No tools needed for mounting; no nuts, lockwashers, or any other hardware. A clean, fast replacement.
- Six spring clips grip the panel for positive, non-twist mounting. Replaces any standard control type. (One or two locating lugs.)
- Shaft is molded, high-strength polystyrene, fingertip knurled and slotted for screwdriver adjustment. Extends 1/2" from face of mounting surface.

The ten values below will replace 75% of current rear-end or "hidden" television controls:

Max. Resistance	Taper	Cat. No.	Max. Resistance	Taper	Cat. No.
5000	C1	BX-10	1 meg.	C1	BX-69
50K	C1	BX-31	1 1/2 megs.	C1	BX-742
100K	C1	BX-40	2 megs.	C1	BX-75
200K	C1	BX-46	2 1/2 megs.	C1	BX-83
500K	C1	BX-59	3 megs.	C1	BX-84

List Price \$0.85 each

\* Trademark

### MODEL JP AND JL RADIOHM®



Designed originally to meet rugged military specifications. These miniature controls are completely closed — can be sealed or potted — making them ideal for miniature amplifiers, geophysical equipment, guided missiles, and other application where small size, high quality and depend-

ability are primary factors. Rated at 1/4 watt, carbon, .0671" diameter. Shaft: Model JP—plain round 1/8" diam. 3/4" long from mta. surface. Model JL—screwdriver slotted 1/8" diam., 1/2" long from mta. surface. Model JP has 1/4"—32 thread bushing 1/2" long. Model JL has split locking bushing 1/8"—32 thread, 3/8" long with iam nut. Both types equipped with lockwasher and mta. nut.

Ohms	Tol.	Taper See charts at End of Sec.	Catalog Number	Catalog Number
1000	20%	C1	JP-102	JL-102
1500	20%	C1	JP-152	JL-152
2500	20%	C1	JP-252	JL-252
5000	20%	C1	JP-502	JL-502
7500	20%	C1	JP-752	JL-752
10K	20%	C1	JP-103	JL-103
10K	20%	C2	JP2-103	.....
25K	20%	C1	JP-253	JL-253
50K	20%	C1	JP-503	JL-503
100K	20%	C1	JP-104	JL-104
250K	20%	C1	JP-254	JL-254
500K	20%	C1	JP-504	JL-504
500K	20%	C2	JP2-504	.....
1 Meg.	20%	C1	JP-105	JL-105
2.5 Meg.	20%	C1	JP-255	JL-255

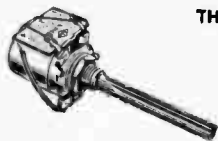
List Price: JP—\$5.85; JL—\$6.10; KC knobs—\$1.50/5.

KNOB	Cat. No.	Color
	KC-3	knob Black
	KC-4	knob White
	KC-5	knob Red





CONTROLS (Cont'd)



THE COMPENTROL®

The COMPENTROL is a volume control and special Packaged Electronic Circuit network designed to better reproduce the apparent bass and treble response of amplifiers, radio, and television sets when volume is at low level. For use in radio sets (5 or more tube AC or DC), audio amplifiers, or phono combinations.

Resistance	Type	Cat. No.
1/2 meg.	Plain Type	C1-60
1/2 meg.	Switch Type	C1-60-S
1 meg.	Plain Type	C1-70
1 meg.	Switch Type	C1-70-S

Suggested Dir. Net — Plain.....\$2.75 ea. Switch.....\$3.30 ea.

SENIOR COMPENTROL®  
WITH LEVEL-SET

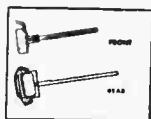


Designed for use in hi-fi amplifiers, or pre-amplifiers a compact dual concentric unit to replace standard gain controls, permits any degree of compensation at low listening levels where compensation is required. For high level (or flat response) listening, compensation can be completely removed. Universal (replaces 100K to 1 Meg) control. Supplied with dual knob.

CAT. NO. C2-100.....Suggested Dealer Net \$4.50

FASTATCH® SENIOR COMPENTROL® KIT

With High-Baast P. E. C. Plates



The ultimate in compensated control for the advanced hi-fi owner. The Senior Compentrol is furnished as two separate units that can be snapped together after shafts are cut to any length up to 3 3/4" from mounting surface. Compensating P. E. C. plate is pre-wired to rear unit. Two high-frequency boost plates are furnished

for medium or substantial boosting of highs. Contains knobs and complete instructions.

C2-200 KIT.....Suggested Dealer Net \$4.75

SENIOR COMPENTROL® — CAT. NO. C3-300

The C3-300 is a compensated tone control as used in Baxendall circuit. Not to be confused with the C2-100 and C2-200 Compensated volume controls.

SEPARATE HIGH-BOOST P. E. C. PLATES

Same as furnished in C2-200 Kit, for overall emphasis of high frequencies. Can be installed in existing Compentrol unit or other location in high-fidelity amplifiers.

Cat. No.	Boost at 10 KC.	Recommended for	List Price
PC-60	4db.	Multiple speaker installations	\$.50
PC-61	8db.	Single or coaxial speaker installations	.50

MODEL "SM" SERIES (Switch Type Only)

Model SM is a precision made sub-miniature unit designed primarily for transistor circuit applications. Rated 1/10 watt. 0.502" diam. without knob — 1/32" with knob. Stud mounted.



Ohms	Taper	Catalog Number
2,500	C-2	SM2-252-S
5,000	C-2	SM2-502-S
10,000	C-2	SM2-103-S
25,000	C-2	SM2-253-S

List Price \$6.25

MODEL B16 SERIES



Miniature controls designed originally for the hearing aid industry. Rated 1/10 watt, 5/8" diam. without knob — 23/32" with knob. 1/4" total thickness with knob. Control including switch complete within knob.

Ohms Max. Resistance	Taper See Chart at End of Sec.	Catalog Number Plain	Catalog Number Switch
500	C-1	B16-107	.....
1,000	C-1	B16-109	.....
2,500	C-1	B16-111	.....
2,500	C-2	B16-112	B16-212
5,000	C-1	B16-113	.....
5,000	C-2	B16-114	B16-214
10,000	C-1	B16-115	.....
10,000	C-2	B16-116	B16-216
25,000	C-2	B16-117	B16-217
50,000	C-1	B16-119	.....
100,000	C-1	B16-121	.....
250,000	C-1	B16-123	.....
1/2 Meg.	C-2	B16-118	B16-218
1 Meg.	C-2	B16-120	B16-220
2 Megs.	C-2	B16-122	B16-222
3 Megs.	C-2	B16-124	B16-224
5 Megs.	C-2	B16-128	B16-228

List Price: Plain Type \$2.50; Switch Type \$4.00

5 WATT WIREWOUND RADIOHMS®



Size of a 2 watt, BUT rated at full 5 watts. 1 1/2" diam. x 1/16" deep. Linear taper. Shaft (WW-Style) full round, aluminum, 1/4" diam. x 3" long from mtg. surface. (WN-Style) Finger tip

knurl, screwdriver slotted, 1/4" diam. x 3/4" long from mtg. surface. Bushing 3/8" long — 3/8" — 32 thrd.

Ohms	WW		WN	
	Catalog No.	Catalog No.	Catalog No.	Catalog No.
1	WW-010	WN-010	100	WW-101
2	WW-020	WN-020	200	WW-201
3	WW-030	WN-030	250	WW-251
4	WW-040	WN-040	300	WW-301
5	WW-050	WN-050	400	WW-401
6	WW-060	WN-060	500	WW-501
8	WW-080	WN-080	750	WW-751
10	WW-100	WN-100	1000	WW-102
15	WW-150	WN-150	1500	WW-152
20	WW-200	WN-200	2000	WW-202
25	WW-250	WN-250	2500	WW-252
30	WW-300	WN-300	3000	WW-302
40	WW-400	WN-400	4000	WW-402
50	WW-500	WN-500	5000	WW-502
60	WW-600	WN-600	7500	WW-752
75	WW-750	WN-750	10K	WW-103
			15K	WW-153

List Price \$11.65



## CONTROLS (Cont'd)



### FASTATCH® DUAL RADIOHMS®

Any dual concentric needed is instantly available—just select proper front and rear unit—cut shafts to length, snap together—snap on switch if needed. Carbon units are 1/2 watt, 1 1/16" diam.; wirewound units are 5 watts, 1 1/32" diam. Voltage breakdown 900 VAC-RMS to ground. Bushing 3/8" long, 3/8"—32 thrd. equipped with lockwasher and mtg. nut. (AK-26 or AK-28 bushing adaptors can be added for auto radio applications.)

#### FASTATCH DUAL — FRONT UNIT

Outer shaft is 3 1/16" long from mounting surface, with double-flat mill . . . brass for quick cutting to proper length. Use for single or double flat or round shaft. Scores make cutting for single or double slot easy.

#### FASTATCH DUAL — REAR UNIT

Distinctive blue aluminum inner shaft is 3 3/4" long from mounting surface. Easily cut to proper length. Diameter, 3/16" with .156" flat. Fits .187" or .202" flat shaft knob—spring adapter furnished for other knob types. Convert to switch type with type KB switches listed on page 1 of this section. Front and rear units.

List Price \$1.75 — F1, F3, R2, R4

List Price \$2.25 — F7

Max. Resist.	Taper or Tap	Front Unit Carbon	Front Unit Wirewound	Rear Unit Carbon
250	C1	.....	F7-50	.....
300	C1	F1-0	F7-53	.....
500	C1	F1-1	F7-59	R2-1
750	C1	F1-2	F7-65	.....
750	C5	F3-2	.. ..	.....
750	500	F1-3	.. ..	.....
1000	C1	F1-4	F7-68	R2-4
1000	C5	F1-5	.....	R2-5
1500	C1	F1-6	F7-72	R2-6
1500	C5	F1-7	.. ..	R2-7
1500	187 and 375	F1-8	.. ..	.....
2000	C1	F1-9	F7-75	R2-9
2000	C5	F1-10	.. ..	R2-10
2000	1500	F1-11	.. ..	.....
2000	250 and 500	F3-11	.. ..	.....
2500	C1	F7-78	.. ..	R2-12
2500	C1	F7-82	.. ..	R2-13
2500	C2	F1-12	.. ..	R2-14
2500	C3	.. ..	.. ..	.....
3500	C5	.. ..	.. ..	.....
2500	500	F1-15	.. ..	.....
2500	625	F1-16	.. ..	R2-18
3000	C1	F1-17	.. ..	R2-19
3500	C5	.. ..	F7-85	.....
5000	C1	F1-19	F7-90	.....
5000	C3	F1-20	.. ..	R2-22
5000	C5	F1-21	.. ..	R2-23
7500	C1	.. ..	.. ..	.....
10K	C1	F1-23	F7-96	R2-25
10K	C2	F1-24	.. ..	.....
10K	C5	F1-25	.. ..	R2-27
15K	5K and 10K	F1-26	.. ..	.....
25K	C1	F1-27	.. ..	R2-29
35K	C1	F1-28	.. ..	R2-30

Max. Resist.	Taper or Tap	Front Unit	Rear Unit
50K	C1	F1-29	R2-31
75K	C1	F1-30	R2-32
100K	C1	F1-31	R2-33
125K	C1	F1-32	R2-34
200K	C1	F1-33	R2-35
250K	C1	F1-34	R2-36
250K	C2	F1-35	R2-37
250K	C4	.. ..	R4-37
250K	C5	F1-37	R2-38
250K	75K	F3-37	.....
330K	66K	.. ..	R2-40
350K	C2	F1-39	R2-41
500K	C1	F1-40	R2-42
500K	C2	F1-41	R2-42
500K	C4	F1-42	R2-42
500K	250K	F3-42	R4-42
500K	100K	F1-44	R2-44
500K	150K	.. ..	R2-45
500K	250K	.. ..	R2-46
500K	50K	F1-47	R2-47
500K	150K	.. ..	R2-48
750K	C7	F1-49	.....
850K	C1	F1-50	.....
1 meg.	C1	F1-51	R2-51
1 meg.	C2	F1-52	R2-52
1 meg.	C3	F1-53	R2-53
1 meg.	C4	F1-54	R2-54
1 meg.	C7	F1-55	.....
1 meg.	500K	.. ..	R2-56
1 meg.	200K	.. ..	R2-57
1 meg.	250K	.. ..	R2-58
1 meg.	300K	F1-59	R2-59
1 meg.	500K	.. ..	R2-60
1 meg.	100K	.. ..	R2-61
1 meg.	300K	.. ..	R2-62
1 meg.	200K and 500K	F1-63	.....
1 1/2 meg.	C1	F1-64	R2-64
1 1/2 meg.	C7	F1-65	.....
1 1/2 meg.	250K and 500K	.. ..	R2-66
2 megs.	C1	F1-67	R2-67
2 megs.	C2	F1-68	R2-68
2 megs.	C4	F1-69	.....
2 megs.	C5	.. ..	R2-70
2 megs.	C7	F1-71	.....
2 megs.	1 meg.	.. ..	R2-72
2 megs.	400K	F1-73	R2-73
2 megs.	200K	F1-74	R2-74
2 megs.	600K	.. ..	R4-74
2 megs.	1 meg.	F1-75	R2-75
2 1/2 megs.	C1	F1-76	R2-76
2 1/2 megs.	C7	F1-77	R2-77
3 megs.	C1	F1-78	R2-78
3 megs.	C2	F1-79	R2-79
3 megs.	1 1/2 meg.	.. ..	R2-80
3 megs.	900K	F1-81	R2-81
4 megs.	C7	F1-82	.....
5 megs.	C7	F1-83	R2-83
5 megs.	C3	.. ..	R2-84

#### FASTATCH DUAL WIREWOUND FRONT UNIT

The units are constructed in the same style as the carbon front units. Shaft 1/4" diam., 2 1/16" long from mtg. surface. Design is identical to carbon front units. Control is rated full 5 watts, wirewound, 1 1/8" diam. — 3/16" deep. All units are linear taper.



## CONTROLS (Cont'd)

### FASTATCH® DUAL CONTROL LAB KITS

FR-22A Kit — For the experimental or prototype lab. Contains the 11 most popular front values, 11 most popular rear values, and an assortment of needed switches and bushing adaptors to provide needed dual concentric controls. This assortment provides for approximately 80% of current needs.



List Price \$45.85

### RADIOHM® SINGLE CONTROL LAB KIT

BB Kit — Again for the experimental or prototype lab. Contains 22 controls of the 12 most needed values for single controls. Exact contents as listed.

Ohms Resist.	Taper	Catalog No.	Quantity
½ Meg	C-2	B-60	4
1 Meg	C-2	B-70	4
5,000	C-1	B-10	2
50,000	C-1	B-31	2
100K	C-1	B-40	2
1 Meg	C-1	B-69	2
5 Meg	C-1	B-87	1
1,000	C-1	B-5	1
10,000	C-1	B-14	1
2 Meg	C-2	B-76	1
500K	C-1	B-59	1
2 Meg	C-1	B-75	1

List Price \$34.75

### TYPE KB — "FASTATCH" SWITCHES

SPST	5 amps, 125 V.A.C. — 12 amps, 12 V.D.C.	KB-1	4
DPST	5 amps, 125 V.A.C. — 12 amps, 12 V.D.C.	KB-2	2
SPDT	5 amps, 125 V.A.C. — 12 amps, 12 V.D.C.	KB-3	2

### NON-RUBBING CONTACT RADIOHMS®

Model A controls: 1 watt, carbon, 1 1/8" diam. x 1/8" deep, molded phenolic case. Shaft 1/4" diam. — 3 3/8" from mtg. surface, universal fluted mill. Can be made to switch type by addition of K-10, -11, -12 switch covers listed below.

Ohms Max. Resistance	Taper	Catalog Number	Ohms Max. Resistance	Taper	Catalog Number
500	C1	A-100	½ meg.	C1	A-128
1,000	C1	A-101	½ meg.	C2	A-130
2,000	C1	A-102	1 meg.	C1	A-232
5,000	C1	A-105	1 meg.	C2	A-132
10,000	C1	A-108	2 meg.	C1	A-233
25,000	C1	A-115	2 meg.	C2	A-133
50,000	C1	A-118	3 meg.	C1	A-234
50,000	C2	A-119	3 meg.	C2	A-134
100K	C1	A-122	5 meg.	C1	A-249
100K	C2	A-123	5 meg.	C2	A-149
250K	C1	A-227	10 meg.	C1	A-250
250K	C2	A-127	10 meg.	C2	A-150

List Price \$1.65

### MODEL K SWITCH

Line switch for both Model "A" and "V" type controls. Underwriters approved. 3 amps. 125 V.A.C.; 1 amp., 250 V.A.C.; 12 amps. 8 V.D.C.

Type	Catalog No.	List Price
SPST	K-10	\$.65
SPDT	K-11	.85
DPST	K-12	.85

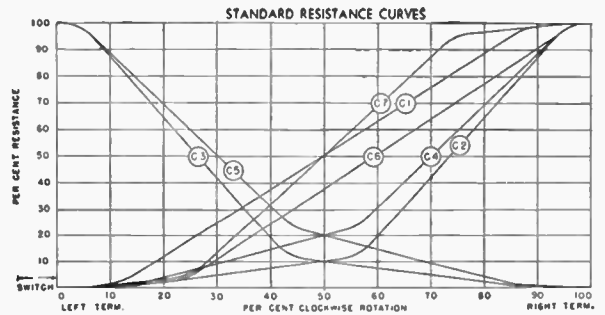
### MODEL "BB" TWIN RADIOHM®

Two Model "B" controls in tandem operated by a single shaft. Specifications same as Model B.

Resistance Front	Taper Front	Resistance Rear	Taper Rear	Catalog Number
10,000	C1	25,000	C1	BB-1001
10,000	C1	50,000	C1	BB-1011
10,000	C2	50,000	C1	BB-101
10,000	C4	25,000	C3	BB-100
50,000	C1	50,000	C1	BB-1051
50,000	C3	500,000	C3	BB-105
100,000	C1	100,000	C1	BB-1021
100,000	C2	100,000	C2	BB-102
250,000	C1	250,000	C1	BB-1031
250,000	C2	250,000	C2	BB-103
500,000	C1	500,000	C1	BB-1041
500,000	C2	500,000	C2	BB-104
1 meg.	C1	1 meg.	C1	BB-108
1 meg.	C2	1 meg.	C2	BB-107
2 meg.	C1	2 meg.	C1	BB-110
5 meg.	C1	5 meg.	C1	BB-112

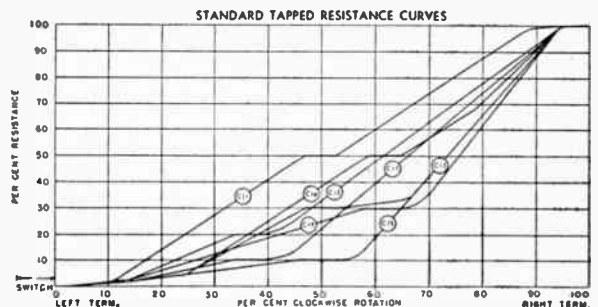
List Price \$2.75

### TAPERS FOR PLAIN TYPE

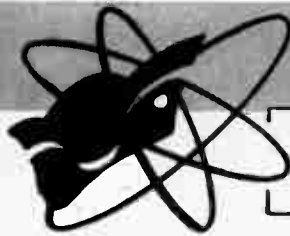


- C-1 Linear, has uniform resistance change from either end.
- C-2 Semi-log (audio) 10% center.
- C-3 Right-hand semi-log. Reverse of C-2. Decreases with clockwise rotation.
- C-4 Modified log with 20% center.
- C-5 Right-hand modified log with 20% center. Reverse of C-4. Decreases with clockwise rotation.
- C-6 Modified log with 40% center.
- C-7 Symmetrical-straight line with slow resistance change of either end.

### TAPERS FOR SWITCH TYPE



- C-11 Taper topped of 50% rotation, 50% resistance.
- C-12 Taper topped of 37 1/2% rotation, 20% resistance.
- C-13 Taper topped of 50% rotation, 30% resistance.
- C-14 Taper topped of 62% rotation, 30% resistance.
- C-15 Taper topped of 50% rotation, 10% resistance.
- C-16 Taper topped of 62% rotation, 50% resistance.
- C-17 Taper topped of 37 1/2% rotation, 10% resistance.



*Continental* wire wound

## POTENTIOMETERS & RHEOSTATS

### Phenolic Housed SINGLE CONTROL

**4 WATT RATING**  
10 to 100,000 Ohms



STYLE  
WCA

Features stability and dependability in unusually high wattage for a wide range of exacting applications in Radio, Instrument, Electric, Electronic and Test Equipment fields.

Proper design assures maximum heat conduction and radiation in resistance ranges from 10 ohms to 100,000 ohms.

May be used as a rheostat or potentiometer depending upon terminal connections selected.

Style WCA: Standard tolerance of  $\pm 10\%$ .

Style GCA: Tolerance is  $\pm 5\%$  exception of 100,000 ohm which is  $\pm 10\%$ . Parts and finishes meet U. S. Navy specifications RE13A492C.

**3 WATT RATING**  
10 to 70,000 Ohms



STYLE  
WCB

All WIRT phenolic housed potentiometers are protected with a dust proof cover. They are nominally rated for maximum power dissipation in an ambient temperature of  $40^\circ\text{C}$ . There is complete absence of electrolytic effects.

A special heat resisting adhesive holds the high quality resistance wire which is carefully space-wound on specially treated laminated phenolic strips.

Style WCB: Standard tolerance of  $\pm 10\%$ .

Style GCB: Tolerance is  $\pm 5\%$ . Parts and finishes meet U.S. Navy specifications RE13A492C.



STYLE  
WCD

### Phenolic Housed DUAL CONTROL

**5 WATT RATING**

Maximum resistance ranges are 25,000 ohms on panel or front section, and 50,000 ohms on side furthest from panel or rear section.

Style WCD: Standard tolerance of  $\pm 10\%$ . Contact arm of front winding grounded to bushing. Rear winding is completely insulated.

Style GCD: Tolerance  $\pm 5\%$ . Both front and rear windings are insulated from mounting bushing.

### SWITCHES

#### For Use with Controls

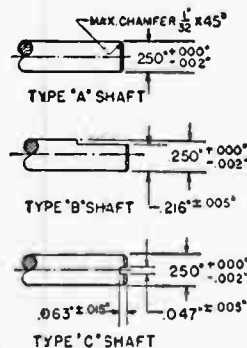


STYLE  
WCS1

3 Amps., 125 volts AC.

Used with controls Style WCA or GCA.

S.P.S.T. Underwriters' approved.



TYPE "A" SHAFT

Round

TYPE "B" SHAFT

Flatted

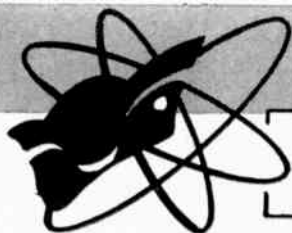
TYPE "C" SHAFT

Screw Driver Slot

Shafts for potentiometers and rheostats can be supplied in A, B, or C.

CONTINENTAL CARBON, Division of The Wirt Co.

For additional technical information, kindly write the factory. Your inquiry relative to "specials" is invited. Kindly list the details of your specifications and requirements.



*Continental wire wound*

## POTENTIOMETERS & RHEOSTATS

### Metal Housed STANDARD SIZE CONTROLS

WIRT, tin plated, steel housed potentiometers and rheostats are rugged and compact. These wire wound controls feature reliability and exceptional stability for a wide variety of exacting applications in the radio, instrument, electronic, electrical and test equipment fields. High quality resistance wire is space wound on specially prepared cores. The phosphor bronze contact arm is

grounded to the metal casing and terminals are hot tin dipped.

Stops to provide fixed resistance can be supplied on several types.

Your inquiry is invited. Kindly state details of your requirements.



**WC801**  
Rheostat

**HOUSING DIMENSIONS:** 1 1/8" dia., 5/8" th.  
**RATING:** 2 watts  
**RESISTANCE RANGE:** 5 to 15,000 ohms with linear winding.

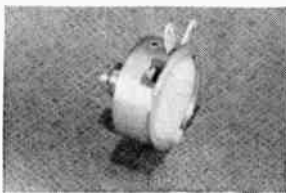
**STANDARD TOLERANCE:** ±15%.

**ROTATING CONTACT:** Grounded to mounting bushing. Can be insulated by use of bushing and washer available.

**SHAFT:** Aluminum, 1/4" diameter, any desired length. Details of three available styles on preceding page.

**MOUNTING BUSHING:** Brass 3/8" — 32 x 1/4" long or 3/8" — 32 x 3/8" long.

**MOUNTING NUT:** Each control equipped with one 1/2" hex. mounting nut.



**WC802**  
Thin  
Potentiometer

**HOUSING DIMENSIONS:** 1 1/8" dia., 5/8" th.  
**RATING:** 2 watts.  
**RESISTANCE RANGE:** 5 to 15,000 ohms linear winding.

**STANDARD TOLERANCE:** ±15%.

**ROTATING CONTACT:** Grounded to mounting bushing. Can be insulated by use of bushing and washer available.

**SHAFT:** Aluminum, 1/4" diameter, any desired length. Details of three available styles on preceding page.

**MOUNTING BUSHING:** 3/8" — 32 x 1/4" long, or 3/8" — 32 x 3/8" long.

**MOUNTING NUT:** Each control equipped with one 1/2" hex. mounting nut.



**WC804**  
Rheostat  
Adjustable from  
front or back.

**HOUSING DIMENSIONS:** 1 1/2" dia., 1/2" th.  
**RATING:** 2 watts.

**RESISTANCE RANGE:** 5 to 15,000 ohms with linear winding.

**STANDARD TOLERANCE:** 15%.

**FIXED RESISTANCE:** Can be supplied with stops in most cases to provide fixed resistance.

Style WC804 has slot in rotor mechanism for screw driver adjustment from either front or back.

### Metal Housed MINIATURE CONTROLS



**WC807**  
Rheostat  
Grounded Rotor

**WC808**  
Rheostat  
Insulated Rotor

\* **WC815**  
Rheostat  
with Terminal  
Back of Panel

**WC817**  
Potentiometer  
Grounded Rotor

**WC818**  
Potentiometer  
Insulated Rotor

**Rating:** 1.5 watts  
**RESISTANCE RANGE:** 5 to 5,000 ohms with linear winding.  
**STANDARD TOLERANCE:** ± 20%.

**FIXED RESISTANCE:** Can be supplied with stops in most cases to provide fixed resistance.  
**ADJUSTMENT:** Slot is provided in rotor mechanism for screw driver adjustment from front or back.

\* This type also available in printed circuit style. Refer to style 816B.



**SW723**  
2 Terminals  
or  
**SW724**  
3 Terminals

**SW725**  
4 Terminals  
or  
**SW726**  
6 Terminals

**S.P.S.T.** Rated at 0.75 Amps. 125 V. AC-DC.  
**S.P.D.T.** Rated at 0.75 Amps. 125 V. AC-DC.  
**D.P.S.T.** Rated at 0.50 Amps. 125 V. AC-DC.  
**D.P.D.T.** Rated at 0.50 Amps. 125 V. AC-DC.

The radio, signal, phonograph, instrument and automotive industries find innumerable uses for these compact, rugged Wirt Slide Switches. Housings are made of tin plated steel. All contacts and terminals are plated for soldering. Black phenolic material is used for buttons.

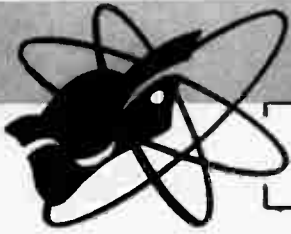
Other colors can be supplied by special arrangement.

### SLIDE SWITCH SHIELD SWS511

Used for terminal protection or electrostatic shielding, Wirt Slide Switch Shields are available for all listed slide switches. The shield is made of cadmium plated steel insulated with fiber.  
UL approved.

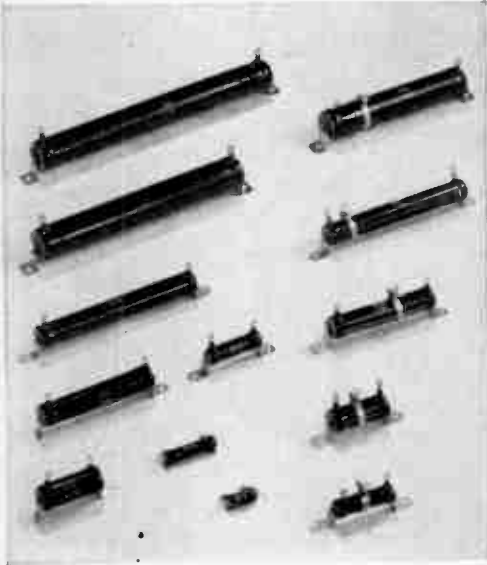
CONTINENTAL CARBON, Division of The Wirt Co.

For additional technical information, kindly write the factory. Your inquiry relative to "specials" is invited. Kindly list the details of your specifications and requirements.



# Continental wire wound

## FIXED & ADJUSTABLE RESISTORS



Fixed taps available.  
Edison type base also available.

### ADJUSTABLE RESISTORS

Adjustable WIRT POWER resistors are made under the same specifications as the fixed. A portion of the winding is exposed longitudinally to which a slider contact band is attached. A screw-driver adjustable band is supplied with each resistor to make contact at any point of the exposed portion. Ratings are based on the entire resistance from terminal to terminal and rated proportionately to the point of the adjusting contact band. Loosen the band free of the winding before moving to avoid abrasion of the resistance wire.

### WIRE WOUND FLAT RESISTORS

Construction is of evenly spaced nickel alloy resistance wire wound on a special molded rectangular ceramic base. Terminal leads are permanently affixed by a special Patent Applied For process to insure positive and everlasting contact. These resistors are coated with a tough moisture resistant high temperature material. Center taps and other positioned taps can be furnished on special order to provide a wide assortment of styles in various ratings. Standard tolerance is  $\pm 10\%$ ; however, other tolerances are available. Resistors are permanently marked with resistance, ratings and manufacturers designation. Maximum surface temperature is  $250^{\circ}\text{C}$  in an ambient of  $40^{\circ}\text{C}$  at full rated load.

WIRT POWER resistors are produced to exacting quality standards for maximum reliability and long trouble-free operation. WIRT POWER resistors are rated for hot spot temperature of  $515^{\circ}\text{F}$  in an ambient of  $40^{\circ}\text{C}$  ( $104^{\circ}\text{F}$ ). They are available from stock in all standard RETMA resistance values.

### FIXED RESISTORS

**WINDINGS** — A low temperature coefficient resistance wire is precisely space wound on a low loss ceramic core. Maximum wire size is used consistent with wattage ratings and resistance.

**TERMINALS** — Bands are securely clamped and permanently secured to the winding and core to insure continuity of resistance. Wire terminals are affixed to all sizes of 10 watts and below unless expressly omitted.

**COATING** — Each resistor winding is protected with a coat of vitreous enamel fused on at high temperature to insure a moisture-proof, acid resistant barrier and rapid dissipation of heat.

**MARKING** — Each resistor is marked with resistance wattage and manufacturers designation. Special markings available if desired.

TABLE OF SIZES AND RATINGS (FIXED)

Code No.	Wattage	Length	S I Z E		RESISTANCE RANGE	
			O.D.	I.D.	Min.	Max.
VFR-1	5	1"	3/8"	1/4"	1 Ohm	10 K
VFR-3	10	1 3/4"	3/8"	1/4"	1 Ohm	25 K
VFR-4	20	2"	1/2"	3/8"	1 Ohm	50 K
VFR-7	25	2"	3/4"	1/2"	1 Ohm	100 K
VFR-12	50	4"	3/4"	1/2"	1 Ohm	250 K
VFR-15	75	6"	3/4"	1/2"	1 Ohm	250 K
VFR-19	100	6 1/2"	1 1/8"	3/4"	1 Ohm	100 K
VFR-22	160	8 1/2"	1 1/8"	3/4"	1 Ohm	100 K
VFR-23	200	10 1/2"	1 1/8"	3/4"	1 Ohm	100 K

STANDARD TOLERANCE:  $\pm 5\%$ . Other tolerances and special resistance values available on special order.

TABLE OF SIZES AND RATINGS (ADJUSTABLE)

Code No.	Wattage	Length	S I Z E		RESISTANCE RANGE	
			O.D.	I.D.	Min.	Max.
VAR-3	10	1 3/4"	3/8"	1/4"	1 Ohm	10 K
VAR-4	20	2"	1/2"	3/8"	1 Ohm	25 K
VAR-7	25	2"	3/4"	1/2"	1 Ohm	25 K
VAR-12	50	4"	3/4"	1/2"	1 Ohm	100 K
VAR-15	75	6"	3/4"	1/2"	1 Ohm	100 K
VAR-19	100	6 1/2"	1 1/8"	3/4"	1 Ohm	100 K
VAR-22	160	8 1/2"	1 1/8"	3/4"	1 Ohm	100 K
VAR-23	200	10 1/2"	1 1/8"	3/4"	1 Ohm	100 K

STANDARD TOLERANCE:  $\pm 5\%$ . Other tolerances and special resistance values available on special order. Phenolic knob type slider bands also available on any of the above sizes.

Special fixed tapped resistors also available on special order. Send us your complete specifications and we will advise.

Low temperature Phenocote resistors also available in above styles upon application.

TABLE OF SIZES AND RATINGS

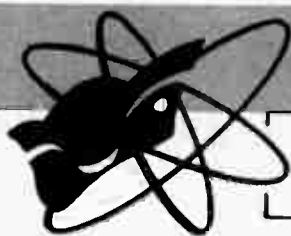
Code No.	Wattage	Length	S I Z E		Min.	RESISTANCE Max.
			Width	Depth		
CS-151	3	1 3/8"	1/2"	1/4"	3 Ohms	4500 Ohms
CS-152	5	1 23/32"	1/2"	1/4"	3 Ohms	8500 Ohms
CS-1	7	2 1/8"	1/2"	1/4"	3 Ohms	9500 Ohms
CS-2	10	2 1/8"	7/8"	1/4"	3 Ohms	15 K
CS-25	15	2 3/8"	7/8"	1/4"	3 Ohms	22 K
CS-3	20	3 1/8"	7/8"	1/4"	3 Ohms	25 K

Lead spacing on above is 1 3/8" on CS-151; 1 1/8" on CS-152; 1 1/8" on CS-1 and CS-2; 2 1/8" on CS-25 and 2 3/8" on CS-3.

Your inquiry is invited. Kindly list details of your requirements.

CONTINENTAL CARBON, Division of The Wirt Co.

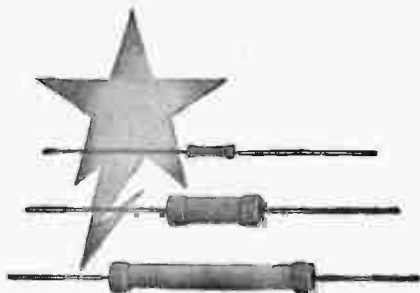
For additional technical information, kindly write the factory. Your inquiry relative to "specials" is invited. Kindly list the details of your specifications and requirements.



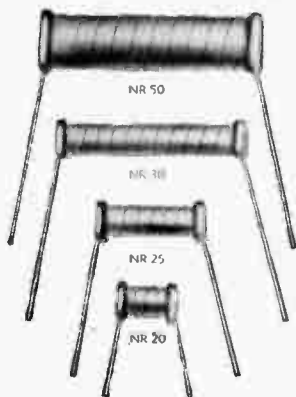
**Continental**

## METAL FILM RESISTORS

### NOBLETTE TYPE NA



### NOBLELOY TYPE NR



### DESIGN and CONSTRUCTION

A metallic resistance element is deposited on a low loss ceramic carrier using a pyrochemic process developed and patented by Continental. A layer of vitreous enamel protects metal film against unusual atmospheric conditions. They are calibrated to value by means of spiralled grooves cut into the film to increase the resistance path. The NOBLETTE with its axial leads and the NOBLELOY with radial leads permits the use of metal film resistors in a wider range of application.

Notable quantities of these metal film resistors are low inductance—initial accuracy and excellent resistance stability under adverse operating conditions.

Both types are stocked in standard tolerances of  $\pm 1\%$ . Also available in  $\frac{1}{2}\%$ , 2%, and 5%—prices furnished on request. When ordering, specify quantity, resistance, tolerance and type or wattage.

Type	Wattage	Resistance Range	Voltage
NA15	$\frac{1}{2}$ watt	1 ohm to 1 megohm	350
NA25	1 watt	1 ohm to 5 megohms	500
NA30	2 watts	2 ohms to 10 megohms	750
No. 20 AWG Tinned Copper Axial Leads, $1\frac{1}{2}$ " long.			
NR20	$\frac{1}{2}$ watt	1 ohm to 3 megohms	350
NR25	1 watt	1 ohm to 5 megohms	500
NR30	2 watts	2 ohms to 10 megohms	750
NR50	5 watts	3 ohms to 15 megohms	1000
No. 18 AWG Tinned Copper Radial Leads, $1\frac{1}{2}$ " long.			

## WIRE WOUND RESISTORS *Low Power Types*

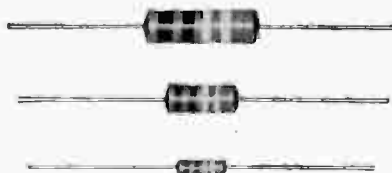
Resistance Wire Molded in Bakelite

### Axial Lead — Insulated

For low power application. Composed with a minimum of .0015 inch wire that is precision wound for true parallel winding to prevent shorting at turns. Terminals are securely bonded in permanent connections to the winding. These resistors are moisture resistant and recommended for circuits requiring very low resistance, which is not ordinarily available in composition type.

Type	Wattage
WM 10	$\frac{1}{3}$ watt
WM 20	$\frac{1}{2}$ watt
WM 25	1 watt

### Color Coded — RETMA Standard

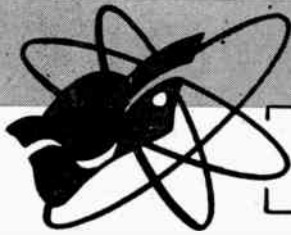


Resistance to Range
.47 ohms to 10 ohms
.47 ohms to 10 ohms
.47 ohms to 10 ohms

Available in  
 $\pm 5\%$  to  $\pm 10\%$   
Tolerances.

CONTINENTAL CARBON, Division of The Wirt Co.

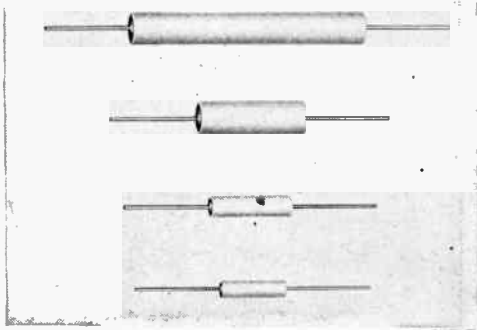
For additional technical information, kindly write the factory. Your inquiry relative to "specials" is invited. Kindly list the details of your specifications and requirements.



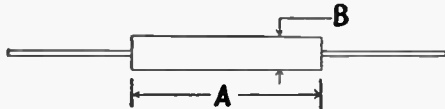
Continental

## CARBON FILM RESISTORS

HERMETICALLY SEALED . . . CERAMIC ENCASED . . .  $\pm 1\%$  STANDARD



MECHANICAL CHARACTERISTICS



Type	Dimensions			
	A		B	
CFH 10	.625"	$\pm .031$ "	.187"	$+.031$ "
CFH 15	.687"	$+.062$ "	.250"	$\pm .031$ "
		$-.000$ "		
CFH 25	1.062"	$\pm .062$ "	.375"	$+.062$ "
CFH 30	2.156"	$+.093$ "	.375"	$+.062$ "
		$-.031$ "		$-.031$ "

This new style precision resistor is highly recommended for use in test equipment, meters and hi-frequency circuits. Improved construction features a layer of pure carbon deposited on a ceramic rod. Silver plated end-caps are expansion fitted for positive contact. The entire unit is encased in a non-hygroscopic ceramic tube and sealed with high temperature solder for greatly improved stability characteristics.

### Design Features

- Conform to MIL-R-10509B specifications.
- Operates at 100% rated load at 70° C.
- Hermetically sealed to protect against extreme atmospheric conditions.
- Fully insulated and suited for snap-in component clips.
- Each unit is marked with resistance, tolerance and brand.
- Tolerances of  $\pm 2\%$  or  $\pm 5\%$  available on special order.

### ELECTRICAL CHARACTERISTICS

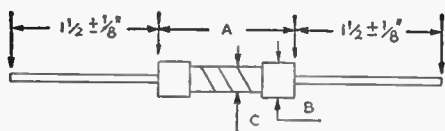
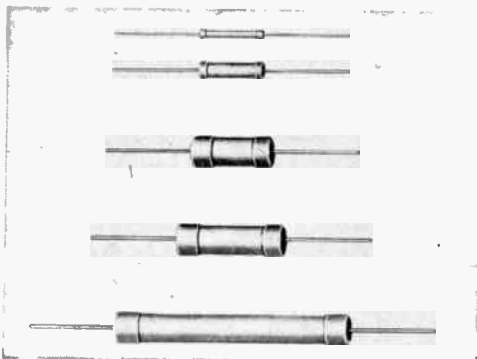
TEST METHODS PER MIL-R-10509B	% CHANGE			
	CFH 10	CFH 15	CFH 25	CFH 30
Rated Load, 95% R.H.				
250 Hours	1	1	1	1
Rated Load, 25° C. Ambient, 500 Hours	1	1	1	1
Temperature Cycling	$.5 \pm 1$	$.5 \pm 1$	$.5 + 1$	$.5 + 1$
Low Temperature Exposure	.5	.5	.5	.5
Short Time Overload	.3	.3	.3	.3
Effect of Soldering	.1	.1	.1	.1

Type	Rating Watts	Continuous D. C. Volts	Resistance	
			Min.	Max.
*CFH 10	1/4	300	10	500K
CFH 15	1/2	350	10	1 Meg
CFH 25	1	500	50	10 Meg
CFH 30	2	1000	100	20 Meg

\* #22 AWG Tinned Copper Leads, all others #20 AWG.

## COATED TYPES $\pm 1\%$ STANDARD

- ★ Low Cost Precision
  - ★  $\pm 1\%$  Standard Tolerance
  - ★ 1/4, 1/2, 1 and 2 Watt Sizes
  - ★ Meet MIL-R-10509 Specifications
- A low cost precision resistor, highly recommended for test equipment, meters or hi-frequency circuits. Design and construction feature a layer of pure carbon particles deposited on a ceramic rod. Silver plated end-caps are expansion fitted over silver contact bands for good electrical and positive contact. The terminals will withstand a 5 pound pull. Tinned copper leads are securely riveted to caps. Furnished  $\pm 1\%$  standard tolerance.  $\pm 2\%$  and  $\pm 5\%$  tolerances are available.



MECHANICAL CHARACTERISTICS

Type	Dimensions		
	A	B	C
*CF 10	1/2"	$\pm 1/16$ "	3/32" $\pm .010$ "
CF 15	3/8"	$\pm 1/16$ "	3/32" $\pm .010$ "
CF 20	1/2"	$\pm 1/16$ "	3/32" $\pm .010$ "
CF 25	3/4"	$\pm 1/16$ "	3/32" $\pm .010$ "
CF 30	2 1/4"	$\pm 1/16$ "	3/32" $\pm .010$ "

\*No. 22AWG Tinned Copper Leads, all others No. 20 AWG.

### ELECTRICAL CHARACTERISTICS

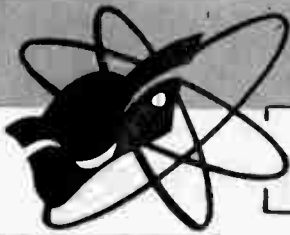
TEST METHOD PER MIL-R-10509	% CHANGE			
	CF10	CF15	CF20	CF25
Rated Load, 95% R.H., 250 hours	3	3	3	3
Rated Load, 40° Ambient, 1000 hours	1	1	1	1
Temperature Cycling	.5	.5	.5	.5
Low Temperature Exposure	.3	.3	.3	.3
Short Time Overload	.1	.1	.1	.1
Effect of Soldering	.1	.1	.1	.1

Type	Rating Watts	Continuous D. C. Volts	Resistance	
			Min.	Max.
CF 10	1/4	300	5	1 Meg
CF 15	1/2	350	10	2 Meg
CF 20	1/2	350	10	3 Meg
CF 25	1	500	10	5 Meg
CF 30	2	1000	30	10 Meg

CONTINENTAL CARBON, Division of The Wirt Co.

For additional technical information, kindly write the factory. Your inquiry relative to "specials" is invited. Kindly list the details of your specifications and requirements.





*Continental*

**Auto Radio**

**SUPPRESSORS & CONDENSERS**

**DISTRIBUTOR and SPARKPLUG SUPPRESSORS**

*Easy to Install . . . Fit All Cars, Including 12-Volt*

Continental Suppressors are exactly engineered to effectively remove radio noise from ignition spark discharge at the plugs and high-tension distributor. A scientifically determined 10,000 ohm resistance element is encased in a well insulated molded phenolic case. Corrosion resistant brass contact terminals are spring loaded and expansion fitted in the mold to compensate for thermal expansion and insure positive and insure positive contact with long trouble free operation.

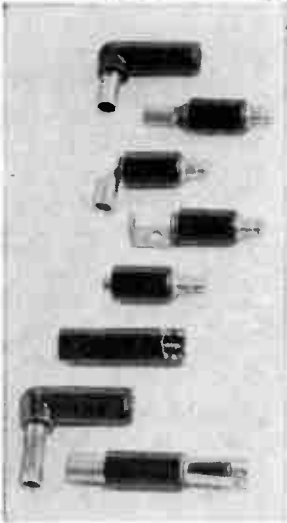
**FIELD PROVEN:** Engine efficiency is not noticeably impaired when subjected to a 25,000 mile test. The average change in resistance is less than 1% over a period of 25,000 miles.

**HIGH QUALITY:** Types C11, T 24 and S20A meet the requirements of specification MIL-S-12944 (Military).

**INSTALLATION:**

- S20A** Insert one end of sparkplug cable into screw end of suppressor and snap brass terminal end on sparkplug, 90 degree angle mounting.
- S19** Snap cable end onto suppressor nut and snap insert terminal of suppressor onto spark plug, vertical mounting.
- S21** Same as S 19, except 90 degrees angle mounted.
- S23** For removable sparkplug nut type. Unscrew sparkplug nut, place U-bracket of suppressor terminal on sparkplug stud and replace nut. Snap on cable to other suppressor terminal.
- S27** Remove sparkplug nut, thread on suppressor and snap on cable. Vertical mounting.
- C11** Cut the distributor cable and insert each end into suppressor with twist action.
- T24** Insert one end of distributor cable into screw end of suppressor. Insert brass insert into distributor cap-well with snap action, 90 degree angle mounting.
- T20** Insert brass insert into well of distributor and snap-in cable to other end of suppressor.

Net Weight each Suppressor approximately 0.3 oz.

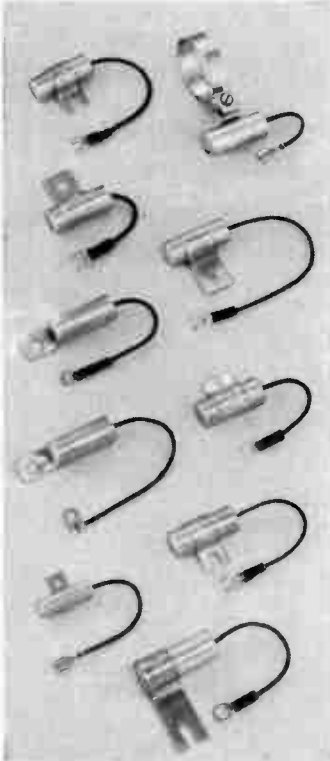


*Continental* **CONDENSERS**

**FIT ALL CARS . . . QUALITY PROVEN . . . GUARANTEED LONG LIFE**

Continental replacement condensers eliminate radio interference caused by components in the automobile electrical system. Highest quality construction features moisture proof protection of windings in cadmium plated housing. Brackets and terminals are also plated to resist corrosion. Insulated leads are firmly fixed to terminals and winding. These condensers are guaranteed to give long and dependable service under all conditions.

CODE NO.	APPLICATION	CAP. MFD.	LENGTH x DIA. IN INCHES	NET WT. IN OZ.
GB05	Generator, Universal type	.5	1 5/8 x 5/8	1
GB05A	Oil Gauge, Mercury 1950-1956	.5	1 5/8 x 5/8	1.5
GB05B	Voltage Regulator Ford 1950-1957 Mercury 1947-1956	.5	1 5/8 x 5/8	1
GB05C	Voltage Regulator Lincoln 1951-1957 Mercury 1957	.5	1 5/8 x 5/8	1
GB05D	Ignition Coil Chrysler	.5	1 5/8 x 5/8	1
GB05E	Voltage Regulator Chrysler	.5	1 5/8 x 5/8	1
GB05H	Generator Chrysler	.5	1 5/8 x 5/8	1
GB01	Fuel Gauge Ford 1952-1956 Mercury 1953-1956	.1	1 1/4 x 3/8	.5
GB025	Universal	.25	1 5/8 x 5/8	1
GB10	Generator Ford 1951-1957	1.0	1 7/8 x 3/4	1.5

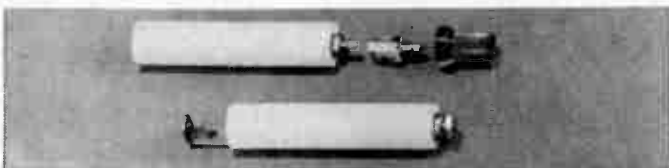


**OIL BURNER SUPPRESSORS**

Eliminate uncomfortable radio-TV interference due to discharge action of oil burner igniting coil action. Easy to connect.

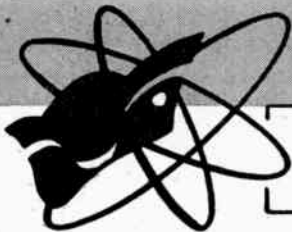
Standard Type OB15 at far left, has Rajah terminal. Timken Type OB15A.

Other types available.



**CONTINENTAL CARBON, Division of The Wirt Co.**

For additional technical information, kindly write the factory. Your inquiry relative to "specials" is invited. Kindly list the details of your specifications and requirements.



**Continental**

## CARBOMITE RESISTORS

Continental's "Carbomite" resistors meet all requirements of JAN or MIL-R-11 specifications covering fixed composition resistors, including characteristic G for 70° C. operating temperature. These resistors being fully insulated can be mounted

side by side without shorting. They are recommended where space is at a premium and when reliable stability is required for severe service.

The tinned copper terminals are coated with a heavy layer of tin composition for instant soldering.

Type	Wattage	Rating
M20	½ watt	70°C Amb. 350 Volts Max.
M25	1 watt	70°C Amb. 500 Volts Max.
M30	2 watt	70°C Amb. 1000 Volts Max.

### BULK PACKAGE TYPE M

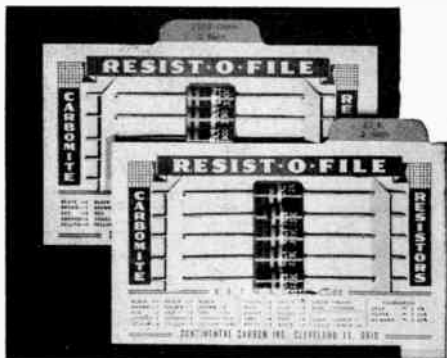
Conveniently packaged in 50 per box in bulk. When ordering, specify quantity, resistance, tolerance and type of wattage.

### CARD MOUNTED TYPE MR

Five Type M resistors of one resistance, type and tolerance are mounted on a 3 x 5 index card, 10 cards per package. When ordering specify quantity, resistance, tolerance and type or wattage.

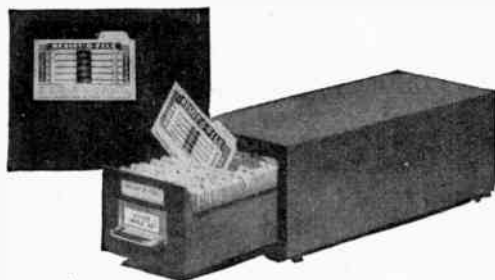
Type	Quantity
MR20 (½ watt)	per 5-Pac card.....
MR25 (1 watt)	per 5-Pac card.....
MR30 (2 watt)	per 5-Pac card.....

Order out a trial set from your Electronic Parts Distributor.



Identified, staggered-tab file system adds to your convenience.

### RESIST-O-FILES TYPE MRC



Code No.	Quantity
MRC 20	(40 cards)
MRC 25	(40 cards)
MRC 30	(30 cards)

Five Type M resistors are mounted on a 3 x 5 index card and arranged in RESIST-O-FILES for ½ watt, 1 watt or 2 watt, all 10% tolerance.

Code MRC20, ½ watt (200 resistors), 1 card each with values of: 10 ohms, 15, 22, 33, 47, 68, 100, 150, 220, 330, 470, 680, 1000, 1500, 2200, 3300, 4700, 6800, 10K, 15K, 22K, 33K, 47K, 68K, 150K, 220K, 330K, 1.5 meg., 2.2 meg., 3.3 meg., 4.7 meg., 6.8 meg. and 10 meg., and 2 cards each of 100K, 470K and 1 meg.

Code MRC25, 1 watt (200 resistors), the same values and quantities as MRC 20 assortment.

Code MRC 30, 2 watt (150 resistors), 1 card each with values of: 10 ohms, 15, 22, 47, 68, 100, 150, 220, 330, 470, 680, 1000, 1500, 2200, 3300, 4700, 6800, 10K, 15K, 22K, 33K, 47K, 68K, 100K, 150K, 220K, 330K, 470K, 680K, and 1 meg.

Kindly order by quantity and code number.

### POPULAR 5-PAC DISPLAY 10% Carbomite Resistors



To facilitate stocking the numerous popular values of resistors, Continental offers the last word in a handy visual self-serve inventory stock. Each card is identified with a color coded file tab showing type, value and rating. A metal cabinet is available to house a selection of up to 40 cards.

### COLOR CODE INDICATOR



Resistor values easily read with circular slide chart. Band identification printed on back.

All package arrangements are available from your local distributor exclusively.

CONTINENTAL CARBON, Division of The Wirt Co.

# BE RIGHT WITH OHMITE

RHEOSTATS  
RESISTORS  
SWITCHES  
CHOKES

## VITREOUS ENAMELED RHEOSTATS

### CLOSE CONTROL RHEOSTATS

Underwriters' Laboratories Reexamination Service Listed

For many years the Ohmite line of ten wirewound, vitreous enameled rheostats, ranging from 25 to 1000 watts in size, has been the most extensive available to industry. Six of the most popular sizes have been carried in stock by Ohmite Distributors and at our factory. Now, the other four sizes, the Model G, 75 watts; Model P, 225 watts; Model T, 750 watts; and the Model U, 1000 watts are available from stock, thus making the entire line of ten sizes quickly obtainable for design and production needs and for emergencies.

**FEATURES OF CONSTRUCTION:** Ohmite rheostats are designed to produce permanently smooth, close control. The construction is all ceramic and metal; there is nothing to smoke, char, shrink, or shift. All models have insulated shafts with provision to keep the rheostat from turning on the panel. The resistance wire is wound over a solid ceramic core. Each turn is a separate resistance step and is locked against shifting by vitreous enamel. The core and base are also bonded by vitreous enamel. The pivoted universal-action-mounted contact brush is of copper-graphite or silver-graphite on the heavier current rheostats. It rides upon a large flat surface and assures perfect contact without wear on the wire. Pressure

at the contact and at the center lead are independent. The construction is patented under U. S. Patent No. 1,942,495 and Re-issue 19607; other patents pending. Ohmite Rheostat Models H, J, K, L, and N, all marked Series A, are listed under the Underwriters' Laboratories Reexamination Service.

**RATING:** The current carrying capacities shown in the tables are for use in *free air*; when units are enclosed, these currents should be reduced possibly as much as 30% to 50%, depending upon the degree of ventilation. The rated current will cause the rheostat to dissipate its rated wattage when the full resistance is in the circuit.



Model "H"

Models "J", "G" and "K"

### MODEL "H", Series A - 25 WATT

Diameter 1 5/8" — Depth behind panel 1 3/8" — Shaft 1/4" diameter. Rotation 295° — Mounting for panels up to 1/4" by means of 3/8"-32 Bushing and Hex. Nut — Non-turn lug requires 7/8" hole 1/2" below center of shaft — Stock No. 5150 Knob Supplied.

Stock No.	Total Ohms	Max. Amps.	Net Price	Stock No.	Total Ohms	Max. Amps.	Net Price
0140	1	5.000	\$4.62	0152	125	.445	\$4.11
0141	2	3.540	4.11	0153	175	.375	4.11
0142	3	2.880	4.11	0154	250	.316	4.11
0143	6	2.040	4.11	0155	350	.267	4.11
0144	8	1.770	4.11	0156	500	.222	4.11
0145	10	1.580	4.11	0157	750	.182	4.11
0146	15	1.290	4.11	0158	1,000	.155	4.62
0147	25	1.000	4.11	0159	1,500	.129	4.62
0148	35	.845	4.11	0160	2,500	.100	4.62
0149	50	.707	4.11	0161	3,500	.084	4.86
0150	75	.575	4.11	0162	5,000	.070	4.86
0151	100	.500	4.11				

### MODEL "G" - 75 WATT

Diameter 2 3/4" — Depth behind panel 1 3/4" — Shaft 1/4" Diameter. Rotation 300° — Mounting for panels up to 1/4" by means of 3/8"-32 Bushing and Hex. Nut — Non-turn lug requires 7/8" hole 1/2" below center of shaft — Stock No. 5150 Knob Supplied.

Stock No.	Total Ohms	Max. Amps.	Net Price	Stock No.	Total Ohms	Max. Amps.	Net Price
1100	0.5	12.300	\$6.96	1112	200	.612	\$6.42
1101	1	8.660	6.96	1113	300	.500	6.42
1102	2	6.120	6.96	1114	400	.433	6.42
1103	3	5.000	6.96	1115	500	.388	6.42
1104	5	3.880	6.42	1116	750	.316	6.96
1105	7.5	3.160	6.42	1117	1,000	.274	6.96
1106	10	2.740	6.42	1118	1,500	.224	6.96
1107	16	2.170	6.42	1119	2,000	.194	6.96
1108	25	1.730	6.42	1120	2,500	.173	6.96
1109	50	1.230	6.42	1121	5,000	.123	7.44
1110	75	1.000	6.42	1122	7,500	.100	7.98
1111	100	.866	6.42	1123	10,000	.087	7.98

### MODEL "J", Series A - 50 WATT

Diameter 2 5/8" — Depth behind panel 1 3/8" — Shaft 1/4" Diameter. Rotation 300° — Mounting for panels up to 1/4" by means of 3/8"-32 Bushing and Hex. Nut — Non-turn lug requires 7/8" hole 1/2" below center of shaft — Stock No. 5150 Knob Supplied.

Stock No.	Total Ohms	Max. Amps.	Net Price	Stock No.	Total Ohms	Max. Amps.	Net Price
0308	0.5	10.000	\$5.16	0321	150	.575	\$4.62
0309	1	7.070	5.16	0322	225	.470	4.62
0310	2	5.000	5.16	0323	300	.408	4.62
0311	4	3.530	4.62	0324	500	.316	4.62
0312	6	2.880	4.62	0325	800	.250	4.86
0313	8	2.500	4.62	0326	1,000	.224	4.86
0314	12	2.040	4.62	0327	1,600	.176	4.86
0315	16	1.760	4.62	0328	2,500	.141	4.86
0316	22	1.500	4.62	0329	3,500	.119	5.16
0317	35	1.190	4.62	0330	5,000	.100	5.16
0318	50	1.000	4.62	0331	8,000	.079	5.16
0319	80	.790	4.62	0332	10,000	.070	5.16
0320	125	.630					

### MODEL "K", Series A - 100 WATT

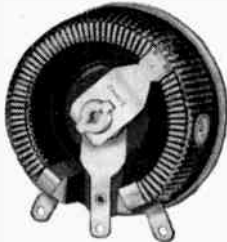
Diameter 3 1/8" — Depth behind panel 1 3/4" — Shaft 1/4" Diameter. Rotation 300° — Mounting for panels up to 1/4" by means of 3/8"-32 Bushing and Hex. Nut — Non-turn lug requires 7/8" hole 1/2" below center of shaft — Stock No. 5150 Knob Supplied.

Stock No.	Total Ohms	Max. Amps.	Net Price	Stock No.	Total Ohms	Max. Amps.	Net Price
0440	0.5	14.100	\$7.74	0452	200	.707	\$7.23
0441	1	10.000	7.74	0453	300	.575	7.23
0442	2	7.070	7.74	0454	400	.500	7.23
0443	3	5.750	7.74	0455	500	.447	7.23
0444	5	4.470	7.74	0456	750	.365	7.23
0445	7.5	3.650	7.23	0457	1,000	.316	7.74
0446	10	3.160	7.23	0458	1,500	.258	7.74
0447	16	2.500	7.23	0459	2,000	.224	7.74
0448	25	2.000	7.23	0460	2,500	.200	7.74
0449	50	1.410	7.23	0461	5,000	.141	8.22
0450	75	1.150	7.23	0462	7,500	.115	8.76
0451	100	1.000	7.23	0463	10,000	.100	9.24

BE RIGHT WITH  
**OHMITE** ★

RHEOSTATS  
 RESISTORS  
 SWITCHES  
 CHOKES

**VITREOUS ENAMELED RHEOSTATS**



Model "L"

**MODEL "L", Series A - 150 WATT**

Diameter 4"—Depth behind panel 2"—Shaft 1/4" Diameter. Rotation 300°—Mounting for panels up to 1/4", 3/8"-32 Bushing and Hex. Nut or two 10-32 x 3/4" flat head screws, mounting centers 7/8" each side of center of shaft on line perpendicular to center terminal.—Stock No. 5150 Knob Supplied.

Stock No.	Total Ohms	Max. Amps.	Net Price	Stock No.	Total Ohms	Max. Amps.	Net Price
0524	0.5	17.300	\$9.78	0537	150	1.000	\$ 9.24
0525	1	12.300	9.78	0538	200	.865	9.24
0526	2	8.650	9.78	0539	250	.775	9.24
0527	3	7.070	9.78	0540	350	.655	9.24
0528	5	5.480	9.78	0541	500	.548	9.24
0529	7.5	4.470	9.78	0542	750	.447	9.78
0530	10	3.880	9.24	0543	1,250	.346	9.78
0531	15	3.613	9.24	0544	1,800	.288	10.32
0532	25	2.450	9.24	0545	2,250	.259	10.32
0533	35	2.070	9.24	0546	3,000	.224	10.32
0534	50	1.735	9.24	0547	4,500	.182	10.80
0535	75	1.415	9.24	0548	7,500	.141	11.34
0536	100	1.225	9.24	0549	10,000	.122	12.36

**MODEL "P" - 225 WATT**

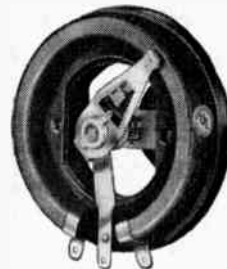
Diameter 5"—Depth behind panel 2 1/8"—Shaft 3/8" Diameter. Rotation 310°—Mounting for panels up to 1/4", two 1/4"-20 x 1 1/2" flat head screws, mounting centers 7/8" each side of center of shaft on center line of cross-bar.—Stock No. 5105 Knob Supplied. Three 8-32 Terminal Screws, Nuts and Washers are supplied.

Stock No.	Total Ohms	Max. Amps.	Net Price	Stock No.	Total Ohms	Max. Amps.	Net Price
1250	1	15.000	\$12.84	1261	100	1.500	\$12.84
1251	2	10.600	12.84	1262	150	1.220	12.84
1252	3	8.660	12.84	1263	200	1.060	12.84
1253	4	7.500	12.84	1264	300	.866	12.84
1254	5	6.710	12.84	1265	400	.750	12.84
1255	7.5	5.490	12.84	1266	700	.567	12.84
1256	10	4.740	12.84	1267	900	.500	12.84
1257	15	3.870	12.84	1268	1,200	.433	12.84
1258	25	3.000	12.84	1269	1,500	.387	12.84
1259	50	2.120	12.84	1270	1,750	.358	12.84
1260	75	1.730	12.84	1271	2,500	.300	12.84

**MODEL "N", Series A - 300 WATT**

Diameter 6"—Depth behind panel 2 3/8"—Shaft 3/8" Diameter. Rotation 315°—Mounting for panels up to 1/4", two 1/4"-20 x 1 1/2" flat head screws, mounting centers 1 1/8" each side of center of shaft on center line of cross-bar.—Stock No. 5105 Knob Supplied. Three 8-32 Terminal Screws, Nuts and Washers are supplied.

Stock No.	Total Ohms	Max. Amps.	Net Price	Stock No.	Total Ohms	Max. Amps.	Net Price
0650	1	17.320	\$13.92	0661	100	1.730	\$13.92
0651	2	12.240	13.92	0662	150	1.410	13.92
0652	3	10.000	13.92	0663	200	1.220	13.92
0653	4	8.660	13.92	0664	300	1.000	13.92
0654	5	7.750	13.92	0665	400	.866	13.92
0655	7.5	6.320	13.92	0666	700	.655	13.92
0656	10	5.480	13.92	0667	900	.578	13.92
0657	15	4.470	13.92	0668	1,200	.500	13.92
0658	25	3.460	13.92	0669	1,500	.447	13.92
0659	50	2.450	13.92	0670	1,750	.414	13.92
0660	75	2.000	13.92	0671	2,500	.346	13.92



Models "N" and "R"  
 ("P", "T" and "U" Similar)

**MODEL "R" - 500 WATT**

Diameter 8"—Depth behind panel 2 1/8"—Shaft 3/8" Diameter. Rotation 325°—Mounting for panels up to 1/4", two 1/4"-20 x 1 1/2" flat head screws, mounting centers 1 1/2" each side of center of shaft on center line of cross-bar.—Stock No. 5105 Knob Supplied. Three 8-32 Terminal Screws, Nuts and Washers are supplied.

Stock No.	Total Ohms	Max. Amps.	Net Price	Stock No.	Total Ohms	Max. Amps.	Net Price
0849	1.0	22.300	\$20.10	0872	50	3.160	\$20.10
0850	1.5	18.200	20.10	0861	80	2.520	20.10
0851	2	15.800	20.10	0862	125	2.000	20.10
0852	2.5	14.100	20.10	0863	175	1.690	20.10
0853	3	12.900	20.10	0864	250	1.410	20.10
0854	4	11.200	20.10	0865	325	1.240	20.10
0855	5	10.000	20.10	0866	500	1.000	20.10
0856	8	7.900	20.10	0867	750	.817	20.10
0857	12.5	6.300	20.10	0868	1,000	.707	20.10
0858	16	5.600	20.10	0869	1,500	.577	20.10
0859	25	4.470	20.10	0870	2,000	.500	20.10
0860	40	3.540	20.10	0871	2,500	.447	20.10

**MODEL "T" - 750 WATT**

Diameter 10"—Depth behind panel 3"—Shaft 3/8" Diameter. Rotation 330°—Mounting for panels up to 1/4", two 1/4"-20 x 1 1/2" flat head screws, mounting centers 1 7/8" each side of center of shaft on center line of cross-bar.—Stock No. 5105 Knob Supplied. Three 8-32 Terminal Screws, Nuts and Washers are supplied.

Stock No.	Total Ohms	Max. Amps.	Net Price	Stock No.	Total Ohms	Max. Amps.	Net Price
1300	1	27.400	\$28.38	1312	50	3.870	\$28.38
1301	1.5	22.300	28.38	1313	80	3.060	28.38
1302	2	19.400	28.38	1314	100	2.740	28.38
1303	2.5	17.300	28.38	1315	160	2.170	28.38
1304	3	15.800	28.38	1316	200	1.940	28.38
1305	4	13.600	28.38	1317	300	1.580	28.38
1306	5	12.200	28.38	1318	400	1.370	28.38
1307	8	9.650	28.38	1319	600	1.117	28.38
1308	10	8.650	28.38	1320	750	1.000	28.38
1309	12.5	7.750	28.38	1321	1,200	.791	28.38
1310	16	6.820	28.38	1322	1,800	.646	28.38
1311	25	5.470	28.38	1323	2,500	.547	28.38

**MODEL "U" - 1000 WATT**

Diameter 12"—Depth behind panel 3"—Shaft 3/8" Diameter. Rotation 335°—Mounting for panels up to 1/4", two 1/4"-20 x 1 1/2" flat head screws, mounting centers 3" each side of center of shaft on center line of cross-bar.—Stock No. 5105 Knob Supplied. Three 8-32 Terminal Screws, Nuts and Washers are supplied.

Stock No.	Total Ohms	Max. Amps.	Net Price	Stock No.	Total Ohms	Max. Amps.	Net Price
1450	1	31.600	\$33.15	1462	50	4.470	\$55.25
1451	1.5	25.800	33.15	1463	75	3.650	55.25
1452	2	22.400	33.15	1464	100	3.160	55.25
1453	2.5	20.000	33.15	1465	175	2.390	55.25
1454	3	18.300	33.15	1466	225	2.110	55.25
1455	4	15.800	33.15	1467	300	1.830	55.25
1456	5	14.100	33.15	1468	400	1.580	55.25
1457	8	11.200	33.15	1469	500	1.410	55.25
1458	10	10.000	33.15	1470	750	1.150	55.25
1459	12.5	8.950	33.15	1471	1,000	1.000	55.25
1460	16	7.900	33.15	1472	1,500	.816	55.25
1461	25	6.330	33.15	1473	2,500	.633	55.25

# BE RIGHT WITH OHMITE

RHEOSTATS  
RESISTORS  
SWITCHES  
CHOKES

## OHMITE® STOCK AXIAL-LEAD RESISTORS



Ohmite axial-lead, vitreous-enameled resistors are compact, wire-wound units available in three stock sizes: 3-Watt ( $1\frac{1}{8}$ " x  $\frac{1}{4}$ " ), 5-Watt ( $1\frac{1}{8}$ " x  $\frac{1}{2}$ " ), and 10-watt ( $1\frac{1}{8}$ " x  $\frac{3}{8}$ " ) . . . The resistance wire and terminal lead are both welded to the end cap, utilizing the patented Ohmite welding technique. All have  $1\frac{1}{2}$ " tinned wire leads, are simple to mount, and occupy small space.

Axial-lead resistors are especially suited for printed circuits, terminal board, and point-to-point wiring applications.

The standard resistance tolerance is  $\pm 5\%$ , 50 ohms and higher; tolerance below 50 ohms is  $\pm 10\%$ .

Ohms	Ohms	Ohms	Ohms
1.0	125	1,200	9,000
1.5	150	1,250	10,000
2.0	200	1,500	†11,000
3.0	225	1,750	†12,000
4.0	250	2,000	*12,500
5.0	300	2,250	†13,500
7.5	350	2,500	*15,000
10	400	3,000	†16,000
12	450	3,500	*17,500
15	500	4,000	*18,000
20	600	4,500	*20,000
25	700	5,000	*22,500
30	750	6,000	*25,000
35	800	7,000	†30,000
40	900	7,500	†35,000
50	1,000	8,000	†40,000
75	1,100	†8,500	†45,000
100			†50,000

\*5 and 10-watt size only.  
†10-watt size only.

### 3-WATT SIZE

Net Price, 1 thru 1,000 ohms . . . . . \$0.51  
Net Price, 1,100 thru 5,000 ohms . . . . . .54  
Net Price, 6,000 thru 10,000 ohms . . . . . .57

### 5-WATT SIZE

Net Price, 1 thru 1,000 ohms . . . . . \$0.54  
Net Price, 1,100 thru 5,000 ohms . . . . . .57  
Net Price, 6,000 thru 10,000 ohms . . . . . .60  
Net Price, 12,500 thru 20,000 ohms . . . . . .72  
Net Price, 22,500 and 25,000 ohms . . . . . .75

### 10-WATT SIZE

Net Price, 1 thru 1,000 ohms . . . . . \$0.60  
Net Price, 1,100 thru 5,000 ohms . . . . . .63  
Net Price, 6,000 thru 10,000 ohms . . . . . .72  
Net Price, 11,000 thru 20,000 ohms . . . . . .81  
Net Price, 22,500 thru 40,000 ohms . . . . . .84  
Net Price, 45,000 and 50,000 ohms . . . . . .96

## Popular OHMITE "BROWN DEVIL"® RESISTORS



### 5 Watt—1" x 5/16" Core Size

Ohms	Amps	Ohms	Amps	Ohms	Amps
1	2.23	200	.160	2,250	.047
1.5	1.82	225	.150	2,500	.045
2	1.58	250	.140	3,000	.041
3	1.29	300	.130	3,500	.037
4	1.12	350	.120	4,000	.035
5	1.00	400	.110	4,500	.033
7.5	.810	450	.100	5,000	.032
10	.710	500	.100	6,000	.029
12	.640	600	.091	7,000	.027
15	.580	700	.084	7,500	.026
20	.500	750	.082	8,000	.025
25	.450	800	.079	9,000	.024
30	.410	900	.074	10,000	.022
35	.380	1,000	.070	12,500	.020
40	.350	1,100	.067	15,000	.018
50	.320	1,200	.064	17,500	.017
75	.260	1,250	.063	20,000	.016
100	.220	1,500	.057	22,500	.014
125	.200	1,750	.053	25,000	.013
150	.180	2,000	.050		

Net Price, 1 thru 1,000 ohms . . . . . \$0.45  
Net Price, 1,100 thru 5,000 ohms . . . . . .48  
Net Price, 6,000 thru 10,000 ohms . . . . . .51  
Net Price, 12,500 and 15,000 ohms . . . . . .54  
Net Price, 17,500 and 20,000 ohms . . . . . .57  
Net Price, 22,500 and 25,000 ohms . . . . . .60

### 10 Watt—1 3/4" x 5/16" Core Size

Ohms	Amps	Ohms	Amps	Ohms	Amps
1	3.16	350	.17	6,000	.041
2	2.24	400	.16	7,000	.038
3	1.83	450	.15	7,500	.036
4	1.58	500	.14	8,000	.035
5	1.41	600	.13	8,500	.034
7.5	1.16	700	.12	10,000	.032
10	1.00	750	.12	11,000	.030
12	.91	800	.11	12,000	.029
15	.82	900	.11	12,500	.028
20	.71	1,000	.10	13,500	.027
25	.63	1,100	.095	14,300	.026
30	.58	1,200	.091	15,000	.026
35	.53	1,250	.089	16,000	.025
40	.50	1,500	.081	17,500	.024
50	.45	1,750	.075	18,000	.023
75	.37	2,000	.071	20,000	.022
100	.32	2,250	.066	22,500	.021
125	.28	2,500	.063	25,000	.020
150	.26	3,000	.057	30,000	.018
200	.22	3,500	.053	35,000	.017
225	.21	4,000	.050	40,000	.016
250	.20	4,500	.047	45,000	.015
300	.18	5,000	.045	50,000	.014

Net Price, 1 thru 1,000 ohms . . . . . \$0.48  
Net Price, 1,100 thru 5,000 ohms . . . . . .54  
Net Price, 6,000 thru 10,000 ohms . . . . . .60  
Net Price, 11,000 thru 20,000 ohms . . . . . .66  
Net Price, 22,500 and 25,000 ohms . . . . . .72  
Net Price, 30,000 thru 50,000 ohms . . . . . .81

### 10 WATT DIVIDOHM®

Core:  $1\frac{3}{4}$ " x  $\frac{5}{16}$ " — Mounting Centers  $\frac{1}{4}$ "

Adjustable Res.			Adjustable Res.		
Res.	Max.	Stock	Res.	Max.	Stock
Ohms	Amps	No.	Ohms	Amps	No.
1	3.16	1001	75	.37	1011
2	2.24	1002	100	.32	1012
3	1.83	1003	150	.28	1013
5	1.41	1004	200	.22	1014
7.5	1.16	1005	250	.20	1015
10	1.00	1006	300	.18	1016
15	.82	1007	350	.17	1017
20	.71	1008	400	.16	1018
25	.63	1009	500	.14	1019
50	.45	1010	600	.13	1020

## WITH WELDED TERMINALS

High quality, small size, wire-wound resistors ideal for voltage dropping, bias units, bleeders, etc. They're extra-sturdy, all-ceramic, vitreous enameled. These all-welded construction units have welded high-strength alloy terminals. For perfect electrical connection, the resistance wire is welded to the terminal. They give time-proved protection against shock, vibration, heat and humidity. Their long record of continuous trouble-free service—their wide use in all climates of the world—prove their complete reliability and economy. All units can be conveniently mounted by means of their  $1\frac{1}{2}$ " tinned wire leads.

### 20 Watt—2" x 7/16" Core Size

Ohms	Amps	Ohms	Amps	Ohms	Amps
5	2.00	1,250	.12	12,500	.035
10	1.41	1,500	.12	15,000	.031
25	.89	1,750	.11	20,000	.026
50	.63	1,850	.10	25,000	.023
75	.52	2,000	.10	30,000	.021
100	.45	2,250	.094	35,000	.020
150	.36	2,400	.091	40,000	.018
200	.32	2,500	.089	45,000	.017
250	.28	2,750	.085	50,000	.016
300	.26	3,000	.081		
350	.24	3,500	.075	60,000	.015
400	.22	4,000	.070	65,000	.014
500	.20	4,500	.066	70,000	.014
650	.18	5,000	.063	75,000	.013
700	.17	6,000	.057	80,000	.012
750	.16	7,000	.053	85,000	.012
800	.15	7,500	.051	90,000	.011
850	.15	8,000	.050	95,000	.010
1,000	.14	9,000	.047	100,000	.010
1,200	.13	10,000	.043		

Net Price, 5 thru 1,000 ohms . . . . . \$0.63  
Net Price, 1,200 thru 5,000 ohms . . . . . .66  
Net Price, 6,000 thru 10,000 ohms . . . . . .72  
Net Price, 12,500 thru 20,000 ohms . . . . . .78  
Net Price, 25,000 thru 40,000 ohms . . . . . .90  
Net Price, 45,000 thru 60,000 ohms . . . . . 1.05  
Net Price, 65,000 thru 80,000 ohms . . . . . 1.20  
Net Price, 85,000 thru 100,000 ohms . . . . . 1.38

### ADJUSTABLE RESISTORS

Adjustable Res.				Adjustable Res.			
Res.	Max.	Stock		Res.	Max.	Stock	
Ohms	Amps	No.		Ohms	Amps	No.	
750	.12	1021		4,000	.050	1031	
800	.11	1022		4,500	.047	1032	
1,000	.10	1023		5,000	.045	1033	
1,250	.089	1024		6,000	.041	1034	
1,500	.081	1025		7,000	.038	1035	
2,000	.071	1026		7,500	.036	1036	
2,250	.066	1027		8,000	.035	1037	
2,500	.063	1028		8,500	.034	1038	
3,000	.057	1029		9,000	.033	1039	
3,500	.053	1030		10,000	.032	1040	

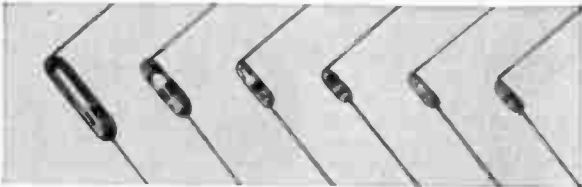
Net Price, 1 thru 1,000 ohms . . . . . \$0.96  
Net Price, 1,250 thru 5,000 ohms . . . . . 1.02  
Net Price, 6,000 thru 10,000 ohms . . . . . 1.08



# BE RIGHT WITH OHMITE

RHEOSTATS  
RESISTORS  
SWITCHES  
CHOKES

## TAN-O-MITE® SUBMINIATURE, SERIES TW TANTALUM WIRE CAPACITORS



Ultrasmall for low-voltage DC transistorized electronic equipment, these new units provide substantial savings in circuit space plus high quality and long, reliable operation. Tantalum capacitors are more stable, have much better shelf-life, produce greater capacity in a given size, and are usable over a wider temperature range than other electrolytic capacitors. Available in six subminiature sizes; 0.1 to 60 mfd. over-all capacitance range. Smallest size .075 x .156 inches; largest .125 x .500 inches. Five stock sizes as listed in table. All Tan-O-Mite® Tantalum Capacitors feature Ohmite's unequalled tantalum wire construction, reliability and excellent performance under temperature extremes of -55°C. to +85°C.

SIZE	UNINSULATED	
	D (inches)	L (inches)
T	.075 (5/64)	.156 (5/32)
S	.075 (5/64)	.187 (3/16)
M	.095 (3/32)	.172 (11/64)
A	.095 (3/32)	.250 (1/4)
B	.125 (1/8)	.312 (5/16)
C	.125 (1/8)	.500 (1/2)

### SERIES TW - STOCK VALUES

Cap. Mfd.	DC Working Voltage*	Cat. No.	Cap. Mfd.	DC Working Voltage*	Cat. No.
0.1	4	R1T4	2	4	2T4
	20	R1T20		8	2S8
	4	R1M4		4	2M4
	4	R1A4		4	2A4
	20	R1A20		8	2A8
0.5	4	R5T4	4	4	4S4
	20	R5T20		4	4M4
	4	R5M4		4	4A4
	20	R5A20		10	4B10
1	4	1T4	8	4	8B4
	8	1T8			
	4	1M4			
	8	1M8			
	4	1A4			
	8	1A8			

\*Capacitor may be operated at any voltage less than that shown in the table. Middle letters in catalog no. indicate size.

TAN-O-MITE® CAPACITOR ..... NET PRICE \$1.65

## 2 WATT MOLDED COMPOSITION POTENTIOMETER - TYPE AB



The Type AB Potentiometer is an exceptionally high quality unit designed especially for industrial, laboratory, radio service and other uses where reliability is particularly important. Because the resistor element is molded, the unit has an exceptionally large safety factor. The power rating of 2 watts is unusual for a unit of such small size. The unit has a very low noise level and low voltage coefficient. It will pass the Army-Navy 200 hour salt spray test, specification AN-QQ-S-91. The single unit is 1-1/16" diameter and extends 9/16" behind the panel. The dual unit extends 1-3/16" behind the panel. The 2" long round shaft (including the 3/8" long mounting bushing) is available from stock on potentiometers with all three resistance tapers and on the dual unit. The screwdriver shaft with locking-nut is available from stock on the linear taper units only. A SPST switch, to be attached to the back of the control, can be supplied extra.

## 1/2 WATT MINIATURE POTENTIOMETER - TYPE AS



### Molded Composition Type

Only 1/2" in diameter, this control has a maximum continuous power rating of .5 watts at 70°C ambient (metal panel mounted - full resistance in circuit). Ideal for rheostat and potentiometer applications in small or light-weight electronic assemblies. In fifteen resistance values from 100 ohms through 5 megohms with linear taper. Locking type shaft is standard.

Net Price ..... \$5.10

Stock No.	Resistance
3601	100
3602	250
3603	500
3604	1,000
3605	2,500
3606	5,000
3607	10,000
3608	25,000
3609	50,000
3610	.1 meg.
3611	.25 meg.
3612	.50 meg.
3613	1.0 meg.
3614	2.5 meg.
3615	5.0 meg.

Tolerance ±10%,  
100 ohms to .50  
meg. Tolerance  
±20%, 1.0 meg. to  
5.0 meg.

Total Resistance ±10% Except as Noted	Resistance Rotation Characteristics (Taper)				
	LINEAR			Type A Clockwise Log. Stock No.	Type B Counterclock. Log. Stock No.
	Type U 2" Shaft Stock No.	Type LU Locking Shaft Stock No.	Type U Dual Unit Stock No.		
50 Ohms	CU 5001	CLU 5001			
100 Ohms	CU 1011	CLU 1011			
250 Ohms	CU 2511	CLU 2511			
500 Ohms	CU 5011	CLU 5011			
1,000 Ohms	CU 1021	CLU 1021			
2,500 Ohms	CU 2521	CLU 2521			
5,000 Ohms	CU 5021	CLU 5021			
10,000 Ohms	CU 1031	CLU 1031	CCU 1031		CB 1031
25,000 Ohms	CU 2531	CLU 2531	CCU 2531		CB 2531
50,000 Ohms	CU 5031	CLU 5031	CCU 5031		CB 5031
.10 Meg.	CU 1041	CLU 1041	CCU 1041	CA 1041	
.25 Meg.	CU 2541	CLU 2541	CCU 2541	CA 2541	
.5 Meg.	CU 5041	CLU 5041	CCU 5041	CA 5041	
1.0 Meg. ±20%	CU 1052	CLU 1052	CCU 1052	CA 1052	
2.5 Meg. ±20%	CU 2552	CLU 2552		CA 2552	
5.0 Meg. ±20%	CU 5052	CLU 5052			

Stock No. CU Potentiometer ..... Net Price \$1.95  
 Stock Nos. CA and CB Potentiometer ..... Net Price 2.25  
 Stock No. CLU Potentiometer ..... Net Price 2.55  
 Stock No. CCU Dual Potentiometer ..... Net Price 5.85  
 Stock No. CS-1, Switch only for above unit (supplied unmounted) ..... Net Price .66



# HARDWICK-HINDLE INC.



NEWARK • NEW JERSEY

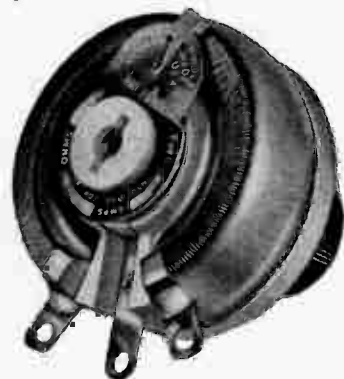
## VITREOUS ENAMELED RHEOSTATS

### Insulated shafts and mounting bushings

**Type A-25** — Will withstand rugged treatment under the most adverse conditions. It has unusually smooth mechanical operation. The terminals, made of strong corrosion resistant alloy, are permanently welded to the winding form. The wound ring is made an integral part of the refractory base by vitreous enamel. The phosphor bronze actuating arm, with its graphite brush, gives smoothest action and excellent electrical control. Shafts are insulated. Three terminals permit either potentiometer or rheostat use; and our new high temperature gray enamel gives an added safety factor.



**Types H-50, H-100, H-150** — These are our newest rheostats and they will give longer service and greater protection. They are designed for use under extremes of humidity and abnormal atmospheric conditions. The unique "buss bar" type brush automatically adjusts tension for complete, continuous contact. It eliminates backlash and prevents binding. It assures perfect contact with the entire winding surface. Our new high-temperature gray enamel bonding gives you an increased safety factor and better overall service. These improved rheostats are designed to comply with current standards of: (a) Military Specifications MIL R-22. (b) RETMA. (c) N.E.M.A. (d) "listed by Underwriters Laboratories, Inc."



### TABLES OF SIZES AND RATINGS OF RHEOSTATS

TYPE A-25 25 WATT RHEOSTAT					TYPE H-50 50 WATT RHEOSTAT					TYPE H-100 100 WATT RHEOSTAT					TYPE H-150 150 WATT RHEOSTAT				
Stock No.	Total Ohms	Max. Amps.	Approx. No. Steps	List Price	Stock No.	Total Ohms	Max. Amps.	Approx. No. Steps	List Price	Stock No.	Total Ohms	Max. Amps.	Approx. No. Steps	List Price	Stock No.	Total Ohms	Max. Amps.	Approx. No. Steps	List Price
0201	0.50	7.06	17	\$8.13	0301	0.50	10.0	25	\$8.59	0401	0.50	14.2	30	\$12.84	0501	0.50	17.30	26	\$16.30
0202	0.75	5.77	17	8.13	0302	0.75	8.16	25	8.59	0402	0.75	11.6	30	12.87	0502	0.75	14.10	30	16.30
0203	1.0	5.00	17	7.70	0303	1.0	7.06	52	8.59	0403	1.0	10.0	30	12.87	0503	1.00	12.25	40	16.30
0204	1.5	4.08	34	7.70	0304	1.5	5.77	52	8.59	0404	1.5	8.16	30	12.87	0504	1.5	10.00	37	16.30
0205	2.5	3.16	34	6.84	0305	2.5	4.48	52	7.70	0405	2.5	6.34	54	12.87	0505	2.5	7.75	39	16.30
0206	5.0	2.22	34	6.84	0306	5.0	3.16	52	7.70	0406	5.0	4.48	54	12.87	0506	5.0	5.48	79	16.30
0207	7.5	1.82	34	6.84	0307	7.5	2.58	52	7.70	0407	7.5	3.66	54	12.05	0507	7.5	4.47	75	16.30
0208	10	1.58	90	6.84	0308	10	2.22	98	7.70	0408	10	3.16	54	12.05	0508	10	3.88	77	15.40
0209	15	1.29	90	6.84	0309	15	1.82	98	7.70	0409	15	2.58	112	12.05	0509	15	3.16	151	15.40
0210	25	1.00	100	6.84	0310	25	1.41	98	7.70	0410	25	2.00	108	12.05	0510	25	2.45	151	15.40
0211	50	0.706	100	6.84	0311	50	1.00	129	7.70	0411	50	1.42	127	12.05	0511	50	1.73	192	15.40
0212	75	0.577	135	6.84	0312	75	0.816	153	7.70	0412	75	1.16	151	12.05	0512	75	1.41	224	15.40
0213	100	0.500	112	6.84	0313	100	0.706	157	7.70	0413	100	1.00	160	12.05	0513	100	1.22	204	15.40
0214	150	0.408	146	6.84	0314	150	0.577	187	7.70	0514	150	0.816	190	12.05	0514	150	1.00	280	15.40
0215	250	0.316	146	6.84	0315	250	0.448	258	7.70	0415	250	0.634	250	12.05	0515	250	0.775	252	15.40
0216	500	0.222	180	6.84	0316	500	0.316	308	7.70	0416	500	0.448	302	12.05	0516	500	0.548	362	15.40
0217	750	0.182	214	6.84	0317	750	0.258	294	8.10	0417	750	0.366	303	12.05	0517	750	0.447	378	16.30
0218	1000	0.158	248	7.70	0318	1000	0.222	390	8.10	0418	1000	0.316	317	12.87	0518	1000	0.388	398	16.30
0219	1500	0.129	292	7.70	0319	1500	0.182	364	8.10	0419	1500	0.258	375	12.87	0519	1500	0.316	483	17.17
					0320	2500	0.141	485	8.10	0420	2500	0.200	494	12.87	0520	2500	0.245	635	17.17
					0321	5000	0.100	590	8.59	0421	5000	0.141	640	13.70	0521	5000	0.173	790	18.00
					0322	7500	0.082	714	8.59	0422	7500	0.115	760	14.60	0522	7500	0.141	940	18.89
					0323	10000	0.070	750	8.59	0423	10000	0.100	740	15.40	0523	10000	0.122	1020	20.59

\*Thru all or any part of winding.  
Diameter of base: 1 3/8".  
Depth behind panel: 1 1/2".  
Mounting: Single hole for 3/8" bushing.  
Shaft: 1/4" diameter, projecting 1/2" beyond bushing.  
Standard Bushing: Will take panels up to 1/4".  
Mechanical Rotation: 285 degrees.  
Non-Turn Feature: Standard position as shown. Changed on request.  
Terminals: Holes for No. 4 screw.

\*Thru all or any part of winding.  
Diameter of base: 2 3/8".  
Depth behind panel: 1 1/2".  
Mounting: Single hole for 3/8"-32 bushing.  
Shaft: 1/4" diameter, projecting 1/2" beyond bushing.  
Standard Bushing: Will take panels up to 1/4".  
Mechanical Rotation: 300 degrees.  
Non-Turn Feature: Standard position as shown. Changed on request.  
Furnished with or without knob.  
Terminals: Holes for No. 8 screw.

\*Thru all or any part of winding.  
Diameter of base: 3 1/8".  
Depth behind panel: 1 3/4".  
Mounting: Single hole for 3/8"-32 bushing.  
Shaft: 1/4" diameter, projecting 1/2" beyond bushing.  
Standard Bushing: Will take panels up to 1/4".  
Mechanical Rotation: 300 degrees.  
Non-Turn Feature: Standard position as shown. Changed on request.  
Furnished with or without knob.  
Terminals: Holes for No. 8 screw.

\*Thru all or any part of winding.  
Diameter of base: 4".  
Depth behind panel: 1 3/4".  
Mounting: Two holes as shown 10-32 x 3/8" screws furnished.  
Shaft: 1/4" diameter, projecting 1/2" beyond bushing.  
Standard Bushing: Will take panels up to 1/4".  
Mechanical Rotation: 300 degrees.  
Non-Turn Feature: For single hole mounting supplied on request.  
Furnished with or without knob.  
Terminals: Holes for No. 8 screw.

**RATING**—current ratings shown for all Rheostats are for use in 1/2 air. When units are enclosed values should be reduced about 50%.

Data on non-stock Rheostats—special shafts and bushings; values intermediate to those listed; tapered windings; tandem assemblies, etc., furnished upon request.







# HARDWICK-HINDLE INC.



NEWARK • NEW JERSEY

## BLUE RIBBON RESISTORS

TABLE OF RATINGS



Blue Ribbon resistors differ from tubular resistors in that they are wound on an elliptical core. An aluminum bar through the center insures more even distribution of heat, avoiding hot spots.

Our gray enamel eliminates crazing which results in failure of the resistive element due to moisture penetration from humidity, salt and other severe atmospheric conditions.

Mounting studs—corrosion and rust resistant—peened to the ends of the thru-bar conduct heat to the mounting surface. You can stack two or more units. Our method of fastening the tube to the thru-bar prevents loosening.

In comparison with tubular units of equivalent wattage rating these resistors offer outstanding advantages: • Higher wattage rating per unit space requirement. • Reduction in space requirement. • Simple sturdy mounting, single or stacked. • Light weight. • Lower inductance.

Designed for and manufactured in accordance with JAN-R-26A specifications.

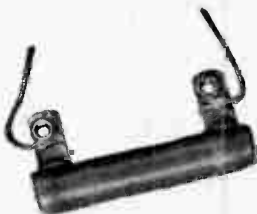
TYPE 1 1/4" B 30 Watt Rating* Mounting Centers 2"				TYPE 2" B 40 Watt Rating* Mounting Centers 2 3/4"				TYPE 3 1/2" B 55 Watt Rating* Mounting Centers 4 1/4"				TYPE 6" B 75 Watt Rating* Mounting Centers 6 3/4"			
Stock No.	Ohms	Max. Milli-Amps.	List Price	Stock No.	Ohms	Max. Milli-Amps.	List Price	Stock No.	Ohms	Max. Milli-Amps.	List Price	Stock No.	Ohms	Max. Milli-Amps.	List Price
B101	5	2450	\$1.92	B201	5	2830	\$2.01	B301	5	3320	\$2.32	B601	5	3880	\$2.88
B102	10	1730	1.92	B202	10	2000	2.01	B302	10	2350	2.32	B602	10	2750	2.88
B103	15	1410	1.92	B203	15	1640	2.01	B303	15	1920	2.32	B603	15	2240	2.88
B104	25	1090	1.92	B204	25	1260	2.01	B304	25	1480	2.32	B604	25	1730	2.88
B105	50	770	1.92	B205	50	890	2.01	B305	50	1050	2.32	B605	50	1220	2.88
B106	100	550	1.92	B206	100	630	2.01	B306	100	740	2.32	B606	100	860	2.88
B107	150	440	1.92	B207	150	510	2.01	B307	150	600	2.32	B607	150	710	2.88
B108	250	340	1.92	B208	250	400	2.01	B308	250	470	2.32	B608	250	550	2.88
B109	500	245	1.92	B209	500	283	2.01	B309	500	332	2.32	B609	500	388	2.88
B110	1000	173	1.92	B210	1000	200	2.01	B310	1000	235	2.32	B610	1000	275	2.88
B111	1500	141	1.92	B211	1500	164	2.01	B311	1500	192	2.32	B611	1500	224	2.88
B112	2500	109	1.92	B212	2500	126	2.01	B312	2500	148	2.32	B612	2500	173	2.88
B113	5000	77	2.06	B213	5000	89	2.15	B313	5000	105	2.45	B613	5000	122	3.02
B114	10000	55	2.10	B214	10000	63	2.42	B314	10000	74	2.72	B614	10000	86	3.28
				B215	15000	51	2.52	B315	15000	60	2.83	B615	15000	71	3.38
								B316	25000	47	3.10	B616	25000	55	3.67
												B617	50000	39	4.12

\*This rating based on a maximum temperature rise of 300 degrees C. with the Resistor mounted horizontally on a 10" x 10" x .040" steel plate supported horizontally 1/2" above a wooden surface.

When Resistors are mounted on a non-metallic base the nominal watt rating should be reduced by approximately 15%.

## 10 and 20 WATT FIXED VITREOUS ENAMELED RESISTORS

Designed for radio service and replacement use—conservatively rated—wound upon Steatite Tube—combination lug and pigtail terminal connections. Vitreous



enamel insulation, insures proof against moisture. 10 watt and 20 watt sizes, in the range of resistance values shown.

TABLE OF RATINGS

10 WATT 3/4" Long x 5/16" O.D.				20 WATT 2" Long x 1/2" O.D.											
Stock No.	Ohms	Max. Milli-Amps.	List Price	Stock No.	Ohms	Max. Milli-Amps.	List Price	Stock No.	Ohms	Max. Milli-Amps.	List Price	Stock No.	Ohms	Max. Milli-Amps.	List Price
A101	1	3160	\$.75	A116	750	115	\$.75	A201	5	2000	\$.95	A216	2000	100	\$.97
A102	3	1825	.75	A117	1000	100	.75	A202	10	1415	.95	A217	2500	89	.97
A103	5	1415	.75	A118	1250	89	.80	A203	25	895	.95	A218	3000	81	.97
A104	7.5	1150	.75	A119	1500	81	.80	A204	50	633	.95	A219	4000	71	.97
A105	10	1000	.75	A120	2000	70	.80	A205	75	517	.95	A220	5000	63	.97
A106	15	815	.75	A121	2500	63	.80	A206	100	447	.95	A221	6000	57	1.12
A107	25	630	.75	A122	3000	58	.80	A207	150	375	.95	A222	7500	51	1.12
A108	50	450	.75	A123	4000	50	.80	A208	200	316	.95	A223	10000	44	1.12
A109	75	365	.75	A124	5000	45	.80	A209	250	282	.95	A224	12500	40	1.20
A110	100	315	.75	A125	7500	36	.92	A210	400	224	.95	A225	15000	37	1.20
A111	150	260	.75	A126	10000	31	.92	A211	500	200	.95	A226	25000	15	1.37
A112	200	225	.75	A127	12500	16	1.03	A212	750	163	.95	A227	35000	13	1.37
A113	250	200	.75	A128	15000	14	1.03	A213	1000	141	.95	A228	40000	12	1.37
A114	400	158	.75	A129	20000	12	1.03	A214	1250	126	.97	A229	50000	11	1.58
A115	500	142	.75	A130	25000	11	1.08	A215	1500	115	.97				



# HARDWICK-HINDLE INC.

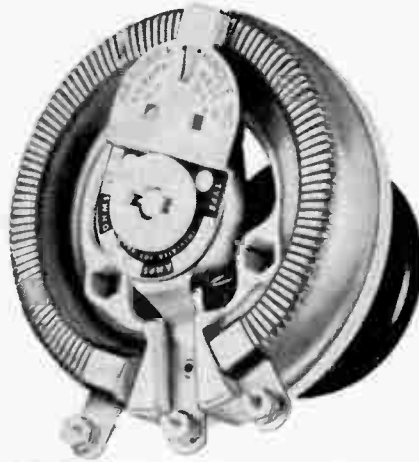


NEWARK • NEW JERSEY

## TYPE H-225 225 WATT RHEOSTAT

Stock No.	Ohms	Max. Amps.*	Approx. No. Steps	List Price
0530	1	15.00	55	\$21.40
0531	1.5	12.30	55	
0532	2	10.60	55	
0533	2.5	9.50	55	
0534	3	8.66	55	
0535	4	7.50	55	
0536	5	6.71	55	
0537	7.5	5.49	115	
0538	10	4.74	115	
0539	15	3.87	115	
0540	25	3.00	115	
0541	50	2.12	256	
0542	75	1.73	306	
0543	100	1.50	315	
0544	150	1.22	385	
0545	200	1.06	357	
0546	250	.950	350	
0547	300	.866	335	
0548	400	.750	448	
0549	500	.671	450	
0550	700	.567	495	
0551	750	.549	533	
0552	900	.500	500	
0553	1,000	.474	555	
0554	1,200	.433	526	
0555	1,500	.387	630	
0556	1,750	.358	620	
0557	2,500	.300	670	

\* Through all or any part of winding.



- a. **High temperature enamel**—bonds the wire to core and the core to base to afford greater safety factor where overloaded conditions are demanded.
- b. **Bus-bar construction** gives minimum resistance and ample safety under maximum current requirements. Made of alloy materials to fit wire size and current requirements of various resistance values and also to give minimum wear on wire.
- c. **Constant pressure contact arm**—This patented feature is made of high carbon spring steel to insure uniform pressure of contact brush on both collector ring and winding surface and to eliminate troublesome contact resistance.
- d. **Tripod Mounting Frame**—Alloy casting designed to give greater safety factor under shock and vibration.

## TYPE H-300 300 WATT RHEOSTAT

Stock No.	Ohms	Max. Amps.*	Approx. No. Steps	List Price
0601	1	17.25	49	\$23.20
0602	1.5	14.15	47	
0603	2	12.24	49	
0604	2.5	10.95	70	
0605	3	10.00	73	
0606	4	8.66	70	
0607	5	7.75	66	
0608	7.5	6.32	71	
0609	10	5.48	136	
0610	15	4.47	144	
0611	25	3.46	145	
0612	50	2.45	245	
0613	75	2.00	260	
0614	100	1.73	327	
0615	150	1.41	394	
0616	200	1.22	420	
0617	250	1.09	525	
0618	300	1.00	420	
0619	400	.866	440	
0620	500	.775	440	
0621	700	.655	502	
0622	750	.633	540	
0623	900	.578	521	
0624	1,000	.548	580	
0625	1,200	.500	690	
0626	1,500	.449	680	
0627	1,750	.414	790	
0628	2,500	.346	862	

\* Through all or any part of winding.

## TYPE H-500 500 WATT RHEOSTAT

Stock No.	Ohms	Max. Amps.*	Approx. No. Steps	List Price
0701	1	22.3	70	\$33.50
0702	1.5	18.2	64	
0703	2	15.8	68	
0704	2.5	14.1	67	
0705	3	12.9	65	
0706	4	11.2	96	
0707	5	10.0	96	
0708	7.5	8.17	98	
0709	8	7.90	97	
0710	10	7.07	105	
0711	12.5	6.30	103	
0712	15	5.77	202	
0713	16	5.60	192	
0714	25	4.47	195	
0715	40	3.54	205	
0716	50	3.16	200	
0717	75	2.58	395	
0718	80	2.52	382	
0719	100	2.23	450	
0720	125	2.00	505	
0721	150	1.82	544	
0722	175	1.69	500	
0723	250	1.41	570	
0724	325	1.24	515	
0725	500	1.00	620	
0726	750	.817	740	
0727	1,000	.707	780	
0728	1,500	.577	940	
0729	2,000	.500	986	
0730	2,500	.447	940	

\* Through all or any part of winding.

## TYPE H-750 750 WATT RHEOSTAT

Stock No.	Ohms	Max. Amps.*	Approx. No. Steps	List Price
0801	1	27.4	85	\$47.30
0802	1.5	22.3	85	
0803	2	19.4	81	
0804	2.5	17.3	87	
0805	3	15.8	83	
0806	4	13.6	87	
0807	5	12.2	122	
0808	7.5	10.0	129	
0809	8	9.65	122	
0810	10	8.65	121	
0811	12.5	7.75	120	
0812	15	7.07	127	
0813	16	6.82	120	
0814	25	5.47	240	
0815	50	3.87	238	
0816	75	3.19	250	
0817	80	3.06	266	
0818	100	2.74	265	
0818	150	2.23	500	
0820	160	2.17	485	
0821	200	1.94	472	
0822	250	1.73	470	
0823	300	1.58	500	
0824	400	1.37	472	
0825	500	1.22	565	
0826	600	1.12	677	
0827	750	1.00	670	
0828	1,000	.865	715	
0829	1,200	.791	860	
0830	1,500	.707	840	
0831	1,800	.646	1,020	
0832	2,500	.547	1,085	

\* Through all or any part of winding.

## TYPE H-1000 1000 WATT RHEOSTAT

Stock No.	Ohms	Max. Amps.*	Approx. No. Steps	List Price
0901	1	31.60	81	\$55.25
0902	1.5	25.80	84	
0903	2	22.40	109	
0904	2.5	20.00	105	
0905	3	18.30	113	
0906	4	15.80	106	
0907	5	14.10	105	
0908	7.5	11.50	158	
0909	8	11.20	168	
0910	10	10.00	166	
0911	12.5	8.95	165	
0912	15	8.16	156	
0913	16	7.90	166	
0914	25	6.33	160	
0915	50	4.47	331	
0916	75	3.65	303	
0917	100	3.16	320	
0918	150	2.58	306	
0919	175	2.39	645	
0920	225	2.11	585	
0921	250	2.00	640	
0922	300	1.83	605	
0923	400	1.58	640	
0924	500	1.41	635	
0925	750	1.15	820	
0926	1,000	1.00	862	
0927	1,500	.816	1,030	
0928	2,500	.633	1,300	

\* Through all or any part of winding.



# R. C. L.

## MANUFACTURING COMPANY

### ELECTRONIC SPECIALTIES

#### RIVERSIDE, NEW JERSEY

## WIRE-WOUND POWER AND PRECISION RESISTORS

Wire-wound precision and power resistors made under exact atmospheric conditions to meet all requirements of the electronic industry. RCL resistors are silicon coated by our own special process, using low-temperature coefficient materials.

### AXIAL LEAD PRECISION RESISTORS

RCL Type	Military Spec. Mil-R-93 & Mil-R-9444	Maximum* Resistance Value	Commercial† Wattage Rating	Military‡ Wattage Rating	Wire Gauge AWG
7009		100K	1/8	—	#22
7010	AFRT 10	200KΩ	1/4	1/8	#22
7011		150	1/4	—	#22
7020	AFRT 11	500KΩ	1/2	1/4	#22
7030	AFRT 12	750KΩ	1/2	1/2	#20
7040	ARFT 13	1.5 Meg.	1.0	3/4	#20
7051		1.0 Meg.	1/2	—	#20
7050	RB 52	2.0 Meg.	1.0	1.0	#20
	AFRT 14				
7060	AFRT 15	3.5 Meg.	2.0	2.0	#20

Prices on Axial Lead Precision Resistors Quoted on Request

### RADIAL LUG PRECISION RESISTORS

RCL Type	Military Specs. Mil-R-93 & Mil-R-9444	Maximum* Resistance Value	Commercial† Wattage Rating	Military‡ Wattage Rating	Mounting Hole Dia.
6010	RB09	600KΩ	1/4	—	.144
6020	RB15	1.0 Meg.	1/8	1/4	.144
6030	RB16	1.5 Meg.	1/2	1/2	.144
6040	RB17	3.0 Meg.	1.0	1/2	.144
6041	RB17	1.5 Meg.	1.0	1/2	.144
6050	RB18	5.0 Meg.	1.0	1/2	.144
6060	RB19	10 Meg.	2.0	1	.144

Prices on Radial Lead Precision Resistors Quoted on Request

### FIXED AND ADJUSTABLE POWER RESISTORS

Standard Band Widths 3/16" and 1/4"

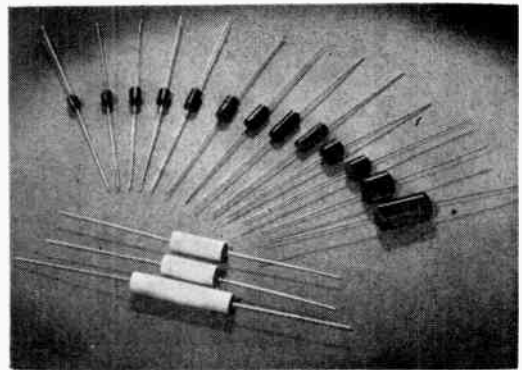
RCL TYPE		Mil-R-26 Type	Maximum Resistance	Wattage Rating	LIST PRICE	
Fixed	Adj.				Fixed	Adj.
2010	2011	RW 30	2,500Ω	5	\$ .65	\$ .72
2020	2021	RW 29	10,000Ω	10	.81	.89
2030	2031	RW 32	25,000Ω	20	.87	.96
2040	2041		25,000Ω	25	.93	1.02
2050	2051		50,000Ω	50	2.32	2.55
2060	2061	RW 36	100,000Ω	75	3.90	4.29
2070	2071		100,000Ω	100	3.42	3.76
2080	2081		125,000Ω	150	3.83	4.21
2090	2091	RW 47	150,000Ω	200	4.08	4.49

#### NOTES:

\* Maximum resistance value is based on .0009" E alloy wire.

† Commercial wattage rating is based on a 40°C. ambient.

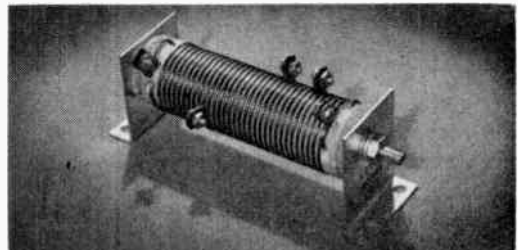
‡ Military wattage rating is based on ambient specified in the applicable specification.



PRECISION WIRE-WOUND RESISTORS



POWER WIRE-WOUND RESISTORS



ADJUSTABLE POWER RESISTORS

#### ORDERING INFORMATION

When ordering R.C.L. precision wire-wound resistors, please specify the following: Quantity, R.C.L. style and/or Military Specification style; resistance value in absolute ohms (1 absolute ohm equals 0.9995 International ohm); resistance tolerance, temperature coefficient; and specific requirements that may apply to your particular application.

# 2 Big Reasons for Buying and Using...



## STACKPOLE

## Packaged CARBON RESISTORS



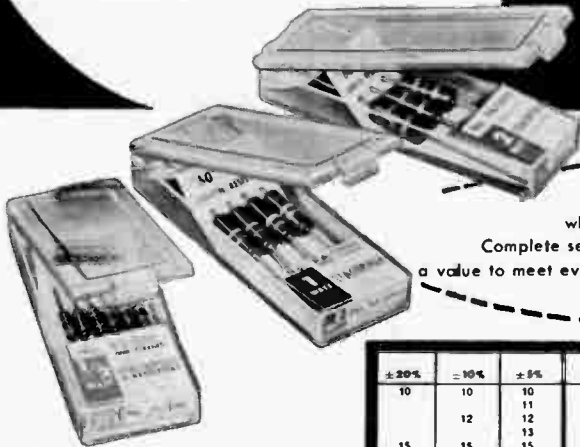
### They're Genuine Stackpole Resistors

- ✓ Exact replacements for original installations.
- ✓ Surpass MIL-R11 specifications.
- ✓ Rated at 70°C. ambient.
- ✓ Protected from humidity.
- ✓ Low noise level.

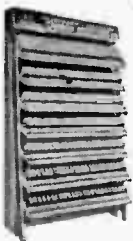


### They're Packaged by G-C for Protection and Convenience

- ✓ No damage possible to resistors or leads.
- ✓ Complete range of RETMA values . . . enough for every circuit need.
- ✓ All resistors clearly labelled and color coded.
- ✓ Handy hinged plastic boxes are re-usable.
- ✓ Bonus coupon offer with every box.



You get both quality and packaging protection when you insist on G-C Stackpole Carbon Resistors. Complete selection in 1/2-, 1- and 2-watt values . . . a value to meet every circuit requirement.



Look for this self-service display at your jobber . . . buy where you see the G-C Stackpole sign!

BULK PACKED FOR VOLUME USERS  
IMMEDIATE DELIVERY FROM STOCK  
ALSO PACKED FOR AUTOMATION USE

**G-C ELECTRONICS MFG. CO.**

Division of G-C — Textron Inc.  
Rockford, Illinois

±20%	±10%	±5%	±20%	±10%	±5%	±20%	±10%	±5%	±20%	±10%	±5%
10	10	10		390	390	15000	15000	15000		560000	560000
		11		430	430			16000		620000	620000
		12	470	470	470		18000	18000	680000	680000	680000
		13		510	510			20000		750000	750000
15	15	15		560	560	22000	22000	22000		820000	820000
		16		620	620			24000		910000	910000
		18	680	680	680		27000	27000	1.0 Meg	1.0 Meg	1.0 Meg
		20		750	750			30000		1.1 Meg	1.1 Meg
22	22	22		820	820	33000	33000	33000		1.2 Meg	1.2 Meg
		24		910	910			36000		1.3 Meg	1.3 Meg
		27	1000	1000	1000		39000	39000	1.5 Meg	1.5 Meg	1.5 Meg
		30		1100	1100			43000		1.6 Meg	1.6 Meg
33	33	33		1200	1200	47000	47000	47000		1.8 Meg	1.8 Meg
		36		1300	1300			51000		2.2 Meg	2.2 Meg
		39	1500	1500	1500		56000	56000	2.2 Meg	2.2 Meg	2.2 Meg
		43		1600	1600			62000		2.4 Meg	2.4 Meg
47	47	47		1800	1800	68000	68000	68000		2.7 Meg	2.7 Meg
		51		2000	2000			75000		3.0 Meg	3.0 Meg
		56	2200	2200	2200		82000	82000	3.3 Meg	3.3 Meg	3.3 Meg
		62		2400	2400			91000		3.6 Meg	3.6 Meg
68	68	68		2700	2700	100000	100000	100000		3.9 Meg	3.9 Meg
		75		3000	3000			110000		4.3 Meg	4.3 Meg
		82	3300	3300	3300		120000	120000	4.7 Meg	4.7 Meg	4.7 Meg
		91		3600	3600			130000		5.1 Meg	5.1 Meg
100	100	100		3900	3900	150000	150000	150000		5.6 Meg	5.6 Meg
		110		4300	4300			160000		6.2 Meg	6.2 Meg
		120	4700	4700	4700		180000	180000	6.8 Meg	6.8 Meg	6.8 Meg
		130		5100	5100			200000		7.5 Meg	7.5 Meg
150	150	150		5600	5600	220000	220000	220000		8.2 Meg	8.2 Meg
		160		6200	6200			240000		9.1 Meg	9.1 Meg
		180	6800	6800	6800		270000	270000	10.0 Meg	10.0 Meg	10.0 Meg
		200		7500	7500			300000		11.0 Meg	11.0 Meg
220	220	220		8200	8200	330000	330000	330000		12.0 Meg	12.0 Meg
		240		9100	9100			360000		13.0 Meg	13.0 Meg
		270	10000	10000	10000		390000	390000	15.0 Meg	15.0 Meg	15.0 Meg
		300		11000	11000			430000		16.0 Meg	16.0 Meg
330	330	330		12000	12000	470000	470000	470000		18.0 Meg	18.0 Meg
		360		13000	13000			510000		20.0 Meg	20.0 Meg
									22.0 Meg	22.0 Meg	22.0 Meg



# G-C ELECTRONICS ACCUR-OHM POWER RHEOSTATS

## POWER RHEOSTAT 25 WATTS

INCLUDING KNOB

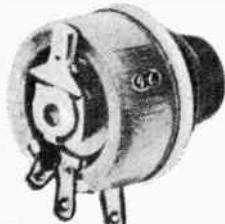


GCR-25

Resistance	Max. Amps.	Resistance	Max. Amps.
1	5.000	125	.445
2	3.540	175	.375
3	2.800	250	.316
6	2.040	350	.267
8	1.770	500	.222
10	1.580	750	.182
15	1.290	1000	.155
25	1.000	1500	.129
35	.845	2500	.100
50	.707	3500	.084
75	.575	5000	.070
100	.500		

## POWER RHEOSTAT 50 WATTS

INCLUDING KNOB



GCR-50

Resistance	Max. Amps.	Resistance	Max. Amps.
0.5	10.000	125	.630
1	7.070	150	.574
2	5.000	225	.470
4	3.540	300	.408
6	2.880	500	.316
8	2.500	800	.250
12	2.040	1000	.223
16	1.760	1600	.176
22	1.500	2500	.141
35	1.190	3500	.119
50	1.000	5000	.100
80	.790	8000	.079
		10,000	.070

## POWER RHEOSTAT 75 WATTS

INCLUDING KNOB

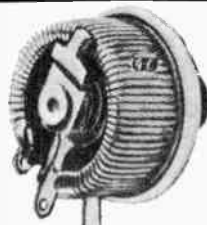


GCR-75

Resistance	Max. Amps.	Resistance	Max. Amps.
0.5	12.300	200	.612
1	8.660	300	.500
2	6.120	400	.433
3	5.000	500	.388
5	3.880	750	.316
7.5	3.160	1,000	.274
10	2.740	1,500	.224
16	2.170	2,000	.194
25	1.730	2,500	.173
50	1.230	5,000	.123
75	1.000	7,500	.100
100	.866	10,000	.087

## POWER RHEOSTAT 100 WATTS

INCLUDING KNOB

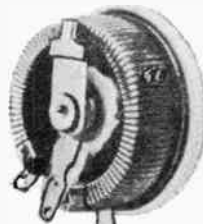


GCR-100

Resistance	Max. Amps.	Resistance	Max. Amps.
0.5	14.100	200	.707
1	10.000	300	.575
2	7.070	400	.500
3	5.750	500	.447
5	4.470	750	.365
7.5	3.650	1,000	.316
10	3.160	1,500	.258
16	2.500	2,000	.224
25	2.000	2,500	.200
50	1.410	5,000	.141
75	1.150	7,500	.115
100	1.000	10,000	.100

## POWER RHEOSTAT 150 WATTS

INCLUDING KNOB



GCR-150

Resistance	Max. Amps.	Resistance	Max. Amps.
0.5	17.300	150	1.000
1	12.300	200	.865
2	8.650	250	.775
3	7.070	350	.655
5	5.480	500	.548
7.5	4.470	750	.447
10	3.880	1,250	.346
15	3.163	1,800	.288
25	2.450	2,250	.259
35	2.070	3,000	.224
50	1.735	4,500	.182
75	1.415	7,500	.141
100	1.225	10,000	.122

# G-C ELECTRONICS MFG. CO.

Division of G-C—Textron Inc.  
ROCKFORD, ILLINOIS



# G-C ELECTRONICS

## ACCUR-OHM POWER RESISTORS

**GCL-5**

**FIXED  
VITREOUS ENAMELED  
RESISTORS  
5 WATT**

Core: 5/16" x 3/16" x 1"  
Terminal #10-L STD.

Ohms	Milliamps	Volts	Ohms	Milliamps	Volts	Ohms	Milliamps	Volts
1	2230	2.2	125	200	25	1250	63	79
1.5	1820	2.7	150	182	27	1500	58	87
2	1580	3.2	200	158	32	1750	53	93
3	1290	3.9	225	149	33	2000	50	100
4	1120	4.5	250	141	35	2250	47	106
5	1000	5.0	300	129	39	2500	45	112
7.5	816	6.1	350	119	42	3000	41	123
10	707	7.1	400	112	45	3500	38	133
12	646	7.8	450	105	47	4000	35	140
15	576	8.0	500	100	50	4500	33	149
20	500	10	600	91	55	5000	32	160
25	447	11	700	84	59	6000	29	174
30	400	12	750	81	61	7000	27	189
35	374	13	800	79	63	7500	26	195
40	354	14	900	74	67	8000	25	200
50	316	16	1000	71	71	9000	23	207
75	258	19	1100	67	74	10,000	22	220
100	223	22	1200	64	77			

**GCL-10**

**FIXED  
VITREOUS ENAMELED  
RESISTORS  
10 WATT**

Core: 5/16" x 3/16" x 1 1/4"  
Terminal #10-L

Ohms	Milliamps	Volts	Ohms	Milliamps	Volts	Ohms	Milliamps	Volts
1	3160	3.1	350	169	59	7000	38	266
1.5	2580	3.8	400	158	63	7500	36	270
2	2230	4.4	450	149	67	8000	35	280
3	1820	5.4	500	141	70	8500	34	289
4	1580	6.3	600	129	77	9000	33	297
5	1410	7.0	700	120	84	10,000	30	300
7.5	1150	8.6	750	115	86	11,000	27	300
10	1000	10	800	112	89	12,000	25	300
12	911	11	900	105	94	12,500	24	300
15	816	12	1000	100	100	13,500	22	300
20	707	14	1100	95	104	14,300	21	300
25	631	16	1200	91	109	15,000	20	300
30	577	17	1250	89	111	16,000	19	300
35	535	19	1500	82	123	17,500	17	300
40	500	20	1750	76	133	18,000	16	300
50	447	22	2000	71	142	20,000	16	320
75	365	27	2250	67	151	22,500	15	337
100	316	31	2500	63	158	25,000	15	375
125	282	35	3000	57	171	30,000	14	420
150	254	38	3500	53	185	35,000	13	455
200	223	44	4000	50	200	40,000	12	480
225	217	47	4500	47	212	45,000	11	495
250	200	50	5000	45	225	50,000	10	500
300	182	54	6000	41	246			

**GCL-20**

**FIXED  
VITREOUS ENAMELED  
RESISTORS  
20 WATT**

Core: 7/16" x 1/4" x 2"  
Terminal #10-L

Ohms	Milliamps	Volts	Ohms	Milliamps	Volts	Ohms	Milliamps	Volts
1	4480	4.4	850	154	131	10,000	44	440
3	2580	7.7	1000	141	141	12,500	36	450
5	2000	10	1200	129	155	15,000	31	463
10	1410	14	1250	126	157	20,000	24	480
15	1150	17	1500	115	172	25,000	20	500
25	895	22	1750	107	187	30,000	17	510
50	633	31	1850	104	192	35,000	15	525
75	516	39	2000	100	200	40,000	14	560
100	447	44	2250	94	211	45,000	13	585
150	365	54	2400	91	218	50,000	12	600
175	332	59	2500	89	222	55,000	11	605
200	316	63	2750	85	234	60,000	10.8	648
250	285	71	3000	81	243	65,000	10.5	684
300	258	77	3500	75	262	70,000	10	700
350	233	84	4000	70	280	75,000	9.5	712
400	223	89	4500	67	301	80,000	9.3	744
500	200	100	5000	63	315	85,000	9.1	773
650	175	114	6000	57	342	90,000	8.8	792
700	168	118	7000	53	371	95,000	8.6	816
750	164	123	7500	51	382	100,000	8.4	840
800	158	126	8000	50	400			

**GCB-25**

**FIXED  
VITREOUS ENAMELED  
RESISTORS  
25 WATT**

Core: 9/16" x 5/16" x 2"  
Mounting Centers 4 3/4"  
With #P-3747 Brackets  
Standard Lug #12

Ohms	100% Rating Volts	Rating Amps	50% Rating Amps	Ohms	100% Rating Volts	Rating Amps	50% Rating Amps	Ohms	100% Rating Volts	Rating Amps	50% Rating Amps
1	5.0	5.000	3.535	400	100	.250	.177	7500	427	.057	.040
2	7.0	3.535	2.500	500	111	.223	.158	10,000	500	.050	.035
3	8.6	2.885	2.040	750	136	.182	.129	12,000	505	.042	.029
4	10	2.500	1.770	800	141	.177	.125	15,000	510	.034	.024
5	11	2.236	1.580	850	145	.171	.121	20,000	520	.026	.018
10	15	1.580	1.118	1000	158	.158	.111	25,000	530	.022	.014
15	19	1.291	.914	1250	176	.141	.100	30,000	540	.018	.012
25	25	1.000	.707	1500	193	.129	.091	35,000	550	.016	.010
50	35	.707	.500	2000	222	.111	.079	40,000	560	.014	.009
75	43	.577	.408	2500	250	.100	.070	50,000	585	.012	.008
100	50	.500	.353	3000	273	.091	.064	60,000	610	.010	.007
150	61	.408	.289	3500	294	.084	.058	70,000	630	.009	.006
200	70	.353	.250	4000	316	.079	.056	75,000	635	.008	.005
250	79	.316	.223	5000	350	.070	.050	80,000	640	.008	.005
300	86	.289	.204	6000	384	.064	.045	100,000	700	.007	.005

## G-C ELECTRONICS MFG. CO.

Division of G-C — Textron Inc.      ROCKFORD, ILLINOIS



# G-C ELECTRONICS ACCUR-OHM POWER RESISTORS



**GCB-50**

**FIXED  
VITREOUS ENAMELED  
RESISTORS  
50 WATT**

Core: 9/16" x 5/16" x 4"  
Mounting Centers 3/4"  
With #P-3747 Brackets  
Standard Lug #12

Ohms	100% Volts	Rating Amps	50% Rating Amps	Ohms	100% Volts	Rating Amps	50% Rating Amps	Ohms	100% Volts	Rating Amps	50% Rating Amps
1	7	7.070	5.000	500	158	.316	.223	12,500	787	.063	.044
2	10	5.000	3.535	750	193	.258	.182	15,000	855	.057	.040
3	12	4.070	2.885	800	200	.250	.177	20,000	960	.048	.034
4	14	3.535	2.500	1000	223	.223	.158	25,000	1024	.041	.029
5	15	3.160	2.236	1500	273	.182	.129	30,000	1080	.036	.025
10	22	2.236	1.580	2000	316	.158	.111	35,000	1120	.032	.022
25	35	1.414	1.000	2500	350	.141	.100	40,000	1140	.029	.018
50	50	1.000	.707	3000	384	.129	.091	50,000	1150	.023	.016
75	61	.816	.577	4000	444	.111	.079	75,000	1200	.016	.011
100	70	.707	.500	5000	500	.100	.070	100,000	1250	.012	.008
150	86	.577	.408	6000	545	.091	.064	125,000	1300	.010	.007
200	100	.500	.353	7500	608	.081	.057	150,000	1350	.009	.006
250	111	.447	.316	8000	632	.079	.055	175,000	1375	.008	.005
300	122	.408	.289	10,000	700	.070	.050	200,000	1400	.007	.005
400	141	.353	.250	12,000	768	.064	.045	225,000	1450	.006	.004
								250,000	1500	.006	.004



**GCB-75**

**FIXED  
VITREOUS ENAMELED  
RESISTORS  
75 WATT**

Core: 9/16" x 5/16" x 6"  
Mounting Centers 6 3/4"  
With #P-3747 Brackets  
Standard Lug #12

Ohms	100% Volts	Rating Amps	50% Rating Amps	Ohms	100% Volts	Rating Amps	50% Rating Amps	Ohms	100% Volts	Rating Amps	50% Rating Amps
1	8	8.660	6.120	400	173	.433	.306	8000	769	.096	.068
2	12	6.120	4.330	500	193	.387	.274	10,000	860	.086	.061
3	15	5.000	3.530	750	237	.316	.223	12,000	948	.079	.055
4	17	4.330	3.060	800	242	.306	.216	12,500	962	.077	.054
5	19	3.875	2.740	1000	274	.274	.193	15,000	1050	.070	.050
10	27	2.740	1.935	1500	334	.223	.158	20,000	1220	.061	.043
25	43	1.732	1.225	2000	386	.193	.137	25,000	1225	.049	.035
50	61	1.225	.866	2500	432	.173	.122	30,000	1260	.042	.030
100	86	.866	.612	3000	474	.158	.111	35,000	1270	.036	.025
150	106	.707	.500	4000	548	.137	.096	40,000	1280	.032	.023
200	122	.612	.433	5000	610	.122	.086	45,000	1310	.029	.021
250	137	.548	.387	6000	666	.111	.079	50,000	1320	.026	.018
300	150	.500	.353	7500	750	.100	.070	75,000	1340	.018	.012
								100,000	1360	.013	.009



**GCB-100**

**FIXED  
VITREOUS ENAMELED  
RESISTORS  
100 WATT**

Core: 3/4" x 1/2" x 6 1/2"  
Mounting Centers 7 1/4"  
With #P-3689 Brackets  
Standard Lug #12

Ohms	100% Volts	Rating Amps	50% Rating Amps	Ohms	100% Volts	Rating Amps	50% Rating Amps	Ohms	100% Volts	Rating Amps	50% Rating Amps
1	10	10.000	7.070	500	223	.447	.316	10,000	1000	.100	.070
2	14	7.070	5.000	750	274	.365	.258	15,000	1217	.081	.057
3	17	5.770	4.070	1000	316	.316	.223	20,000	1400	.070	.048
4	20	5.000	3.535	1250	356	.285	.200	25,000	1415	.063	.041
5	22	4.470	3.160	1500	388	.259	.182	30,000	1425	.047	.036
10	31	3.160	2.236	2000	448	.224	.158	35,000	1430	.042	.033
25	50	2.000	1.414	2500	500	.200	.141	40,000	1440	.036	.029
50	70	1.414	1.000	3000	543	.181	.129	50,000	1450	.029	.023
75	86	1.150	.816	3500	595	.170	.119	60,000	1460	.024	.020
100	100	1.000	.707	4000	640	.160	.111	70,000	1470	.021	.018
125	112	.895	.632	4500	675	.150	.105	75,000	1474	.019	.016
150	122	.816	.576	5000	705	.141	.100	100,000	1500	.015	.012
250	157	.630	.447	7500	864	.115	.081				



**GCB-160**

**FIXED  
VITREOUS ENAMELED  
RESISTORS  
160 WATT**

Core: 1 1/8" x 3/4" x 8 1/2"  
Mounting Centers 9 1/4"  
With #P-4898 Brackets  
Standard Lug #14

Ohms	100% Volts	Rating Amps	50% Rating Amps	Ohms	100% Volts	Rating Amps	50% Rating Amps	Ohms	100% Volts	Rating Amps	50% Rating Amps
1	12	12.630	8.940	250	200	.800	.565	10,000	1260	.126	.089
2	18	8.940	6.320	500	282	.565	.400	15,000	1560	.104	.073
3	21	7.300	5.170	750	346	.461	.326	20,000	1780	.089	.063
4	25	6.320	4.470	1000	400	.400	.282	25,000	2000	.080	.056
5	28	5.650	4.000	1500	489	.326	.231	30,000	2010	.067	.047
10	40	4.000	2.830	2000	564	.282	.200	35,000	2015	.057	.041
15	49	3.265	2.315	2500	630	.252	.179	40,000	2020	.050	.035
25	63	2.525	1.786	3000	693	.231	.163	50,000	2030	.040	.028
50	89	1.786	1.265	3500	753	.215	.151	60,000	2040	.034	.024
75	109	1.460	1.033	4000	800	.200	.141	75,000	2065	.027	.019
100	126	1.265	.894	4500	832	.185	.133	80,000	2080	.025	.017
150	155	1.033	.731	5000	895	.179	.126	100,000	2100	.021	.015
200	178	.894	.633	7500	1096	.146	.104				



**GCB-200**

**FIXED  
VITREOUS ENAMELED  
RESISTORS  
200 WATT**

Core: 1 1/8" x 3/4" x 10 1/2"  
Mounting Centers 11 1/4"  
With #P-4898 Brackets  
Standard Lug #14

Ohms	100% Volts	Rating Amps	50% Rating Amps	Ohms	100% Volts	Rating Amps	50% Rating Amps	Ohms	100% Volts	Rating Amps	50% Rating Amps
1	14	14.140	10.000	750	387	.516	.365	15,000	1725	.115	.082
2	20	10.000	7.070	1000	447	.447	.316	20,000	2000	.100	.070
3	24	8.162	5.770	1500	547	.365	.259	25,000	2225	.089	.063
4	28	7.070	5.000	2000	632	.316	.223	30,000	2460	.082	.057
5	31	6.325	4.470	2500	707	.283	.200	35,000	2470	.071	.050
10	44	4.470	3.160	3000	776	.259	.181	40,000	2480	.062	.043
25	70	2.828	2.000	3500	840	.240	.170	50,000	2500	.050	.034
50	100	2.000	1.414	4000	900	.225	.160	60,000	2500	.042	.029
75	122	1.635	1.152	4500	945	.210	.150	75,000	2500	.033	.023
100	141	1.414	1.000	5000	1000	.200	.141	100,000	2500	.025	.017
150	173	1.152	.816	7500	1222	.163	.115	125,000	2500	.020	.014
250	224	.895	.632	10,000	1410	.141	.100	150,000	2500	.016	.012
500	316	.632	.447								

## G-C ELECTRONICS MFG. CO.

Division of G-C — Textron Inc.  
ROCKFORD, ILLINOIS





# G-C ELECTRONICS ACCUR-OHM POWER RESISTORS



**GCV-10**

**ADJUSTABLE  
VITREOUS ENAMELED  
RESISTORS  
10 WATT**

Core: 5/16" x 3/16" x 1 3/4"  
Mounting Centers 2 1/4"  
With Bracket #P-4989  
Standard Lug #10

Ohms	100% Volts	Rating Amps	50% Rating Amps	Ohms	100% Volts	Rating Amps	50% Rating Amps	Ohms	100% Volts	Rating Amps	50% Rating Amps
1	3.1	3.160	2.230	200	44	.223	.158	2500	158	.063	.045
2	4.4	2.230	1.580	250	50	.200	.141	3000	171	.057	.041
3	5.4	1.820	1.290	300	54	.182	.129	3500	185	.053	.038
5	7.0	1.410	1.000	350	59	.169	.119	4000	200	.050	.035
7.5	8.6	1.150	.816	400	63	.158	.112	4500	212	.047	.033
10	10	1.000	.707	500	70	.141	.100	5000	225	.045	.032
15	12	.816	.576	600	77	.129	.091	6000	246	.041	.029
20	14	.707	.500	750	86	.115	.081	7000	226	.038	.027
25	16	.631	.447	800	89	.112	.079	7500	270	.036	.026
50	22	.447	.316	1000	100	.100	.071	8000	280	.035	.025
75	27	.365	.258	1250	111	.089	.063	8500	289	.034	.024
100	31	.316	.223	1500	123	.082	.058	9000	297	.033	.023
150	38	.251	.182	2000	142	.071	.050	10,000	300	.030	.022
				2250	151	.067	.047				



**GCV-25**

**ADJUSTABLE  
VITREOUS ENAMELED  
RESISTORS  
25 WATT**

Core: 9/16" x 5/16" x 2"  
Mounting Centers 2 3/4"  
With Bracket #P-3747  
Standard Lug #12

1	5.0	5.000	3.535	250	79	.316	.223	3500	294	.084	.058
2	7.0	3.535	2.500	300	86	.289	.204	4000	316	.079	.056
3	8.6	2.885	2.040	400	100	.250	.177	4500	332	.074	.052
5	11	2.236	1.580	500	111	.223	.158	5000	350	.070	.050
7.5	13	1.825	1.290	750	136	.182	.129	6000	384	.064	.045
10	15	1.580	1.118	800	141	.177	.125	7000	420	.060	.042
15	19	1.291	.914	850	145	.171	.121	7200	425	.059	.041
20	22	1.111	.790	1000	158	.158	.111	7500	427	.057	.040
25	25	1.000	.707	1250	176	.141	.100	8000	440	.055	.039
50	35	.707	.500	1500	193	.129	.091	9000	468	.052	.037
75	43	.577	.408	2000	222	.111	.079	10,000	500	.050	.035
100	50	.504	.353	2250	236	.105	.074	12,000	506	.042	.029
150	61	.408	.289	2500	250	.100	.070	15,000	510	.034	.024
200	70	.353	.250	3000	273	.091	.064	20,000	520	.026	.018
								25,000	530	.022	.014



**GCV-50**

**ADJUSTABLE  
VITREOUS ENAMELED  
RESISTORS  
50 WATT**

Core: 9/16" x 5/16" x 4"  
Mounting Centers 4 3/4"  
With Bracket #P-3747  
Standard Lug #12

1	7	7.070	5.000	750	193	.258	.182	7500	608	.081	.057
2	10	5.000	3.535	800	200	.250	.177	8000	632	.079	.055
3	12	4.070	2.885	1000	223	.223	.158	9000	665	.074	.052
4	14	3.535	2.500	1250	250	.200	.141	10,000	700	.070	.050
5	15	3.160	2.236	1500	273	.182	.129	12,000	768	.064	.045
10	22	2.236	1.580	2000	316	.158	.111	15,000	855	.057	.040
25	35	1.414	1.000	2250	335	.149	.105	20,000	960	.048	.034
50	50	1.000	.707	2500	350	.141	.100	25,000	1024	.041	.029
75	61	.816	.577	3000	384	.129	.091	30,000	1080	.036	.025
100	70	.707	.500	3500	416	.119	.084	40,000	1140	.029	.018
150	86	.577	.408	4000	444	.111	.079	50,000	1150	.023	.016
200	100	.500	.353	4500	472	.105	.074	60,000	1175	.019	.014
250	111	.447	.316	5000	500	.100	.070	75,000	1200	.016	.011
300	122	.408	.289	6000	545	.091	.064	80,000	1225	.015	.010
400	141	.353	.250	7000	588	.084	.059	100,000	1250	.012	.008
500	158	.316	.223	7200	598	.083	.058				



**GCV-75**

**ADJUSTABLE  
VITREOUS ENAMELED  
RESISTORS  
75 WATT**

Core: 9/16" x 5/16" x 6"  
Mounting Centers 6 3/4"  
With Bracket #P-3747  
Standard Lug #12

1	8	8.660	6.120	750	237	.316	.223	7500	750	.100	.070
2	12	6.120	4.330	800	242	.306	.216	8000	769	.096	.068
3	15	5.000	3.530	1000	274	.274	.193	9000	819	.091	.064
4	17	4.330	3.060	1250	280	.244	.173	10,000	860	.086	.061
5	19	3.875	2.740	1500	334	.223	.158	12,000	948	.079	.055
10	27	2.740	1.935	2000	386	.193	.137	15,000	1050	.070	.050
15	33	2.236	1.580	2250	409	.182	.129	20,000	1220	.061	.043
25	43	1.732	1.225	2500	432	.173	.122	25,000	1225	.049	.035
50	61	1.225	.866	3000	474	.158	.111	30,000	1260	.042	.030
75	75	1.000	.707	3500	511	.146	.103	35,000	1270	.036	.025
100	86	.866	.612	4000	548	.137	.096	40,000	1280	.032	.023
200	122	.612	.433	4500	581	.129	.091	45,000	1310	.029	.021
250	137	.548	.387	5000	610	.122	.086	50,000	1320	.026	.018
300	150	.500	.353	6000	666	.111	.079	60,000	1330	.022	.016
400	173	.433	.306	7000	721	.103	.073	70,000	1340	.019	.014
500	193	.387	.274	7200	735	.102	.072	80,000	1350	.017	.012
								100,000	1360	.013	.009

## G-C ELECTRONICS MFG. CO.

Division of G-C — Textron Inc.  
ROCKFORD, ILLINOIS



# G-C ELECTRONICS ACCUR-OHM POWER RESISTORS



**GCV-100  
ADJUSTABLE  
VITREOUS ENAMELED  
RESISTORS**

**100 WATT**  
Core: 3/4" x 1/2" x 6 1/2"  
Mounting Centers 7 1/4"  
With Brackets P-3689  
Standard Lug #12

Ohms	100% Rating		50% Rating	Ohms	100% Rating		50% Rating	Ohms	100% Rating		50% Rating
	Volts	Amps	Amps		Volts	Amps	Amps		Volts	Amps	Amps
1	10	10.000	7.070	400	200	.500	.353	7500	864	.115	.081
2	14	7.070	5.000	500	223	.447	.316	10,000	1000	.100	.070
3	17	5.770	4.070	750	274	.365	.258	15,000	1217	.081	.057
4	20	5.000	3.535	1000	316	.316	.223	20,000	1400	.070	.048
5	22	4.470	3.160	1500	388	.259	.182	25,000	1415	.053	.041
10	31	3.160	2.236	2000	448	.224	.158	30,000	1425	.047	.033
25	50	2.000	1.414	2500	500	.200	.141	40,000	1440	.036	.027
50	70	1.414	1.000	3000	543	.181	.129	50,000	1450	.029	.022
100	100	1.000	.707	4000	640	.160	.111	60,000	1480	.024	.019
200	141	.707	.500	5000	705	.141	.100	75,000	1474	.019	.015
250	157	.630	.447	6000	773	.129	.091	100,000	1500	.015	.011



**GCV-160  
ADJUSTABLE  
VITREOUS ENAMELED  
RESISTORS**

**160 WATT**  
Core: 1 1/8" x 3/4" x 8 1/2"  
Mounting Centers 9 1/4"  
With Brackets P-4898  
Standard Lug #14

Ohms	100% Rating		50% Rating	Ohms	100% Rating		50% Rating	Ohms	100% Rating		50% Rating
	Volts	Amps	Amps		Volts	Amps	Amps		Volts	Amps	Amps
1	12	12.650	8.940	250	200	.800	.565	7500	1096	.146	.104
2	18	8.940	6.320	500	282	.565	.400	10,000	1260	.126	.089
3	21	7.300	5.170	1000	400	.400	.282	15,000	1560	.104	.073
4	25	6.320	4.470	1500	489	.326	.231	20,000	1780	.089	.063
5	28	5.650	4.000	2000	564	.282	.200	25,000	2000	.080	.056
10	40	4.000	2.830	2500	630	.232	.179	30,000	2010	.067	.047
15	49	3.265	2.315	3000	693	.231	.163	40,000	2020	.050	.035
25	63	2.525	1.786	3500	753	.215	.151	50,000	2030	.040	.028
50	89	1.786	1.265	4000	809	.200	.141	60,000	2040	.034	.024
100	126	1.265	.894	4500	832	.185	.133	75,000	2065	.027	.019
200	178	.894	.633	5000	895	.179	.126	80,000	2080	.025	.017
								100,000	2100	.021	.015



**GCV-200  
ADJUSTABLE  
VITREOUS ENAMELED  
RESISTORS**

**200 WATT**  
Core: 1 1/8" x 3/4" x 10 1/2"  
Mounting Centers 11 1/4"  
With Brackets P-4898  
Standard Lug #14

Ohms	100% Rating		50% Rating	Ohms	100% Rating		50% Rating	Ohms	100% Rating		50% Rating
	Volts	Amps	Amps		Volts	Amps	Amps		Volts	Amps	Amps
1	14	14.140	10.000	1000	447	.447	.316	10,000	1410	.141	.100
2	20	10.000	7.070	1500	547	.365	.259	15,000	1725	.115	.082
3	24	8.162	5.770	2000	632	.316	.225	20,000	2000	.100	.070
4	28	7.070	5.000	2500	707	.283	.200	25,000	2225	.089	.063
5	31	6.325	4.470	3000	776	.259	.181	30,000	2460	.082	.057
10	44	4.470	3.160	3500	840	.240	.170	40,000	2480	.062	.043
25	70	2.828	2.000	4000	900	.225	.160	50,000	2500	.050	.034
50	100	2.000	1.414	4500	945	.210	.150	60,000	2500	.042	.029
100	141	1.414	1.000	5000	1000	.200	.141	75,000	2500	.033	.023
250	224	.895	.632	7500	1222	.163	.115	100,000	2500	.025	.017
500	316	.632	.447								



**SAVE OHM  
RESISTORS**

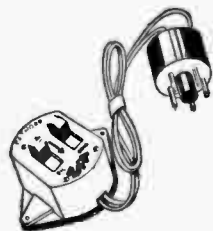
Type	Dim.	Wattage	Max. Res.
GCS-5	1 5/8 x 9/16	5	10,000

Type	Dim.	Wattage	Max. Res.
GCS-10	2 x 9/16	10	15,000



**SAVE OHM  
"FUSESISTOR"**

Type	Dim.	Wattage	Max. Res.
GCF-7.5	7.5 OHMS	...	...



**ZIPT** Quickly repairs cathode to filament and grid to cathode shorts in TV picture tubes.

**9264 ZIPT**

**9264-D Display of 24 Zipts**

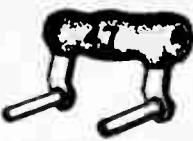









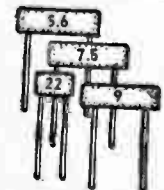




## G-C ELECTRONICS MFG. CO.

Division of G-C — Tectron Inc.  
ROCKFORD, ILLINOIS



# G - C ELECTRONICS

## TV FUSE-SISTORS

ILLUSTRATION	PART No.	DESCRIPTION	LIST	ILLUSTRATION	PART No.	DESCRIPTION	LIST
	<b>9272</b> 9272-D	<b>G-C 4.7 OHM TV FUSE-SISTOR</b> Replacement for Philco, etc. <b>4.7 Ohm Fuse-Sistor</b> Display of 50 #9272	\$ .65 32.50		<b>9214</b> 9214-D	<b>G-C No. 9214 GLO-BAR</b> Resistance—Hot—20 ohms at 600 M. A. Cold—250 ohms—no load—Replace G. E. No. RRW051. Very popular resistor. <b>Glo-Bar Thermistor</b> Display of 20 #9214	<b>\$1.35</b> 27.00
	<b>9276</b> 9276-D	<b>G-C 5.6 OHM TV FUSE-SISTOR</b> Replacement for Raytheon, R. C. A., Arvin, Western Auto, etc. <b>5.6 Ohm Fuse-Sistor</b> Display of 50 #9276	\$ .65 32.50		<b>9215</b> 9215-D	<b>G-C No. 9215 GLO-BAR</b> Resistance—Hot—75 ohms at 300 M. A. Cold—950 ohms—no load. Replace G. E. No. RRW041. <b>Glo-Bar Thermistor</b> Display of 20 #9215	<b>\$1.35</b> 27.00
	<b>9207</b> 9207-D	<b>G-C 7.5 OHM TV FUSE-SISTOR</b> Replaces any fuse resistor in series wired, 1955 TV sets. For Motorola, Crosley, Hoffman, Raytheon, Sylvania, Zenith, R. C. A., Admiral, Hallicrafter, Sora, etc. <b>7.5 Ohm Fuse-Sistor</b> Display of 50 #9207	\$ .65 32.50		<b>9216</b> 9216-D	<b>G-C No. 9216 GLO-BAR</b> Resistance—Hot—31 ohms at 300 M. A. Cold—260 ohms—no load. Replaces G. E. No. RRW097. Popular in all G. E. - 1953 models. <b>Glo-Bar Thermistor</b> Display of 20 #9216	<b>\$1.43</b> 28.60
	<b>9277</b> 9277-D	<b>G-C 9 OHM TV FUSE-SISTOR</b> Ideal replacement for Gamble-Skogmo, Firestone, and Raytheon television receivers. <b>9 Ohm Fuse-Sistor</b> Display of 50 #9277	\$ .65 32.50		<b>9217</b> 9217-D	<b>G-C No. 9217 GLO-BAR</b> Resistance—Hot—35 ohms at 600 M. A. Cold—460 ohms—no load. Replaces G. E. No. RRW054. Popular G. E. Type Resistor. <b>Glo-Bar Thermistor</b> Display of 20 #9217	<b>\$1.43</b> 28.60
	<b>9278</b> 9278-D	<b>G-C 22 OHM TV FUSE-SISTOR</b> Replacement for Motorola television receivers. <b>22 Ohm Fuse-Sistor</b> Display of 50 #9278	\$ .65 32.50		<b>9268</b> 9268-D	<b>G-C No. 9268 GLO-BAR</b> Resistance—Hot—43 ohms at 600 M. A. Cold—125 ohms—no load. Replacement for Crosley. <b>Glo-Bar Thermistor</b> Display of 20 #9268	<b>\$1.70</b> 34.00
	<b>9279</b> 9279-D	<b>G-C FUSE-SISTOR KIT</b> One each of 5.6 Ohm, 7.5 Ohm, 9 Ohm, and 22 Ohm Fuse-Sistors. <b>Fuse-Sister Kit</b> Display of 20 kits	\$2.50 50.00		<b>9135</b> 9135-D	<b>G-C No. 9135 GLO-BAR KIT</b> "2 Resistors in Kit." No. 9135 kit of 2 resistors will take care of 100% replacement of G. E. filament resistors. Also, for Motorola, Sears, Crosley, Hoffman, Teletone, and Pathe. <b>Glo-Bar Thermistor Kit</b> Display of 20 #9135	<b>\$2.40</b> 48.00
	<b>9286</b> 9286-D	<b>G-C TV FUSE-SISTOR</b> 150-ohm 0.12 Amp. as used on Motorola Radio, Part. No. 65A633275 with Mounting Board. <b>Fuse-Sistor</b> Display of 50 #9286	\$ .65 32.50		<b>9269</b> 9269-D	<b>G-C No. 9269 GLO-BAR</b> Resistance—Hot—9 ohms at 600 M. A. Replaces RCA Part No. 100118. <b>Glo-Bar Thermistor</b> Display of 20 #9269	<b>\$1.85</b> 37.00
	<b>9287</b> 9287-D	<b>G-C TV FUSE-SISTOR</b> 150-ohm 5 watt, as used on Motorola TV, Part No. 65A31725C. <b>Fuse-Sistor</b> Display of 50 #9287	\$ .65 32.50	<b>G-C ELECTRONICS MFG. CO.</b> Division of G-C — Textron Inc. Rockford, Illinois			

DALE  
PRODUCTS  
INC.



# TYPES RS and RLS

## MINIATURE WIRE WOUND RESISTORS

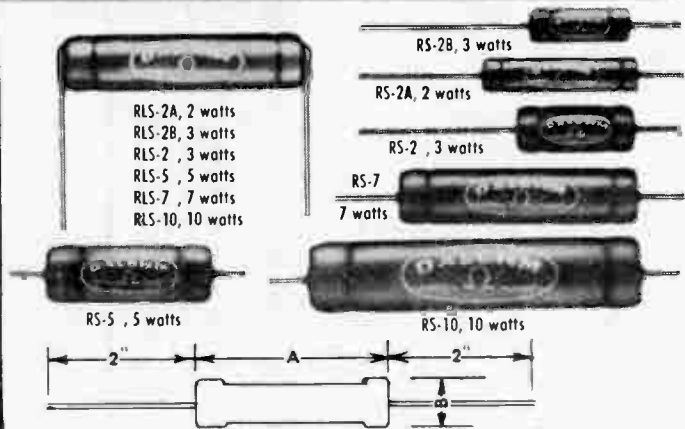
every desirable characteristic

For all applications where the equipment must survive the most severe environmental, shock, and vibration conditions.

Smallest in size; completely welded from terminal to terminal; silicone sealed, offering high dielectric strength, maximum heat dissipation and maximum resistance to abrasion; impervious to moisture, salt ions, and gases.

Type RS supplied with axial leads,  
Type RLS with radial leads—especially designed for printed circuit applications.

- Temperature coefficient 0.00002/Deg. C
- Ranges from 0.05 ohm to 175,000 ohms, depending on type
- Tolerances 0.05%, 0.1%, 0.25%, 0.5%, 1%, 3%



Type	Dim. A	Dim. B	Max. Res. Value
RS-2 A RLS-2 A	13/16" ± 1/16"	3/16" ± 1/32"	28,000 Ohms
RS-2 B RLS-2 B	9/16" ± 1/16"	3/16" ± 1/32"	20,000 Ohms
RS-2 RLS-2	5/8" ± 1/16"	1/4" ± 1/32"	30,000 Ohms

Type	Dim. A	Dim. B	Max. Res. Value
RS-5 RLS-5	3/4" ± 1/16"	5/16" ± 1/32"	60,000 Ohms
RS-7 RLS-7	1-7/32" ± 1/16"	5/16" ± 1/32"	90,000 Ohms
RS-10 RLS-10	1-25/32" ± 1/16"	3/8" ± 1/32"	175,000 Ohms

DALE  
PRODUCTS  
INC.

Columbus, Nebr., U.S.A.

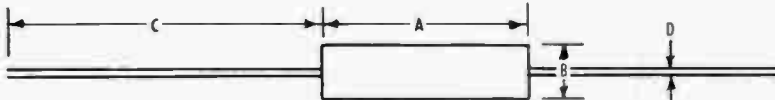


# TYPE RSE

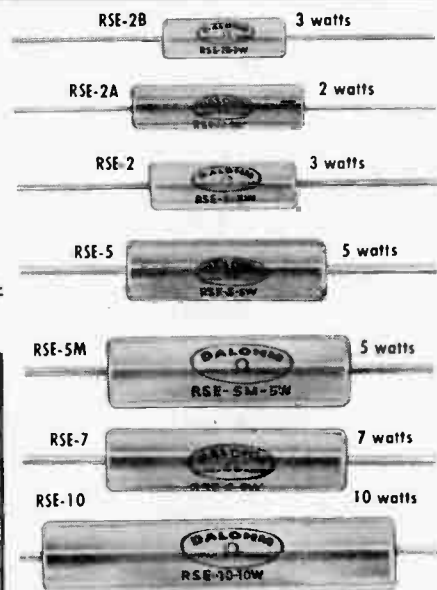
## RUGGEDIZED MINIATURE WIRE WOUND RESISTORS

Designed for trouble-free performance under the most exacting conditions of shock and vibration. Smallest in size; completely welded from terminal to terminal; sealed in silicone and housed in bright nickel plated brass tubing. (Suggested mounting clip: Atlas E-E Corp.) Impervious to moisture, salt ions, vapor and gases.

- Temperature coefficient 0.00002/Deg. C
- Ranges from .5 ohm to 175,000 ohms depending on type
- Tolerances 0.05%, 0.1%, 0.25%, 0.5%, 1%, 3%



Type	Wattage Rating	Dim. A (inches)	Dim. B (inches)	Dim. C (inches)	Dim. D	Max. Res.	Min. Res.	MIL R-26-C
RSE-2 A	2	15/16 ± 1/32	.220 ± .005	1-7/16 ± 1/8	.032	28 K	.5 Ohms	No
RSE-2 B	3	11/16 ± 1/32	.220 ± .005	1-7/16 ± 1/8	.032	20 K	.5 Ohms	No
RSE-2	3	13/16 ± 1/32	.260 ± .005	1 1/8 ± 1/8	.040	30 K	2 Ohms	No
RSE-5	5	1-5/64 ± 1/32	.330 ± .005	1 1/8 ± 1/8	.040	60 K	5 Ohms	No
RSE-5 M	5	1 1/8 ± 1/32	.395 ± .005	1 1/8 ± 1/8	.040	100 K	5 Ohms	RW 55
RSE-7	7	1-23/64 ± 1/32	.330 ± .005	1 1/8 ± 1/8	.040	90 K	7 Ohms	No
RSE-10	10	1-61/64 ± 1/32	.395 ± .005	1 1/8 ± 1/8	.040	175 K	10 Ohms	RW 56



RS, RLS and RSE RESISTORS CONFORM TO APPLICABLE JAN and MIL SPECIFICATIONS

Your request for samples and quotations cordially invited.

EXPORT DEPT: Pan-Mar Corp., 1270 Broadway, New York

**DALE  
PRODUCTS  
INC.**

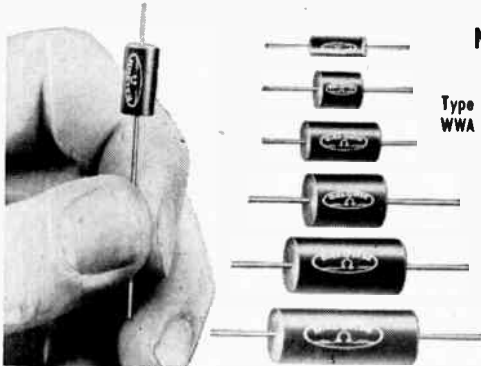
Columbus, Nebr., U.S.A.



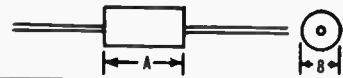
**WIRE WOUND  
ENCAPSULATED  
PRECISION RESISTORS  
SURPASS MIL-R-93A**

Completely impervious to penetrating effects of salt ions, humidity, moisture, and corrosive gases and vapors, Daleohm's new encapsulating material has very high di-electric strength. All materials are carefully selected for coefficient of expansion characteristics, thereby eliminating the possibility of distorted wiring and shorted turns which are quite common in similar types of resistors. Type WW resistors are all non-inductive, pi-wound.

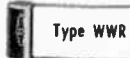
- Resistance range 0.1 ohm to 5 megohms
- Tolerances .05%, .1%, .25%, .5% and 1%
- Powered at .1 watt to 2.5 watts, depending on size, type and tolerance
- Temperature coefficient 0.00002/Deg. C
- Terminals: WWL-lugs; WWA-axial leads; WWP, parallel leads; WWR-radial leads



**NEW SUB-MINIATURE SIZES**



Types	A	B	Max. Res.	Min. Res.	Stand. Tol.	Watts at 85° C		Mil. Spec.	Max. Mil. Res.	Max. Mil. Wattage
						for 20° C Rise	for 40° C Rise			
WWA-13	3/8	1/8	50K	10 Ohms	1%	.1 W	.2 W	No	No	No
WWA-22	1/4	1/4	150K	10 Ohms	1%	.15 W	.3 W	RB-56	.125 Meg	.125 W
WWA-24	1/2	1/4	300K	10 Ohms	1%	.2 W	.4 W	RB-55	.225 Meg	.15 W
WWA-26	3/8	1/4	400K	10 Ohms	1%	.25 W	.5 W	RB-54	.33 Meg	.25 W
WWA-34	1/2	3/8	500K	10 Ohms	1%	.25 W	.5 W	No	No	No
WWA-36	3/8	3/8	750K	10 Ohms	1%	.3 W	.6 W	RB-53	.75 Meg	.3 W
WWA-38	1	3/8	1 Meg	10 Ohms	1%	.4 W	.8 W	RB-52	1 Meg	.4 W

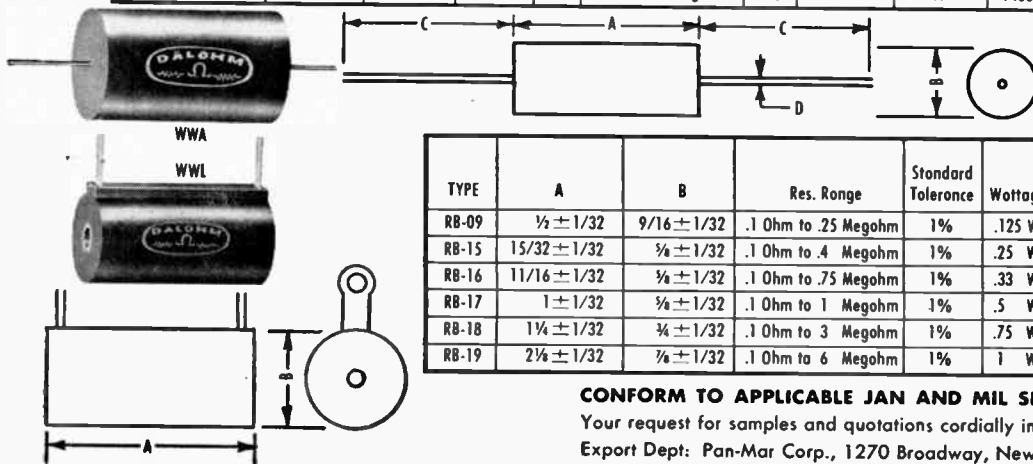


Type	A	B	Max. Res.	Min. Res.	Stand. Tol.	Watts at 85° C	
						for 20° C Rise	for 40° C Rise
WWL and WWR 23	3/8	1/4	75K	10 Ohms	1%	.15 W	.3 W
WWL and WWR 24	1/2	1/4	100K	10 Ohms	1%	.2 W	.4 W
WWL and WWR 34	1/2	3/8	350K	10 Ohms	1%	.25 W	.5 W
WWL and WWR 36	3/8	3/8	550K	10 Ohms	1%	.3 W	.6 W
WWL and WWR 38	1	3/8	750K	10 Ohms	1%	.4 W	.8 W

Type	A	B	Max. Res.	Min. Res.	Stand. Tol.	Watts at 85° C	
						for 20° C Rise	for 40° C Rise
WWP-22	1/4	1/4	150K	10 Ohms	1%	.15 W	.3 W
WWP-24	1/2	1/4	300K	10 Ohms	1%	.2 W	.4 W
WWP-34	1/2	3/8	500K	10 Ohms	1%	.25 W	.5 W
WWP-36	3/8	3/8	750K	10 Ohms	1%	.3 W	.6 W
WWP-38	1	3/8	1 Meg	10 Ohms	1%	.4 W	.8 W

**STANDARD SIZES**

Type	A	B	C	D	Res. Range	Stand. Tol.	Wattage at 85° C		Max. Working Voltage	Max. Military Resistance
							for 20° Rise	for 40° Rise		
WWA and WWL 44	1/2 ± 1/32	1/2 ± 1/32	1 1/8 ± 1/8	.040	.1 Ohm to 700K Ohms	1%	.5	1.0	250 Volts	150K Ohms
WWA and WWL 45	3/8 ± 1/32	1/2 ± 1/32	1 1/8 ± 1/8	.040	.1 Ohm to 1 Megohm	1%	.5	1.0	350 Volts	250K Ohms
WWA and WWL 4B	1 ± 1/32	1/2 ± 1/32	1 1/8 ± 1/8	.040	.1 Ohm to 2 Megohm	1%	.75	1.5	700 Volts	500K Ohms
WWA and WWL 4-12	1 1/2 ± 1/32	1/2 ± 1/32	1 1/8 ± 1/8	.040	.1 Ohm to 4 Megohm	1%	.875	1.75	1050 Volts	850K Ohms
WWA and WWL 4-16	2 ± 1/32	1/2 ± 1/32	1 1/8 ± 1/8	.040	.1 Ohm to 5 Megohm	1%	1.0	2.0	1400 Volts	1.25 Megohms



TYPE	A	B	Res. Range	Standard Tolerance	Wattage	Max. Working Voltage	MIL. TYPE
RB-09	1/2 ± 1/32	9/16 ± 1/32	.1 Ohm to .25 Megohm	1%	.125 W	250 V	RB-09
RB-15	15/32 ± 1/32	3/8 ± 1/32	.1 Ohm to .4 Megohm	1%	.25 W	300 V	RB-15
RB-16	11/16 ± 1/32	3/8 ± 1/32	.1 Ohm to .75 Megohm	1%	.33 W	300 V	RB-16
RB-17	1 ± 1/32	3/8 ± 1/32	.1 Ohm to 1 Megohm	1%	.5 W	600 V	RB-17
RB-18	1 1/4 ± 1/32	3/8 ± 1/32	.1 Ohm to 3 Megohm	1%	.75 W	600 V	RB-18
RB-19	2 1/4 ± 1/32	3/8 ± 1/32	.1 Ohm to 6 Megohm	1%	1 W	900 V	RB-19

**CONFORM TO APPLICABLE JAN AND MIL SPECIFICATIONS**

Your request for samples and quotations cordially invited

Export Dept: Pan-Mar Corp., 1270 Broadway, New York 1, N. Y.

**DALE  
PRODUCTS  
INC.**

Columbus, Nebr., U.S.A.



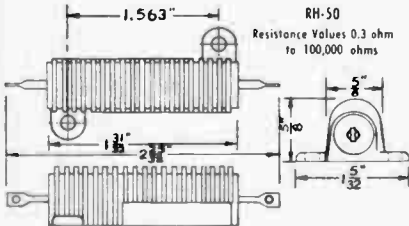
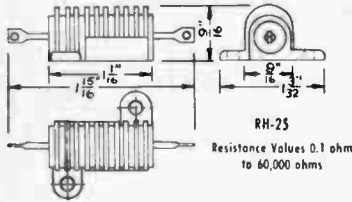
# TYPE RH MINIATURE WIRE WOUND RESISTORS

every desirable characteristic

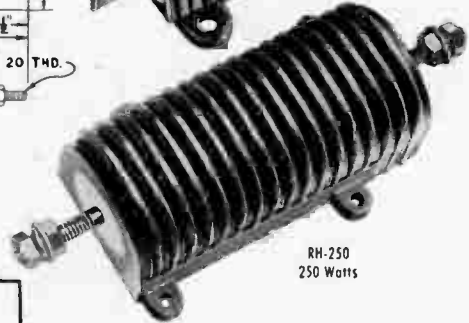
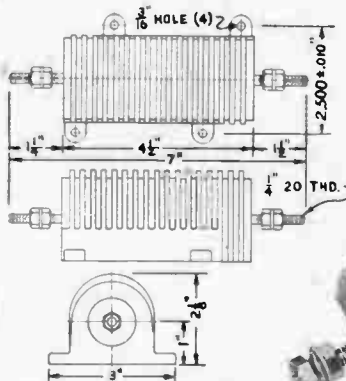
For all applications where the equipment must survive the most severe environmental, shock, vibration, humidity and temperature conditions.

Smallest in size; completely welded from terminal to terminal; silicone sealed in a die-cast black anodized aluminum housing and mounts on sub-panel for maximum heat dissipation; impervious to moisture, salt ions, vapor and gases.

- Temperature coefficient 0.00002/Deg. C
- Ranges from 0.1 Ohm to 100,000 ohms, depending on type
- Tolerances 0.05%, 0.1%, 0.25%, 0.5%, 1%, 3%
- Other values and tolerances on request



**RH-250** Resistance Values 0.3 ohm to 35,000 ohms



<b>RH-25</b>		
Tolerance	Resistance	
	Min.	Max.
.05%	1 ohm to 15,500 ohms	
.1 %	0.1 ohm to 15,500 ohms	
.25%	0.1 ohm to 15,500 ohms	
.5 %	0.1 ohm to 15,500 ohms	
1 %	0.1 ohm to 60,000 ohms	
3 %	0.1 ohm to 60,000 ohms	

<b>RH-50</b>		
Tolerance	Resistance	
	Min.	Max.
.05%	1 ohm to 55,000 ohms	
.1 %	0.3 ohm to 55,000 ohms	
.25%	0.3 ohm to 55,000 ohms	
.5 %	0.3 ohm to 55,000 ohms	
1 %	0.3 ohm to 100,000 ohms	
3 %	0.3 ohm to 100,000 ohms	

<b>RH-250</b>	
Resistance Values 0.3 ohm to 35,000 ohms in tolerances .05%, .1%, .25%, .5%, 1%, 3%	

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PRODUCTS  
INC.**

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# TYPE PH POWER HOUSE

Miniature Wire Wound Resistors

PH types combine high power rating with subminiature design, have completely welded construction from terminal to terminal, and are silicone sealed for absolute protection against moisture, shock and salt spray. Ruggedized construction assures dependability under the most extreme conditions. Vertical single hole panel mounting provided by integral threaded base and lock nut. Black anodized vertical finned housing provides protective covering and high heat dissipation.

- Temperature coefficient 0.00002/Deg. C

<b>PH-25</b>		
Tolerance	Resistance	
	Min.	Max.
.05%	10 ohm to 15,000 ohms	
.1 %	5 ohm to 15,000 ohms	
.25%	2.5 ohm to 15,000 ohms	
.5 %	1 ohm to 15,000 ohms	
1 %	1 ohm to 60,000 ohms	
3 %	0.1 ohm to 60,000 ohms	

<b>PH-100</b>		
Tolerance	Resistance	
	Min.	Max.
.05%	10 ohm to 35K ohms	
.1 %	5 ohm to 35K ohms	
.25%	5 ohm to 35K ohms	
.5 %	5 ohm to 35K ohms	
1 %	1 ohm to 35K ohms	
3 %	1 ohm to 35K ohms	



Your request for samples and quotations cordially invited.

EXPORT DEPT: Pan-Mar Corp.,  
1270 Broadway, New York

DALE  
PRODUCTS  
INC.



## DEPOSITED CARBON RESISTORS and HERMETIC SEALED RUGGEDIZED DEPOSITED CARBON RESISTORS

### TYPE DC Deposited Carbon Resistors for exceptional accuracy in any high-low resistance range

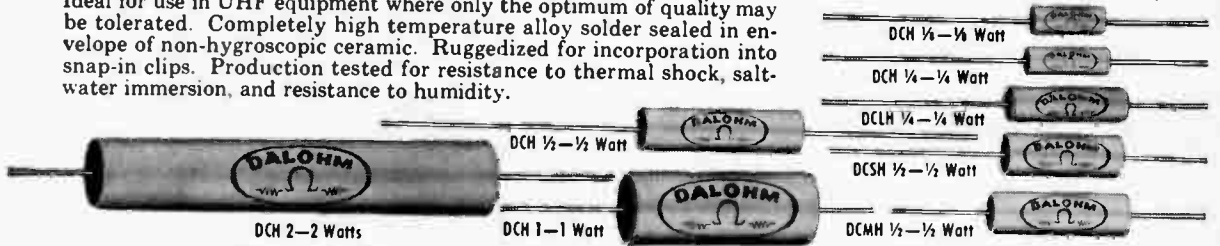
Manufactured under the most rigid quality control standards to deliver matchless performance and economy. Dalohm Type DC resistors now supplied with an improved coating material which incorporates extreme toughness, low temperature cycling, humidity resistance, and high temperature characteristics.



### TYPE DCH HERMETIC SEAL RUGGEDIZED DEPOSITED CARBON RESISTORS . . .

The ultimate in precision under all conditions

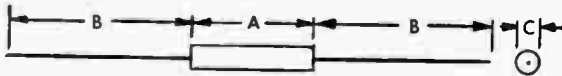
Ideal for use in UHF equipment where only the optimum of quality may be tolerated. Completely high temperature alloy solder sealed in envelope of non-hygroscopic ceramic. Ruggedized for incorporation into snap-in clips. Production tested for resistance to thermal shock, salt-water immersion, and resistance to humidity.



#### CHARACTERISTICS

- TEMPERATURE COEFFICIENT—Will vary slightly with type and resistance value. Variation will run from 140 to 500 parts per million per Degree C.
- VOLTAGE COEFFICIENT—Less than 0.002% per volt with average about 0.0012%.

- DEVIATION UNDER LOAD—High stability is experienced when operated continuously at full wattage. A change of less than 0.1% takes place after 100 hours of operation at 125 Degrees Ambient (1/2 watt resistor dissipating 0.1 watt).
- HUMIDITY CHARACTERISTICS—TYPE DC: Negligible; TYPE DCH: After 1000 hours 95% R.H. at 70 Degrees C, a change of less than 0.1% is experienced.
- TOLERANCE—Supplied with 1% tolerance and are calibrated at 25 Degrees C. (Other tolerances available.)



Type	DIMENSIONS			STANDARD RESISTANCE RANGE	MAX. WEIGHT (Grams)	CONFORMS TO MIL-R-10509B
	A	B	C			
DC-1/4	9/32 ± 1/64	1 1/2 ± 1/8	3/32 ± 1/64	10 Ohms to 500 K Ohms	0.2 grams	—
DC-1/2	13/32 ± 1/64	1 1/2 ± 1/8	3/32 ± 1/64	10 Ohms to 1 Megohm	0.22 grams	—
DCL-1/4	17/32 ± 1/64	1 1/2 ± 1/8	3/32 ± 1/64	10 Ohms to 1.5 Megohm	1.0 grams	—
DCS-1/2	1/2 ± 1/16	1 1/2 ± 1/8	3/16 ± 1/32	10 Ohms to 5 Megohm	0.7 grams	—
DCM-1/2	11/16 ± 1/16	1 1/2 ± 1/8	3/16 ± 1/32	10 Ohms to 5 Megohm	0.9 grams	—
DC-1/2	13/16 ± 1/16	1 1/2 ± 1/8	3/16 ± 1/32	10 Ohms to 5 Megohm	1.1 grams	—
DC-1	15/16 ± 1/16	1 1/2 ± 1/8	5/16 ± 1/32	10 Ohms to 10 Megohm	2.5 grams	—
DC-2	2-1/16 ± 1/16	1 1/2 ± 1/8	5/16 ± 1/32	10 Ohms to 50 Megohm	5.0 grams	—
DCH-1/4	9/32 ± 1/32	1 1/2 ± 1/8	.155 ± .010	10 Ohms to 500 K Ohms	.4 grams	NO
DCH-1/2	7/16 ± 1/32	1 1/2 ± 1/8	.155 ± .010	10 Ohms to 1 Megohm	.6 grams	RN60
DCLH-1/4	39/64 ± 1/32	1 1/2 ± 1/8	.175 ± .010	10 Ohms to 2 Megohms	.7 grams	RN65
DCSH-1/2	21/32 ± 1/32	1 1/2 ± 1/8	.250 ± .010	1 Ohm to 2 Megohms	1.6 grams	NO
DCMH-1/2	3/4 ± 1/32	1 1/2 ± 1/8	.250 ± .010	1 Ohm to 5 Megohms	1.95 grams	RN70
DCH-1/2	3/8 ± 1/32	1 1/2 ± 1/8	.250 ± .010	1 Ohm to 5 Megohms	2.3 grams	NO
DCH-1	1-3/32 ± 1/32	1 1/2 ± 1/8	.400 ± .010	1 Ohm to 10 Megohms	5.2 grams	RN75
DCH-2	2 1/4 ± 1/32	1 1/2 ± 1/8	.400 ± .010	5 Ohms to 50 Megohms	10.2 grams	RN80

Other values available on request.

**CONFORM TO APPLICABLE JAN & MIL SPECIFICATIONS**

Your request for samples and quotations are cordially invited

EXPORT DEPT:  
Pan-Mar Corp.  
1270 Broadway  
New York, New York

**DALE  
PRODUCTS  
INC.**

Columbus, Nebr., U.S.A.



## POTENTIOMETERS

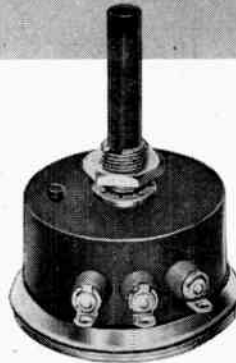


### A10-W TRIMMER POTENTIOMETERS

High temperature, Humidity proof,  
Ruggedized, Wire wound

Designed to provide highest performance under ever-increased MIL SPEC requirements with peak demands in moisture and vibration tests.

- Powered at .8 watt, derated to 0 @ 175 degrees C
- Resistance range 10 ohms to 100,000 ohms; selection of 40 standard values; standard tolerance 5%; other resistance values and tolerances on request
- Finest adjustment provided by extended winding surface
- Unique safety clutch
- High heat resistance housing
- Holds set resistance values



### DP-12 MIL-E-TRIZED POTENTIOMETERS

**MILITARY TYPE RA-30  
BUILT TO SURPASS  
JAN-R-19**

- Hermetically sealed-moisture proof; completely protected against tropical damp, arctic cold, shock, vibration, salt-laden air, ultra high altitude
- Resistance range 100 ohms to 40K ohms; standard tolerance 5%; others on request
- Temperature range — 55 degrees C to 125 degrees C; Minimum rotational life 25,000 mechanical cycles
- Excellent linearity and precision resolution; sensitive shaft adjustment
- Powered at .4 watt, derated to 0 at 125° C.

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INC.**

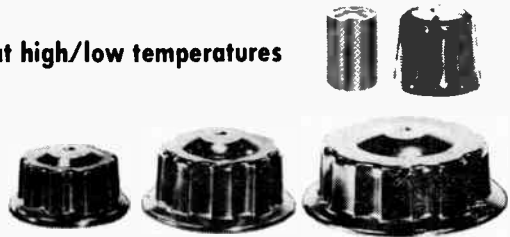
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## COLLET FITTING KNOBS

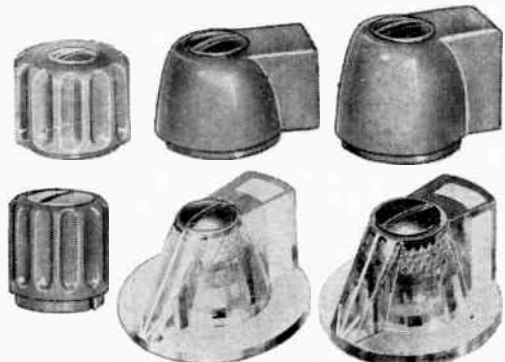
### TYPE K INDUSTRIAL KNOBS for hard use at high/low temperatures

- Precision cast of thermo-setting plastic in easy grip shapes; knobs fit concentrically on shafts and can be positioned easily and accurately
- Five sizes— $\frac{1}{8}$ " , 1-1/16" , 1-3/4" , 2-1/4" , 3". Collets interchangeable for shafts  $\frac{1}{8}$ " to  $\frac{3}{8}$ ".
- Standard escutcheons, pointers and indicators available.



### TYPE MS MILITARY STYLE KNOBS in accordance with MIL-K-25049

- Incorporation of collet-fitting design into military style knobs offers the ultimate in airborne and other military knobs applications. Precision made of tough, fungus-proof thermoplastic. All metal parts corrosion resistant
- Maximum locking pressure on shaft eliminates any slippage from vibration or torque
- Designed for flatted shafts
- Complete selection of skirts available as required by MIL SPECS. Marking of skirts can be to your specific requirements.



Your request for samples and quotations cordially invited

Export Dept: Pon-Mor Corp., 1270 Broadway, New York 1, N. Y.



# LECTROHM

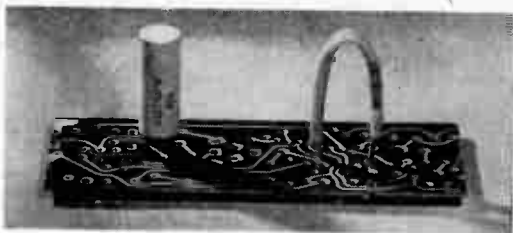
INCORPORATED • 5560 NORTHWEST HIGHWAY, CHICAGO 30, ILLINOIS

## LECTROHM IS CREATING NEW DESIGNS AND MATERIALS IN WIRE WOUND RESISTORS FOR NEW ASSEMBLY METHODS

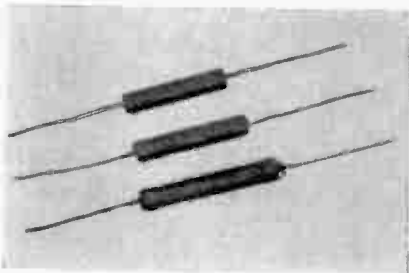
In addition to supplying the electronics industry with superior vitreous enameled wire-wound power resistors in the familiar sizes and ratings, LECTROHM is producing whole new groups of types, each designed to solve a special problem. Miniaturization and printed circuit restrictions in space and ventilation no longer are complicated by conventional power re-

sistor size standards. New coating materials and winding methods developed by LECTROHM permit an infinite variety of configurations yet retain operating and life characteristics expected of the finest grade vitreous enameled types. LECTROHM engineers will fit the resistor size and shape to your design.

### LECTROHM LEADS IN "SPECIAL DESIGNS"



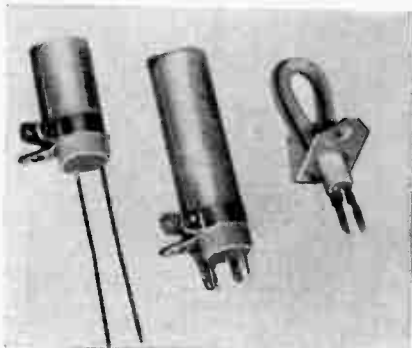
Printed Circuit Upright — Printed Circuit Flexible



#### LECTROHM AXIAL LEAD WIREWOUNDS

For added convenience in mounting in many types of assembly.

3 to 10 watts. 10 to 50,000 Ohms.



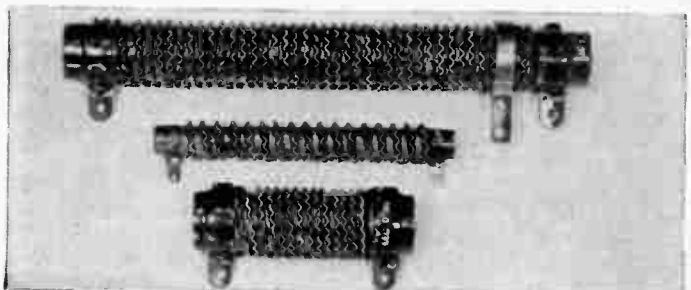
#### LECTROHM ABOVE CHASSIS TYPE

More efficient use of space designed to eliminate heat beneath the chassis. Lectrohm engineers will create resistors to fit your available space.

5 to 25 watts. 10 to 15,000 Ohms.



Some of the many "Special" Lectrohm Resistors



#### RIB-ON-EDGE LECTROHM (STANDARD SIZES AND VALUES)

155 to 420 watts. .06 to 22 Ohms.



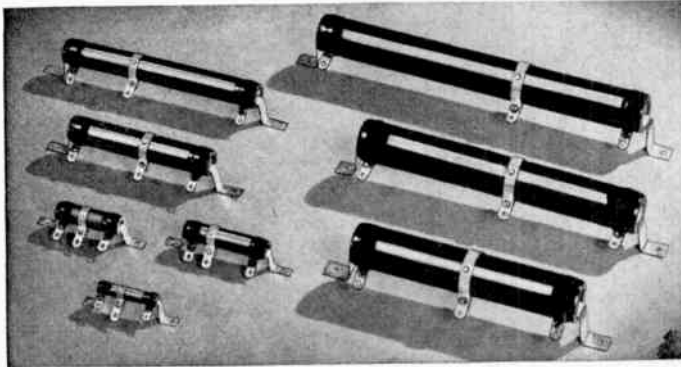
#### VITREOUS ENAMELED LECTROHM-FERRULE TYPE (STANDARD SIZES AND VALUES)

13 to 190 watts. To 100,000 Ohms.

# LECTROHM

INCORPORATED • 5560 NORTHWEST HIGHWAY, CHICAGO 30, ILLINOIS

## VITREOUS ENAMELED RESISTORS



### Adjustable Wire-Wound Types

The same high quality and construction are used for LECTROHM Adjustable Resistors as are incorporated in LECTROHM fixed units.

These resistors are used for replacing voltage dividers in radio receivers, for radio transmitter power supply, and for general experimental work.

#### TYPE 1 1/4EV—10-WATT

DIMENSIONS ..... 1 1/8" x 1 1/8" x 1 3/4"  
 TERMINALS ..... Lug Type  
 MAXIMUM RESISTANCE ..... 10,000 ohms  
 MOUNTING BRACKET ..... Centers 2 1/4"

Res. Ohms	Max. M.A.	List Price	Res. Ohms	Max. M.A.	List Price
1	3150	\$1.47	750	115	\$1.47
2	2230	1.47	800	111	1.47
3	1825	1.47	1000	100	1.47
5	1415	1.47	1250	89	1.53
7.5	1155	1.47	1500	79	1.53
10	1000	1.47	2000	69	1.53
15	815	1.47	2250	64	1.53
20	707	1.47	2500	61	1.53
25	630	1.47	3000	56	1.53
50	447	1.47	3500	51	1.53
75	365	1.47	4000	47	1.53
100	315	1.47	4500	44	1.53
150	258	1.47	5000	40	1.53
200	223	1.47	6000	36	1.63
250	200	1.47	7000	33	1.63
300	182	1.47	7500	32	1.63
350	169	1.47	8000	31	1.63
400	158	1.47	8500	30	1.63
500	141	1.47	10000	24	1.63
600	129	1.47			

#### TYPE 2SV—25-WATT

DIMENSIONS ..... 1 1/8" x 1 1/8" x 2"  
 TERMINALS ..... Solder Lug  
 MAXIMUM RESISTANCE ..... 25,000 ohms  
 MOUNTING BRACKET ..... Centers 2 7/8"

Res. Ohms	Max. M.A.	List Price	Res. Ohms	Max. M.A.	List Price
1	5000	\$1.87	1000	158	\$1.87
3	2890	1.87	1250	141	1.88
5	2240	1.87	1500	129	1.88
10	1580	1.87	2000	112	1.88
15	1290	1.87	2500	100	1.88
25	1000	1.87	3000	91	1.88
50	707	1.87	3500	84	1.88
75	575	1.87	4000	79	1.88
100	500	1.87	5000	71	1.88
150	400	1.87	6000	64	2.03
200	353	1.87	7500	57	2.03
250	316	1.87	10000	50	2.03
300	288	1.87	12000	44	2.08
400	250	1.87	15000	26	2.08
500	224	1.87	20000	22	2.08
750	182	1.87	25000	20	2.28

#### TYPE 4 1/2MV—50-WATT

DIMENSIONS ..... 3/4" x 1/2" x 4 1/2"  
 TERMINALS ..... Solder Lugs  
 MAXIMUM RESISTANCE ..... 100,000 ohms  
 MOUNTING BRACKET ..... Centers 5 1/2"

Res. Ohms	Max. M.A.	List Price	Res. Ohms	Max. M.A.	List Price
5	3160	\$2.37	3000	129	\$2.47
10	2230	2.37	4000	112	2.47
25	1410	2.37	5000	100	2.47
50	1000	2.37	7500	81	2.63
75	816	2.37	10000	70	2.63
100	707	2.37	12000	64	2.83
150	577	2.37	15000	57	2.83
200	500	2.37	20000	50	2.83
250	447	2.37	25000	44	3.08
300	408	2.37	30000	41	3.08
400	354	2.37	40000	35	3.08
500	316	2.37	50000	20	3.30
750	258	2.37	60000	18	3.30
1000	224	2.37	75000	17	3.67
1500	182	2.47	80000	16	3.67
2000	158	2.47	100000	14	3.92
2500	141	2.47			

#### TYPE 6 1/2MV—80-WATT

DIMENSIONS ..... 3/4" x 1/2" x 6 1/2"  
 TERMINALS ..... Solder Lugs  
 MAXIMUM RESISTANCE ..... 100,000 ohms  
 MOUNTING BRACKET ..... Centers 7 1/2"

Res. Ohms	Max. M.A.	List Price	Res. Ohms	Max. M.A.	List Price
10	2830	\$2.75	3500	152	\$2.83
15	2810	2.75	5000	126	2.83
25	1790	2.75	7500	103	3.00
50	1265	2.75	10000	89	3.00
100	894	2.75	15000	73	3.20
250	566	2.75	20000	63	3.20
300	517	2.75	25000	57	3.53
400	495	2.75	30000	51	3.53
500	400	2.75	40000	44	3.53
750	327	2.75	50000	25	3.62
1000	283	2.75	60000	23	3.62
1500	231	2.83	75000	21	3.97
2000	200	2.83	80000	20	3.97
2500	179	2.83	100000	18	4.33

#### TYPE 6 1/2KV—100-WATT

DIMENSIONS ..... 1 1/8" x 3/4" x 6 1/2"  
 TERMINALS ..... Solder Lugs  
 MAXIMUM RESISTANCE ..... 100,000 ohms  
 MOUNTING BRACKET ..... Centers 7 1/2"

Res. Ohms	Max. M.A.	List Price	Res. Ohms	Max. M.A.	List Price
50	1413	\$3.58	15000	81	\$4.12
100	1000	3.58	20000	70	4.12
500	447	3.58	25000	63	4.37
1000	316	3.58	30000	57	4.37
2000	223	3.67	35000	53	4.37
3000	182	3.67	40000	50	4.37
4000	158	3.67	50000	44	4.53
5000	141	3.67	75000	23	4.75
7500	115	3.67	100000	20	4.95
10000	100	3.87			

#### TYPE 8 1/2KV—160-WATT

DIMENSIONS ..... 1 1/8" x 3/4" x 8 1/2"  
 TERMINALS ..... Solder Lugs  
 MAXIMUM RESISTANCE ..... 100,000 ohms  
 MOUNTING BRACKET ..... Centers 9 1/2"

Res. Ohms	Max. M.A.	List Price	Res. Ohms	Max. M.A.	List Price
5	5660	\$5.33	10000	126	\$4.44
10	4000	4.14	15000	103	4.69
25	2530	4.14	20000	89	4.69
50	1788	4.14	25000	80	4.81
100	1266	4.14	30000	73	4.81
500	566	4.14	40000	55	4.81
1000	400	4.14	50000	43	4.94
2500	253	4.19	75000	27	5.17
5000	179	4.19	100000	18	5.44

#### TYPE 10 1/2KV—200-WATT

DIMENSIONS ..... 1 1/8" x 3/4" x 10 1/2"  
 TERMINALS ..... Solder Lugs  
 MAXIMUM RESISTANCE ..... 100,000 ohms  
 MOUNTING BRACKET ..... Centers 11 1/2"

Res. Ohms	Max. M.A.	List Price	Res. Ohms	Max. M.A.	List Price
50	2000	\$4.37	10000	141	\$4.70
100	1414	4.37	20000	100	4.92
500	632	4.37	25000	89	5.03
1000	447	4.37	30000	81	5.03
1500	361	4.45	50000	63	5.17
2000	316	4.45	75000	51	5.42
2500	283	4.45	100000	28	5.67
5000	200	4.45			

Mounting brackets and one band are furnished with all adjustable types.

#### ADJUSTABLE LUGS

Diameter of Resistor	List Price
	3/8"
1/2"	.25
5/8"	.42
1 1/4"	.42

Screw-Driver Type



**AUTOMATIC**

# AMPERITE

**REGULATOR**

BALLAST TUBE FOR AUTOMATIC REGULATION OF CURRENT AND VOLTAGE



STANDARD

## AUTOMATIC REGULATION

### What It Is!

The **AMPERITE Ballast-Regulating Tube** is an automatic "rheostat" designed to keep the current in a circuit at a definite value, for example, 0.5 amps.

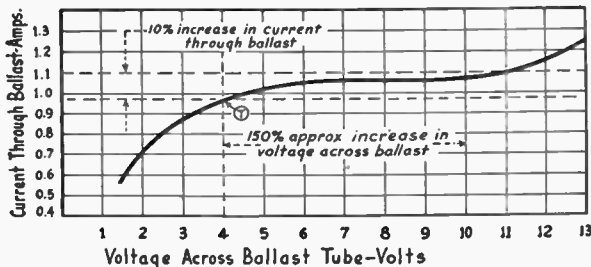
Should the supply voltage increase, this Ballast-Regulating Tube will automatically increase in resistance to take up the increase in supply voltage.



MINIATURE

Being a constant current device, the **AMPERITE Ballast-Regulating Tube** can be used only to regulate a constant load—fixed wattage. Thermostatic relays can sometimes be included in these regulators to reduce initial surge.

We strongly recommend that you send us your specifications on special problems, and let us recommend the **BALLAST TUBE** you need.



(T) = Threshold Current & Voltage

Characteristic curve of a typical Amperite. Approximate curve of any other Amperite can be obtained by multiplying or dividing the current or voltage scale by any number.

### POPULAR TYPES OF BALLAST TUBES

List \$3.00

D6-1E	1H20	*3T4	4A10	6-3	7-4	9-4A	12-4
*D8T4	1H22	*3T4A	4-12	6-4	*7TF4	9-7	12-7
**D8TK7	*2TK7	*3TF4A	4E3	6-4A	7A10	9-8	12A10
**D8TF10	2A10	*3TF4	4E4	6-4B	7-11	9A10	12-11
**D8TF30	2A12	*3TFV4	*4HTF4	*6T4	*7HTF2	10T1	13-4
D7-20	2A20	3V4	*4HTF7	*4HTF7	*6T4F	*10TF2	15-2
D7H4	*2HT2	S-7	4H10	*6TF4	*7HTF3	10-3	15-4
*D7HT4	2H4	*3TF7	4E11	6-7	7H4	10-4A	16-4
*D7HT11	*2HT4	3A10	5E1	*6TF7	7H4B	10-4B	17-3
1A10	*2HTF4	3-11	*5TF2	6-8B	7H7	10-4C	20-8
**1TF10	2H10	3E11	5-4	6A10	7H11	10-4D	20-4
1-15	3-2	*3T11	*3TF4	6-11	*8TF2	10-4E	22-4
*1HT2	*3TF2	3TF11	5A10	6-12	8-3B	10A10	24-3
1E4	*3TK2	*3TF12	5-11	6-13	8-4	10A12	34-2
*1HT4	3-4	3-14	5-16	6A15	8A10	10-25	35-4
1H10	3H-1-7	3-16	5E3	6-38	*9TF2	11-3	40-6E
*1HTF10	3H4	3A20	5H4	6H4	9-3	11-4	41-7E
*1HT11	*3HTF4	3E-25	5H10	*6HTF4	9-4	11A10	55-1
*1HTF11		3-38A	5H11	6H6		11-11	55-4
		3-50A					

\*T denotes T5½ bulb-7 pin miniature, e.g., 3T4.  
 \*\*TF denotes T6½ bulb-9 pin miniature, e.g., 3TF4.  
 Base Wiring: Octal, 7 and 9 pin miniature—prongs 2-7.

## ADVANTAGES

Light . . . Compact . . . No Moving Parts (Will withstand vibrations of 10G min.) (Not affected by altitude or humidity changes) . . . Can Be Changed as Easily as a Radio Tube . . . Operates Equally Well on AC or DC . . . Inexpensive.

## CAPACITIES AVAILABLE

Current values of 60 ma. to 5 amps; threshold voltage 0.4 to 30 V. Maximum dissipation per **AMPERITE** 50w per tube (ST19 bulb). Any number of **AMPERITES** with the same voltage range can be operated in parallel. **AMPERITES** should not be used in series.

## AGEING

**AMPERITE** Ballast Tubes may change approximately up to 3% in current if aged for 4 to 8 hours, at maximum voltage. They will change very little thereafter.

## LIFE EXPECTANCY

Average life if operated as recommended . . . . . 2000 Hours  
 If operated continuously at maximum voltage . . . . . 1000 Hours  
 If operated continuously at 80% maximum voltage . . . . . 5000 Hours  
 If filament is operated below glow point . . . . . 5000 Hours up

In operation, the Amperite filament starts to glow at one point; as the voltage is increased, the glow spreads over the entire filament. Like incandescent lamps, turning Amperite on and off reduces its life, especially if operating near its maximum voltage.

## TIME LAG CHARACTERISTICS

Time lag encountered in an Amperite Ballast Tube depends upon the wattage consumed by the ballast and the size of the bulb. Where the wattage is small for the size of the bulb, the action can be made practically instantaneous—less than 1 second. In such cases the bulb will remain at practically ambient temperature. When the wattage is high enough to heat the bulb to a temperature uncomfortable to the hand (160°F) the lag might be as much as several minutes for final readings—but normally reaches within 90% of final readings within a few seconds.

## AMPERITE NUMBERING SYSTEM

In general, the **AMPERITE** number approximately denotes the current—voltage threshold value. For example:

AMPERITE NUMBER	3-4	3H4	10-7	12-11	12H11
THRESHOLD CURRENT	0.3	0.35	1.0	1.2	1.25
THRESHOLD VOLTAGE	4.0	4.0	7.0	11.0	11.0

We strongly recommend that you send us your specifications on special problems, and let us recommend the **BALLAST TUBE** you need.

**AUTOMATIC**

# AMPERITE

**REGULATOR**

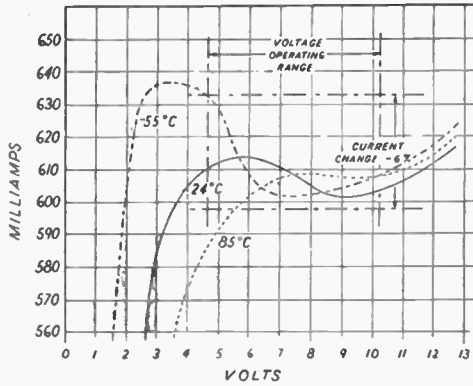
BALLAST TUBE FOR AUTOMATIC REGULATION OF CURRENT AND VOLTAGE



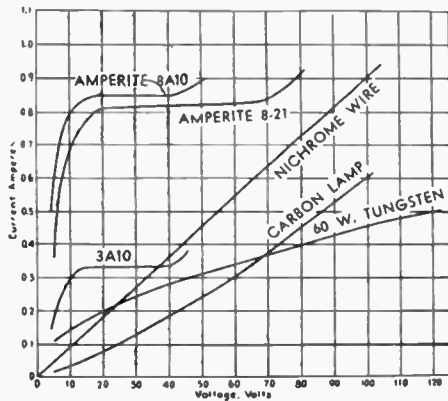
### AMBIENT EFFECTS

Ambient temperature variation of  $-50^{\circ}$  to  $+70^{\circ}\text{C}$  will change the current value of an Amperite approximately 2% on regulating portion of curve shown directly below. Being hermetically sealed the Amperite is not affected by altitude or humidity changes.

We strongly recommend that you send us your specifications on special problems, and let us recommend the BALLAST TUBE you need.

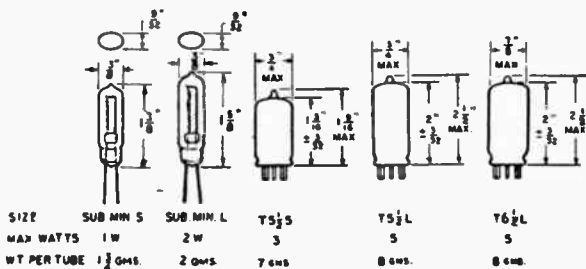


Amperite Ballast-Type 6-4 current voltage characteristic under ambient conditions of  $-55^{\circ}$ ,  $24^{\circ}$ , and  $85^{\circ}\text{C}$ . The percentage change with ambient is approximately the same with all type Amperite ballasts.



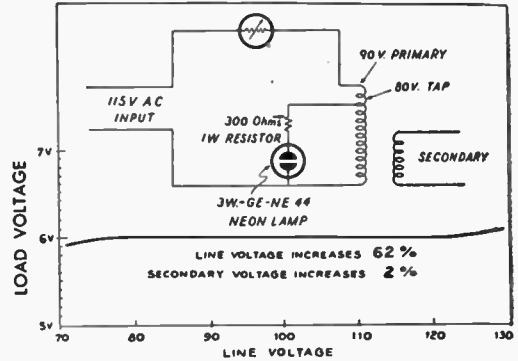
This diagram illustrates far superior regulating characteristics of the Amperite Ballast-Regulating Tube.

STANDARD SIZES available for various wattage consumption . . . For good regulation, a bulb should not be required to dissipate more than 50% of maximum wattage.



### BATTERY CHARGING AND DISCHARGING

Amperite Ballast Tubes are very successfully used for keeping the current constant in charging and discharging batteries. Any number of Amperites of the same voltage range can be placed in parallel in order to obtain the proper current. The current can be kept to  $\pm 1\%$ . Advise voltage variation and currents desired.



On 115V supplies  $\pm 1\%$  regulation can be obtained by shunting the load or transformer primary with a G.E. 3W-NE-44 Neon Lamp. 1 G.E. 3W-NE-44 Neon Lamp should be used for each 50 watts of load. This is the cheapest and most compact method of obtaining  $\pm 1\%$  regulation. The Amperite is not affected by frequency changes.

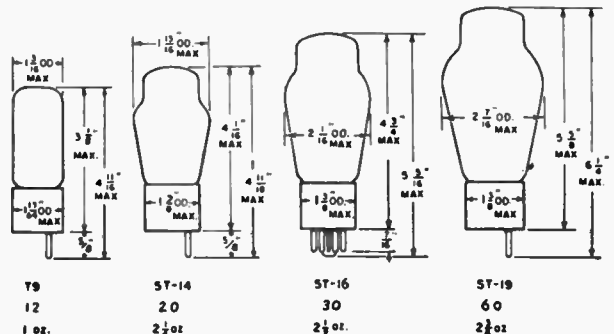
### POWER SUPPLIES

We strongly recommend, for any particular application, to fill and return one of our special problem sheets (ASP 343) and permit us to recommend the most suitable AMPERITE.

Power Supply	Dry Cells	6 Volts	12 Volts	26 Volts	115 Volts
Supply Variation	2.2-3.0V	5.5-7.5V	10.0-14.0V	22.0-30.0V	105-125V
Desired on Load	1.8-2.0V	3.9-4.1V	6.1- 6.4V	17.5-18.5V	90- 95V
Required on AMPERITE	0.4-1.0V	1.6-3.4V	3.9- 7.6V	4.5-11.5V	15- 30V
Current Variation	.29-.32a	.29-.31a	.29-.31a	.29-.32a	.29-.32a

The above chart shows the maximum load voltage for the given supply to obtain  $\pm 2\%$  regulation on load. Better regulation is obtainable by increasing the voltage across the AMPERITE. In general, the higher the percent of the supply voltage taken by the AMPERITE, the better the regulation.

We strongly recommend that you send us your specifications on special problems, and let us recommend the BALLAST TUBE you need.



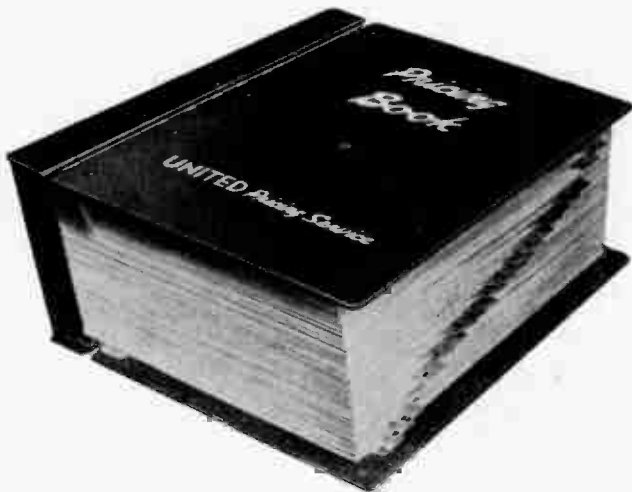
# PRICES

All prices listed in The MASTER are subject to change without notice — they should not be considered final.

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# DELIVERY

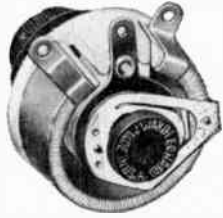
Delivery is often dependent on availability of raw materials. Check with your distributor for delivery information at the time you place your order.

# Vitrohm

## RING RHEOSTATS



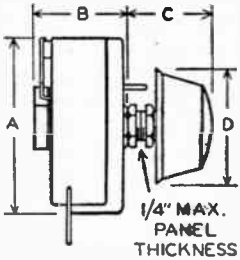
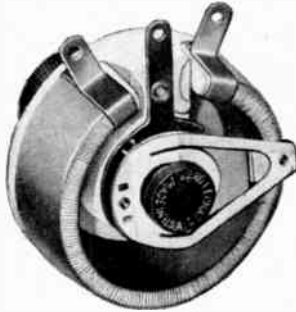
# WARD LEONARD



TYPE 25R



TYPE 50R



DIMENSION SKETCH

SEE DIMENSIONS HEADING EACH TABLE

## 25-Watt — 50-Watt

The Ward Leonard 25-watt (Type 25R) and 50-watt (Type 50R) Type Rheostats are especially suited for use in electronic and electrical circuits where gradual and positive resistance change is essential. Balanced contact arms, self-lubricating metal graphite contact shoes, and no backlash in the drive shaft combine to assure uniform contact pressure and smooth operation.

Standard shaft length for back-of-board mounting on 1/4" panel.

### 25 WATTS TYPE 25R

Dimensions: A-1<sup>1</sup>/<sub>16</sub>" B-1<sup>1</sup>/<sub>8</sub>"  
C-1" D-1<sup>1</sup>/<sub>32</sub>"

Current M.A.	Approx. No. of Steps	List Price	Ohms
5000	27	\$7.70	1
3540	27	6.85	2
2880	27	6.85	3
			4
2040	81	6.85	6
1770	90	6.85	8
1580	90	6.85	10
1280	103	6.85	15
1000	103	6.85	25
840	108	6.85	35
707	137	6.85	50
574	137	6.85	75
500	171	6.85	100
407	171	6.85	150
316	240	6.85	250
267	274	6.85	350
223	308	6.85	500
181	308	6.85	750
158	390	7.70	1000
128	376	7.70	1500
100	520	7.70	2500
84	520	8.10	3500
70	520	8.10	5000
			7500
			10000

### 50 WATTS TYPE 50R

Dimensions: A-2<sup>3</sup>/<sub>16</sub>" B-1<sup>1</sup>/<sub>8</sub>"  
C-1" D-1<sup>1</sup>/<sub>32</sub>"

Current M.A.	Approx. No. of Steps	List Price
7070	49	\$8.60
5000	49	8.60
3540	59	7.70
2880	108	7.70
2500	113	7.70
2230	150	7.70
1810	150	7.70
1415	188	7.70
1190	119	7.70
1000	188	7.70
812	188	7.70
707	225	7.70
574	225	7.70
447	300	7.70
374	338	7.70
316	375	7.70
256	450	8.10
223	450	8.10
181	570	8.10
141	570	8.10
119	713	8.60
100	713	8.60
81	855	8.60
70	998	8.60

The Ring Rheostats shown on this page are standard values and sizes carried in stock at our factory and by our Distributors. Information concerning Rheostats of special construction available on request.

## 100-Watt — 150-Watt

The Ward Leonard 100-watt (Type 100R) and 150-watt (Type 150R) Ring Type Rheostats are of sturdy construction for electrical applications, such as control of fractional h.p. motors, rectifiers, voltage regulators, and some electronic circuits, such as filament and battery control.

### 100 WATTS TYPE 100R

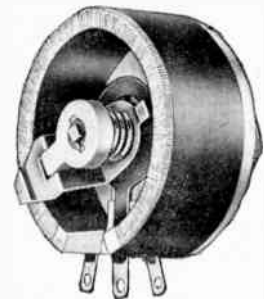
Dimensions: A-3<sup>3</sup>/<sub>16</sub>" B-1<sup>1</sup>/<sub>4</sub>"  
C-1<sup>1</sup>/<sub>8</sub>" D-1<sup>1</sup>/<sub>2</sub>"

Current M.A.	Approx. No. of Steps	List Price	Ohms
10000	41	\$12.90	1
7070	41	12.90	2
5740	72	12.90	3
4470	82	12.90	5
3640	82	12.05	7.5
3160	72	12.05	10
2560	156	12.05	15
2000	196	12.05	25
1415	274	12.05	50
1150	313	12.05	75
1000	274	12.05	100
707	313	12.05	200
574	353	12.05	300
500	392	12.05	400
447	392	12.05	500
364	464	12.05	750
316	470	12.90	1000
223	595	12.90	2000
200	744	12.90	2500
141	893	13.70	5000
115	893	14.60	7500
100	1041	15.40	10000

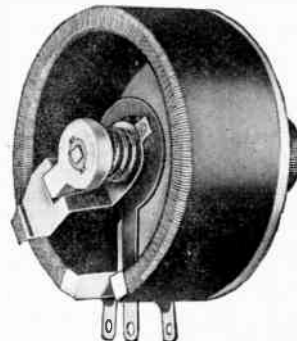
### 150 WATTS TYPE 150R

Dimensions: A-3<sup>13</sup>/<sub>16</sub>" B-2"  
C-1<sup>1</sup>/<sub>4</sub>" D-1<sup>1</sup>/<sub>2</sub>"

Current M.A.	Approx. No. of Steps	List Price
12240	43	\$16.30
8660	43	16.30
7070	54	16.30
5470	107	16.30
4470	107	16.30
3870	107	15.40
3160	107	15.40
2440	204	15.40
1730	245	15.40
1415	286	15.40
1224	367	15.40
866	326	15.40
707	408	15.40
612	408	15.40
547	489	15.40
447	489	16.30
387	620	16.30
273	775	17.20
244	775	17.20
173	930	18.90
141	1240	18.90
122	1240	20.60



TYPE 100R



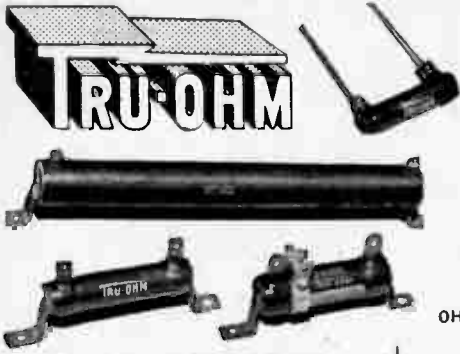
TYPE 150R

For Correct Current Control Use Ward Leonard









# VITREOUS ENAMELED RESISTORS

• FIXED • ADJUSTABLE • TRU-RIB

Our new, modern plant occupies 80,000 square feet devoted to producing the finest power rheostats and wire wound resistors available. If you need a rheostat or resistor, whether it be right from stock or to your specifications, we assure you of courteous service, prompt delivery and quality merchandise.

## 10 WATT—TYPE FRL-10

FIXED		
OHMS	MILLIAMPS	VOLTS
1	3160	3.1
1.5	2580	3.8
2	2230	4.4
3	1820	5.4
4	1580	6.3
5	1410	7.0
7.5	1150	8.6
10	1000	10
12	914	11
15	816	12
20	707	14
25	631	16
30	577	17
35	535	19
40	500	20
45	447	22
50	365	27
75	316	31
100	283	35
125	254	38
150	223	44
200	211	47
225	200	50
250	182	54
300	169	59
350	158	63
400	149	67
450	141	70
500	129	77
600	120	84
700	115	86
750	112	89
800	105	94
900	100	100
1000	95	104
1100	91	109
1200	89	111
1250	82	123
1500	76	133
1750	71	142
2000	67	151
2250	63	158
2500	57	171
3000	53	185
3500	50	200
4000	47	212
4500	45	225
5000	41	246
6000	38	266
7000	36	270
7500	35	280
8000	34	289
8500	33	297
9000	30	300
10,000	27	300
11,000	25	300
12,000	24	300
12,500	22	300
13,500	21	300
14,300	20	300
15,000	19	300
16,000	17	300
17,500	16	300
18,000		300

## 25 WATT—TYPE FR-25

OHMS	100% RATING		50% RATING
	VOLTS	AMPS	
1	5.0	5.000	3.535
2	7.0	3.535	2.500
3	8.6	2.885	2.040
4	10	2.500	1.770
5	11	2.236	1.580
10	15	1.580	1.118
15	19	1.291	.914
25	25	1.000	.707
50	35	.707	.500
75	43	.577	.408
100	50	.500	.353
150	61	.408	.289
200	70	.353	.250
250	79	.316	.223
300	86	.289	.204
400	100	.250	.177
500	111	.223	.158
750	136	.182	.129
800	141	.177	.125
850	145	.171	.121
1000	158	.158	.111
1250	176	.141	.100
1500	193	.129	.091
2000	222	.111	.079
2500	250	.100	.070
3000	278	.091	.064
3500	294	.084	.058
4000	316	.079	.056
5000	350	.070	.050
6000	384	.064	.045
7500	427	.057	.040
10,000	500	.050	.035
12,000	505	.042	.029
15,000	510	.034	.024
20,000	520	.026	.018
25,000	530	.022	.014
30,000	540	.018	.012
35,000	550	.016	.010
40,000	560	.014	.009
50,000	585	.012	.008
60,000	610	.010	.007
70,000	630	.009	.006
75,000	635	.008	.005
80,000	640	.008	.005
100,000	700	.007	.005

Free air rating to 10,000 Ohms at 25 Watts

## 10 WATT—TYPE AR-10

OHMS	100% RATING		50% RATING
	VOLTS	AMPS	
1	3.1	3.160	2.230
2	4.4	2.230	1.580
3	5.4	1.820	1.290
5	7.0	1.410	1.000
7.5	8.6	1.150	.816
10	10	1.000	.707
15	12	.816	.576
20	14	.707	.500
25	16	.631	.447
50	22	.447	.316
75	27	.365	.258
100	31	.316	.223
150	38	.254	.182
200	44	.223	.158
250	50	.200	.141
300	54	.182	.129
350	59	.169	.119

## 10 WATT (Continued)

400	63	.158	.112
500	70	.141	.100
600	77	.129	.091
750	86	.115	.081
800	89	.112	.079
1000	100	.100	.071
1250	111	.089	.063
1500	123	.082	.058
2000	142	.071	.050
2250	151	.067	.047
2500	158	.063	.045
3000	171	.057	.041
3500	185	.053	.038
4000	200	.050	.035
4500	212	.047	.033
5000	225	.045	.032
6000	246	.041	.029
7000	226	.038	.027
7500	270	.036	.026
8000	280	.035	.025
8500	289	.034	.024
9000	297	.033	.023
10,000	300	.030	.022

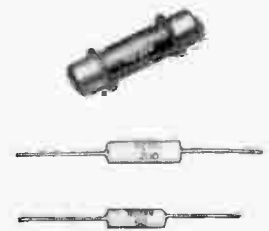
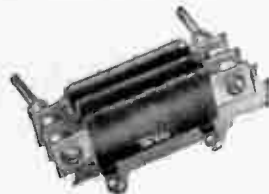
## 25 WATT—TYPE AR-25

OHMS	ADJUSTABLE 100% RATING		50% RATING
	VOLTS	AMPS	
1	5.0	5.000	3.535
2	7.0	3.535	2.500
3	8.6	2.885	2.040
5	11	2.236	1.580
7.5	13	1.825	1.290
10	15	1.580	1.118
15	19	1.291	.914
20	22	1.117	.790
25	25	1.000	.707
50	35	.707	.500
75	43	.577	.408
100	50	.500	.353
150	61	.408	.289
200	70	.353	.250
250	79	.316	.223
300	86	.289	.204
400	100	.250	.177
500	111	.223	.158
750	136	.182	.129
800	141	.177	.125
850	145	.171	.121
1000	158	.158	.111
1250	176	.141	.100
1500	193	.129	.091
2000	222	.111	.079
2250	236	.105	.074
2500	250	.100	.070
3000	273	.091	.064
3500	294	.084	.058
4000	316	.079	.056
4500	332	.074	.052
5000	350	.070	.050
6000	384	.064	.045
7000	420	.060	.042
7200	425	.059	.041
7500	427	.057	.040
8000	440	.055	.039
9000	468	.052	.037
10,000	500	.050	.035
12,000	505	.042	.029
15,000	510	.034	.024
20,000	520	.026	.018
25,000	530	.022	.014

You are guaranteed to receive 24 hour delivery as we maintain jobber stock items!



## SPECIAL RESISTORS



Now Available — 25 watt — 50 watt — 75 watt — 100 watt — 150 watt — Power Rheostats — ready for shipment from stock; special features available to meet your requirements.

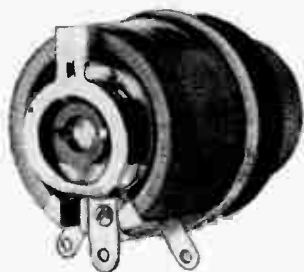
Mfd. by TRU-OHM PRODUCTS, DIVISION OF MODEL ENG. & MFG. INC. • General Sales Office: Chicago 18, Ill.



# POWER RHEOSTATS



Approved



**TYPE R-25 — 25 WATTS**

Cat. No.	Resistance	Max. Amps.	Approx. Steps
100	1	5.000	26
101	2	3.540	28
102	3	2.880	44
103	6	2.040	50
104	8	1.770	54
105	10	1.580	60
106	15	1.290	78
107	25	1.000	80
108	35	.845	100
109	50	.707	105
110	75	.575	120
111	100	.500	140
112	125	.445	145
113	175	.375	153
114	250	.316	170
115	350	.267	180
116	500	.222	215
117	750	.182	220
118	1000	.155	270
119	1500	.129	325
120	2500	.100	410
121	3500	.084	410
122	5000	.070	480

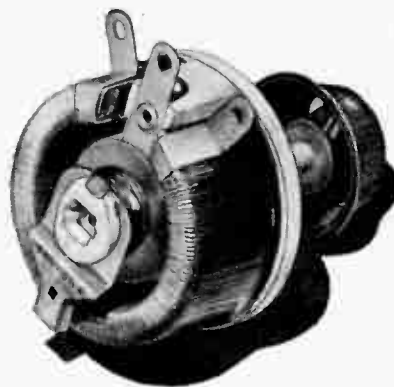
## CONSTRUCTION

The TRU-OHM power rheostat will provide smooth variation of resistance under the most severe operating conditions. The all ceramic-metal construction insures dependable service even at extreme operating temperatures. An extra deep core, on which the resistance wire is toroidally wound, means a more conservative power rating.

Types R-50, 75, 100 and 150 have an exclusive torsion spring assembly which provides uniform pressure of the contact brush against the winding at all times. Current flows from the brush through a flexible shunt wire to a large size slip ring. Positive, low-wear contact is maintained against the center terminal by an adequate compression spring. Back lash in the rotating assembly is reduced to a minimum by means of the design. A positive stop is provided at the extremes of rotation entirely independent at the contact arm assembly.

## SPECIAL FEATURES

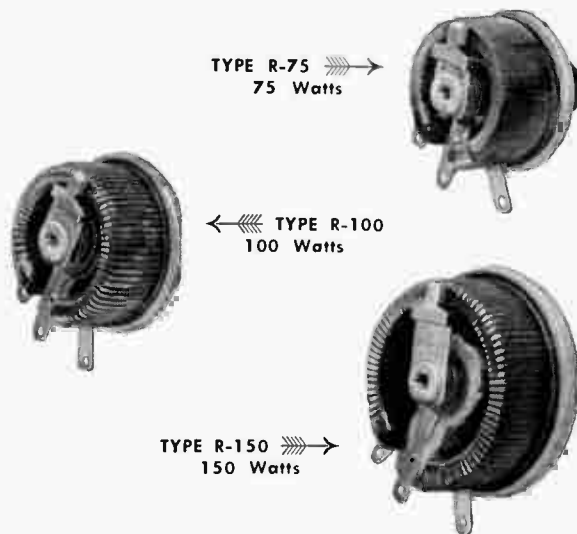
TRU-OHM rheostats are available with many extras such as off positions, screw driver control, shaft assemblies for special mounting conditions, etc. Prompt engineering service is available for all special requirements. Knobs furnished upon request.



**TYPE R-50 — 50 WATTS**

Cat. No.	Resistance	Max. Amps.	Approx. Steps
200	0.5	10.000	22
201	1	7.070	36
202	2	5.000	38
203	4	3.540	38
204	6	2.880	75
205	8	2.500	70
206	12	2.040	80
207	16	1.760	90
208	22	1.500	95
209	35	1.190	120
210	50	1.100	120
211	80	.790	135
212	125	.630	185
213	150	.574	175
214	225	.470	215
215	300	.408	225
216	500	.316	295
217	800	.250	360
218	1000	.223	375
219	1600	.176	465
220	2500	.141	560
221	3500	.119	585
222	5000	.100	600
223	8000	.079	710
224	10,000	.070	720

## Also ready for Immediate Shipment

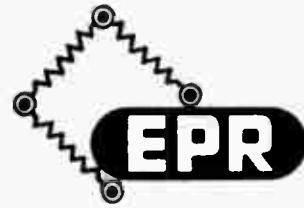


You are guaranteed to receive 24 hour delivery as we maintain jobber stock items!

Mfd. by TRU-OHM PRODUCTS DIVISION OF MODEL ENG. & MFG. INC.  
General Sales Office: Chicago 18, Ill.

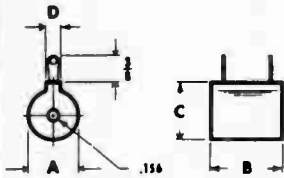


# EASTERN PRECISION RESISTOR CORP.



## "N-CAP" Series

## ENCAPSULATED LUG TYPE



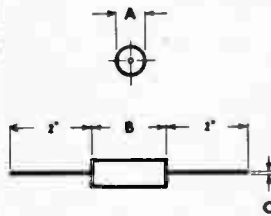
EPR Style	MIL-R-93 Characteristic "A"	MIL Wattage	COMM Wattage	MAX MIL Resistance	MAX COMM Resistance	A	B	C	D
*N-109	RB-09	.125	.25	130K	2.7 meg	9/16"	1/2"	11/16"	3/16"
N-110E	RB-15	.25	.50	135K	3.0 meg	5/8"	1/2"	21/32"	5/16"
N-111	RB-16	.33	.75	335K	7.0 meg	3/4"	11/16"	7/8"	3/16"
N-112A	RB-17	.50	1.0	465K	9.6 meg	13/16"	1"	27/32"	5/16"
N-113	RB-18	.50	1.0	1.2 meg	10.0 meg	7/8"	1-1/4"	1"	3/16"
N-114	RB-19	1.0	2.0	2.5 meg	10.0 meg	1-1/16"	2-1/8"	1-3/16"	1/4"

"N-CAPS" are manufactured to surpass the requirements of MIL-R-93 characteristic "A". Wound on plastic bobbins and totally encapsulated in the same material these resistors represent the optimum in precision wire wound resistors.

\* Clearance for a #2 screw

## "NS" Series

## ENCAPSULATED AXIAL LEAD TYPE

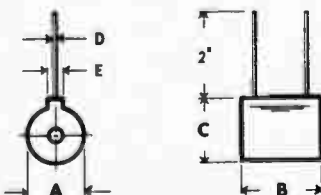


EPR Style	MIL-R-93 Characteristic "A"	MIL Wattage	COMM Wattage	MAX MIL Resistance	MAX COMM Resistance	A	B	C (AWG)
NS-6AV	—	—	.10	—	125 K	.150	3/8"	#24
NS-6AWE	—	—	.10	—	250 K	1/4"	5/16"	#22
NS-6AWM	—	—	.15	—	380 K	1/4"	1/2"	#22
NS-6AWG	—	—	.15	—	600 K	1/4"	5/8"	#22
NS-6AW	RB-52	.20	.40	27.5 K	675 K	1/4"	3/4"	#22
NS-6AH	—	—	.20	—	1.4 meg	7/16"	1/2"	#22
NS-6A	RB-52	.25	.50	80 K	2.5 meg	3/8"	1"	#20
NS-6B	RB-52	.25	.50	235 K	4.78 meg	1/2"	1"	#20
NS-6C	—	—	1.50	—	10.0 meg	1/2"	1-3/4"	#20
NS-6D	—	—	2.0	—	10.0 meg	1/2"	2"	#20

Wound on plastic bobbins and encapsulated to meet the requirements of characteristic "A" of MIL-R-93 specification. Suitable where point to point wiring is indicated "NS" series resistors are adaptable to automation assembly.

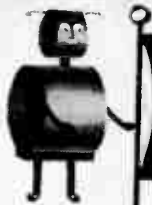
## "NM" Series

## ENCAPSULATED RADIAL LEAD TYPE

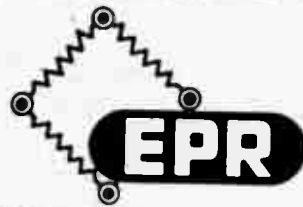


EPR Style	Maximum Resistance	Wattage	A	B	C	Ø (AWG)	E
NM-2	130 K	.125	1/4"	1/4"	11/32"	#24	3/32"
NM-3	360 K	.17	1/4"	7/16"	5/16"	#22	3/32"
NM-4	1 meg	.25	1/4"	3/4"	5/16"	#22	3/32"
NM-5	1.5 meg	.33	1/4"	1"	5/16"	#22	3/32"
NM-6	720 K	.25	5/16"	7/16"	3/8"	#22	1/8"
NM-7	1.8 meg	.33	5/16"	3/4"	3/8"	#22	1/8"
NM-10	480 K	.25	3/8"	5/16"	19/32"	#22	5/32"
NM-12	1.9 meg	.5	3/8"	5/8"	1/2"	#22	1/8"

"NM" series resistors are encapsulated to the requirements of MIL-R-93 characteristic "A". Sub-miniature in size these resistors are designed to meet the specifications of critical applications wherein space and stability is a prime factor.



# ENCAPSULATED PRECISION WIRE WOUND RESISTORS



## PRICE LIST

### EPR STYLES

N-109, N-110, M-111, N-112A  
ALL "NS"-AXIAL LEAD STYLES  
ALL "NM"-RADIAL LEAD STYLES

RESISTANCE VALUES	LIST PRICE
25 Ohms	3.25
100 Ohms	2.10
5,000 Ohms	2.10
10,000 Ohms	2.15
15,000 Ohms	2.20
30,000 Ohms	2.45
50,000 Ohms	2.50
75,000 Ohms	3.00
100,000 Ohms	3.30
125,000 Ohms	3.80
150,000 Ohms	4.20
200,000 Ohms	4.65
250,000 Ohms	5.15
300,000 Ohms	5.40
400,000 Ohms	6.00
500,000 Ohms	6.75
600,000 Ohms	7.35
700,000 Ohms	8.05
750,000 Ohms	8.50
900,000 Ohms	9.10
1 Meg	9.55
1.5 Meg	12.40
2 Meg	15.20

### EPR STYLES

N-113

RESISTANCE VALUES	LIST PRICE
25 Ohms	4.10
100 Ohms	2.60
5,000 Ohms	2.60
10,000 Ohms	2.75
15,000 Ohms	2.95
30,000 Ohms	3.10
50,000 Ohms	3.30
75,000 Ohms	3.60
100,000 Ohms	4.15
125,000 Ohms	4.50
150,000 Ohms	5.00
200,000 Ohms	5.55
250,000 Ohms	6.25
300,000 Ohms	6.85
400,000 Ohms	7.50
500,000 Ohms	8.30
600,000 Ohms	9.00
700,000 Ohms	9.65
750,000 Ohms	10.15
900,000 Ohms	10.70
1 Meg	11.25
1.5 Meg	13.25
2 Meg	16.95

### EPR STYLES

N-114

RESISTANCE VALUES	LIST PRICE
25 Ohms	5.25
100 Ohms	3.55
5,000 Ohms	3.55
10,000 Ohms	3.55
15,000 Ohms	3.60
30,000 Ohms	3.90
50,000 Ohms	4.25
75,000 Ohms	4.80
100,000 Ohms	5.05
125,000 Ohms	5.50
150,000 Ohms	6.00
200,000 Ohms	6.50
250,000 Ohms	6.90
300,000 Ohms	7.00
400,000 Ohms	8.00
500,000 Ohms	8.85
600,000 Ohms	9.50
700,000 Ohms	9.95
750,000 Ohms	10.25
900,000 Ohms	11.00
1 Meg	12.10
1.5 Meg	16.65
2 Meg	20.75

#### STANDARD TOLERANCE

± 1%

#### SPECIAL TOLERANCE

± .5%

± .25%

± .10%

± .05%

± .01%

#### PRICING

Add 5% to Listed Prices

Add 10% to Listed Prices

Add 25% to Listed Prices

Add 50% to Listed Prices

Add 300% to Listed Prices

FOR PRICE OF VALUES NOT LISTED, USE NEXT HIGHER LISTED VALUE.

EASTERN PRECISION RESISTOR CORP. Brooklyn • New York

2173 ITEMS  
IN STOCK



WIRE & CABLE FOR INDUSTRY

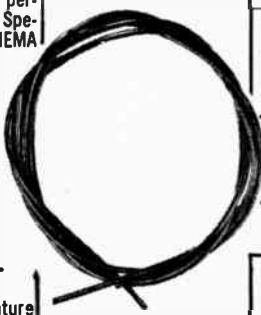
Electronics • Television • Radio • Sound • Aircraft

**ALPHLEX PVC-105  
(Plastic Tubing):**

Made of especially compounded resins to offer an extraordinary combination of excellent qualities including high dielectric strength, flexibility, non-flammability, abrasion resistance, oil and chemical resistance, heat stability and resistance to aging. It is specifically recommended for applications involving higher than normal operating temperatures and is approved by the Underwriters' Laboratories for 105°C applications. It is compounded with non-migratory resinous type plasticizers and exhibits exceptional oil resistance characteristics. Conforms to the performance requirements of specifications MIL-I-631B. ASTM-D876, ASTM-D922.

**ALPHLEX PIF-130  
(Plastic Impregnated  
Fiberglass Tubing):**

Class B insulation combining the advantages of an inorganic fiberglass base sleeving with the most desirable characteristics of a heat-resistant, very flexible plastic insulation. The plastic compound is formulated to provide the maximum in electrical characteristics, heat stability (130°C), flexibility and toughness. This tubing and sleeving conforms to the performance requirements of Specifications MIL-I-3190, NEMA VS1, ASTM D372.



**OTHER TYPES OF  
AVAILABLE ALPHLEX  
TUBING & SLEEVING**

- SRF-200 — Silicone Rubber Coated Fiberglass Tubing.
- SFS-400 — Silicone Impregnated Fiberglass Steeving.
- HTF-1200 — High Temperature Fiberglass Steeving.
- PVC-60 — Low Temperature Plastic Tubing.
- PLE-70 — Polyethylene Tubing.
- VTS-135 — Varnish Impregnated Tubing and Steeving.

For Full Specifications  
of Complete Insulating  
Tubing & Steeving Items  
Write For ALPHLEX CATALOG.

- \*STOCK COLORS**
- (1) CLEAR
  - (2) BLACK
  - (3) RED
  - (4) YELLOW
  - (5) GREEN
  - (6) BLUE
  - (7) BROWN
  - (8) WHITE
  - (9) ORANGE

**ALPHLEX TUBING & SLEEVING**

SIZE	NOM. I.O.	ALPHLEX Plastic Tubing No.	*STOCK COLORS	ALPHLEX Plastic Fiberglass No.	*STOCK COLORS
24	.022"	PVC-105-24	1 thru 9	PIF-130-24	2, 3, 4
22	.027"	PVC-105-22	1 thru 9	PIF-130-22	2, 3, 4
20	.034"	PVC-105-20	1 thru 9	PIF-130-20	2, 3, 4
19	.038"	PVC-105-19	1 thru 9	PIF-130-19	2, 3, 4
18	.042"	PVC-105-18	1 thru 9	PIF-130-18	2, 3, 4
17	.047"	PVC-105-17	1 thru 9	PIF-130-17	2, 3, 4
16	.053"	PVC-105-16	1 thru 9	PIF-130-16	2, 3, 4
15	.059"	PVC-105-15	1 thru 9	PIF-130-15	2, 3, 4
14	.066"	PVC-105-14	1 thru 9	PIF-130-14	2, 3, 4
13	.076"	PVC-105-13	1 thru 9	PIF-130-13	2, 3, 4
12	.085"	PVC-105-12	1 thru 9	PIF-130-12	2, 3, 4
11	.095"	PVC-105-11	1 thru 6	PIF-130-11	2, 3, 4
10	.106"	PVC-105-10	1 thru 6	PIF-130-10	2, 3, 4
9	.118"	PVC-105-9	1 thru 6	PIF-130-9	2, 3, 4
8	.133"	PVC-105-8	1 thru 6	PIF-130-8	2, 3, 4
7	.148"	PVC-105-7	1 thru 6	PIF-130-7	2, 3, 4
6	.166"	PVC-105-6	1 thru 6	PIF-130-6	2, 3, 4
5	.186"	PVC-105-5	1 thru 6	PIF-130-5	2, 3, 4
4	.208"	PVC-105-4	1 thru 6	PIF-130-4	2, 3, 4
3	.234"	PVC-105-3	1 thru 6	PIF-130-3	2, 3, 4
2	.263"	PVC-105-2	1 thru 6	PIF-130-2	2, 3, 4
1	.294"	PVC-105-1	1, 2	PIF-130-1	2, 3, 4
5/16"	.312"	PVC-105-5/16"	1, 2	PIF-130-5/16"	2, 3, 4
0	.330"	PVC-105-0	1, 2	PIF-130-0	2, 3, 4
3/8"	.375"	PVC-105-3/8"	1, 2	PIF-130-3/8"	2, 3, 4
7/16"	.438"	PVC-105-7/16"	1, 2	PIF-130-7/16"	2, 3, 4
1/2"	.500"	PVC-105-1/2"	1, 2	PIF-130-1/2"	2, 3, 4
9/16"	.562"	PVC-105-9/16"	1, 2	PIF-130-9/16"	2, 3, 4
5/8"	.625"	PVC-105-5/8"	1, 2	PIF-130-5/8"	2, 3, 4
3/4"	.750"	PVC-105-3/4"	1, 2	PIF-130-3/4"	2, 3, 4
7/8"	.875"	PVC-105-7/8"	1, 2	PIF-130-7/8"	2, 3, 4
1"	1.000"	PVC-105-1"	1, 2	PIF-130-1"	2, 3, 4
1-1/8"	1.125"	PVC-105-1-1/8"	1, 2	---	---
1-1/4"	1.250"	PVC-105-1-1/4"	1, 2	---	---
1-3/8"	1.375"	PVC-105-1-3/8"	1, 2	---	---
1-1/2"	1.500"	PVC-105-1-1/2"	1, 2	---	---
1-3/4"	1.750"	PVC-105-1-3/4"	1, 2	---	---
2"	2.000"	PVC-105-2"	1, 2	---	---
2-1/4"	2.250"	PVC-105-2-1/4"	1, 2	---	---
2-1/2"	2.500"	PVC-105-2-1/2"	1, 2	---	---

**STANDARD PACKAGING**

SIZES	Standard Put-Up	
	Type PVC-105	Type PIF-130
No. 24 to 16	1000' spls. 500' spls. 100' spls.	1000' spls. 500' spls. 100' spls. 36" lengths
No. 14 to 6	500' spls. 100' spls.	500' spls. 100' spls. 36" lengths
No. 4 to 7/16"	250' spls. 100' spls.	250' spls. 100' spls. 36" lengths
No. 1/2"	100' coils	100' coils 36" lengths
Larger than 1/2"	50' coils	36" lengths

2173 ITEMS  
IN STOCK



**SHIELDED MICROPHONE CABLE**

STANDARD SPOOL PUT-UP: 25 FT., 50 FT., 100 FT., 250 FT., 500 FT., 1000 FT.

**PLASTIC**

APPLICATIONS: All high impedance microphones—Lapel, Ribbon, Velocity, Crystal, Contact, Hi-Fi interconnecting cables.

ALPHA NO.	NO. OF COND.	COND. SIZE	COND. STRAND	NOMINAL CAPACITY	NOM. O.D.
1703	1	24	10/34	38 mmf./ft.	.145"
1704	1	24	10/34	25 mmf./ft.	.200"
1706	1	20	26/34	39 mmf./ft.	.175"

COLOR CODE OF CONDUCTOR: WHITE

APPLICATIONS: All low impedance microphones—Carbon, Condenser, Dynamic.

ALPHA NO.	NO. OF COND.	COND. SIZE	COND. STRAND	NOMINAL CAPACITY	NOM. O.D.
1710	2	22	16/34	31 mmf./ft.	.235"
1713	3	20	26/34	39 mmf./ft.	.295"
1715	4	20	26/34	43 mmf./ft.	.320"

COLOR CODE OF CONDUCTORS: 1—WHITE, 2—BLACK, 3—RED, 4—GREEN



**DESCRIPTION:**  
Each conductor stranded tinned copper, polyethylene insulation, color coded, braided tinned copper shield, chrome colored vinyl plastic jacket overall.

**CHARACTERISTICS:**  
Oil and moisture resistant. Flexible. Will not stain or mark. Will resist aging and rough usage.  
Capacitance—Low  
Insulation Resistance—High  
Attenuation—Low

**RUBBER**

APPLICATIONS: All high impedance microphones. Broadcast and heavy duty studio use.

ALPHA NO.	NO. OF COND.	COND. SIZE	COND. STRAND	NOMINAL CAPACITY	NOM. O.D.
1248	1	20	26/34	40 mmf./ft.	.175"
1249	1	20	26/34	30 mmf./ft.	.245"
1249/18	1	18	41/34	45 mmf./ft.	.250"

COLOR CODE OF CONDUCTOR: BLACK

APPLICATIONS: All low impedance microphones. Broadcast and heavy duty studio use.

ALPHA NO.	NO. OF COND.	COND. SIZE	COND. STRAND	NOMINAL CAPACITY	NOM. O.D.
1250	2	20	26/34	70 mmf./ft.	.275"
1250/18	2	18	41/34	75 mmf./ft.	.305"
1251	3	20	26/34	80 mmf./ft.	.285"
1251/18	3	18	41/34	85 mmf./ft.	.325"
1252	4	20	26/34	90 mmf./ft.	.305"

COLOR CODE OF CONDUCTORS: 1—BLACK, 2—WHITE, 3—RED, 4—GREEN



**DESCRIPTION:**  
Each conductor stranded tinned copper, rubber insulation, color coded, braided tinned copper shield, cotton wrap, tough black rubber jacket overall. It is extremely flexible and specially designed for heavy studio use.

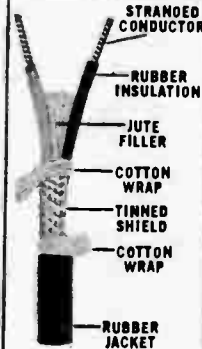
**SHIELDED MULTI-CONDUCTOR CABLE (Rubber Jacket)**

STANDARD SPOOL PUT-UP: 25 FT., 50 FT., 100 FT., 250 FT., 500 FT., 1000 FT.

APPLICATIONS: Shielded electronic power cable. Control circuits. Video and audio interconnecting cable. Broadcast and heavy duty studio use

ALPHA NO.	NO. OF COND.	COND. SIZE	COND. STRAND	NOMINAL INSULATION	NOM. O.D.
1253	5	20	26/34	.020"	.340"
1254	6	20	26/34	.020"	.365"
1254/18	6	18	41/34	.020"	.430"
1255	7	20	26/34	.020"	.370"
1255/8	8	20	26/34	.020"	.400"

COLOR CODE OF CONDUCTORS: 1—BLACK, 2—WHITE, 3—RED, 4—GREEN, 5—YELLOW, 6—BLUE, 7—BROWN, 8—ORANGE



**DESCRIPTION:**  
Each conductor stranded tinned copper, rubber insulation, color coded, conductors twisted, braided tinned copper shield, cotton wrap, tough black rubber jacket overall.



2173 ITEMS  
IN STOCK

WIRE & CABLE FOR INDUSTRY

Electronics \* Television \* Radio \* Sound \* Aircraft

**DESCRIPTION:**

Each conductor 20 AWG stranded tinned copper, cotton wrap, rubber insulation, color coded, conductors twisted, cushioned with cotton fillers, cotton wrap, tough black rubber jacket overall. It is extremely flexible and specially designed for heavy studio use.



**UNSHIELDED MULTI-CONDUCTOR CABLE (Rubber Jacket)**

STANDARD SPOOL PUT-UP: 25 FT., 50 FT., 100 FT., 250 FT., 500 FT., 1000 FT.

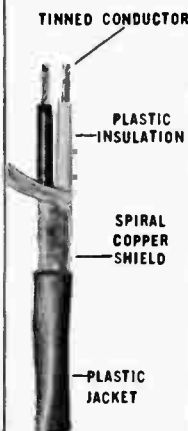
APPLICATIONS: Inter-rack connecting cable. Recording studio and broadcast. Remote control circuits. Rough usage electronic power cable. P.A. systems. Multiple speaker cable.

ALPHA NO.	NO. OF COND.	COND. SIZE	COND. STRAND	NOMINAL INSULATION	NOM. O.D.
1244	2	20	26/34	.020"	.250"
1245	3	20	26/34	.020"	.285"
1246	4	20	26/34	.020"	.300"
1247	5	20	26/34	.020"	.340"
1247 / 6	6	20	26/34	.020"	.370"
1247 / 8	8	20	26/34	.020"	.400"

COLOR CODE OF CONDUCTORS: 1—BLACK, 2—WHITE, 3—RED, 4—GREEN, 5—YELLOW, 6—BLUE, 7—BROWN, 8—ORANGE

**DESCRIPTION:**

Each conductor tinned copper, plastic insulation, color coded, conductors twisted, spiral wrapped copper shield, gray vinyl plastic jacket overall.



**SHIELDED PLASTIC JACKETED CABLE  
SPIRAL WRAPPED COPPER SHIELD**

STANDARD SPOOL PUT-UP: 100 FT., 250 FT., 500 FT., 1000 FT.

APPLICATIONS: For public address and sound systems. Recording studios. Amateur radio transmitters. Paging and call systems.

ALPHA NO.	NO. OF COND.	COND. SIZE	COND. STRAND	NOMINAL INSULATION	NOMINAL JACKET	NOM. O.D.
2254	2	22	7/30	.016"	.020"	.175"
2255	2	22	1	.016"	.020"	.170"
2256	2	20	10/30	.016"	.020"	.195"
3256	3	20	10/30	.016"	.020"	.210"
4256	4	20	10/30	.016"	.020"	.225"
2258	2	18	16/30	.016"	.020"	.230"

COLOR CODE OF CONDUCTORS: 1—BLACK, 2—RED, 3—WHITE, 4—GREEN

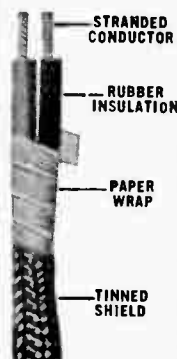
**DESCRIPTION:**

No. 1265: Two conductors 18 AWG stranded tinned copper, rubber insulation, color coded, conductors twisted, spiral wrapped copper shield overall.

No. 1256: Each conductor 20 AWG stranded tinned copper, rubber insulation waxed cotton braid, color coded, conductors twisted, tinned copper shield overall.

No. 1266: Same as No. 1265 except with waxed cotton braid over shield.

No. 1262: Same as No. 1256 plus cotton braid over shield.



**SHIELDED SPEAKER CABLE**

STANDARD SPOOL PUT-UP: 100 FT., 250 FT., 500 FT., 1000 FT.

APPLICATIONS: Commercial speaker installations. Master control sound systems. Recording studios. Amateur radio transmitters. Paging and call systems.

**TINNED SHIELD OVERALL**

ALPHA NO.	NO. OF COND.	COND. SIZE	COND. STRAND	NOMINAL INSULATION	NOM. O.D.
1265	2	18	16/30	.032"	.235"
1256	2	20	10/30	.016"	.170"

**COTTON BRAID OVER SHIELD**

1266	2	18	16/30	.032"	.260"
1262	2	20	10/30	.016"	.225"



**2173 ITEMS  
IN STOCK**



**2 CONDUCTOR SHIELDED CABLE (Twisted Pair)**

STANDARD SPOOL PUT-UP: 100 FT., 250 FT., 500 FT., 1000 FT.

APPLICATIONS: For public address and sound systems. Transmission line. Industrial paging and call systems. Recording equipment. Hospital and school sound installations. Broadcast and audio cable. Rack and panel wiring.

**WITHOUT PLASTIC JACKET  
STRANDED CONDUCTORS**

ALPHA NO.	NO. OF CONO.	CONO. SIZE	CONO. STRAND	NOMINAL INSULATION	NOM. O.D.
1261/30	2	30	7/38	.010"	.085"
1261/28	2	28	7/36	.010"	.090"
1261/26	2	26	7/34	.010"	.100"
1261	2	24	16/36	.016"	.125"
1256/22V	2	22	7/30	.016"	.140"
1256V	2	20	10/30	.016"	.155"
1259V	2	18	16/30	.016"	.180"
1260V	2	16	26/30	.020"	.210"
1260/14	2	14	41/30	.020"	.235"
1260/12	2	12	65/30	.025"	.295"

**SOLID CONDUCTORS**

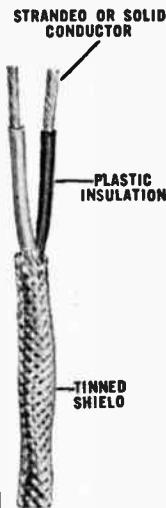
1267/22V	2	22 Solid	1	.016"	.135"
1267V	2	20 Solid	1	.016"	.145"
1267/18V	2	18 Solid	1	.016"	.170"

**WITH PLASTIC JACKET  
STRANDED CONDUCTORS**

ALPHA NO.	NO. OF COND.	COND. SIZE	COND. STRAND	NOMINAL INSULATION	NOMINAL JACKET	NOM. O.D.
1736	2	22	7/30	.016"	.020"	.175"
1741	2	20	10/30	.016"	.020"	.195"
1746	2	18	16/30	.016"	.020"	.230"

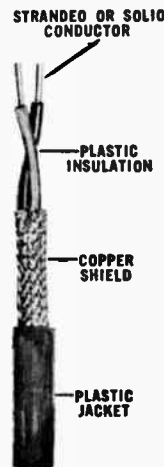
**SOLID CONDUCTORS**

9775	2	22 Solid	1	.016"	.020"	.170"
1779	2	20 Solid	1	.016"	.020"	.185"
1783	2	18 Solid	1	.016"	.020"	.220"



**DESCRIPTION:**  
Each conductor tinned copper, plastic insulation, color coded, conductors twisted, tinned copper shield overall.

**COLOR CODE OF CONDUCTORS:**  
1—BLACK  
2—RED



**DESCRIPTION:**  
Each conductor tinned copper, plastic insulation, color coded, conductors twisted, braided copper shield, gray vinyl plastic jacket overall. Suitable for outdoor installations.

**COLOR CODE OF CONDUCTORS:**  
1—BLACK  
2—RED



WIRE & CABLE FOR INDUSTRY

Electronics • Television • Radio • Sound • Aircraft

2173 ITEMS  
IN STOCK

## 2 AND 3 CONDUCTOR UNSHIELDED CABLE

STANDARD SPOOL PUT-UP: 25 FT., 50 FT., 100 FT., 250 FT., 500 FT., 1000 FT.

APPLICATIONS: Intercoms. Interconnecting cables. Remote control circuits. Telephones. Telemetering connecting cable. "Baby Sitter" intercom.

STRANDED OR SOLID CONDUCTOR



PLASTIC INSULATION

**DESCRIPTION:**

Each conductor stranded or solid tinned copper, plastic insulation, color coded, conductors twisted.

**COLOR CODE OF CONDUCTORS:**

- 1—BROWN
- 2—TAN
- 3—GRAY

### WITHOUT PLASTIC JACKET SOLID CONDUCTORS

ALPHA NO.	NO. OF COND.	COND. SIZE	COND. STRAND	NOMINAL INSULATION	NOM. O.D.
9269	2	22 Solid	1	.016"	.115"
9270	3	22 Solid	1	.016"	.125"
9271	2	20 Solid	1	.016"	.130"
9272	3	20 Solid	1	.016"	.140"
9273	2	18 Solid	1	.016"	.145"
9274	3	18 Solid	1	.016"	.155"

### STRANDED CONDUCTORS

9169	2	22	7/30	.016"	.115"
9170	3	22	7/30	.016"	.125"
9171	2	20	10/30	.016"	.130"
9172	3	20	10/30	.016"	.140"
9173	2	18	16/30	.016"	.145"
9174	3	18	16/30	.016"	.155"

### WITH PLASTIC JACKET SOLID CONDUCTORS

ALPHA NO.	NO. OF COND.	COND. SIZE	COND. STRAND	NOMINAL INSULATION	NOMINAL JACKET	NOM. O.D.
1793	2	22 Solid	1	.010"	.020"	.125"
1794	3	22 Solid	1	.010"	.020"	.130"
1795	2	20 Solid	1	.016"	.020"	.170"
1796	3	20 Solid	1	.016"	.020"	.180"
1797	2	18 Solid	1	.016"	.020"	.185"
179E	3	18 Solid	1	.016"	.020"	.190"

### STRANDED CONDUCTORS

1893	2	22	7/30	.010"	.020"	.135"
1894	3	22	7/30	.010"	.020"	.145"
1895	2	20	10/30	.016"	.020"	.180"
1896	3	20	10/30	.016"	.020"	.190"
1897	2	18	16/30	.016"	.020"	.200"
1898	3	18	16/30	.016"	.020"	.210"

STRANDED OR SOLID CONDUCTOR



PLASTIC INSULATION

PLASTIC JACKET

**DESCRIPTION:**

Each conductor tinned copper, plastic insulation, color coded, conductors twisted, gray vinyl plastic jacket overall. Suitable for outdoor installations.

**COLOR CODE OF CONDUCTORS:**

- 1—BLACK
- 2—RED
- 3—WHITE

2173 ITEMS  
IN STOCK



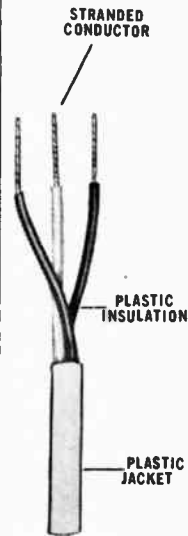
**MULTI-CONDUCTOR FLEXIBLE CABLE**

STANDARD SPOOL PUT-UP: 25 FT., 50 FT., 100 FT., 250 FT., 500 FT., 1000 FT.

APPLICATIONS: Unbalanced intercom systems. Low voltage relay control cable. P.A. systems. Signal systems. Electronic computer cable.

**PLASTIC JACKET**

ALPHA NO.	NO. OF COND.	COND. SIZE	COND. STRAND	NOMINAL INSULATION	NOMINAL JACKET	NOM O.D.
1172	2	22	7/30	.010"	.020"	.150"
1173	3	22	7/30	.010"	.020"	.155"
1174	4	22	7/30	.010"	.020"	.185"
1175	5	22	7/30	.010"	.020"	.190"
1176	6	22	7/30	.010"	.020"	.195"
1177	7	22	7/30	.010"	.020"	.230"
1178	8	22	7/30	.010"	.020"	.245"
1179	9	22	7/30	.010"	.020"	.250"
1180	10	22	7/30	.010"	.020"	.255"
1181	12	22	7/30	.010"	.020"	.280"
1181/15	15	22	7/30	.010"	.020"	.325"



**DESCRIPTION:**  
Each conductor 22 AWG stranded tinned copper, plastic insulation, color coded, conductors twisted, gray vinyl plastic jacket overall. Suitable for outdoor installations.

**COLOR CODE OF CONDUCTORS:**

- 1—BLACK
- 2—RED
- 3—WHITE
- 4—GREEN
- 5—ORANGE
- 6—BLUE
- 7—BROWN
- 8—YELLOW
- 9—PURPLE
- 10—SLATE
- 11—PINK
- 12—TAN

**TINNED COPPER SHIELDING**

STANDARD SPOOL PUT-UP: 50 FT., 100 FT., 250 FT., 500 FT., 1000 FT.

ALPHA NO.	SIZES OF WIRES	APPROX. I.D.
1221	36 AWG	.025"
1222	36 AWG	.035"
1223	36 AWG	3/64"
1224	36 AWG	3/32"
2229	36 AWG	7/64"
1229	36 AWG	1/8"
1230	36 AWG	3/16"
1231	36 AWG	1/4"
1232	36 AWG	3/8"
1233/2	30 AWG	1/2"
1233	36 AWG	5/8"
1234	36 AWG	3/4"
2234	36 AWG	25/32"
1235	36 AWG	1"
1239	36 AWG	1-3/8"



FLEXIBLE TINNED COPPER

**DESCRIPTION:**  
Very fine soft annealed tinned copper wires braided and rolled flat.



WIRE & CABLE FOR INDUSTRY

Electronics Television • Radio • Sound • Aircraft

2173 ITEMS  
IN STOCK

**DESCRIPTION:**

Each conductor 22 AWG tinned copper, plastic insulation, conductors color coded, twisted into pairs, gray vinyl plastic jacket overall. Suitable for outdoor installations.

**COLOR CODE OF PAIRED CONDUCTORS:**

- | Pair No. | Color Combination              |
|----------|--------------------------------|
| 1        | Black paired with Red          |
| 2        | Black paired with White        |
| 3        | Black paired with Green        |
| 4        | Black paired with Blue         |
| 5        | Black paired with Brown        |
| 6        | Black paired with Yellow       |
| 7        | Black paired with Orange       |
| 8        | Red paired with Green          |
| 9        | Red paired with White          |
| 10       | Red paired with Blue           |
| 11       | Red paired with Yellow         |
| 12       | Red paired with Brown          |
| 13       | Red paired with Orange         |
| 14       | Green paired with Blue         |
| 15       | Green paired with White        |
| 16       | Green paired with Brown        |
| 17       | Green paired with Orange       |
| 18       | Green paired with Yellow       |
| 19       | White paired with Blue         |
| 20       | White paired with Brown        |
| 21       | White paired with Orange       |
| 22       | White paired with Yellow       |
| 23       | Blue paired with Brown         |
| 24       | Blue paired with Orange        |
| 25       | Blue paired with Yellow        |
| 26       | Brown paired with Orange       |
| 27       | Brown paired with Yellow       |
| 28       | Purple paired with Red         |
| 29       | Purple paired with White       |
| 30       | Purple paired with Green       |
| 31       | Purple paired with Blue        |
| 32       | Purple paired with Brown       |
| 33       | Purple paired with Yellow      |
| 34       | Purple paired with Orange      |
| 35       | Purple paired with Slate       |
| 36       | Purple paired with Black       |
| 37       | Slate paired with Red          |
| 38       | Slate paired with White        |
| 39       | Slate paired with Green        |
| 40       | Slate paired with Blue         |
| 41       | Slate paired with Brown        |
| 42       | Slate paired with Yellow       |
| 43       | Slate paired with Orange       |
| 44       | Slate paired with Black        |
| 45       | White/Black paired with Red    |
| 46       | White/Black paired with Green  |
| 47       | White/Black paired with Blue   |
| 48       | White/Black paired with Brown  |
| 49       | White/Black paired with Yellow |
| 50       | White/Black paired with Orange |
| 51       | White/Black paired with Purple |

SOLID OR STRANDED CONDUCTOR



**PLASTIC INTERCOMMUNICATION CABLE (Twisted Pairs)**

STANDARD SPOOL PUT-UP: 50 FT., 100 FT., 250 FT., 500 FT., 1000 FT.

**APPLICATIONS:** Balanced intercom systems. Annunciators. Telephones. "Nurses call" systems. Control circuit cable. Electronic computer cable. Multiple speaker cable. Signal systems. "Alarm" systems. Guided missiles.

**SOLID CONDUCTORS**

ALPHA NO.	NO. OF PAIRS	NO. OF COND.	COND. SIZE	COND. STRANO	NOMINAL INSULATION	NOMINAL JACKET	NOM. O.D.
1300	1	2	22 Solid	1	.010"	.020"	.145"
1302	2	4	22 Solid	1	.010"	.020"	.190"
1304	3	6	22 Solid	1	.010"	.020"	.215"
1307	6	12	22 Solid	1	.010"	.020"	.280"
1307/9	9	18	22 Solid	1	.010"	.020"	.320"
1308	10	20	22 Solid	1	.010"	.020"	.345"
1308/11	11	22	22 Solid	1	.010"	.020"	.355"
1309	13	26	22 Solid	1	.010"	.025"	.365"
1309/15	15	30	22 Solid	1	.010"	.025"	.385"
1310	16	32	22 Solid	1	.010"	.025"	.395"
1312	26	52	22 Solid	1	.010"	.035"	.490"
1313	27	54	22 Solid	1	.010"	.035"	.500"
1314	51	102	22 Solid	1	.010"	.035"	.650"

**STRANDED CONDUCTORS**

ALPHA NO.	NO. OF PAIRS	NO. OF COND.	COND. SIZE	COND. STRANO	NOMINAL INSULATION	NOMINAL JACKET	NOM. O.D.
1316	1	2	22	7/30	.010"	.020"	.150"
1317	2	4	22	7/30	.010"	.020"	.190"
1318	3	6	22	7/30	.010"	.020"	.225"
1319	4	8	22	7/30	.010"	.020"	.235"
1320	5	10	22	7/30	.010"	.020"	.265"
1322	6	12	22	7/30	.010"	.020"	.315"
1323	9	18	22	7/30	.010"	.020"	.355"
1327	15	30	22	7/30	.010"	.025"	.440"
1329	27	54	22	7/30	.010"	.035"	.565"

**DESCRIPTION:**

Each conductor 22 AWG solid tinned copper, two reverse serves paraffined, color coded, conductors twisted into pairs, covered with an impregnated double paper wrap, lead sheath overall. Use where 100% shielding is required for underground or waterproof requirements.



**LEAD-COVERED COMMUNICATION CABLE (Twisted Pairs)**

STANDARD REEL PUT-UP: 1000 FT.

**APPLICATIONS:** Balanced intercom systems. Annunciators. Telephones. "Nurses call" systems. Control circuit cable. Electronic computer cable. Multiple speaker cable. Signal systems. "Alarm" systems. Guided missiles. Industrial electronic cable—"explosion-proof".

ALPHA NO.	NO. OF PAIRS	NO. OF COND.	COND. SIZE	LEAD SHEATH	NOM. O.D.
1289	6	12	22 Solid	.057"	.340"
1291	10	20	22 Solid	.057"	.415"
1293	16	32	22 Solid	.057"	.485"
1295	26	52	22 Solid	.057"	.530"

**2173 ITEMS  
IN STOCK**



**PLASTIC HOOK-UP-WIRE—SPECIFICATION MIL-W-76A**

(superseding JAN-C-76)

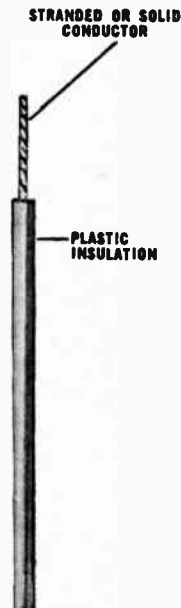
STANDARD SPODL PUT-UP: 100 FT., 500 FT., 1000 FT.

**STRANDED**

ALPHA NO.	MIL-W-76A TYPE DESIGNA.	COND. SIZE	COND. STRAND	NOM. INSUL.	VOLT. RATE.	NOM. O.D.	STAND. P.U.	* STOCK COLORS
1550	MW-C 24( 7)U	24	7/32	.016"	1000	.059"	1000'	1 thru 22
1550Q	MW-C 24( 7)U	24	7/32	.016"	1000	.059"	100'	1 thru 22
1551	MW-C 22( 7)U	22	7/30	.016"	1000	.064"	1000'	1 thru 30
1552	MW-C 22( 7)U	22	7/30	.016"	1000	.064"	100'	1 thru 30
1553	MW-C 20(10)U	20	10/30	.016"	1000	.073"	1000'	1 thru 30
1554	MW-C 20(10)U	20	10/30	.016"	1000	.073"	100'	1 thru 30
1555	MW-C 18(16)U	18	16/30	.016"	1000	.084"	1000'	1 thru 22
1556	MW-C 18(16)U	18	16/30	.016"	1000	.084"	100'	1 thru 22
1557	MW-C 16(26)U	16	26/30	.016"	1000	.095"	1000'	1 thru 22
1558	MW-C 16(26)U	16	26/30	.016"	1000	.095"	100'	1 thru 22
1559	MW-C 14(41)U	14	41/30	.016"	1000	.110"	1000'	1 thru 22
1559Q	MW-C 14(41)U	14	41/30	.016"	1000	.110"	100'	1 thru 22
1560	MW-C 12(65)U	12	65/30	.016"	1000	.125"	1000'	1 thru 22
1560Q	MW-C 12(65)U	12	65/30	.016"	1000	.125"	100'	1 thru 22

**SOLID**

1561	MW-C 22( 1)U	22	1	.016"	1000	.060"	1000'	1 thru 22
1562	MW-C 22( 1)U	22	1	.016"	1000	.060"	100'	1 thru 22
1563	MW-C 20( 1)U	20	1	.016"	1000	.066"	1000'	1 thru 22
1564	MW-C 20( 1)U	20	1	.016"	1000	.066"	100'	1 thru 22
1565	MW-C 18( 1)U	18	1	.016"	1000	.074"	1000'	1 thru 10
1566	MW-C 18( 1)U	18	1	.016"	1000	.074"	100'	1 thru 10
1567	MW-C 16( 1)U	16	1	.016"	1000	.083"	1000'	1 thru 10
1568	MW-C 16( 1)U	16	1	.016"	1000	.083"	100'	1 thru 10



**DESCRIPTION:**

Single conductor stranded or solid tinned copper, thermo-plastic insulation.

**\*STOCK COLORS**

- |                      |                     |                             |
|----------------------|---------------------|-----------------------------|
| ( 1) WHITE           | (11) TAN            | (21) WHITE / GRAY           |
| ( 2) BLACK           | (12) PINK           | (22) WHITE / VIOLET         |
| ( 3) RED             | (13) DARK BLUE      | (23) WHITE / BLACK / RED    |
| ( 4) GREEN           | (14) WHITE / BLACK  | (24) WHITE / BLACK / GREEN  |
| ( 5) YELLOW          | (15) WHITE / RED    | (25) WHITE / BLACK / YELLOW |
| ( 6) LIGHT BLUE      | (16) WHITE / GREEN  | (26) WHITE / BLACK / BLUE   |
| ( 7) BROWN           | (17) WHITE / YELLOW | (27) WHITE / BLACK / BROWN  |
| ( 8) ORANGE          | (18) WHITE / BLUE   | (28) WHITE / BLACK / ORANGE |
| ( 9) GRAY (slate)    | (19) WHITE / BROWN  | (29) WHITE / BLACK / GRAY   |
| (10) VIOLET (purple) | (20) WHITE / ORANGE | (30) WHITE / BLACK / VIOLET |

2173 ITEMS  
IN STOCK



WIRE & CABLE FOR INDUSTRY

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**PLASTIC HOOK-UP WIRE—SPECIFICATION MIL-W-76A**

(superseding JAN-C-76)

STANDARD SPOOL PUT-UP: 100 FT., 500 FT., 1000 FT.

**DESCRIPTION:**  
Single conductor stranded tinned copper, light wall thermo-plastic-insulation.

**\*STOCK COLORS:**

- (1) WHITE
- (2) BLACK
- (3) RED
- (4) GREEN
- (5) YELLOW
- (6) BLUE
- (7) BROWN
- (8) ORANGE
- (9) GRAY
- (10) VIOLET
- (11) WHITE/BLACK
- (12) WHITE/RED
- (13) WHITE/GREEN
- (14) WHITE/YELLOW
- (15) WHITE/BLUE
- (16) WHITE/BROWN
- (17) WHITE/ORANGE
- (18) WHITE/GRAY
- (19) WHITE/VIOLET



**TYPE LW (LIGHT WALL)**

ALPHA NO.	MIL-W-76A TYPE DESIGNA.	COND. SIZE	COND. STRAND	NOM. INSUL.	VOLT. RATE.	NOM. O.D.	STAND. P.U.	*STOCK COLORS
1685	LW-C 30( 7)U	30	7/38	.010"	300	.033"	1000'	1 thru 19
1685Q	LM-C 30( 7)U	30	7/38	.010"	300	.033"	100'	1 thru 19
1686	LW-C 28( 7)U	28	7/36	.010"	300	.035"	1000'	1 thru 19
1686Q	LW-C 28( 7)U	28	7/36	.010"	300	.035"	100'	1 thru 19
1687	LW-C 26( 7)U	26	7/34	.010"	300	.039"	1000'	1 thru 19
1687Q	LW-C 26( 7)U	26	7/34	.010"	300	.039"	100'	1 thru 19
1688	LW-C 24( 7)U	24	7/32	.010"	300	.043"	1000'	1 thru 10
1688Q	LW-C 24( 7)U	24	7/32	.010"	300	.043"	100'	1 thru 10
1689	LW-C 22( 7)U	22	7/30	.010"	300	.049"	1000'	1 thru 10
1689Q	LW-C 22( 7)U	22	7/30	.010"	300	.049"	100'	1 thru 10
1690	LW-C 20( 10)U	20	10/30	.010"	300	.060"	1000'	1 thru 10
1690Q	LW-C 20( 10)U	20	10/30	.010"	300	.060"	100'	1 thru 10

**TYPE HW (HEAVY WALL)—superseding SRHV**

**DESCRIPTION:**  
Single conductor stranded tinned copper, heavy wall thermo-plastic insulation.

**\*STOCK COLORS**

- (1) WHITE
- (2) BLACK
- (3) RED
- (4) GREEN
- (5) YELLOW
- (6) LIGHT BLUE
- (7) BROWN
- (8) ORANGE
- (9) GRAY (slate)
- (10) VIOLET (purple)



1571	HW-C 22( 7)U	22	7/30	.032"	2500	.103"	1000'	1 thru 10
1571Q	HW-C 22( 7)U	22	7/30	.032"	2500	.103"	100'	1 thru 10
1573	HW-C 20( 10)U	20	10/30	.032"	2500	.108"	1000'	1 thru 10
1573Q	HW-C 20( 10)U	20	10/30	.032"	2500	.108"	100'	1 thru 10
1575	HW-C 18( 16)U	18	16/30	.032"	2500	.120"	1000'	1 thru 10
1575Q	HW-C 18( 16)U	18	16/30	.032"	2500	.120"	100'	1 thru 10
1577	HW-C 16( 26)U	16	26/30	.032"	2500	.134"	1000'	1 thru 3
1577Q	HW-C 16( 26)U	16	26/30	.032"	2500	.134"	100'	1 thru 3
1579	HW-C 14( 41)U	14	41/30	.045"	2500	.170"	1000'	1 thru 3
1579Q	HW-C 14( 41)U	14	41/30	.045"	2500	.170"	100'	1 thru 3
1651	HW-C 12( 65)U	12	65/30	.045"	2500	.190"	1000'	1 thru 3
1651Q	HW-C 12( 65)U	12	65/30	.045"	2500	.190"	100'	1 thru 3
1653	HW-C 10(105)U	10	105/30	.045"	600	.215"	1000'	1 thru 3
1653Q	HW-C 10(105)U	10	105/30	.045"	600	.215"	100'	1 thru 3
1655	HW-C 8(133)U	8	133/29	.045"	600	.265"	1000'	1 thru 3
1655Q	HW-C 8(133)U	8	133/29	.045"	600	.265"	100'	1 thru 3
1657	HW-C 6(133)U	6	133/27	.045"	600	.310"	1000'	1 thru 3
1657Q	HW-C 6(133)U	6	133/27	.045"	600	.310"	100'	1 thru 3

2173 ITEMS  
IN STOCK

WIRE & CABLE FOR INDUSTRY

ALPHA

WIRE

ALPHA  
WIRE

Electronics • Television • Radio • Sound • Aircraft

**PLASTIC HOOK-UP WIRE — GLASS BRAID**  
**SPECIFICATION MIL-W-76A** (superseding JAN-C-76)

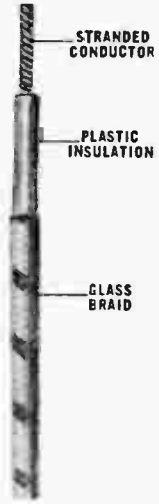
STANDARD SPOOL PUT-UP: 100 FT., 500 FT., 1000 FT.

**TYPE MW (MEDIUM WALL)—GLASS BRAID**  
(superseding SRIR and WL Glass Braid)

ALPHA NO.	OLD ALPHA WL NO.	MIL-W-76A TYPE DESIGNA.	COND. SIZE	COND. STRAND	NOM. INSUL.	VOLT. RATE.	NOM. O.D.	STAND. P.U.	*STOCK COLORS
1580	1490	MW-C 22( 7)B	22	7/30	.016"	1000	.080"	1000'	1 thru 19
1580Q	1490Q	MW-C 22( 7)B	22	7/30	.016"	1000	.080"	100'	1 thru 19
1591	1491	MW-C 20( 10)B	20	10/30	.016"	1000	.090"	1000'	1 thru 19
1591Q	1491Q	MW-C 20( 10)B	20	10/30	.016"	1000	.090"	100'	1 thru 19
1592	1492	MW-C 18( 16)B	18	16/30	.016"	1000	.100"	1000'	1 thru 19
1592Q	1492Q	MW-C 18( 16)B	18	16/30	.016"	1000	.100"	100'	1 thru 19
1593	1493	MW-C 16( 26)B	16	26/30	.016"	1000	.115"	1000'	1 thru 19
1593Q	1493Q	MW-C 16( 26)B	16	26/30	.016"	1000	.115"	100'	1 thru 19
1594	1494	MW-C 14( 41)B	14	41/30	.016"	1000	.125"	1000'	1 thru 10
1594Q	1494Q	MW-C 14( 41)B	14	41/30	.016"	1000	.125"	100'	1 thru 10
1595	1495	MW-C 12( 65)B	12	65/30	.016"	1000	.140"	1000'	1 thru 10
1595Q	1495Q	MW-C 12( 65)B	12	65/30	.016"	1000	.140"	100'	1 thru 10

**TYPE HW (HEAVY WALL)—GLASS BRAID**  
(superseding SRHV—Glass Braid)

1598	1498	HW-C 10(105)B	10	105/30	.045"	600	.235"	1000'	1 thru 3
1598Q	1498Q	HW-C 10(105)B	10	105/30	.045"	600	.235"	100'	1 thru 3
1599	—	HW-C 8(133)B	8	133/29	.045"	600	.290"	1000'	1 thru 3
1599Q	—	HW-C 8(133)B	8	133/29	.045"	600	.290"	100'	1 thru 3
1599 / 6	—	HW-C 6(133)B	6	133/27	.045"	600	.340"	1000'	1 thru 3
1599/6Q	—	HW-C 6(133)B	6	133/27	.045"	600	.340"	100'	1 thru 3



**DESCRIPTION:**  
Single conductor stranded tinned copper, thermoplastic insulation, glass braid overall.

**\*STOCK COLORS**

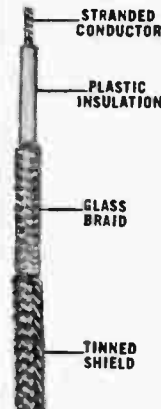
- ( 1) WHITE
- ( 2) WHITE/BLACK
- ( 3) WHITE/RED
- ( 4) WHITE/GREEN
- ( 5) WHITE/YELLOW
- ( 6) WHITE/BLUE
- ( 7) WHITE/BROWN
- ( 8) WHITE/ORANGE
- ( 9) WHITE/GRAY
- (10) WHITE/VIOLET
- (11) BLACK
- (12) RED
- (13) GREEN
- (14) YELLOW
- (15) BLUE
- (16) BROWN
- (17) ORANGE
- (18) GRAY
- (19) VIOLET

**SHIELDED HOOK-UP WIRE—SPECIFICATION MIL-W-76A**  
**GLASS BRAID OVER PLASTIC INSULATION**

(superseding JAN-C-76) STANDARD SPOOL PUT-UP: 100 FT., 500 FT., 1000 FT.

**TYPE MW (MEDIUM WALL)—GLASS BRAID, SHIELDED**

ALPHA NO.	MIL-W-76A TYPE DESIGNA.	COND. SIZE	COND. STRAND	NOM. INSUL.	VOLT. RATE.	NOM. O.D.
1361	MW-C 22( 7)BS	22	7/30	.016"	1000	.095"
1362	MW-C 20( 10)BS	20	10/30	.016"	1000	.108"
1363	MW-C 18( 16)BS	18	16/30	.016"	1000	.124"
1364	MW-C 16( 26)BS	16	26/30	.016"	1000	.133"
1365	MW-C 14( 41)BS	14	41/30	.016"	1000	.144"
1366	MW-C 12( 65)BS	12	65/30	.016"	1000	.168"
1367	HW-C 10(105)BS	10	105/30	.045"	600	.265"



**DESCRIPTION:**  
Single conductor stranded tinned copper, thermoplastic insulation, lacquered glass braid, tinned copper shield overall.

2173 ITEMS  
IN STOCK



WIRE & CABLE FOR INDUSTRY

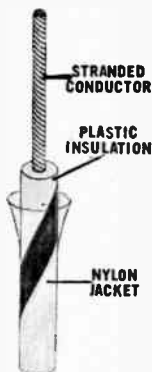
Electronics ■ Television ■ Radio ■ Sound ■ Aircraft

**DESCRIPTION:**

Single conductor stranded tinned copper, thermoplastic insulation, nylon jacket overall.

**\*STOCK COLORS:**

- (1) WHITE
- (2) BLACK
- (3) RED
- (4) GREEN
- (5) YELLOW
- (6) BLUE
- (7) BROWN
- (8) ORANGE
- (9) GRAY
- (10) VIOLET
- (11) WHITE / BLACK
- (12) WHITE / RED
- (13) WHITE / GREEN
- (14) WHITE / YELLOW
- (15) WHITE / BLUE
- (16) WHITE / BROWN
- (17) WHITE / ORANGE
- (18) WHITE / GRAY
- (19) WHITE / VIOLET



**PLASTIC HOOK-UP WIRE — NYLON JACKET**  
**SPECIFICATION MIL-W-76A** (superseding JAN-C-76)  
STANDARD SPOOL PUT-UP: 100 FT., 500 FT., 1000 FT.

**TYPE MW (MEDIUM WALL) — NYLON JACKET**  
(superseding WL-Nylon Jacket)

ALPHA NO.	MIL-W-76A TYPE DESIGNA.	COND. SIZE	COND. STRAND	NOM. INSUL.	VOLT. RATE.	NOM. D.D.	STAND. P.U.	*STOCK COLORS
1504	MW-C 22( 7J)	22	7/30	.016"	1000	.075"	1000'	1 thru 19
1504Q	MW-C 22( 7J)	22	7/30	.016"	1000	.075"	100'	1 thru 19
1505	MW-C 20(10J)	20	10/30	.016"	1000	.090"	1000'	1 thru 19
1505Q	MW-C 20(10J)	20	10/30	.016"	1000	.090"	100'	1 thru 19
1506	MW-C 18(16J)	18	16/30	.016"	1000	.103"	1000'	1 thru 19
1506Q	MW-C 18(16J)	18	16/30	.016"	1000	.103"	100'	1 thru 19
1507	MW-C 16(26J)	16	26/30	.016"	1000	.115"	1000'	1 thru 19
1507Q	MW-C 16(26J)	16	26/30	.016"	1000	.115"	100'	1 thru 19
1508	MW-C 14(41J)	14	41/30	.016"	1000	.125"	1000'	1 thru 6
1508Q	MW-C 14(41J)	14	41/30	.016"	1000	.125"	100'	1 thru 6
1509	MW-C 12(65J)	12	65/30	.016"	1000	.140"	1000'	1 thru 3
1509Q	MW-C 12(65J)	12	65/30	.016"	1000	.140"	100'	1 thru 3

**PLASTIC NYLON JACKETED HOOK-UP WIRE —**  
**SPECIFICATIONS MIL-W-5086 AND MIL-C-7078**

STANDARD SPOOL PUT-UP: 100 FT., 500 FT., 1000 FT.

APPLICATIONS: Use wherever a single conductor, 600 volt insulated, aircraft electrical wire is needed. Resistant to: abrasion, moisture, cold, heat, flame, fungus, oil, salt water.

**UNSHIELDED (MIL-W-5086)**

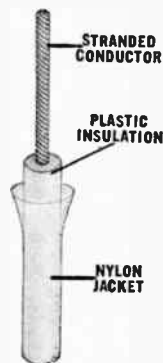
ALPHA NO.	MIL TYPE DESIGNATION	COND. SIZE	COND. STRAND	VOLTAGE RATING	NOM. O.D.
1381	AN-22	22	19/34	600	.080"
1382	AN-20	20	19/32	600	.090"
1383	AN-18	18	19/30	600	.105"
1384	AN-16	16	19/29	600	.120"
1385	AN-14	14	19/27	600	.138"
1386	AN-12	12	19/25	600	.157"
1387	AN-10	10	37/25	600	.193"
1388	AN-8	8	133/29	600	.248"
• 1389	AN-6	6	133/27	600	.289"
• 1389 / 4	AN-4	4	133/25	600	.338"
• 1389 / 2	AN-2	2	646/30	600	.412"
• 1389 / 0	AN-0	0	1045/30	600	.518"
• 1389 / 00	AN-00	00	1330/30	600	.588"

**SHIELDED (MIL-C-7078)**

1391	AN-22	22	19/34	600	.100"
1392	AN-20	20	19/32	600	.110"
1393	AN-18	18	19/30	600	.125"
1394	AN-16	16	19/29	600	.140"
1395	AN-14	14	19/27	600	.160"
1396	AN-12	12	19/25	600	.178"

**DESCRIPTION:**

MIL-W-5086 — Single conductor stranded tinned copper, white plastic insulation, nylon jacket overall. Superseding AN-JC-48A  
MIL-C-7078 — Single conductor stranded tinned copper, white plastic insulation, nylon jacket, braided tinned copper shield overall. Superseding AN-C-168



- Nylon lacquered glass braid over plastic insulation instead of nylon jacket.



**2173 ITEMS  
IN STOCK**

WIRE & CABLE FOR INDUSTRY

**ALPHA WIRE**



*Electronics \* Television \* Radio \* Sound \* Aircraft*

**HIGH TEMPERATURE PLASTIC HOOK-UP WIRE —  
SPECIFICATION MIL-W-16878B**

STANDARD SPOOL PUT-UP: 100 FT., 500 FT., 1000 FT

APPLICATIONS: For miniature and sub-miniature high temperature hook-ups.

**TYPE B**

ALPHA NO.	MIL-W-16878B DESIGNATION TYPE	COND. SIZE	COND. STRAND	NOMINAL INSULATION	VOLTAGE RATING	NOM. O.D.	* STOCK COLORS
1850	B-32	32	7/40	.010"	600	.028"	1 thru 19
1851	B-30	30	7/38	.010"	600	.032"	1 thru 19
1852	B-28	28	7/36	.010"	600	.035"	1 thru 19
1853	B-26	26	7/34	.010"	600	.038"	1 thru 19
1854	B-24	24	7/32	.010"	600	.043"	1 thru 19
1855	B-22	22	7/30	.010"	600	.049"	1 thru 19
1856	B-20	20	10/30	.010"	600	.060"	1 thru 19
1857	B-18	18	16/30	.010"	600	.071"	1 thru 19
1858	B-16	16	26/30	.010"	600	.081"	1 thru 19

**TYPE B — NYLON JACKET**

1860	B-32	32	7/40	.010"	600	.032"	1 thru 19
1861	B-30	30	7/38	.010"	600	.036"	1 thru 19
1862	B-28	28	7/36	.010"	600	.039"	1 thru 19
1863	B-26	26	7/34	.010"	600	.042"	1 thru 19
1864	B-24	24	7/32	.010"	600	.047"	1 thru 19
1865	B-22	22	7/30	.010"	600	.053"	1 thru 19
1866	B-20	20	10/30	.010"	600	.065"	1 thru 19
1867	B-18	18	16/30	.010"	600	.075"	1 thru 19
1868	B-16	16	26/30	.010"	600	.085"	1 thru 19

**TYPE C**

1830	C-24	24	7/32	.016"	1000	.058"	1 thru 10
1831	C-22	22	7/30	.016"	1000	.064"	1 thru 10
1832	C-20	20	10/30	.016"	1000	.072"	1 thru 10
1833	C-18	18	16/30	.016"	1000	.082"	1 thru 10
1834	C-16	16	26/30	.016"	1000	.091"	1 thru 10
1835	C-14	14	41/30	.016"	1000	.105"	1 thru 10

**TYPE C — NYLON JACKET**

1840	C-24	24	7/32	.016"	1000	.062"	1 thru 10
1841	C-22	22	7/30	.016"	1000	.069"	1 thru 10
1842	C-20	20	10/30	.016"	1000	.076"	1 thru 10
1843	C-18	18	16/30	.016"	1000	.087"	1 thru 10
1844	C-16	16	26/30	.016"	1000	.096"	1 thru 10
1845	C-14	14	41/30	.016"	1000	.111"	1 thru 10

**TYPE D**

1870	D-24	24	7/32	.032"	3000	.083"	1 thru 10
1871	D-22	22	7/30	.032"	3000	.089"	1 thru 10
1872	D-20	20	10/30	.032"	3000	.097"	1 thru 10
1873	D-18	18	16/30	.032"	3000	.107"	1 thru 10
1874	D-16	16	26/30	.032"	3000	.116"	1 thru 10
1875	D-14	14	41/30	.032"	3000	.130"	1 thru 10
1876	D-12	12	65/30	.032"	3000	.163"	1 thru 10
1877	D-10	10	105/30	.032"	3000	.182"	1 thru 10

**TYPE D — NYLON JACKET**

1880	D-24	24	7/32	.032"	3000	.085"	1 thru 10
1881	D-22	22	7/30	.032"	3000	.094"	1 thru 10
1882	D-20	20	10/30	.032"	3000	.102"	1 thru 10
1883	D-18	18	16/30	.032"	3000	.113"	1 thru 10
1884	D-16	16	26/30	.032"	3000	.122"	1 thru 10
1885	D-14	14	41/30	.032"	3000	.137"	1 thru 10
1886	D-12	12	65/30	.032"	3000	.173"	1 thru 10
1887	D-10	10	105/30	.032"	3000	.193"	1 thru 10



**DESCRIPTION:**  
Single conductor stranded tinned copper, 100°C high temperature vinyl thermoplastic light wall insulation. Nylon jacket over plastic insulation, where specified.

**\* STOCK COLORS:**

- (1) WHITE
- (2) BLACK
- (3) RED
- (4) GREEN
- (5) YELLOW
- (6) BLUE
- (7) BROWN
- (8) ORANGE
- (9) GRAY
- (10) VIOLET
- (11) WHITE/BLACK
- (12) WHITE/RED
- (13) WHITE/GREEN
- (14) WHITE/YELLOW
- (15) WHITE/BLUE
- (16) WHITE/BROWN
- (17) WHITE/ORANGE
- (18) WHITE/GRAY
- (19) WHITE/VIOLET

**DESCRIPTION:**  
Single conductor stranded tinned copper, 100°C high temperature vinyl thermoplastic medium wall insulation. Nylon jacket over plastic insulation, where specified.

**\* STOCK COLORS:**

- (1) WHITE
- (2) WHITE/BLACK
- (3) WHITE/RED
- (4) WHITE/GREEN
- (5) WHITE/YELLOW
- (6) WHITE/BLUE
- (7) WHITE/BROWN
- (8) WHITE/ORANGE
- (9) WHITE/GRAY
- (10) WHITE/VIOLET

**DESCRIPTION:**  
Single conductor stranded tinned copper, 100°C high temperature vinyl thermoplastic heavy wall insulation. Nylon jacket over plastic insulation, where specified.

**\* STOCK COLORS:**

- (1) WHITE
- (2) WHITE/BLACK
- (3) WHITE/RED
- (4) WHITE/GREEN
- (5) WHITE/YELLOW
- (6) WHITE/BLUE
- (7) WHITE/BROWN
- (8) WHITE/ORANGE
- (9) WHITE/GRAY
- (10) WHITE/VIOLET



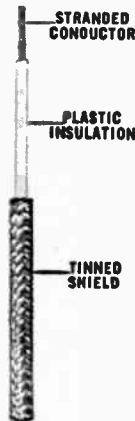
WIRE & CABLE FOR INDUSTRY

Electronics ■ Television ■ Radio ■ Sound ■ Aircraft

2173 ITEMS  
IN STOCK

**DESCRIPTION:**

Single conductor stranded tinned copper, thermoplastic insulation, tinned copper shield overall.



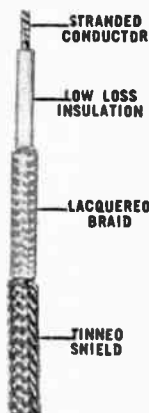
**SHIELDED PLASTIC HOOK-UP WIRE —  
SPECIFICATION MIL-W-76A (superseding JAN-C-76)**  
STANDARD SPOOL PUT-UP: 100 FT., 500 FT., 1000 FT.

**TYPE MW (MEDIUM WALL) SHIELDED**

ALPHA NO.	MIL-W-76A TYPE DESIGNA.	COND. SIZE	COND. STRAND	NOM. INSUL.	VOLT. RATE.	NOM. O.O.
1350	MW-C 24( 7)S	24	7/32	.016"	1000	.075"
1351	MW-C 22( 7)S	22	7/30	.016"	1000	.085"
1352	MW-C 20(10)S	20	10/30	.016"	1000	.095"
1353	MW-C 18(16)S	18	16/30	.016"	1000	.105"
1354	MW-C 16(26)S	16	26/30	.016"	1000	.120"
1355	MW-C 14(41)S	14	41/30	.016"	1000	.135"
1356	MW-C 12(65)S	12	65/30	.016"	1000	.155"

**DESCRIPTION:**

Single conductor stranded tinned copper, low loss insulation, highly lacquered braid, close tinned copper shield overall.



**COMMERCIAL SHIELDED HOOK-UP WIRE**  
STANDARD SPOOL PUT-UP: 100 FT., 500 FT., 1000 FT.

**APPLICATIONS:** To reduce interference caused by motors, high tension wires, x-ray machines or other apparatus that radiates electrical impulses. Ideal for grid-lead use.

**SHIELD OVERALL**

ALPHA NO.	COND. SIZE	COND. STRAND	NOMINAL INSULATION	NOM. O.D.
1194 / 22	22	7/30	.016"	.095"
1194	20	10/30	.016"	.105"
1196	18	16/30	.016"	.125"
1197	16	26/30	.016"	.135"
1198	14	41/30	.016"	.155"
1199	12	65/30	.016"	.175"
1199 / 10	10	105/30	.045"	.270"

**PLASTIC JACKET OVER SHIELD**

ALPHA NO.	COND. SIZE	COND. STRAND.	NOMINAL INSULATION	NOMINAL JACKET	NOM. O.D.
1208	24	10/34	.016"	.032"	.150"
1210	20	26/34	.030"	.032"	.175"

**DESCRIPTION:**

Single conductor stranded tinned copper, low loss insulation, close tinned copper shield, plastic jacket overall.

**2173 ITEMS  
IN STOCK**



**ALTEMP "TEFLON"\* HOOK-UP WIRE —  
SPECIFICATION MIL-W-16878B**

STANDARD PUT-UP: 10 FT., 25 FT., 50 FT., 100 FT., 250 FT., 500 FT., 1000 FT.

**TYPE E — EXTRUDED INSULATION**

ALPHA NO.	MIL-W-16878B TYPE	COND. SIZE	COND. STRAND	NOMINAL INSULATION	VOLTAGE RATING	NOMINAL O. D.	* STOCK COLORS
2851	E-30	30	7/38	.010"	600	.033"	1 thru 10
2852	E-28	28	7/36	.010"	600	.036"	1 thru 10
2853	E-26	26	7/34	.010"	600	.040"	1 thru 10
2854	E-24	24	19/36	.010"	600	.045"	1 thru 10
2855	E-22	22	19/34	.010"	600	.051"	1 thru 10
2856	E-20	20	19/32	.010"	600	.059"	1 thru 10
2857	E-18	18	19/30	.010"	600	.070"	1 thru 10
2858	E-16	16	19/29	.010"	600	.083"	1 thru 10

Other sizes, stranding and colors available to order.

**TYPE E — SPIRAL WRAPPED INSULATION**

2881	E-30	30	7/38	.010"	600	.032"	
2882	E-28	28	7/36	.010"	600	.035"	
2883	E-26	26	7/34	.010"	600	.039"	
2884	E-24	24	19/36	.010"	600	.044"	
2885	E-22	22	19/34	.010"	600	.051"	
2886	E-20	20	19/32	.010"	600	.058"	
2887	E-18	18	19/30	.010"	600	.070"	
2888	E-16	16	19/29	.010"	600	.081"	

Other sizes and strandings available to order.

**TEFLON KIT ASSORTMENTS**

**30 SPOOLS TOTAL — 5 WIRE SIZES x 6 SOLID COLORS**

WIRE SIZE	10' SPOOLS	25' SPOOLS	50' SPOOLS	100' SPOOLS
No. 28- 7/36 No. 26- 7/34 No. 24-19/36 No. 22-19/34 No. 20-19/32	KIT TK-4	KIT TK-3	KIT TK-2	KIT TK-1

**10 SPOOLS TOTAL — 1 WIRE SIZE x 10 SOLID COLORS**

No. 30- 7/38	KIT TK-8	KIT TK-7	KIT TK-6	KIT TK-5
No. 28- 7/36	KIT TK-12	KIT TK-11	KIT TK-10	KIT TK-9
No. 26- 7/34	KIT TK-16	KIT TK-15	KIT TK-14	KIT TK-13
No. 24-19/36	KIT TK-20	KIT TK-19	KIT TK-18	KIT TK-17
No. 22-19/34	KIT TK-24	KIT TK-23	KIT TK-22	KIT TK-21
No. 20-19/32	KIT TK-28	KIT TK-27	KIT TK-26	KIT TK-25
No. 18-19/30	KIT TK-32	KIT TK-31	KIT TK-30	KIT TK-29
No. 16-19/29	KIT TK-36	KIT TK-35	KIT TK-34	KIT TK-33

**DESCRIPTION:**

Single conductor stranded silver plated copper, extruded Teflon insulation.

**\* STOCK COLORS:**

- ( 1) WHITE
- ( 2) BLACK
- ( 3) RED
- ( 4) GREEN
- ( 5) YELLOW
- ( 6) BLUE
- ( 7) BROWN
- ( 8) ORANGE
- ( 9) GREY
- (10) VIOLET

**DESCRIPTION:**

Single conductor stranded silver plated copper, heat fused spiral wrapped Teflon insulation.

**AVAILABLE COLORS:**

10 solid colors and all tracer combinations.

**COLORS:**

- WHITE
- BLACK
- RED
- GREEN
- YELLOW
- BLUE
- BROWN
- ORANGE
- GREY
- VIOLET

2173 ITEMS  
IN STOCK



WIRE & CABLE FOR INDUSTRY

Electronics ■ Television ■ Radio ■ Sound ■ Aircraft

### SUB-MINIATURE WIRE AND CABLE — HIGH TEMP. 105°C

STANDARD SPOOL PUT-UP: 100 FT., 250 FT., 500 FT., 1000 FT.

APPLICATIONS: Wherever a fine hook-up wire is required for: instrumentation projects, electro-medical apparatus, computers, transistor circuits, photo-electric cell circuits, sub-miniaturization programs, strain gauges,, slip ring assemblies.

#### UNSHIELDED SINGLE CONDUCTOR

ALPHA NO.	NO. OF COND.	COND. SIZE	COND. STRAND	NOMINAL INSULATION	NOM. O.D.	*STOCK COLORS
1606	1	30	7/38	.010"	.032"	1 thru 19
1607	1	28	7/36	.010"	.035"	1 thru 19
1609	1	26	7/34	.010"	.038"	1 thru 19
1610	1	24	16/36	.016"	.056"	1 thru 10

#### MULTI-CONDUCTOR (no jacket overall)

ALPHA NO.	NO. OF COND.	COND. SIZE	COND. STRAND	NOMINAL INSULATION	NOMINAL JACKET	NOM. O.D.
2606	2	30	7/38	.010"	—	.061"
3606	3	30	7/38	.010"	—	.067"
4606	4	30	7/38	.010"	—	.075"

COLOR CODE OF CONDUCTORS: 1—BLACK 2—RED 3—WHITE 4—GREEN

#### MULTI-CONDUCTOR (plastic jacket overall)

ALPHA NO.	NO. OF COND.	COND. SIZE	COND. STRAND	NOMINAL INSULATION	NOMINAL JACKET	NOM. O.D.
2607	2	28	7/36	.010"	.010"	.081"
3607	3	28	7/36	.010"	.010"	.088"
4607	4	28	7/36	.010"	.010"	.097"

COLOR CODE OF CONDUCTORS: 1—BLACK, 2—RED, 3—WHITE, 4—GREEN

#### SHIELDED

##### SINGLE CONDUCTOR (no jacket overall)

ALPHA NO.	NO. OF COND.	COND. SIZE	COND. STRAND	NOMINAL INSULATION	NOMINAL JACKET	NOM. O.D.
1332	1	30	7/38	.010"	—	.055"
1334	1	28	7/36	.010"	—	.059"
1336	1	26	7/34	.010"	—	.063"
1337	1	24	16/36	.016"	—	.075"

##### MULTI-CONDUCTOR (no jacket overall)

ALPHA NO.	NO. OF COND.	COND. SIZE	COND. STRAND	NOMINAL INSULATION	NOMINAL JACKET	NOM. O.D.
2337	2	24	16/36	.016"	—	.118"
3337	3	24	16/36	.016"	—	.125"
4337	4	24	16/36	.016"	—	.145"

COLOR CODE OF CONDUCTORS: 1—BLACK, 2—RED, 3—WHITE, 4—GREEN

##### MULTI-CONDUCTOR (plastic jacket overall)

ALPHA NO.	NO. OF COND.	COND. SIZE	COND. STRAND	NOMINAL INSULATION	NOMINAL JACKET	NOM. O.D.
2334	2	28	7/36	.010"	.010"	.138"
3334	3	28	7/36	.010"	.010"	.146"
4334	4	28	7/36	.010"	.010"	.165"

COLOR CODE OF CONDUCTORS: 1—BLACK, 2—RED, 3—WHITE, 4—GREEN

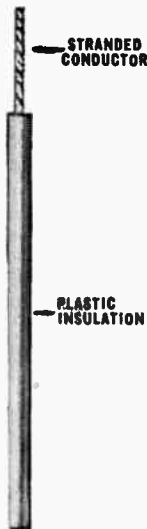
#### DESCRIPTION:

Single or multi-conductor stranded tinned copper, 105°C high temperature vinyl thermoplastic insulation.

When jacketed, a clear vinyl thermoplastic jacket is over cabled conductors.

#### \*STOCK COLORS:

- (1) WHITE
- (2) BLACK
- (3) RED
- (4) GREEN
- (5) YELLOW
- (6) BLUE
- (7) BROWN
- (8) ORANGE
- (9) GRAY
- (10) VIOLET
- (11) WHITE/BLACK
- (12) WHITE/RED
- (13) WHITE/GREEN
- (14) WHITE/YELLOW
- (15) WHITE/BLUE
- (16) WHITE/BROWN
- (17) WHITE/ORANGE
- (18) WHITE/GRAY
- (19) WHITE/VIOLET



#### DESCRIPTION:

Single or multi-conductor stranded tinned copper, 105°C high temperature vinyl thermoplastic insulation, tinned copper shield.

When jacketed, a clear vinyl thermoplastic jacket is over tinned copper shield.



**2173 ITEMS  
IN STOCK**



**KINKLESS TEST LEAD WIRE**

STANDARD SPOOL PUT UP: 25 FT., 50 FT., 100 FT., 250 FT., 500 FT., 1000 FT.

APPLICATIONS: As test leads in analyzers, oscillators, multi-meters, and all other types of testing apparatus or wherever an Extra Flexible insulated wire is required. Heavy Duty type designed for television, therapeutic equipment, analyzers, oscillators, etc.

**STANDARD TYPE**

ALPHA NO.	COND. SIZE	COND. STRAND	NOMINAL INSULATION	VOLTAGE BREAKDOWN (60 CYCLES)	NOM. O.D.	STANDARD PUT-UP
9635Q	20	41/36	.044"	8,500	.135"	100'
9635	20	41/36	.044"	8,500	.135"	500'
1633	20	41/36	.047"	10,000	.140"	100'
1635	20	41/36	.047"	10,000	.140"	500'
1636Q	18	65/36	.047"	12,000	.150"	100'
1636	18	65/36	.047"	12,000	.150"	500'

**HEAVY DUTY TYPE**

1637	18	65/36	.109"	22,000	.245"	100'
1638	18	65/36	.109"	22,000	.245"	500'



**DESCRIPTION:**

Single conductor extra flexible tinned soft annealed copper, concentric strand, cotton wrap, rubber insulation, satin finish.

**STOCK COLORS:**

RED  
BLACK

**HI-VOLTAGE & CATHODE RAY WIRE**

STANDARD SPOOL PUT-UP: 25 FT., 50 FT., 100 FT., 250 FT., 500 FT., 1000 FT.

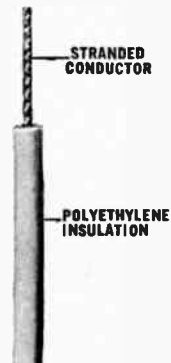
APPLICATIONS: Designed for high-voltage leads for all applications, especially for cathode ray tubes in television receivers and oscilloscopes. Shielded type used to minimize RF radiation in transmitters, X-ray and diathermy equipment. CHARACTERISTICS: High dielectric strength. Resistant to heat, flame and moisture.

**UNSHIELDED**

ALPHA NO.	COND. SIZE	COND. STRAND	NOMINAL INSULATION	VOLTAGE RATING	NOM. O.O.
1641	20	10/30	.047"	10,000	.125"
1642	20	10/30	.063"	20,000	.170"
1645	18	16/30	.095"	40,000	.230"

**SHIELDED**

1649	18	16/30	.095"	40,000	.260"
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**DESCRIPTION:**

**UNSHIELDED**—Single conductor stranded tinned copper, special white polyethylene insulation.

**DESCRIPTION:**

**SHIELDED**—Single conductor 18 AWG stranded tinned copper, special white polyethylene insulation, tinned copper shield overall.



WIRE & CABLE FOR INDUSTRY

*Electronics ■ Television ■ Radio ■ Sound ■ Aircraft*

**2173 ITEMS  
IN STOCK**

**DESCRIPTION:**

Pure electrolytic solid or stranded copper properly annealed and tinned for quick soldering.



TINNED COPPER WIRE

**TINNED COPPER WIRE**

APPLICATIONS: Winding of coils. Antennas. Point to point wiring. Bus-bar. Component leads. Ground wire.

**SOLID**

STANDARD SPOOL PUT-UP: 100 FT., 500 FT., 1000 FT.

ALPHA NO.	COND. SIZE	CIRCULAR MIL AREA	NOM. O.D.
299/5	34 AWG	39.75	.006"
299/4	32 AWG	63.21	.008"
299/3	30 AWG	100.5	.010"
299/2	28 AWG	159.8	.013"
299/1	26 AWG	254.1	.016"
299	24 AWG	404.0	.020"
298	22 AWG	642.4	.025"
297	20 AWG	1022	.033"
296	18 AWG	1642	.040"
295	16 AWG	2583	.051"
286	14 AWG	4107	.065"
289	12 AWG	6530	.082"
292	10 AWG	10380	.103"
292/8	8 AWG	16510	.129"
292/6	6 AWG	26250	.162"

**BUS-BAR (ROUND)—2 FOOT LENGTHS  
(100 LENGTHS PER PACKAGE)**

2082	14 AWG	4107	.065"
2080	12 AWG	6530	.082"
2078	10 AWG	10380	.103"



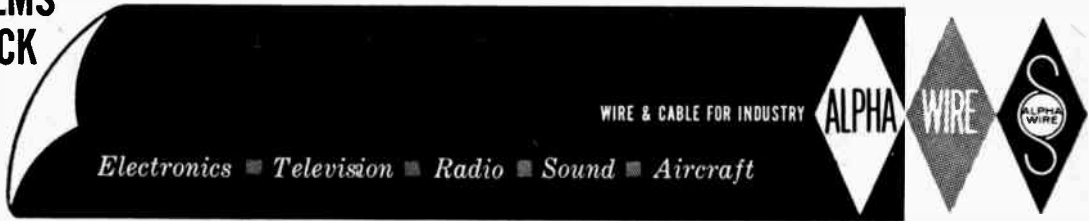
STRANDED  
TINNED COPPER WIRE

**STRANDED**

STANDARD SPOOL PUT-UP: 100 FT., 500 FT., 1000 FT.

ALPHA NO.	COND. SIZE	COND. STRAND	CIRCULAR MIL AREA	NOM. O.D.
199	24 AWG	7/32	442.47	.025"
198	22 AWG	7/30	703.5	.030"
197	20 AWG	10/30	1005.0	.037"
196	18 AWG	16/30	1608.0	.045"
195	16 AWG	26/30	2613.0	.059"
193	14 AWG	41/30	4120.5	.073"
192	12 AWG	65/30	6532.5	.091"

**2173 ITEMS  
IN STOCK**

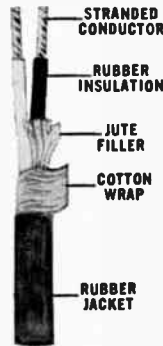


**RUBBER SHEATHED SERVICE CORD (UNDERWRITERS APPROVED)**

STANDARD PUT-UP: 25 FT., 50 FT., 100 FT., 250 FT.

**APPLICATIONS:** For amplifiers, sound systems, speakers, vacuum cleaners, electric tools, washing machines, refrigerators, appliances, trouble lights, garage lamps or wherever a rough usage power line is required.

ALPHA NO.	NO. OF CONO.	COND. SIZE	U/L TYPE	CURRENT CARRYING CAPACITY	VOLTAGE RATING	NOM. O.D.
1951	2	18	SV	5 amps	300	.250"
1952	2	18	SJ	5 amps	300	.310"
1952/3	3	18	SJ	5 amps	300	.345"
1953	2	16	SJ	7 amps	300	.340"
1953/3	3	16	SJ	7 amps	300	.375"
1954	2	18	S	5 amps	600	.390"
1954/3	3	18	S	5 amps	600	.405"
1955	2	16	S	7 amps	600	.410"
1955/3	3	16	S	7 amps	600	.430"
1956	2	14	S	15 amps	600	.540"
1956/3	3	14	S	15 amps	600	.560"
1957	2	12	S	20 amps	600	.605"
1957/3	3	12	S	20 amps	600	.635"
1958	2	10	S	25 amps	600	.640"
1958/3	3	10	S	25 amps	600	.690"



**DESCRIPTION:**

Each conductor stranded bare copper, cotton separator, 1/32" rubber insulation, conductors color coded and twisted, cushioned with jute fillers, tough rubber jacket overall.

**COLOR CODE OF CONDUCTORS:**

- 1—WHITE
- 2—BLACK
- 3—GREEN

**E-Z STRIP LAMP CORD (UNDERWRITERS APPROVED)**

STANDARD SPOOL PUT-UP: 25 FT., 50 FT., 100 FT., 250 FT., 500 FT., 1000 FT.

**APPLICATIONS:** For line cord on radios, lamps, electric clocks, food mixers and other small instruments and appliances.

ALPHA NO.	NO. OF CONO.	COND. SIZE	COND. STRAND	INSULATION TYPE	U/L TYPE	NOM. O.D.	*STOCK COLORS
1967	2	18	41/34	Rubber	SP-1 (POSJ)	.235" x .130"	1 thru 3
1977	2	18	41/34	Plastic	SPT-1(POT)	.235" x .130"	1 thru 8



**DESCRIPTION:**

Two conductors parallel, 18 AWG stranded extra flexible bare copper, rubber or plastic jacket overall. Slit in jacket to permit "E-Z" separation.

**\*STOCK COLORS:**

- (1) BROWN
- (2) BLACK
- (3) WHITE
- (4) GRAY
- (5) PINK
- (6) LIGHT BLUE
- (7) YELLOW
- (8) GREEN

2173 ITEMS  
IN STOCK



WIRE & CABLE FOR INDUSTRY

Electronics Television \* Radio Sound Aircraft

**"ALMAG" MAGNET WIRE**

PLAIN ENAMEL						HEAVY FORMVAR							
Size	Put-Up	"ALMAG" Magnet Wire No.	Approx. Length per Spool in Feet	"ALMAG" Magnet Wire No.	Approx. Length per Spool in Feet	Size	Size	Put-Up	"ALMAG" Magnet Wire No.	Approx. Length per Spool in Feet	"ALMAG" Magnet Wire No.	Approx. Length per Spool in Feet	Size
44	1 lb.	PE-44	80,000	HF-44	80,000	44	24	10 lb.	PE-24	8,060	HF-24	8,060	24
44	1/2 lb.	PE-44	40,000	HF-44	40,000	44	24	5 lb.	PE-24	4,030	HF-24	4,030	24
44	1/4 lb.	PE-44	20,000	HF-44	20,000	44	24	1 lb.	PE-24	806	HF-24	806	24
42	1 lb.	PE-42	51,000	HF-42	51,000	42	24	1/2 lb.	PE-24	403	HF-24	403	24
42	1/2 lb.	PE-42	25,500	HF-42	25,500	42	24	1/4 lb.	PE-24	201	HF-24	201	24
42	1/4 lb.	PE-42	12,750	HF-42	12,750	42	22	10 lb.	PE-22	5,080	HF-22	5,080	22
40	1 lb.	PE-40	33,400	HF-40	33,400	40	22	5 lb.	PE-22	2,540	HF-22	2,540	22
40	1/2 lb.	PE-40	16,700	HF-40	16,700	40	22	1 lb.	PE-22	508	HF-22	508	22
40	1/4 lb.	PE-40	8,350	HF-40	8,350	40	22	1/2 lb.	PE-22	254	HF-22	254	22
38	5 lb.	PE-38	100,000	HF-38	100,000	38	22	1/4 lb.	PE-22	127	HF-22	127	22
38	1 lb.	PE-38	20,000	HF-38	20,000	38	20	10 lb.	PE-20	3,180	HF-20	3,180	20
38	1/2 lb.	PE-38	10,000	HF-38	10,000	38	20	5 lb.	PE-20	1,590	HF-20	1,590	20
38	1/4 lb.	PE-38	5,000	HF-38	5,000	38	20	1 lb.	PE-20	318	HF-20	318	20
36	5 lb.	PE-36	64,000	HF-36	64,000	36	20	1/2 lb.	PE-20	159	HF-20	159	20
36	1 lb.	PE-36	12,800	HF-36	12,800	36	20	1/4 lb.	PE-20	79	HF-20	79	20
36	1/2 lb.	PE-36	6,400	HF-36	6,400	36	18	10 lb.	PE-18	2,010	HF-18	2,010	18
36	1/4 lb.	PE-36	3,200	HF-36	3,200	36	18	5 lb.	PE-18	1,005	HF-18	1,005	18
34	5 lb.	PE-34	40,300	HF-34	40,300	34	18	1 lb.	PE-18	201	HF-18	201	18
34	1 lb.	PE-34	8,060	HF-34	8,060	34	18	1/2 lb.	PE-18	100	HF-18	100	18
34	1/2 lb.	PE-34	4,030	HF-34	4,030	34	18	1/4 lb.	PE-18	50	HF-18	50	18
34	1/4 lb.	PE-34	2,015	HF-34	2,015	34	16	10 lb.	PE-16	1,270	HF-16	1,270	16
32	10 lb.	PE-32	50,300	HF-32	50,300	32	16	5 lb.	PE-16	635	HF-16	635	16
32	5 lb.	PE-32	25,150	HF-32	25,150	32	16	1 lb.	PE-16	127	HF-16	127	16
32	1 lb.	PE-32	5,030	HF-32	5,030	32	16	1/2 lb.	PE-16	63	HF-16	63	16
32	1/2 lb.	PE-32	2,515	HF-32	2,515	32	16	1/4 lb.	PE-16	31	HF-16	31	16
32	1/4 lb.	PE-32	1,257	HF-32	1,257	32	14	10 lb.	PE-14	800	HF-14	800	14
30	10 lb.	PE-30	32,300	HF-30	32,300	30	14	5 lb.	PE-14	400	HF-14	400	14
30	5 lb.	PE-30	16,150	HF-30	16,150	30	14	1 lb.	PE-14	80	HF-14	80	14
30	1 lb.	PE-30	3,230	HF-30	3,230	30	14	1/2 lb.	PE-14	40	HF-14	40	14
30	1/2 lb.	PE-30	1,615	HF-30	1,615	30	14	1/4 lb.	PE-14	20	HF-14	20	14
30	1/4 lb.	PE-30	807	HF-30	807	30	12	10 lb.	PE-12	500	HF-12	500	12
28	10 lb.	PE-28	20,400	HF-28	20,400	28	12	5 lb.	PE-12	250	HF-12	250	12
28	5 lb.	PE-28	10,200	HF-28	10,200	28	12	1 lb.	PE-12	50	HF-12	50	12
28	1 lb.	PE-28	2,040	HF-28	2,040	28	12	1/2 lb.	PE-12	25	HF-12	25	12
28	1/2 lb.	PE-28	1,020	HF-28	1,020	28	12	1/4 lb.	PE-12	12	HF-12	12	12
28	1/4 lb.	PE-28	510	HF-28	510	28	10	10 lb.	PE-10	320	HF-10	320	10
26	10 lb.	PE-26	12,800	HF-26	12,800	26	10	5 lb.	PE-10	160	HF-10	160	10
26	5 lb.	PE-26	6,400	HF-26	6,400	26	10	1 lb.	PE-10	32	HF-10	32	10
26	1 lb.	PE-26	1,280	HF-26	1,280	26	10	1/2 lb.	PE-10	16	HF-10	16	10
26	1/2 lb.	PE-26	640	HF-26	640	26	10	1/4 lb.	PE-10	8	HF-10	8	10
26	1/4 lb.	PE-26	320	HF-26	320	26							

PLAIN ENAMEL

**39¢ SPECIAL SPOOLS**

TINNED COPPER

"ALMAG" Item No.	Spools per Standard Pkg.	Weight (lbs.) per Package	Approx. Length per Spool in Feet	"ALMAG" Item No.	Spools per Standard Pkg.	Weight (lbs.) per Package	Approx. Length per Spool in Feet
218A	6	1.0	30	518A	6	1.0	36
220A	6	1.0	50	520A	6	1.0	52
222A	6	1.0	70	522A	6	1.0	80
224A	6	1.0	144	524A	6	1.0	122
226A	6	1.0	225	526A	6	1.0	179
228A	6	1.0	350	528A	6	1.0	271
230A	6	1.0	540	530A	6	.8	416
232A	6	.8	797	532A	6	.8	596
234A	6	.5	1,098	534A	6	.5	860
236A	6	.5	1,516	536A	6	.5	1,203
238A	6	.5	1,557	538A	6	.5	1,567



# Birnbach

## PLASTIC and RUBBER MICROPHONE CABLE MULTI-CONDUCTOR — ARMORED CABLE

### PLASTIC MICROPHONE CABLE

Designed to stand up under physical abuse and is resistant to oil, moisture and aging for long life. These cables have low capacitance, high insulation resistance and low attenuation at audio frequencies. Will not stain or mark.

#1839 is used for high impedance microphone, lapel, contact, crystal, ribbon, velocity and Hi-Fi interconnecting cable.

#1840 is used for high impedance lapel microphones.

#1841 is used for crystal, ribbon and other impedance microphones.

Above recommended for Hi-Fi installations because of low loss and low capacitance.

#### PLASTIC — ONE-CONDUCTOR MICROPHONE CABLE

##### DESCRIPTION:

Single Conductor Stranded

3 strands #33 copper tinned, and 4 strands #33 (steel-tinned 1840 and 1841) cellulose yarn braid. Polyethylene insulation, tinned copper shielded braid, with chrome vinyl plastic jacket overall.

Cat. No.	Spool	Cond.	Size No. Avg.	Stranding	Nom. Cap./Ft.	Nom. O.D.
1839	500'	1	20	26/34	39MMF	.175"
1840	500'	1	25	7/33*	34MMF	.144"
1841	500'	1	25	7/33*	25MMF	.200"

\*3X33 Copper, 4X33 Steel (All tinned)

#### SPIRAL SHIELDED MICROPHONE CABLE

Constructed with tinned copper spiral wrapped concentric shield. Extremely flexible, smaller size.

Cat. No.	Spool	Cond.	Size No. Avg.	Stranding	Nom. Cap./Ft.	Nom. O.D.
1835	500'	1	25	7/33	25MMF	.159"
1836	500'	1	25	7/33	33MMF	.125"

#### PLASTIC — MULTI-CONDUCTOR MICROPHONE CABLE

Used with carbon and all low impedance microphones.

##### DESCRIPTION:

Each conductor tinned copper, Polyethylene insulation — color coded tinned copper braid shield, chrome vinyl jacket overall.

Cat. No.	Spool	Cond.	Size No. Avg.	Stranding	Nom. Cap./Ft.	Nom. O.D.
1842	500'	2	22	16/34	81MMF	.231"
1843	500'	3	20	26/34	89MMF	.295"
1844	500'	4	20	24/34	43MMF	.320"
1845	500'	5	20	26/34	48MMF	.345"
1846	500'	6	20	26/34	54MMF	.370"

COLOR CODE: 1—Black, 2—White, 3—Red, 4—Green, 5—Yellow, 6—Blue

### SHIELDED MULTI-CONDUCTOR CABLE

Used indoors for permanent or portable work to prevent interference pickup on P.A. systems, recording equipment, photo electric circuits, etc.

#### TINNED COPPER SHIELD OVERALL

##### DESCRIPTION:

Each Conductor #20 10/30 Stranded Tinned Copper, 1/64" rubber wall, waxed cotton braid color coded, twisted conductors, tinned copper shield overall.

Cat. No.	Spool	Conds.	Size AWG	Strand	Insul.	Cap/Ft. Bet. Conds. & Shield	Cap/Ft. Bet. Conds.	Nom. O.D.
972	100'	2	20	10/30	1/64	.65 Mmf.	.43 Mmf.	.215"
973	100'	3	20	10/30	1/64	.68 Mmf.	.55 Mmf.	.220"
974	100'	4	20	10/30	1/64	.69 Mmf.	.57 Mmf.	.250"
975	100'	5	20	10/30	1/64	.70 Mmf.	.58 Mmf.	.280"
976	100'	6	20	10/30	1/64	.71 Mmf.	.60 Mmf.	.290"
977	100'	7	20	10/30	1/64	.72 Mmf.	.62 Mmf.	.315"
978	100'	8	20	10/30	1/64	.74 Mmf.	.65 Mmf.	.350"

COLOR CODE: 1—Black, 2—Red, 3—White, 4—Green, 5—Brown, 6—Yellow, 7—Blue, 8—Orange

### ARMORED INDUSTRIAL CABLE

Used for P.A. systems on speaker extensions, oil burner installations, auto wiring, etc.

Two Conductors Parallel #18 16/30 Stranded Tinned Copper, rubber insulation, lacquered cotton braid color coded, spiral galvanized steel armor overall.

Cat. No.	Spool	Size AWG	Strand	O.D.
1111	250'	18	16/30	.155" x .240"
1112	500'	18	16/30	.155" x .240"
1113	1000'	18	16/30	.155" x .240"

FOR LONGER LENGTHS AND ALTERNATE PUT-UPS—SPECIFY.

### RUBBER MICROPHONE CABLE

#### Especially Designed for Heavy Studio Use

#### RUBBER CRYSTAL MICROPHONE CABLE

Designed for long service life and low loss. Use with crystal, ribbon, dynamic and velocity microphones and photoelectric cells. Birnbach #1870 is used widely for lapel microphones and phono pick ups.

##### DESCRIPTION:

Single Conductor, 26 Strands

#34 extra flexible tinned copper, special low loss rubber compound, tinned copper braid shield, cotton wrap, tough black rubber jacket overall.

Cat. No.	Spool	Cond.	Size No. Avg.	Stranding	Nom. Cap./Ft.	Nom. O.D.
870	100'	1	20	26/34	40 Mmf.	.175"
1870	250'	1	20	26/34	40 Mmf.	.175"
872	100'	1	20	26/34	30 Mmf.	.245"
1872	250'	1	20	26/34	30 Mmf.	.245"

### RUBBER MICROPHONE CABLE

##### DESCRIPTION:

Each Conductor, extra flexible stranded tinned copper, insulated with a .022" wall special low capacity rubber, color coded, conductors twisted, jute filler, cotton wrap, tinned copper braided shield, cotton wrap with tough weatherproof black rubber jacket overall.

Used for indoor and outdoor crystal, carbon and condenser microphones and for public address systems.

Cat. No.	Spool	Cond.	Size Avg.	Strand.	Nom. Cap. Between 1-Cond. & Shield	Nom. Cap. Between 1-Cond. & Others	Nom. O.D.	
772	100'	2	20	26/34	.65 Mmf.	.68 Mmf.	.43 Mmf.	.280"
1772	250'	2	20	26/34	.65 Mmf.	.68 Mmf.	.43 Mmf.	.280"
772/18	100'	2	18	41/34	.70 Mmf.	.73 Mmf.	.48 Mmf.	.300"
773	100'	3	20	26/34	.68 Mmf.	.72 Mmf.	.55 Mmf.	.290"
1773	250'	3	20	26/34	.68 Mmf.	.72 Mmf.	.55 Mmf.	.290"
773/18	100'	3	18	41/34	.68 Mmf.	.72 Mmf.	.55 Mmf.	.350"
774	100'	4	20	26/34	.68 Mmf.	.74 Mmf.	.57 Mmf.	.300"
1774	250'	4	20	26/34	.68 Mmf.	.74 Mmf.	.57 Mmf.	.300"
775	100'	5	20	26/34	.70 Mmf.	.76 Mmf.	.58 Mmf.	.330"
1775	250'	5	20	26/34	.70 Mmf.	.76 Mmf.	.58 Mmf.	.330"
776	100'	6	20	26/34	.71 Mmf.	.80 Mmf.	.60 Mmf.	.350"
1776	250'	6	20	26/34	.71 Mmf.	.80 Mmf.	.60 Mmf.	.350"
777	100'	7	20	26/34	.72 Mmf.	.85 Mmf.	.62 Mmf.	.365"
1777	250'	7	20	26/34	.72 Mmf.	.85 Mmf.	.62 Mmf.	.365"
778	100'	8	20	26/34	.74 Mmf.	.90 Mmf.	.65 Mmf.	.390"

For longer lengths and alternate put-ups—Specify.

#### MICROPHONE CABLE COLOR CODE CHART

1—Black	3—Red	5—Yellow	7—Brown
2—White	4—Green	6—Blue	8—Orange

### 2 CONDUCTOR SHIELDED

(Twisted Pair)

Used for transmission line, P. A. and sound systems, school, hospital sound installations, industrial paging systems, broadcast and audio cable, paging and rack panel wiring.

##### DESCRIPTION:

Each conductor copper tinned, plastic insulation, color coded twisted, tinned copper shield overall.

Cat. No.	Spool	Conds.	Size AWG	Strand	Insul.	NOM O.D.
826	500'	2	24	16/36	.015"	.120"
825	500'	2	22	7/30	.017"	.140"
972S	500'	2	20	10/30	.017"	.155"
827	500'	2	18	16/30	.017"	.180"
828	500'	2	16	26/30	.020"	.210"
829	500'	2	14	41/30	.020"	.235"
830	500'	2	12	65/30	.025"	.295"

Cat. No.	Spool	Conds.	Size AWG	Strand	Insul.	NOM O.D.
973S	500'	3	20	10/30	.017"	.192"
972B	500'	2	20	10/30	.017"	.180"

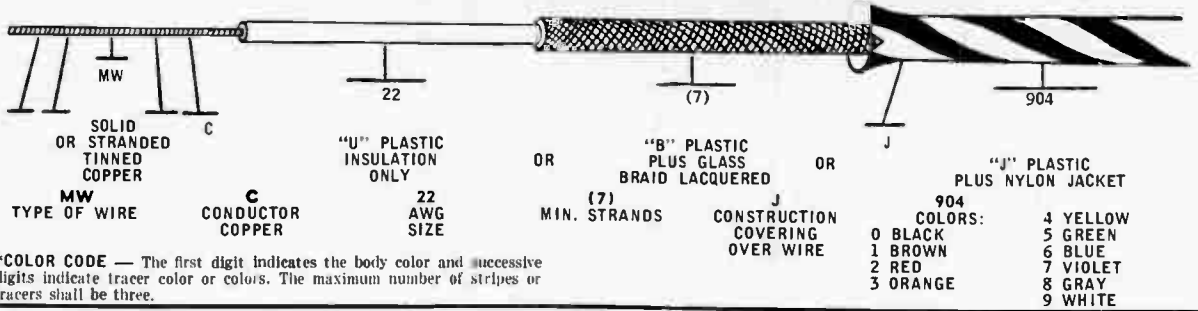
COLOR CODE: 1—Black, 2—Red, 3—White

# Birnbach

**GOV'T SPEC. HOOK-UP WIRE**  
SPECIFICATION MIL-W-76A TYPES MW, LW, HW, GLASS BRAID



**EXAMPLE SPEC. MIL-W-76A TYPE CODE DESIGNATION**



**PLASTIC HOOK-UP WIRE**

**SPECIFICATION MIL-W-76A TYPE MW (MEDIUM WALL) PLASTIC HOOK-UP WIRE TYPE MW 1000 VOLTS (FUNGUS PROOF) SUPERSEDES JAN-C-76 TYPE SRIR STRANDED**

Cat. No.	Spool	Size AWG	MIL-W-76A Type Designation	Conductor Strand	Nom. Wall	Volt Rating	Nom. O.D.
7024	1000'	24	MW-C 24(16)U	16/36	.015"	1000	.055"
7024-1	100'	24	MW-C 24(16)U	16/36	.015"	1000	.052"
7024-S	1000'	24	MW-C 24(16)U	16/36	.015"	1000	.052"
7024-IS	1000'	24	MW-C 24(16)U	16/36	.015"	1000	.055"
7001	1000'	22	MW-C 22(7)U	7/30	.017"	1000	.066"
7001-1	100'	22	MW-C 22(7)U	7/30	.017"	1000	.066"
*7001-S	1000'	22	MW-C 22(7)U	7/30	.017"	1000	.066"
*7001-IS	1000'	22	MW-C 22(7)U	7/30	.017"	1000	.066"
7003	1000'	20	MW-C 20(10)U	10/30	.017"	1000	.074"
7003-1	100'	20	MW-C 20(10)U	10/30	.017"	1000	.074"
*7003-S	1000'	20	MW-C 20(10)U	10/30	.017"	1000	.074"
*7003-IS	1000'	20	MW-C 20(10)U	10/30	.017"	1000	.074"
7005	1000'	18	MW-C 18(16)U	16/30	.017"	1000	.085"
7005-1	100'	18	MW-C 18(16)U	16/30	.017"	1000	.085"
*7005-S	1000'	18	MW-C 18(16)U	16/30	.017"	1000	.085"
*7005-IS	1000'	18	MW-C 18(16)U	16/30	.017"	1000	.085"
7007	1000'	16	MW-C 16(26)U	26/30	.017"	1000	.098"
7007-1	100'	16	MW-C 16(26)U	26/30	.017"	1000	.098"
7009	1000'	14	MW-C 14(41)U	41/30	.017"	1000	.114"
7009-1	100'	14	MW-C 14(41)U	41/30	.017"	1000	.114"
7011	1000'	12	MW-C 12(65)U	65/30	.017"	1000	.132"
7011-1	100'	12	MW-C 12(65)U	65/30	.017"	1000	.132"
<b>SOLID</b>							
7000	1000'	22	MW-C 22(1)U	1	.017"	1000	.061"
7000-1	100'	22	MW-C 22(1)U	1	.017"	1000	.061"
7002	1000'	20	MW-C 20(1)U	1	.017"	1000	.068"
7002-1	100'	20	MW-C 20(1)U	1	.017"	1000	.068"
7004	1000'	18	MW-C 18(1)U	1	.017"	1000	.075"
7004-1	100'	18	MW-C 18(1)U	1	.017"	1000	.075"

STOCK COLORS: White, Yellow, Lt. Blue, Black, Violet (purple), Blue, Brown, Lt. Green, Pink, Red, Green, Tan, Orange, Gray (slate).

**\*SINGLE SPIRAL TRACER COLORS AVAILABLE:**

White/Black	White/Orange	White/Blue
White/Brown	White/Yellow	White/Purple
White/Red	White/Green	White/Gray

**†DOUBLE SPIRAL TRACER COLORS AVAILABLE:**

White/Black/Red	White/Black/Blue	White/Black/Gray
White/Black/Green	White/Black/Brown	White/Black/Purple
White/Black/Yellow	White/Black/Orange	

Additional spiral tracer combination available, to order, for all numbers.

**SPECIFICATION MIL-W-76A TYPE MW (Medium Wall)—NYLON JACKET 1000 VOLT (Fungus Proof) (Supersedes Jan-C-76 Types SRIR and WL Nylon Jacket)**

DESCRIPTION: One conductor stranded tinned copper with thermoplastic insulation and extruded nylon jacket overall.



Cat. No.	Spool	Size AWG	MIL-W-76A Type Designation	Conductor Strand	Nom. Wall	Volt Rating	Nom. O.D.
7224	1000'	24	MW-C 24(16)J	16/36	.015"	1000	.068"
7224-1	100'	24	MW-C 24(24)J	16/36	.015"	1000	.068"
*7222	1000'	22	MW-C 22(7)J	7/30	.017"	1000	.075"
*7222-1	100'	22	MW-C 22(7)J	7/30	.017"	1000	.075"
*7220	1000'	20	MW-C 20(10)J	10/30	.017"	1000	.087"
*7220-1	100'	20	MW-C 20(10)J	10/30	.017"	1000	.087"
*7218	1000'	18	MW-C 18(16)J	16/30	.017"	1000	.100"
*7218-1	100'	18	MW-C 18(16)J	16/30	.017"	1000	.100"
7216	1000'	16	MW-C 16(26)J	26/30	.017"	1000	.112"
7216-1	100'	16	MW-C 16(26)J	26/30	.017"	1000	.112"
7214	1000'	14	MW-C 14(41)J	41/30	.017"	1000	.122"
7214-1	100'	14	MW-C 14(41)J	41/30	.017"	1000	.122"
7212	1000'	12	MW-C 12(65)J	65/30	.017"	1000	.140"
7212-1	100'	12	MW-C 12(65)J	65/30	.017"	1000	.140"
7210	1000'	10	HW-C 10(105)J	105/30	.045"	600	.240"
7210-1	100'	10	HW-C 10(105)J	105/30	.045"	600	.240"

STOCK COLORS: White, Orange, Purple, Black, Yellow, Gray, Brown, Green, Red, Blue

White/Black	White/Red	White/Yellow	White/Blue	White/Gray	White/Black/Yellow	White/Black/Green	White/Black/Brown
White/Brown	White/Orange	White/Green	White/Purple	White/Black/Red	White/Black/Blue	White/Black/Orange	White/Black/Gray

\*In addition Nos. 7218, 7220, 7222, available in Red/Black and Black/White. Nos. 7212, 7210 available solid colors only.

# Birnbach

**GOV'T SPEC. HOOK-UP WIRE**  
**SPECIFICATION MIL-W-76A (superseding JAN-C-76) TYPE MW**



## PLASTIC HOOK - UP WIRE

**SPECIFICATION MIL-W-76A**

**TYPE LW (Light Wall)**

**TYPE LW — 300 VOLTS**

DESCRIPTION: One conductor stranded tinned copper with light wall of primary thermoplastic insulation.

Cat. No.	Spool	Size AWG	MIL-W-76A Type Designation	Conductor Strand	Nom. Wall	Volt Rating	Nom. O.D.
7330	1000'	30	LW-C 30(7)U	7/28	.010"	300	.033"
7330-1	100'	30	LW-C 30(7)U	7/28	.010"	300	.033"
7328	1000'	28	LW-C 28(7)U	7/36	.010"	300	.035"
7328-1	100'	28	LW-C 28(7)U	7/36	.010"	300	.035"
7326	1000'	26	LW-C 26(10)U	10/36	.010"	300	.040"
7326-1	100'	26	LW-C 26(10)U	10/36	.010"	300	.040"

STOCK COLORS: Black, Brown, Red, White, Green, Orange, Yellow, Gray, Blue, Purple  
 Additional sizes, colors available to order.

## SPECIFICATION MIL-W-76A TYPE HW (Heavy Wall) — 2500 VOLTS (Fungus Proof) (SUPERSEDES Jan-C-76 Type SRHV)

DESCRIPTION: Similar to type MW. One conductor stranded tinned copper with larger wall of primary thermoplastic insulation to take 2500 V RMS.

Cat. No.	Spool	Size AWG	MIL-W-76A Type Designation	Conductor Strand	Nom. Wall	Volt Rating	Nom. O.D.
7322	1000'	22	HW-C 22(7)U	7/30	.033"	2500	.105"
7322-1	100'	22	HW-C 22(7)U	7/30	.033"	2500	.105"
7320	1000'	20	HW-C 20(10)U	10/30	.033"	2500	.112"
7320-1	100'	20	HW-C 20(10)U	10/30	.033"	2500	.112"
7318	1000'	18	HW-C 18(16)U	16/30	.033"	2500	.122"
7318-1	100'	18	HW-C 18(16)U	16/30	.033"	2500	.122"
7316	1000'	16	HW-C 16(26)U	26/30	.033"	2500	.135"
7316-1	100'	16	HW-C 16(26)U	26/30	.033"	2500	.135"
7314	1000'	14	HW-C 14(41)U	41/30	.045"	2500	.175"
7314-1	100'	14	HW-C 14(41)U	41/30	.045"	2500	.175"
7312	1000'	12	HW-C 12(65)U	65/30	.045"	2500	.195"
7312-1	100'	12	HW-C 12(65)U	65/30	.045"	2500	.195"
*7013	1000'	10	HW-C 10(105)U	105/30	.045"	600	.217"
*7013-1	100'	10	HW-C 10(105)U	105/30	.045"	600	.217"
*7015	1000'	8	HW-C 8(133)U	133/29	.045"	600	.268"
*7015-1	100'	8	HW-C 8(133)U	133/29	.045"	600	.268"
*7017	1000'	6	HW-C 6(133)U	133/27	.045"	600	.315"
*7017-1	100'	6	HW-C 6(133)U	133/27	.045"	600	.315"

STOCK COLORS: White, Black, Brown, Red, Orange, Yellow, Green, Blue, Purple, Gray

\*Nos. 7013, 7015, 7017, available stock colors: Black, White. Additional sizes, colors available to order.

## SPECIFICATION MIL-W-76A TYPE MW (Medium Wall) — GLASS BRAID 1000 VOLTS (Supersedes Jan-C-76 Types SRIR and WL Glass Braid)

DESCRIPTION: One conductor stranded tinned copper with thermoplastic insulation and lacquered glass braid overall.

Cat. No.	Spool	Size AWG	MIL-W-76A Type Designation	Conductor Strand	Nom. Wall	Volt Rating	Nom. O.D.
7022	1000'	22	MW-C 22(7)B	7/30	.017"	1000	.079"
7022-1	100'	22	MW-C 22(7)B	7/30	.017"	1000	.079"
7020	1000'	20	MW-C 20(10)B	10/30	.017"	1000	.084"
7020-1	100'	20	MW-C 20(10)B	10/30	.017"	1000	.084"
7018	1000'	18	MW-C 18(16)B	16/30	.017"	1000	.100"
7018-1	100'	18	MW-C 18(16)B	16/30	.017"	1000	.100"
7016	1000'	16	MW-C 16(26)B	26/30	.017"	1000	.116"
7016-1	100'	16	MW-C 16(26)B	26/30	.017"	1000	.116"
*7014	1000'	14	MW-C 14(41)B	41/30	.017"	1000	.129"
*7014-1	100'	14	MW-C 14(41)B	41/30	.017"	1000	.129"
*7012	1000'	12	MW-C 12(65)B	65/30	.017"	1000	.149"
*7012-1	100'	12	MW-C 12(65)B	65/30	.017"	1000	.149"

STOCK COLORS:

White  
Black  
Green  
Brown  
Blue  
Purple  
Red  
Orange

White/Brown  
White/Black  
White/Orange  
White/Yellow  
White/Green  
White/Blue

White/Red  
White/Gray  
White/Purple  
White/Black/Red  
White/Black/Yellow  
White/Black/Blue

White/Black/Green  
White/Black/Orange  
White/Black/Brown  
White/Black/Gray

\*Nos. 7014, 7012, available stock in solid colors.

## TYPE HW (Heavy Wall) — GLASS BRAID (Supersedes Jan-C-76 Type SRHV — Glass Braid)

Cat. No.	Spool	Size AWG	MIL-W-76A Type Designation	Conductor Strand	Nom. Wall	Volt Rating	Nom. O.D.
7010	1000'	10	HW-C 10(105)B	105/30	.045"	600	.237"
7010-1	100'	10	HW-C 10(105)B	105/30	.045"	600	.237"
7008	1000'	8	HW-C 8(133)B	133/29	.045"	600	.293"
7008-1	100'	8	HW-C 8(133)B	133/29	.045"	600	.293"
7006	1000'	6	HW-C 6(133)B	133/27	.045"	600	.340"
7006-1	100'	6	HW-C 6(133)B	133/27	.045"	600	.340"

STOCK COLORS: White, Black

# Birnbach

## GOV'T SPEC. HOOK-UP WIRE

SPECIFICATION MIL-W-76A TYPES GLASS BRAID NYLON JACKET SHIELDED



### PLASTIC HOOK-UP WIRE

#### SPECIFICATION MIL-W-16878B



#### TYPE B — HIGH TEMPERATURE

Suitable for general purpose wiring for miniature high temperature hook-ups in aircraft, electronic instruments, devices, etc., where excellent resistance to moisture and solvents may be required.

DESCRIPTION: One conductor stranded tinned copper with rated -55°C to +105°C high temperature thermoplastic light wall insulation.

Cat. No.	Spool	Size AWG	Mil-W-16878B Type Designation	Conductor Strand	Nom. Wall	Volt Rating	Nom. O.D.
7190	1000'	32	B-32	7/40	.010"	600	.028"
7191	1000'	30	B-30	7/38	.010"	600	.030"
7192	1000'	28	B-28	7/36	.010"	600	.033"
7193	1000'	26	B-26	7/34	.010"	600	.037"
7194	1000'	24	B-24	7/32	.010"	600	.043"
7195	1000'	22	B-22	7/30	.010"	600	.048"
7196	1000'	20	B-20	7/28	.010"	600	.057"
7197	1000'	18	B-18	7/26	.010"	600	.067"
7198	1000'	16	B-16	19/29	.010"	600	.077"

STOCK COLORS:		Black	Red	Brown	Blue	Orange
White/Black	White/Green	White	Yellow	Green	Gray	Purple
White/Red	White/Yellow		White/Blue		White/Orange	
			White/Brown		White/Gray	White/Violet

Mil-W-16878B Type B also available with nylon jacket.

#### SPECIFICATION MIL-W-16878B



#### TYPE C — HIGH TEMPERATURE

DESCRIPTION: One Conductor Similar To Type B—Heavier Wall Hi-Temp Thermoplastic Insulation

Cat. No.	Spool	Size AWG	Mil-W-16878B Type Designation	Minimum Strand	Nom. Wall	Volt Rating	Nom. O.D.
7170	1000'	24	C-24	7/32	.016"	1000	.058"
7171	1000'	22	C-22	7/30	.016"	1000	.064"
7172	1000'	20	C-20	7/28	.016"	1000	.073"
7173	1000'	18	C-18	7/26	.016"	1000	.085"
7174	1000'	16	C-16	7/29	.016"	1000	.095"
7175	1000'	14	C-14	7/27	.016"	1000	.109"

STOCK COLORS: BLACK, RED, BROWN, BLUE, ORANGE, WHITE, YELLOW, GREEN, GRAY, PURPLE.

ALSO AVAILABLE IN TRACER COLORS, NYLON JACKET. ADDITIONAL TYPES AVAILABLE TO ORDER.

See page S-1369 for our MIL-W-16878B Type E TEFLON\* Hook-up Wire Listing. Additional special constructions available to order. Wrapped or extruded with or without shielding, glass braid, nylon braid, silicone ond in multi-conductors.

### SHIELDED PLASTIC HOOK-UP WIRE

#### SPECIFICATION MIL-W-76A

#### TYPE MW (Medium Wall) — SHIELDED

(Supersedes Jan-C-76 Type SRIR Shielded)

DESCRIPTION: One conductor stranded tinned copper with thermoplastic insulation and tinned copper shielded braid overall.



Cat. No.	Spool	Size AWG	Mil-W-76A Type Designation	Minimum Strand	Nom. Wall	Volt Rating	Nom. O.D.
7074	1000'	24	MW-C 24(16)S	16/30	.015"	1000	.071"
7074-1	100'	24	MW-C 24(16)S	16/30	.015"	1000	.074"
7072	1000'	22	MW-C 22(7)S	7/30	.017"	1000	.084"
7072-1	100'	22	MW-C 22(7)S	7/30	.017"	1000	.084"
7070	1000'	20	MW-C 20(10)S	10/30	.017"	1000	.094"
7070-1	100'	20	MW-C 20(10)S	10/30	.017"	1000	.094"
7068	1000'	18	MW-C 18(16)S	16/30	.017"	1000	.106"
7068-1	100'	18	MW-C 18(16)S	16/30	.017"	1000	.106"
7067	1000'	16	MW-C 16(26)S	26/30	.017"	1000	.121"
7067-1	100'	16	MW-C 16(26)S	26/30	.017"	1000	.121"
*7066	1000'	14	MW-C 14(41)S	41/30	.017"	1000	.137"
*7065	1000'	12	MW-C 12(65)S	65/30	.017"	1000	.155"

STOCK COLORS: (Underneath Shield) Black, White, Red, Yellow, Brown, Green, Blue, Gray

\*Nos. 7066, 7065, available from stock in Black or White.

\*TEFLON — DuPont Reg. TM for Tetrafluorethylene

# Birnbach

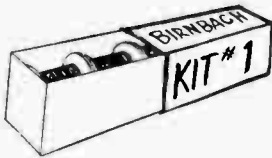
## GOV'T SPEC. HOOK-UP WIRE

MIL-W-16878 B MIL-W-5086, MIL-C-7078



### BIRFLON EXTRUDED TEFLON\* WIRE KITS

BECAUSE OF TEFLON'S UNIQUE AND OUTSTANDING PROPERTIES LABORATORY AND INDUSTRIAL USERS WILL FIND THESE KITS USEFUL FOR EXPERIMENTAL AND PROTOTYPE PURPOSES.

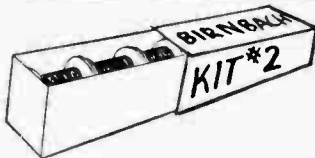


#### KIT #TK-1 TYPE E PER SPECIFICATION MIL-W-16878 B

Contains 6—50 ft. spools #22 AWG stranded silver plated copper wire, extruded Teflon insulation.

**1 Each Color Net \$49.50**

Colors: White, Black, Red, Green, Yellow, Blue.



#### KIT #TK-2

Contains 6—50 ft. spools. One each size from #30 through #20 AWG stranded silver plated copper wire, extruded Teflon insulation.

**1 Each Color Net \$45.50**

Colors: White, Black, Red, Green, Yellow, Blue. Additional colors for kits available from stock.

### BIRFLON EXTRUDED TEFLON\*

### HOOK-UP WIRE

#### SPECIFICATION MIL-W-16878B

#### TYPE E—600 VOLT

#### HIGH TEMPERATURE RATING —90° TO +250°C (TYPE EE-1000V AVAILABLE)

Chemically inert, non-flammable, excellent flexibility, easy stripping, high dielectric strength, unaffected by fungus. Exceeds Class II insulation requirements. Unaffected by high or low temperature. Outstanding for its dependability and long life under all operating conditions indoors or outdoors. Teflon permits miniaturization and compactness in electronic designs of sub-miniature components, computers, UHF equip., slip ring assemblies, leads to hermetically sealed and potted components, telemetering equip. and guided missiles.

Cat. No.	Spool	Size AWG	Mil Type Designation	Min. Strand	Nom. Insul.	Volt Rating	Diameter Over Insulation Max.
8532	1000'	32	E-32	7/10	.010"	600	.033"
8532-1	100'	32	E-32	7/10	.010"	600	.033"
8530	1000'	30	E-30	7/38	.010"	600	.036"
8530-1	100'	30	E-30	7/38	.010"	600	.036"
8528	1000'	28	E-28	7/36	.010"	600	.039"
8528-1	100'	28	E-28	7/36	.010"	600	.039"
8526	1000'	26	E-26	7/34	.010"	600	.043"
8526-1	100'	26	E-26	7/34	.010"	600	.043"
8524	1000'	24	E-24	19/36	.010"	600	.048"
8524-1	100'	24	E-24	19/36	.010"	600	.048"
8522	1000'	22	E-22	7/30	.010"	600	.054"
8522-1	100'	22	E-22	7/30	.010"	600	.054"
8520	1000'	20	E-20	7/28	.010"	600	.062"
8520-1	100'	20	E-20	7/28	.010"	600	.062"
8518	1000'	18	E-18	19/30	.010"	600	.074"
8518-1	100'	18	E-18	19/30	.010"	600	.074"
8516	1000'	16	E-16	19/29	.010"	600	.087"
8516-1	100'	16	E-16	19/29	.010"	600	.087"

\*Duponts Tetrafluoroethylene Resin.

Colors: Black, Brown, Red, Orange, Yellow, Green, Blue, Purple, Gray, White. Additional sizes and strandings available upon request. Wrapped Teflon\* insulated wire available. Can be furnished in a variety of constructions with or without shielding, glass braid, multi-conductors.

### AIRCRAFT PLASTIC HOOK-UP WIRE

#### SPECIFICATIONS MIL-W-5086 and MIL-C-7078

#### NYLON JACKET

Used where a single conductor, 600 volt insulated wire, is required. This aircraft electrical wire is resistant to effects of salt water, oils, aircraft engine fuels, alcohol, fungus, heat, cold, salt water, abrasion, meets -65°F temperature test.

DESCRIPTION: One conductor stranded tinned copper with plastic insulation, nylon jacket overall. Color: White.

#### MIL-W-5086 UNSHIELDED (Supersedes AN-J-C-48A)

Cat. No.	Spool	Size AWG	Mil Type Type Designation	Conductor Stranded	Volt Rating	Nom. O.D.
7351	1000'	22	AN-22	19/34	600	.080"
7353	1000'	20	AN-20	19/32	600	.090"
7355	1000'	18	AN-18	19/30	600	.104"
7357	1000'	16	AN-16	19/29	600	.118"
7359	1000'	14	AN-14	19/27	600	.135"
7361	1000'	12	AN-12	19/25	600	.154"
7362	1000'	10	AN-10	183/28	600	.198"
7363	1000'	8	AN-8	183/29	600	.247"
7364	1000'	6	AN-6	183/27	600	.297"
7365	1000'	4	AN-4	183/25	600	.394"

In addition MIL-W-5086 unshielded available in sizes AN-2, AN-0, AN-00.

#### MIL-C-7078 SHIELDED (Supersedes An-C-168)

Cat. No.	Spool	Size AWG	Mil Type Type Designation	Conductor Stranded	Volt Rating	Nom. O.D.
7371	1000'	22	AN-22	19/34	600	.100"
7372	1000'	20	AN-20	19/32	600	.110"
7373	1000'	18	AN-18	19/30	600	.124"
7374	1000'	16	AN-16	19/29	600	.139"
7375	1000'	14	AN-14	19/27	600	.158"
7376	1000'	12	AN-12	19/25	600	.177"

DESCRIPTION: One conductor stranded tinned copper with plastic insulation, nylon jacket with tinned copper shielded braid overall. Color: White under shield.

# Birnbach

## MINIATURE, SUBMINIATURE, HIGH TEMP. SHIELDED & MULTICONDUCTOR



### MINIATURIZATION HOOK-UP WIRE and CABLE

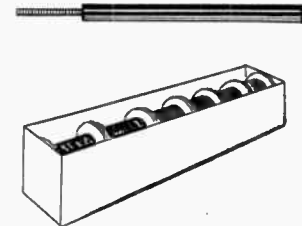
#### HIGH TEMPERATURE 105°C.

#### UNSHIELDED — ONE CONDUCTOR

Used in miniaturized equipment Phono-pickup lead computers transistor circuits, electro-medical and electro therapeutic apparatus, instrumentation projects, miniaturization programs, where fine sizes are required with high operating temperature.

For "Lab" requirements Miniaturization Hook-Up Wire and Cable assortments—WRITE for information.

Cat. No	Spool	No. of Cond.	Size AWG	Conductor Strand	Nom. Wall	Nom. O.D.
7534	1000'	1	34	4/40	.010"	.027"
7534-500	500'	1	34	4/40	.010"	.027"
7532	1000'	1	32	7/40	.010"	.029"
7532-500	500'	1	32	7/40	.010"	.029"
7530	1000'	1	30	7/38	.010"	.030"
7530-500	500'	1	30	7/38	.010"	.030"
7529	1000'	1	29	5/36	.010"	.030"
7529-500	500'	1	29	5/36	.010"	.030"
7528	1000'	1	28	7/36	.010"	.035"
7528-500	500'	1	28	7/36	.010"	.035"
7527	1000'	1	27	7/35	.010"	.037"
7527-500	500'	1	27	7/35	.010"	.037"
7526	1000'	1	26	10/36	.010"	.038"
7526-500	500'	1	26	10/36	.010"	.038"
7524	1000'	1	24	16/36	.015"	.055"
7524-500	500'	1	24	16/36	.015"	.055"



#### DESCRIPTION:

One conductor stranded tinned copper with 105°C. high temperature thermoplastic insulation overall.

STOCK COLORS: Black, Red, Green, Yellow, Blue, Brown, White, Orange, Gray, Purple

#### SUB-MINIATURE

#### MULTI-CONDUCTOR CABLE

(Super Flexible)

DESCRIPTION: Multi-Cond. tinned copper stranded 105° C high temperature P.V.C. thermoplastic insulation. When jacketed clear P.V.C. thermoplastic used over cabled wire.

#### NO OUTER JACKET



Cat. No.	Spool	No. of Cond.	Size AWG	Cond. Strand	Nom. Wall	Nom. O.D.
7652	1000'	2	30	7/38	.010"	.059"
7652	500'	2	30	7/38	.010"	.059"
7653	1000'	3	30	7/38	.010"	.065"
7653	500'	3	30	7/38	.010"	.065"
7654	1000'	4	30	7/38	.010"	.072"
7654	500'	4	30	7/38	.010"	.072"

COLOR CODE CHART: 1 Black, 2 White, 3 Red, 4 Green

#### CLEAR VINYL JACKET OVERALL

Cat. No.	Spool	No. of Cond.	Size AWG	Cond. Strand	Nom. Wall Jacket	Nom. O.D.
7668	1000'	2	28	7/36	.010"	.079"
7668	500'	2	28	7/36	.010"	.079"
7669	1000'	3	28	7/36	.010"	.086"
7669	500'	3	28	7/36	.010"	.086"
7670	1000'	4	28	7/36	.010"	.095"
7670	500'	4	28	7/36	.010"	.095"

COLOR CODE CHART: 1 Black, 2 White, 3 Red, 4 Green

#### SUB-MINIATURE

#### SHIELDED HOOK-UP WIRE

(Super Flexible)

Cat. No	Spool	No. of Cond.	Size AWG	Conductor Strand	Nom. Wall	Nom. O.D.
7538	1000'	1	30	7/38	.010"	.053"
7538	500'	1	30	7/38	.010"	.053"
7535	1000'	1	28	7/36	.010"	.058"
7535	500'	1	28	7/36	.010"	.058"
7537	1000'	1	26	10/36	.010"	.061"
7537	500'	1	26	10/36	.010"	.061"
7536	1000'	1	24	16/36	.015"	.075"
7536	500'	1	24	16/36	.015"	.075"

STOCK COLOR: White (under shield)



#### DESCRIPTION:

One or multi-conductor stranded tinned copper with 105°C. high temperature thermoplastic insulation and tinned copper shielded braid overall.

#### SUB-MINIATURE

#### MULTI-CONDUCTOR CABLE SHIELDED

(Super Flexible)

DESCRIPTION: Multi-conductor, tinned copper stranded 105° C high temperature P.V.C. thermoplastic insulation, tinned copper shield. When jacketed clear P.V.C. Thermoplastic jacket used over tinned copper shield.

#### NO OUTER JACKET



Cat. No.	Spool	No. of Cond.	Size AWG	Cond. Strand	Nom. Wall	Nom. O.D.
7542	1000'	2	24	16/36	.015"	.114"
7542/3	1000'	3	24	16/36	.015"	.123"
7542/4	1000'	4	24	16/36	.015"	.144"

COLOR CODE CHART: 1 Black, 2 White, 3 Red, 4 Green

#### CLEAR VINYL JACKET OVERALL

Cat. No.	Spool	No. of Cond.	Size AWG	Cond. Strand	Nom. Wall Jacket	Nom. O.D.
7552	1000'	2	28	7/36	.010"	.137"
7552/3	1000'	3	28	7/36	.010"	.145"
7552/4	1000'	4	28	7/36	.010"	.163"

COLOR CODE CHART: 1 Black, 2 White, 3 Red, 4 Green

# Birnbach

## HIGH VOLTAGE, SILICONE HOOK-UP WIRE KEL-F HOOK-UP, CATHODE RAY, 105° UL



### BIRSIL SILICONE RUBBER HOOK-UP LEAD WIRE 200° C. — 600 VOLT

This Birsil Silicone Rubber Hook up lead wire withstands extreme temperature range and flexibility from —104° C. to +400° F. with retention of physical properties and is highly resistant to flex cracking at temperature extremes; fungus resistant; corona resistant; engineered for high-heat and hi-frequency applications; low power factor; acid-alkali-oil resistant; low dielectric constant; insulation approaching mica. Approved by U. L. but consumer must apply for Underwriter's Laboratories approval for individual product.

Cat. No.	Spool	Size AWG	Strand	Nom.		
				Ins. Wall	Volt Rating	O.D.
7622	1000'	22	7/30	1/32"	600	.103"
7622-1	100'	22	7/30	1/32"	600	.105"
7620	1000'	20	10/30	1/32"	600	.165"
7620-1	100'	20	10/30	1/32"	600	.121"
7618	1000'	18	16/30	1/32"	600	.121"
7618-1	100'	18	16/30	1/32"	600	.128"
7616	1000'	16	26/30	1/32"	600	.128"
7616-1	100'	16	26/30	1/32"	600	.144"
7614	1000'	14	41/30	1/32"	600	.144"
7614-1	100'	14	41/30	1/32"	600	.165"
7612-1	100'	12	65/30	1/32"	600	.165"
7610-1	100'	10	65/28	3/64"	600	.185"
						.240"

Additional sizes and colors available to order.

#### DESCRIPTION:

One conductor, tinned copper strands, silicone rubber insulation, glass braid, lacquered. Color: White.



### BIRFLENE\* KEL-F HOOK-UP WIRE —125° C. to +175° C. MEETS MIL-W-12349-SPEC

#### PERFORMANCE SPECIFICATIONS:

Continuous: —60° to +150° C. Operating Voltage: 1000 volts RMS. Spark Test: 7500 volts. Dielectric Strength: 5000 volts at 60° C. for 1 minute. Insulation Resistance: Greater than 5000 Meg Ohms/1000 Ft. at 60° C. Moisture Absorption: Nil. Flammability: Non-flammable. Resistance to Chemicals: All solvents and acids. Aging: Outdoor, 1 year; no detectable change.

Cat. No.	Spool	Size AWG	Strand	Nom.		
				Ins. Wall	Volt Rating	O.D.
7130	1000'	30	7/38	.004"		.029"
7130-1	100'	30	7/38	.006"		.029"
7128	1000'	28	7/36	.006"		.032"
7128-1	100'	28	7/36	.006"		.032"
7126	1000'	26	7/34	.008"		.037"
7126-1	100'	26	7/34	.008"		.037"
7124	1000'	24	7/32	.008"		.043"
7124-1	100'	24	7/32	.008"		.043"
7122	1000'	22	7/30	.008"		.050"
7122-1	100'	22	7/30	.008"		.050"
7120	1000'	20	7/28	.010"		.060"
7120-1	100'	20	7/28	.010"		.060"
7118	1000'	18	16/30	.010"		.070"
7118-1	100'	18	16/30	.010"		.070"
7116	1000'	16	19/29	.010"		.079"
7116-1	100'	16	19/29	.010"		.079"

#### DESCRIPTION:

One conductor silver plated copper stranded, insulation — Monochlorotrifluoroethylene (Birlene Kel-F).

**COLORS:** White, Red, Green, Gray, Black, Orange, Dk. Blue, Lt. Blue, Brown, Yellow, Purple

Available in Spiral Tracers.

\*Made with Kellogg Co. Kel-F or Bakelite Co. Fluorothene.

### HI-VOLTAGE and CATHODE RAY CABLE

Used for 10,000, 20,000, 40,000, 60,000 volt applications as for cathode ray tubes in TV receivers, oscilloscopes and other electronic devices. Has dielectric constant of 2.7 and power factor of .002. Shielded Hi-Voltage type used to shield RF radiation in X-Ray, diathermy, medical equipment, and in transmitters.

#### UNSHIELDED

Cat. No.	Spool	Size AWG	Strand	Nom.		
				Ins. Wall	Volt Rating	O.D.
7402	1000'	20	10/30	.047"	10,000	.125"
7402-1	100'	20	10/30	.047"	10,000	.125"
7412	1000'	20	10/30	.068"	20,000	.169"
7412-1	100'	20	10/30	.068"	20,000	.169"
7418	1000'	18	16/30	.047"	10,000	.135"
7418-1	100'	18	16/30	.047"	10,000	.135"
7428	1000'	18	16/30	.069"	20,000	.179"
7428-1	100'	18	16/30	.069"	20,000	.179"
7448	1000'	18	16/30	.095"	40,000	.231"
7448-1	100'	18	16/30	.095"	40,000	.231"
7449	1000'	18	16/30	.123"	60,000	.285"
7449-1	100'	18	16/30	.123"	60,000	.285"

#### SHIELDED

7458	1000'	18	16/30	.095"	40,000	.256"
7458-1	100'	18	16/30	.095"	40,000	.256"

#### DESCRIPTION:

One conductor stranded copper tinned rulan (flame retarding type) polyethylene insulation. Available in White. Temp. Rating: 105°C

Shielded: Same as above with tinned copper braided shield overall.

Special constructions available to order.

### PLASTIC INSULATED HOOK-UP WIRE

Designed for the chassis, sub-chassis wiring of radio and television receivers and transmitters inside or outside the chassis. UL approved for 105° C. (221° F.) operating temperature.

#### 105° C. — 600 VOLT RATING UL APPROVED

Cat. No.	Spool	AWG	Stranding	Nom. Wall	Volt. Breakdown	DC Ins. Res. Megs./Ft.	Max.
							O.D.
7201	1000'	22	7/30	.032"	18000	5000	.100"
7201-1	100'	22	7/30	.032"	18000	5000	.100"
7203	1000'	20	10/30	.032"	18000	5000	.104"
7203-1	100'	20	10/30	.032"	18000	5000	.104"
7205	1000'	18	16/30	.032"	18000	5000	.112"
7205-1	100'	18	16/30	.032"	18000	5000	.112"
7207	1000'	16	26/30	.032"	18000	5000	.129"
7207-1	100'	16	26/30	.032"	18000	5000	.129"
7202	1000'	22	Solid	.032"	18000	5000	.095"
7202-1	100'	22	Solid	.032"	18000	5000	.095"
7204	1000'	20	Solid	.032"	18000	5000	.102"
7204-1	100'	20	Solid	.032"	18000	5000	.102"

COLORS: Black, Red, Green, Yellow, Blue, Brown, White, Orange, Gray, Purple

#### DESCRIPTION:

One Conductor stranded annealed copper tinned, plastic insulation.

# Birnbach

## SHIELDED — MULTI — TWO WIRE SPEAKER CABLE TWISTED PAIR CABLES

### SHIELDED TWO WIRE SPEAKER CABLE

Used extensively for master control sound systems, photo electric circuits, P.A. systems, etc.

#### DESCRIPTION:

#972A—2 Cond. #18-16/30 Tinned Copper, 1/32" wall special low capacity rubber, color coded, twisted, paper wrap, closely woven tinned copper shield overall.



No. 972A

#1972A—Similar to #972A with a waxed cotton braid over shield.

#### TINNED SHIELD OVERALL

Cat. No.	Spool	Conds.	Size AWG	Strand	Insul.	Cap/Ft. Bet. & Shield	Cap/Ft. Bet. Conds.	O.D.
972A	500'	2	18	16/30	1/32	.65	.43	.250"

#### WAXED COTTON BRAID OVER SHIELD

1972A	500'	2	18	16/30	1/32	.65	.43	.275"
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#### COLOR CODE: Black and Red

For longer lengths and alternate put-ups—Specify.

### Multi-Conductor Industrial Cable PLASTIC JACKET OVERALL

#### DESCRIPTION:

#18 solid tinned copper plastic insulation, color coded, twisted conductors. Gray vinyl jacket overall. Used for inter-com systems, speaker cable, alarm, signal, P. A. systems, thermostats, remote control circuits. Suitable for outdoor installations.



Cat. No.	Spool	Conds.	Size AWG	Nom. Insul.	Nom. Jacket	Nom. O.D.
4752	500'	2	18 solid	.017"	.020"	.185"
4753	500'	3	18 solid	.017"	.020"	.190"
4754	500'	4	18 solid	.017"	.020"	.235"
4755	500'	5	18 solid	.017"	.020"	.240"
4756	500'	6	18 solid	.017"	.020"	.275"

#### COLOR CODE:

1—Black, 2—Red, 3—White, 4—Green, 5—Orange, 6—Blue

### UNSHIELDED AUDIO CABLE Solid Conductors (2 & 3)

Widely used for connecting sound and inter-com systems, audio hookups, indoor and outdoors. Telephones, telemetering connections. For Baby Sitter Intercoms.

#### FOR INDOOR USE

##### Without plastic Jacket

#### DESCRIPTION:

Solid Tinned Copper Conductors, vinyl plastic insulation, color coded, conductors twisted.



Cat. No.	Spool	Conds.	Size AWG	Nom. Insul.	Nom. O.D.
931	1000'	2	22 solid	.016"	.116"
933	1000'	3	22 solid	.016"	.125"
981	1000'	2	20 solid	.016"	.130"
983	1000'	3	20 solid	.016"	.140"
985	1000'	2	18 solid	.016"	.145"
987	1000'	3	18 solid	.016"	.155"

#### FOR OUTDOOR USE

##### With Plastic Jacket Overall

#### DESCRIPTION:

Solid Tinned Copper Conductors, vinyl plastic insulation, color coded, conductors twisted with weatherproof plastic jacket overall.



Cat. No.	Spool	Conds.	Size AWG	Nom. Insul.	Nom. Jacket	Nom. O.D.
932	1000'	2	22 solid	.010"	.020"	.125"
934	1000'	3	22 solid	.010"	.020"	.130"
982	1000'	2	20 solid	.016"	.020"	.170"
984	1000'	3	20 solid	.016"	.020"	.180"
986	1000'	2	18 solid	.016"	.020"	.185"
988	1000'	3	18 solid	.016"	.020"	.190"

For longer lengths and alternate put-ups—Specify.

COLOR CODE: 1—Brown 2—Tan 3—Gray

### MULTI-CONDUCTOR FLEXIBLE CABLE RUBBER INSULATED — Cotton Braid Overall

#### DESCRIPTION:

Each Conductor, #20 — 10/30 Tinned Copper Stranded, 1/64" low capacity rubber, cotton braid overall, conductors twisted, closely woven brown cotton braid overall.



Used for multiple circuit hookups, connecting speakers, remote control units, analyzers, etc.

Cat. No.	Spool	Conds.	Size AWG	Strand	Ins.	Nom. O.D.
172	100'	2	20	10/30	1/64"	.205"
173	100'	3	20	10/30	1/64"	.245"
174	100'	4	20	10/30	1/64"	.265"
175	100'	5	20	10/30	1/64"	.290"
176	100'	6	20	10/30	1/64"	.310"
177	100'	7	20	10/30	1/64"	.325"
178	100'	8	20	10/30	1/64"	.360"
179	100'	9	20	10/30	1/64"	.395"
180	100'	10	20	10/30	1/64"	.425"
182	100'	12	20	10/30	1/64"	.440"

#### COLOR CODE:

1—Black 5—Orange 9—White/Black Tracer  
2—White 6—Blue 10—Red/Black Tracer  
3—Red 7—Brown 11—Green/Black Tracer  
4—Green 8—Yellow 12—Orange/Black Tracer

### MULTI-CONDUCTOR FLEXIBLE CABLE Plastic Jacket Overall

#### DESCRIPTION:

Each conductor #22 7/30 tinned copper stranded 1/64" thermoplastic insulation, color coded, conductors twisted, gray vinyl plastic jacket overall. Used for signal, P.A. systems. Electronic computer cable, suitable for outdoor use.



Cat. No.	Spool	Conds.	Size AWG	Strand	Nom. Insul.	Nom. Jacket	Nom. O.D.
156	500'	2	22	7/30	.010"	.020"	.150"
157	500'	3	22	7/30	.010"	.020"	.155"
158	500'	4	22	7/30	.010"	.020"	.185"
159	500'	5	22	7/30	.010"	.020"	.190"
160	500'	6	22	7/30	.010"	.020"	.195"
161	500'	7	22	7/30	.010"	.020"	.230"
162	250'	8	22	7/30	.010"	.020"	.245"
163	250'	9	22	7/30	.010"	.020"	.250"
164	250'	10	22	7/30	.010"	.020"	.255"
165	250'	12	22	7/30	.010"	.020"	.280"

For longer lengths and alternate put-ups—Specify.

#### COLOR CODE:

1—Black 3—White 5—Orange 7—Brown 9—Violet 11—Pink  
2—Red 4—Green 6—Blue 8—Yellow 10—Slate 12—Tan

### THERMO-PLASTIC INSULATED — Cotton Braid Overall

Each Conductor #22 — 7/30 Tinned Copper Stranded, 1/64" Thermoplastic insulation, color coded, conductors twisted, closely woven brown cotton braid overall.



Cat. No.	Spool	Conds.	Size AWG	Strand	Ins.	Nom. O.D.
263	100'	3	22	7/30	1/64"	.160"
264	100'	4	22	7/30	1/64"	.170"
265	100'	5	22	7/30	1/64"	.195"
266	100'	6	22	7/30	1/64"	.210"
267	100'	7	22	7/30	1/64"	.230"
268	100'	8	22	7/30	1/64"	.245"
269	100'	9	22	7/30	1/64"	.260"
270	100'	10	22	7/30	1/64"	.295"
272	100'	12	22	7/30	1/64"	.325"

For longer lengths and alternate put-ups—Specify.

COLOR CODE: 1—Black, 2—White, 3—Red, 4—Green, 5—Orange, 6—Blue, 7—Brown, 8—Yellow, 9—Purple, 10—Pink, 11—Gray, 12—Dk. Blue

### TWISTED PAIR TRANSMISSION CABLE WEATHERPROOF BRAID

#### DESCRIPTION:

No. 952—Two Conductors, #22-7/30 Tinned Copper Stranded, special low loss rubber insulation, color coded, twisted conductors, cotton braid overall with rugged weatherproof finish.



No. 919, 920—Two Conductors, #18-16/30 Tinned Copper Stranded, same construction as above.

Used for low loss transmission coupling between antenna and receiver as double twisted lead-in wire for inter-com. setup.

Cat. No.	Spool	Size AWG	Strand	Insul.	Nom. O.D.
952	500'	22	7/32	1/32"	.180"
919	500'	18	16/30	1/32"	.195"
920	1000'	18	16/30	1/32"	.195"

For longer lengths and alternate put-ups—Specify.



# INTER-COM—MULTI-COND.—FLEXIBLE TWISTED PAIR BROADCAST AUDIO



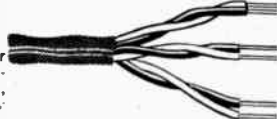
## PLASTIC INTERCOMMUNICATING CABLES

### TWISTED PAIRS—SOLID CONDUCTORS

Used in connecting Intercommunicating and Sound Systems, Telephones, Annunciators, Nurses Hospital Call Systems, Electronic Computers, Guided Missiles.

**DESCRIPTION:**

Each Conductor #22 Solid Copper Tinned, .010" Wall Vinyl Plastic Insulation, conductors color coded, twisted pairs cabled, tubed gray Vinyl plastic jacket overall.



No. 4701 to 4729

Cat No	Spool	Pairs	Cond.	Size No. AWG	O.D.
4701	500'	1	2	22 Solid	.145"
4702	500'	2	4	22 Solid	.205"
4703	500'	3	6	22 Solid	.215"
4706	500'	6	12	22 Solid	.250"
4709	500'	9	18	22 Solid	.310"
4711	500'	11	22	22 Solid	.350"
4715	500'	15	30	22 Solid	.390"
4716	500'	16	32	22 Solid	.405"
4727	500'	27	54	22 Solid	.495"
4729	500'	51	102	22 Solid	.650"

For longer lengths and alternate put-ups—Specify.

### TWISTED PAIRS—STRANDED CONDUCTORS

**DESCRIPTION:**

Each Conductor #22 7/30 Stranded Tinned Copper, .010" Vinyl plastic insulation, twisted pairs cabled, conductors color coded, tubed gray Vinyl plastic jacket overall.



No. 4731 to 4747

Cat. No.	Spool	Pairs	Cond.	Size No. AWG	Strand	Nom. O.D.
4731	500'	1	2	22	7/30	.145"
4732	500'	2	4	22	7/30	.210"
4733	500'	3	6	22	7/30	.225"
4734	500'	4	8	22	7/30	.235"
4735	500'	5	10	22	7/30	.245"
4736	500'	6	12	22	7/30	.270"
4739	500'	9	18	22	7/30	.325"
4745	500'	15	30	22	7/30	.455"
4747	500'	27	54	22	7/30	.570"

For longer lengths and alternate put-ups—Specify.

#### COLOR CODE CHART FOR PAIRED INTERCOMMUNICATING CABLES

Pair No.	Color	Pair No.	Color
1	Black with Red	27	Brown with Yellow
2	Black with White	28	Purple with Red
3	Black with Green	29	Purple with White
4	Black with Blue	30	Purple with Green
5	Black with Brown	31	Purple with Blue
6	Black with Yellow	32	Purple with Brown
7	Black with Orange	33	Purple with Yellow
8	Red with Green	34	Purple with Orange
9	Red with White	35	Purple with Slate
10	Red with Blue	36	Purple with Black
11	Red with Yellow	37	Slate with Red
12	Red with Brown	38	Slate with White
13	Red with Orange	39	Slate with Green
14	Green with Blue	40	Slate with Blue
15	Green with White	41	Slate with Brown
16	Green with Brown	42	Slate with Yellow
17	Green with Orange	43	Slate with Orange
18	Green with Yellow	44	Slate with Black
19	White with Blue	45	White/Black with Red
20	White with Brown	46	White/Black with Green
21	White with Orange	47	White/Black with Blue
22	White with Yellow	48	White/Black with Brown
23	Blue with Brown	49	White/Black with Yellow
24	Blue with Orange	50	White/Black w. Orange
25	Blue with Yellow	51	White/Black with Purple
26	Brown with Orange		

## SPIRAL WRAPPED SHIELDED AUDIO and MULTI-CONDUCTOR CABLE

### Plastic Jacketed—with Spiral wrapped copper shield

Designed for P. A. and sound systems, installations in schools, hospitals, and institutions, recording studios, transmitters, paging and call systems.



**DESCRIPTION:**

Each conductor copper tinned, 1/64 plastic insulation, color coded, twisted, spiral wrapped tinned copper shield, gray plastic jacket overall.

Cat. No.	Spool	Conds.	Size AWG	Strand	Nom. Insul.	Nom. Jacket	O.D.
941	500'	2	22	7/30	.017"	.020"	.171"
941/1	500'	1	22	7/30	.017"	.020"	.120"
942	500'	2	20	10/30	.017"	.020"	.190"
943	500'	3	20	10/30	.017"	.020"	.208"
944	500'	4	20	10/30	.017"	.020"	.222"
947	500'	2	18	16/30	.017"	.020"	.230"

COLOR CODE: 1—Black, 2—Red, 3—White, 4—Green

## PLASTIC INTER-COM CABLE

### 4 CONDUCTORS (2 Shielded — 2 Unshielded)

Widely used for wiring from station to station where a shielded twisted pair is indicated in order to eliminate cross talk.

**DESCRIPTION:**

No. 925 — 4 conductors #22 7/30 stranded tinned copper, vinyl plastic insulation color coded, tinned copper shield over one pair (2 cond.) One pair (2 cond.) unshielded. Tubed gray vinyl jacket overall.



Cat. No.	Spool	Conds.	Size AWG	Strand	Nom. Insul.	Nom. Jacket	O.D.
925	500'	4	22	7/30	.016"	.020"	.310"

### 3 CONDUCTORS (1 Shielded — 2 Unshielded)

Widely used for wiring from station to station where a single shielded conductor is indicated in order to eliminate cross talk.

**DESCRIPTION:**

No. 924 — 3 conductors #22 7/30 stranded tinned copper, vinyl plastic insulation color coded, tinned copper shield over one conductor, tubed gray vinyl jacket overall.



Cat. No.	Spool	Conds.	Size AWG	Strand	Nom. Insul.	Nom. Jacket	O.D.
924	500'	3	22	7/30	.016"	.020"	.205"

## SHIELDED BROADCAST AUDIO CABLE

Designed to provide maximum performance on all equipment. Conductors twisted correctly assures quiet, clear operation which eliminates interference and cross talk. Used by Broadcast studios, for P. A. and sound systems, rack wiring, etc.

**DESCRIPTION:**

#938—#22 Solid Tinned Copper Conductor, enameled, heavy cellulose acetate yarn wrap, cotton braid waxed; cabled with #22 AWG solid tinned copper wire laid parallel to twisted pair under tinned copper braid shield; tubed-on Vinyl plastic jacket overall.



No. 938  
CBS, ABC TYPE

#939—#22-7/30 Stranded Tinned Copper, plastic insulation, color coded, twisted, copper braid shield, tubed-on Vinyl plastic jacket overall.



No. 939

#940—2 Conductors #22 solid plastic insulation, color coded, twisted with #22 AWG solid tinned copper ground wire under tinned copper shield with vinyl plastic jacket overall.



No. 940

#940/1 same construction as #940 however with tinned copper spiral wrapped shield. #822 and #824 have solid enameled copper wire, cotton wrap, cotton braid waxed twisted pair, bare copper braid overall.



Nos. 822 and 824

No. Cat.	Spool	Conds.	AWG Size No.	Strand	Nom. Insul.	Nom. Jacket	O.D.
938	500'	2	22	Solid	.016"	.020"	.210"
939	500'	2	22	7/30	.016"	.020"	.160"
940	500'	2	22	Solid	.016"	.020"	.150"
940/1	500'	2	22	Solid	.016"	.020"	.145"
822	500'	2	22	Solid	.016"	.020"	.125"
824	500'	2	19	Solid	.016"	.020"	.145"

COLOR CODE: Black and Red

For longer lengths and alternate put-ups—Specify.

# Birnbach

## RUBBER JACKETED CABLE — JUKE BOX CABLE, SERVICE CORDS ANTENNA, COAXIAL, TV, DIATHERMY.

### RUBBER JACKETED MULTI-CONDUCTOR CABLE (NOT SHIELDED)

Used for permanent or portable P.A. systems, sound recording, indoor or outdoor speakers, interconnecting cable for all electronic uses.

**DESCRIPTION:**  
Each conductor, extra flexible stranded tinned copper, insulated with a .022" wall special low capacity rubber, color coded, conductors twisted, jute filler, cotton wrap with tough weatherproof black rubber jacket overall.



**COLOR CODE CHART**

1—Black	3—Red	5—Yellow	7—Brown
2—White	4—Green	6—Blue	8—Orange

Cat. No.	Spool	Cond.	Size No. AWG	Strand	Cap. Bet. 1 Cond. & Others	Nom. O.D.
788	100'	2	20	26/34	40 Mmf.	.275"
789	250'	2	20	26/34	40 Mmf.	.275"
790	100'	3	20	26/34	50 Mmf.	.285"
791	250'	3	20	26/34	50 Mmf.	.285"
792	100'	4	20	26/34	53 Mmf.	.305"
793	250'	4	20	26/34	53 Mmf.	.305"
794	100'	5	20	26/34	56 Mmf.	.335"
795	250'	5	20	26/34	56 Mmf.	.335"
796	100'	6	20	26/34	58 Mmf.	.355"
797	250'	6	20	26/34	58 Mmf.	.355"
798	100'	7	20	26/34	60 Mmf.	.370"
749	100'	8	20	26/34	63 Mmf.	.395"

For longer lengths and alternate put-ups—Specify.

### RUBBER SERVICE CORD (HEAVY DUTY) — UL APPROVED

For power line requirement where rough usage is indicated as for amplifiers, sound systems, speakers, vacuum cleaners, washing machines, trouble lights, refrigerators, etc. Color coded. Underwriters approved.

**DESCRIPTION:**  
Each Conductor Stranded Bare Copper, cotton serve, rubber insulation, color coded, conductors twisted, jute fillers, cotton wrap, tough rubber jacket overall.



Cat. No.	Std. Put-Up	Size No. Conds. AWG	Type	Strand	Amp. Rating	Volt. Rating	Nom. O.D.	Std. Pkgs.
701	250'	2-18	SV	41/34	7	300	.250"	2 Spools
574	250'	2-18	SJ	41/34	7	300	.300"	2 Spools
575	250'	3-18	SJ	41/34	7	300	.345"	1 Spool
578	250'	2-16	SJ	65/34	10	300	.325"	2 Spools
578/3	250'	3-16	SJ	65/34	10	300	.375"	1 Spool
702	250'	2-18	S	41/34	7	600	.390"	2 Coils
703	250'	2-16	S	65/34	10	600	.410"	2 Coils
704	250'	2-14	S	41/30	15	600	.540"	1 Coil
705	250'	2-12	S	65/30	20	600	.605"	1 Coil
706	250'	2-10	S	103/30	25	600	.640"	1 Coil

Additional Conductors Available  
COLOR CODE: 1—White, 2—Black, 3—Green.

### RIP-STRIP LAMP CORD TYPE SP-1 (POSJ-64) — UL APPROVED TYPE SPT-1 (POT) — UL APPROVED

All purpose approved cords SP-1 (rubber) SPT-1 (Plastic) for line cord on lamps, radios, clocks, small electronic instruments and appliances.

**DESCRIPTION:**  
Two Conductors Parallel, #18—41/34 Extra Flexible Copper, rubber or plastic jacket slit for easy separation.



Cat. No.	Spool	Cond.	Size No. AWG	Strand	Insul. Type	UL Type	Nom. O.D.
570	100'	2	18	41/34	Rubber	SP-1 (POSJ)	.130" x .235"
572	250'	2	18	41/34	Rubber	SP-1 (POSJ)	.130" x .235"
573	500'	2	18	41/34	Rubber	SP-1 (POSJ)	.130" x .235"
569	500'	2	18	41/34	Plastic	SPT-1 (POT)	.130" x .235"

Colors: (Rubber) Brown, Black, White.  
(Plastic) Brown, Black, Ivory, Gray, Pink, Light Blue, Yellow, Green.

### SERVICE LINE CORDS—UL APPROVED

An all purpose approved power supply cord for radios, record players, lamps, and small appliances.

**DESCRIPTION:**  
Two Conductors Rubber Parallel SP-1 (POSJ) with Molded-on Male Plug, double brass blades, conductor end stripped and tinned, hanked. Available in Black and Brown.



Cat. No.	Lgth. Ft.	Cond.	Size No. AWG	Strand	Nom. O.D.	Std. Pkg.
816	6	2	18	41/34	.130" x .235"	100
817	7 1/2	2	18	41/34	.130" x .235"	100
819	10	2	18	41/34	.130" x .235"	50

### JUKE BOX SPEAKER CABLE

Small, compact diameter. Useful. Practical. Ideal for rear auto speaker extension cable.



**DESCRIPTION:**  
Composed of 7 strand #32-1 Bare—copper conductor, 1 tinned copper conductor, 2 conductors parallel chrome vinyl plastic insulation.

Cat. No.	Spool	Conds.	Size AWG	Strand	Nom. Insul.	Nom. O.D.
4500	1000'	2	24	7/32	.015"	.058" x .115"

### JUKE BOX CONTROL CABLE

Used as replacement cable in Juke Boxes.



**DESCRIPTION:**  
Two Conductors #16 stranded vinyl insulation tinned copper, color coded green-orange. One conductor #20 stranded tinned copper, vinyl insulation. Color coded Blue, 3 conductors cable with .020" chrome vinyl plastic jacket overall.

Cat. No.	Spool	Conds.	Size AWG	Strand	Nom. Insul.	Nom. Jacket	Nom. O.D.
4510	500'	3	2—#16	26/30	.020"	.020"	.240"
			1—#20	10/30	.020"		

### SHIELDED JUKE BOX CONTROL CABLE



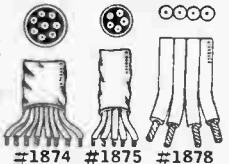
**DESCRIPTION:**  
5 Conductor cable. Three cond. twisted color coded, black, green, red with tinned copper shielded braid overall.  
Two Conductor twisted color coded blue, yellow and chrome vinyl jacket overall.

Cat. No.	Spool	Conds.	Size AWG	Strand	Nom. Insul.	Nom. Jacket	Nom. O.D.
4515	500'	5	3 (shielded)	7/30	.015"	.020" x .200"	.300"
			2 (unshielded)				

### ANTENNA CONTROL ROTOR CABLE

Developed for remote control of television antenna rotators.

**DESCRIPTION:**  
#1874—4 Conductors flat parallel polyethylene plastic insulation — One outer conductor tinned, balance bare copper.  
#1875 — 5 Conductors twisted, color coded. Vinyl plastic jacket overall.  
#1878 — 8 Conductors twisted, color coded. Vinyl plastic jacket overall.



Cat. No.	Spool	Cond.	Size AWG	Strand	Nom. O.D.
1874	1000'	4	20	7/28	.072" x .390"
1874A	500'	4	20	7/28	.072" x .390"
1875	1000'	5	20	7/28	.180"
1875A	500'	5	20	7/28	.180"
1878	1000'	8	22	7/30	.205"
1878A	500'	8	22	7/30	.205"

COLOR CODE CHART FOR #1875, #1878

1—Black	3—Red	5—Yellow	7—Brown
2—White	4—Green	6—Blue	8—Orange

### RG/U COAXIAL TRANSMISSION CABLE

**DESCRIPTION:**  
One and Two Conductor, Polyethylene plastic insulation, copper braid shield, plastic jacket overall.

Cat. No.	Spool	Type	Nom. Imped.	Nom. Mmfd. Ft.	Size AWG	Strand	Nom. O.D.
901	500'	RG-8 U	52	29.5	13	7/21 Bare	.405"
903	500'	RG-11 U	75	20.5	18	7/26 Tinned	.405"
905	1000'	RG-58A U	50	29.0	20	19 .0068 Tinned	.195"
910	1000'	RG-59 U	73	21.0	22	Solid Copperweld	.242"
912	500'	RG-22 U	95.0	16.0	18	2 Cond. 7/0152	.405"

### DIATHERMY CABLE

Used as leads on electro-therapy apparatus, charging cable, battery lead, underground cable, etc. Used where extreme flexibility and long life is required. Has tough rubber jacket.

**DESCRIPTION:**  
One Conductor #14-104/34 Stranded Bare Copper, annealed, cotton serve, 3/64" special low loss rubber insulation, double cotton braid, extremely flexible special grade tough live rubber jacket.



Cat. No.	Spool	Size AWG	Strand	Ins.	Nom. O.D.
756	100'	14	104/34	3/64"	.300"
757	1000'	14	104/34	3/64"	.300"

**KINKLESS TEST LEAD WIRE — SHIELDED CABLE  
PHONO PICKUP WIRE — SERVICE and POWER CORDS**



**KINKLESS TEST LEAD WIRE**

Used with portable test equipment; as tested, leads in analyzers, oscillators, instruments; wherever extreme flexibility and limpness is required. Has excellent dielectric properties.

**DESCRIPTION:**

Nos. 61, 62—#20—41/36 extra flexible annealed tinned copper, stranded.  **COLORS: Red, Black**

Nos. 66, 67—#18—65/36 extra flexible annealed tinned copper stranded; paper serve; 3/64" special low capacity rubber, wax finish.

Cat. No.	Spool	Size AWG	Strand	Ins.	Puncture Voltage	Nom. O.D.
61	100'	20	41/36	3/64"	20,000 Volts	.137"
62	500'	20	41/36	3/64"	20,000 Volts	.137"
66	100'	18	65/36	3/64"	22,000 Volts	.145"
67	500'	18	65/36	3/64"	22,000 Volts	.145"

**HEAVY DUTY HI-VOLTAGE TYPE**

**DESCRIPTION:**

Nos. 68, 69—#18—65/36 extra flexible annealed tinned copper; stranded; paper serve; 5/64" special low capacity rubber, wax finish. 

Used for oscillators, analyzers, TV, therapeutic instruments, etc.; wherever an extremely flexible high voltage lead is indicated.

Cat. No.	Spool	Size AWG	Strand	Ins.	Puncture Voltage	Nom. O.D.
68	100'	18	65/36	5/64"	29,000 Volts	.210"
69	500'	18	65/36	5/64"	29,000 Volts	.210"

For longer lengths and alternate put-ups—Specify.

**SHIELDED PHONO WIRE**

Used where small diameter, limpness and extreme flexibility is necessary as for phono pickup arms and grid wire.

**DESCRIPTION:**

#1822—Single Conductor #22-7/30 Tinned Copper Strands, Vinyl plastic insulation, close tinned copper shield overall. 

#1824—Single Conductor #24-16/36 Extremely Flexible Tinned Copper Strands, special plastic insulation, close tinned copper shield braided overall.

#1825—Same construction as #1824 except with fine cotton braid overall.

**TINNED COPPER SHIELD OVERALL**

Cat. No.	Spool	Strand	Cond.	Size AWG	Insul.	Nom. O.D.
1824	500'	1	24	16/36	.010"	.080"
1824M	1000'	1	24	16/36	.010"	.080"
1822	100'	1	22	7/30	.010"	.080"
1822B	500'	1	22	7/30	.015"	.090"
1822C	1000'	1	22	7/30	.015"	.090"

**COTTON BRAID OVER SHIELD**


1825	500'	1	24	16/36	.010"	.095"
1825M	1000'	1	24	16/36	.010"	.095"

For longer lengths and alternate put-ups—Specify.

**SHIELDED GRID LEAD WIRE**

Used to reduce loss in grid lead use, also to reduce interference caused by motors, high tension wires, X-ray machines, etc.

**DESCRIPTION:**

#820—Single Conductor #20—10/30, #818—16/30 Stranded Tinned Copper, low loss rubber insulation, cotton braid lacquered, closely woven tinned copper shield overall. 


Cat. No.	Spool	Size AWG	Strand	Ins. Under Shield	Cap./Ft. Mmf.	Nom. O.D.
820	100'	20	10/30	.085"	70	.140"
818	100'	18	16/30	.085"	75	.150"

For longer lengths and alternate put-ups—Specify.


**7MM HIGH TENSION CABLE**

Used as hi voltage leads in electronic equipment and instruments, photo electric cell leads, automotive, etc.

**DESCRIPTION:**

#1600 — Unshielded One Conductor #16-19/29 stranded tinned copper wire, rubber insulation, cotton braid highly lacquered.  **No. 1600**

**DESCRIPTION:**

#781 — Shielded Same construction as #1600 plus a closely woven tinned copper shield overall.  **No. 781**

Cat. No.	Spool	Size AWG	Strand	Insul.	Nom. O.D.
1600	100'	16	19/29	3/32"	.275"
781	100'	18	19/29	3/32"	.295"

Used for auto and aircraft ignition systems where grounding is required for elimination of interference. For longer lengths and alternate put-ups—specify.

**HI VOLTAGE LACQUERED WIRE**

Used as primary wiring as for automobiles, tail, dashboard, horn, etc. Instrument leads, high voltage and primary voltage requirements.

**DESCRIPTION:**

One Conductor tinned copper annealed stranded, rubber insulation, highly lacquered braid, oil, heat, and moisture resistant. 

Cat. No.	Spool	Size AWG	Strand	Ins.	Puncture V.	Nom. O.D.
2818	100'	18	16/30	.022"	9500	.117"
2816	100'	16	19/29	.022"	9500	.127"
2814	100'	14	19/27	.022"	9500	.148"
2812	100'	12	19/25	.027"	9500	.171"
2810	100'	10	19/23	.031"	9500	.202"

For longer lengths and alternate put-ups—Specify.

**LACQUERED HOOK-UP WIRE**

Used in transformers, amplifiers, hook-ups, leads, etc. Strips easily for soldering.

**DESCRIPTION:**

No. 3462—#20-10/30 Single Conductor stranded tinned copper, low loss free stripping rubber insulation, cotton braid highly lacquered. 

No. 3600—#18-16/30 Single Conductor stranded tinned copper, 1/32" low loss free stripping rubber insulation, rayon braid highly lacquered.

Cat. No.	Spool	Size AWG	Strand	Insul.	Punct. Volt.	DC Ins. Res./Ft. Meg.	Nom. O.D.
3461	100'	20	10/30	1/64"	7000	390	.090"
3462	500'	20	10/30	1/64"	7000	390	.090"
3460	100'	18	16/30	1/32"	9000	460	.125"
3600	500'	18	16/30	1/32"	9000	460	.125"

**COLORS: Black, Red, Green, Yellow, Brown, Blue, White**  
For longer lengths and alternate put-ups—Specify.

**SHIELDED HOOK-UP & LEAD-IN WIRE**

Used to prevent and reduce interference caused by motors, hi-tension cables, X-ray machines and various units radiating electrical impulses. Useful in grid circuits.

**TINNED COPPER SHIELD OVER RUBBER INSULATION**

**DESCRIPTION:**

Single Conductor, Tinned Copper Stranded, low loss rubber insulation, closely woven tinned copper shield overall. 

Cat. No.	Spool	Size AWG	Strand	Ins.	Cap./Ft. Mmf.	Nom. O.D.
810	500'	20	10/30	.015"	105	.095"
803	250'	18	16/30	.015"	125	.125"
802	250'	16	26/30	.031"	90	.145"

**TINNED COPPER SHIELD OVER LACQUERED BRAID**

**DESCRIPTION:**

Single Conductor, Tinned Copper Stranded, low loss Vinyl insulation, highly lacquered braid, closely woven tinned copper shield overall. 

Cat. No.	Spool	Size AWG	Strand	Nom. O.D.
831	1000'	22	7/30	.105"
832	1000'	20	10/30	.110"
833	1000'	18	16/30	.145"
834	1000'	16	26/30	.160"
835	1000'	14	41/30	.180"


For longer lengths and alternate put-ups—Specify.

**HEAVY DUTY SERVICE CORD**

(U/L APPROVED)

Used for heavy duty replacement on refrigerators, washing machines, machinery, tools and electronic devices.

**DESCRIPTION:**

Two Conductors, Stranded Bare Copper, cotton serve, rubber insulation, jute filler, cotton wrap, tough rubber jacket overall, molded rubber plug one end, free end stripped and tinned for easy attachment—Hanked. 

No. 346 Same as above with extra ground lead.


Cat. No.	Length Ft.	Conds.	Size AWG	Type	Strand	O.D.	Std. Pkg.
348	8	2	16	S.J.	.65/34	.325"	25
346	8	3	16	S.J.	.65/34	.355"	25
309	9	2	18	S.V.	.41/34	.250"	25
312	12	2	18	S.V.	.41/34	.250"	25

**TELEVISION POWER SUPPLY CORD**

(U/L APPROVED)

Used extensively as replacement of damaged or worn out TV cords.

**DESCRIPTION:**

Six Foot Rip Strip TV U.L. Approved Safety Cord. 2-cond. No. 18 SP-1 (P.O.S.I) brown rubber cord with molded male plug and TV molded-on connector on other end. 

Cat. No.	Std. Pkg.
815	Television Power Supply Cord..... 6 Feet ..... 100

**PUSHBACK — HEAVY FORMVAR — MAGNET WIRE  
PLAIN ENAMEL — DCC — DNC — SOLID TINNED**

*Birnbach*



**BIRNBACH RADEX SLIPBACK HOOK-UP WIRE**

Has a double cotton braid over the conductor, brightly color coded, saturated with paraffin. This construction will not cause the cotton insulation to fray or bunch up when pushed back. Has high dielectric strength and will withstand all climatic changes without breakdown.

COLORS: Black, Red, Blue, Yellow, Green, White, Brown, Orange.

SOLID						STRANDED					
Cat. No.	Put-Up	Size	Strands	Puncture V. 60-cy. AC	O.D.	Cat. No.	Put-Up	Size	Strands	Puncture V. 60-cy. AC	O.D.
380	100' Spool	20	Solid	2000	.090"	381	100' Spool	20	10 30	2100	.093"
382	100' Spool	18	Solid	2100	.098"	383	100' Spool	18	16 30	2200	.103"
384	100' Coil	16	Solid	2100	.108"	385	100' Spool	16	26 30	2200	.118"
580	1000' Spool	20	Solid	2000	.090"	581	1000' Spool	20	10 30	2100	.093"
582	1000' Spool	18	Solid	2100	.098"	583	1000' Spool	18	16 30	2200	.103"
584	1000' Spool	16	Solid	2100	.108"	585	1000' Spool	16	26 30	2200	.118"



**BIRNBACH BIRNTEX SLIPBACK WIRE**

This wire is constructed of quality materials and carefully insulated with a cotton wrap over which a cotton braid is closely woven, and then saturated with paraffin. Pushes back easily.

SOLID						STRANDED					
Cat. No.	Put-Up	Size	Strands	Puncture V. 60-cy. AC	O.D.	Cat. No.	Put-Up	Size	Strands	Puncture V. 60-cy. AC	O.D.
72	100' Spool	22	Solid	1500	.060"	73	100' Spool	22	7 30	1500	.065"
76	1000' Spool	22	Solid	1500	.060"	77	1000' Spool	22	7 30	1500	.065"
84	100' Spool	20	Solid	1500	.065"	85	100' Spool	20	10 30	1500	.070"
86	100' Spool	18	Solid	1500	.075"	87	100' Spool	18	16 30	1500	.080"
92	1000' Spool	20	Solid	1500	.065"	93	1000' Spool	20	10 30	1500	.070"
94	1000' Spool	18	Solid	1500	.075"	95	1000' Spool	18	16 30	1500	.080"

**HEAVY FORMVAR, PLAIN ENAMEL, DOUBLE COTTON, DOUBLE NYLON, SOLID TINNED MAGNET WIRE**

Has new tough abrasion resisting film. Replaces enamel and fabric insulations for certain applications requiring exceptional abrasion resistance. Stable under heat. High dielectric strength. Infinite resistance to water and moisture. Does not fail after two hours at 105°C. Takes up less winding space.

1/4 lb. SPOOL		1/2 lb. SPOOL		1 lb. SPOOL	
Size B&S	Ft.	Size B&S	Ft.	Size B&S	Ft.
10	8	10	16	10	32
12	12	12	25	12	50
14	20	14	39	14	78
16	31	16	62	16	124
18	49	18	99	18	198
20	78	20	156	20	313
22	125	22	250	22	501
24	200	24	399	24	798
26	300	26	600	26	1200
28	500	28	1000	28	1999
30	800	30	1600	30	3200
32	1225	32	2450	32	4900
34	1988	34	3975	34	7950
36	3200	36	6400	36	12800
38	5050	38	10100	38	20200
40	7075	40	15850	40	31700
42	12375	42	24750	42	49500
44	14500	44	29000	44	58000

**PLAIN ENAMEL**

1/4 lb. SPOOL		1/2 lb. SPOOL		1 lb. SPOOL	
Size B&S	Ft.	Size B&S	Ft.	Size B&S	Ft.
10	8	10	16	10	32
12	12	12	25	12	50
14	20	14	40	14	80
16	32	16	63	16	126
18	50	18	100	18	201
20	80	20	160	20	320
22	127	22	254	22	508
24	201	24	403	24	806
26	320	26	640	26	1280
28	507	28	1015	28	2030
30	805	30	1610	30	3220
32	1282	32	2564	32	5128
34	2037	34	4075	34	8150
36	3221	36	6443	36	12887
38	5132	38	10246	38	20492
40	8143	40	16286	40	32573
42	12803	42	25605	42	51211
44	20455	44	40910	44	81819

1/4 lb. SPOOL		1/2 lb. SPOOL		1 lb. SPOOL	
Size B&S	Ft.	Size B&S	Ft.	Size B&S	Ft.
12	12	12	24	12	49
14	19	14	39	14	78
16	31	16	62	16	125
18	49	18	99	18	198
20	78	20	157	20	314
22	123	22	247	22	495
24	195	24	390	24	781
26	303	26	606	26	1212
28	478	28	956	28	1912
30	739	30	1479	30	2958
32	1130	32	2272	32	4545
34	1712	34	3424	34	6849
36	2551	36	5102	36	10204
38	3770	38	7541	38	15082
40	5040	40	10080	40	20161

**DOUBLE COTTON**

1/4 lb. SPOOL		1/2 lb. SPOOL		1 lb. SPOOL	
Size B&S	Ft.	Size B&S	Ft.	Size B&S	Ft.
10	8	10	16	10	31
12	12	12	24	12	49
14	19	14	39	14	78
16	31	16	62	16	123
18	48	18	97	18	194
20	78	20	157	20	304
22	119	22	238	22	477
24	184	24	369	24	738
26	284	26	568	26	1136
28	435	28	871	28	1742
30	641	30	1284	30	2569
32	976	32	1953	32	3906
34	1365	34	2735	34	5470
36	1827	36	3654	36	7309
38	2738	38	5476	38	10952
40	3405	40	6811	40	13623

**SOLID TINNED (Soft Drawn)**

1/4 lb. SPOOL		1/2 lb. SPOOL		1 lb. SPOOL	
Size B&S	Ft.	Size B&S	Ft.	Size B&S	Ft.
10	8	10	16	10	32
12	12	12	25	12	50
14	20	14	40	14	80
16	32	16	63	16	126
18	50	18	100	18	201
20	80	20	160	20	320
22	127	22	254	22	508
24	201	24	403	24	806
26	320	26	640	26	1280
28	507	28	1015	28	2030
30	805	30	1610	30	3220
32	1282	32	2564	32	5128
34	2037	34	4075	34	8150
36	3221	36	6443	36	12887
38	5132	38	10246	38	20492
40	8143	40	16286	40	32573

BARE COPPER — SOFT DRAWN AVAILABLE FROM STOCK

# Birnbach

## COPPERWELD ENAMEL, TINNED AND BARE COPPER BUS BAR, BRAIDED TINNED COPPER SHIELDING



### AERIAL WIRE — SOLID — STRANDED

#### STRANDED TINNED COPPER WIRE

Cat. No.	Put-Up	Size AWG	Strand	O.D.
495	100' Coil	12	7/20	.102"
1671	100' Coil	11	7/22	.076"
1638	1000' Spool	14	7/22	.076"
1674	100' Coil	15	7/23	.069"
1633	1000' Spool	15	7/23	.069"
1628	1000' Spool	16	7/24	.062"

#### COIL LEAD, JUMPER CABLE

No. Cat.	Put-Up	AWG Size	Strand	O.D.
1622	1000' Spool	22	7/30	.030"
1620	1000' Spool	20	10/30	.037"
1618	1000' Spool	18	16/30	.045"

#### BARE COPPER WIRE (Soft Drawn)

Cat. No.	Put-Up	Size AWG	Area Circular Mills	O.D.
1560	100' Coil	8	16,510	.1285"
1562	100' Coil	10	10,380	.102"
1563	1000' Spool	10	10,380	.102"
1566	100' Coil	12	6,530	.081"
1567	1000' Spool	12	6,530	.081"
1570	100' Coil	14	4,107	.061"
1571	1000' Spool	14	4,107	.061"
1574	100' Coil	16	2,583	.051"
1575	1000' Spool	16	2,583	.051"

#### SILICON BRONZE AERIAL WIRE

Especially designed for ships, airports, short wave and transmitting antennas where high tensile strength and resistance to the elements are important.

Cat. No.	Put-Up	Size AWG	Strand	Breaking Strength	O.D.
529	100'	4	7/12	3670 lbs.	.240"
528	100'	6	7/14	2140 lbs.	.190"
527	100'	8	7/16	1600 lbs.	.150"
499	100'	10	7/18	1000 lbs.	.122"
524	100'	12	7/20	650 lbs.	.100"
526	100'	14	7/22	420 lbs.	.075"

For longer lengths and alternate put-ups—Specify.



#### COPPERWELD ENAMEL ANTENNA WIRE

Used where high tensile strength is required as for short wave and transmitting aeriels. Has low R.F. resistance and is ideal for transmitting doublet and directional antennas. Will maintain frequency characteristics because of its stretchless qualities.

Cat. No.	Put-Up	Size AWG	Tensile Strength	O.D.
710-100	100' Spool	10	1130 lbs.	.103"
710-250	250' Spool	10	1130 lbs.	.103"
710-500	500' Spool	10	1130 lbs.	.103"
710-1000	1000' Spool	10	1130 lbs.	.103"
710-2500	2500' Spool	10	1130 lbs.	.103"
712-100	100' Coil	12	720 lbs.	.082"
712-250	250' Coil	12	720 lbs.	.082"
712-500	500' Spool	12	720 lbs.	.082"
712-1000	1000' Spool	12	720 lbs.	.082"
712-2500	2500' Spool	12	720 lbs.	.082"
714-100	100' Coil	14	400 lbs.	.065"
714-250	250' Spool	14	400 lbs.	.065"
714-500	500' Spool	14	400 lbs.	.065"
714-1000	1000' Spool	14	400 lbs.	.065"
714-2500	2500' Spool	14	400 lbs.	.065"

#### SOLID ENAMEL COPPER WIRE

Cat. No.	Put-Up	Size AWG	O.D.
497	100' Coil	10	.102"
1497	1000' Spool	10	.102"
492	100' Coil	12	.083"
492A	150' Coil	12	.083"
492B	200' Coil	12	.083"
1492	1000' Spool	12	.083"
490	100' Coil	14	.068"
490A	150' Coil	14	.068"
490B	200' Coil	14	.068"
1490	1000' Spool	14	.068"

#### STRANDED BARE COPPER WIRE

Cat. No.	Put-Up	Size AWG	Strand	O.D.
493	100' Coil	12	7/20	.100"
1670	100' Coil	14	7/22	.075"
1639	1000' Spool	14	7/22	.075"
1673	100' Spool	15	7/23	.068"
1634	1000' Spool	15	7/23	.068"
1680	100' Coil	16	7/24	.060"
1647	1000' Spool	16	7/24	.060"
681	100' Coil	18	7/26	.050"
1648	1000' Spool	18	7/26	.050"
700	100' Coil	19	7/27	.041"
1741	1000' Spool	19	7/27	.041"

### TINNED COPPER WIRE — BUS BAR

Pure Electrolytic, Copper, annealed, tinned for quick soldering

Cat. No.	Put-Up	Size AWG	Area Circular Mills	O.D.
1433/4	100' Coil	4	41,740	.204"
1433/6	100' Coil	6	26,250	.162"
1433	100' Coil	8	16,510	.129"
1402	100' Coil	10	10,380	.103"
1403	1000' Spool	10	10,380	.103"
1406	100' Coil	12	6,530	.082"
1407	1000' Spool	12	6,530	.082"
1410	100' Coil	14	4,107	.065"
1411	1000' Spool	14	4,107	.065"
1414	100' Coil	16	2,583	.051"
1415	1000' Spool	16	2,583	.051"
1418	100' Coil	18	1,624	.040"
1419	1000' Spool	18	1,624	.040"
1422	100' Coil	20	1,022	.033"
1423	1000' Spool	20	1,022	.033"
1434	1000' Spool	22	621.4	.025"
1424	1000' Spool	24	401.0	.020"
1426	1000' Spool	26	251.1	.016"
1428	1000' Spool	28	159.8	.013"
1430	1000' Spool	30	100.5	.010"

See Magnet Wire Section For Additional Sizes

### BUS BAR WIRE (Hard Drawn)

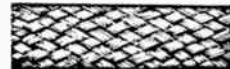


For hooking up all types of transmitters, especially ultra short wave equipment. All bus wire is made of hard drawn copper, tinned, straightened, and cut in 2 ft. lengths.	Cat. No.	No.
	2010	10 Round Tinned
	2012	12 Square Tinned
	2013	12 Round Tinned
	2014	14 Square Tinned
	2015	14 Round Tinned
	2016	16 Round Tinned
	2018	18 Round Tinned

(100 to Std. Package)

### TINNED COPPER SHIELDING

Used for shielding and bonding on aircraft, marine and auto radio wires and cables. Shields speaker leads, lead-ins, amplifier wires. Extremely flexible, slides over wires and cables.



#### DESCRIPTION:

No. 853 thru 856/2—Composed of extremely flexible fine soft annealed copper tinned wires closely woven, braided and Rolled Flat.

No. 860—Composed of extremely flexible fine soft annealed copper wires closely woven, braided and Rolled Flat.

#### TINNED

Cat. No.	Size & No. of Wires	Inside Diam. Flattened	Spool
853	12 x 2/36	1/32"	1000'
854	12 x 2/36	3/64"	1000'
855	16 x 3/16	1/16"	50'
858	24 x 5/36	1/8"	50'
859	30 x 4/36	3/16"	50'
863	24 x 10/36	1/4"	50'
864	48 x 4/34	3/8"	50'
868	48 x 7/36	1/2"	50'
865	48 x 11/36	5/8"	50'
865/1	48 x 11/36	8/4"	50'
857	48 x 19/36	25/32"	50'
856	48 x 19/36	1"	50'
856/1	48 x 19/36	1-3/8"	50'
856/2	48 x 19/36	1-1/2"	50'

#### BARE

860	24 x 10/36	1/4"	50'
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For longer lengths and alternate put-ups—Specify.

# Birnbach

## INSULATING TUBING & SLEEVING

BIRACO, BIRFLEX, VINYL COATED FIBERGLASS



### BIRACO PLASTIC TUBING

UL APPROVED FOR 105° C. OPERATION — MEETS MIL-I-631C SPECS.



A quality plastic Vinyl tubing designed for electronic and electrical insulation work. Has high dielectric strength, extreme flexibility, non-flammability, abrasion resistance, impervious to oil, water, alkalis, alcohol, solvents, etc., high heat stability and resistance to aging. Meets all A.S.T.M. specifications, Mil. Spec. (Type F, Form U, Grades A and C, Class 2, Category 1).

#### BIRACO TUBING

Put up on convenient 100' Spools or Coils.

Cat. No.	B & S Gauge Size No.	Approx. I.D.	Lgth. Spool
308BC	24	.022"	100'
311BC	22	.027"	100'
313BC	20	.034"	100'
314BC	18	.042"	100'
315BC	16	.053"	100'
316BC	14	.066"	100'
317BC	12	.085"	100'
325BC	10	.106"	100'
318BC	8	.135"	100'
326BC	6	.166"	100'
319BC	4	.208"	100'
320BC	2	.263"	100'
321BC	5/16"	.3125"	100'
322BC	3/8"	.375"	100'
323BC	1/2"	.500"	100'
324BC	5/8"	.625"	100'
*327BC	3/4"	.750"	100'
*360BC	7/8"	.875"	100'
*361BC	1"	1.000"	100'
*362BC	1 1/4"	1.250"	50'
*363BC	1 1/2"	1.500"	50'
*328BC	1 3/4"	1.750"	100'
*329BC	2"	2.000"	50'
*364BC	2 1/4"	2.250"	100'
*365BC	2 1/2"	2.500"	100'

#### SPECIAL SPOOLS BIRACO TUBING

Cat. No.	B & S Gauge Size No.	Approx. I.D.	Lgth. Spool
308B	24	.022"	25'
311B	22	.027"	25'
313B	20	.034"	25'
314B	18	.042"	25'
315B	16	.053"	25'
316B	14	.066"	25'
317B	12	.085"	25'
325B	10	.106"	15'
318B	8	.135"	15'
326B	6	.166"	15'
319B	4	.208"	10'
320B	2	.263"	10'

Also available in 36" Lengths.

#### COLORS AVAILABLE FROM STOCK:

Black, Red, Green, White, Yellow, Blue, Brown, Orange, Clear.

\*Cat. Nos. 360BC, 361BC, 362BC, 363BC, 364BC, 328BC, 329BC, 365BC available in Black and Clear from stock.

#### DIMENSIONAL TOLERANCES OF BIRACO

Size	Approx. I.D., Inches	ASTM Tolerances, Ins.	Wall Thickness, Inches
24	.022	.020 — .027	.012±.002
22	.027	.025 — .032	.012±.002
20	.034	.032 — .039	.016±.003
18	.042	.040 — .049	.016±.003
16	.053	.051 — .061	.016±.003
14	.066	.064 — .072	.016±.003
12	.085	.081 — .089	.016±.003
10	.106	.102 — .112	.016±.003
8	.133	.129 — .141	.020±.003
6	.166	.162 — .178	.020±.003
4	.208	.204 — .224	.020±.003
2	.263	.258 — .278	.020±.003
5/16"	.315	.3125 — .334	.025±.003
3/8"	.375	.375 — .399	.025±.003
1/2"	.500	.500 — .524	.025±.003
5/8"	.625	.625 — .655	.030±.005
3/4"	.750	.750 — .786	.035±.005
7/8"	.875	.875 — .911	.035±.005
1"	1.000	1.000 — 1.036	.035±.005
1 1/4"	1.250	1.250 — 1.286	.040±.005
1 1/2"	1.500	1.500 — 1.536	.045±.005
1 3/4"	1.750	1.812 — 1.750	.055±.008
2"	2.000	2.000 — 2.070	.060±.010
2 1/4"	2.250	2.250 — 2.330	.065±.010
2 1/2"	2.500	2.500 — 2.590	.070±.010

#### TABLE OF PHYSICAL & ELECTRICAL PROPERTIES



#### BIRACO TUBING

- Tensile Strength—2500 Psi (Minimum Average)
- Flammability—Non-Flammable
- Ultimate Elongation—340%
- Recommended for Temperatures to—105° C.
- Cold Bend—-40° C.
- Dielectric Strength .020" Wall—800 V/Mil
- Varnish Baking—Good
- Water Absorption
- Weight Increase (1 Week)—0.1%
- Oil Resistance—Indefinitely flexible when immersed in oil

### BIRFLEX VINYL COATED FIBERGLASS TUBING

(ASTM, NEMA Grade B-B-1) MEETS MIL-I-3190 SPECS.

Quality Electronic and Electrical Tubing. It is Class B Insulation that combines the best features of the inorganic fiberglass base sleeving with heat resistant, flexible plastic insulation. The plastic compound provides the highest electrical properties, heat stability (130° C.), flexibility and toughness. Meets performance requirements of specs. MIL-I-3190 A, NEMA VSI, ASTM D 372.



#### SPECIAL SPOOLS VINYL COATED FIBERGLASS

Cat. No.	B & S Gauge Size	Approx. I.D.	Lgth. Spool
291V	20	.034	25'
293V	18	.042	25'
294V	16	.053	25'
295V	14	.066	25'
300V	12	.085	25'
307V	10	.106	20'
301V	8	.135	15'
302V	6	.166	10'
305V	4	.208	10'
306V	2	.263	10'



#### \*VINYL COATED FIBERGLASS

30" Lengths

Cat. No.	B & S Gauge Size	Approx. I.D.
291	20	.034
293	18	.042
294	16	.053
295	14	.066
300	12	.085
307	10	.106
301	8	.135
302	6	.166
297	3/16"	.208
298	1/4"	.263

36" Lengths

*303	5/16"	.3125
*304	3/8"	.375
*299	1/2"	.500
*296	5/8"	.625



#### \*VINYL COATED FIBERGLASS

Put up on convenient 100' Spools or Coils.

Cat. No.	B & S Gauge Size	Approx. I.D.	Lgth. Spool
289VC	24	.022	100'
290VC	22	.027	100'
291VC	20	.034	100'
293VC	18	.042	100'
294VC	16	.053	100'
295VC	14	.066	100'
300VC	12	.085	100'
307VC	10	.106	100'
301VC	8	.135	100'
302VC	6	.166	100'
305VC	4	.208	100'
306VC	2	.263	100'
*303VC	5/16"	.3125	100'
*304VC	3/8"	.375	100'
*299VC	1/2"	.500	100'
*296VC	5/8"	.625	100'

#### DIMENSIONAL TOLERANCES OF VINYL COATED FIBERGLASS

Size	Approx. I.D., Inches	N.E.M.A. Tolerances, Inches
24	.022	.020-.027
22	.027	.025-.032
20	.034	.032-.039
18	.042	.040-.049
16	.053	.051-.061
14	.066	.064-.072
12	.085	.081-.089
10	.106	.102-.112
8	.133	.129-.141
6	.166	.162-.178
4	.208	.204-.224
2	.263	.258-.278
5/16"	.3125	.312-.328
3/8"	.375	.375-.399
1/2"	.500	.500-.524
5/8"	.625	.625-.655

#### PHYSICAL & ELECTRICAL PROPERTIES BIRFLEX VINYL COATED FIBERGLASS

(Class B)

- Grade B-1
- Dielectric Strength.....4000 V.
- Temperature Rating.....130° C.
- Low Temp. Flexibility.....-30° C.
- Non-Flammable
- Ins. Resistance.....Over 1,000,000 MEGS.
- Corrosion Resistance.....Excellent
- Oil Resistance.....Good

#### COLORS:

Black, Red, White, Yellow, Brown, Orange, Green, Blue, Gray, Purple

#### Additional Sizes Available

Other types of Biraco, Birflex, Birflon Tubing and sleeving available. Write for new Comprehensive Catalog on Tubing and Sleeving.

# Birnbach

## BIRFLON TEFLON TUBING BUS BAR WIRE - INSULATED BUSHINGS



### NEW THIN WALL



### TEFLON TUBING

Spaghetti, Steeving, made from "TEFLON" is used in electronic equipment primarily for connection of components. Where temperature range and space is a factor, spaghetti made from "TEFLON" is ideal, because its continuous service temperature is 250° C. This is more than 100° C. above other materials used for spaghetti. "TEFLON" is a Class C dielectric. Even where 100° C. temperature applications are indicated "TEFLON" will be of help in simplifying the soldering technique since "TEFLON" is not harmed by the hot barrel of the soldering iron—therefore, the assembly of aircraft guided missile, hermetically sealed, potted components and communication equipment is greatly speeded up.

### ADDITIONAL ADVANTAGES OF BIRFLON T-500 "TEFLON"\*

- Good dielectric strength (500 to 1000 volts mil)
- Lowest dielectric constant (2.0) and dissipation factor (0.0002) of any solid dielectric
- NO change of electrical properties with temperature (25° C. to 250° C.) or frequency (60cps to 100mc.)
- Service range from -320° F. to 500° F. and retains toughness and flexibility throughout temperature range from -110° F. to 540° F.
- Non-flammable, Non-explosive
- Unaffected by corrosive atmospheres and fungus
- Zero water absorption
- Full range of colors for identification

### ADDITIONAL USES FOR BIRFLON T-500 SPAGHETTI

- SHEATHING FOR SEVERAL WIRES
- MEDICAL APPLICATIONS
- INSULATION FOR BARE WIRES
- INSTRUMENT TUBING
- REPLACEMENT FOR HOOK-UP WIRE INSULATED WITH "TEFLON"

BIRNBACH is your best source of tubing, made from "TEFLON". Your inquiry and order will receive immediate attention. We offer wide range of standard sizes, colored tubing and special sizes, quick delivery and right price.

\*"TEFLON"—DuPont trade name for Tetrafluoroethylene resin

### TINNED COPPER WIRE — BUS BAR

Pure Electrolytic Copper, annealed, tinned for quick soldering

Cat. No.	Put-Up	Size AWG	Area Circular Mills	O.D.
1433 1/4	100' Coil	4	41,710	.204"
1433 6	100' Coil	6	26,250	.162"
1433	100' Coil	8	16,510	.129"
1402	100' Coil	10	10,380	.103"
1403	1000' Spool	10	10,380	.103"
1406	100' Coil	12	6,530	.082"
1407	1000' Spool	12	6,530	.082"
1410	100' Coil	14	4,107	.065"
1411	1000' Spool	14	4,107	.065"
1414	100' Coil	16	2,583	.051"
1415	1000' Spool	16	2,583	.051"
1418	100' Coil	18	1,621	.040"
1419	1000' Spool	18	1,621	.040"
1422	100' Coil	20	1,022	.033"
1423	1000' Spool	20	1,022	.033"
1434	1000' Spool	22	621.4	.025"
1424	1000' Spool	24	401.0	.020"
1426	1000' Spool	26	251.1	.016"
1428	1000' Spool	28	159.8	.013"
1430	1000' Spool	30	100.5	.010"

SEE OUR MAGNET WIRE LISTING FOR ADDITIONAL SIZES

### BUS BAR WIRE (Hard Drawn)



For hooking up all types of transmitters, especially ultra short wave equipment. All bus wire is made of hard drawn copper, tinned, straightened, and cut in 2 ft. lengths.

Cat. No.	No.	
2010	10	Round Tinned
2012	12	Square Tinned
2013	12	Round Tinned
2014	14	Square Tinned
2015	14	Round Tinned
2016	16	Round Tinned
2018	18	Round Tinned

(100 to Std. Package)

### TEFLON\* TUBING STOCK NUMBERS

Cat. No.	Spool or Coil Put-Up	B & S Gauge Size No.	Approx. I.D.
8014-100	100'	30	.012"
8015-100	100'	28	.015"
8016-100	100'	26	.018"
8000-100	100'	24	.022"
8000-50	50'	24	.022"
8000-25	25'	24	.022"
8001-100	100'	22	.027"
8001-50	50'	22	.027"
8001-25	25'	22	.027"
8002-100	100'	20	.034"
8002-50	50'	20	.034"
8002-25	25'	20	.034"
8003-100	100'	18	.042"
8003-50	50'	18	.042"
8003-25	25'	18	.042"
8004-100	100'	16	.053"
8004-50	50'	16	.053"
8004-25	25'	16	.053"
8005-100	100'	14	.066"
8005-50	50'	14	.066"
8005-25	25'	14	.066"
8006-100	100'	12	.085"
8006-50	50'	12	.085"
8006-25	25'	12	.085"
8007-100	100'	10	.106"
8007-50	50'	10	.106"
8007-25	25'	10	.106"
8008-100	100'	8	.133"
8008-50	50'	8	.133"
8008-25	25'	8	.133"
8009-100	100'	6	.166"
8009-50	50'	6	.166"
8009-25	25'	6	.166"
8010-100	100'	4	.208"
8010-50	50'	4	.208"
8010-25	25'	4	.208"
8011-100	100'	2	.263"
8011-50	50'	2	.263"
8011-25	25'	2	.263"
8012-100	100'	0	.330"
8012-50	50'	0	.330"
8012-25	25'	0	.330"

COLORS: Natural, Red, Black, Blue, Brown, Green, Orange, Yellow, Gray, Violet, White. Additional colors, sizes, and longer lengths available.

### TEFLON\* TUBING SPECIFICATIONS

Avg. Size	Nom. O.D.	Nom. I.D.	Wall Thick.
30	.030"	.012"	.009"
28	.033"	.015"	.009"
26	.038"	.018"	.010"
24	.042"	.022"	.010"
22	.047"	.027"	.010"
20	.058"	.031"	.012"
18	.066"	.042"	.012"
16	.077"	.053"	.012"
14	.090"	.066"	.012"
12	.109"	.085"	.012"
10	.130"	.106"	.012"
8	.163"	.133"	.015"
6	.196"	.166"	.015"
4	.238"	.208"	.015"
2	.293"	.263"	.015"
0	.360"	.330"	.015"

TOLERANCE: ±.003" ON WALL

FOR BIRNBACH HARDWARE AND SWITCHES SEE HARDWARE AND SWITCH SECTION.

\*TEFLON—DUPONT REG. TM

# Belden

## ELECTRONIC WIRES & CABLES

### microphone cables plastic

All Belden Microphone Cables are exceptionally limp with long flex life, low capacitance, high tensile strength, and high resistance to abrasion.

For Hi-Fi installations, 8401 and 8411 are recommended as connector cords because of their low loss, and low capacitance.

Plastic Microphone Cables, because of their non-marking jacket and lightness in weight, are excellent for use in audience participation programs.

Trade Number

8411

15' Spool  
25' Spool  
50' Spool  
100' Spool  
500' Spool  
25 A.W.G.



3x33 copper & 4x33 steel stranded tinned conductor  
Cellulose yarn braid  
Polyethylene plastic insulation  
Tinned copper braid shield  
Chrome vinyl plastic jacket  
.144" Nom. Diam  
Nom. Capacitance — 34 mmf/ft

For high impedance lapel microphones and high fidelity interconnecting cables.

8401

15' Spool  
25' Spool  
50' Spool  
100' Spool  
500' Spool  
25 A.W.G.



3x33 copper & 4x33 steel stranded tinned conductor  
Cellulose yarn braid  
Polyethylene plastic insulation  
Tinned copper braid shield  
Chrome vinyl plastic jacket  
.200" Nom. Diam  
Nom. Capacitance — 25 mmf/ft

For crystal, ribbon, and other high impedance microphones and high fidelity interconnecting cables.

8422

15' Spool  
25' Spool  
50' Spool  
100' Spool  
500' Spool  
22 A.W.G.



16x34 stranded tinned copper conductor  
Polyethylene plastic insulation  
2 conductors cabled with fillers:  
Black and White  
Rayon braid  
Tinned copper braid shield  
Chrome vinyl plastic jacket  
.231" Nom. Diam  
Nom. Capacitance — 32 mmf/ft between one conductor and remaining conductor connected to shield  
For all low impedance microphones.

### rubber

Rubber Microphone Cables have high resistance to abrasion and impact. They are limp and lie flat without kinking or looping. Recommended for all stage and studio use.

8410

15' Spool  
25' Spool  
50' Spool  
100' Spool  
500' Spool  
25 A.W.G.



3x33 copper & 4x33 copper coated steel stranded tinned conductor  
Cellulose yarn braid  
Rubber insulation  
Rayon braid  
Tinned copper braid shield  
Rayon wrap  
Black rubber jacket  
.245" Nom. Diam  
Nom. Capacitance — 33 mmf/ft

For crystal, ribbon, and other high impedance microphones.

8412

15' Spool  
25' Spool  
50' Spool  
100' Spool  
500' Spool  
20 A.W.G.



26x34 stranded tinned copper conductor  
Cotton wrap  
Rubber insulation  
2 conductors cabled with fillers: Black and White  
Rayon braid  
Tinned copper braid shield  
Cotton wrap  
Black rubber jacket  
.268" Nom. Diam  
Nom. Capacitance — 68 mmf/ft between one conductor and remaining conductor connected to shield  
For all low impedance microphones.

Trade Number

8414

50' Spool  
500' Spool  
20 A.W.G.



26x34 stranded tinned copper conductor  
Cotton wrap  
Rubber insulation  
2 conductors cabled with fillers:  
Black and White  
Spiraled, stranded tinned copper drain wire  
Conductive textile served shield  
Black rubber jacket  
.256" Nom. Diam

For hand and desk type microphones where exceptional limpness is required.

8428

15' Spool  
25' Spool  
50' Spool  
100' Spool  
500' Spool  
18 A.W.G.



41x34 stranded tinned copper conductor  
Cotton wrap  
Rubber insulation  
2 conductors cabled with fillers:  
Black and White  
Rayon braid  
Tinned copper braid shield  
Cotton wrap  
Black rubber jacket  
.295" Nom. Diam  
Nom. Capacitance— 80 mmf/ft between one conductor and remaining conductor connected to shield

Heavy-duty studio cable.

8423

15' Spool  
50' Spool  
100' Spool  
250' Spool  
500' Spool  
1000' Spool  
20 A.W.G.



26x34 stranded tinned copper conductor  
Cotton wrap  
.020" rubber insulation  
3 conductors cabled:  
Black, Red, White  
Rayon braid  
Tinned copper braid shield  
Cotton wrap  
Black rubber jacket  
.277" Nom. Diam  
Nom. Capacitance— 85 mmf/ft between one conductor and remaining conductors connected to shield

For all low impedance microphones.

8424

15' Spool  
50' Spool  
100' Spool  
250' Spool  
500' Spool  
1000' Spool  
20 A.W.G.



26x34 stranded tinned copper conductor  
Cotton wrap  
.020" rubber insulation  
4 conductors cabled:  
Black, Green, Red, White  
Rayon braid  
Finned copper braid shield  
Cotton wrap  
Black rubber jacket  
.295" Nom. Diam  
Nom. Capacitance— 95 mmf/ft between one conductor and remaining conductors to shield

For all low impedance microphones.

8425

15' Spool  
50' Spool  
100' Spool  
250' Spool  
500' Spool  
20 A.W.G.



26x34 stranded tinned copper conductor  
Cotton wrap  
.020" rubber insulation  
5 conductors cabled:  
Black, Blue, Green, Red, White  
Rayon braid  
Finned copper braid shield  
Cotton wrap  
.040" black rubber jacket  
.323" Nom. Diam

Interconnecting power cable for all electronic uses.

8426

15' Spool  
50' Spool  
100' Spool  
250' Spool  
500' Spool  
20 A.W.G.



26x34 stranded tinned copper conductor  
Cotton wrap  
.020" rubber insulation  
6 conductors cabled:  
Black, Blue, Brown, Green, Red, White  
Rayon braid  
Finned copper braid shield  
Cotton wrap  
.040" black rubber jacket  
.349" Nom. Diam

Interconnecting power cable for all electronic uses.

### RUBBER PARALLEL CORD

8462

100' Spool  
18 A.W.G.



41x34 stranded bare copper conductor  
Cotton wrap  
2 conductors parallel  
Brown rubber insulation and jacket integral  
.123"x.223" Nom. Diam

Underwriters' Type SP-1



# BELDEN ELECTRONIC WIRES & CABLES

multiple conductor cables

rubber-jacketed portable cord

For other U.L. approved portable cord see Belden Catalog on Portable Cords.



8478

Trade Number

25' Spool  
50' Spool  
100' Spool  
250' Spool  
1000' Spool  
18 A.W.G.  
41x34 stranded bare copper conductor  
Cotton wrap  
1/32" rubber insulation  
2 conductors cabled with fillers: Black and White  
Cotton wrap  
1/32" black rubber jacket  
.299" Nom. Diam

Underwriters' Type  
SJ



8472

25' Spool  
50' Spool  
100' Spool  
250' Spool  
16 A.W.G.  
65x34 stranded bare copper conductor  
Cotton wrap  
1/32" rubber insulation  
2 conductors cabled with fillers: Black and White  
Cotton wrap  
1/32" black rubber jacket  
.325" Nom. Diam

Underwriters' Type  
SJ



8452

15' Spool  
25' Spool  
50' Spool  
100' Spool  
250' Spool  
500' Spool  
1000' Spool  
18 A.W.G.  
41x34 stranded bare copper conductor  
Cotton Wrap  
1/64" rubber insulation  
2 conductors cabled with fillers: Black and White  
Cotton wrap  
1/32" black rubber jacket  
.245" Nom. Diam

Underwriters' Type  
SV



8453

15' Spool  
50' Spool  
100' Spool  
250' Spool  
18 A.W.G.  
41x34 stranded bare copper conductor  
Cotton wrap  
1/64" rubber insulation  
3 conductors cabled with fillers: Black, Green, White  
Cotton wrap  
1/32" black rubber jacket  
.265" Nom. Diam



8454

15' Spool  
50' Spool  
100' Spool  
500' Spool  
1000' Spool  
18 A.W.G.  
41x34 stranded bare copper conductor  
Cotton wrap  
1/64" rubber insulation  
4 conductors cabled: Black, Brown, Red, White  
Cotton wrap  
1/32" black rubber jacket  
.265" Nom. Diam



8455

15' Spool  
50' Spool  
100' Spool  
250' Spool  
22 A.W.G.  
16x34 stranded bare copper conductor  
Cotton wrap  
1/64" rubber insulation  
18 A.W.G.  
41x34 stranded bare copper conductor  
Cotton wrap  
1/64" rubber insulation  
5 conductors cabled with fillers: 3—22 A.W.G.: Brown, Green, White  
2—18 A.W.G.: Black, Red  
Cotton wrap  
1/32" black rubber jacket  
.280" Nom. Diam

Belden shielded and unshielded multiple conductor cables provide dependable service as power supply cords, interconnecting cables on electronic equipment, remote control circuits, special press-to-talk microphone circuits, and a multitude of electronic applications. These cables are designed for long service life, excellent mechanical and electrical characteristics, and uniform quality. Special black rubber jacket has excellent resistance to abrasion and ozone.

## rubber-jacketed portable cord

Trade Number

8427

15' Spool  
50' Spool  
100' Spool  
250' Spool  
20 A.W.G.



26x34 stranded tinned copper conductor  
Cotton wrap  
.020" rubber insulation  
7 conductors cabled: Black, Blue, Brown, Green, Red, White, Yellow  
Rayon braid  
Tinned copper braid shield  
Cotton wrap  
0.040" black rubber jacket  
.360" Nom. Diam

Interconnecting power cable for all electronic uses.

\* New Item.

8418

15' Spool  
50' Spool  
100' Spool  
250' Spool  
20 A.W.G.



26x34 stranded tinned copper conductor  
Cotton wrap  
.020" rubber insulation  
8 conductors cabled with fillers: Black, Blue, Brown, Green, Orange, Red, White, Yellow  
Rayon braid  
Tinned copper braid shield  
Cotton wrap  
0.040" black rubber jacket  
.386" Nom. Diam

Interconnecting power cable for all electronic uses.

## shielded — plastic jacket (oil and ozone-proof)

\* 8403

15' Spool  
50' Spool  
100' Spool  
250' Spool  
500' Spool  
1000' Spool  
20 A.W.G.



26x34 stranded tinned copper conductor  
.013" polyethylene insulation  
3 conductors cabled: Black, Red, White  
Rayon braid  
Tinned copper braid shield  
Chrome vinyl plastic jacket  
.247" Nom. Diam

For low impedance microphones.

\* 8404

15' Spool  
50' Spool  
100' Spool  
250' Spool  
500' Spool  
1000' Spool  
20 A.W.G.



26x34 stranded tinned copper conductor  
.013" polyethylene insulation  
4 conductors cabled: Black, Green, Red, White  
Rayon braid  
Tinned copper braid shield  
Chrome vinyl plastic jacket  
.250" Nom. Diam

For low impedance microphones and strain gauges.

\* 8405

15' Spool  
50' Spool  
100' Spool  
250' Spool  
500' Spool  
1000' Spool  
20 A.W.G.



26x34 stranded tinned copper conductor  
.013" polyethylene insulation  
5 conductors cabled with fillers: Black, Blue, Green, Red, White  
Rayon braid  
Tinned copper braid shield  
Chrome vinyl plastic jacket  
.275" Nom. Diam

For strain gauges and interconnecting cable.

## intercommunicating and sound system cables unshielded

Belden Intercom Cables are outstanding in their performance and dependability. Designed for maximum efficiency, performance, and ease of installation.

Special approved vinyl compounds assure high insulation resistance and best electrical and physical properties. Precision short lay cabling maintains conductor balance, providing quiet circuit free from crosstalk. The outer, free stripping chrome vinyl jacket is waterproof, weather resistant, and is ideal for all types of industrial, home, and office installations. Quick termination, positive color coding, and small diameter effect economies in any installation.



8740

Trade Number

100' Spool  
500' Spool  
1000' Spool  
22 A.W.G.  
Tinned copper conductor, solid  
.015" vinyl plastic insulation  
1 pair cabled (2 conductors)  
Color coded:  
1 (See listing Page 5)  
.020" tubed chrome vinyl plastic jacket  
140" Nom. Diam



8741

100' Spool  
500' Spool  
1000' Spool  
22 A.W.G.  
Tinned copper conductor, solid  
.015" vinyl plastic insulation  
2 pair cabled (4 conductors)  
Color coded:  
1 through 2 (See listing Page 5)  
.023" tubed chrome vinyl plastic jacket  
191" Nom. Diam



8742

100' Spool  
500' Spool  
1000' Spool  
22 A.W.G.  
Tinned copper conductor, solid  
.015" vinyl plastic insulation  
3 pair cabled (6 conductors)  
Color coded:  
1 through 3 (See listing Page 5)  
.033" tubed chrome vinyl plastic jacket  
226" Nom. Diam













8743





100' Spool  
500' Spool  
1000' Spool  
22 A.W.G.  
Tinned copper conductor, solid  
.015" vinyl plastic insulation  
6 pair cabled (12 conductors)  
Color coded:  
1 through 6 (See listing Page 5)  
.093" tubed chrome vinyl plastic jacket  
281" Nom. Diam

# BELDEN ELECTRONIC WIRES & CABLES

intercommunicating and sound system cables unshielded

					
<b>Trade Number</b> <b>8744</b>	<b>8753</b>	<b>8745</b>	<b>8746</b>	<b>8747</b>	<b>8748</b>
100' Spool 500' Spool 1000' Spool 22 A.W.G.	100' Spool 500' Spool 1000' Spool 22 A.W.G.	100' Spool 500' Spool 1000' Spool 22 A.W.G.	<b>PUT-UP:</b> To Customers' Specified Length Max. Length 1500 ft. 22 A.W.G.	100' Spool 500' Spool 1000' Spool 22 A.W.G.	100' Spool 500' Spool 1000' Spool 22 A.W.G.
Tinned copper conductor, solid .010" vinyl plastic insulation 9 pair cabled (18 conductors) Color coded: 1 through 9 (See listing Page 5) .025" tubed chrome vinyl plastic jacket .330" Nom. Diam	Tinned copper conductor, solid .010" vinyl plastic insulation 11 pair cabled (22 conductors) Color coded: 1 through 11 (See listing Page 5) .030" tubed chrome vinyl plastic jacket .370" Nom. Diam	Tinned copper conductor, solid .010" vinyl plastic insulation 15 pair cabled (30 conductors) Color coded: 1 through 15 (See listing Page 5) .030" tubed chrome vinyl plastic jacket .400" Nom. Diam	Tinned copper conductor, solid .010" vinyl plastic insulation 27 pair cabled (54 conductors) Color coded: 1 through 27 (See listing Page 5) .030" tubed chrome vinyl plastic jacket .520" Nom. Diam	7x30 stranded tinned copper conductor .010" vinyl plastic insulation 6 pair cabled (12 conductors) Color coded: 1 through 6 (See listing Page 5) .023" tubed chrome vinyl plastic jacket .316" Nom. Diam	7x30 stranded tinned copper conductor .010" vinyl plastic insulation 9 pair cabled (18 conductors) Color coded: 1 through 9 (See listing Page 5) .025" tubed chrome vinyl plastic jacket .365" Nom. Diam

		<b>PAIRED INTERCOM CABLES</b> <b>COLOR CODE LISTING</b> Belden Intercom Cables are color coded for easy identification. In the description of Intercom Cables, color coding of the pairs is identified by the number shown in the following list: <table border="1"> <thead> <tr> <th>Pair Number</th> <th>Color Combination</th> </tr> </thead> <tbody> <tr><td>1.....</td><td>Black paired with Red</td></tr> <tr><td>2.....</td><td>Black paired with White</td></tr> <tr><td>3.....</td><td>Black paired with Green</td></tr> <tr><td>4.....</td><td>Black paired with Blue</td></tr> <tr><td>5.....</td><td>Black paired with Brown</td></tr> <tr><td>6.....</td><td>Black paired with Yellow</td></tr> <tr><td>7.....</td><td>Black paired with Orange</td></tr> <tr><td>8.....</td><td>Red paired with Green</td></tr> <tr><td>9.....</td><td>Red paired with White</td></tr> <tr><td>10.....</td><td>Red paired with Blue</td></tr> <tr><td>11.....</td><td>Red paired with Yellow</td></tr> <tr><td>12.....</td><td>Red paired with Brown</td></tr> <tr><td>13.....</td><td>Red paired with Orange</td></tr> <tr><td>14.....</td><td>Green paired with Blue</td></tr> <tr><td>15.....</td><td>Green paired with White</td></tr> <tr><td>16.....</td><td>Green paired with Brown</td></tr> <tr><td>17.....</td><td>Green paired with Orange</td></tr> <tr><td>18.....</td><td>Green paired with Yellow</td></tr> <tr><td>19.....</td><td>White paired with Blue</td></tr> <tr><td>20.....</td><td>White paired with Brown</td></tr> <tr><td>21.....</td><td>White paired with Orange</td></tr> <tr><td>22.....</td><td>White paired with Yellow</td></tr> <tr><td>23.....</td><td>Blue paired with Orange</td></tr> <tr><td>24.....</td><td>Blue paired with Yellow</td></tr> <tr><td>25.....</td><td>Brown paired with Orange</td></tr> <tr><td>26.....</td><td>Brown paired with Yellow</td></tr> <tr><td>27.....</td><td>Brown paired with Blue</td></tr> </tbody> </table>	Pair Number	Color Combination	1.....	Black paired with Red	2.....	Black paired with White	3.....	Black paired with Green	4.....	Black paired with Blue	5.....	Black paired with Brown	6.....	Black paired with Yellow	7.....	Black paired with Orange	8.....	Red paired with Green	9.....	Red paired with White	10.....	Red paired with Blue	11.....	Red paired with Yellow	12.....	Red paired with Brown	13.....	Red paired with Orange	14.....	Green paired with Blue	15.....	Green paired with White	16.....	Green paired with Brown	17.....	Green paired with Orange	18.....	Green paired with Yellow	19.....	White paired with Blue	20.....	White paired with Brown	21.....	White paired with Orange	22.....	White paired with Yellow	23.....	Blue paired with Orange	24.....	Blue paired with Yellow	25.....	Brown paired with Orange	26.....	Brown paired with Yellow	27.....	Brown paired with Blue		
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26.....	Brown paired with Yellow																																																											
27.....	Brown paired with Blue																																																											
<b>Trade Number</b> <b>8749</b>	<b>8750</b>		<b>8734</b>	<b>8735</b>																																																								
100' Spool 500' Spool 1000' Spool 22 A.W.G.	<b>PUT-UP:</b> To Customers' Specified Length Max. Length 1500 ft. 22 A.W.G.		100' Spool 500' Spool 1000' Spool 22 A.W.G.	15' Spool 50' Spool 100' Spool 500' Spool 1000' Spool 22 A.W.G.																																																								
7x30 stranded tinned copper conductor .010" vinyl plastic insulation 15 pair cabled (30 conductors) Color coded: 1 through 15 (See listing Page 5) .030" tubed chrome vinyl plastic jacket .470" Nom. Diam	7x30 stranded tinned copper conductor .010" vinyl plastic insulation 27 pair cabled (54 conductors) Color coded: 1 through 27 (See listing Page 5) .030" tubed chrome vinyl plastic jacket .565" Nom. Diam.		7x30 stranded tinned copper conductor .015" vinyl plastic insulation 3 conductors cabled: Black, Red, White White conductor, tinned copper braid shield Black & Red conductors, unshielded .023" tubed chrome vinyl plastic jacket .190" Nom. Diam For Station-to-station and Extension Wiring (Shielded)	7x30 stranded tinned copper conductor .015" vinyl plastic insulation 3 conductors cabled: Black, Red, White Tinned copper braid shield .023" tubed chrome vinyl plastic jacket .195" Nom. Diam																																																								

			
<b>Trade Number</b> <b>8737</b>	<b>8758</b>	<b>8759</b>	<b>8738</b>
100' Spool 500' Spool 1000' Spool 22 A.W.G.	100' Spool 500' Spool 1000' Spool 20 A.W.G.	100' Spool 500' Spool 1000' Spool 20 A.W.G.	100' Spool 500' Spool 1000' Spool 22 A.W.G.
7x30 stranded tinned copper conductor .015" vinyl plastic insulation 2 conductors cabled: Black and Red Tinned copper spiral wrapped shield .023" tubed chrome vinyl plastic jacket .168" Nom. Diam	7x28 stranded tinned copper conductor .015" vinyl plastic insulation 2 conductors cabled: Black and Red Tinned copper braid shield .165" Nom. Diam	7x28 stranded tinned copper conductor .015" vinyl plastic insulation 2 conductors cabled: Black and Red Tinned copper spiral wrapped shield .020" tubed chrome vinyl plastic jacket .185" Nom. Diam	Tinned copper conductor, solid .015" vinyl plastic insulation 2 conductors cabled: Black and Red Tinned copper braid shield .130" Nom. Diam

The vinyl plastic jacket of Belden Inter-communication System Cables is tubed for greater flexibility and fast, easy stripping.

# BELDEN ELECTRONIC WIRES & CABLES

## intercommunicating and sound system cables

shielded



8739

Trade Number

100' Spool  
500' Spool  
1000' Spool  
22 A.W.G.

Tinned copper conductor, solid  
.015" vinyl plastic insulation  
2 conductors cabled:  
Black and Red  
Tinned copper spiral wrapped shield  
.023" tubed chrome vinyl plastic jacket  
.156" Nom. Diam



8732

100' Spool  
500' Spool  
1000' Spool  
22 A.W.G.

7x30 stranded tinned copper conductor  
.015" polyethylene insulation  
2 pair cabled:  
(4 conductors)  
Color coded:  
Black and White  
One pair tinned copper braid shield  
One pair unshielded  
.023" tubed chrome vinyl plastic jacket  
.174"x.282" Nom. Diam

plastic-insulated cable



8443

25' Spool  
100' Spool  
500' Spool  
1000' Spool  
22 A.W.G.

7x30 stranded tinned copper conductor  
.010" vinyl plastic insulation  
3 conductors cabled:  
Black, Green, Red  
.023" tubed chrome vinyl plastic jacket  
.146" Nom. Diam



8444

25' Spool  
100' Spool  
500' Spool  
1000' Spool  
22 A.W.G.

7x30 stranded tinned copper conductor  
.010" vinyl plastic insulation  
4 conductors cabled:  
Black, Green, Red, White  
.023" tubed chrome vinyl plastic jacket  
.164" Nom. Diam



8445

25' Spool  
100' Spool  
500' Spool  
1000' Spool  
22 A.W.G.

7x30 stranded tinned copper conductor  
.010" vinyl plastic insulation  
5 conductors cabled:  
Black, Brown, Green, Red, White  
.023" tubed chrome vinyl plastic jacket  
.178" Nom. Diam

Single conductors cabled, waterproof, weather resistant, outer chrome vinyl jacket. Flexible, light weight and small in diameter for use in control, annunciator and communication circuits.

plastic-insulated cable



8446

Trade Number

15' Spool  
100' Spool  
500' Spool  
1000' Spool  
22 A.W.G.

7x30 stranded tinned copper conductor  
.010" vinyl plastic insulation  
18 A.W.G.  
16x30 stranded tinned copper conductor  
.018" vinyl plastic insulation  
6 conductors cabled:  
4 — 22 A.W.G.: Brown, Blue, Green, White  
2 — 18 A.W.G.: Black, Red  
.023" tubed chrome vinyl plastic jacket  
.281" Nom. Diam



8447

15' Spool  
100' Spool  
500' Spool  
1000' Spool  
22 A.W.G.

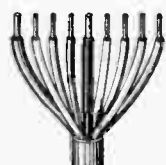
7x30 stranded tinned copper conductor  
.010" vinyl plastic insulation  
18 A.W.G.  
16x30 stranded tinned copper conductor  
.018" vinyl plastic insulation  
7 conductors cabled:  
5 — 22 A.W.G.: Blue, Brown, Green, Orange, White  
2 — 18 A.W.G.: Black, Red  
.023" tubed chrome vinyl plastic jacket  
.236" Nom. Diam



8448

15' Spool  
100' Spool  
500' Spool  
1000' Spool  
22 A.W.G.

7x30 stranded tinned copper conductor  
.010" vinyl plastic insulation  
18 A.W.G.  
16x30 stranded tinned copper conductor  
.018" vinyl plastic insulation  
8 conductors cabled:  
6 — 22 A.W.G.: Blue, Brown, Green, Orange, White, Yellow  
2 — 18 A.W.G.: Black, Red  
.023" tubed chrome vinyl plastic jacket  
.241" Nom. Diam



8449

15' Spool  
100' Spool  
500' Spool  
1000' Spool  
22 A.W.G.

7x30 stranded tinned copper conductor  
.010" vinyl plastic insulation  
18 A.W.G.  
16x30 stranded tinned copper conductor  
.018" vinyl plastic insulation  
9 conductors cabled:  
7 — 22 A.W.G.: Blue, Brown, Green, Orange, Purple, White, Yellow  
2 — 18 A.W.G.: Black, Red  
.023" tubed chrome vinyl plastic jacket  
.251" Nom. Diam

## p. a. and sound system cables



8789

Trade Number

100' Spool  
500' Spool  
1000' Spool  
18 A.W.G.

7x26 stranded tinned copper conductor  
.020" vinyl plastic insulation  
2 conductors cabled:  
Black and White  
Tinned copper braid shield  
.205" Nom. Diam



\*8779

100' Spool  
500' Spool  
1000' Spool  
16 A.W.G.

19x29 stranded tinned copper conductor  
.023" vinyl plastic insulation  
2 conductors cabled:  
Black and White  
Tinned copper braid shield  
.225" Nom. Diam



8790

100' Spool  
500' Spool  
1000' Spool  
18 A.W.G.

7x26 stranded tinned copper conductor  
.020" vinyl plastic insulation  
2 conductors cabled:  
Red and White  
Tinned copper spiral wrapped shield  
.025" tubed chrome vinyl plastic jacket  
.225" Nom. Diam  
For public address and intercommunicating systems in schools, hospitals, and institutions.



\*8780

100' Spool  
500' Spool  
1000' Spool  
16 A.W.G.

19x29 stranded tinned copper conductor  
.023" vinyl plastic insulation  
2 conductors cabled:  
Black and White  
Tinned copper spiral wrapped shield  
.025" tubed chrome vinyl plastic jacket  
.256" Nom. Diam



8791

100' Spool  
500' Spool  
1000' Spool  
18 A.W.G.

7x26 stranded tinned copper conductor  
.020" vinyl plastic insulation  
3 conductors cabled:  
Black, Red, White  
Tinned copper spiral wrapped shield  
.023" tubed chrome vinyl plastic jacket  
.230" Nom. Diam

\* New Item.






For HiPower, low loss extension speaker lines.






For HiPower, low loss extension speaker lines.






# BELDEN ELECTRONIC WIRES & CABLES

## p. a. and sound system cables

A cable for every service. Designed for maximum dependability, long service life, and freedom from maintenance. A choice of either copper braid or copper wrap shields for maximum shielding. Designed for P.A. system installations in schools, public buildings, churches, and wherever a cable of uniform quality and outstanding service life is required.

					
<b>Trade Number</b>	<b>8762</b>	<b>8209</b>	<b>8208</b>	<b>8799</b>	<b>8206</b>
	100' Spool 500' Spool 1000' Spool 20 A.W.G. 7x28 tinned stranded copper conductor .014" polyethylene plastic insulation 2 conductors cabled: Black and White Spiral wrapped aluminum foil shield 7x28 tinned stranded copper drain wire parallel to twisted pair under shield .025" tubed chrome vinyl plastic jacket .160" Nom. Diam For public address and intercommunicating systems in schools, hospitals, and institutions.	15' Spool 50' Spool 100' Spool 500' Spool 1000' Spool 18 A.W.G. 16x30 stranded tinned copper conductor Low-loss rubber insulation 2 conductors cabled: Red and White Paper wrap Tinned copper braid shield White cotton braid treated with weather-resistant compound .258" Nom. Diam For long runs in extension speaker installations.	15' Spool 50' Spool 100' Spool 500' Spool 1000' Spool 18 A.W.G. 16x30 stranded tinned copper conductor Low-loss rubber insulation 2 conductors cabled: Red and White Paper wrap Tinned copper braid shield .020" tubed chrome vinyl plastic jacket .260" Nom. Diam For extension speakers.	100' Spool 500' Spool 1000' Spool 18 A.W.G. Bare copper conductor, solid enameled Cotton wrap Cotton braid waxed 2 conductors cabled: Black and White Tinned copper braid shield .165" Nom. Diam P.A. Cable Amplifier to Speaker and Broadcast Control Cable.	15' Spool 50' Spool 100' Spool 250' Spool 18 A.W.G. 7x27 stranded tinned copper conductor .040" rubber insulation Tinned copper braid shield .155" Nom. Diam Shielded connector cable.

					
<b>Trade Number</b>	<b>8432</b>	<b>8433</b>	<b>8204</b>	<b>8205</b>	<b>*8460</b>
	100' Spool 500' Spool 1000' Spool 20 A.W.G. 10x30 stranded tinned copper conductor .015" rubber insulation Cotton braid Lacquer coating 2 conductors cabled: Black and Red Tinner copper braid shield .225" Nom. Diam	100' Spool 500' Spool 20 A.W.G. 10x30 stranded tinned copper conductor .015" rubber insulation Cotton braid Lacquer coating 3 conductors cabled: Black, Red, Yellow Tinner copper braid shield .230" Nom. Diam	25' Spool 100' Spool 500' Spool 1000' Spool 18 A.W.G. 16x30 stranded tinned copper conductor Low-loss rubber insulation 2 conductors cabled: Red and White White cotton braid treated with weather-resistant compound .220" Nom. Diam For extension speakers.	25' Spool 100' Spool 500' Spool 1000' Spool 22 A.W.G. 7x30 stranded tinned copper conductor Rubber insulation 2 conductors cabled: Black and Red Black cotton braid treated with weather-resistant compound .165" Nom. Diam For extension speaker and control circuits.	100' Spool 500' Spool 1000' Spool 18 A.W.G. 7x26 stranded tinned copper conductor .020" vinyl plastic insulation 2 conductors cabled: Black and White .175" Nom. Diam For extension speaker lines.

					
<b>Trade Number</b>	<b>*8461</b>	<b>*8470</b>	<b>*8471</b>	<b>8486</b>	<b>8482</b>
	100' Spool 500' Spool 1000' Spool 18 A.W.G. 7x26 stranded tinned copper conductor .020" vinyl plastic insulation 2 conductors cabled: Black and White .025" tubed chrome vinyl plastic jacket .195" Nom. Diam For extension speaker lines.	100' Spool 500' Spool 1000' Spool 16 A.W.G. 19x29 stranded tinned copper conductor .023" vinyl plastic insulation 2 conductors cabled: Black and White .195" Nom. Diam For HiPower, low loss extension speaker lines.	100' Spool 500' Spool 1000' Spool 16 A.W.G. 19x29 stranded tinned copper conductor .023" vinyl plastic insulation 2 conductors cabled: Black and White .025" tubed chrome vinyl plastic jacket .246" Nom. Diam For HiPower, low loss extension speaker lines.	1000' Spool 19 A.W.G. Bare copper conductor, solid .015" vinyl plastic insulation 2 conductors cabled: Brown and Tan .025" tubed chrome vinyl plastic jacket .162" Nom. Diam	1000' Spool 19 A.W.G. Bare copper conductor, solid .015" vinyl plastic insulation 2 conductors cabled: Brown and Tan .115" Nom. Diam

\* New item.

# BELDEN ELECTRONIC WIRES & CABLES

## p. a. and sound system cables

A cable for every service. Designed for maximum dependability, long service life, and freedom from maintenance. A choice of either copper braid or copper wrap shields for maximum shielding. Designed for PA system installations in schools, public buildings, churches, and wherever a cable of uniform quality and outstanding service life is required.



8492

Trade Number

1000' Spool  
19 A.W.G.  
Bare copper conductor, solid  
.025" vinyl plastic insulation  
2 conductors cabled:  
One conductor tinned for polarity  
.150" Nom. Diam  
Colors: Brown or White (Both conductors same color)

For sound and alarm systems and speaker extensions.



8493

1000' Spool  
19 A.W.G.  
Bare copper conductor, solid  
.025" vinyl plastic insulation  
3 conductors cabled:  
Polarity Coding: One conductor tinned, second conductor ridge on insulation and third conductor plain  
.170" Nom. Diam  
Colors: Brown or White (All 3 conductors same color)

For sound and alarm systems and speaker extensions.



8483

1000' Spool  
19 A.W.G.  
Bare copper conductor, solid  
.015" vinyl plastic insulation  
3 conductors cabled:  
Brown, Gray, Tan  
.132" Nom. Diam

1000' Spool  
19 A.W.G.  
Bare copper conductor, solid  
.015" vinyl plastic insulation  
3 conductors cabled:  
Brown, Gray, Tan  
.023" tubed chrome vinyl plastic jacket  
.176" Nom. Diam

For sound system and speaker extensions.



8487



8782

Trade Number

500' Spool  
1000' Spool  
24 A.W.G.  
7x32 stranded—1 bare copper conductor and 1 tinned copper conductor  
2 conductors parallel  
Chrome vinyl plastic insulation  
.058"x.115" Nom. Diam

Juke Box Speaker Cable.



8783

500' Spool  
20 A.W.G.  
10x30 stranded tinned copper conductor  
.020" vinyl plastic insulation  
16 A.W.G.  
26x30 stranded tinned copper conductor  
.020" vinyl plastic insulation  
3 conductors cabled:  
1 — 20 A.W.G.: Blue  
2 — 16 A.W.G.: Green, Orange  
.020" tubed chrome vinyl plastic jacket  
.240" Nom. Diam

Juke Box Control Cable.



8785

500' Spool  
22 A.W.G.  
7x30 stranded tinned copper conductor  
.015" vinyl plastic insulation  
5 conductors cabled:  
3 conductors: Black, Green, Red, with overall tinned copper braid shield  
2 conductors: Blue and Yellow twisted pair, unshielded  
.020" tubed chrome vinyl plastic jacket  
.195"x.300" Nom. Diam

Juke Box Control Cable.



8786

500' Spool  
22 A.W.G.  
7x30 stranded tinned copper conductor  
.015" vinyl plastic insulation  
2 conductors: Blue and White twisted pair  
24 A.W.G.  
7x32 stranded tinned copper conductor  
.015" vinyl plastic insulation  
4 conductors: Black, Green, Red, Yellow, with overall tinned copper braid shield  
.020" tubed chrome vinyl plastic jacket  
.195"x.300" Nom. Diam  
Type MRVC2 cable for "200" record players.

## broadcast audio cables



8437

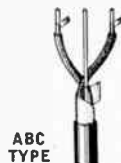
Trade Number

100' Spool  
500' Spool  
1000' Spool  
22 A.W.G.  
Tinned copper conductor, solid  
Enameled  
Heavy cellulose acetate yarn wrap  
Cotton braid waxed  
2 conductors cabled:  
Black and Red  
Tinned copper braid shield  
22 A.W.G. tinned solid copper wire parallel to twisted pair under shield  
.025" tubed black vinyl plastic jacket  
.222" Nom. Diam



NBC TYPE  
8435

100' Spool  
500' Spool  
1000' Spool  
20 A.W.G.  
Tinned copper conductor, solid  
Enameled  
Cotton wrap  
Cotton braid waxed  
2 conductors cabled:  
Blue and Red  
Tinned copper braid shield  
Cotton wrap  
.025" tubed black plastic jacket  
.208" Nom. Diam






ABC TYPE  
8436

100' Spool  
500' Spool  
1000' Spool  
22 A.W.G.  
Tinned copper conductor, solid  
Heavy cellulose acetate yarn wrap  
Cellulose acetate yarn braid  
Lacquer coating  
2 conductors cabled:  
Black and Red  
Tinned copper spiral wrapped shield  
22 A.W.G. tinned solid copper wire parallel to twisted pair under shield  
.020" tubed black plastic jacket  
.180" Nom. Diam

Belden Broadcast Audio Cables are designed to meet the most exacting requirements of the industry for trouble-free, dependable service. High insulation resistance, precision cabling of the conductors, and a high percentage of shielding assure a low noise circuit, free from cross-talk. Spiral wrap copper shield plus drain wire plus shield isolation eliminate current loops so often found troublesome in this service.

# BELDEN ELECTRONIC WIRES & CABLES

## broadcast audio cables

Trade Number	NBC TYPE	ABC TYPE	
			
	<b>8438</b>	<b>8439</b>	<b>8440</b>
100' Spool 500' Spool 1000' Spool 20 A.W.G.	100' Spool 500' Spool 1000' Spool 20 A.W.G.	100' Spool 500' Spool 1000' Spool 20 A.W.G.	100' Spool 500' Spool 1000' Spool 22 A.W.G.
Tinned copper conductor, solid Enameled Cotton wrap Cotton braid waxed 2 conductors cabled: Blue and Red Tinned copper braid shield .140" Nom. Diam	Tinned copper conductor, solid Heavy cellulose acetate yarn wrap Cellulose acetate yarn braid Lacquer coating 2 conductors cabled: Black and Red Tinned copper braid shield .150" Nom. Diam	Tinned copper conductor, solid Enameled Cotton wrap Cotton braid waxed 2 conductors cabled: Black and Red Tinned copper spiral wrapped shield 22 A.W.G. tinned solid copper wire parallel to twisted pair under shield .020" tubed chrome vinyl plastic jacket .185" Nom. Diam	
Free stripping jackets and fast shield termination reduce installation time and costs to a minimum.			

### SOLID ALUMINUM TV GROUNDING WIRE

**\*10-50 ft. coils per display**

**8018**

50' Coils in counter dispenser  
500' Spool  
1000' Spool




8 A.W.G.



Aluminum wire, soft annealed  
.128" Nom. Diam

\*10-50 ft. coils in counter dispenser. Coils are connected and may be cut for any 50 ft. multiple — up to 500 ft.

500' and 1000' spools are marked at 100' intervals for easy measuring.

## transmission line cables

Trade Number	WELDOHM	300 OHM	
			
	<b>8230 (WELDOHM®)</b>	<b>8225</b>	<b>8222</b>
50' Pancake Coils 75' Pancake Coils 100' Pancake Coils 500' Spool 1000' Spool 20 A.W.G.	50' Pancake Coils 75' Pancake Coils 100' Pancake Coils 500' Spool 1000' Spool 20 A.W.G.	100' Spool 500' Spool 20 A.W.G.	7x28 stranded bare copper conductor 2 conductors parallel Brown polyethylene plastic insulation .075"x.128" Nom. Diam Nom. Attenuation — 7.7 db/100 ft at 100 mc 11.0 db/100 ft at 200 mc 13.6 db/100 ft at 300 mc 15.9 db/100 ft at 400 mc Nom. Impedance — 72 ohms Nom. Velocity of propagation — 69% Nom. Capacitance — 20.3 mmf/ft
7x28 stranded "Weldohm®" annealed copper coated steel wire 2 conductors parallel Brown polyethylene plastic insulation .072"x.400" Nom. Diam Nom. Attenuation — 1.1 db/100 ft at 100 mc 1.7 db/100 ft at 200 mc 2.2 db/100 ft at 300 mc 2.7 db/100 ft at 400 mc Nom. Impedance — 300 ohms Nom. Velocity of propagation — 80% Nom. Capacitance — 4.4 mmf/ft Greater service life in TV installations requiring long runs from receiving antennas. Has over 2½ times the flex-life and over 1½ times the breaking strength of the equivalent in copper.	7x28 stranded bare copper conductor 2 conductors parallel Brown polyethylene plastic insulation .058"x.400" Nom. Diam Nom. Attenuation — 1.1 db/100 ft at 100 mc 1.7 db/100 ft at 200 mc 2.2 db/100 ft at 300 mc 2.7 db/100 ft at 400 mc Nom. Impedance — 300 ohms Nom. Velocity of propagation — 80% Nom. Capacitance — 4.4 mmf/ft		
		For use with television and FM receiving antenna. Especially low losses at high frequencies.	For use with receiving antenna at high frequencies.

Trade Number				
				
	<b>8224</b>	<b>8235</b>	<b>8275 (CELLULINE®)</b> Pat. No. 2,782,251	<b>8227</b>
100' Spool 500' Spool 20 A.W.G.	100' Spool 500' Spool 20 A.W.G.	100' Spool 500' Spool 20 A.W.G.	50' Coils in counter dispenser 75' Coils in counter dispenser 100' Coils in counter dispenser 500' Spool 1000' Spool 20 A.W.G.	100' Spool 250' Spool 500' Spool 20 A.W.G.
7x28 stranded bare copper conductor 2 conductors parallel Brown polyethylene plastic insulation .075"x.182" Nom. Diam Nom. Attenuation — 2.8 db/100 ft at 100 mc 4.2 db/100 ft at 200 mc 5.4 db/100 ft at 300 mc 6.4 db/100 ft at 400 mc Nom. Impedance — 150 ohms Nom. Velocity of propagation — 76% Nom. Capacitance — 9.0 mmf/ft	7x28 stranded "Weldohm®" copper coated steel wire 2 conductors parallel Brown polyethylene plastic insulation .185"x.520" Nom. Diam Nom. Attenuation — 1.1 db/100 ft at 100 mc 1.73 db/100 ft at 200 mc 2.28 db/100 ft at 300 mc 2.74 db/100 ft at 400 mc 3.18 db/100 ft at 500 mc 3.7 db/100 ft at 700 mc 4.5 db/100 ft at 900 mc Nom. Impedance — 300 ohms Nom. Velocity of propagation — 77% Nom. Capacitance — 5.6 mmf/ft Greater service life in TV installations requiring long runs from receiving antennas. Has over 2½ times the flex-life and over 1½ times the breaking strength of the equivalent in copper.	7x28 stranded "Weldohm®" annealed copper-coated steel wire 2 conductors parallel Brown polyethylene plastic jacket with inert gas filled unicellular polyethylene core .300" Nom. Diam round .350" Nom. Diam over conductor insulation Nom. Attenuation — 1.05 db/100 ft at 100 mc 2.12 db/100 ft at 200 mc 2.9 db/100 ft at 300 mc 3.62 db/100 ft at 400 mc 4.3 db/100 ft at 500 mc 5.0 db/100 ft at 600 mc 5.8 db/100 ft at 700 mc 6.6 db/100 ft at 800 mc 7.4 db/100 ft at 900 mc Nom. Impedance — 300 ohms Nom. Velocity of propagation — 80% Nom. Capacitance — 4.6 mmf/ft	7x28 stranded — 1 bare — 1 tinned copper conductor Polyethylene plastic insulation 2 conductors cabled: Polyethylene plastic jacket Tinned copper braid shield Black vinyl plastic jacket .325" Nom. Diam Nom. Attenuation — 4.1 db/100 ft at 100 mc 6.4 db/100 ft at 200 mc 8.4 db/100 ft at 300 mc 10.2 db/100 ft at 400 mc Nom. Impedance — 100 ohms Nom. Velocity of propagation — 62% Nom. Capacitance — 15.5 mmf/ft between conductors	
		For use with receiving antenna, matching transformer, and experimental applications at high frequencies.	For use with television and FM antenna in extremely noisy locations.	

# BELDEN ELECTRONIC WIRES & CABLES

## transmission line cables

### 75 OHM VIDEO CABLE

For video signal transmission in color and monochrome TV studio applications.



**\*8281**

Trade Number

100' Spool  
500' Spool  
1000' Spool  
20 A.W.G.

Bare copper conductor, solid Polyethylene plastic insulation  
Tinned copper, double braid shield  
Polyethylene jacket

.310" Nom. Diam

Nom. Attenuation —  
.55 db/100 ft at 5 mc  
.8 db/100 ft at 10 mc  
1.3 db/100 ft at 20 mc  
2.7 db/100 ft at 100 mc  
5.1 db/100 ft at 300 mc  
6.8 db/100 ft at 500 mc  
8.4 db/100 ft at 700 mc

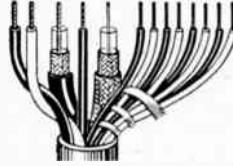
Nom. Impedance — 75 ohms

Nom. Capacitance — 20.7 mmf/ft

Nom. Velocity of propagation — 65.2

This cable provides a high quality carrier of video signal with superior picture definition and eliminates problems of periodicity. Cable is manufactured with rigid control of concentricity and all dimensional tolerances. Center conductor is maintained at same distance from shield through the entire length of cable. 100% sweep tested.

### TV EYE CABLE



**8282**

50' Spool  
100' Spool  
500' Spool  
13 conductor TV eye cable

9 Conductors:

22 A.W.G.  
7x30 tinned stranded copper conductor  
.018" vinyl plastic insulation  
Black, Blue, Brown, Green, Orange, Purple, Red, White, Yellow

2 conductors:

18 A.W.G.  
16x30 tinned stranded copper conductor  
.018" vinyl plastic insulation  
2 conductors paired  
Black and Red

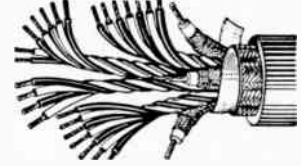
1 conductor:

RG-58A/U cable (Belden 8259)

1 conductor:

RG-59/U type cable  
.040" tubed gray vinyl plastic jacket  
.470" Nom. Diam

### TV CAMERA CABLE



**8280**

PUT-UP:

To customers' specified length. Lengths to 100 feet in coils. 101 Feet to 700 feet on spools. Maximum length 700 feet.

4 Conductors: 18 A.W.G. flexible plastic insulated wires. Color coded: Orange, Blue, Brown, Green.

21 Conductors: 22 A.W.G. flexible plastic insulated wires. Cabled in 3 groups of 7 wires each. Each group color coded.

(1)	(2)	(3)
White	White with Black Stripe	White with Red Stripe
Black	Black	Black
Red	Red	Red
Yellow	Yellow	Yellow
Green	Green	Green
Blue	Blue	Blue
Brown	Brown	Brown

3—Coaxial Cables—Nom. Impedance 51 ohms  
Color coded: Black, White, Red

Paper separator

Tinned copper braid shield

Chrome vinyl plastic jacket

.750" Nom. Diam

May be used where RCA cable specification A-8831733 is indicated.

## antenna rotor cables



**8464**

Trade Number

75' Pancake Coils  
100' Pancake Coils  
500' Spool  
1000' Spool  
20 A.W.G.

7x28 stranded bare copper conductor  
4 conductors parallel

Gray vinyl plastic insulation  
One outer conductor tinned for polarity

.070"x.390" Nom. Diam



**8484**

100' Spool  
500' Spool  
1000' Spool  
20 A.W.G.

7x28 stranded bare copper conductor  
.010" vinyl plastic insulation

4 conductors parallel:  
Black, Green, Red, and White

.015" tubed chrome vinyl plastic jacket  
.170" Nom. Diam



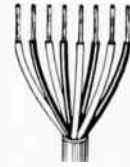
**8485**

100' Spool  
500' Spool  
1000' Spool  
20 A.W.G.

7x28 stranded bare copper conductor  
.010" vinyl plastic insulation

5 conductors parallel:  
Black, Green, Red, White, and Yellow

.015" tubed chrome vinyl plastic jacket  
.180" Nom. Diam



**8488**

100' Spool  
500' Spool  
1000' Spool  
22 A.W.G.

7x30 stranded bare copper conductor  
.010" vinyl plastic insulation

8 conductors cabled:  
Black, Blue, Brown, Green, Orange, Red, White, and Yellow

.020" tubed chrome vinyl plastic jacket  
.205" Nom. Diam

### INDOOR AERIAL WIRE (Extra Flexible)



**8014**

Trade Number

25' Spool  
500' Spool  
25 A.W.G.

13x36 stranded tinned copper conductor  
.010" chrome vinyl plastic insulation  
.044" Nom. Diam

### STRANDED BARE COPPER AERIAL WIRE



**8000**

Trade Number

50' Coil  
75' Coil  
100' Coil  
1000' Spool  
14 A.W.G.

7x22 stranded bare copper conductor  
.076" Nom. Diam



**8002**

Trade Number

50' Coil  
75' Coil  
100' Coil  
1000' Spool  
16 A.W.G.

7x24 stranded bare copper conductor  
.060" Nom. Diam

### SOLID FORMVAR (HF) AERIAL WIRE



**8008**

Trade Number

100' Spool  
200' Spool  
500' Spool  
12 A.W.G.  
(BF) Formvar  
.084" Nom. Diam



**8009**

Trade Number

100' Spool  
500' Spool  
14 A.W.G.  
(HF) Formvar  
.067" Nom. Diam

# BELDEN ELECTRONIC WIRES & CABLES

## community tv antenna system cables

Belden Community TV Antenna System Cables are designed for lowest losses, longer service life, and maximum dependability. Quality controlled through every step of manufacturing. No variation from shipment to shipment. The cables are essentially flat with no peaks

in attenuation to reduce the signal on either the high or low television channels.

Sweep testing — 8232 and 8233 are 100% sweep tested — other coaxial cables sweep tested upon request.



TAP-OFF  
LEAD-IN

RG-59/U

8241



TAP-OFF  
LEAD-IN

(Double  
Shielded)

8232



SECONDARY  
LEAD

RG-11/U

8238



SECONDARY  
LEAD

(Double  
Shielded)

8233

Trade  
Number

100' Spool  
500' Spool  
1000' Spool  
22 A.W.G.  
Bare "Copperweld" conductor, solid  
Polyethylene plastic insulation  
Bare copper braid shield  
Black vinyl plastic jacket  
.242" Nom. Diam.  
Nom. Attenuation —  
2.70 db/100 ft at 50 mc  
3.75 db/100 ft at 100 mc  
5.60 db/100 ft at 200 mc  
7.10 db/100 ft at 300 mc  
Nom. Impedance — 73 ohms  
Nom. Velocity of propagation —  
66%  
Nom. Capacitance — 21.0 mmf/ft

100' Spool  
500' Spool  
1000' Spool  
22 A.W.G.  
Bare "Copperweld" conductor, solid  
Polyethylene plastic insulation  
Bare copper braid shield  
Polyethylene plastic jacket  
Bare copper braid shield  
Black vinyl plastic jacket  
.315" Nom. Diam.  
Nom. Attenuation —  
2.70 db/100 ft at 50 mc  
3.75 db/100 ft at 100 mc  
5.60 db/100 ft at 200 mc  
7.10 db/100 ft at 300 mc  
Nom. Impedance — 73 ohms  
Nom. Velocity of propagation —  
66%  
Nom. Capacitance — 21.0 mmf/ft

Recommended as alternate for RG-59/U to minimize Line Radiation.

100' Spool  
500' Spool  
1000' Spool  
1500' Spool  
18 A.W.G.  
7x26 stranded tinned copper conductor  
Polyethylene plastic insulation  
Bare copper braid shield  
Black vinyl plastic jacket  
.405" Nom. Diam.  
Nom. Attenuation —  
1.30 db/100 ft at 50 mc  
1.90 db/100 ft at 100 mc  
2.85 db/100 ft at 200 mc  
3.65 db/100 ft at 300 mc  
Nom. Impedance — 75 ohms  
Nom. Velocity of propagation —  
66%  
Nom. Capacitance — 20.5 mmf/ft

500' Spool  
1000' Spool  
1500' Spool  
18 A.W.G.  
7x26 stranded tinned copper conductor  
Polyethylene plastic insulation  
Bare copper braid shield  
Polyethylene plastic jacket  
Bare copper braid shield  
Black vinyl plastic jacket  
.470" Nom. Diam.  
Nom. Attenuation —  
1.20 db/100 ft at 50 mc  
1.90 db/100 ft at 100 mc  
2.85 db/100 ft at 200 mc  
3.65 db/100 ft at 300 mc  
Nom. Impedance — 75 ohms  
Nom. Velocity of propagation —  
66%  
Nom. Capacitance — 20.5 mmf/ft  
Recommended as alternate for RG-11/U to minimize Line Radiation.

## tinned copper bus bar wires



8011



8012



E013



8019



8020



8021

Trade  
Number

100' Spool  
• 1000' Spool  
12 A.W.G.  
Tinned copper wire,  
solid  
.080" Nom. Diam.

100' Spool  
• 1000' Spool  
14 A.W.G.  
Tinned copper wire,  
solid  
.064" Nom. Diam.

100' Spool  
• 1000' Spool  
16 A.W.G.  
Tinned copper wire,  
solid  
.050" Nom. Diam.

100' Spool  
• 1000' Spool  
18 A.W.G.  
Tinned copper wire,  
solid  
.040" Nom. Diam.

100' Spool  
• 1000' Spool  
20 A.W.G.  
Tinned copper wire,  
solid  
.032" Nom. Diam.

100' Spool  
• 1000' Spool  
22 A.W.G.  
Tinned copper wire,  
solid  
.025" Nom. Diam.

## tv power supply (cheater) cord



Trade  
Number

8874  
6' Cord — Cartoned  
18 A.W.G.  
Brown Type SP-1

Extra-flexible all-rubber parallel lamp cord with Belden molded-on-all-rubber connector and Belden molded plastic plug. Underwriters' Flag Type Green Cord Set Label. Television Power Supply Connector Cord. Original equipment on most television sets.

NOTE

Request the Belden 1700 series, "Household Electrical Cords" catalog, for complete listing of replacement and extension cord sets.






• New put-up.








# BELDEN ELECTRONIC WIRES & CABLES

## rgu transmission line cables




Belden RGU Cables can be furnished on special order with Type II-A Black Noncontaminating Jacket. Other types will be quoted on request.

					
	RG-5A/U	RG-8/U	RG-9/U	RG-11/U	RG-22A/U
Trade Number	8264	8237	8242	8238	8260
	100' Spool 500' Spool 1000' Spool	100' Spool 500' Spool 1000' Spool	100' Spool 500' Spool 1000' Spool	100' Spool 500' Spool 1000' Spool 1500' Spool	100' Spool 500' Spool 1000' Spool
	16 A.W.G.	13 A.W.G.	13 A.W.G.	18 A.W.G.	18 A.W.G.
	Silver coated copper conductor, solid Polyethylene plastic insulation Silver coated copper, double braid shield Gray noncontaminating plastic jacket .328" Nom. Diam Nom. Attenuation — 2.40 db/100 ft at 100 mc 3.50 db/100 ft at 200 mc 5.25 db/100 ft at 400 mc Nom. Impedance — 50 ohms Nom. Velocity of propagation — 66% Nom. Capacitance — 29 mmf/ft	7x21 stranded bare copper conductor Polyethylene plastic insulation Bare copper braid shield Black vinyl plastic jacket .405" Nom. Diam Nom. Attenuation — 2.10 db/100 ft at 100 mc 3.30 db/100 ft at 200 mc 4.50 db/100 ft at 400 mc Nom. Impedance — 52 ohms Nom. Velocity of propagation — 66% Nom. Capacitance — 29.5 mmf/ft	7x21 stranded silver coated copper conductor Polyethylene plastic insulation Silver coated copper braid shield Bare copper braid shield Gray noncontaminating plastic jacket .420" Nom. Diam Nom. Attenuation — 2.10 db/100 ft at 100 mc 3.30 db/100 ft at 200 mc 4.50 db/100 ft at 400 mc Nom. Impedance — 51 ohms Nom. Velocity of propagation — 66% Nom. Capacitance — 30.0 mmf/ft	7x26 stranded tinned copper conductor Polyethylene plastic insulation Bare copper braid shield Black vinyl plastic jacket .405" Nom. Diam Nom. Attenuation — 1.90 db/100 ft at 100 mc 2.85 db/100 ft at 200 mc 4.35 db/100 ft at 400 mc Nom. Impedance — 75 ohms Nom. Velocity of propagation — 66% Nom. Capacitance — 20.5 mmf/ft	7x.0152" stranded bare copper conductor Polyethylene plastic insulation 2 conductors cabled Core jacket polyethylene plastic Tinned copper, double braid shield Gray noncontaminating plastic jacket .420" Nom. Diam Nom. Attenuation — 4.00 db/100 ft at 100 mc 5.50 db/100 ft at 200 mc 8.50 db/100 ft at 400 mc Nom. Impedance — 95 ohms Nom. Velocity of propagation — 66% Nom. Capacitance — 16 mmf/ft


					
	RG-29/U	RG-54A/U	RG-55/U	RG-58A/U	RG-58/U
Trade Number	8244	8239	8245	8259	8240
	100' Spool 500' Spool 1000' Spool	100' Spool 500' Spool 1000' Spool	100' Spool 500' Spool 1000' Spool	100' Spool 500' Spool 1000' Spool	100' Spool 500' Spool 1000' Spool
	20 A.W.G.	18 A.W.G.	20 A.W.G.	20 A.W.G.	20 A.W.G.
	Bare copper conductor, solid Polyethylene plastic insulation Tinned copper braid shield Clear polyethylene plastic jacket .174" Nom. Diam Nom. Attenuation — 4.10 db/100 ft at 100 mc 6.20 db/100 ft at 200 mc 9.50 db/100 ft at 400 mc Nom. Impedance — 53.5 ohms Nom. Velocity of propagation — 66% Nom. Capacitance — 28.5 mmf/ft	7x.0152" bare copper conductor stranded Polyethylene plastic insulation Tinned copper braid shield Clear polyethylene plastic jacket .250" Max. Diam Nom. Attenuation — 3.10 db/100 ft at 100 mc 4.40 db/100 ft at 200 mc 6.70 db/100 ft at 400 mc Nom. Impedance — 58 ohms Nom. Velocity of propagation — 66% Nom. Capacitance — 26.5 mmf/ft	Bare copper conductor, solid Polyethylene plastic insulation Tinned copper, double braid shield Clear polyethylene plastic jacket .206" Max. Diam Nom. Attenuation — 4.10 db/100 ft at 100 mc 6.20 db/100 ft at 200 mc 9.50 db/100 ft at 400 mc Nom. Impedance — 53.5 ohms Nom. Velocity of propagation — 66% Nom. Capacitance — 28.5 mmf/ft	19x.0071" tinned copper conductor stranded Polyethylene plastic insulation Tinned copper braid shield Black vinyl plastic jacket .195" Nom. Diam Nom. Attenuation — 5.30 db/100 ft at 100 mc 8.20 db/100 ft at 200 mc 12.60 db/100 ft at 400 mc Nom. Impedance — 50 ohms Nom. Velocity of propagation — 66% Nom. Capacitance — 29 mmf/ft	Bare copper conductor, solid Polyethylene plastic insulation Tinned copper braid shield Black vinyl plastic jacket .195" Nom. Diam Nom. Attenuation — 4.10 db/100 ft at 100 mc 6.20 db/100 ft at 200 mc 9.50 db/100 ft at 400 mc Nom. Impedance — 53.5 ohms Nom. Velocity of propagation — 66% Nom. Capacitance — 28.5 mmf/ft

# BELDEN ELECTRONIC WIRES & CABLES

## rgu transmission line cables

Trade Number	8241	8254	8257
	 RG-59/U	 RG-62/U	 RG-71/U
	100' Spool 500' Spool 1000' Spool 22 A.W.G. Bare "Copperweld" conductor, solid Polyethylene plastic insulation Bare copper braid shield Black vinyl plastic jacket .242" Nom. Diam Nom. Attenuation — 3.75 db/100 ft at 100 mc 5.60 db/100 ft at 200 mc 8.30 db/100 ft at 400 mc Nom. Impedance — 73 ohms Nom. Velocity of propagation — 66% Nom. Capacitance — 21.0 mmf/ft	100' Spool 500' Spool 1000' Spool 22 A.W.G. Bare "Copperweld" conductor, solid Semi-solid polyethylene plastic insulation Bare copper braid shield Black vinyl plastic jacket .242" Nom. Diam Nom. Attenuation — 3.10 db/100 ft at 100 mc 4.40 db/100 ft at 200 mc 6.30 db/100 ft at 400 mc Nom. Impedance — 93 ohms Nom. Velocity of propagation — 84% Nom. Capacitance — 13.5 mmf/ft	100' Spool 500' Spool 1000' Spool 22 A.W.G. Bare "Copperweld" conductor, solid Semi-solid polyethylene plastic insulation Tinned copper, double braid shield Clear polyethylene plastic jacket .240" Max. Diam Nom. Attenuation — 3.10 db/100 ft at 100 mc 4.40 db/100 ft at 200 mc 6.30 db/100 ft at 400 mc Nom. Impedance — 93 ohms Nom. Velocity of propagation — 84% Nom. Capacitance — 13.5 mmf/ft

## URANIUM LOGGING CABLE






Trade Number	8721
	 8721
	1200' to 2500' Spool 2501' to 4000' Spool 4001' to 6000' Spool 25 A.W.G. 3x33 copper & 4x33 steel stranded tinned conductor Cellulose yarn braid Polyethylene plastic insulation Tinned copper coated steel braid shield Chrome vinyl plastic jacket .205" Nom. Diam Nom. Capacitance — 25 mmf/ft A high tensile strength, low capacitance, small diameter, waterproof cable for use with the deep well probe used in gamma ray logging of underground formations. Breaking strength 250 lbs.

## MULTIPLE SET ANTENNA CABLE

Trade Number	8231
	 8231
	100% Sweep Tested. A low loss coaxial cable designed for economical installation of multiple TV sets using a master antenna. Fits special tap-off connectors used in these installations. 100' Spool 500' Spool 1000' Spool 21 A.W.G. Tinned copper conductor, solid Polyethylene plastic insulation Bare copper braid shield Black vinyl plastic jacket .280" Nom. Diam Nom. Attenuation — 1.8 db/100 ft at 50 mc 2.2 db/100 ft at 100 mc 3.8 db/100 ft at 200 mc 4.8 db/100 ft at 300 mc 5.9 db/100 ft at 400 mc Nom. Impedance — 75 ohms Nom. Capacitance — 20.5 mmf/ft

## type mw hook-up wire in 30 color combinations

Thermoplastic Insulated Type MW-1000 Volt-80°C-(Formerly Type SRIR-JAN-C-76) Military Specifications MIL-W-76A

Trade Number	8530	8529	8524	8523	8522
	 8530	 8529	 8524	 8523	 8522
	MW-C-22(1)-U-* 25' Spool 100' Spool 1000' Spool 22 A.W.G. Tinned copper conductor, solid .016" vinyl thermoplastic insulation .059" Nom. Diam Stock Colors: Put-up †Colors 25' (1 thru 13) 100' (1 thru 22) 1000' (1 thru 22)	MW-C-20(1)-U-* 25' Spool 100' Spool 1000' Spool 20 A.W.G. Tinned copper conductor, solid .016" vinyl thermoplastic insulation .066" Nom. Diam Stock Colors: Put-up †Colors 25' (1 thru 13) 100' (1 thru 22) 1000' (1 thru 22)	MW-C-22(7)-U-* 25' Spool 100' Spool 1000' Spool 22 A.W.G. 7x30 stranded tinned copper conductor .016" vinyl thermoplastic insulation .064" Nom. Diam Stock Colors: Put-up †Colors 25' (1 thru 13) 100' (1 thru 30) 1000' (1 thru 30)	MW-C-20(7)-U-* 25' Spool 100' Spool 1000' Spool 20 A.W.G. 10x30 stranded tinned copper conductor .016" vinyl thermoplastic insulation .072" Nom. Diam Stock Colors: Put-up †Colors 25' (1 thru 13) 100' (1 thru 30) 1000' (1 thru 30)	MW-C-18(16)-U-* 25' Spool 100' Spool 1000' Spool 18 A.W.G. 16x30 stranded tinned copper conductor .016" vinyl thermoplastic insulation .081" Nom. Diam Stock Colors: Put-up †Colors 25' (1 thru 13) 100' (1 thru 22) 1000' (1 thru 22)

\* Type Designation Government Specification Hook-up Wire will be shown as follows:

- MW
- Type
- C
- Conductor
- Copper
- 22
- Size
- A.W.G.
- (7)
- Minimum
- Strands
- U
- Finish
- Covering Over
- Insulation
- None
- 000
- Color Code
- First Digit Is Body
- Color and Second
- or Succeeding
- Digits Indicate Tracer
- Colors

† SOLID AND STRIPED COLORS. First color in stripe combination is body color and second or third colors are stripes (White/Black/Red)

1 Brown	7 Violet (purple)	13 Dark Blue	19 White/Brown	25 White/Black/Yellow
2 Red	8 Gray (slate)	14 White/Black	20 White/Orange	26 White/Black/Blue
3 Orange	9 White	15 White/Red	21 White/Gray	27 White/Black/Brown
4 Yellow	10 Black	16 White/Green	22 White/Violet	28 White/Black/Orange
5 Green	11 Tan	17 White/Yellow	23 White/Black/Red	29 White/Black/Gray
6 Light Blue	12 Pink	18 White/Blue	24 White/Black/Green	30 White/Black/Violet







Colors:

0 Black	5 Green
1 Brown	6 Blue
2 Red	7 Violet (purple)
3 Orange	8 Gray (slate)
4 Yellow	9 White







# BELDEN ELECTRONIC WIRES & CABLES

high temperature thermoplastic insulated hook-up wires  
 type b specification mil-w-16878-b  
 600 volts - 100c

## thermoplastic insulated — plain

Trade Number	*8500	*8501	*8502	*8503	*8504	*8505
						
	100' Spool 1000' Spool	100' Spool 1000' Spool	100' Spool 1000' Spool	100' Spool 1000' Spool	100' Spool 1000' Spool	100' Spool 1000' Spool
	16 A.W.G.	18 A.W.G.	20 A.W.G.	22 A.W.G.	24 A.W.G.	26 A.W.G.
	19x29 stranded tinned copper conductor .010" vinyl thermoplastic insulation .077" Nom. Diam	7x26 stranded tinned copper conductor .010" vinyl thermoplastic insulation .068" Nom. Diam	7x28 stranded tinned copper conductor .010" vinyl thermoplastic insulation .058" Nom. Diam	7x30 stranded tinned copper conductor .010" vinyl thermoplastic insulation .050" Nom. Diam	7x32 stranded tinned copper conductor .010" vinyl thermoplastic insulation .044" Nom. Diam	7x34 stranded tinned copper conductor .010" vinyl thermoplastic insulation .039" Nom. Diam
† Colors:	9; 14 thru 22	† Colors: 9; 14 thru 22	† Colors: 9; 14 thru 22	† Colors: 9; 14 thru 22	† Colors: 9; 14 thru 22	† Colors: 9; 14 thru 22

## thermoplastic insulated — nylon jacketed

Trade Number	*8510	*8511	*8512	*8513	*8514	*8515
						
	100' Spool 1000' Spool	100' Spool 1000' Spool	100' Spool 1000' Spool	100' Spool 1000' Spool	100' Spool 1000' Spool	100' Spool 1000' Spool
	16 A.W.G.	18 A.W.G.	20 A.W.G.	22 A.W.G.	24 A.W.G.	26 A.W.G.
	19x29 stranded tinned copper conductor .010" vinyl thermoplastic insulation Nylon jacket .082" Nom. Diam	7x26 stranded tinned copper conductor .010" vinyl thermoplastic insulation Nylon jacket .073" Nom. Diam	7x28 stranded tinned copper conductor .010" vinyl thermoplastic insulation Nylon jacket .063" Nom. Diam	7x30 stranded tinned copper conductor .010" vinyl thermoplastic insulation Nylon jacket .055" Nom. Diam	7x32 stranded tinned copper conductor .010" vinyl thermoplastic insulation Nylon jacket .049" Nom. Diam	7x34 stranded tinned copper conductor .010" vinyl thermoplastic insulation Nylon jacket .044" Nom. Diam
† Colors:	9; 14 thru 22	† Colors: 9; 14 thru 22	† Colors: 1 thru 10; 14 thru 22	† Colors: 1 thru 10; 14 thru 22	† Colors: 1 thru 10; 14 thru 22	† Colors: 9; 14 thru 22

† SOLID AND STRIPED COLORS. First color in stripe combination is body color and second or third colors are stripes (White/Black/Red)

1 Brown	6 Light Blue	14 White/Black	19 White/Brown
2 Red	7 Violet (purple)	15 White/Red	20 White/Orange
3 Orange	8 Gray (slate)	16 White/Green	21 White/Gray
4 Yellow	9 White	17 White/Yellow	22 White/Violet
5 Green	10 Black	18 White/Blue	

Other military wires, color combinations or larger put-ups available as specials — write for quotation.

\* New Item.

# BELDEN ELECTRONIC WIRES & CABLES

## hook-up and lead wires

### cellulose braid lacquered (USED ON R-F CIRCUITS WHERE LOW-LOSS PROPERTIES ARE REQUIRED)

There is a Belden hook-up and lead wire construction for every service requirement — for receivers, transmitters, amplifiers, rectifiers, aircraft radio, geophysical instruments, and all other types of electronic equipment.



Trade Number	8941	8945	8943	8947	8942	8938
	25' Spool 100' Spool 1000' Spool	25' Spool 100' Spool 1000' Spool	25' Spool 100' Spool 1000' Spool	25' Spool 100' Spool 1000' Spool	100' Spool 1000' Spool	100' Spool 500' Spool
	20 A.W.G.	18 A.W.G.	20 A.W.G.	18 A.W.G.	16 A.W.G.	14 A.W.G.
	Tinned copper conductor, solid Heavy cellulose acetate yarn wrap Cellulose acetate yarn braid Fungus and flame resistant lacquer coating Colors: Black, Blue, Brown, Green, Orange, Red, White, Yellow .072" Nom. Diam Nom. * d-c Ins. Res. —200 megohms/ft Nom. **breakdown voltage—1000 volts	Tinned copper conductor, solid Heavy cellulose acetate yarn wrap Cellulose acetate yarn braid Fungus and flame resistant lacquer coating Colors: Black, Blue, Green, Red, White, Yellow .080" Nom. Diam Nom. * d-c Ins. Res. —200 megohms/ft Nom. **breakdown voltage—1000 volts	10x30 tinned copper conductor stranded Heavy cellulose acetate yarn wrap Cellulose acetate yarn braid Fungus and flame resistant lacquer coating Colors: Black, Blue, Brown, Green, Orange, Red, White, Yellow .076" Nom. Diam Nom. * d-c Ins. Res. —200 megohms/ft Nom. **breakdown voltage—1000 volts	16x30 tinned copper conductor stranded Heavy cellulose acetate yarn wrap Cellulose acetate yarn braid Fungus and flame resistant lacquer coating Colors: Black, Blue, Green, Red, White, Yellow .087" Nom. Diam Nom. * d-c Ins. Res. —200 megohms/ft Nom. **breakdown voltage—1000 volts	26x30 stranded tinned copper conductor Heavy cellulose acetate yarn wrap Cellulose acetate yarn braid Fungus and flame resistant lacquer coating Colors: Black, Green, Red .099" Nom. Diam Nom. * d-c Ins. Res. —200 megohms/ft Nom. **breakdown voltage—1000 volts	41x30 stranded tinned copper conductor Heavy cellulose acetate yarn wrap Cellulose acetate yarn braid Fungus and flame resistant lacquer coating Colors: Black, Red .115" Nom. Diam Nom. * d-c Ins. Res. —200 megohms/ft Nom. **breakdown voltage—1000 volts

### r-f push-back wire (CELLULOSE ACETATE BRAID WAXED)



Trade Number	8841	8839	8844
	100' Spool 1000' Spool	100' Spool 1000' Spool	100' Spool 1000' Spool
	20 A.W.G.	20 A.W.G.	18 A.W.G.
	Tinned copper conductor, solid Two cellulose acetate yarn braids waxed Colors: Black, Blue, Green, Red, all with White Tracer .067" Nom. Diam Nom. *d-c Ins. Res. —1000 megohms /ft Nom. **breakdown voltage — 1000 volts	10x30 stranded tinned copper conductor Two cellulose acetate yarn braids waxed Colors: Black, Blue, Green, Red, all with White Tracer .072" Nom. Diam Nom. *d-c Ins. Res. —1000 megohms /ft Nom. **breakdown voltage — 1000 volts	16x30 stranded tinned copper conductor Two cellulose acetate yarn braids waxed Colors: Black, Blue, Green, Red, all with White Tracer .092" Nom. Diam Nom. *d-c Ins. Res. —1000 megohms /ft Nom. **breakdown voltage — 1000 volts

Used on r-f circuits where low-loss properties are required.

### rubber insulated push-back



Trade Number	8837	8838	8833
	100' Spool 1000' Spool	100' Spool 1000' Spool	100' Spool 1000' Spool
	20 A.W.G.	20 A.W.G.	18 A.W.G.
	Tinned copper conductor, solid Cotton wrap .010" unvulcanized rubber insulation Cellulose acetate yarn braid Fungus and flame resistant lacquer coating Colors: Black, Blue, Green, Red, Yellow .075" Nom. Diam Nom. *d-c Ins. Res. —2000 megohms /ft Nom. **breakdown voltage — 2000 volts	10x30 stranded tinned copper conductor Cotton wrap .010" unvulcanized rubber insulation Cellulose acetate yarn braid Fungus and flame resistant lacquer coating Colors: Black, Blue, Green, Red, Yellow .081" Nom. Diam Nom. *d-c Ins. Res. —2000 megohms /ft Nom. **breakdown voltage — 2000 volts	16x30 stranded tinned copper conductor .031" rubber insulation Cellulose acetate yarn braid Fungus and flame resistant lacquer coating Colors: Black, Blue, Green, Red, Yellow .125" Nom. Diam Nom. *d-c Ins. Res. —10,000 megohms/ft Nom. **breakdown voltage — 8000 volts

General-use hook-up wire and leads for transformers, speakers, and controls in audio and power circuits.

### thermo-plastic insulated





Trade Number	8918
	250' Spool 1000' Spool
	18 A.W.G.
	16x30 stranded tinned copper conductor .031" vinyl thermo-plastic insulation Colors: Black, Blue, Green, Red, Yellow .112" Nom. Diam Nom. *d-c Ins. Res. —5000 megohms /ft Nom. **breakdown voltage — 12,000 volts

\* Measurements for d-c insulation resistance made with a megohm bridge at 300 volts on specimens in mercury after subjection to 90% relative humidity and 100F for 24 hours.


\*\* Measurements for insulation breakdown were made on specimens in mercury by application of gradually increasing 60-cycle a-c potential.

# BELDEN ELECTRONIC WIRES & CABLES



## test prod wire

Trade Number	8899	8898
		
	10' Spool 14' Spool (7' Black and 7' Red) 25' Spool 100' Spool 500' Spool 1000' Spool 18 A.W.G.	10' Spool 25' Spool 100' Spool 500' Spool 18 A.W.G.
	65x36 stranded tinned copper conductor Cotton wrap .043" rubber insulation Colors: Black, Red .140" Nom. Diam Puncture voltage 20,000 volts Suggested Working Voltage 5,000 volts	65x36 stranded tinned copper conductor Cotton wrap .088" rubber insulation Colors: Black, Red .230" Nom. Diam Puncture voltage 20,000 volts Suggested Working Voltage 10,000 volts
	High-voltage lead wire for use with portable testing equipment, instruments, and other electronic units where excellent dielectric properties of the insulation and extreme flexibility and limpness of the cable are essential considerations.	


## SHIELDED HOOK-UP WIRE

Trade Number	8885
	
	15' Spool 25' Spool 100' Spool 500' Spool 20 A.W.G.
	10x30 stranded tinned copper conductor .015" rubber insulation Cellulose acetate yarn braid Fungus and flame resistant lacquer coating Tinned copper braid shield .117" Nom. Diam Nom. * d-c Ins. Res. — 5000 megohms/ft Nom. **breakdown voltage — 4000 volts
	Used in circuits where shielded grid return is required and to shield a circuit conductor from stray fields.

## HIGH-VOLTAGE AND CATHODE-RAY TUBE LEAD CABLE

Trade Number	8869	8868
		
	25' Spool 100' Spool 20 A.W.G.	25' Spool 100' Spool 20 A.W.G.
	7x28 stranded tinned copper conductor .035" flame retardant Rulon polyethylene plastic insulation Color: White .108" Nom. Diam Puncture voltage 32,000 volts Temperature rating 100C Suggested Working Voltage 10,000 volts	7x28 stranded tinned copper conductor .065" flame retardant Rulon polyethylene plastic insulation Color: White with Red Stripe .168" Nom. Diam Puncture voltage 54,000 volts Temperature rating 100C Suggested Working Voltage 20,000 volts
	High-voltage leads to cathode-ray tubes in television receivers, oscilloscopes and in power supplies and other applications where a high-voltage cable is required. High dielectric strength, corona resistance, and minimum surface leakage are very important features of these cables.	

## LITZ WIRE

Trade Number	8817
	
	100' Spool 5x14 Colenamel conductor Wrap of Nylon .008" Nom. Diam
	For rewinding antenna primaries and for hand-wound r-f coils



## LEAD-IN WIRE

Trade Number	8200
	
	100' Spool 500' Spool 1000' Spool 18 A.W.G.
	7x27 stranded tinned copper conductor .040" Black rubber insulation .126" Nom. Diam

## PHONOGRAPH PICKUP ARM CABLE

Trade Number	*8430
	
	10' Spool 25' Spool 250' Spool 32 A.W.G.
	7x40 stranded bare copper conductor .009" vinyl plastic insulation 2 conductors cabled Black, Red .055" Nom. Diam
	Extremely flexible, light weight, small diameter.

## VOICE COIL LEAD WIRE

Trade Number	8431	8127
		
	10' Spool 15' Spool 25' Spool 100' Spool 500' Spool 24 A.W.G.	10' Spool 25 A.W.G.
	16x36 stranded tinned copper conductor .015" rubber insulation Tinned copper braid shield Brown, fine cotton braid .095" Nom. Diam	32x40 braided bare copper wire .024" Nom. Diam
	Extreme flexibility, limpness, and high dielectric breakdown are the important features of this cable.	

\* Measurements for d-c insulation resistance made with a megohm bridge at 300 volts on specimens in mercury after subjection to 90% relative humidity and 100F for 24 hours.

\*\* Measurements for insulation breakdown were made on specimens in mercury by application of gradually increasing 60-cycle a-c potential.

# BELDEN ELECTRONIC WIRES & CABLES

## aircraft, marine, and auto radio wires

Belden supplies a complete line of aircraft, marine and auto radio and bonding cables. They are designed for outstanding performance and dependability.



**8633**

Trade Number

100' Spool  
1000' Spool  
18 A.W.G.  
16x30 stranded tinned copper conductor  
Rubber insulation  
Cotton braid  
Cellulose acetate yarn braid  
Lacquer coating  
Colors: Black, Blue, Green, Red, Yellow  
.125" Nom. Diam  
Heavy-duty hook-up wire.



**8652**

100' Spool  
16 A.W.G.  
19x29 stranded tinned copper conductor  
Rubber insulation  
Cotton braid  
Lacquer coating  
Color: Black with one White Tracer  
.137" Nom. Diam  
Heavy-duty hook-up wire.



**8651**

100' Spool  
14 A.W.G.  
19x27 stranded tinned copper conductor  
Rubber insulation  
Cotton braid  
Lacquer coating  
Color: Green with two White Tracers  
.159" Nom. Diam  
Heavy-duty hook-up wire.



**8650**

100' Spool  
12 A.W.G.  
19x25 stranded tinned copper conductor  
Rubber insulation  
Cotton braid  
Lacquer coating  
Color: Red with three White Tracers  
.199" Nom. Diam  
Heavy-duty hook-up wire.



**8656**

100' Spool  
16 A.W.G.  
19x29 stranded tinned copper conductor  
Rubber insulation  
Cotton braid  
Blue lacquer coating  
Tinned copper braid shield  
.170" Nom. Diam  
Shielded heavy-duty hook-up wire.

Belden supplies a complete line of auto radio wires and shielding to handle every wire requirement in installation and servicing. In installations of this type, the use of the correct wire is particularly important.



**8667**

Trade Number

100' Spool  
7 MM  
7x28 stranded tinned copper-clad steel conductor  
Rubber insulation  
Cotton braid  
Lacquer coating  
Color: Black  
.280" Nom. Diam (7m/m)  
High-voltage ignition cable.



**8665**

100' Spool  
19 A.W.G.  
7x.013" stranded stainless steel alloy conductor  
Rubber insulation  
Glass yarn web braid  
Neoprene jacket  
Tinned copper braid shield  
Black neoprene jacket  
.365" Nom. Diam  
Nom. Capacitance — 33.0 mmf/ft  
7m/m shielded high-voltage ignition cable.



**8677**

100' Spool  
500' Spool  
16 A.W.G.  
19x29 stranded tinned copper conductor  
Vinyl plastic insulation  
One brown and one red conductor parallel  
Chrome vinyl plastic jacket  
.164"x.276" Nom. Diam  
Duplex weatherproof cable.



**8675**

100' Spool  
500' Spool  
14 A.W.G.  
19x27 stranded tinned copper conductor  
Vinyl plastic insulation  
One brown and one red conductor parallel  
Chrome vinyl plastic jacket  
.189"x.326" Nom. Diam  
Duplex weatherproof cable.



**8673**

100' Spool  
500' Spool  
12 A.W.G.  
19x25 stranded tinned copper conductor  
Vinyl plastic insulation  
One brown and one red conductor parallel  
Chrome vinyl plastic jacket  
.214"x.384" Nom. Diam  
Duplex weatherproof cable.

## braided tinned copper (FOR SHIELDING AND BONDING)



**8660**

Trade Number

10' Spool  
50' Spool  
250' Spool  
96x34 braided tinned copper  
Braided in tubing form  
1/8" ID Nom. Diam



**8668**

10' Spool  
50' Spool  
250' Spool  
120x34 braided tinned copper  
Braided in tubing form  
11/64" ID Nom. Diam



**8661**

10' Spool  
50' Spool  
250' Spool  
192x34 braided tinned copper  
Braided in tubing form  
3/8" ID Nom. Diam



**8669**

10' Spool  
50' Spool  
250' Spool  
336x34 braided tinned copper  
Braided in tubing form  
1/2" ID Nom. Diam



**8662**

10' Spool  
50' Spool  
250' Spool  
576x34 braided tinned copper  
Braided in tubing form  
25/32" ID Nom. Diam

# BELDEN ELECTRONIC WIRES & CABLES

## magnet wire

Nylclad magnet wire combines the most desirable features of Formvar with the well-known toughness and solvent resistance of Nylon enamel.

For difficult and exacting windings, these plus values may represent the difference between low and high rejections.

Nylclad will out-perform all other A.I.E.E. Class A, film-coated wires with respect to: (1) ability to withstand winding abuse and forming operations; (2) resistance to the solvent action of insulating varnishes and all types of thinners; (3) resistance to softening at elevated temperatures; (4) solvent crazing; (5) windability.



### BELDENAMEL (E)

Size	Turns per Linear Inch	Turns per Square Inch	1/4 Pound Spool		1/2 Pound Spool	
			Trade No.	Approx. Length Feet	Trade No.	Approx. Length Feet
14	15.2	231	.....	.....	8047	40
16	19.1	365	.....	.....	8048	63
18	23.9	571	.....	.....	8049	100
20	29.9	894	.....	.....	8050	160
22	37.4	1399	.....	.....	8051	254
24	46.9	2200	.....	.....	8052	404
26	59.0	3481	.....	.....	8053	645
28	73.8	5446	8040	510	8054	1020
30	92.2	8501	8041	807	8055	1615
32	114.0	12996	8042	1257	8056	2515
34	144.0	20736	8043	2030	8057	4060
36	180.0	32400	8044	3200	8058	6400
38	225.0	50625	8045	5070	.....	.....
40	290.0	84100	8046	8050	.....	.....

### NYLCLAD (HNC)

Size	Turns per Linear Inch	Turns per Square Inch	1/2 Pound Spool		1 Pound Spool	
			Trade No.	Approx. Length Feet	Trade No.	Approx. Length Feet
14	14.9	222	8059	40	8073	80
16	18.6	316	8060	63	8074	126
18	23.2	538	8061	100	8075	199
20	28.9	835	8062	157	8076	315
22	36.0	1296	8063	250	8077	501
24	44.7	1998	8064	396	8078	793
26	55.7	3102	8065	630	8079	1260
28	69.4	4816	8066	995	8080	1990
30	86.2	7430	8067	1570	8081	3140
32	106.0	11236	8068	2440	8082	4880
34	133.0	17689	8069	3930	8083	7860
36	167.0	27889	8070	6200	8084	12400
38	206.0	42436	8071	9700	8085	19400
40	264.0	69169	8072	16050	8086	32100

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**Belden Manufacturing Company • Chicago, Illinois**

# BELDEN • Price List

Belden Trade Number	Unit Package and Length	Suggested List Price Each	Belden Trade Number	Unit Package and Length	Suggested List Price Each
1701B†	TOP		8019	1000'¶	.015'
1701K†	TOP		8020	100'	1.00
1702B†	TOP		8020	1000'¶	.015'
1702K†	TOP		8021	100'	.88
1704	9.70		8021	1000'¶	.015'
1705B†	TOP		8127	10'	.50
1705K†	TOP		8200	100'	2.50
1706	2.57		8200	500'	.025'
1707	2.85		8200	1000'	.025'
1708	2.49		8204	25'	2.10
1709	2.31		8204	100'	6.00
1716B	1.04		8204	500'	.085'
1716K	1.15		8204	1000'▲	.085'
1717B	.87		8205	25'	1.35
1717K	1.00		8205	100'	4.05
1725K	.54		8205	500'	.055'
1728B	.63		8205	1000'▲	.055'
1728K	.76		8206	15'	1.20
1735K	.71		8206	50'	3.25
1736B	.91		8206	100'	5.75
1736K	1.01		8206	250'	.08'
1737B	.73		8208	15'	1.95
1737K	.86		8208	50'	5.40
1738B	.77		8208	100'	9.90
1738K	.90		8208	500'	.13'
1739B	.58		8208	1000'▲	.13'
1739K	.68		8209	15'	1.85
1749B	.54		8209	50'	5.15
1749K	.67		8209	100'	9.50
1750B	1.00		8209	500'	.12'
1750K	1.15		8209	1000'▲	.12'
1751K	1.72		8222	100'	2.65
1752K	1.44		8222	500'	.03'
1754B	.71		8224	100'	3.40
1754K	.86		8224	500'	.04'
1756K	1.47		8225	50'	1.80
1765B	.37		8225	75'	2.50
1766B	1.05		8225	100'	3.15
1767K	1.58		8225	500'	.035'
1773	3.21		8225	1000'	.035'
1774	3.66		8227	100'	14.50
1775	3.90		8227	250'	.15'
1776	4.47		8227	500'	.15'
1777K	.81		8230	50'	1.90
1783	2.86		8230	75'	2.65
1784	3.15		8230	100'	3.40
1785	3.31		8230	500'	.04'
1786	3.73		8230	1000'	.04'
1790K	7.72		8231	100'	11.50
1791K	5.36		8231	500'▲	.12'
1792K	9.13		8231	1000'▲	.12'
1793	2.52		8232	100'	16.90
1794	3.09		8232	500'▲	.17'
1795K	5.07		8232	1000'▲	.17'
1796	3.55		8233	500'▲	.30'
8000	50'	1.38	8233	1000'▲	.30'
8000	75'	1.88	8233	1500'▲	.30'
8000	100'	2.38	8235	100'	7.00
8000	1000'	.03'	8235	500'	.07'
8002	50'	1.00	8237	100'	22.75
8002	75'	1.25	8237	500'▲	.23'
8002	100'	1.63	8237	1000'▲	.23'
8002	1000'	.02'	8238	100'	21.25
8008	100'	3.90	8238	500'▲	.21'
8008	200'	7.25	8238	1000'▲	.21'
8008	500'	.04'	8238	1500'▲	.21'
8009	100'	2.70	8239	100'	14.75
8009	500'	.03'	8239	500'▲	.15'
8011	100'	3.50	8239	1000'▲	.15'
8011	1000'¶	.04'	8240	100'	9.65
8012	100'	2.45	8240	500'▲	.10'
8012	1000'¶	.025'	8240	1000'▲	.10'
8013	100'	1.85	8241	100'	10.50
8013	1000'¶	.02'	8241	500'▲	.12'
8014	25'	.50	8241	1000'▲	.12'
8014	500'	.02'	8242	100'	47.00
8018	50'	1.55	8242	500'▲	.47'
8018	500'	.03'	8242	1000'▲	.47'
8018	1000'	.03'	8244	100'	10.00
8019	100'	1.45	8244	500'▲	.10'

Belden Trade Number	Unit Package and Length	Suggested List Price Each	Belden Trade Number	Unit Package and Length	Suggested List Price Each
8244	1000'▲	.10'	8423	100'	15.00
8245	100'	16.75	8423	250'	.18'
8245	500'▲	.17'	8423	500'	.18'
8245	1000'▲	.17'	8423	1000'	.18'
8254	100'	12.25	8424	15'	3.15
8254	500'▲	.13'	8424	50'	9.15
8254	1000'▲	.13'	8424	100'	17.50
8257	100'	19.75	8424	250'	.20'
8257	500'▲	.20'	8424	500'	.20'
8257	1000'▲	.20'	8424	1000'	.20'
8259	100'	9.65	8425	15'	3.50
8259	500'▲	.10'	8425	50'	10.90
8259	1000'▲	.10'	8425	100'	21.50
8260	100'	43.40	8425	250'	.23'
8260	500'▲	.44'	8426	15'	4.50
8260	1000'▲	.44'	8426	50'	13.40
8264	100'	38.75	8426	100'	25.75
8264	500'▲	.39'	8426	250'	.30'
8264	1000'▲	.39'	8427	15'	4.90
8275	50'	3.75	8427	50'	14.50
8275	75'	5.25	8427	100'	28.15
8275	100'	6.90	8427	250'	.32'
8275	500'	.08'	8428	15'	2.90
8275	1000'	.08'	8428	25'	4.75
8280●	1000'	1.00'	8428	50'	9.00
8281*	100'	27.50	8428	100'	17.50
8281*	500'▲	.28'	8428	500'	.19'
8281*	1000'▲	.28'	8430*	10'	.60
8282	50'	21.90	8430*	25'	.85
8282	100'	42.25	8430*	250'	.06'
8282	500'▲	.43'	8431	10'	.85
8401	15'	1.38	8431	15'	1.05
8401	25'	2.00	8431	25'	1.70
8401	50'	3.90	8431	100'	5.25
8401	100'	7.15	8431	500'	.08'
8401	500'	.09'	8432	100'	10.15
8403*	15'	2.50	8432	500'	.11'
8403*	50'	6.25	8432	1000'▲	.11'
8403*	100'	12.50	8433	100'	12.65
8403*	250'	.17'	8433	500'▲	.13'
8403*	500'	.17'	8435	100'	9.40
8403*	1000'	.17'	8435	500'	.10'
8404*	15'	2.90	8435	1000'▲	.10'
8404*	50'	7.50	8436	100'	7.75
8404*	100'	15.00	8436	500'	.08'
8404*	250'	.19'	8436	1000'▲	.08'
8404*	500'	.19'	8437	100'	8.40
8404*	1000'	.19'	8437	500'	.09'
8405*	15'	3.25	8437	1000'▲	.09'
8405*	50'	9.25	8438	100'	6.90
8405*	100'	18.50	8438	500'	.07'
8405*	250'	.22'	8438	1000'▲	.07'
8405*	500'	.22'	8439	100'	8.00
8405*	1000'	.22'	8439	500'	.08'
8410	15'	2.25	8439	1000'▲	.08'
8410	25'	3.50	8440	100'	7.50
8410	50'	6.50	8440	500'	.08'
8410	100'	12.25	8440	1000'▲	.08'
8410	500'	.15'	8443	25'	1.40
8411	15'	1.10	8443	100'	4.15
8411	25'	1.70	8443	500'	.06'
8411	50'	2.90	8443	1000'▲	.06'
8411	100'	5.30	8444	25'	1.65
8411	500'	.08'	8444	100'	5.00
8412	15'	2.40	8444	500'	.07'
8412	25'	3.90	8444	1000'▲	.07'
8412	50'	7.15	8445	25'	1.95
8412	100'	13.75	8445	100'	6.15
8412	500'	.16'	8445	500'	.08'
8414	50'	5.90	8445	1000'▲	.08'
8414	500'	.12'	8446	15'	1.75
8418	15'	4.90	8446	100'	8.90
8418	50'	14.90	8446	500'	.12'
8418	100'	28.65	8446	1000'▲	.12'
8418	250'	.32'	8447	15'	1.90
8422	15'	1.80	8447	100'	9.90
8422	25'	2.80	8447	500'	.12'
8422	50'	5.25	8447	1000'▲	.12'
8422	100'	9.50	8448	15'	2.00
8422	500'	.12'	8448	100'	10.40
8423	15'	2.75	8448	500'	.13'
8423	50'	8.15	8448	1000'▲	.13'

All put-ups are one piece per spool except 8661-250, 8662-250 and 8669-250 which are two pieces per spool. All prices subject to change without notice. † New Put-up. \* New item. § Specify color. ● Solid. ■ Striped. ● To customer's specified length. † Temporarily out of production. ALL PRICES SHOWN ON THIS SHEET ARE LIST PRICE ONLY.



# BELDEN • Price List

Belden Trade Number	Unit Package and Length	Suggested List Price Each
8449	15'	2.15
8449	100'	11.50
8449	500'	.14'
8449	1000'▲	.14'
8452	15'	1.50
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8452	25'	2.40
8452	50'	4.10
8452	100'	7.25
8452	250'	17.50
8452	500'	.10'
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8452	1000'	.10'
8453	15'	2.00
8453	50'	5.00
8453	100'	9.15
8453	500'	.11'
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8454	15'	2.05
8454	50'	6.00
8454	100'	11.15
8454	500'	.135'
8454	1000'▲	.135'
<hr/>		
8455	15'	2.35
8455	50'	6.65
8455	100'	12.40
8455	250'▲	.15'
8460*	100'	4.00
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8460*	500'	.04'
8460*	1000'▲	.04'
8461*	100'	6.75
8461	500'	.07'
8461*	1000'▲	.07'
<hr/>		
8462	100'	5.00
8464	75'	3.90
8464	100'	4.90
8464	500'	.06'
8464	1000'	.06'
<hr/>		
8470*	100'	4.75
8470*	500'	.05'
8470*	1000'▲	.05'
8471*	100'	6.50
8471*	500'	.07'
<hr/>		
8471*	1000'▲	.07'
8472	25'	3.25
8472	50'	5.75
8472	100'	10.75
8472	250'▲	.13'
<hr/>		
8478	25'	2.75
8478	50'	4.75
8478	100'	8.75
8478	250'	.11'
8478	1000'▲	.11'
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8482	1000'▲	.02'
8483	1000'▲	.03'
8484	100'	5.25
8484	500'	.06'
8484	1000'▲	.06'
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8485	100'	6.00
8485	500'	.06'
8485	1000'▲	.06'
8486	1000'▲	.03'
8487	1000'▲	.04'
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8488	100'	7.65
8488	500'	.08'
8488	1000'▲	.08'
8492	1000'▲	.03'
8493	1000'▲	.04'
<hr/>		
8500*	100'§	2.75
8500*	1000'§	.03'
8500*	100'§	2.90
8500*	1000'§	.03'
8501*	100'§	2.20
<hr/>		
8501*	1000'§	.025'
8501*	100'§	2.35
8501*	1000'§	.025'
8502*	100'§	1.88
8502*	1000'§	.02'
<hr/>		
8502*	100'§	2.03
8502*	1000'§	.02'
8503*	100'§	1.75
8503*	1000'§	.02'
8503*	100'§	1.90
<hr/>		
8503*	1000'§	.02'
8504*	100'§	1.70
8504*	100'§	.02'
8504*	100'§	1.85
8504*	1000'§	.02'
8505*	100'§	1.68

Belden Trade Number	Unit Package and Length	Suggested List Price Each
8505*	1000'§	.02'
8505*	100'§	1.83
8505*	1000'§	.02'
8510*	100'§	3.30
8510*	1000'§	.035'
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8510*	100'§	3.45
8510*	1000'§	.035'
8511*	100'§	2.70
8511*	1000'§	.03'
8511*	100'§	2.85
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8511*	1000'§	.03'
8512*	100'§	2.28
8512*	1000'§	.025'
8512*	100'§	2.43
8512*	1000'§	.025'
<hr/>		
8513*	100'§	2.15
8513*	1000'§	.025'
8513*	100'§	2.30
8513*	1000'§	.025'
8514*	100'§	2.03
<hr/>		
8514*	1000'§	.025'
8514*	100'§	2.18
8514*	1000'§	.025'
8515*	100'§	2.00
8515*	1000'§	.025'
<hr/>		
8515*	100'§	2.15
8515*	1000'§	.025'
8522	25'§	.73
8522	100'§	2.00
8522	1000'§	.03'
<hr/>		
8522	100'§	2.15
8522	1000'§	.03'
8523	25'§	.65
8523	100'§	1.75
8523	1000'§	.03'
<hr/>		
8523	100'§	1.90
8523	1000'§	.03'
8524	25'§	.63
8524	100'§	1.50
8524	100'§	1.65
<hr/>		
8524*	1000'§	.025'
8524	1000'§	.025'
8529	25'§	.60
8529	100'§	1.50
8529	1000'§	.025'
<hr/>		
8529	100'§	1.65
8529	1000'§	.025'
8530	25'§	.55
8530	100'§	1.30
8530	1000'§	.02'
<hr/>		
8530	100'§	1.45
8530	1000'§	.02'
8650	100'	.09'
8651	100'	.07'
8652	100'	.06'
<hr/>		
8656	100'	.08'
8660	10'	.70
8660	50'	2.25
8660	250'	.07'
8661	10'	.95
<hr/>		
8661	50'	3.65
8661	250'	.10'
8662	10'	2.40
8662	50'	11.00
8662	250'	.24'
<hr/>		
8665	100'	.26'
8667	100'	.13'
8668	10'	.90
8668	50'	3.00
8668	250'	.09'
<hr/>		
8669	10'	1.90
8669	50'	8.75
8669	250'	.19'
8673	100'	16.90
8673	500'▲	.17'
<hr/>		
8675	100'▲	12.15
8675	500'▲	.12'
8677	100'	9.15
8677	500'▲	.09'
8721	1200-2500'	.12'
<hr/>		
8721	2501-4000'	.12'
8721	4001-6000'	.12'
8732	100'	7.50
8732	500'	.08'
8732	1000'▲	.08'
8734	100'	6.25

Belden Trade Number	Unit Package and Length	Suggested List Price Each
8734	500'	.07'
8734	1000'▲	.07'
8735	15'	1.45
8735	50'	3.80
8735	100'	7.15
<hr/>		
8735	500'	.10'
8735	1000'▲	.10'
8737	100'	6.00
8737	500'	.06'
8737	1000'▲	.06'
<hr/>		
8738	100'	4.25
8738	500'	.05'
8738	1000'▲	.05'
8739	100'	4.90
8739	500'	.05'
<hr/>		
8739	1000'▲	.05'
8740	100'	3.00
8740	500'	.03'
8740	1000'▲	.03'
8741	100'	4.90
<hr/>		
8741	500'	.05'
8741	1000'▲	.05'
8742	100'	6.50
8742	500'	.07'
8742	1000'▲	.07'
<hr/>		
8743	100'	9.25
8743	500'	.10'
8743	1000'▲	.10'
8744	100'	13.25
8744	500'	.13'
<hr/>		
8744	1000'▲	.13'
8745	100'	24.15
8745	500'	.25'
8745	1000'▲	.25'
8746●	1000'▲	.43'
<hr/>		
8747	100'	12.50
8747	500'	.13'
8747	1000'▲	.13'
8748	100'	18.00
8748	500'	.18'
<hr/>		
8748	1000'▲	.18'
8749	100'	32.50
8749	500'	.33'
8749	1000'▲	.33'
8750●	1000'▲	.58'
<hr/>		
8753	100'	18.50
8753	500'	.19'
8753	1000'▲	.19'
8758	100'	5.25
8758	500'	.055'
<hr/>		
8758	1000'▲	.055'
8759	100'	6.50
8759	500'	.07'
8759	1000'▲	.07'
8762	100'	5.50
<hr/>		
8762	500'	.06'
8762	1000'▲	.06'
8779*	100'	10.50
8779*	500'	.11'
8779*	1000'▲	.11'
<hr/>		
8780*	100'	10.50
8780*	500'	.11'
8780*	1000'▲	.11'
8782	500'▲	.02'
8782	1000'▲	.02'
<hr/>		
8783	500'▲	.07'
8785	500'▲	.09'
8786	500'▲	.11'
8789	100'	7.50
8789	500'	.08'
<hr/>		
8789	1000'▲	.08'
8790	100'	7.75
8790	500'	.08'
8790	1000'▲	.08'
8791	100'	9.75
<hr/>		
8791	500'	.10'
8791	1000'▲	.10'
8799	100'	8.25
8799	500'	.09'
8799	1000'▲	.09'
<hr/>		
8817	100'	.40'
8833	100'§	4.00
8833	1000'§	.04'
8837	100'§	3.00

Belden Trade Number	Unit Package and Length	Suggested List Price Each	
8837	1000'§	.03'	
8838	100'§	3.15	
8838	1000'§	.04'	
8839	100'§	3.40	
8839	1000'§	.04'	
<hr/>			
8841	100'§	3.40	
8841	1000'§	.04'	
8844	100'§	3.25	
8844	1000'§	.04'	
8868	25'	1.70	
<hr/>			
8868	100'§	.07'	
8869	25'	1.15	
8869	100'§	.05'	
8874	100'§	1.05	
8885	15'	1.00	
<hr/>			
8885	25'	1.65	
8885	100'§	5.00	
8885	500'▲	.07'	
8898	10'§	.95	
8898	25'§	1.95	
<hr/>			
8898	100'§	5.75	
8898	500'§	.09'	
8899	10'§	.70	
8899	14'§	.93	
8899	25'§	1.25	
<hr/>			
8899	100'§	3.83	
8899	500'§	.07'	
8899	1000'§	.07'	
8918	250'§	.025'	
8919	1000'§	.025'	
<hr/>			
8938	100'§	4.40	
8938	500'§	.05'	
8941	25'§	.80	
8941	100'§	2.50	
8941	1000'§	.03'	
<hr/>			
8942	100'§	3.50	
8942	1000'§	.04'	
8943	25'§	.80	
8943	100'§	2.50	
8943	1000'§	.03'	
<hr/>			
8945	25'§	.85	
8945	100'§	2.75	
8945	1000'§	.03'	
8947	25'§	.95	
8947	100'§	3.00	
8947	1000'§	.04'	
<hr/>			
<b>BELDENMEL MAGNET WIRE</b>			
		1/4-Lb. Spools	1/2-Lb. Spools
Size	List Price	List Price	List Price
14	—	—	\$1.05
16	—	—	1.03
18	—	—	1.03
20	—	—	1.08
22	—	—	1.13
24	—	—	1.18
26	—	—	1.25
28	\$ .78	—	1.30
30	.85	—	1.45
32	.85	—	1.48
34	.93	—	1.60
36	1.08	—	1.88
38	1.35	—	—
40	1.93	—	—
<hr/>			
<b>HNC NYCLAD</b>			
		1/2-Lb. Spools	1-Lb. Spools
Size	List Price	List Price	List Price
14	\$1.03	—	\$1.95
16	1.03	—	1.95
18	1.05	—	2.00
20	1.10	—	2.08
22	1.15	—	2.18
24	1.20	—	2.30
26	1.30	—	2.53
28	1.43	—	2.75
30	1.58	—	3.08
32	1.65	—	3.25
34	1.88	—	3.75
36	2.20	—	4.25
38	2.88	—	5.95
40	4.45	—	9.35

All put-ups are one piece per spool except 8661-250, 8662-250 and 8669-250 which are two pieces per spool. All prices subject to change without notice. § New Put-up. \* New item. † Specify color. ● To customer's specified length. † Temporarily out of production. ALL PRICES SHOWN ON THIS SHEET ARE LIST PRICE ONLY.



## DEPENDABLE WIRE and CABLE

**CAA-Signal & Control Cable**  
(Thermoplastic Insulation & Jacket)

**COAXIAL CABLES** Spec JAN-C-17-A & MIL-C-17-B  
including Low-Temperature,  
Non-Contaminating Jackets

**ELECTRONIC JOBBER WIRE & CABLE**  
300-ohm Television Lead-In  
Rotor Antenna Cable  
Double Shielded & Jacketed Coaxial Cable  
(Radiation & Contamination Proof)

**ELECTRICAL JOBBER WIRE & CABLE**  
"UF" Underground feeder and  
non-metallic sheath  
"TW" Building Wire  
Machine Tool Control & Switchboard  
Fixture Wire—"TF" & "TFE"  
Parallel Cord—"SPT-1" & "SPT-2"  
Bell Wire—single & multi cond  
Thermostat Cable 2-7 conductors  
(Twisted & Thermoplastic Jacketed)  
Flexible Service Cord—"ST" & "SJT"  
Microphone Cables  
Sound & Intercommunication Wire and Cable

### SPECIAL PURPOSE CABLES

Meteorological Survey Cable  
Underwater Sound Equipment Cable  
Geophysical Cable  
Fire Control Wire & Cable  
Electronic Computer Wire & Cable  
Inside Telephone Cable  
Special Design High Frequency Cable

**TEFLON INSULATED WIRE & CABLE**  
MIL-W-16878A TYPES "E" & "EE"  
Multi-conductor Cables  
Teflon Coaxial Cables

TV twin-leads, coaxial cable, hook-up wire,  
rotor antenna cable, custom-engineered  
multi-conductor cable. For prices, samples  
and technical data, contact your nearest  
Plastoid representative (see list in manu-  
facturers' section).

### RADIO AND ELECTRONIC HOOK-UP WIRE

**MIL-W-76-A** (superseding JAN-C-76)  
**MIL-W-16878-A** (types B, C, & D, with  
and without nylon jackets)  
Underwriters Laboratory -80°; 90°; 105°  
(PVC insulation, nominal walls of  
.008; .015; .031; .047 & with braided  
outercovering or extruded nylon jacket)

### AIRCRAFT WIRE & CABLE

**MIL-W-5086**  
**MIL-C-7078**  
**MIL-W-5274-A**

### NAVY SHIPBOARD CABLE — MIL-C-915-A

DHFA	TTHFWA	TTRSA	DSGA
THFA	PBJX	DBSP	TSGA
FHFA	PBTX	TBSP	FSGA
SHFR	PBTM	FBSP	MSCA
THFR	TSP	ITRS	SSGA
MHFA	MDGB	SRI	
SRIB	SHFS	MRI-D	

**REA Telephone Cable (Spec PE-14)**

**MULTI PAIR RURAL DISTRIBUTION WIRE**

**TRAFFIC CONTROL CABLE (Specs IMSA 19 & 20)**

**POWER CONTROL CABLES (Specs IPCEA & IMSA)**  
(Thermoplastic Insulation & Jacket)

**AIRPORT LIGHTING CABLE**

**PLASTOID**  
Corporation

Synkote Insulated Wire and Cable is  
"Manufactured by the mile - tested by the inch"  
plant: HAMBURG, N. J. • offices: Long Island City, N.Y.



# NATIONAL LOS ANGELES, CALIF.

## WIRE & CABLE CORPORATION

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our complete line

### "MIL and JAN-spec" WIRES

#### WIRES TO GOVERNMENT SPECIFICATION

#### ARMY • NAVY • AIR FORCE

JAN-C-75 — MIL — ANJ-C-48A

Largest Electronics  
and Aircraft Wire  
and  
Cable Inventory  
West of Chicago!

### MIL-W-16878-A HOOK-UP WIRE

#### TYPE B

Construction: Tinned copper stranded. Thermoplastic insulation. Temperature -54C to +105C. Rating 600 volts (working). Colors: All NEMA standard color coding. Tracers available on solid colors.

Gauge	Catalogue No.	Gauge	Catalogue No.
30	NB738U	22	NB1934U
28	NB736U	20	NB1932U
27	NB735U	18	NB1930U
26	NB734U	16	NB2630U
24	NB1936U		



#### TYPE B NYLON JACKETED

Construction: Tinned copper stranded. Thermoplastic insulation with an extruded nylon jacket overall. Temperature -40C to +80C. Rating 1000 volts (working) Colors: All standard NEMA color coding. Tracers also available on solid colors.

Gauge	Catalogue No.	Gauge	Catalogue No.
30	NB738N	22	NB1934N
28	NB736N	20	NB1932N
27	NB735N	18	NB1930N
26	NB734N	16	NB2630N
24	NB1936N		



#### TYPE C

Construction: Tinned copper stranded. Thermoplastic insulation. Temperature -54C to +105C. Rating 1000 volts (working). Colors: All standard NEMA color coding. Tracers available on solid colors.

Gauge	Catalogue No.	Gauge	Catalogue No.
24	NC1936U	14	NC1927U
22	NC1934U	12	NC1925U
20	NC1932U	10	NC4927U
18	NC1930U	8	NC13329U
16	NC2630U	6	NC13327U



### MIL-W-16878-A HOOK-UP WIRE

#### TYPE C NYLON JACKETED

Construction: Tinned copper stranded. Thermoplastic insulation with an extruded nylon jacket overall. Temperature -54C to +105C. Rating 1000 volts (working). Colors: All NEMA standard colors. Tracers available on solid colors.

Gauge	Catalogue No.	Gauge	Catalogue No.
24	NC1936N	18	NC1930N
22	NC1934N	16	NC2630N
20	NC1932N	14	NC1927N



#### TYPE D

Construction: Tinned copper stranded. Thermoplastic insulation. Temperature -54C to +105C. Rating 3000 volts (working). Colors: All standard NEMA color coding. Tracers on solid colors available.

Gauge	Catalogue No.	Gauge	Catalogue No.
24	ND1936U	14	ND1927U
22	ND1934U	12	ND1925U
20	ND1932U	10	ND4927U
18	ND1930U	8	ND13329U
16	ND2630U	6	ND13327U



#### TYPE D NYLON

Construction: Tinned copper stranded. Thermoplastic insulation with an extruded nylon jacket overall. Temperature -54C to +105C. Rating 3000 volts (working). Colors: All standard NEMA color coding. Tracers available on solid colors.

Gauge	Catalogue No.	Gauge	Catalogue No.
24	ND1936N	14	ND1927N
22	ND1934N	12	ND1925N
20	ND1932N	10	ND4927N
18	ND1930N	8	ND13329N
16	ND2630N	6	ND13327N





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## TYPE E TEFLON INSULATED

Construction: Silver-coated stranded copper conductor. Extruded teflon insulation. Temperature -65C to +200C. Rating 600 volts (working). Colors: All standard NEMA color coding.

Gauge	Catalogue No.	Gauge	Catalogue No.
24	NE1936U	18	NE1930U
22	NE1934U	16	NE2630U
20	NE1932U		



## MIL-W-76A

### TYPE MW

Construction: Tinned copper, stranded or solid. Thermoplastic insulation. Temperature -40C to +80C. Rating 1000 volts (working). Colors: All standard NEMA color coding. Tracers also available on solid colors.

Stranded		Solid	
Gauge	Catalogue No.	Gauge	Catalogue No.
24	NMW732U	22	NMW221U
22	NMW730U	20	NMW201U
20	NMW1030U	18	NMW181U
18	NMW1630U		
16	NMW2630U		
14	NMW1927U		
12	NMW1925U		



## JAN-C-76

### TYPE SRIR Hook-up Wire

Construction: Tinned copper stranded or solid. Nominal insulation thickness .015" thermoplastic. Rating 1000 volts (working). Temperature -40C to +60C. Colors: All standard NEMA color coding. Tracers available on solid colors.

Stranded		Solid	
Gauge	Catalogue No.	Gauge	Catalogue No.
24	NIR732U	24	NIR241U
22	NIR730U	22	NIR221U
20	NIR1030U	20	NIR201U
18	NIR1630U	18	NIR181U
16	NIR2630U	16	NIR161U
14	NIR1927U		
12	NIR1925U		
10	NIR4927U		
8	NIR13329U		
6	NIR13327U		



### MIL-W-5086 TYPE I AIRCRAFT WIRE

Construction: Tinned copper stranded. Synthetic resin insulation with a nylon jacket overall. Rating 600 volts (working). Temperature -54C to +105C. Color: white. Tracers available on white background.

Gauge	Catalogue No.	Gauge	Catalogue No.
22	NAN1934N	14	NAN1927N
20	NAN1932N	12	NAN1925N
18	NAN1930N	10	NAN4126N
16	NAN1929N		



### MIL-W-5086 TYPE II AIRCRAFT WIRE

Construction: Tinned copper stranded. Synthetic resin insulation with a 100% glass braid and nylon jacket overall. Rating 600 volts (working). Temperature -54C to +105C. Color: white. Tracers available on white background.

Gauge	Catalogue No.	Gauge	Catalogue No.
22	NAN1934GN	8	NAN13329GN
20	NAN1932GN	6	NAN13327GN
18	NAN1930GN	4	NAN13325GN
16	NAN1929GN	2	NAN66530GN
14	NAN1927GN	1/0	NAN104530GN
12	NAN1925GN	2/0	NAN133030GN
10	NAN4126GN		



### MIL-C-7078 TYPE I AIRCRAFT WIRE

Construction: Tinned copper stranded. Synthetic resin insulation with a nylon jacket and tinned copper shield overall. Rating 600 volts (working). Temperature -54C to +105C. Color: white. Tracers available on white background.

Gauge	Catalogue No.	Gauge	Catalogue No.
22	NAN1934NS	14	NAN1927NS
20	NAN1932NS	12	NAN1925NS
18	NAN1930NS	10	NAN4126NS
16	NAN1929NS		





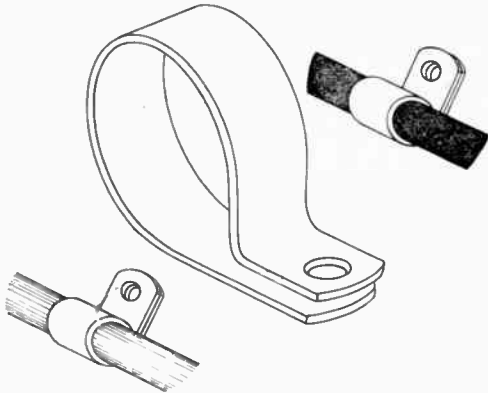
**NATIONAL** LOS ANGELES, CALIF.

WIRE & CABLE CORPORATION

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## ETHYL CELLULOSE PLASTIC CLAMP

Light weight, shock resistant. Temp. range 185 F. to minus 40 F. Easy to open, fast assembly. Resists corrosion, moisture, abrasion. Resilient, light weight for single or group wires. Use with pipe or tubing.

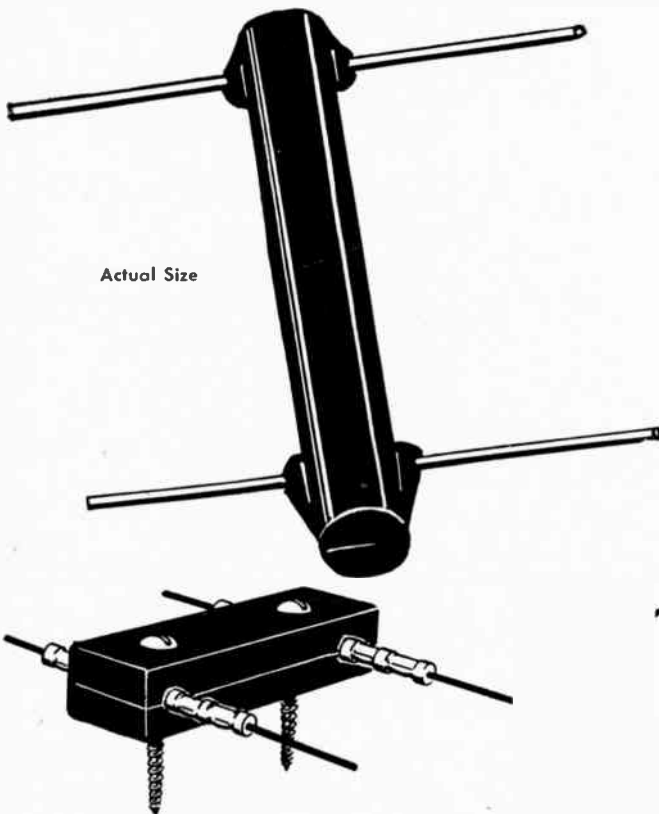


SIZE & NUMBER	FOR USE WITH ROD O.D.	DIAMETER	L.	MATERIAL THICKNESS
E- 2	1/8"	.125"	0.328	.063
E- 3	3/16"	.188	0.390	.063
E- 4	1/4"	.250	0.421	.063
E- 5	5/16"	.313	0.453	.063
E- 6	3/8"	.375	0.483	.063
E- 7	7/16"	.438	0.531	.063
E- 8	1/2"	.500	0.562	.063
E- 9	9/16"	.563	0.625	.063
E- 9½	19/32"	.593	0.618	.063
E-10	5/8"	.625	0.610	.063
E-11	11/16"	.688	0.666	.063
E-12	3/4"	.750	0.765	.063
E-14	7/8"	.875	0.812	.063
E-16	1"	1.000	0.906	.063
E-18	1-1/8"	1.125	0.968	.063
E-19	1-3/16"	1.188	1.025	.063
E-20	1-1/4"	1.250	1.156	.063

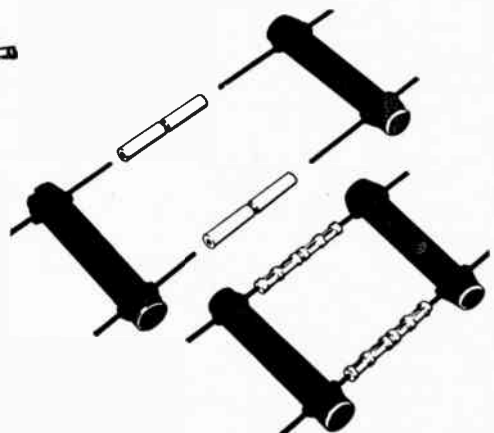
## NATIONAL OPENLINE

DESIGNED FOR COMMERCIAL TV  
DISTRIBUTION SYSTEMS  
AND RF POWER TRANSMISSION

Specifications two inch spacing between conductors . . . 12 and 14 copperweld . . . 470 and 500 ohm impedance . . . attenuation: 150 mc 0.25 DB PER 100 FEET AT 30 mc 0.1 DB per 100 FEET. Velocity factor 0.975 . . . copperweld steel for maximum strength and electrical stability, and to insure permanent uniform performance . . . Spreaders are brown polystyrene, spaced at average five foot intervals staggered slightly to avoid spurious resonances.



NATIONAL STAND OFF CLAMP BLOCKS



NATIONAL CONNECTOR SLEEVES



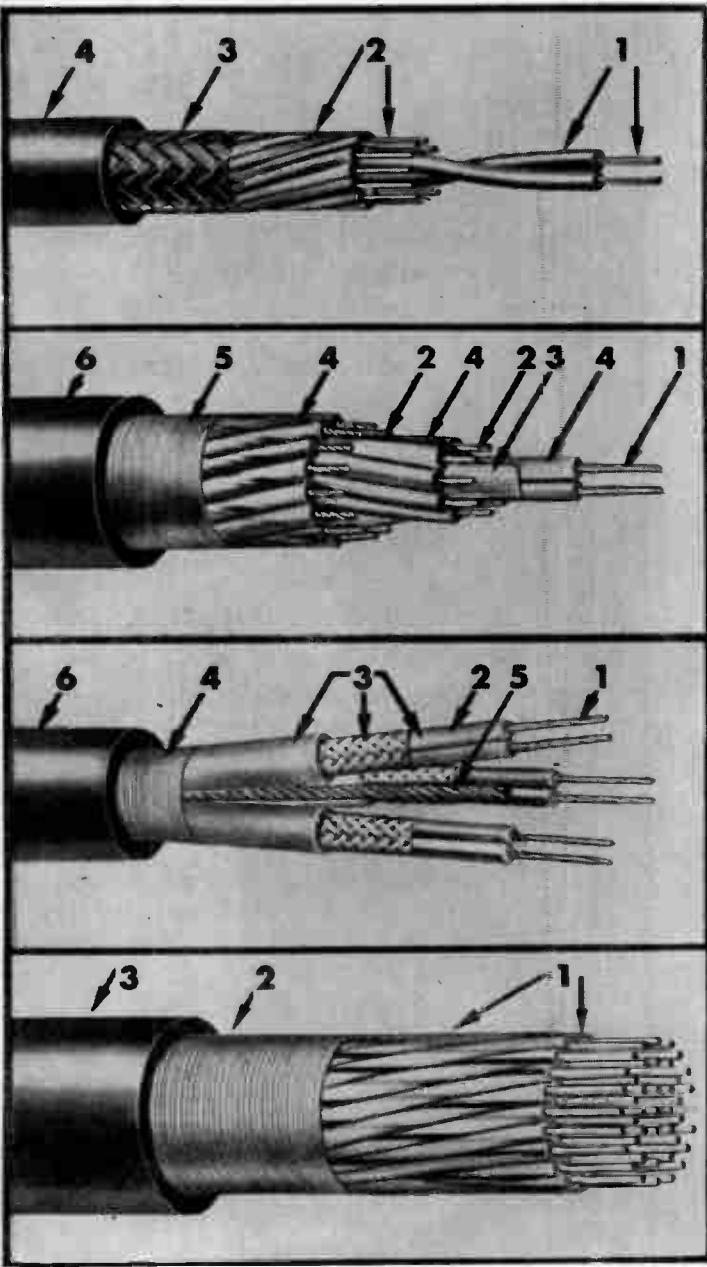
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our complete line

These are a few of the special purpose control cables we stock and make in any combination you need. We supply stranded or solid conductors, insulated to Military or commercial specifications with any combination of fillers, shields and jackets. If desired, we will apply a polyvinyl or neoprene cover-all jacket.



1. HEAVY DUTY AC POWER SUPPLY WIRES.
2. CONTROL WIRES.
3. COPPER SHIELD.
4. VINYL OR NEOPRENE.

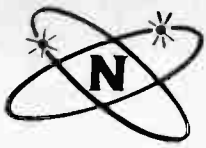
1. HEAVY DUTY POWER SUPPLY.
2. CONTROL WIRES.
3. VINYL OR COTTON.
4. VINYL INSULATION.
5. VINYL TAPE WRAP.
6. VINYL OR NEOPRENE JACKET.

1. STRANDED OR SOLID CONDUCTOR.
2. VINYL INSULATION.
3. TWO CONDUCTOR CABLE SHIELDED.
4. VINYL TAPE WRAP.
5. STEEL CORE.
6. VINYL OR NEOPRENE.

1. STRANDED OR SOLID INSULATED CONTROL WIRES.
2. VINYL TAPE WRAP.
3. VINYL OR NEOPRENE JACKET.

National's fabricating service. . . Custom cutting, stripping, and harness fabrication. Send us your specifications for quotation.

**NATIONAL — LARGEST ELECTRONICS AND AIRCRAFT WIRE AND CABLE INVENTORY WEST OF CHICAGO!**



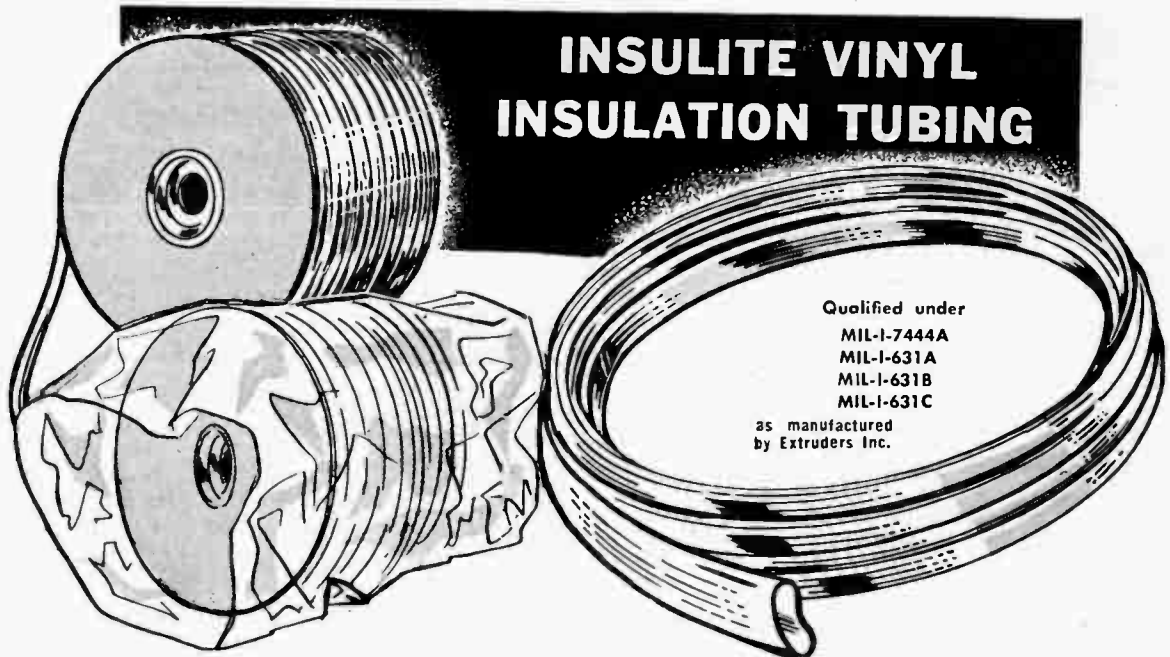
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IMMEDIATE DELIVERY FROM WAREHOUSE STOCKS



Sizes 24 thru 3/8 on spools completely enclosed in plastic wrapping. Sizes 7/16" thru 2 1/2" in coils. GP—general purpose Insulite qualified under spec. MIL-I-631B, Type F, Form U, Grade A, Classes I and II, Categories 1 and 2.

### ABOUT INSULITE

Insulite, commercial and specification grade Vinyl tubing is manufactured from only the highest quality materials. Extreme care in preparing the compound formulations assures product uniformity. The most modern of plants, complete with compounding facilities and controlled extrusion techniques, together with modern inspection equipment, provides rigid physical and visual inspection on each length of tubing, assuring a finished product fully guaranteed against defective workmanship and materials. A product development laboratory is engaged in constant research to provide you with the finest in tubing.

### PHYSICAL PROPERTIES

Property	MIL-I-7444	MIL-I-631A
Specific Gravity	1.21	1.23
Tensile Strength	2800 PSI	2700 PSI
Ultimate Elongation	350 %	340 %
Water Absorption*	0.2 %	—
Cold Bend	—55°C	—30°C
Dielectric Strength (.025 wall)	875 V.P.M.	1032 V.P.M.
Flame Resistance	**	**
Approx. Durometer Hardness (Shore "A")	66	86

\*Weight increase after 24 hours at 77° F.  
\*\*Self-Extinguishing

**IMMEDIATE  
DELIVERY**

**AT STANDARD MILL PRICES**

LARGEST ELECTRONICS AND AIRCRAFT WIRE AND CABLE INVENTORY WEST OF CHICAGO!

**Federal Cable**

# "ALL-STAR" Quality-Controlled Television Lead-ins

Wires and Cables for Every AV Application —  
Home, Motel, Hotel and Community TV Systems

These types are outstanding examples of the quality, ruggedness, efficiency and long life built into every foot of Federal Cable. What-

ever the run requirements or local weather conditions the Federal "All Stars" will score high in satisfaction.

**TV 1182** **HEAVY DUTY LEAD-IN**

Conductors (2): 7 strands #28 AWG soft copper	Nom. Ohms:.....300 Nom. OD: .405x .098
Jacket: Silver or Brown Polyethylene	Std. Spools (ft.) 100, 500, 1000
90 Mil-Web	Net Wgt. (lbs.): 2, 10, 20

**TV 9320** **STANDARD LEAD-IN**

#20 Gauge 2-conductor 7 strands #28 AWG copper	Nom. Ohms:.....300 Nom. OD: .072 x .390
Jacket: Brown or Clear Poly- ethylene 72 Mil-Web	500 ft. — 1000 ft. spools Shipping Ctn. 2M' either put- up 19 lbs. M ft.

**TV 9120** **STANDARD LEAD-IN**

#20 Gauge 2-conductor 7 strands #28 AWG copper	Nom. Ohms:.....300 Nom. OD: .055 x .350
Jacket: Brown or Clear Poly- ethylene 55 Mil-Web	500 ft. — 1000 ft. spools Shipping Ctn. 2M' either put- up 15 lbs. M ft.

**TV 9322** **STANDARD LIGHT DUTY LEAD-IN**

#22 Gauge 2-conductor 7 strands #30 AWG copper	Nom. Ohms:.....300 Nom. OD: .040 x .350
Jacket: Brown or Clear Poly- ethylene 40 Mil-Web	1000 ft. spools Shipping Ctn. 2000 ft. 13 lbs. M. ft.

**TV 1188** **ROTOR ANTENNA LEAD-IN**

Conductors (4): 3—7 strands .0211 AWG soft copper	Nom. Ohms:.....300 Nom. OD: .390x .065
1—7 strands .0121 AWG tinned copper	Std. Spools (ft.) 100, 500, 1000
Jacket: Silver Vinyl	Net Wgt. (lbs.): 2, 1, 22
65 Mil-Web	

**K 111** **SINGLE SHIELD LEAD-IN FOR VHF**

Conductors (2): #26 AWG hard drawn silver plated 'Hitenso'	Nom. Cap. (mmf/ft): 42 Nom. Ohms:.....300 Nom. OD: .480x .290
Dielectric: Polyethylene	Std. Spools (ft.): 500, 1000
Shield: #34 AWG soft copper	Net Wgt. (lbs.): 34, 68
Jacket: Black Vinyl	

**K 14** **COMMUNITY TV PRIMARY LEAD-IN**

Conductor: #9 AWG soft copper	Nom. Cap. (mmf/ft):.....21 Nom. Ohms:.....71
Dielectric: Polyethylene	Nom. OD: .870
Braid: #30 AWG soft copper	Std. Spools (ft.): 1000
Jacket: Grey Vinyl	Net Wgt. (lbs.): 487

**K 125** **NON-RADIATING, DOUBLE SHIELDED RG 11/U**

Conductor: 7 strands .0159 tinned copper	Nom. Cap. (mmf/ft):.....20 Nom. Ohms:.....75
Dielectric: Polyethylene	Nom. OD: .460
Braid: #33 AWG soft copper	Std. Spools (ft.): 1000
Separator: Polyethylene	Net Wgt. (lbs.): 157
Braid: #33 AWG soft copper	
Jacket: Black Vinyl	

**K 126** **NON-RADIATING DOUBLE SHIELDED RG 59/U**

Conductor: #22 AWG H.S. copperweld, 30% conduc- tivity	Nom. Cap. (mmf/ft):.....21 Nom. Ohms:.....73 Nom. OD: .315
Dielectric: Polyethylene	Std. Spools (ft.): 1000
Braid: #34 AWG soft copper	Net Wgt. (lbs.): 62
Separator: Polyethylene	
Braid: #34 AWG soft copper	
Jacket: Black Vinyl	

**K 133** **SIVER JACKET LONG LIFE RG 59/U**

Conductor: #22 AWG H.S. copperweld, 30% conduc- tivity	Nom. Cap. (mmf/ft):.....21 Nom. Ohms:.....73 Nom. OD: .242
Dielectric: Polyethylene	Std. Spools (ft.): 1000
Braid: #34 AWG soft copper	Net Wgt. (lbs.): 40
Jacket: Silver Polyethylene	



**"ALL-STAR" Quality-Controlled**

**Federal Cable**

# Television Lead-ins

Wherever There Are TV Customers . . . Federal Lead-in Wires and Cables Can Be Depended Upon to Deliver TOP Performance

Only the finest materials — quality-controlled throughout the entire manufacturing process — are used in Federal cables. You can reply

completely on "America's leading producer of solid dielectric cables" to provide a superior cable for every communication need.

## K 134



### SILVER JACKET LONG LIFE RG 11/U

Conductor: 7 strands .0159 tinned copper	Nom. Cap. (mmf/ft.): 20
Dielectric: Polyethylene	Nom. Ohms: 75
Braid: #33 AWG soft copper	Nom. OD: .405
Jacket: Silver Polyethylene	Std. Spools (ft.): 1000
	Net Wgt. (lbs.): 103

## K 135



### SILVER JACKET LONG LIFE NON-RADIATING RG 11/U

Conductor: 7 strands .0159 tinned copper	Nom. Cap. (mmf/ft.): 20
Dielectric: Polyethylene	Nom. Ohms: 75
Braid: #33 AWG soft copper	Nom. OD: .460
Separator: Polyethylene	Std. Spools (ft.): 1000
Braid: #33 AWG soft copper	Net Wgt. (lbs.): 148
Jacket: Silver Polyethylene	

## K 136



### SILVER JACKET LONG LIFE NON-RADIATING RG 59/U

Conductor: #22 AWG H.S. copperweld 30% conduc- tivity	Nom. Cap. (mmf/ft.): 21
Dielectric: Polyethylene	Nom. Ohms: 73
Braid: #34 AWG soft copper	Nom. OD: .315
Separator: Polyethylene	Std. Spools (ft.): 1000
Braid: #34 AWG soft copper	Net Wgt. (lbs.): 80
Jacket: Silver Polyethylene	

## K 137



### SILVER JACKET LONG LIFE SOLID CONDUCTOR RG 11/U

Conductor: #17 AWG cop- perweld 30% conductivity	Nom. Cap. (mmf/ft.): 20
Dielectric: Polyethylene	Nom. Ohms: 75
Braid: #33 AWG soft copper	Nom. OD: .405
Jacket: Silver Polyethylene	Std. Spools (ft.): 1000
	Net Wgt. (lbs.): 109

## K 139



### SILVER JACKET LONG LIFE NON-RADIATING SOLID CONDUCTOR RG 11/U

Conductor: #17 AWG cop- perweld 30% conductivity	Nom. Cap. (mmf/ft.): 20
Dielectric: Polyethylene	Nom. Ohms: 75
Braid: #33 AWG soft copper	Nom. OD: .460
Separator: Polyethylene	Std. Spools (ft.): 1000
Braid: #33 AWG soft copper	Net Wgt. (lbs.): 148
Jacket: Silver Polyethylene	

## K 200



### HEAVY DUTY LEAD-IN

Conductors (2): 7 strands #21 AWG soft copper	Nom. Ohms: 200
7 strands #21 AWG soft copper (one strand tinned for identification)	Nom. OD: .650x, .285
Jacket: Polyethylene	Std. Spools (ft.): 100, 500, 1000
	Net Wgt. (lbs.): 12, 61, 122

## K 276



Conductor: #22 AWG H.S. copperweld 30% conduc- tivity	Nom. Cap. (mmf/ft.): 21
Dielectric: Polyethylene	Nom. Ohms: 73
Braid: #34 AWG soft copper	Nom. OD: .242
Jacket: Black Vinyl	Std. Spools (ft.): 1000
	Net Wgt. (lbs.): 37

## RG 11/U



### COMMUNITY TV PRIMARY OR SECONDARY LEAD-IN

Conductor: 7 strands .0159 tinned copper	Nom. Cap. (mmf/ft.): 20
Dielectric: Polyethylene	Nom. Ohms: 75
Braid: #33 AWG soft copper	Nom. OD: .405
Jacket: Black Vinyl	Std. Spools (ft.): 1000
	Net Wgt. (lbs.): 108

## RG 59/U



### COMMUNITY TV SECONDARY OR TAP-OFF LEAD-IN

Conductor: #22 AWG H.S. copperweld 30% conduc- tivity	Nom. Cap. (mmf/ft.): 21
Dielectric: Polyethylene	Nom. Ohms: 73
Braid: #34 AWG soft copper	Nom. OD: .242
Jacket: Black Vinyl	Std. Spools (ft.): 1000
	Net Wgt. (lbs.): 42

**Federal Cable**

a division of ROYAL ELECTRIC CORPORATION  
PAWTUCKET, RHODE ISLAND

an associate of INTERNATIONAL TELEPHONE AND TELEGRAPH CORP.

# Military Types . . . A ROME CABLE PRODUCT



## THERMOPLASTIC INSULATED HOOK-UP WIRE SPECIFICATION MIL-W-76A (SUPERSEDES JAN. C-76)

This specification has been approved by the Departments of the Army, Navy, and Air Force. Insulation possesses high dielectric strength. Impervious to oils, acids, alkalis, moisture and flame. The following types and colors are available for shipment from stock—  
\*See other sizes, types and covering over insulated wire.

### TYPE HW TYPE MW

#### SPECIFICATION MIL-W-76A

Single Conductor, Solid or Stranded Conductor as Indicated. Tinned Copper. Thermoplastic Insulation. No further covering. (SUPERSEDED SIRI—SPECIFICATION JAN-C-76). Ins. Nom., .016"; Max. R.M.S. Voltage, 1000; Stand. Spool, 1000 ft.  
Single Conductor, Solid or Stranded Conductor as Indicated. Tinned Copper. Thermoplastic Insulation. No further covering. (SUPERSEDED SRHV—SPECIFICATION JAN-C-76). Ins. Nom., .031"; Max. R.M.S. Voltage, 2500 Stand. Spool, 1000 ft.

#### AVAILABLE COLORS—(COLOR CODE)

#### \*COVERING OVER INSULATED WIRE

CAT. NO.	MIL-W-76A TYPE DESIGNATION	SIZE	STRAND-ING	O.D.	MAX. COLORS
707	MW-C 22 (1) U	.22	Solid	.062"	1 thru 13
717	MW-C 20 (1) U	.20	Solid	.089"	1 thru 13
727	MW-C 18 (1) U	.18	Solid	.077"	1 thru 13
737	MW-C 22 (7) U	.22	7/.010	.070"	1 thru 22
747	MW-C 20 (7) U	.20	7/.0216	.078"	1 thru 22
757	MW-C 18 (16) U	.18	19/.0092	.089"	1 thru 22
637	HW-C 22 (1) U	.22	Solid	.098"	1 thru 13
642	HW-C 20 (1) U	.20	Solid	.105"	1 thru 13
647	HW-C 18 (1) U	.18	Solid	.113"	1 thru 13
657	HW-C 22 (7) U	.22	7/.010	.108"	1 thru 22
672	HW-C 20 (7) U	.20	7/.0126	.114"	1 thru 22
677	HW-C 18 (16) U	.18	19/.0092	.125"	1 thru 22

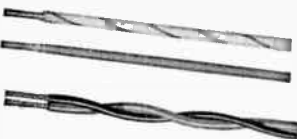
Symbol	Type
U	None
J	Jacket (Nylon)
B	*Braid
S	*Shield
JS	Jacket and Shield (Nylon)
BS	**Braid and Shield
SJ	Shield and Outer Jacket (Nylon)
JSJ	Jacket, Shield, Outer Jacket
BSJ	**Braid, Shield, Outer Jacket

11—Tan      \*\*Specify, Synthetic, or Glass Yarn

\*Other color combinations and sizes on special production order. \*Available on factory order: Spec. MIL-W-76A, Types LAV & HF with above coverings. We are also prepared to furnish wires to Military Specifications MIL-W-1687 A—Types B, C, D, E, EE, FF, N. Quoted on request. Write for the Rome Cable Corporation TI-5 catalogue, complete with Military Specifications for Electronic Instrumentation and Sub-Miniature Wires, Multi-Conductor and Co-Axial Cables. Underwriter's Laboratory Approved—Rome High Temp®—Rome Synthitol®—Registered®.

# Rome Synthitol . . . A ROME CABLE PRODUCT

## THERMOPLASTIC INSULATED HOOK-UP WIRE



U/L Voltage Rating—300 Volts Max. Single and Two-Conductor Twisted Cable; Color Coded

Rome Synthitol is a polyvinyl chloride type of thermoplastic insulation impervious to oils, acids, alkalis, moisture and flame, and possessing unusually high dielectric strength. Colors are of gem-like permanency. Approved by Underwriters' Laboratories where exposed to temperatures not exceeding 80° Centigrade or where exposed to oil at temperatures not exceeding 60° Centigrade with ratings at 300 and 600 volts as indicated below. The Underwriters' approval seal appears on every factory length reel of Rome Synthitol.

Rome Synthitol is specially designed for the chassis and sub-chassis wiring of radio and television receivers and transmitters as well as all other types of electronic equipment. It has physical and electrical characteristics of unusual permanency.

**SPECIFICATIONS**  
Conductors: Annealed tinned solid or stranded copper conforming to A.S.T.M. Specification B 33 and/or Underwriters' Standards.  
In order to provide maximum flexibility and prevent unraveling of the strands, a short lay stranding is used as follows:  
No. 22 Awg. .33" max. No. 30 Awg. .50" max.  
Insulation: Rome Synthitol—Approved by and conforming to Underwriters' requirements and the performance specifications of A.S.T.M. D 734. Available in solid colors or with a surface applied contrasting colored spiral stripe.

**Typical Test Results**  
Breakdown Voltage:  
1/64" Synthitol . . . . .over 10000 volts  
1/32" Synthitol . . . . .over 18000 volts  
Insulation Resistance:  
1/32" Synthitol . . . . .over 5000 megohms feet

Cat. No.	Size Awg.	Stranding	Nom. Ins. Thickness	Volts	Max. Dia. Inches	Length	List Price
801	22	Solid	1/64	300	.065	25' Carton	\$ 0.39
803	22	Solid	1/64	300	.065	100' Carton	1.39
805	22	Solid	1/64	300	.065	500' Spool	5.95
807	22	Solid	1/64	300	.065	1000' Spool	10.15
811	20	Solid	1/64	300	.071	25' Carton	.45
813	20	Solid	1/64	300	.071	100' Carton	2.00
815	20	Solid	1/64	300	.071	500' Spool	6.65
817	20	Solid	1/64	300	.071	1000' Spool	13.18
841	18	Solid	1/64	300	.080	25' Carton	.57
842	18	Solid	1/64	300	.080	100' Carton	2.04
843	18	Solid	1/64	300	.080	500' Spool	9.22
844	18	Solid	1/64	300	.080	1000' Spool	17.37
821	22	7 x No. 30	1/64	300	.069	25' Carton	.45
823	22	7 x No. 30	1/64	300	.069	100' Carton	2.00
825	22	7 x No. 30	1/64	300	.069	500' Spool	6.65
827	22	7 x No. 30	1/64	300	.069	1000' Spool	13.18
831	20	10 x No. 30	1/64	300	.078	25' Carton	.55
833	20	10 x No. 30	1/64	300	.078	100' Carton	1.84
835	20	10 x No. 30	1/64	300	.078	500' Spool	8.48
837	20	10 x No. 30	1/64	300	.078	1000' Spool	15.44
846	18	16 x No. 30	1/64	300	.085	25' Carton	.61
847	18	16 x No. 30	1/64	300	.085	100' Carton	2.15
848	18	16 x No. 30	1/64	300	.085	500' Spool	9.72
849	18	16 x No. 30	1/64	300	.085	1000' Spool	18.59
851	22	Solid	1/32	600	.097	25' Carton	.51

Cat. No.	Size Awg.	Stranding	Nom. Ins. Thickness	Volts	Max. Dia. Inches	Length	Price List
852	22	Solid	1/32	600	.097	100' Carton	\$51.84
853	22	Solid	1/32	600	.097	500' Spool	8.18
854	22	Solid	1/32	600	.097	1000' Spool	15.77
856	20	Solid	1/32	600	.104	25' Carton	.73
857	20	Solid	1/32	600	.104	100' Carton	2.35
858	20	Solid	1/32	600	.104	500' Spool	9.40
859	20	Solid	1/32	600	.104	1000' Spool	17.87
861	18	Solid	1/32	600	.112	25' Carton	.72
862	18	Solid	1/32	600	.112	100' Carton	2.66
863	18	Solid	1/32	600	.112	500' Spool	12.27
864	18	Solid	1/32	600	.112	1000' Spool	23.52
866	22	7 x No. 30	1/32	600	.102	25' Carton	.66
867	22	7 x No. 30	1/32	600	.102	100' Carton	3.07
868	22	7 x No. 30	1/32	600	.102	500' Spool	9.41
869	22	7 x No. 30	1/32	600	.102	1000' Spool	17.88
871	30	10 x No. 30	1/32	600	.110	25' Carton	.76
872	30	10 x No. 30	1/32	600	.110	100' Carton	2.72
873	30	10 x No. 30	1/32	600	.110	500' Spool	10.84
874	20	10 x No. 30	1/32	600	.110	1000' Spool	20.95
876	18	16 x No. 30	1/32	600	.118	25' Carton	.87
877	18	16 x No. 30	1/32	600	.118	100' Carton	3.15
878	18	16 x No. 30	1/32	600	.118	500' Spool	13.08
879	18	16 x No. 30	1/32	600	.118	1000' Spool	23.38
881	20	10 x No. 30	.025	300	.170	100' Coil	3.86
882	20	2 cond.					
	20	10 x No. 30	.025	300	.170	500' Spool	17.79
883	20	2 cond.					
	20	10 x No. 30	.025	300	.170	1000' Spool	35.26

COLORS: Black, Brown, Light Blue, Dark Blue, Green, Orange, Pink, Purple, Red, Slate, Tan, White, Yellow.

# Rome Hi-Temp . . . A ROME CABLE PRODUCT

## RUBBER INSULATED HOOK-UP WIRE



The result of extensive laboratory development and proved by a decade of service—Rome Hi-Temp is offered for radio and electronic circuits where resistance to moisture and heat is required.

#### SPECIFICATIONS

Conductors: Annealed tinned, solid or stranded copper conforming to A.S.T.M. Specification B 33 and/or Underwriters' Standards.

In order to provide maximum flexibility and prevent unraveling of the strands a short lay stranding is used as follows:

- No. 22 Awg. .33 inch max.
- No. 20 Awg. .50 inch max.

Insulation: Rome Hi-Temp—a high quality, free-stripping heat-resistant rubber insulation approved by Underwriters' Laboratories.

#### Typical Test Results

Breakdown Voltage (1/32" Hi-Temp) . . . . .10500 volts  
Insulation Resistance . . . . .Over 10000 megohms feet  
\*Only factory length reels are furnished with U/L's labels.

Cat. No.	Size No.	Stranding No.	Length	Insulation Thickness	Diameter	List Price Each
901	22	Solid	25 ft. carton	1/32"	.075"	\$0.44
903	22	Solid	100 ft. carton	1/32"		1.65
905	22	Solid	500 ft. spool	1/32"		6.56
907	22	Solid	1000 ft. spool	1/32"		12.70
911	20	Solid	25 ft. carton	1/32"	.086"	.50
913	20	Solid	100 ft. carton	1/32"		1.79
915	20	Solid	500 ft. spool	1/32"		7.40
917	20	Solid	1000 ft. spool	1/32"		14.30
921	22	7 x 30	25 ft. carton	1/32"	.085"	.50
923	22	7 x 30	100 ft. carton	1/32"		1.79
925	22	7 x 30	500 ft. spool	1/32"		7.40
927	22	7 x 30	1000 ft. spool	1/32"		14.30
931	20	10 x 30	25 ft. carton	1/32"	.090"	.62
933	20	10 x 30	100 ft. carton	1/32"		2.04
935	20	10 x 30	500 ft. spool	1/32"		9.07
937	20	10 x 30	1000 ft. spool	1/32"		16.95

U/L Voltage Rating—300 Volts Maximum  
Colors: Black, Blue, Brown, Green, Orange, Pink, Red, Slate, White, Yellow

The MASTER — 22nd Edition



# TELEVISION CABLE . . . Transmission Cables

No.	Type	Length							No.		Nom- inal Diam. (in.)	List Price Each			
4500	2 condr.	500 ft. Spool	22 7x30	Both conductors bare copper; flexible stranding; conductors parallel; insulated with polyethylene. <b>USE: Receiving antenna at high frequencies</b>	.055 x .400	\$82.00			4401	1 condr.	100 ft. Spool	22 solid	Bare copper, solid; black vinyl plastic jacket; bare copper braid shield; polyethylene plastic insulation.	.242	\$ 7.65
4503	2 condr.	500 ft. Spool	20 7x28	Same as 4500	.072 x .400	28.50			4403	1 condr.	500 ft. Spool	22 solid	Same as 4401	.242	71.50
4504	2 condr.	500 ft. Spool	20 7x28	Same as 4500	.080 x .400	31.50			4405	1 condr.	100 ft. Spool	20 solid	Bare copper, solid; black vinyl plastic jacket; tinned copper braid shield; polyethylene plastic insulation.	.195	7.35
4506	2 condr.	500 ft. Spool	20 7x28	Same as 4500	.100 x .400	34.50			4407	1 condr.	500 ft. Spool	20 solid	Same as 4405	.195	59.35
4507	3 condr.	500 ft. Spool	20 7x28	Two bare, one tinned copper conductor; flexible stranding; conductors parallel; polyethylene insulation. <b>USE: Same as 4501, but third conductor may be used for ground or other purposes.</b>	.072 x .400	32.25			4415	1 condr.	100 ft. Spool	13 7x21	Bare copper; flexible stranding; black vinyl plastic jacket; bare copper braid shield; polyethylene plastic insulation.	.405	18.50
4508	4 condr.	500 ft. Spool	22 7x30	Same as 4503 except three conductors bare copper, one conductor tinned. Amber polyethylene plastic insulation overall is semi-transparent for easy conductor identification and is grooved between conductors for ease of separation and stripping. <b>USE: Rotor Aerials.</b>	.072 x .345	30.75			4417	1 condr.	500 ft. Spool	13 7x21	Same as 4415	.405	173.75
4509	4 condr.	500 ft. Spool	20 7x28	Same as 4508	.072 x .400	33.00			4419	1 condr.	100 ft. Spool	18 7x26	Tinned copper; flexible stranding; bare copper braid shield; black vinyl plastic jacket; polyethylene plastic insulation.	.405	17.35
4516	5 condr.	500 ft. Spool	20 7x28	Same as 4508 except four conductors bare copper, one conductor tinned copper. <b>USE: Rotor Aerials.</b>	.072 x .355	40.90			4421	1 condr.	500 ft. Spool	18 7x26	Same as 4419	.405	163.75
4517	5 condr.	500 ft. Spool	20 7x28	Same as 4516	.090 x .400	44.00			4523	2 condr. Heavy	500 ft. Spool	18 7x26	Conductors bare copper; flexible stranding; conductors run parallel; polyethylene insulation. <b>USE: TV and FM receiving antenna. Especially designed for use in TV ring areas. Also adapted to use with low-power transmitting antenna.</b>	.350	48.00
4515	4 condr.	500 ft. Spool	22 7x30	Tinned copper conductors. .010 thermoplastic insulation over each conductor with jacket overall. <b>USE: Rotor Aerials.</b>	.160	36.85			4527	2 condr. round	500 ft. Spool	20 7x28	Copper weld conductors; tubular die cast protects against exterior hazards. <b>USE: For UHF and VHF.</b>		
4518	5 condr.	500 ft. Spool	22 7x30	Same as 4515	.170	45.00									
4521	8 condr.	500 ft. Spool	22 7x30	Same as 4515	.205	45.00									

## PHONOGRAPH PICK-UP-ARM CABLE



TYPE NO. 1470

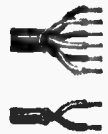
# INTERCOMMUNICATING AND SOUND SYSTEM CABLES



## PAIRED CONDUCTORS

Size and Stranding: 22 Solid. Specifications and General Applications: Cabled .020" gray vinyl plastic jacket overall.

No.	Type Condr.	Length Spool	Nominal Diam. (in.)	List Price
5201	1 Pr. - 2	100 ft.	.145	\$ 2.50 Ea.
5202	1 Pr. - 2	500 ft.	.145	25.00 M
5205	2 Pr. - 4	100 ft.	.190	4.65 Ea.
5206	2 Pr. - 4	500 ft.	.190	46.50 M
5211	3 Pr. - 6	100 ft.	.230	5.90 Ea.
5212	3 Pr. - 6	500 ft.	.230	59.00 M
5221	5 Pr. - 10	100 ft.	.250	8.80 Ea.
5222	5 Pr. - 10	500 ft.	.250	88.00 M
5226	6 Pr. - 12	100 ft.	.265	9.25 Ea.
5227	6 Pr. - 12	500 ft.	.265	92.50 M
5231	7 Pr. - 14	100 ft.	.280	13.30 Ea.
5232	7 Pr. - 14	500 ft.	.280	133.00 M
5236	8 Pr. - 16	100 ft.	.300	13.80 Ea.
5237	8 Pr. - 16	500 ft.	.300	138.00 M
5241	9 Pr. - 18	100 ft.	.320	14.15 Ea.
5242	9 Pr. - 18	500 ft.	.320	141.50 M
5251	11 Pr. - 22	100 ft.	.360	16.50 Ea.
5252	11 Pr. - 22	500 ft.	.360	165.00 M
5271	15 Pr. - 30	100 ft.	.390	22.00 Ea.
5272	15 Pr. - 30	500 ft.	.390	220.00 M
5286	27 Pr. - 54	100 ft.	.510	36.00 Ea.
5287	27 Pr. - 54	500 ft.	.510	360.00 M



## PAIRED INTERCOMMUNICATING CABLES FOR COLOR CODING

Identification is simple with Consolidated Intercom Cables because they are all color coded. See chart in next column.

## MULTIPLE CONDUCTORS

Size and Stranding: 22 - 7 x 30. Specifications and General Applications: Cable, .020". Gray Only. Plastic jacket overall.



No.	Type Condr.	Length ft. (Spool)	Nom. Diam. (in.)	Color	List Price
5401	3	100	.140	Black, green, red	\$ 3.00
5402	3	500	.140	Same as 5401	30.00
5406	4	100	.158	Black, green, red, white	3.70
5407	4	500	.158	Same as 5407	37.00
5411	5	100	.170	Black, brown, green, red, white	4.50
5412	5	500	.170	Same as 5411	45.00
5416	6	100	.212	Black, blue, brown, green, red, white	7.15
5417	6	500	.212	Same as 5416	71.50
5421	7	100	.230	Black, blue, brown, green, orange, red, white	7.70
5422	7	500	.230	Same as 5421	77.00
5426	8	100	.235	Black, blue, brown, green, orange, red, white, yellow	8.25
5427	8	500	.235	Same as 5426	82.50
5431	9	100	.245	Black, blue, brown, green, orange, purple, red, white, yellow	9.00
5432	9	500	.245	Same as 5431	90.00

## MICROPHONE CABLE

CONDUCTOR COLOR CHART: 1—Black; 2—White; 3—Red; 4—Green; 5—Yellow; 6—Blue; 7—Brown.

Standard Spool Put-up: 100 ft.—250 ft.—500 ft.—1000 ft.

SHIELDED; Weatherproof rubber jacket for all microphone or weatherproof extension work. (Longer continuous lengths if desired).



No.	TYPE	SIZE	SPECIAL USE	SPECIFICATIONS	STRANDING	FINISHED O. D. (inches)	NOMINAL CAPACITY per ft. (mmf)
1458	2 conductor	22	Low impedance microphones	Tinned copper conductors polyethylene insulation conductors; black and white. Cabled with fillers closely woven tinned copper shield. Gray vinyl plastic jacket.	16 x 34	.231	32.
1461	1 conductor	22	Lapel microphone	Tinned copper polyethylene insulation with a closely woven tinned copper shield. Grey vinyl plastic jacket.	16 x 34	.135	34.
1457	1 conductor	22	Crystal. Ribbon and other high impedance microphones	Same as 1461 except heavier polyethylene insulation on conductor.	16 x 34 26 x 34	.200 .175	25. 40.
1459	1 conductor	20	Lapel microphone	Tinned Copper Wire. with polyethylene to .087" O.D. with a closely woven tinned copper shielded braid, and a heavy black plastic jacket overall.	26 x 34	.240	33.
1460	1 conductor	20	Crystal microphone	Tinned copper. yarn serve; wall of live rubber; tinned copper braid shield; rubber jacket overall.	26 x 34	.280	68.
1462	2 conductor	20	Carbon microphones	Same as 1460; color coded			
1456	2 conductor	18	Heavy duty studio cable	Same as 1460; color coded	41 x 34	.295	80.
1463	3 conductor	20	Carbon microphones	Same as 1460; color coded	26 x 34	.290	85.
1464	4 conductor	20	Carbon microphones	Same as 1460; color coded	26 x 34	.300	95.
1465	5 conductor	20	Carbon microphones	Same as 1460; color coded	26 x 34	.340	
1466	6 conductor	20	Carbon microphones	Same as 1460; color coded	26 x 34	.350	
1467	7 conductor	20	Carbon microphones	Same as 1460; color coded	26 x 34	.370	

## PHONOGRAPH MULTIPLE CABLE



TYPE No.	LENGTH	SIZE	SPECIAL USE	SPECIFICATIONS	STRANDING	FINISHED O. D. (Inches)	LIST PRICE EACH
5030	500 ft.	2-16 28-22	Connections between commercial electric phonographs (juke boxes) and record selectors.	1 cond. No. 16 gauge bare copper wire with 1/64" black vinylite insulation. 1 cond. No. 16 gauge solid bare copper wire with 1/64" red vinylite insulation. 14 condrs. No. 22 gauge solid bare copper wire with .010" vinylite insulation, all individually color coded. 14 condrs. No. 22 gauge tinned copper wire with a .010" vinylite insulation, all individually color coded. All condrs. grouped into cable form with a tight, spiral cotton wrapping and with a heavy black vinylite jacket over-all.	Solid		\$382.00
5103	1,000 ft.	3-22	Connections for commercial electric phonographs and record selectors.	3 condrs. No. 22 with 1/64" thermoplastic insulation, all individually color coded. All conductors grouped into cable form with a treated cotton braid overall lacquered.	7 x 30	.125	44.25
5113	1,000 ft.	2-16 1-18	Connections for commercial electric phonographs and record selectors.		2-26 x 30 1-16 x 30	.165	105.70
5123	1000 ft.	2-16 1-18	Same as 5030	Same as 5113, but with silver plastic jacket.	2-26 x 30 1-16 x 30	.165	77.75
5135	1000 ft.	22 5 condr.	Same as 5030	5 cond. No. 22 with 1/64" thermoplastic insulation; 3 cond. twisted together with a braided tinned copper shield; 2 cond. twisted; all cond. grouped into cable form with a brown cotton braid overall.	5-7 x 30	.225	99.75

# CONSOLIDATED

## CATHODE-RAY TUBE LEAD CABLE

For high voltage leads to cathode-ray tubes in television receivers, oscilloscopes, power supplies and other uses requiring a high-voltage cable. Special features: minimum surface leakage, corona resistance and high dielectric strength. Size: 20, Stranding 7 x 28.

No.	Length Package & Color	Specifications	Insulation Thickness	Finished O.D. (Inches)	List Price Each
4601	100 ft. Spool Red with two white tracers	Extra flexible tinned copper wire; red cellulose acetate yarn braid with 2 white tracers; lacquer coating.	.035"	.136	\$2.80
4611	100 ft. Spool Red	Same as No. 4601 except heavier insulation; solid red braid.	.065"	.198	\$4.80
4616	100 ft. Spool White	Extra flexible tinned copper wire; flame retardant polyethylene plastic insulation; working voltage 10,000 volts.	.035"	.108	\$2.75
4621	100 ft. Spool White with red stripe	Same as No. 4616 except working voltage 20,000 volts.	.065"	.148	\$4.60

## ANALYZER CABLE

SPECIFICATIONS: Extra flexible tinned copper; rubber covered; color coded; Brown cotton braid overall.

No.	Condr.	Length	Stranding	Size	Insulation Thickness	List Price
1501	8 cond.	100 ft.	2-14 6-18	41 x 30 16 x 30	1/64"	\$26.30
1502	9 cond.	100 ft.	2-14 7-18	41 x 30 16 x 30	1/64"	27.50



## TINNED COPPER SHIELDED

For radio, auto and electrical work.

SPECIFICATIONS: Extra flexible; tinned copper stranded; cotton serve; live color-coded rubber insulation; cotton serve over all conductors; tinned shielded overall braid.

No.	Condr.	Length	Stranding	Size	Insulation Thickness	List Price
1471	1 cond.	100 ft.	18	16 x 30	1/64"	\$ 6.60
1472	2 cond.	100 ft.	20	10 x 30	1/64"	8.50
1473	3 cond.	100 ft.	20	10 x 30	1/64"	11.00
1474	4 cond.	100 ft.	20	10 x 30	1/64"	14.45
1475	5 cond.	100 ft.	20	10 x 30	1/64"	235
1476	6 cond.	100 ft.	20	10 x 30	1/64"	21.00
1477	7 cond.	100 ft.	20	10 x 30	1/64"	25.30

## MAGNET WIRE



Popular, profitable specialty wire packaged for easy selling in radio-electrical department, specialty and hardware stores.

Wide variety of sizes and insulations. Keeps stock in perfect order, always saleable. Supplied on Spool as Shown and in Heavier

Weights for whatever weight desired. (Also available are other sizes and insulations.)

Here is a handy and convenient way to stock small quantities of wire. It prevents wire from matting or tangling.

## DOUBLE COTTON COVERED

Size	1/4 lb.	1/2 lb.	1 lb.
14	\$0.55	\$0.95	\$1.87
15	.58	.98	1.90
16	.60	1.00	1.95
17	.60	1.05	2.00
18	.60	1.10	2.05
19	.65	1.15	2.28
20	.65	1.25	2.34
21	.77	1.34	2.50
22	.82	1.39	2.64
23	.88	1.50	2.75
24	.94	1.60	3.00
25	.95	1.65	3.14
26	1.00	1.75	3.39
27	1.15	1.89	3.64
28	1.20	2.14	4.00
29	1.30	2.39	4.50
30	1.32	2.50	4.75
31	1.50	2.75	5.00
32	1.75	3.00	5.64
33	1.89	3.37	6.25
34	2.14	3.89	7.00
35	2.39	4.25	7.50
36	2.75	4.89	8.65
37	2.25	6.25	11.40
38	4.75	8.65	16.50
39	6.00	11.50	22.00
40	8.00	15.00	28.15

## PLAIN ENAMEL

Size	1/4 lb.	1/2 lb.	1 lb.
14	\$0.45	\$0.75	\$1.39
15	.45	.80	1.40
16	.50	.84	1.42
17	.50	.87	1.44
18	.50	.89	1.45
19	.55	.92	1.49
20	.55	.94	1.50
21	.55	.95	1.59
22	.55	.97	1.70
23	.58	.99	1.75
24	.60	1.00	1.87
25	.65	1.10	1.95
26	.65	1.10	2.03
27	.70	1.15	2.14
28	.73	1.20	2.25
29	.75	1.25	2.30
30	.80	1.30	2.35
31	.89	1.35	2.45
32	.90	1.40	2.50
33	.95	1.50	2.65
34	1.00	1.70	2.75
35	1.09	1.84	3.14
36	1.29	2.00	3.50
37	1.45	2.25	4.00
38	1.70	2.50	4.50
39	1.87	3.00	5.00
40	2.50	3.75	6.00

## FORMVAR WIRE—No. 2000

### SINGLE FORMVAR MAGNET WIRE

Size	1/4 lb.	1/2 lb.	1 lb.
14	\$0.66	\$1.12	\$2.07
15	.66	1.20	2.10
16	.75	1.25	2.14
17	.75	1.30	2.15
18	.75	1.34	2.17
19	.83	1.39	2.23
20	.83	1.40	2.25
21	.83	1.42	2.27
22	.83	1.45	2.56
23	.89	1.49	2.62
24	.90	1.50	2.80
25	.97	1.65	2.92
26	.99	1.65	3.05
27	1.05	1.74	3.26
28	1.10	1.80	3.37
29	1.14	1.87	3.46
30	1.20	1.95	3.52
31	1.34	2.02	3.67
32	1.35	2.10	3.75
33	1.42	2.25	3.95
34	1.50	2.55	4.12
35	1.64	2.81	4.70
36	1.82	3.00	5.26
37	2.17	3.37	6.00
38	2.55	3.75	6.76
39	2.80	4.50	7.50
40	3.75	5.64	9.00

### HEAVY FORMVAR MAGNET WIRE

Size	1/4 lb.	1/2 lb.	1 lb.
14	\$0.73	\$1.24	\$2.27
15	.73	1.34	2.33
16	.84	1.39	2.35
17	.84	1.44	2.37
18	.84	1.47	2.39
19	.92	1.52	2.45
20	.92	1.54	2.51
21	.92	1.55	2.61
22	.92	1.60	2.80
23	.97	1.64	2.87
24	1.00	1.65	3.07
25	1.15	1.97	3.50
26	1.19	1.98	3.64
27	1.25	2.07	3.84
28	1.34	2.15	4.04
29	1.37	2.24	4.14
30	1.44	2.34	4.22
31	1.67	2.52	4.58
32	1.69	2.63	4.67
33	1.77	2.81	4.94
34	1.87	3.19	5.68
35	2.04	3.46	5.88
36	2.39	3.75	6.58
37	2.72	4.20	7.50
38	3.17	4.69	8.45
39	3.50	5.64	9.38
40	4.69	7.04	11.27

## TEST PROD WIRE



A specially constructed high grade wire for use on laboratory test equipment, bench analyzers, etc. Nos. 1001, 1002, 1003; Size 26, Stranding 41x36, Insulation Thickness .043". Nos. 1006, 1007, 1008, 1009; Size 18, Stranding 65x36, Insulation Thickness .088", Finished O.D. .230".

No.	Length Package & Color	Specifications	List Price Each
1001	100 ft. Spool Black Red	Extra flexible tinned copper wire with red or black live rubber insulation 5000 Volts	\$2.25
1002	250 ft. Spool Black Red	Same as No. 1001 5000 Volts	5.60
1003	1000 ft. Spool Black Red	Same as No. 1001 5000 Volts	21.00

No.	Length Package & Color	Specifications	List Price Each
1006	100 ft. Spool Black Red	Same as No. 1001 10,000 Volts	\$4.30
1007	250 ft. Spool Black Red	Same as No. 1001 10,000 Volts	10.75
1008	500 ft. Spool Black Red	Same as No. 1001 10,000 Volts	20.00
1009	1000 ft. Spool Black Red	Same as No. 1001 10,000 Volts	40.00

## COPPER WIRE—No. 2000

### BARE COPPER WIRE

Size	1/4 lb.	1/2 lb.	1 lb.
11	\$0.53	\$0.97	\$1.54
15	.57	1.00	1.60
16	.60	1.10	1.83
17	.52	1.12	1.87
18	.63	1.14	1.90
19	.65	1.17	1.95
20	.67	1.20	2.00
21	.68	1.20	2.07
22	.70	1.24	2.14
23	.70	1.27	2.17
24	.70	1.30	2.20
25	.72	1.30	2.20
26	.73	1.34	2.27
27	.75	1.37	2.30
28	.77	1.40	2.40
29	.77	1.42	2.47
30	.77	1.42	2.47
31	.77	1.44	2.53
32	.77	1.44	2.60
33	.78	1.47	2.68
34	.80	1.50	2.77
35	.82	1.55	2.90
36	.84	1.60	3.04
37	.92	1.75	3.22
38	1.00	1.90	3.40
39	1.02	1.97	3.45
40	1.04	2.04	3.50

### TINNED COPPER WIRE

Size	1/4 lb.	1/2 lb.	1 lb.
14	\$0.67	\$1.13	\$1.75
15	.73	1.27	1.92
16	.80	1.40	2.00
17	.84	1.44	2.03
18	.87	1.47	2.08
19	.90	1.50	2.12
20	.94	1.53	2.17
21	.95	1.53	2.24
22	.97	1.57	2.30
23	.98	1.58	2.34
24	1.00	1.60	2.37
25	1.00	1.60	2.37
26	1.00	1.60	2.37
27	1.05	1.67	2.64
28	1.07	1.67	2.80
29	1.13	1.84	2.94
30	1.17	1.92	2.97
31	1.20	2.00	3.04
32	1.24	2.09	3.10
33	1.27	2.17	3.19
34	1.30	2.25	3.27
35	1.32	2.30	3.40
36	1.34	2.34	3.54
37	1.36	2.42	3.72
38	1.38	2.50	3.90
39	1.39	2.50	3.95
40	1.40	2.67	4.00

## FLEXIBLE COTTON BRAIDED

For speakers, testers, battery hook-up, etc. (longer continuous lengths if desired).

SPECIFICATION: Tinned flexible copper; cotton sleeve; live colored rubber insulation; bunched individual conductors; heavy brown cotton braid overall; color coded, Length 100 ft.; Size 20; Stranding 10x30; Insulation Thickness 1/64".

Type No.	Type	Finished O.D. (Inches)	List Price Each
1481	1 cond.	.150	\$ 4.15
1482	2 cond.	.175	5.60
1483	3 cond.	.200	7.75
1484	4 cond.	.275	9.65
1485	5 cond.	.250	11.60
1486	6 cond.	.200	14.45

Type No.	Type	Finished O.D. (Inches)	List Price Each
1487	7 cond.	.275	\$16.60
1488	8 cond.	.300	22.45
1489	9 cond.	.310	23.25
1490	10 cond.	.325	25.30
1494	11 cond.	.335	27.20
1495	12 cond.	.350	33.80



## CONTROL PANEL INTERCOM CABLE

SPECIFICATIONS: Tinned copper; vinylite plastic insulation; wire twisted together; closely woven braided tinned copper shield. Length: 100 ft.; Size 22; Stranding: Solid; Insulation Thickness: .010".

Type No.	Type	Finished O.D. (Inches)	List Price Each
1468	2 conductors	.110	\$ 5.25
1469	3 conductors	.145	6.70



## LEAD COVERED CABLE

For freedom from interference, corrosion and dampness. SPECIFICATIONS: Tinned copper wire; heavy rubber insulation and cotton braid; heavy lead sheath. Length: 100 ft.; Size: 18; Stranding: Solid; Insulation Thickness 1/32".

Type No.	Type	Finished O.D. (Inches)	List Price Each
1453	2 conductors	.240 x .200	\$21.50
1454	3 conductors	.420	37.50



## PERMALINE TV TRANSMISSION LINES

COLUMBIA is first to offer a television transmission line with an insulation so good that it can be **GUARANTEED IN WRITING** to give a service life far beyond the normal life of brown Polyethylene television lines. PERMALINE is a high molecular weight Polyethylene containing carbon black for maximum resistance to sunlight, which has been proven the chief factor in deterioration of ordinary television lines. The insulation value of 50 Mils of PERMALINE is equal to over 150 Mils of conventional brown Polyethylene.

Electrical characteristics of PERMALINE are very similar to Brown Polyethylene television lines but as there is no deterioration attenuation remains constant, instead of increasing as is the case with brown Polyethylene, which becomes brittle and cracks. This is truly the first new development in television transmission lines in ten years.

### 25 YEAR WARRANTY

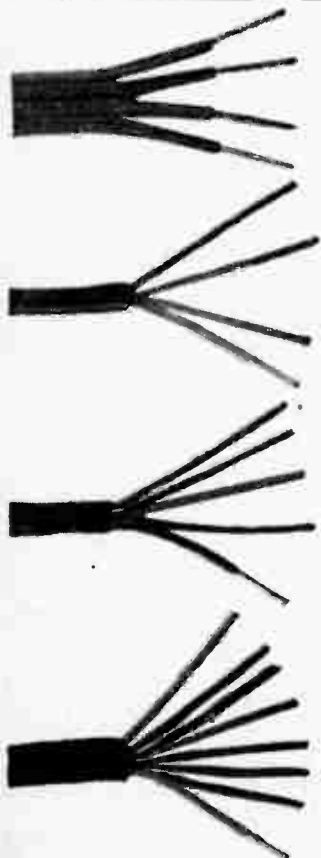
80 Mil 20 Ga. Str. PERMALINE — TV Transmission Line  
.080 x .395

Cat. No.	
5050	1,000 Ft. Metal Spool
5052	500 Ft. Metal Spool
5053	100 Ft. Coil in Transparent Bag
5055	75 Ft. Coil in Transparent Bag
5057	50 Ft. Coil in Transparent Bag

### 15 YEAR WARRANTY

50 Mil 20 Ga. Str. PERMALINE — TV Transmission Line  
.050 x .385

5150	1,000 Ft. Metal Spool
5158	500 Ft. Metal Spool
5152	100 Ft. Coil in Transparent Bag
5154	75 Ft. Coil in Transparent Bag
5156	50 Ft. Coil in Transparent Bag



20 Ga. Str. 4 Cond.  
7/28 Flat Rotor Cable  
PERMALINE INSULATION  
One tinned copper conductor for easy identification.

Cat. No.	
5062	250 FT. SPOOL
5064	500 FT. SPOOL
5066	1000 FT. SPOOL

22 Ga. Str. 4 Cond.  
Round Rotor Cable

Inner conductors are plastic insulated and color coded. .020 PERMALINE Jacket over all.

Cat. No.	
5072	250 FT. SPOOL
5074	500 FT. SPOOL
5076	1000 FT. SPOOL

22 Ga. Str. 5 Cond.  
Round Rotor Cable

Inner conductors are plastic insulated and color coded. .020 PERMALINE Jacket over all.

Cat. No.	
5082	250 FT. SPOOL
5084	500 FT. SPOOL
5086	1000 FT. SPOOL

22 Ga. Str. 8 Cond.  
Round Rotor Cable

Inner conductors are plastic insulated and color coded. .020 PERMALINE Jacket over all.

Cat. No.	
5092	250 FT. SPOOL
5094	500 FT. SPOOL
5096	1000 FT. SPOOL

SPECIAL CABLES WITH THE INSULATION DESCRIBED ON THIS PAGE CAN BE MADE TO SPECIFICATION.

## COLUMBIA TELEVISION TRANSMISSION LINES



Columbia now offers several types of exceptional quality TV lines at moderate prices. Virgin Polyethylene and clean bright conductors assure best results in all TV installations. All cables have a smooth polished finish that will effectively shed dirt and moisture.

### 45 MIL 22 GA. 7/30 TELEVISION LINE .045 x .350

Cat. No.	
1008	100 Ft. Coil
1010	1000 Ft. Metal Spool

### 55 MIL 22 GA. 7/30 TELEVISION LINE .055 x .380

1012	100 Ft. Coil
1014	1000 Ft. Metal Spool

### 55 MIL 20 GA. 7/28 TELEVISION LINE .055 x .385

1053	100 Ft. Coil
1055	1000 Ft. Metal Spool

### 70 MIL 20 GA. 7/28 TELEVISION LINE .070 x .385

1070	1000 Ft. Metal Spool
------	----------------------

### 70 MIL 20 GA. 7/28 TELEVISION LINE .070 x .385

High Strength Copperweld Conductors

3068	100 Ft. Coil
3070	1000 Ft. Metal Spool

### 80 MIL 20 GA. 7/28 TELEVISION LINE .080 x .395

1078	100 Ft. Coil
1080	1000 Ft. Metal Spool

### 100 MIL 20 GA. 7/28 TELEVISION LINE .100 x .430

1002	100 Ft. Coil
1004	1000 Ft. Metal Spool

To save time and effort for the Serviceman, there is now available high quality, packaged television transmission line, featuring brass terminals securely attached to one end of line, plus 2 loose terminals for use at set end. This means perfect connections at all times with no signal loss because of improper connections. Line is neatly

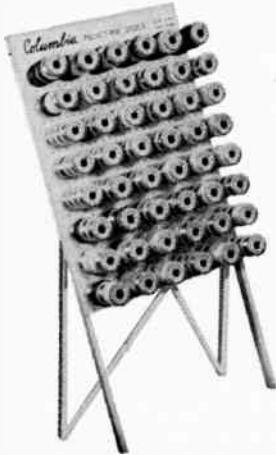
coiled and enclosed in a heat-sealed transparent Polyethylene bag for protection against dust and moisture, insuring a clean, fresh item at all times.



### 70 Mil 20 Ga. Str. 7/28 Television Transmission Line .070 x .385

Cat. No.	
1068	100 Ft. Coil with brass terminals in Polyethylene Bag
1074	75 Ft. Coil with brass terminals in Polyethylene Bag
1072	60 Ft. Coil with brass terminals in Polyethylene Bag

WRITE FOR COMPLETELY ILLUSTRATED CATALOG TO COLUMBIA WIRE & SUPPLY CO., CHICAGO 18, ILL.



## POCKET PAK SPOOL DISPLAY

A very compact display in two square feet of floor space, contains 192 spools of 48 different electronic and hook-up wire items. This attractive display will constantly remind your customer of his wire needs. No need now to spend costly time measuring and pricing small quantities of wire. A complete description of each type is printed on the spool, in addition to the stock number. Full description of all spools on pages 19 and 20 of cat. 107.

## PERMALINE VHF - UHF TELEVISION TRANSMISSION LINE



Since the introduction of this cable in May 1956, it has been proven beyond any doubt that this cable has no equal for reliability over the entire range of VHF and UHF channels under the most adverse conditions, such as salt spray, sunlight, extremes of heat and cold, stress cracking, chemical fumes, whipping in high winds, etc. In many areas throughout the country where other cables have failed due to salt deposits on transmission lines, this cable has given satisfactory reception at all times. Foam polyethylene tubes provide excellent low loss dielectric and require no sealing. 22 gauge solid copperweld conductors mean high tensile strength so necessary where whipping of cable is a problem. Heavy duty jacket of high molecular weight BLACK PERMALINE POLYETHYLENE is a protection against all hazards. We believe this is the finest all-purpose television transmission line available today. Impedance is 270 ohms, nominal attenuation is 3.2 D/B at 500 M/C and 4.6 D/B at 900 M/C. Cable size is approximately .295 x .402.

CAT. NO.		
5684C	.....	100 FT. CARTON
5684D	.....	500 FT. SPOOL
5684M	.....	1000 FT. REEL

## PLASTIC MICROPHONE CABLES

Low capacitance cables with durable Flexlife plastic insulation provides resistance to abrasion, moisture and aging. Low loss polyethylene insulation over flexible stranded copper conductors. Grey Flexlife plastic jacket overall.

### LAPEL MICROPHONE CABLE .130 O.D.

Cat. No. 1315	.....	100 Ft. Spool	.....	25 Ga.	.....	7/33 Stranding
Cat. No. 1316	.....	500 Ft. Spool	.....	25 Ga.	.....	7/33 Stranding

NOMINAL CAPACITANCE 33 MMF PER FT.

### CRYSTAL MICROPHONE CABLE .190 O.D.

Cat. No. 1317	.....	100 Ft. Spool	.....	25 Ga.	.....	7/33 Stranding
Cat. No. 1318	.....	500 Ft. Spool	.....	25 Ga.	.....	7/33 Stranding

NOMINAL CAPACITANCE 24 MMF PER FT.

### TWO CONDUCTOR PLASTIC MICROPHONE CABLE .230 O.D.

Cat. No. 1321	.....	100 Ft. Spool	.....	22 Ga.	.....	16/34 Stranding
Cat. No. 1322	.....	500 Ft. Spool	.....	22 Ga.	.....	16/34 Stranding

NOMINAL CAPACITANCE 30 MMF PER FT. BETWEEN 1 COND. AND REMAINING COND. CONNECTED TO SHIELD.



## DELUXE TELEVISION SERVICE LITE



This newly designed service lite is one of the finest items in our entire line of television service accessories. Has a 2 1/4 inch highly polished aluminum reflector and wide opening spring clamp that will permit this lite to be attached almost anywhere inside the television cabinet leaving both hands free to work. Lower part of clamp has rubber covering that will hold firmly wherever it is placed. Comes complete with 7 1/2 watt 110 volt bulb and six foot parallel plastic cord with unbreakable male plug for attaching to baseboard or into service block on our all purpose Television Service Cord. Display cord furnished with orders for 25 or more lites.

Cat. No. 185 ..... DELUXE TELEVISION SERVICE LITE

## COLUMBIA COAXIAL CABLES

	R G No.	Nominal Impedance	Nominal MMFD. Ft.	Wire Size	Overall Jacket	Spool Size	Cat. No.
	RG 59 U	73.0	21.0	22 C Weld	Black Vinyl .240 O.D.	100 Ft. 500 Ft.	1100 1102
	RG 8 U	52.0	29.5	7/21	Black Vinyl .405 O.D.	1000 Ft. 100 Ft.	1104 1150
	RG 11 U	75.0	20.5	7/26	Black Vinyl .405 O.D.	500 Ft. 1000 Ft.	1152 1154
	RG 58 U	53.5	28.5	20 Ga.	Black Vinyl .195 O.D.	100 Ft. 500 Ft.	1162 1164
	RG 58 A/U	50.0	29.0	19/.0068	Black Vinyl .159 O.D.	1000 Ft. 100 Ft.	1166 1174
						500 Ft. 1000 Ft.	1176 1178

WRITE FOR COMPLETELY ILLUSTRATED CATALOG TO COLUMBIA WIRE & SUPPLY CO., CHICAGO 18, ILL.



# Radio & TV Wire Products

## P.A. and sound system cables

### 1282 juke box speaker cable



24/2 7/32 stranded one conductor tinned one conductor bare copper. Parallel lay chrome vinyl insulation. Nominal O.D. .058" x 155". Put-up 500 ft. and 1000 ft. spools.

List Price \$17.00 M. Wt. 6 Lbs. per M. Ft.

### 1206 shielded connector cable



18/1 16/30 stranded tinned copper conductor .040" wall rubber insulation. Tinned copper braid shield. Nominal O.D. .155". Put-up 250 ft. spools.

List Price \$51.00 M. Wt. 24 Lbs. per M. Ft.

### 1283 juke box control cable



Three conductors twisted 2-#16 26/30 stranded tinned copper .020" vinyl plastic insulation color coded green and orange; 1-#20 10/30 stranded tinned copper .020" vinyl plastic blue. Overall chrome vinyl jacket. Nominal O.D. .240". Put-up 500 ft. spools.

List Price \$70.00 M. Wt. 40 Lbs. per M. Ft.

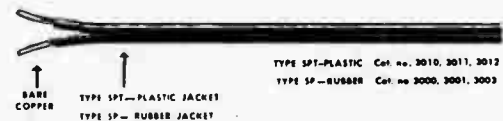
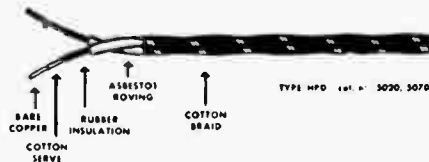
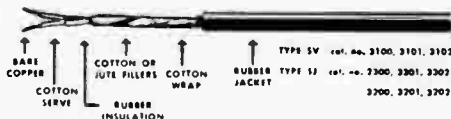
### 1934 extension wiring cable



22/3 7/30 stranded tinned copper conductor .015" vinyl plastic insulation coded red, white and black. White conductor covered with tinned copper braid shield, black and red unshielded with .020" chrome vinyl plastic jacket. Nominal O.D. .185". Put-up 500 ft. and 1000 ft. spools.

List Price \$60.00 M. Wt. 22 Lbs. per M. Ft.

## flexible and portable cords



Catalog Number	AWG Size	UL Type	Number of Strands	Insulation Cond. In.	Thickness Jacket In.	Nominal Outside Diameter Inch	Current Carrying Capacity Amp.	Standard Put-Up	Standard Shipping Pkg.	Approx. Wght. Lbs./M Ft.	List Price Per M Ft.
3000	18/2	SP-1	41/34	2/64	—	.126x225	7	250' Spool	4 Spools	22	37.50
3001	18/2	SP-2	41/34	3/64	—	.150x285	7	250' Spool	4 Spools	36	58.00
3003	16/2	SP-2	65/34	3/64	—	.170x320	10	250' Spool	4 Spools	50	82.00
3010	18/2	SPT-1	41/34	2/64	—	.120x225	7	250' Spool	4 Spools	23	33.60
3011	18/2	SPT-2	41/34	3/64	—	.150x285	7	250' Spool	4 Spools	33	56.00
3012	16/2	SPT-2	65/34	3/64	—	.170x320	10	250' Spool	4 Spools	45	82.00
3100	18/2	SV	41/34	1/64	2/64	.250	7	250' Spool	4 Spools	42	71.00
3200	18/2	SJ	41/34	2/64	2/64	.305	7	250' Spool	4 Spools	54	93.00
3201	18/3	SJ	41/34	2/64	2/64	.345	7	250' Spool	4 Spools	73	137.00
3202	18/4	SJ	41/34	2/64	2/64	.360	5.6	250' Spool	1 Spool	96	200.00
3300	18/2	SJ	16/30	2/64	2/64	.305	7	250' Spool	4 Spools	54	76.00
3301	18/3	SJ	16/30	2/64	2/64	.345	7	250' Spool	4 Spools	73	130.00
5020	18/2	HPD	41/34	2/64	—	.274	10	250' Spool	4 Spools	32	82.00
5070	16/2	HPD	65/34	2/64	—	.301	15	250' Spool	4 Spools	42	97.00

Note: All Cornish Wire and Cable is available in put-ups other than those listed, ask for current price schedule.

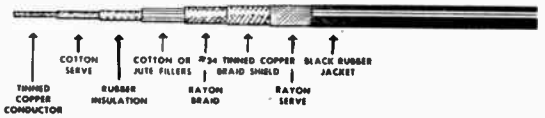
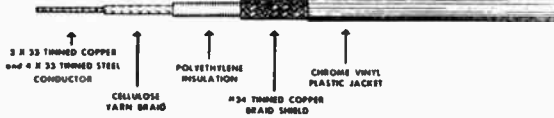




# Radio & TV Wire Products

## microphone cables

Cornish Microphone Cables are available in plastic and rubber insulations. Plastic cables utilize polyethylene insulation on the conductor with outer vinyl plastic jacket. They are designed for low capacitance, high insulation resistance, low attenuation; and withstand severe service under all operating conditions.



PLASTIC MICROPHONE CABLE								
Catalog Number	AWG Size	Number of Strands	Nominal Outside Diameter Inches	Nominal Capacitance Per Ft. MMF	Standard Put-Up	Standard Shipping Pkg.	Approx. Wght. Lbs./M Ft.	List Price Per M Ft.
2411	25/1	7/33	.144	37	500' Spool	1 Spool	15	53.00
2401	25/1	7/33	.200	25	500' Spool	1 Spool	25	70.00

RUBBER MICROPHONE CABLE								
Catalog Number	AWG Size	Number of Strands	Nominal Outside Diameter Inches	Nominal Capacitance Per Ft. MMF	Standard Put-Up	Standard Shipping Pkg.	Approx. Wght. Lbs./M Ft.	List Price Per M Ft.
2101	20/1	26/34	.260	32*	500' Spool	1 Spool	49	100.00
2152	20/2	26/34	.280	48*	500' Spool	1 Spool	54	116.00
2153	20/3	26/34	.280	85*	500' Spool	1 Spool	59	180.00
2154	20/4	26/34	.305	95*	500' Spool	1 Spool	72	200.00
2182	18/2	41/34	.295	80*	500' Spool	1 Spool	60	175.00
2160	20/1	26/34	.175	34*	500' Spool	1 Spool	25	88.00

\*Between one conductor and remaining conductors connected to shield.

## antenna control cables

Cornish Antenna Control Cables are available in polyethylene and vinyl plastic insulations in a varied range of conductors to adequately meet all installation problems encountered. Flat and round constructions are furnished in brown colored outer insulation.



Catalog Number	AWG Size	Number of Strands	Thickness Conductor Insulation Inch	Nominal Outside Dimension Inch	Standard Put-Up	Standard Shipping Pkg.	Approx. Wght. Lbs./M Ft.	List Price Per M Ft.
510	20/4	7/28	—	.075x.350	1000' Spool	1 Spool	20	34.00
514	20/4	7/28	.010	.170	1000' Spool	1 Spool	24	50.00
515	20/5	7/28	.010	.180	1000' Spool	1 Spool	30	60.00
518	22/8	7/30	.015	.205	1000' Spool	1 Spool	34	70.00

## t-v lead-in cables

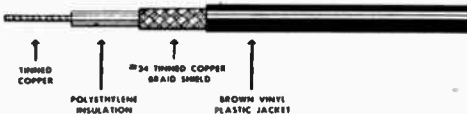
Cornish TV Lead-in Cables are furnished only in pure virgin polyethylene insulation to insure long life under severe operating conditions and are designed so that only exceptionally low losses at high frequencies are experienced. They are available with pure copper or copperweld conductors. Copperweld 300 Ohm lead-in cable has 1/2 times the tensile strength of copper and has approximately 2 1/2 times greater flexing life. It insures long service life in TV aerial installations requiring long runs.



Catalog Number	AWG Size	Number of Strands	Nominal Outside Diameter Inch	Frequency (MC)	Attenuation Per 100 Ft. (Decibels)	Impedance (Ohms)	Capacitance Per Ft. (MMF)	Standard Put-Up Pkg.	Approx. Wght. Lbs./M Ft.	List Price Per M Ft.
500	20/2	7/28	.052 x .400	100	1.1	300	4.6	1000' Spool	17	26.00
501	20/2	7/28	.072 x .400	200	1.7	300	4.6	1000' Spool	18	28.60
502	20/2	7/28	.100 x .400	300	2.2	300	4.6	1000' Spool	20	30.40
				400	2.7					
503	20/2	7/28	.052 x .400	100	1.1	300	4.6	1000' Spool	17	26.00
504	20/2	7/28	.072 x .400	200	1.7	300	4.6	1000' Spool	18	28.60
505	20/2	7/28	.100 x .400	300	2.2	300	4.6	1000' Spool	20	30.40
				400	2.7					
520	20/2	7/28	.320 x .460	100	1.25	300	4.65	500' Spool	28	50.00
499	22/2	7/50	.040 x .360			300	4.6	1000' Spool	12	20.50

## RG/U coaxial transmission cables

Cornish RG/U Coaxial Transmission Cables are available in two basic constructions, namely RG-11/U, Catalog No. 522 and RG-59/U, Catalog No. 521. They are designed for use as communication cables and television antenna lead-in cable. These cables are available, normally, from factory stock. Other special RG/U constructions can be furnished to special order providing quantities required constitute an economical manufacturing run.



Catalog Number	AWG Size	Number of Strands	Nom. Outside Diam. Inch	Frequency (MMC)	Atten. per 100 Ft. (Decibels)	Impedance (Ohms)	Capacitance per M Ft. (MMF)	Standard Put-Up	Standard Shipping Pkg.	Approx. Wght. Per M Ft. Lbs.	List Price Per M Ft.
521 RG-59/U	22/1	Solid	.245	100	3.75	73	21	500 Ft. Spool	1 Spool	43	97.00
				200	5.60						
				400	8.30						
				100	1.90						
522 RG-11/U	18/1	7/26	.405	200	2.85	75	20.5	500 Ft. Spool	1 Spool	98	194.00
				400	4.35						

Note: All Cornish Wire and Cable is available in put-ups other than those listed, ask for current price schedule.



# Radio & TV Wire Products

## test lead wire



Catalog Number	AWG Size	Number of Strands	Jacket Insulation Inch	Nominal Outside Diameter Inch	Suggested Voltage Rating	Available Standard Put-Up	Standard Shipping Pkgs.	Approx. Wght. Lbs./M Ft.	List Price Per M Ft.
1142	18	65/36	.044	.140	5000	100' Spool	4 Spools	15	40.00
1142	18	65/36	.044	.140	5000	500' Spool	1 Spool	15	40.00
1142	18	65/36	.044	.140	5000	1000' Spool	1 Spool	15	40.00

STANDARD COLORS:—Red and Black.

## intercommunication cable

Cornish Intercommunication and Sound Cables are made in various constructions utilizing plastic insulation for both conductors and jacket. Where installation conditions dictate, Cornish shielded cables are recommended.



Catalog Number	AWG Size	Number of Strands	Number of Pairs	Thick. Conductor Insulation Inch	Thickness Jacket Insulation Inch	Nominal Outside Diameter Inch	Standard Put-Up	Standard Shipping Pkg.	Approx. Wght. Lbs./M Ft.	List Price Per M Ft.
1240	22/2	Solid	1	.015	.015	.145	500' Spool	1 Spool	14	30.00
1241	22/4	Solid	2	.015	.015	.205	500' Spool	1 Spool	22	49.00
1242	22/6	Solid	3	.015	.015	.230	500' Spool	1 Spool	29	65.00
1243	22/12	Solid	6	.015	.015	.265	500' Spool	1 Spool	42	92.50
1244	22/18	Solid	9	.015	.015	.320	500' Spool	1 Spool	68	132.50
1245	22/30	Solid	15	.015	.015	.380	500' Coil	1 Coil	105	250.00
1246	22/54	Solid	27	.015	.015	.510	500' Coil	1 Coil	170	430.00

## plastic insulated cable



Catalog Number	AWG Size	Number of Strands	Thick. Conductor Insulation Inch	Thickness Jacket Insulation Inch	Nominal Outside Diameter Inch	Standard Put-Up	Standard Shipping Pkg.	Approx. Wght. Lbs./M Ft.	List Price Per M Ft.
1223	22/3	7/30	.015	.015	.140	500' Spool	1 Spool	14	34.00
1224	22/4	7/30	.015	.015	.160	500' Spool	1 Spool	20	45.00

## shielded intercommunication cable



Catalog Number	AWG Size	Number of Strands	Thickness Conductor Insulation Inch	Tinned Copper Shielding	Nominal Outside Diameter Inch	Standard Put-Up	Standard Shipping Pkg.	Approx. Wght. Lbs./M Ft.	List Price Per M Ft.
1230	20/2	10/30	.015	#34	.163	1000 ft.	2	22	50.00
1238	18/2	16/30	.015	#34	.228	1000 ft.	2	35	70.00
1233	20/3	10/30	.015	#34	.230	500 ft.	2	42	95.00

## intercommunication cable



Catalog Number	AWG Size	Number of Strands	Thickness Conductor Insulation Inch	Thickness Jacket Insulation Inch	Nominal Outside Diameter Inch	Standard Put-Up	Standard Shipping Package	Approx. Weight Lbs./M ft.	List Price Per M Ft.
1234	20/2	10/30	.015	.015	.205	1000' Spool	1 Spool	29	60.00
1236	20/3	10/30	.015	.015	.262	1000' Spool	1 Spool	35	105.00
1237	18/2	16/30	.015	.015	.260	500' Spool	1 Spool	35	72.00
1239	*20/4	10/30	.015	.015	.230	500' Spool	1 Spool	45	100.00

\* Two conductors twisted and shielded with unshielded twisted pair.

## nonflame-cor hook-up wire



Catalog Number	AWG Size	Number of Strands	Nominal Outside Diameter Inches	Voltage Break-Down Nominal Volts	Available Standard Put-Ups	*Standard Shipping Package	Approx. Weight Lbs./M Ft.	List Price Per M Ft.
1084	18	16/30	.110	7400	1000' Spool	1	9	38.05
1085	20	10/30	.102	7400	1000' Spool	1	7	31.00
1086	22	7/30	.091	7400	1000' Spool	1	6	26.40
1079	18	Solid	.103	7400	1000' Spool	1	9	35.10
1080	20	Solid	.095	7400	1000' Spool	1	6	28.10
1081	22	Solid	.091	7400	1000' Spool	1	5	24.50

STANDARD COLORS:—Black, Red, Green, Yellow, Blue, Brown, Orange, Slate, White.



# Radio & TV Wire Products

## replacement and extension cord sets

**DESCRIPTION**  
18/2 SP-1 Brown with Cornish Molded-On Male Plug and Molded-On  $\pm$ 185TV Connector UL Flag Label.

**SUGGESTED USE**  
Television Power Supply Cord for use on original equipment or as a replacement cord set.



cat. no. 3185  
3189

**DESCRIPTION**  
18/2 SP-1 Brown with Cornish Molded-On Male Plug, Appliance end slit 2 inches. Conductor stripped 1 inch. Manked UL Flag Label.

**SUGGESTED USE**  
Replacement Cord-set for radios, record players, lamps and small appliances.



cat. no. 3500  
3501

**DESCRIPTION**  
18/2 5V Black with Cornish Molded-On Male Plug. Appliance end jacket removed 2 inches. Conductors stripped 1 inch. Manked UL Flag Label.

**SUGGESTED USE**  
Replacement Cord-set for food mixers, test equipment and small appliances.



cat. no. 3509  
3510

**DESCRIPTION**  
18/2 16/30 SJ Black with Cornish Molded-On Plug Appliance end jacket removed 2 inches. Conductors stripped 1 inch. Manked UL Flag Label.

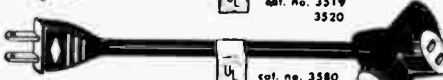
**SUGGESTED USE**  
Replacement Cord set for electric tools, small motors and general use.



cat. no. 3519  
3520

**DESCRIPTION**  
18/2 SP-1 Brown with Cornish Molded-On Plug and soft molded rubber cube tap. UL Blue Flag Label.

**SUGGESTED USE**  
Extension Cord set for office and household use.



cat. no. 3580  
3581  
3582

**DESCRIPTION**  
18/2 16/30 SJ Black with Cornish Molded-On Male Plug and Cornish Molded-On Female Connector. Coiled and boxed.

**SUGGESTED USE**  
Extension Cord set for outdoor and heavy duty use.



cat. no. 3543  
3544

**DESCRIPTION**  
16/2 Glazed Cotton MPD Replacement Heater Cord with Cornish Molded-On Plug and with crotch and conductors wrapped 3 inches with asbestos thread and conductors bared 1/2 inch. Manked, Green Flag Label.

**SUGGESTED USE**  
For electric irons and other heating devices.



cat. no. 5520

**DESCRIPTION**  
18/2 SP-1 Brown with Cornish Molded-On Male Plug and Molded-On  $\pm$ 190 Connector.  
\*Not UL Approved.

**SUGGESTED USE**  
Television Power Supply "Cheater" Cord for safe to and use by authorized television servicemen.

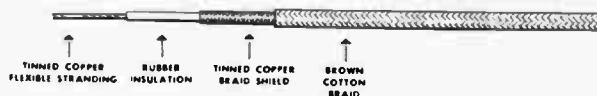


cat. no. 3190  
3191

Catalog Number	Length	Standard Put-Up	Standard Shipping Pkg.	Wght. Standard Shipping Pkg.	List Price Per M. Cords	Catalog Number	Length	Standard Put-Up	Standard Shipping Pkg.	Wght. Standard Shipping Pkg.	List Price Per M. Cords
3185	6 Feet	100	100	19	497.00	3580	6 Feet	100	100	24	802.90
3189	9 Feet	100	100	25	605.65	3581	9 Feet	100	100	32	975.00
3500	6 Feet	100	100	18	400.00	3582	12 Feet	100	100	38	1125.75
3501	10 Feet	100	100	26	554.55	5520	7 Feet	100	100	30	1306.40
3509	6 Feet	100	100	28	762.15	3543	15 Feet	1	20	23	2080.65
3510	10 Feet	50	50	23	1095.25	3544	25 Feet	1	20	33	2785.90
3519	6 Feet	50	50	19	786.25	3190*	6 Feet	100	100	19	497.00
3520	10 Feet	50	50	28	1132.50	3191*	9 Feet	100	100	25	605.65

## phonograph pick-up arm cable

This cable is designed specifically for use as phonograph pick-up arm cable. The conductor, being stranded from #36 AWG wire, is very flexible. The overall diameter of the wire is quite small and cable is devoid of stiffness.



Catalog Number	AWG Size	Number of Strands	Thick. Conductor Insulation Inch	Tinned Copper Shielding	Nom. Outside Diameter Inch	Outer Braid	Standard Put-Up	Standard Shipping Package	Approx. Wght. Lbs./M. Ft.	List Price Per M. Ft.
1250	24/1	16/36	.015	#36	.095	Overall	100' Spool	4 Spools	7	53.00
1251	24/1	16/36	.015	#36	.080	None	100' Spool	4 Spools	6	45.00

## high voltage and cathode-ray tube lead wire

This cable is designed for high voltage applications such as leads to cathode-ray tubes in television receivers and oscilloscopes. It has a high dielectric strength, corona resistance, and minimum surface leakage.



Catalog Number	AWG Size	Number of Strands	Nominal Outside Diameter Inch	Suggested Voltage Rating	Color	Available Standard Put-Ups	Standard Shipping Package	Approx. Wght. Lbs./M. Ft.	List Price Per M. Ft.
1248	20/1	10/30	.108	10,000	White	100' Spool	4 Spools	14	30.00
1249	20/1	10/30	.169	20,000	White With Red Stripes	100' Spool	4 Spools	24	55.00

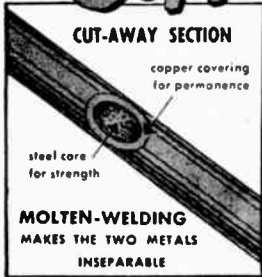
Note: All Cornish Wire and Cable is available in put-ups other than those listed, ask for current price schedule.

# PROVED DEPENDABILITY

# Copperweld TRADE MARK NON-RUSTING

## GROUND RODS and CLAMPS

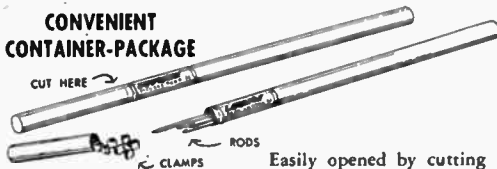
### FOR RADIO AND TELEVISION



Copperweld Ground Rods and Clamps provide the reliable grounding protection necessary for successful performance, elimination of interference and safe operation of radio and television equipment. The rugged steel core gives the stiffness you need for easy driving. High conductance and lasting protection against corrosion are provided by the heavy molten-welded copper covering.

Millions of Copperweld Ground Rods are rendering permanent grounding protection. You're **SAFE** when you use Copperweld—the only Molten-Welded Ground Rods. They give you **PROVED dependability** — **PROVED economy** — **PROVED longer service**.

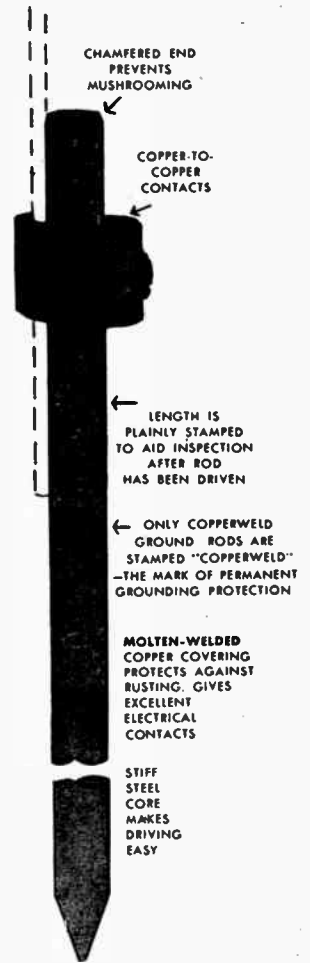
#### CONVENIENT CONTAINER-PACKAGE



Easily opened by cutting the heavy fiber tube. This creates a bin for the rods and a convenient container for the clamps.

#### SPECIFICATIONS

Catalog Number	Size	Pounds Per 100 Pcs.	Pcs. Per Package
RT 34	3/8" x 4'	142	25
RT 36	3/8" x 6'	212	25
RT 38	3/8" x 8'	277	20
RT 45	1/2" x 5'	320	10
RT 46	1/2" x 6'	385	10
RT 48	1/2" x 8'	505	10



MOLTEN-WELDED COPPER COVERING PROTECTS AGAINST RUSTING. GIVES EXCELLENT ELECTRICAL CONTACTS

STIFF STEEL CORE MAKES DRIVING EASY



#### COPPERWELD GUY STRAND

Now handles better than ever because of shorter lay and different stranding practice.

Size	Strength
2 No. 18	350#
3 No. 18	550#
2 No. 14	650#
3 No. 14	1000#

Thick welded-on covering protects against rust.



#### COPPERWELD ANTENNA WIRE

Preferred for many years by professionals and amateurs. Because of its high strength, it maintains a fixed length. Furnished bare or enameled in 4 sizes. No. 10 Awg, No. 12 Awg, and No. 14 Awg are available in 100', 150', 250', 500' and 1,000' coil lengths. No. 14 is also coiled in 2,500' lengths. Size No. 18 Awg is put up in 3,000-ft. spools.

#### SOFT COPPERWELD GROUNDING WIRE

Now available in 5 sizes, No. 8, 10, 12, 14, 16 AWG in lengths of 50 ft. to 2000 ft. depending on size. All sizes are approved by Underwriters Code. Copper to copper connections stay good.

#### SELL a GOOD job

The extra cost of a Copperweld ground rod, Copperweld grounding wire and Copperweld guy wire is about 75 cents per job. Give your customer the choice of paying more for quality. He probably will if you give him a chance.

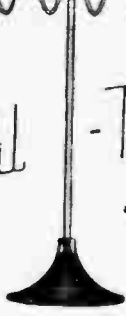
**CROWN METAL PRODUCTS CO.**

WYANO, PA.

# HI-LO TV ANTENNAS are BEST



*Spiral*® -Tenna



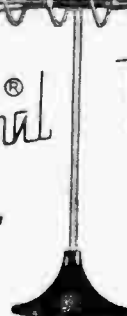
**MODEL 101**  
For  
Channels 2-13

Here is the greatest indoor TV antenna . . . the antenna which has been setting the highest standard for indoor TV reception since the beginning of television. Beautiful golden spiral which performs as well as it looks . . . the highest signal gain possible . . . new and improved for better television pictures. Shipping weight: 2 lbs.

**\$9<sup>95</sup>**  
list price

HI-LO TV ANTENNAS ARE BETTER FOR UHF, VHF, AND COLOR

*Spiral*® Tenna



**MODEL 202UV**  
For  
Channels 2-83

Hi-Lo is still the leader in the antenna business and this UHF-VHF model is one of the reasons. This is the best-performing indoor television antenna for all channels which is guaranteed to outperform others. Its more modern design and finer engineering assure you of television reception at its highest peak. Shipping wt.: 2 lbs.

**\$9<sup>95</sup>**  
list price



**MODEL 303**  
**UHF ANTENNA**

Unsurpassed reception in UHF areas with this proven and accepted indoor antenna which works better in tough areas. Shipping weight: 1½ lbs.

list price **\$5<sup>95</sup>**

You will obtain the sharpest, clearest TV pictures with HI-LO

## HI-LO Wrought Iron TV STANDS



**MODEL 600**  
**\$14<sup>95</sup>**  
list price

### Heavy Duty TV Stand with Swivel and Extension Arms

This finer stand is unequalled for utility and beauty. Designed with the latest engineering techniques, it is stronger than any other wrought iron stand . . . turntable supported an easy roll rollers spaced 16" on centers for greater stability . . . is guaranteed to support even the heaviest television sets, with no wobble, no shimmy and complete safety. Has so many exclusive features that you must see it to believe it. Shipping weight: 18 lbs.



**MODEL 700**  
**\$11<sup>50</sup>**  
list price

### Swivel TV Stand with Extension Arms

Here is the Cadillac of the line at Chevrolet prices because this versatile television stand has everything. The best engineering makes Model 700 a guaranteed seller and one that will bring back more satisfied customers than you dreamed possible. Most durable, yet light weight, rollers spaced 16" on centers for better stability and rubber feet to really prevent marring of any floors. Shipping weight: 13 lbs.



**MODEL 720**  
**\$9<sup>25</sup>**  
list price

### TV Stand with Extension Arms

This is the finest TV stand; one you'll be prouder to own. Made to fit practically any television set regardless of size and weight. Like all other Hi-Lo TV Stands, this no-wobble, no-shimmy stand will provide one of the nicest pieces of furniture. Has many exclusive features including sturdier design, more durable and much more attractive appearance. Shipping wt.: 11 lbs.

### Heavy Duty Stand

From the fine rubber feet which prevent marring of floors to the durable, streamlined wrought iron frame, this is a better stand for the money than any other on the market. You get the finest wrought iron, the smartest design, the most durable legs. Shipping weight: 12 lbs.



**MODEL 650**  
**\$8<sup>75</sup>**  
list price

### TV Stand with Swivel

The best viewing is yours as you turn this better stand because its rotating feature is designed to provide smoothest operation . . . the easiest, most convenient turntable. Stronger than TV stands costing much more, with a design that is second to none, this better stand is designed to blend better with furniture. Shipping weight 10 lbs.



**MODEL 710**  
**\$9<sup>50</sup>**  
list price

### TV Stand

We defy anyone to equal this because here is the greatest TV stand value in the world. Imagine, you get highest quality engineering, finest streamlined design and durability that is tops AND at such a low, low price . . . will suit any person . . . fit any purse. Shipping weight: 8 lbs.



**MODEL 750**  
**\$6<sup>50</sup>**  
list price

U.S. Pat. No. 2,493,579  
Canadian Pat. 1951  
Other Pat. Pending

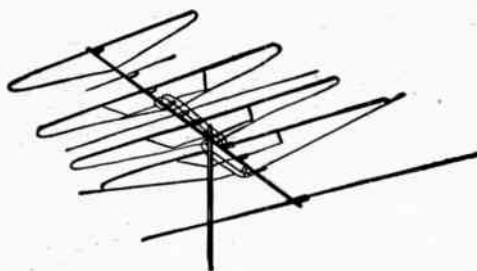
Mfd. By **Hi-Lo** TV Antenna Corporation  
Chicago 13, Illinois

# Go TRIO in '58

## TRIO *Zephyr Royal*

The Nation's Best Performing Antenna  
On Color or Black & White

Recommended for areas where better than average sensitivity is needed for both high and low channels. Now—more powerful than ever! with the revolutionary new extended "wing" dipole, the most powerful dipole ever designed. Plus the "wing" director, specially designed to enhance the power and sensitivity of the "wing" dipole.



## TRIO *Zephyr* pioneer

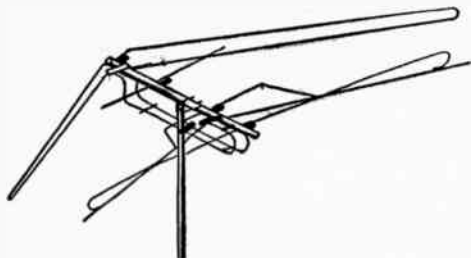
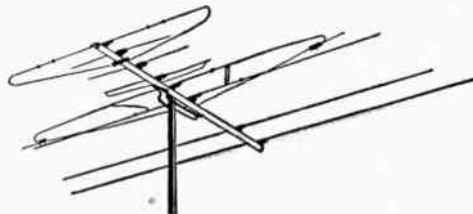
For Extreme Distance

Uses the extended "wing" dipoles. The improved "wing" dipole that adds increased power and the "wing" director. Sharper than conventional director systems. A method for added gain on both high and low channels.

## TRIO *Zephyr* MITE

For Distance

Flat response that gives good reception on both black and white and color. Uses the extended "wing" dipole and "wing" director—most powerful combination ever designed.



## TRIO Colorite

Specifically Designed for Color!

An equally outstanding performer on black and white. Flat frequency response. Extended "wing" dipole. Compact. TRIO Colorite—the antenna with a future!

## TRIO Sharp Shooters

America's No. 1 Antenna Values!

### TRIO "Sharpshooter" YAGIS

Models for every channel and power gain required. Completely pre-assembled. 5 element, 10 element and broadband models.

### TRIO "Sharpshooter" CONICALS

Highest quality. 12 popular models. Completely pre-assembled.

### THE TRIO "88"

Uses famous TRIO "Conical" head and Instalok clamps. Available in single and two bay models.

## TRIO SU 44 UHF ANTENNA

Wide vertical expanse. Instalok-type assembly. New improved phasing harness. Rugged construction. Improved over TRIO UBT-4—rates as highest gain UHF antenna by independent, unsolicited tests.

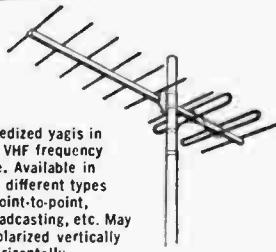


SU-44

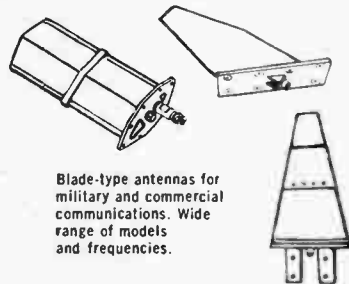


**TRIO MANUFACTURING CO.**  
GRIGGSVILLE, ILLINOIS.

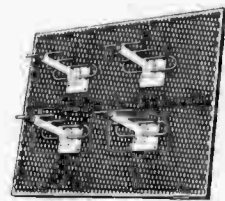
**when it comes to antennas . . .  
you name it—we make it**



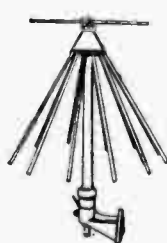
Ruggedized yagis in wide VHF frequency range. Available in many different types for point-to-point, rebroadcasting, etc. May be polarized vertically or horizontally.



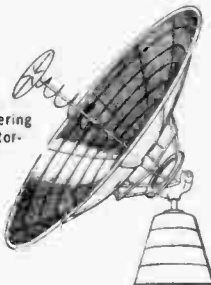
Blade-type antennas for military and commercial communications. Wide range of models and frequencies.



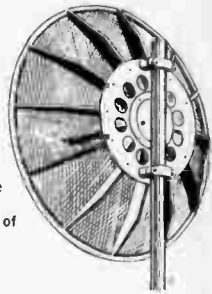
SY-44 Screen type reflector with 4 yagi antennas. 450-470 MC range. Mounting for tower or pipe mast available. 13 db gain over half-wave dipole.



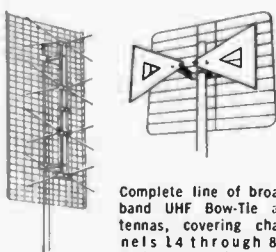
AT-197 Disc cone type. Frequency range 225-400 MC.



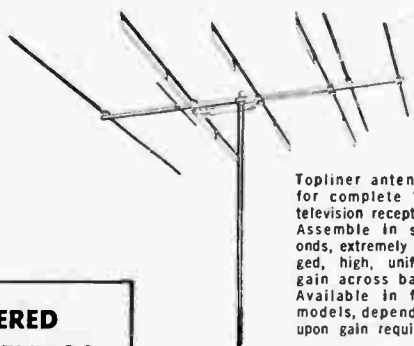
16-foot telemetering parabolic reflector-antenna. Helical driver for operation in range of 215-235 MC. Other drivers available.



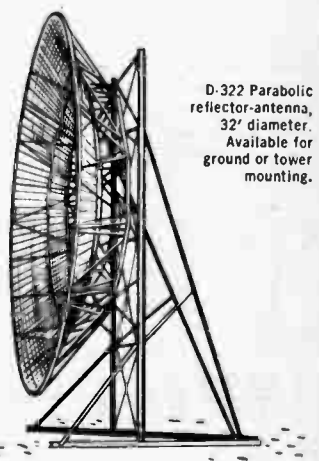
4-foot, one-piece parabolic reflector-antenna. Wide selection of drivers. Also, 6, 8, 10, 16, 19 and 32-foot dishes available with drivers to meet the needs of the system.



Complete line of broadband UHF Bow-Tie antennas, covering channels 14 through 83. Available in various models depending upon gain required.



Topliner antennas for complete VHF television reception. Assemble in seconds, extremely rugged, high, uniform gain across band. Available in four models, depending upon gain required.



D-322 Parabolic reflector-antenna, 32' diameter. Available for ground or tower mounting.

**AREA-ENGINEERED TELEVISION ANTENNAS**

Taco specializes in Area-Engineered antennas for the television trade. These antennas are peaked for the frequency and directional requirements of the specific area. Taco area-engineered antenna systems are available in VHF-UHF combinations with suitable connecting harnesses. These specialized antennas are made in quantity lots for TACO Distributors.

Taco is the world's largest organization devoted solely to design, development and production of fine antenna systems for the military, commercial and home markets. A wide choice of 'stock' antenna types makes Taco the place to look for antennas to meet your needs. If we don't have what you need, we'll make it.

**TACO**  
**TECHNICAL APPLIANCE CORPORATION, SHERBURNE, N. Y.**  
 In Canada: Hockbusch Electronics, Ltd., Toronto 4, Ont.

# Ward

# World's Finest

## Auto Aerials

### FRONT MOUNTS

#### EIGHT BALL

World's most popular universal split-ball design. Installed completely from outside in minutes. Adjusts to any desired angle. Smart, rugged, rattle-proof.

- Adjustable from 56" to 22".
- 54" Elektran lead cable.
- Triple chrome plated brass tubing. MODEL TCF-3C.

12-carton: 12 lbs., 1 lb., each.



#### NEW DE LUXE PHANTOM COMPLETE DISAPPEARING

Extends to 45", collapses down to 1". Features new flame tip. Popular 8-ball universal mount. New shield tube is water-sealed and guards 100% against engine noises. New lead take-off and mounting bracket. Supplied with water grommet for double fender construction.

- 3 sections extend to 45".
- Collapses to 1".
- Heavy chrome-plated brass tubing.
- 54" Elektran lead cable. MODEL DCF-3C.

12-carton: 12 lbs., 1 lb., each.

#### MAJORETTE

Junior partner to 8-ball economy model top cowl or top fender mount. Has all major features of 8-ball, mounting from outside. Highest quality antenna for its price. Very popular.

- Extends to 56" from 22".
- 54" Elektran lead cable.
- Triple chrome plated brass tubing. MODEL TB-3.

12-carton: 11¼ lbs., 14 oz. each.

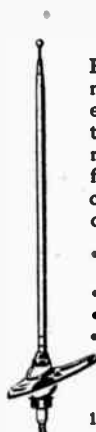


#### STREAMLINE TEAR DROP

Has that "original equipment" styling, to match newest car designs. Finest reception. Heavy chrome-plate mount, with pad designed to fit body contour. Mounts completely from outside of car.

- 3 sections extend from 22" to 56".
- 54" Elektran lead cable.
- Rod adjusts up to 35° angle.
- Triple chrome-plated brass. MODEL TF-56 MO-54" lead. MODEL TE-56 MO-36" lead.

12-carton: 12 lbs., 1 lb., each.



#### CHROME FIBERGLAS

Ward's fabulous Chrome Fiberglass bends but flexes back! It . . .

- Looks like chrome.
- Feels like chrome.
- Sounds like chrome

Not a surface paint but an exclusive impregnating developed by WARD . . . resistant to chemicals and salt water.

- Single section, 38" long.
- Popular 8-ball mount.
- 54" Elektran lead cable. MODEL TGF-1 CHROME.

12-carton: 9 lbs., 12 oz., each.

#### DURA-RAMIC® FIBERGLAS

##### 6 Colors

Engineered for top performance, corrosion resistance and durability — these colorful aerials can't fade, rust or corrode. Flexible so they bend but don't break. Fiberglass is actually impregnated with the colors that are color-keyed for today's styles: Yellow, Tan, Red, Green Blue, White.

- Single section, 38" long.
- Popular 8-ball mount.
- 54" Elektran lead cable. MODEL TGF-1. Specify color.

6-carton: 9 lbs., 12 oz., each.



### SIDE MOUNTS

#### SKY QUEEN

Neatly styled. Two stanchions assure sturdy mounting. Rugged and rattle-proof. Permanent trouble-free service.

- 3 sections extend to 66".
- 36" Elektran lead cable.
- Triple chrome plated brass. MODEL SC-6.

12-carton: 12¾ lbs., 1 lb. each.



#### LONG RANGER

Four section—2 stanchion with extra length for more pull in low signal areas. Perfect for over-the-road truck equipment.

- 4 sections extend to 100".
- 36" Elektran lead cable.
- Triple chrome plated brass. MODEL SC-8.

12-carton: 21 lbs., 1½ lbs. each.



#### CONTINENTAL (Flex-angle)

Adaptable to car bodies of foreign make. The only aerial that fits Volkswagen. Easy installation. Flexible adjustment so rod can lock in vertical position.

- 3 sections, to 56".
- 36" Elektran lead cable.
- Triple chrome plated brass. MODEL CF-6.

12-carton: 15 lbs., 1¼ lbs. each.





# Ward

# Quality-built

## REAR MOUNTS

### SPARKLE REAR FIN ANTENNA

Gleaming chrome mount for rear deck or rear fenders. Includes flat mounting pad and contour pad for high-crown fenders.

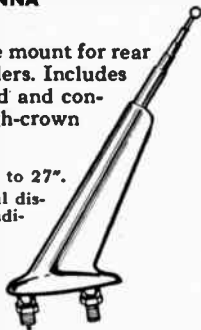
- 3 sections extend to 27".
- Packed in colorful display carton (individually).
- 15' lead cable.

MODEL TFL-1.

12 to master carton: 16½ lbs.

Dummy Dress-up Model: TFD-1 (No lead cable, no reception).

12 to master carton: 12 lbs.



### MIDGET 8-BALL

New styling with WARD's short twin rear mounts. Same quality as famous 8-ball.

- 3 sections extend 11½" to 27".
- One 12" lead, one 6' lead and 12' lead extension with built-in capacitors.
- "T" connector and 5 clips.

MODEL TCT-2.

6 twins to master carton: 13¼ lbs.



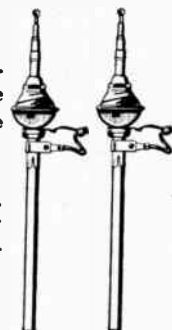
### MIDGET "PHANTOM" DISAPPEARING

Short Twin Rear Mounts. Smart built-in appearance with same dependable WARD quality.

- 3 section telescopic masts, extended from 1¾" to 24".
- "T" connector and 5 clips.

MODEL TDT-2.

6 twins to master carton: 13½ lbs.



## ACCESSORIES

### REAR FENDER PADS

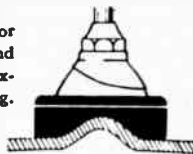


C-60 fits high-crown fenders on cars up to 1957 models, except Chrysler products. 2 pads per package, 6 packages per card.

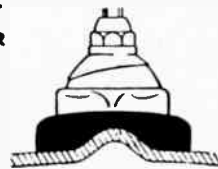
C60A for '56 and '57 Chrysler cars. 2 pads per package, 6 packages mounted on display card.

### FENDER PADS

For use with 8-ball mounts or streamlined mount on front and rear fenders of cars with extremely high crowns or beading.



### FRONT FENDER PADS



C61 for WARD 8-ball mounts on 1957 cars with creased or beaded front fenders. Individually wrapped; 12 pads per card.

C62 for WARD Tear Drop Model TF-56MO on '57 cars with creased or beaded front fenders. Individually wrapped; 6 pads per card.



EACH WARD AERIAL IS COMPLETE WITH WARD ELEKTRAN LEAD CABLE

Made of finest insulating materials: polyethylene, copper-braided shield, oil and abrasion-proof Vinylite. Exclusive lead connector fitting gives easy coaxial connection. 100% shielded.

### REPLACEMENT LEADS:

Part No. 15-1 — 36"

Part No. 15-99 — 54"

LEAD EXTENSIONS: Patented. Give added length for fender or rear installations.

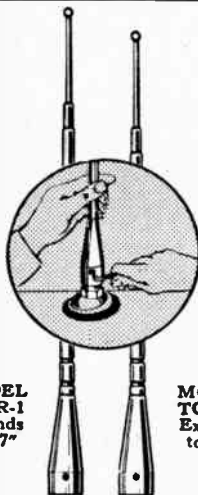
Model C-8: 12", 24 per box, 1½ lbs.

Model C-9: 18", 24 per box, 2 lbs.

Model C-12: 24", 24 per box, 2½ lbs.

Model C-41: 9' with built-in capacitor, 12 per box, 6 lbs.

Model C-42: 15' with built-in capacitor, 12 per box, 8¾ lbs.



MODEL TCFR-1 Extends to 57"

MODEL TCFR-2 Extends to 38"

### SMART, NEW REPLACEMENT MASTS

3-section telescopic. Triple chrome plated brass tubing. Just slip on and tighten over stub of original mast with Allen wrench, supplied. 12 to carton: 6 lbs.

### JOBBER DISPLAY RACK

For chrome aerials, a wrought-iron floor rack that gets attention! Needs only 2 sq. ft. of floor space. Holds 36 TCF-3C chrome aerials. MODEL WJD-2.



### DEALER DISPLAY RACK

Free with purchase of 6 aerials. Colorful, compact. Mounts a single aerial on side for customers to examine. Holds 6 TCF-3C packaged chrome aerials.

MODEL WDD-2



# Ward

# World's Finest

## Communication antennas

a quality antenna for every mobile frequency and application

Each WARD antenna in WARD's complete line has been built with rugged reliability for dependable day-in, day-out service!

**EMERGENCY**  
**INDUSTRIAL**  
**COMMERCIAL**  
**AMATEUR**

### NEW HEAVY-DUTY MASTS

Made of highest grade stainless steel, these masts assure heavy-duty performance. 84½" mast can be bent to bring tip and base 30" apart at base without distortion. All base studs ¾"-24 threads. All taper ground with ball tip.

WCA-320 series—60" long, choice of adapters: chrome, cadmium plated; ⅝" hex steel, cadmium plated with set screws; ½" hex stainless steel.

WCA-321 ser.—72", same choices.  
WCA-322 ser.—84", same choices.  
WCA-323 ser.—96", same choices.  
WCA-324 ser.—Fiberglass in all 4 lengths.

### DISGUISE ANTENNAS

Look and mount like ordinary car aerials, with WARD 8-ball mount. The secret is in the lead: stub load type for 30-50 mcs; standard leads for 144-174 mcs. WCA-B-71 looks like 3-section car aerial, but length fixed at 55½" (permanent at telescopic joints). Has heavy mounting bracket. WCA-235 same but with 70" mast. WCA-143 same but tapered mast. WCA-248 looks like 3-section, 8-ball mount. WCA-249 55½" tapered, 8-ball mount.

### LEADS FOR DISGUISE ANTENNAS

Available in 3 lengths (6', 16', 20') with either RG-8/U or RG-58A/U cables. Stub-type loading for 30-50 mc:

	RG-8/U		RG-58A/U	
	1 connector assembled	2 connectors (1 pkgd. loose)	1 connector assembled	2 connectors (1 pkgd. loose)
16-foot	WCA-147	WCA-163	WCA-A147	—
20-foot	WCA-152	WCA-156	WCA-150	WCA-154
6-foot	WCA-153	WCA-157	WCA-151	WCA-155
Regular coaxial cable leads for 144-174 mc:				
20-foot	WCA-247	—	WCA-246	—

All cables use PL-259 termination.

### WALKIE TALKIE MODEL WCA-254

Designed expressly for 2-way radio . . . gives the greatest operating range and clearest reception. 19" whip rod fits any adapter which accepts PL-259 connector.

### ROOF TOP ANTENNAS

3 efficient models with varying megacycle ranges:

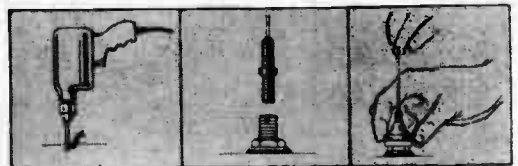
WCA—250 - 144-174 mc.

WCA—251 - 450-470 mc.

WCA—A250 - 108-174 mc.

Mount from the outside; only one ⅜" hole required. Has 12 feet of cable. Weather proof and positive ground. Ideal for fleets, police, taxi, fire, etc.

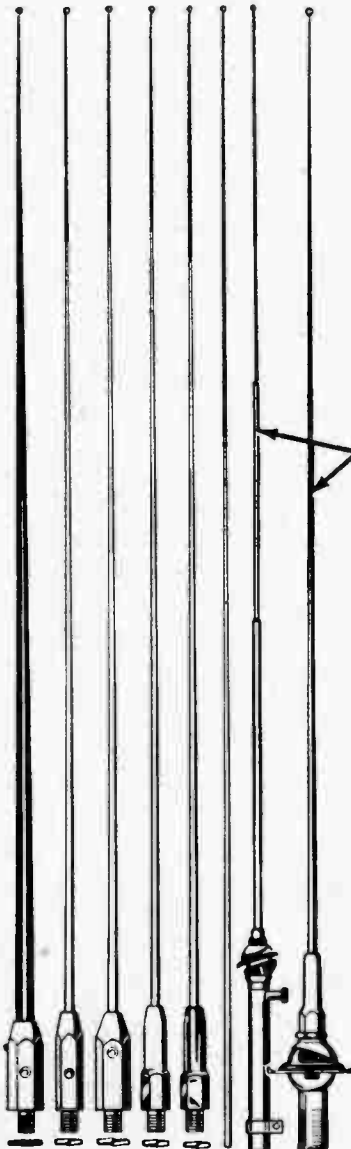
### NEWEST, EASIEST INSTALLATION:



Drill hole with any standard ⅜" drill. Tolerance not critical.

Snap-in assures positive electrical contact between rod & lead cable.

Whip rod becomes handle to hold while installing components quickly, easily.



# Ward

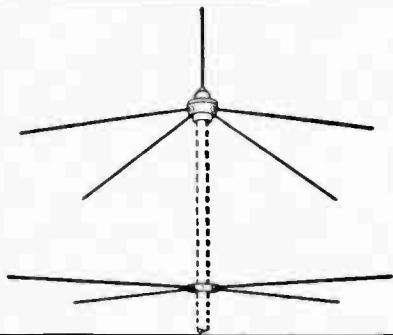
# Quality-built

### GROUND PLANE ANTENNAS AND ADAPTERS

General-purpose, fixed-station antennas, nondirectional and vertically polarized. For any frequency in 144-174 mc. range; will handle up to 3 kw of power. Good impedance, minimum VSWR. Radiate equal power in all horizontal directions. Has built-in lightning arrester; weather-protected with cable terminating in mounting mast. Supplementary rods available to lower vertical radiation angle. Shipping weight, 3 lbs.

WCA-A94 for 144-152 mc. WCA-95 for lowered  
WCA-B94 for 152-164 mc. of radiation.

WCA-94 for 164-174 mc. (Ring and 4 ground rods)



### ADAPTERS

Model WCA-96 VSWR: less than 1.5:1; For use with RG-58/U, and RG-8/U cables. 52 ohms impedance. Vertical polarized. 300 watts maximum.

Model WCA-97 for use with RG-17/U cables. Takes 1/4" IPS.

### NEW MOBILE LOADING COILS

For use with 60" mast and 36" mast extension. Covered with weatherproof plastic. For 20, 40, 80 meters. Specify. WCA-335-20, 40 or 80.



### MAST EXTENSIONS

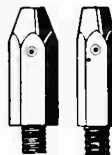
Heavy chrome-plated brass tubing with 3/8-24 thread at both ends. 3 lengths: WCA-330-12" or 24" or 36".



### ADAPTERS

Both have 3/8-24 thread for use on any standard WARD mast. Lock washer included and set screws.

WCA-89-357 stainless, 1/2" hex.  
WCA-89-358 cadmium plated; 3/8" hex.



### SPRINGS

Protect car, protect mast. Shock mounting "gives" under impact. Normal vertical. WCA-3A Cadmium plated with black painted mounts. WCA-3AL. All cadmium plated.



WCA-301 deluxe: stainless steel spring and mounts. 2 lbs., 6 oz.

### COMBINATION BASE AND SPRING

Assembled as one unit. Heavy duty. WCA-336. Weight 3 lbs., 12 oz.



### ALL-NEW HEAVY-DUTY MOBILE BASES

Universal swivel bases; lighter and stronger for rugged service. No special tools. Mounts watertight on any curved or flat surface. Template provided: 3/8-24 mounting hole. Entire outside installation. Back-up plate furnished.



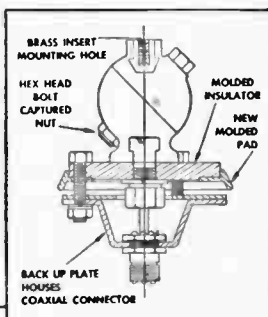
WCA-310, 11  
Painted, or  
stainless hardware.

WCA-315  
Chrome plated  
Stainless hardware

WCA-312  
Chrome plated

### Coaxial BASES

Accept PL-259  
WCA-313 painted  
WCA-314 stainless



### BUMPER MOUNT

Chain type; fits any bumper with 1" clearance from car body. Theft-proof clamp attached to antenna mounting bracket. WCA-339.



### ANTENNA MAST HOOK

Clamp action hook that attaches to roof gutter of car. Holds mast back from base or spring when antenna is not in use. WCA-340.

## WARD PRODUCTS CORPORATION

Division of the Gabriel Company

Cleveland 15, Ohio

**ANTENNA  
DEVELOPMENT &  
MANUFACTURING**  
Asbury Park



**ANTENNA  
DESIGN ENGINEERS  
SINCE 1921**  
New Jersey

**PRE-TUNED FOR OPTIMUM PERFORMANCE**

**FAMOUS**

*Telrex*

**COMMERCIAL—  
GRADE ARRAYS**

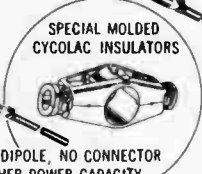
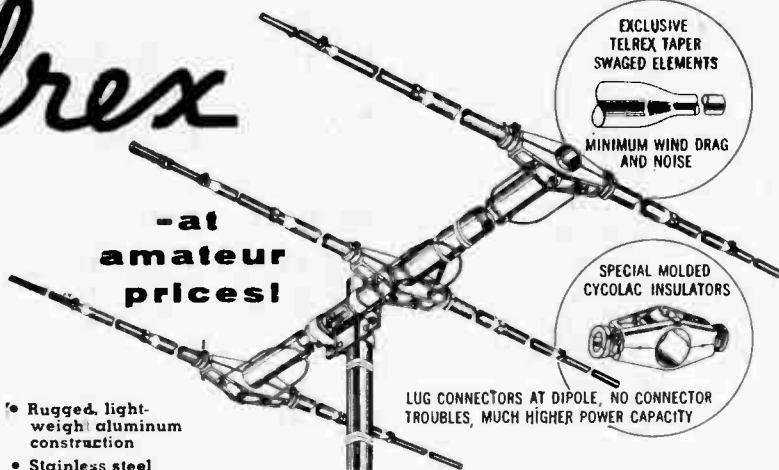
**HIGHEST SIGNAL-  
TO-NOISE,  
SIGNAL-TO-INTERFERENCE  
RATIO EVER!**

- Gusset plate mounting supplied
- Hair-pin resonated dipoles
- Taper swaged elements reduce wind drag 55%

NOW! Telrex features the best arrays ever produced, and new lower cost models designed to do the job. All Telrex arrays are precision tuned and matched for optimum results per element at your site without experimentation or cut and try. Most models supplied with a coaxial halfwave "balun" for balanced pattern and minimum TVI, BCI. Super

**-at  
amateur  
prices!**

- Rugged, light-weight aluminum construction
- Stainless steel electrical terminals

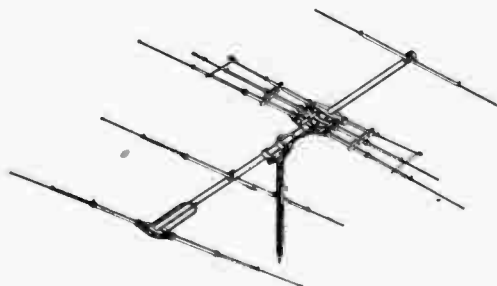


De-Luxe models employ all stainless steel hardware; lower cost models employ heavy cadmium plated hardware. A heavy-duty gusset plate mast fastener supplied with every array. A model to fit every purse or requirement from 3/4 through 40 meters.

**WORLD-WIDE RECOGNITION OF TELREX ENGINEERING HAS RESULTED  
IN SHIPMENTS OF "BEAMED-POWER" ARRAYS TO 91 COUNTRIES!**

**TELREX "TRI-BAND"®**

**3-BAND, 1-TRANSMISSION LINE SYSTEM  
WITH 2 WIDE-SPACED ELEMENTS ON EACH BAND  
PROVIDING GENUINE 3-BAND RESULTS:**



Incorporating a special TELREX tri-band dipole fed with one-transmission line and separate director or reflectors. 40 lbs. of educated aluminum, calibrated for easy assembly to our specifications at your site, without experimentation or formulas. No condensers to breakdown, or fuss or fume with. Simply assemble to our calibration chart for outstanding performance per element, per dollar at your site! Each band can be set to the portion of the band you desire without affecting the performance of the other two bands! Duo-Band models also available.

Call or write for illustrated catalog and prices

**COMMERCIAL ANTENNAS FOR SPECIAL SERVICE**

**CUSTOM DESIGNED ARRAYS** — To customer's specifications to meet any operating or weather condition. Performance-proven Telrex commercial antenna systems now in use world-wide. Broadband or single-frequency arrays for communication, fixed or rotary, point-to-point, FM, TV-relaying, scatter-propagation, etc.  
**ANTENNA ACCESSORIES** — Including broadband baluns, monopoles, antenna rotators, indicators, and special hi-strength masting. Consult Telrex engineers for a recommendation on your specific antenna problems.

"Conical-V-Beams" are produced under re-issue Pat. No. 23,346, and Canadian Pat. No. 500436 and in England Pat. No. 691485.

**ORIGINATORS & MANUFACTURERS OF THE WORLD'S FINEST TV & COMMUNICATION ANTENNAS**

**ANTENNA  
DEVELOPMENT &  
MANUFACTURING**  
Asbury Park



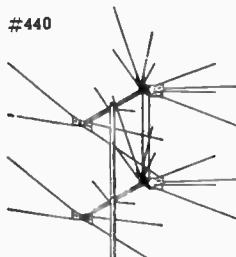
**ANTENNA  
DESIGN ENGINEERS  
SINCE 1921**  
New Jersey

**UHF-VHF ANTENNAS**

**ALL-ALUMINUM  
CONSTRUCTION**

MODEL NO.		Units in St'd. Carton	Ship. Wt. Lbs.	List Price
<b>DUO-BAND (UNIVERSAL) "CONICAL-V-BEAM"</b>				
#420	Single bay	2	10	12.08
#440	Two bay stack	1	10.5	25.50
<b>UNIVERSAL SERIES</b>				
U2X-TV	Single bay	2	7.5	9.30
U4X-TV	Two bay stack	1 or 3	8.22	19.94
U8X-TV	Four bay stack	1	18	43.89
<b>CHALLENGER SERIES</b>				
4 Element Radiator: 4 El. Reflector				
CH2X-8	Single bay	3	10.5	7.22
CH4X-16	Two bay stack	3	21	15.28
CH8X-32	Four bay stack	1	14	34.03
<b>"CLOVER-V-BEAM" SERIES</b>				
CLV	E-Z-Rig Clover	4	5	5.95

#440



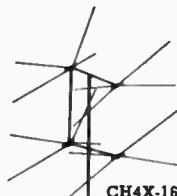
**Type #440** — UHF-VHF at same cone apex. No filter losses. Electronic and mechanical excellence equal to the "Meteor Duo-Band". Solid or tubular elements, with famous Telrex plug-in design. All aluminum. Single lead-in. Practical Channel 2 to 83 performance at lowest cost.

**Type U4X-TV**—Receive all channels. Same antenna as "Universal" except center elements cut to peak at any channel specified, without destroying the antenna's broad band characteristics. Has "Hi-V" reflector.



U4X-TV

**Type CH4X-16**—7/32" D. solid duraluminum rod, or doweled tubular elements. Six supplied in the 2X-6 types; eight elements, in the 2X-8 type. Both types feature "Universal" style "butterfly" element brackets, at each end of the crossarm, facilitating several radiator and reflector arrangements.



CH4X-16

**Type CLV**—Requires no rotator to pick up signal from front or back. Transposition bar stacking gives vertically narrow, noise-free reception lobes. Tough closed loops yield lightly in high winds, but have no tendency to snap off.

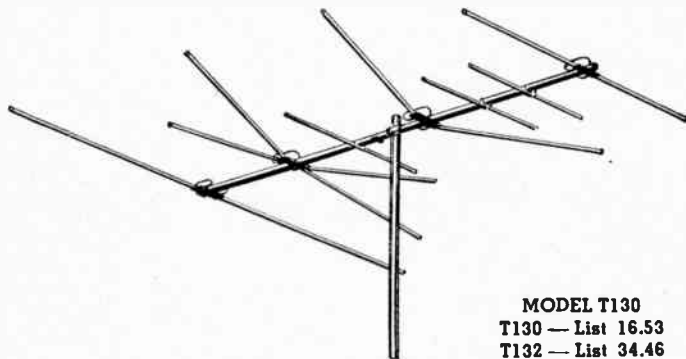


CLV

**NEW "THUNDERBIRD" "BEAMED POWER" ARRAYS FOR ALL-CHANNEL TV**

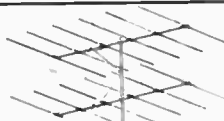
"THUNDER BIRD" Antennas are loop phased, multi-element, "Beamed Power" Arrays for fringe and "sub-fringe" area TV reception. Element functions are duplexed by means of variable impedance phasing loops to produce effective high gain Yagis for Hi and Lo channel VHF Bands in an all-in-line array which actually produces superior gain and directivity — element for element — than equivalent separate units.

**WRITE FOR COMPLETE TV  
ANTENNA CATALOG No. 30**



**MODEL T130**  
T130 — List 16.53  
T132 — List 34.46

FM and HI-FI SERIES		Units in St'd. Carton	Ship. Wt. Lbs.	List Price
FMT-3	Single bay	1	4	9.03
FMT-3-S	Stacked	1	8	20.92
FMT-6	Single bay	1	8	17.75
FMT-6-S	Stacked	1	15	38.31



FMT-6-S

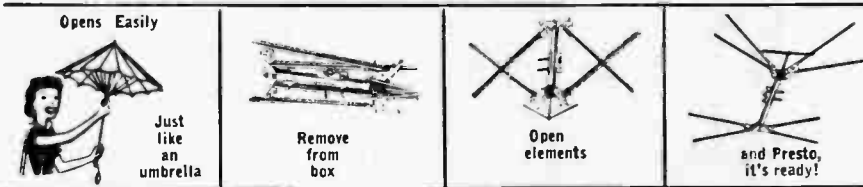
Broad-band gain and impedance characteristics make these beams ideal where extremely high fidelity, high-sensitivity antennas are required. All models of this series provide an excellent match to a 300-ohm characteristic impedance line (common TV lead).

"Conical-V-Beams" are produced under re-issue Pat. No. 23,346, and Canadian Pat. No. 500436 and in England Pat. No. 691485.

**ORIGINATORS & MANUFACTURERS OF THE WORLD'S FINEST TV & COMMUNICATION ANTENNAS**

### TENNA TV ANTENNAS AND ACCESSORIES

with the New and Amazing  
**"PRESTO" INSTANT MOUNT ASSEMBLY**  
*Truly, the King of all Conicals!*



Complete line of 16 full size, all aluminum conicals to fill every installation need. Completely pre-assembled and ready for the most. Molded plastic insulator of high impact polystyrene. Seamless aluminum boom. Doweled elements. List prices shown below are for bulk pack. Packed in individual cartons at slightly higher prices.

 <b>MODEL T-801</b> Model Type List T-801 Sin. Array \$4.40 T-802 Stacked 9.18	 <b>MODEL T-802</b>	 <b>MODEL T-811</b> Model Type List T-811 Sin. Array \$5.25 T-812 Stacked 10.95	 <b>MODEL T-812</b>
 <b>MODEL T-791</b> Model Type List T-791 Sin. Array \$4.68 T-792 Stacked 9.78	 <b>MODEL T-792</b>	 <b>BAR X</b> <b>MODEL T-751</b> Model Type List T-751 Sin. Array \$5.83 T-752 Stacked 12.10	 <b>BAR X</b> <b>MODEL T-752</b>
 <b>BAR X</b> <b>MODEL T-781</b> Model Type List T-781 Sin. Array \$5.83 T-782 Stacked 12.10	 <b>BAR X</b> <b>MODEL T-782</b>	 <b>BAR X</b> <b>MODEL T-851</b> Model Type List T-851 Sin. Array \$4.98 T-852 Stacked 10.35	 <b>BAR X</b> <b>MODEL T-852</b>
 <b>MODEL T-771</b> Model Type List T-771 Sin. Array \$5.25 T-772 Stacked 10.95	 <b>MODEL T-772</b>	 <b>MODEL T-741</b> Model Type List T-741 Sin. Array \$5.53 T-742 Stacked 11.53	 <b>MODEL T-742</b>

#### UHF-VHF COM.

TWIN-V  
 ALL  
 CHANNEL  
 ANTENNA



Model	Description	List
US-102	Bulk Pack	\$3.32
US-102A	Single Pack	3.75
US-104	Quad Stack	6.95
US-104A	Sin. Pack	7.23

#### INDOOR ANTENNA

INDOOR  
 ALL  
 CHANNEL  
 ANTENNA



Model	Description	List
VT-3A	3 Sec.	\$2.78

#### ARRESTOR

ALL UHF CHANNELS  
 UNDER-  
 WRITERS  
 LISTED  
 UHF-VHF  
 LIGHTNING  
 ARRESTOR



Takes Flat, Oval, Round  
 and Open Cables!

Model	Description	List
R-122	Ind. Boxed	\$ 48

#### CONNECTORS

COAXIAL  
 CONNECTORS



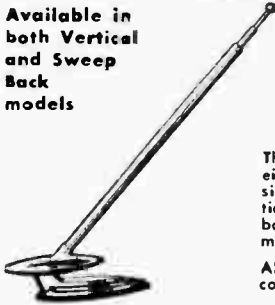
Meet JAN and Signal  
 Corps specifications

Model	Packed	List
PL-258	50	\$ .98
PL-259	50	.88
UG-175U	50	.20
UG-176U	50	.20
SO-239	50	.80
UG-106U	50	.40

#### CONICAL KITS

All of the antennas shown on  
 this page are available in kits  
 for "Do-It-Yourself" buyers.  
 Write for full particulars.

Available in both Vertical and Sweep Back models



## BULLET Swivel Antenna

Mounts Anywhere

The mast section swivels to permit either top cowl, side cowl, top fender, side fender or top trunk deck installation. Beautifully chrome plated from base to tip. Adds a touch of sparkling, modern beauty to any car.

All 15' cables have 75MMF ceramic condenser for finest reception.

Model	Description	Cable	Mast Sec.	List
JA-1	Sin. Rear Active	15'	3-27"	\$ 7.85
JA-2	Sin. Dress-Up	none	3-27"	4.70
JA-3	Dual Rear Active	15'-6'-3"	3-27"	15.48
JA-4	Dual, One Active	15'	3-27"	12.48
JA-5	Front, Vertical	4'	3-57"	6.03
JA-6	Front, Sweep Back	4'	3-57"	6.03

## NAUTILUS Cowl - Fender

Tear-drop mounting base matches the streamlined beauty of the modern car. Available in two models for either front or rear installation. Model NT-3 is for front with 4' lead-in cable. Model NT3-15 is for rear with 15' lead-in cable and 75 MMF Ceramic Condenser.



Model	List
NT-3	\$4.70
Sec.-Lth. 3-57"	
NT3-15	7.25
Sec.-Lth. 3-57"	

## SCREW-BALL Cowl - Fender

Entire mounting job is done from the top . . . only one man is needed. Easiest, quickest of all antennas to install. Nothing like it on the market.



Model	Sec.-Lth.	List
EZ-2	2-49"	\$3.79
EZ-3	3-57"	4.70

## New MONARCH Cowl - Fender

Mounts from outside. Ball-joint metal mounting base, adjustable from flat to 30°. Base sufficiently large to cover largest hales. Lovely chrome finish. Holds angular adjustment permanently. 36" cable.



Model	Sec.-Lth.	List
MH-3B	3-57"	\$5.48
MH-3C	3-70"	6.85

## CONCEALED Cowl - Fender

Completely new design in a concealed type aerial. Ball-joint metal mounting base, adjustable flat to 30°. Waterproof construction. Large seamless shield tube reduces capacity losses. 48" Radar type cable.



Model	Sec.-Lth.	List
FD-3	3-55"	\$6.40
FD-3A	3-68"	6.98

## DELUXE Side Cowl

Finest quality side cowl aerials. Sparkling chrome-plated brass tubing. Lifetime anti-rattle construction. 36".



Model	List	
RAD-4	\$7.09	
Sec.-Lth. 4-92"		
RAD-5	8.19	
Sec.-Lth. 5-112"		
Model Sec.-Lth. List		
CS-3	3-66"	\$4.45

## UNIVERSAL REPLACEMENT MAST

Fits over broken portion of old masts. Allen wrench furnished to tighten set screws for easy installation. Heavily chrome plated.



RA-3	3-23"-57"	\$2.95
Model Sec.-Lth. List		

Packed in Lovely Carton

## TENNA STRATO-FIN

For Dual or Single Rear Mount Installation

3 section, rear fin antenna, beautifully chrome plated from base to tip. 15' cable with built-in 75MMF condenser. 33° angle harmonizes with speed lines of modern cars. Length 10" to 27".



Model	Description	List
TRMD	Sin. Dress-Up, no cable	\$ 4.57
TRM-27	Sin. Rear Active 15' cable	7.60
TRMT-A	Dual Rear Active 22' cable	14.82
TRMT	Dual Rear, One Active 15' cable	12.20

Packed in Lovely Display Carton

## THE TENNA BUG

For Top Cowl, Fender or Rear Deck Installation

3 Masts, main central mast extends to 17", 2 smaller side masts extend to 8". Provides signal strength equal to that of much longer mast. 15' cable has built-in 75MMF condenser.



Model	Description	List
BG-1	Sin. Rear Active, 15' cable	\$6.82
BG-2	Sin. Rear Dress-Up, no cable	3.98

## COMMUNICATION ANTENNAS



SWIVEL BASE: Has adjustable split-ball with positive locking feature.

Model MB-1 ..... List \$4.87

MB-1

SWIVEL BASE AND SPRING: Spring is of oil-tempered heavy spring steel.

Model MB-2—Standard ..... List \$7.08

Model MB-2H—Heavy Duty ..... List 8.19



MB-2

STAINLESS STEEL MASTS: Exceptionally high tensile strength. Fit either MB-1 or MB-2 or any standard base.

Model MM-40F—(Motorcycle) ..... List \$5.76

Model MM-60 60" ..... List 5.76

Model MM-72 72" ..... List 5.76

Model MM-84 84" ..... List 6.06

Model MM-96 96" ..... List 6.85



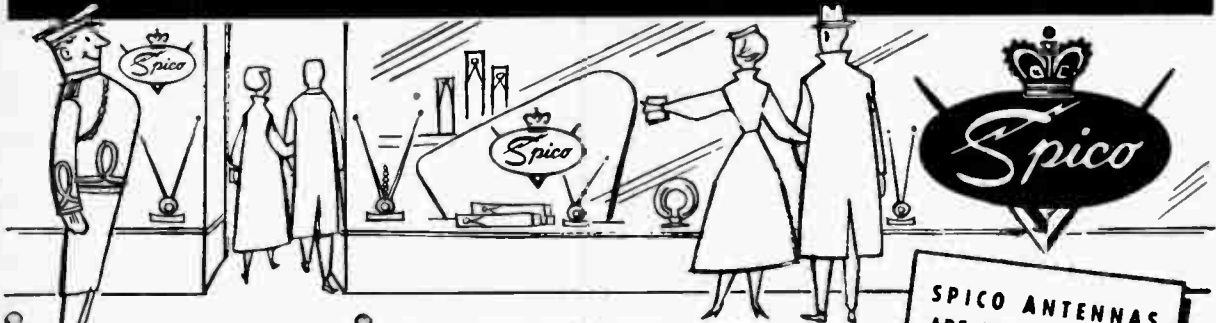
MBS-1

BASE SPRINGS: Flexible cable thru center of springs maintains constant electrical impedance.

Model MBS-1—Standard ..... List \$2.47

Model MBS-2—Heavy Duty ..... List 3.52

# the GOLDEN LINE



**SPICO ANTENNAS ARE MORE POWERFUL THAN ANY OTHER INDOOR TV ANTENNAS MADE!**

## Golden "SUPER SIX"

Model S-6-G

SPICO INDOOR TV ANTENNAS HAVE BEEN SOLD TO OVER 3,500,000 SATISFIED CUSTOMERS FROM COAST TO COAST. The most advertised indoor TV Antenna by leading stores throughout the country. The only indoor TV Antenna with a sales record of over \$1,000,000.00 spent for direct national consumer advertising. Spico's are handled by all merchandising and profit minded dealers. No gimmicks—truly an electronic achievement.

The only indoor TV antenna made with these exclusive U.S. patented features.



**\$12.95**  
List Price

New, Exclusive

*Selectronic*

TUNING

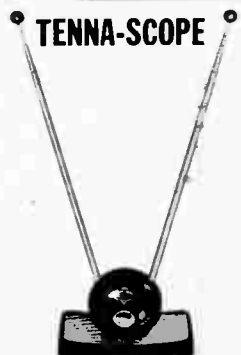
A tunable impedance matching device that gives clear, sharp pictures on each individual channel.

EXCLUSIVE "ADJUST-KNOB" at BASE for MICRO-FINE ADJUSTMENT

U. S. PAT. NO. 2,608,657

**ALL MODELS COMPETITIVELY PRICED FOR VOLUME SALES!**  
Combine the latest durable features with the most advanced modern styling!

### TENNA-SCOPE



Available in gleaming Silver or Gold finish. Embossed inlaid base with matching dipoles.  
Model B-5G (Gold) **\$7.95**  
Model B-5S (Silver) List Price

### TENNA MASTER

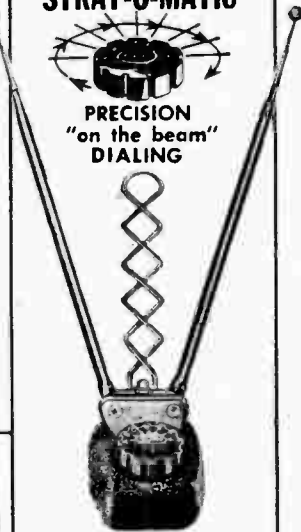


Available in gleaming Silver or Gold finish, featuring 6 point selector switch for best reception.  
Model B-92-G (Gold) **\$10.95**  
Model B-92S (Silver) List Price

### STRAT-O-MATIC



PRECISION "on the beam" DIALING



New GOLDEN Automatic 6-position selector switch  
**UNCONDITIONALLY GUARANTEED!** **\$10.95**  
List Price  
Unbreakable Rustproof Tiltproof Model S-7G

### SWITCH-O-MATIC



Unconditional Guarantee  
Model S-9-A (aluminum)  
Model S-9 (brass)  
Unbreakable Rustproof Tiltproof  
**\$9.95**  
List Price

### INDOOR-TENNA



Unconditional Guarantee  
Unbreakable Rustproof Tiltproof  
Model TV-8 Brass  
Model TV-8A Alum  
**\$6.95**  
List Price



For UHF only Model U-83  
Unbreakable Rustproof Tiltproof  
**\$4.95**  
List Price



**Self Selling Packaging . . .**

All models beautifully packaged in distinctive individual cartons.

SPURLING PRODUCTS CO., INC. HICKSVILLE, L. I., N. Y.

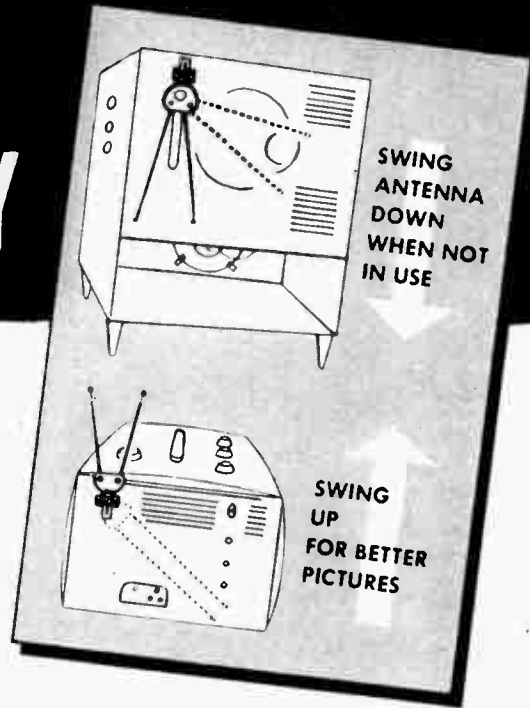


**SO EASY TO MOUNT ANYONE CAN DO IT IN *seconds***

**ON ALL TV SETS - ANY MAKE OR MODEL**

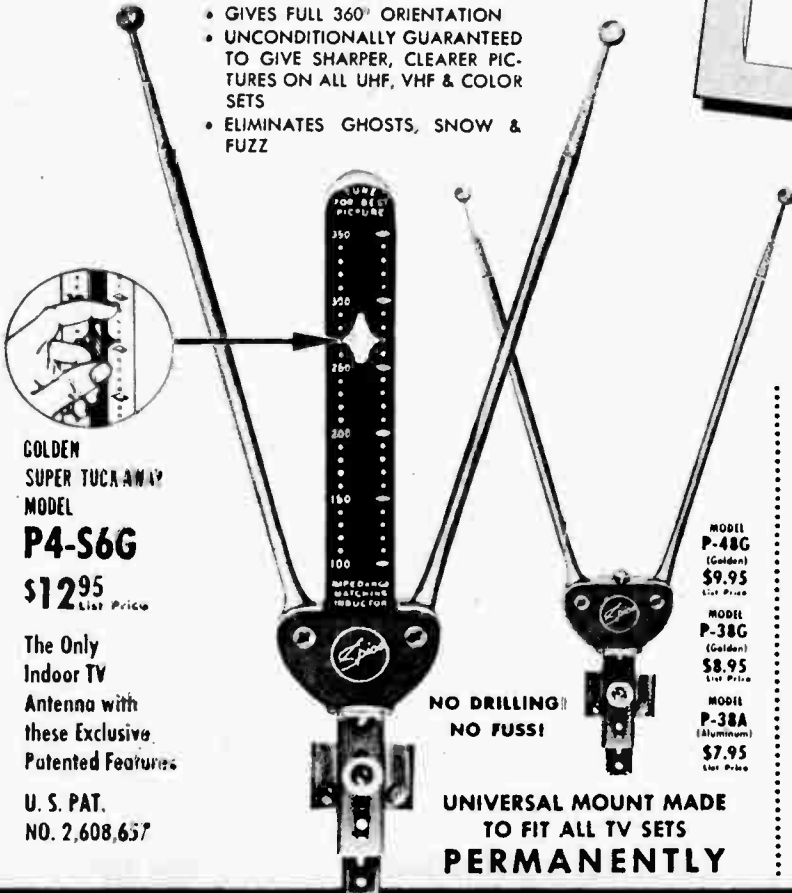


NEW EXCLUSIVE  
**GOLDEN LINE  
TUCK-AWAY**



EXCLUSIVE *Selectronic* TUNING

- ELIMINATES UNSIGHTLY "TOP-OF-THE-SET" RABBIT EARS
- IDEAL FOR CONSOLES . . . PORTABLES, OF COURSE
- GIVES FULL 360° ORIENTATION
- UNCONDITIONALLY GUARANTEED TO GIVE SHARPER, CLEARER PICTURES ON ALL UHF, VHF & COLOR SETS
- ELIMINATES GHOSTS, SNOW & FUZZ



GOLDEN SUPER TUCK-AWAY MODEL

**P4-S6G**

**\$12.95**  
List Price

The Only Indoor TV Antenna with these Exclusive Patented Features

U. S. PAT. NO. 2,608,657

MODEL **P-48G**  
(Golden)  
**\$9.95**  
List Price

MODEL **P-38G**  
(Golden)  
**\$8.95**  
List Price

MODEL **P-38A**  
(Aluminum)  
**\$7.95**  
List Price



**SPICO INDOOR TV ANTENNAS ARE NOW USED BY MORE THAN 3,500,000 SATISFIED TV OWNERS FROM COAST TO COAST**

**HERE'S WHY . . .**

- SPICO is more powerful than any other TV antenna made
- SPICO is advertised most by leading stores everywhere
- SPICO is preferred most by profit-minded, merchandising minded dealers
- SPICO'S national sales record is backed by consistent national advertising in newspapers throughout the country in every major city by leading stores . . . and more than \$1,000,000.00 has already been spent

**SPIRLING PRODUCTS CO., INC. • HICKSVILLE, L. I., N. Y.**



# TV ANTENNAS — TV LAMPS SERVICE AIDS

## TRICRAFT TUBE CHECKER



Model 200

- Entirely NEW circuit
- Tests ALL tubes
- Quick and accurate
- Fits in tube Caddy

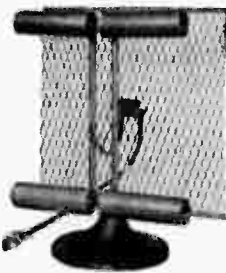
A Precision Instrument with the following features:

1. Tests tubes better, faster and more thoroughly than instruments costing many times more.
2. Compact and rugged enough to take it day in and day out in the service kit.
3. Completely and thoroughly checks all standard octal, loctal, 7 and 9 pin miniature tubes including 150 mil type for grid emission, gas, shorts, opens, microphonics and filament continuity. (Also picture tubes.)
4. All elements checked independently; no elements are tied together during test.
5. Obsolete proof; no circuit changes necessary to check new tubes as they are developed.

MODEL 200 Dealer's Net .....\$32.95  
Pat. Applied for

## TRICRAFT UHF INDOOR ANTENNA

Consists of a two element aluminum array with a plane reflector. Measures only 12 inches from side to side. Has plastic base. Conveniently placed atop TV receivers. Covers all 70 UHF bands and provides excellent impedance match over the band. Packed individually. Wt. 2 lbs. each.



Model 210

MODEL 210 Dealer's Net .....\$5.32

## CHINESE COOLIE HAT LAMP



Cat. No. 8088

Approximately 11" high. Overall width 9". Available in — Black, Red, Green and Chartreuse. — Threads in white shade match base colors. Shade of molded fibre glass, unbreakable, washable, colorfast.

Dealer's Net ..\$5.85

## THE "INDIRECT BULLET"



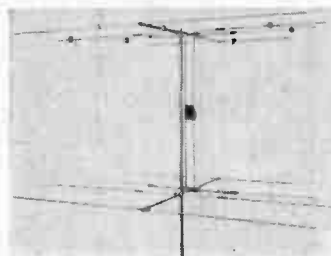
Cat. No. 8001  
Base in six attractive colors: Black, Pink, Crimson, Green, Chartreuse and Turquoise. 5 1/2" round — 10" high.

Swivel connector shade can be tilted in any direction. All have grey shades made of molded fibre glass, unbreakable, washable, colorfast.

Dealer's Net .....\$3.40

Available in Variety of Models

## TRICRAFT HIGH GAIN LONG DISTANCE ANTENNA



FOR FRINGE AREA RECEPTION  
Model P-238

- Top TV Reception from 100 to 200 Miles
- Single bay for metropolitan area
- Two bays for fringe area
- Four bays for ultra fringe area
- Sharpest reception with this 14 element, yagi-type VHF outdoor antenna.

Hard aluminum tubular construction — Molded polystyrene insulators — Pre-assembled . . . unfold, tighten wing nuts — Separate matching network for different bays — Flat response . . . gains nearly uniform across whole high VHF band and across whole low VHF band — Double-duty elements . . . 2, 3, 4, 7 (see illus.) receive in both bands, double reception for each foot of tubing.

Model P-38 — Single unit with high band matcher . . . Dealer's Net \$10.70  
P-238 — Two-stack, with stacking bars and high band impedance matcher . . . \$20.25  
P-438 — Four-stack, with stacking harness, bars and high band impedance matcher . . . \$39.25

## TRICRAFT UHF-VHF INDOOR ANTENNA

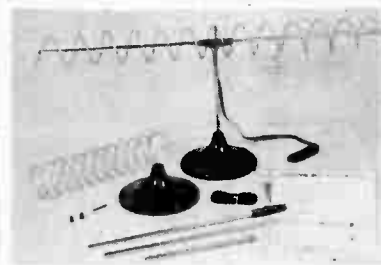


"Performance never before achieved." Here's why:

- Electronically adjusted
- "Only" pretuned frequency indoor antenna
- Turn switch to channel and antenna is electronically tuned to station
- Signal gain never before achieved
- Two-toned mahogany leatherette cover blends with any TV set
- Consumer tested and approved, wt 4 1/2 lbs. ea.

MODEL 600 Dealer's Net .....\$8.60

## TRICRAFT INDOOR ANTENNA



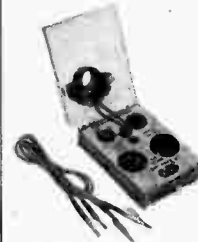
Model T-11 in Kit Form

Gleaming Gold Spiral and Dipoles

- Best indoor performance
- Highly directional characteristics reject noise and ghosts
- No dangling, unsightly wires
- No dust catcher
- Simple to orient on both high or low bands
- Sturdy construction, wt. 1 1/2 lbs. each.

MODEL T-11 Dealer's Net .....\$4.39  
(Licensed by Hi-Lo TV Antenna Corp. U. S. Pat. No. 2,495,579; Canadian Pats. 1951)

## TRICRAFT FILAMENT CONTINUITY CHECKER



Model SM-101

Model SM-101 Dealer's Net .....\$2.95

- Quickly locates bad tubes in series-sets.
- Tests continuity of parts and appliances.
- Easy to use — no warm-up or switching.
- No guessing — positive indication.
- Safe — Test current less than 1/1000 amp.
- Pocket size

## FUSE-O-LET DUPLEX OUTLET



Model FL-101

For Maximum SAFETY  
For Positive PROTECTION  
In HOME and INDUSTRY

FUSE-O-LET saves time and money because it prevents costly down-time and expensive burn-outs on test lines, control circuits, motorized equipment and other critical industrial installations. Eliminates fire hazard, prevents overloaded outlets, protects hidden wiring. Manufactured of finest materials including phosphorus-bronze contacts, comes individually boxed with two 6 amp fuses. Available with any standard 1/4" x 1 1/4", 250 volt fuses, 15 amps or less. Fits all standard outlet boxes. Complete with two fuses Underwriters Laboratories Appl. Patented.

Dealer's Net .....\$7.22

PRODUCTION and MANUFACTURING FACILITIES for CUSTOM MADE PRODUCTS!

# Tricraft

## PRODUCTS CORPORATION

Chicago 13, Illinois

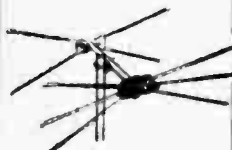




# TELEVISION HARDWARE

The Most Complete Line of TV Antennas and Hardware in the Industry

## TELCO UHF-VHF TELEVISION ANTENNAS



Speed Rig Conical  
No. A-270 List \$9.75



All-Aluminum Conical  
No. A-8700 List \$7.50



Hi-Low Dipole  
No. A-258 List \$0.70



Flying V  
No. A-260 List \$5.25



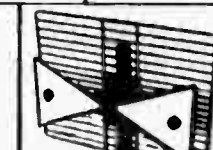
5 Element VHF Yagi  
No. A-302 List \$12.50



10 Element UHF Golden Yagi  
No. A-320 List \$5.50



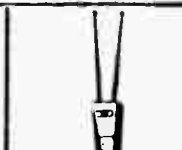
Double V  
No. A-9010 List \$4.25



Golden Grid UHF Butterfly  
No. A-8965 List \$4.95



UHF-VHF Indoor 80-70  
No. A-8161 List \$8.25



Hide-A-Way Indoor VHF  
No. A-8146 List \$10.95

## TELCO UHF-VHF TELEVISION STAND OFFS



No. 8827 3/8" Wood Screw... \$4.58C  
8828 5/8" Wood Screw... 8.87C  
8829 7/8" Wood Screw... 9.76C



No. 8831 3/8" Machine Screw \$6.60C  
8832 5/8" Machine Screw 8.80C  
8833 7/8" Machine Screw 8.90C



No. 8253 3/8" Kant-Strip, Mast \$0.19  
8254 5/8" Kant-Strip, Mast .24  
8257 7/8" Kant-Strip, Mast .25



No. 8225 7/8" Duplex Wood Screw... \$0.20  
8226 7/8" Duplex Machine Screw .28



No. 8809 7/8" T-Type, Wood Screw... \$0.32  
8810 7/8" T-Type, Machine Screw .22



No. 8797 "Snap-On," for 1" Masts... \$0.11  
8798 "Snap-On," for 1 1/2" Masts... .11



No. 8255 3/8" Single, Guy "Wire-Grip" \$0.21  
8256 7/8" Duplex, Guy "Wire-Grip" .33

## TELCO TELEVISION MOUNTS (Roof-Wall Chimney-Vent)



No. 9040 No-Guy Roof Mount  
List \$4.75



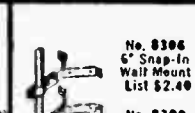
No. 8085 Chimney Quick Mount  
List \$2.65



No. 8030 Snap-In Chimney Mount  
List \$4.70



No. 8628 Peak Mount (18" Lower Bracket) List \$3.55  
No. 8625 Peak Mount (30" Lower Bracket) List \$4.75



No. 8306 6" Snap-In Wall Mount List \$2.40  
No. 8300 8" Snap-In Wall Mount List \$3.50



No. 9021 Hinged Ridge Mount (Fits Masts to 1 1/2") List \$2.35



No. 8575 All-Purpose Mast Bracket  
List \$2.30



No. 8000 Swing-Up Mast Mount  
List \$0.60



No. 8620 Any-Angle Mast Mount  
List \$0.66



No. 8622 Pivot Swing-Up Mount  
List \$0.66

## TELCO TELEVISION INSTALLATION ACCESSORIES



Universal UHF-VHF Lightning Arrestor  
No. 8642 List \$1.25



Universal TV Lead-In Tube  
No. 8958—Brown List \$2.35  
8958-1—Ivory 2.35



Ground Rods  
No. 8929 4' l. x 3/4" dia. \$1.20  
9016 6' l. x 3/4" dia. 0.80  
9017 8' l. x 3/4" dia. 3.60



Screw Eyes  
No. 8078 1" long List \$0.06  
No. 8342 3" long List .02  
No. 8486 5" long List .03  
No. 9027 7" long List .08



TELEVISION HARDWARE MFG. CO. ROCKFORD, ILL., U.S.A.  
DIVISION OF GENERAL CEMENT MFG. CO., ROCKFORD, ILL., U.S.A.



- ROTATORS
- VIBRATORS
- AUTO AERIALS
- TV ANTENNAS
- POWER SUPPLIES



THE **RADIART CORPORATION**  
CLEVELAND 2, OHIO

## AUTO AERIALS



- Exclusive "Static Muffer" Ball
- 18-8 Stainless Steel Rod
- "Super-Chrome" Finish On High Tensile Strength Brass Mast
- SPEE-DEE ASSEMBLY
- Extra Long Fill 42" Polyethylene Lead-In

Here is the outstanding new auto aerial that has everything. Full 30 degree mast adjustment so that it fits all body and fender contours. And the new installation design makes it a snappy 1, 2, 3 assembly without even looking under the fender.

### TWO INSULATOR SIDE MOUNT TYPES

Sturdy high quality construction throughout. Brilliant chromed brass masts with stainless steel rods. Wedge type adaptor furnished, with 36" polyethylene lead-in.

**MODEL 2S**, 43" extended, 2 sections. 10 per master carton, 9 pounds

**MODEL 3S**, 63" extended, 3 sections. 10 per master carton, 13 1/4 pounds

**MODEL 4S**, 92" extended, 3 sections. 10 per master carton, 17 1/2 pounds



### DISAPPEARING MOUNT

A handsome addition to any car. Collapses to 6 inches and extends to 60 inches. Fits either fender or cowl and features the exclusive "O" ring seal around the mast that prevents water from entering inside the aerial. Only one 1/8" mounting hole required.

**MODEL 3D**, 60" extended. 3 sections, 2 pounds each

10 per master carton weighing 19 pounds.



## MODEL 8 BE SPEE-DEE

### DELUXE MODEL 4BX3

Three section design extends to 59 1/2".

- Brilliant long lasting chrome finished mast and spacer cap
- Full length quality 36" polyethylene waterproof lead-in
- Only one half inch mounting hole required

### SUPERIOR STANDARD MODEL 4BX2

Two section design extends to 43".

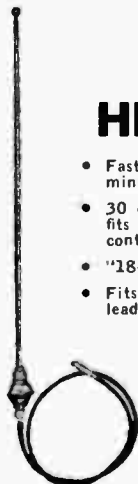


### MODEL 8 BD

## HI • BALL

- Fast installation . . . 5 minutes
- 30 degree mast adjustment fits all body and fender contours
- "18-8" Stainless steel rod
- Fits any car radio, bayonet lead-in adaptor included

A favorite with dealers and service-men everywhere. Fast assembly and outstanding performance make it a great value. Also Model 8BDL with 48" lead-in.



## BATTERY POWER

Here is the ideal compact, efficient unit for testing and demonstrating auto radios. Smooth DC power, 6 or 12 volts, from the 110 volt 60 cycle AC line.

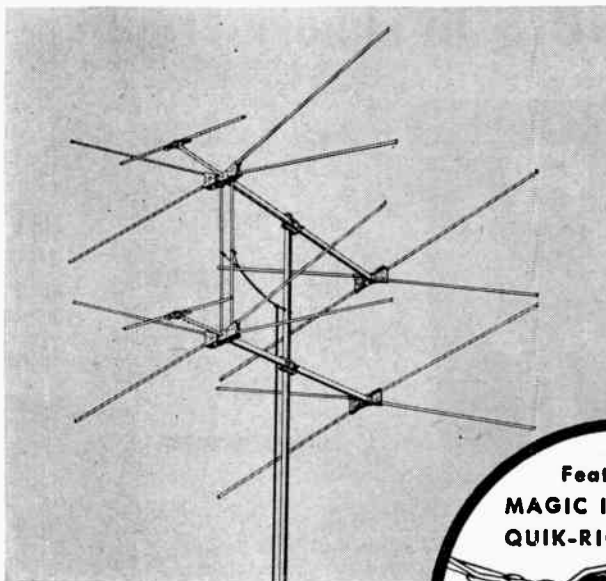
Model	Output	Class
110B6	6A at 12V or 10A at 6V	H
110B12	10A at 12V or 20A at 6V	H

- ROTATORS
- VIBRATORS
- AUTO AERIALS
- TV ANTENNAS
- POWER SUPPLIES



THE **RADIART** CORPORATION  
CLEVELAND 2, OHIO

## RADIART TV ANTENNAS

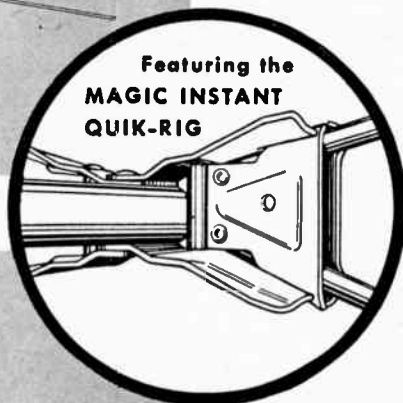


### MODEL 280SW (shown left)

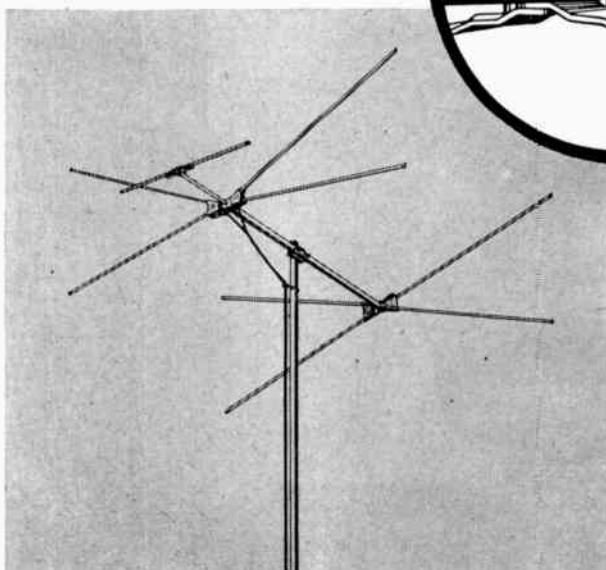
- Double stacked array PLUS high frequency elements
- All aluminum construction
- Mounts on any mast up to 1 $\frac{3}{4}$ " O.D.
- QUICK-RIG design for speedy one man installation
- Complete with stacking bars, nothing else to buy

### MODEL 280

QUICK-RIG double stacked "Lazy-X" conical



Featuring the  
**MAGIC INSTANT  
QUIK-RIG**



### MODEL 180SW (shown left)

Same as above only not double stacked, a single bay array

### MODEL 180

QUICK-RIG 8 element "Lazy-X" conical

- LZX 200—8 element conical completely assembled, stacked array
- LZX 100—single array
- LZX 201—8 element conical unassembled, stacked array
- LZX 101—single array
- LZX 250—6 element conical unassembled, stacked array
- LZX 150—single array
- LZX 251—6 element conical unassembled, stacked array
- LZX 151—single array

## ACCESSORIES

### AK-85 CHIMNEY MOUNT

The famous "Spee-Dee" chimney mount, faster and sturdier.

### TA-5 LIGHTNING ARRESTOR

Here is the midget that does the work of a giant. Many features of superiority.

### MODEL UAK-4 FILTER NETWORK

Here is the most efficient network ... not just a circuit ... but an electronic device.

**CORNELL-DUBILIER**  
SOUTH PLAINFIELD, N. J.



**THE RADIART CORP.**  
CLEVELAND 13, OHIO

now... 3 models to choose from

**C·D·R**  
*Automatic*  
**R O T O R S**

a type for  
every need . . .  
ALL 40% sharper  
tuning than  
any other  
automatic rotor.



**AR-22**

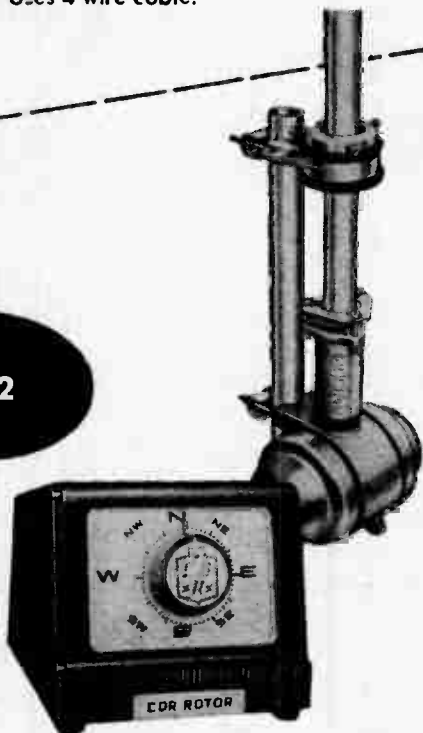
Here is the HEAVY DUTY rotor that is so popular everywhere . . . NOW COMPLETELY AUTOMATIC! Powerful beyond any TV need . . . it is proven and tested as the giant of the industry. Uses 4 wire cable.

The complete, AUTOMATIC rotor with THRUST BEARING. Handsome, modern design cabinet, uses 4 wire cable. Proven and tested by thousands and thousands of satisfied users, it has everything that could be asked for in a popular rotor.

**AR-2**

The complete, AUTOMATIC rotor. Handsome, modern design cabinet, uses 4 wire cable. Proven and tested by thousands and thousands of satisfied users, it has everything that could be asked for in a popular rotor.

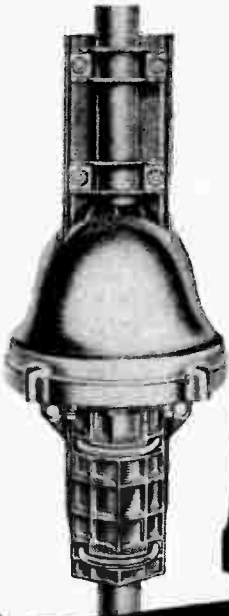
**AR-1**



**CORNELL-DUBILIER**  
SOUTH PLAINFIELD, N. J.



THE **RADIART** CORP.  
CLEVELAND 13, OHIO



**TR-4**

The **HEAVY DUTY** rotor, complete with new handsome modern cabinet with **METER** control dial, uses 4 wire cable.

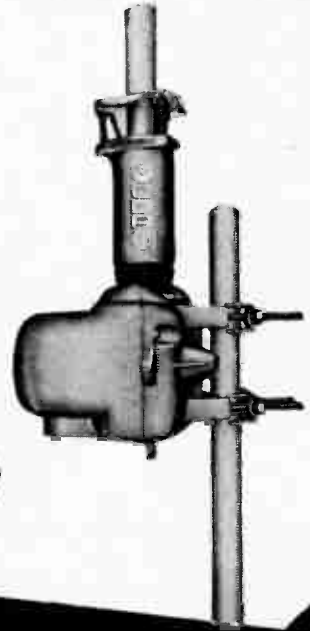


**TR-15**

The same popular rotor as TR-16 without thrust bearing. Instant locking, will not drift!

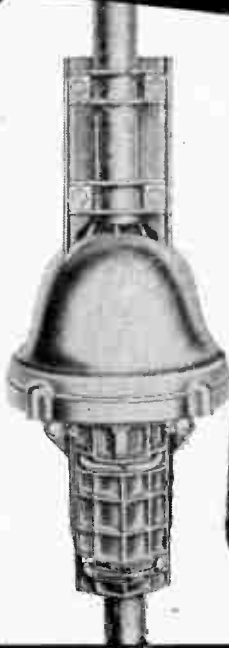
**TA-6**

Heavy duty **THRUST BEARING** for side thrust. No kit needed to install.



**C·D·R**  
**R O T O R S**  
Powerful . Dependable

Here is the **ONE** line that has everything . . . a model for every need! **AND POWERFUL EVEN BEYOND ANY ORDINARY NEED!** Skillfully engineered . . . **ALL FIELD TESTED AND PROVEN** by thousands and thousands of satisfied users from coast to coast.



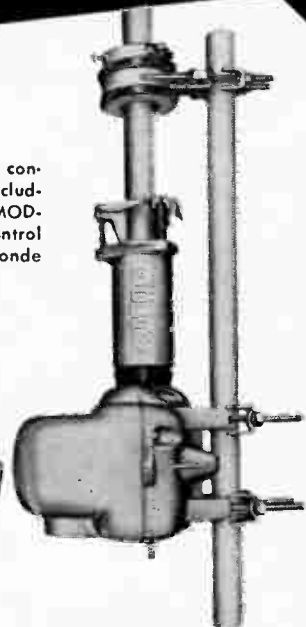
**TR-2**

The **HEAVY DUTY** rotor with plastic cabinet featuring "**Compass Control**" illuminated perfect-pattern dial, uses 8 wire cable.



**TR-16**

A special combination value consisting of complete rotor including thrust bearing. **NEW, MODERN DESIGN** meter control cabinet in mahogany or blonde finish. Uses 4 wire cable.



Do it safely...do it RIGHT

# ALPAR ALUMINUM

# "Crank-up" TOWERS

## FIELD STRENGTH SURVEYS — AMATEURS —

## FOR MOBILE BASE STATIONS — WEATHER RESEARCH INSTRUMENTS

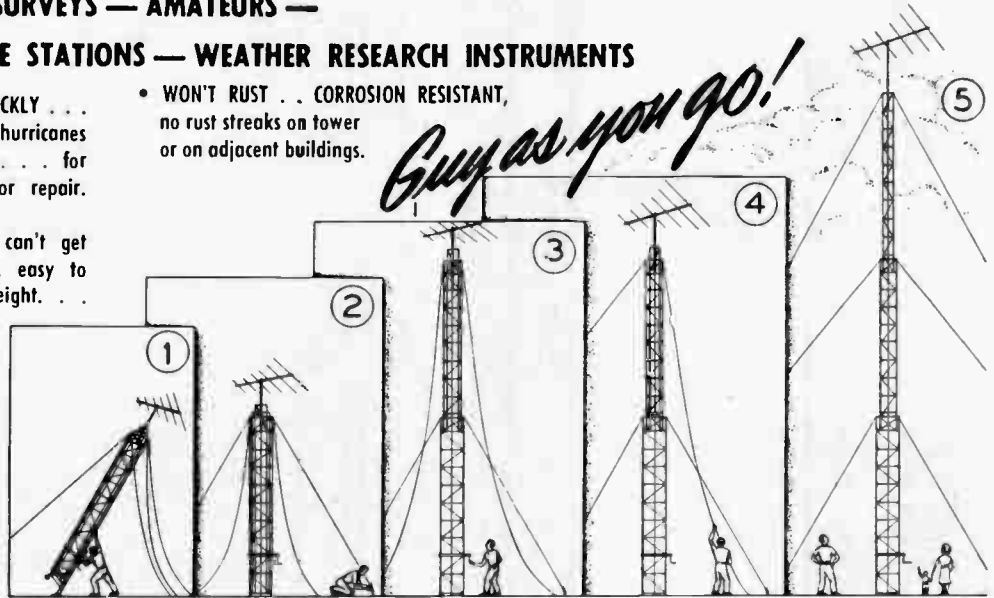
- MAY BE LOWERED QUICKLY . . . for extra safety in hurricanes or unusual weather . . . for antenna adjustment or repair.

- WON'T RUST . . . CORROSION RESISTANT, no rust streaks on tower or on adjacent buildings.

- AUTOMATIC LOCK-UP, can't get out of control . . . easy to crank up to full height. . .

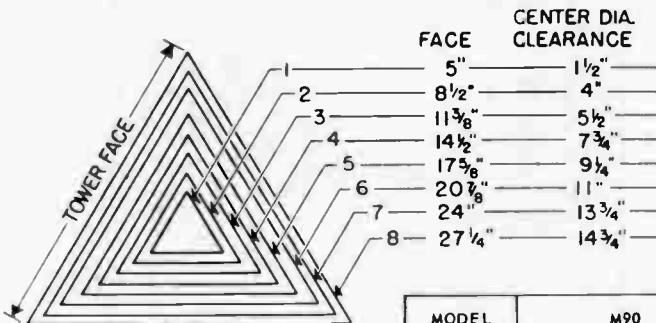
You do not have to crank up the entire tower before you can secure the guys . . .

"Guy as you go", a completely safe, simple procedure.



- (1)—Anchor hinged feet, push up into vertical position. It's light . . . about 1 pound per foot.
- (2)—Secure guys on lowest section.
- (3)—Crank up next section.

- (4)—Secure guys. Repeat steps 3-4 until tower is at its full height.
- (5)—Stand back and admire your ALPAR tower.



These crank up towers are available in three different models, the basic difference between them being in the height — and cross-section — of the tower sections. The desired combination will normally be selected upon the basis of overall height and/or the height of the tower with all sections lowered, i.e., 6', 12' etc. Refer to chart below.

Use Antenna Mount Port CA-1 with all M-90 towers.

Where rotator is used, advise diameter and factory will recommend tower section for adequate fit.

MODEL	M90	M90B	M90A
HEIGHT	Base of 20' plus 18' for each additional section.	Base of 12' plus 10' for each additional section.	Base of 6' plus 4' for each additional section.

ALUMINUM COMMERCIAL BROADCAST TOWERS TO 600 FEET.  
MOST EFFICIENT VERTICAL RADIATOR AVAILABLE FOR COMMERCIAL USE.  
INCREASED SIGNAL — NEGLIGIBLE POWER LOSS — LOW MAINTENANCE

**ALPAR MANUFACTURING CORP. REDWOOD CITY, CALIF.**



# BAKER TV Towers-Masts-Roof Mounts

## BAKER TOWERS

All steel parts heavily galvanized. Major assembly done at factory. Folded flat for shipment and convenient storage. Fit any pitch roof.



No.	Height	Rafter Spacing	Spread	Wt.
010 TK	10'	16"	29"	47
05 TKA	5'	16"	32"	25
05 TKB	5'	12", 16" or 24"	48"	25
03 TKA	3'	16"	32"	12

## FITTED END MASTS

Baker's Armo Zincgrip Fitted End Masts are light, strong and rigid. Masts are equipped with an expanded joint for installation over 10' high. Exclusive latching feature prevents turning during high wind.

No.	Wt.		
15 CM	86 (10 per ctn.)	1 1/4" x 10'	16 gauge
19 CM	100 (10 per ctn.)	1 1/2" x 10'	16 gauge

## PLATED GUY WASHERS

Heavy duty guy washers for 3 or 4 guys. Zinc plated. Can be used with standard thimbles.



110 AM	1 1/4"
120 AM	1 1/2"



## TELESCOPING MASTS

Constructed of 16 gauge high strength tubing for lasting service and strength. Strong vibration free 6" joint. Sections stop automatically when fully extended and will not pull out. Large free-floating guy washer does not bind during installation. Positioning pin prevents sections from slipping or turning in wind. Stainless steel mast clamps hold section in any position.

Completely assembled for immediate installation.

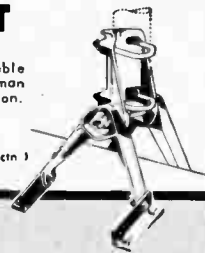
No.	Height	Wt.
20 CMA	20'	19 lbs.
30 CMA	30'	31 lbs.
40 CMA	40'	41 lbs.



## ROOF MOUNT

2 FM Fits any pitch roof. Double rock-up makes erection easy—one man job. Snaps into vertical position. Holds up to 1 1/2" mast.

No.	Mast Size	Wt. Lbs.
2 FM	1 1/2"	67 (15 per ctn.)



## 120 TK TOWER

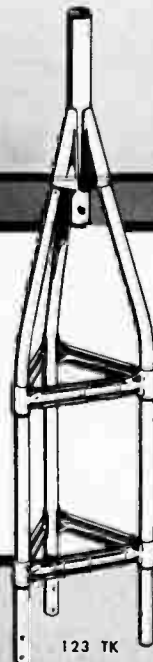
### 120 TK ACCESSORIES

TK 701 Rotor Post	TK 711 Base plate
TK 702 Erection Fixture	TK 712 4' Drive rods - set of 3
TK 703 Erection Fixture - Alum. - Fits all models with 1" side rail.	TK 713 Driving tool
TK 704 Flat Roof Mount	TK 714 Cantilever Guy Bracket
TK 705 Peak Roof Mount	TK 715 Guy Bracket assembly
TK 706 Adjustable house bracket - up to 15"	TK 716 Torque Bar for Guy Bracket
TK 707 Adjustable house bracket - 15" to 24"	TK 717 Side Arm Mount
TK 708 Adjustable house bracket - 24" to 36"	TK 718 Tower Bushing 1 1/4" I.D. x 2" O.D.
TK 709 Eave bracket - 15"	TK 719 Set (6) Assembly Bolts (for attaching tower sections together)
TK 710 Eave bracket - 24"	

120 TK Heavy Duty All Steel Construction completely hot dipped galvanized. Self supporting to 50' or guyed to 120' Inter-locking joints. Easy to climb.

No.	Description	Wt.
121 TK	Section 10' length	35
122 TK	Top Section 10' length	36
123 TK	Top Section 5' length	15
124 TK	Short Base Section 3 1/2' length	11

"Magic Triangle"  
for outstanding strength.



Television

EVANSVILLE  
**BAKER**  
WISCONSIN

Products

# ALLIANCE TV PRODUCTS

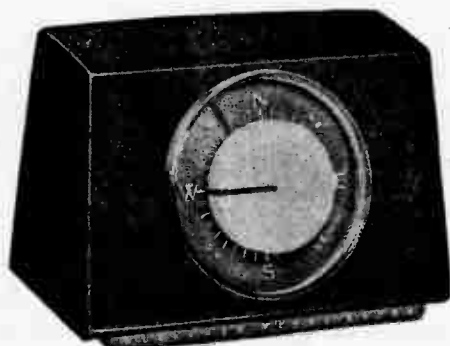
## ALLIANCE TENNA-ROTORS

### ALLIANCE TENNA-ROTOR

The Alliance Tenna-Rotor, available in three models illustrated below, is a TV or FM antenna rotator. Designed to rotate all conventional type antennas. It consists of a fully enclosed electrically driven rotor into which the antenna center-post is clamped. Four-conductor "zip" cable connects rotator with plastic control case placed near receiver, which plugs into any 60 cycle 110-volt AC house circuit. A selector switch controls rotation clockwise or counter-clockwise to point antenna in any direction for optimum reception.



ROTOR UNIT



Model U-98 Automatic  
Available in Forest Green, Ivory and Mahogany  
Grain. List Price .....\$44.25

*Most Widely Advertised  
Rotor on the Market*

### FULLY AUTOMATIC MODEL U-98

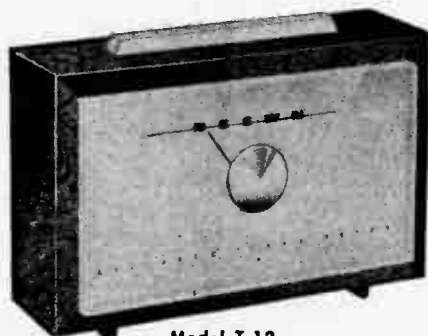
"SET IT AND FORGET IT"

The first and finest fully automatic rotator on the market.

**BEAUTIFUL NEW DECORATOR MODELS!**

New Colors—Forest Green, Ivory, as well as Standard Mahogany.

Simply set the painter—antenna automatically turns by itself and stops at the direction shown on the indicator dial. New styling plus the exclusive automatic feature makes Model U-98 the ultimate in rotators!



Model T-12  
(with Tenna-Teller Dial)  
Available in Forest Green, Ivory and Mahogany  
Grain. List Price .....\$34.25

### MODEL T-12

WITH EXCLUSIVE TENNA-TELLER DIRECTION INDICATOR

This finger-tip electrically driven and manually operated Alliance Tenna-Rotor is noted for extreme accuracy, compactness and smart styling. The "Tenna-Teller" indicator dial shows the exact compass direction to which the antenna is pointed and gives a constant reading.

Both new model Alliance Tenna-Rotors, the U-98 automatic and the T-12 have many new and advanced features of design which include increased speed of rotation and incorporate 32 distinct improvements.

The new rotator unit has double-action, magnetic anti-drift brake, plus smoother synchronization with control units. All Alliance Tenna-Rotors are pre-sold through television advertising, which is continuous and nationwide.

### MODEL K22

New, lowest-priced rotator in the field, Alliance Model K-22 Tenna-Rotor features a fingertip control bar. When pressed on one end the antenna rotates in one direction, reverses when other end is depressed. Center disc signal light indicates when limit of travel is reached. Neat, compact, modern design; product of Alliance high-standard precision manufacturing. Fully guaranteed.



Model K-22  
Standard Color Only  
List Price .....\$24.50

**THE ALLIANCE MANUFACTURING COMPANY, INC. • Alliance, Ohio**

# ALLIANCE TV AND ELECTRONIC PRODUCTS

ALLIANCE TENNA-ROTORS

ALLIANCE GENIE®

## GENIE®

### Radio-Controlled Garage Door Operators

The first quality, low-cost, automatic garage door operator!

The Alliance Genie opens, closes, locks garage door, turns light on and off automatically! Now available in radio-controlled models (fully automatic), and key-lock switch models (semi-automatic).

The Alliance Genie operates on all standard one-piece and sectional overhead garage doors. The "Genie" radio models are activated from the car dash and by a radio transmitter installed under the car hood.

"Genie" key lock models are operated by turning

a key mounted in a lock-switch installed along the driveway.

The Alliance Genie incorporates special safety features — a safety clutch which automatically stops the door if it strikes an object while operating and which automatically reverses direction of door's travel the next time operator is activated.

Special Alliance "wobbulator" assures instant stop and saves motor wear.

The Alliance Genie is easily and quickly installed. Comes complete with necessary mounting brackets. Works on standard house circuits.

ADVERTISED NATIONALLY ON TELEVISION and in LIFE, SATURDAY EVENING POST, BETTER HOMES & GARDENS AND HOUSE BEAUTIFUL.



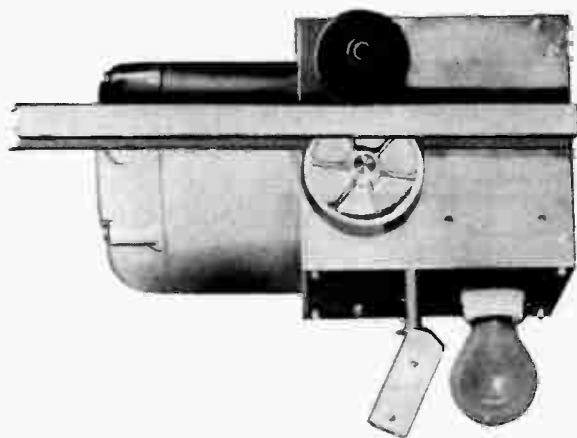
#### "Genie"

##### RADIO CONTROLLED MODELS

- "Genie" RCST-1 (solid doors)
- "Genie" RCCT-1 (sectional doors)

##### KEY LOCK MODELS

- "Genie" KST-1 (solid doors)
- "Genie" KCT-1 (sectional doors)



Model TBB  
List Price...\$4.95

### ALLIANCE THRUST BEARING BRACKET

The Alliance Thrust Bearing Bracket, accessory to Alliance Tenna-Rotor, is made to provide added support for all heavier conventional type antennas. Used with Alliance Tenna-Rotor, it makes an ideal installation. Especially suited for multibay and stocked array an-

tenno types. The Thrust Bearing takes the weight off the rotor unit and transfers it to the ground. It assures extra rigid support and maximum resistance to high winds.

**THE ALLIANCE MANUFACTURING COMPANY, INC. • Alliance, Ohio**

# Rohn

## only complete line of TV and COMMUNICATION TOWERS

### proven in Profits and Customer Satisfaction

• • • • HIGHLIGHTS OF THE ROHN LINE • • • •

look at these  
ROHN exclusives

#### • HOT DIPPED GALVANIZED

The finest, most durable finish is available for ROHN Towers and accessories . . . all done entirely on the ROHN premises under careful ROHN supervision.

#### • UNEQUALLED DESIGN AND ENGINEERING

ROHN is the only design that has stood up over the years. ROHN has been first and foremost . . . and always the leader in new products to meet the changing demands.

#### • MASS PRODUCTION FOR LOW COSTS

ROHN was the first to utilize mass production techniques to build a superior tower at the most competitive prices. This means no sacrifice in quality yet far greater profits for you.

#### • UNIVERSAL CUSTOMER ACCEPTANCE

Thousands and thousands of installations prove the ROHN line first in customer satisfaction.

#### • PIONEER MANUFACTURERS

Pioneers in tower manufacturing—and today one of the world's largest manufacturers of this type equipment. The ROHN Company was built on satisfaction on the part of distributor, dealer and customer alike.

#### • COMPLETE LINE

Only ROHN offers a full line—one dependable one-stop source for all TV installation equipment. Save headaches, save shipping costs, save time . . . use ROHN unequalled service *exclusively*.

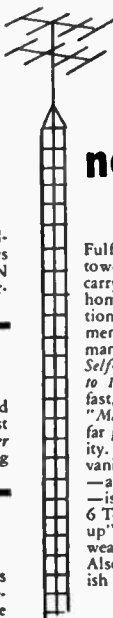
### ALSO a full line of ROHN ACCESSORIES

Rotor posts, house brackets, eave brackets, peak and flat roof mounts, instant drive-in bases, hinged base sections, telescoping mast bases, guying brackets, UHF antenna mounts, erection fixtures, variety of mounts and supports for masts or tubing,

tower installation accessories, TV service tables, mast and TV hot-dipped galvanized tubing, guy rings, "twister-anchors", rubber tower grommets, insulator sections, hinged rotor platform, accessory shelf and platform and dozens of other items. Get the complete catalog TODAY!

## ROHN Manufacturing Company

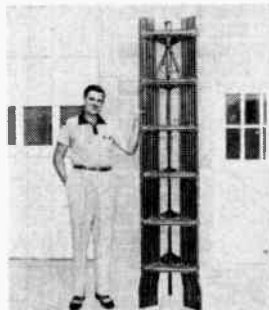
PEORIA, ILLINOIS



### no. 6 tower

"All-Purpose" tower.

Fulfills 75% of your general tower needs—reduces need to carry big inventory. Ideal for home and industrial installations, communication requirements . . . eliminates stocking many different tower models. Self-supporting to 50 ft. or guyed to 120 ft.! Easy to climb for fast, efficient servicing. Utilizes "Magic Triangle" which insures far greater strength and stability. Permanent hot-dipped galvanized coating. Dependability—a feature customers demand—is assured with the Rohn No. 6 Tower designed to "stand up" for years to the rigors of weather and climatic conditions. Also available in enameled finish if desired.



### Package Tower\*

"Space Saver"—cuts storage space 300% or more!

Popular PT-48 has almost 50' of sturdy tower within a compact 8' x 20" package! "Magic Triangle" design is adapted to a pyramid shape using a wide 19" base with progressively decreasing size upward. Decreases your overhead . . . easy to transport and assemble—cuts shipping costs. Galvanized throughout. Available in heights of 24, 32, 40, 48, 56 and 64 feet!

### COMMUNICATIONS TOWER

### No. 40

For extreme heights and communication purposes of all kinds, the Rohn No. 40 gives you strength and durability on which you can depend. The time tested and proven

equilateral triangle design using extra heavy duty tubing and corrugated steel cross-bracing is utilized. The No. 40 is structurally sound so you can install it for heights up to 300'; or at lesser heights when considerably greater strength is required because of excessive wind or antenna loading. Use for radio telephone, broadcasting, microwave relay and all other such communication purposes. If a particular job calls for this type tower, save real money by using ROHN towers.

Note. For lesser heights, use the Rohn No. 20 or No. 30 Tower.



### Both Towers Feature THE ROHN MAGIC TRIANGLE\*

For structural superiority, famed wrap-around "magic triangle" design is featured in these all-steel towers. Towers have full 2 1/2" wide corrugated cross-bracing welded to tubular steel legs. The exclusive design assures dependable strength and permanence.

\*pat. pending

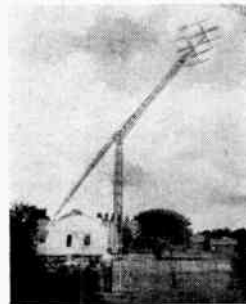


### Telescoping Masts

Heavy-duty hot-dipped galvanized steel tubing and rigid joints give extraordinary strength. Quick installation . . . mast attached to base—antenna fixed, then mast hoisted quickly to desired height. Utilizes special clamp and guy ring arrangement. Flanged interior section; crimped exterior section gives mast stability that can't be beat. Complete with guy rings and necessary erection parts. In 20, 30, 40 and 50 ft. sizes. Bases and ground mounts available.

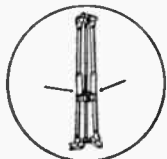
### ROHN FOLD-OVER TOWERS

These unique fold-over towers are perfect for experimentation, TV service departments, amateur use, and special purposes. Uses regular ROHN tower sections with kit. Now available in standard No. 10 tower to 50', and in ROHN No. 30 & No. 40 towers for heavy-duty use.



### ROHN ROOF TOWERS

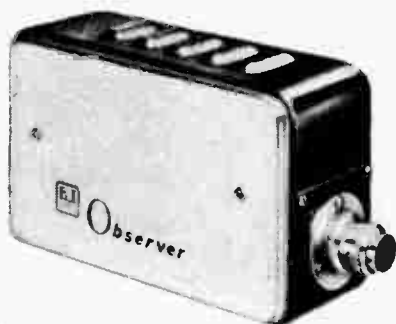
5 models from 2 1/2 to 10 ft.—all hot dipped galvanized. Makes sturdy, quick and economical installation. Very popular everywhere. Collapsible for easy shipping.





# products for BETTER TELEVISION

by BLONDER-TONGUE LABORATORIES, INC., NEWARK 2, NEW JERSEY



## OBSERVER

### Model TVC-1A Industrial TV Camera

A new crystal-controlled camera for use in industry, education, science and other closed circuit applications. Complete unit includes Vidicon tube, coated f.9 lens, control generator and 25 feet of control cable. The control generator may be located up to 500 feet from the camera. It provides two RF outputs and one high definition video output.

Image may be viewed on standard TV sets located up to 1/2 mile from the camera, before preamplification is required. The camera uses fully interlaced, 525-line scanning for maximum resolution. Traverse control permits camera to be focused from 2 inches to infinity.

\$1995<sup>00</sup> list



## VIDEO MONITOR

### Model DVM — 17

A high resolution monitor for closed-circuit TV systems, television studios and control centers, and laboratory and manufacturing operations. Video response flat within 1 db up to 10 Mc. Handles peak-to-peak voltage range from 0.25 to 5.0. Features exclusive DC restorer circuit. Aluminized picture tube.

\$310<sup>00</sup> net

## AUTOMATIC LIGHT COMPENSATOR

### Model ALC

Used with "Observer" camera to maintain constant picture quality during continuously changing light levels over 150 to 1 range. Installed between TVC-1A Camera and TVC-1A Control Generator.



\$400<sup>00</sup> list

## MASTERLINE TV SYSTEM COMPONENTS

### VHF AMPLIFIER Model MLA

Powerful all-channel VHF cascade amplifier with more than 37 db gain. Has variable gain controls for equalizing high and low bands. Output on each band: 1.25 volts RMS, flat to within 2 db. Self-powered. Input and output 75-ohm coax fittings. When used with MAGC maintains constant output level.

\$124<sup>50</sup> list



### AUTOMATIC GAIN CONTROL

#### Model MAGC

A plug-in unit for use with MLA amplifier to maintain constant output level over 20 db input range. Output flat within 1.5 db. Effective with over 14,000 microvolts MLA input signal. Compensates for AC line variations. Input and output 75-ohm coax fittings. \$79<sup>50</sup> list. Obtains power from MLA.



### VHF SINGLE CHANNEL AMPLIFIER with AGC

#### Model MCS

Gain in excess of 38 db on low band and in excess of 35 db on high band. Features automatic level and manual gain controls. Has high rejection of adjacent channels. Input and output 75-ohm coax fittings. Two outputs and all-channel mixing network. Self-powered. (specify VHF channel) \$122<sup>50</sup> list



### RADIATION-PROOF HOUSING

#### Model MRH-A

Weatherproof and radiationproof outdoor enclosure for master TV equipment. Has perforated mounting surface and adjustable support bracket. Maximum ventilation, front-opening sealed door and sturdy hump. Iridite-finished, cadmium-plated steel.

\$51<sup>50</sup> list



### VHF CONVERTER-AMPLIFIERS Model MVC

Converts a specified VHF "high" channel to a specified VHF "low" channel. Crystal controlled. Gain: in excess of 33 db  $\pm 1/2$  db. Input and output 75-ohm coax fittings. Two outputs and all-channel mixing networks. Self-powered. Available on special order only.

(specify input and output channels) \$360<sup>00</sup> list

### Model MLC

Converts a specified VHF "low" channel to a specified VHF "low" channel. Crystal controlled. Flat within  $\pm 1/2$  db over 6 Mc. bandwidth. Input and output 75 ohm coax fittings. Two outputs and all-channel mixing network. Self powered. Available on special order only. \$360<sup>00</sup> list



### UHF CONVERTER-AMPLIFIER

#### Model MUC

Converts a specified UHF channel to a specified VHF channel. Crystal controlled. Gain from 15 to 25 db. Flat within  $\pm 1/2$  db over 6 Mc. bandwidth. Input for 300 ohms and two outputs for 75 ohms. All-channel mixing network. Self powered. Available on special order only. \$360<sup>00</sup> list



# products for BETTER TELEVISION

by BLONDER-TONGUE LABORATORIES, INC., NEWARK 2, NEW JERSEY

## VHF FIELD STRENGTH METER



**Model FSM-1 54mc to 216mc**

A portable, precision instrument for accurate measurement of RF signal strength. Measures signal levels from 10 microvolts to 3.0 volts with an accuracy of  $\pm 1.5$  db. When used with B-T UHF converter, range includes entire UHF band. Also measures percentage of AM modulation and indicates IM distortion.

- Special strap for field use.
  - Features include:
    - Continuous tuning from 54mc to 216mc
    - Sound/video takeoff.
    - Unaffected by temperature changes from  $8^{\circ}$  through  $120^{\circ}$  F.
  - Dimensions: 12 x 9 $\frac{1}{4}$  x 8 $\frac{3}{4}$  inches
  - Input Impedance: 75 ohms
- \$310<sup>00</sup> net**  
less batteries

## FAMOUS LINE OF ALL-CHANNEL UHF CONVERTERS AND VHF AMPLIFIERS



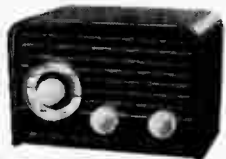
**HOME BOOSTER Model HA-3**

Provides more than 16 db gain. Automatic 'on-off' operates thru TV set. No tuning. Features low-noise, push-pull, broadband circuits. Self-powered. **\$44<sup>50</sup> list**



**CLASS A Model 99**

Ideal all-channel UHF converter for 'Class A' signal areas. Direct-drive ganged tuning provides precise tracking of input and oscillator. VHF output on channel 4, 5 or 6. Precise, 300-ohm impedance match. **\$22<sup>95</sup> list**



**ULTRAVERTER Model BTU-2**

Tunable, all-channel UHF converter—the most powerful in the field—with high-gain, low-noise triode amplifier. Has dual-speed channel selector. VHF output on channel 5 or 6. Automatic 'on-off' with TV. **\$39<sup>95</sup> list**

## CONVENIENT EFFECTIVE TV INSTALLATION TOOLS

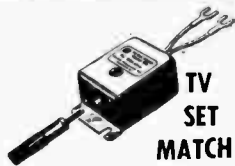
**ROTARY CABLE STRIPPER**



**Model S-1**

A rotary cutter and stripper of coax cable and non-metallic tubing up to  $\frac{1}{4}$ " in diameter. Calibrated for measuring lead and shield length required. Ideal for use with B-T Cable Connectors. **\$2<sup>95</sup> list**

**TV SET MATCH**



**Model TM**

An impedance-matching transformer designed for use at the TV set to match 75-ohm cable to 300-ohm TV input. Cable plug supplied to fit jack permits easy connect and disconnect. Heavy duty output leads with spade lugs. **\$3<sup>30</sup> list**

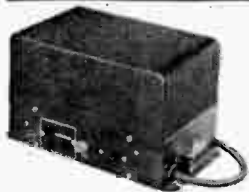
**2-SET COUPLER**



**Model TV-42**

Resistive network provides 12 db isolation between two TV or FM sets fed from a single antenna. Also mixes two amplifiers or antennas. Response from 0 to 900mc. **\$2<sup>75</sup> list**  
Line Splitter (4-set coupler)  
4-300 ohm lines from 1-300 ohm line. **\$8<sup>50</sup> list**  
LS4-4

## ADD-A-UNIT TV SYSTEM COMPONENTS



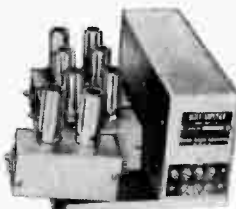
**COMMERCIAL ANTENSIFIER Model CA-1**

A popular broadband VHF amplifier for antenna and line applications. Gain: 26 db on low band and 24 db on high band. Low noise circuit. 75 ohms and 300 ohms at input and output. Gain control. Self-powered. **\$84<sup>50</sup> list**

**MIXER AMPLIFIER**

**Model MA4-1**

A versatile unit consisting of broadband mixing circuits and built-in power supply for up to four plug-in VHF channel strips or two UHF converter strips (see CS-1 and UC-1). Precise 75-ohm and 300-ohm impedance match at all terminals. May be used in series. **\$67<sup>50</sup> list**



### VHF CHANNEL STRIP

**Model CS-1**

Single channel amplifier strip for MA4-1. Gain: 20 db on low channels and 17 db on high channels. Input terminals for 75-ohm or 300-ohm line. Draws power from MA4-1. (specify VHF channel) **\$28<sup>50</sup> list**

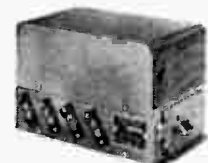
### UHF CONVERTER STRIP

**Model UC-1**

Designed for use with MA4-1. Converts a specified UHF channel to a specified VHF channel. Gain: more than 15 db. 300-ohm input. Draws power from MA4-1. **\$90<sup>00</sup> list**

**DISTRIBUTION AMPLIFIER**

**Model DA8-B**



Provides eight isolated TV set outlets from one 75-ohm or 300-ohm input. Each outlet handles 75-ohm or 300-ohm line, and delivers 10 db gain on all VHF channels. Gain control covers 20 db range. Self-powered. **\$94<sup>50</sup> list**

**ANTENNA BOOSTER Model AB with Remote Control**



More than 25 db gain. Broadband antenna amplifier in weather-proof housing with mast-mounting bracket. Remote control power supply may be located near set. Furnishes either 24 or 110 volts to amplifier, as desired. Matched 300-ohm input and output terminals on both units. Single line carries power 'up' and signal 'down'. 'On-off' is automatic with TV set. **\$99<sup>50</sup> list**

# Products for BETTER TELEVISION

by BLONDER-TONGUE LABORATORIES, INC., NEWARK 2, NEW JERSEY



## MATCH' TV ACCESSORIES



Precise impedance match between 75-ohm coax and 300-ohm antenna line. Has 75-ohm coax fitting and 300-ohm screw terminals. Weather-protected.

\$920 list

### DIRECTIONAL COUPLER

Model MDC-2

Two isolated outlets for TV sets or branch lines. Only 3 db forward loss. Minimum isolation: 14 db. One 75-ohm input and two 75-ohm output fittings. Weather-protected.

\$1300 list

### DIRECTIONAL COUPLER

Model MDC-4

Four isolated outlets for TV sets or branch lines. Only 6 db forward loss. Minimum isolation: 20 db. One 75-ohm input and four 75-ohm output fittings. Weather-protected.

\$2800 list

### DUPLEXERS

Pair remotely controls TV amplifiers or permits two-way audio or AM transmission. One line for VHF TV, plus AC, AM or audio (0 to 2 mc). Weather-protected.

Model MDX-300 (300 ohms) pair

\$2520 list

Model MDX-75 (75 ohms) pair

\$2700 list

### FM WAVE TRAP

Model MWT-1

Eliminates FM interference at the antenna, in the line or at the TV set. Attenuates any FM channel more than 25 db. 75-ohm coax fittings. Weather-protected.

\$2700 list

### LOW-BAND EQUALIZER

Model ME-2

Graduated attenuation from 9 db on Channel 2 to less than 1 db on Channel 6. Balances signals through 2000 ft. of RG-11/U or 1000 ft. of RG-59/U. 75-ohm coax fittings, in and out. Weather-protected.

\$1500 list

### POWER LINE FILTER

Model MLF

Provides 60 db RF isolation between amplifier and power line. Two AC power outlets, one power cable input connector. Mounts in MRH-A.

\$1700 list

### ALL-CHANNEL EQUALIZER

Model ME-1

Graduated attenuation from 17 db on Channel 2 to 1 db on Channel 13. Balances signals through 1000 ft. of RG-11/U or 500 ft. of RG-59/U. 75-ohm coax fittings, in and out. Weather-protected.

\$1600 list

### VHF ATTENUATOR

Model MAT

Uniform all-channel attenuation from 0 to 45 db in steps of 3 db. 75-ohm coax fittings, in and out.

\$2300 list

## CABLE TAP-OFFS

### OUTDOOR TAP-OFF

Model MTO-11

Spliceless, weatherproof tap from RG-11/U cable. Uniform 17 db resistive isolation with only 0.8 db insertion loss. Lowest shunt capacity. Positive electrical protection thru blocking condenser. Supplied with installation tool.

\$675 list



### INDOOR TAP-OFFS

Model T01-75: Single isolated tapoff for recessed mounting. Handles either RG-11/U or RG-59/U, with 75 ohm output jack. \$3.75 list

Model T01-300: Single isolated outlet with 300 ohm terminals. \$3.75 list

Model T02-75: Two 75 ohm isolated outlets from RG-11/U or RG-59/U cable. \$7.20 list

Model T02-300: Two 300 ohm isolated outlets from RG-11/U or RG-59/U cable. \$7.20 list

### FOUR SET TAP-OFF

Model MIT-4

17 db isolation and only 0.3 db insertion loss at each outlet. Coax fittings and weatherproof housing.

\$2800 list



## CABLE CONNECTORS

### CABLE COUPLER

Model MC

Correct 75-ohm match in splicing, adapting or terminating RG-11/U and/or RG-59/U cable. Thru-connection for Model MRH-A. Used with B-T Connectors and Terminating Plug.

\$250 list

### TERMINATING PLUG

Model MTP-75

Correctly terminates cable fitted with Model MC Cable Coupler.

\$250 list

### NEW SOLDERLESS CONNECTORS

Model P-115

Matched 75-ohm male fitting for use with RG-11/U size cable.

each \$155 list

Model P-595

Matched 75-ohm male fitting for use with RG-59/U size cable.

each \$155 list

Write for detailed information on B-T products — or for free, expert sales engineering services to assist you in planning any master TV or industrial TV system.

# South River

## THE COMPLETE QUALITY LINE OF ANTENNA MOUNTING ACCESSORIES

### CHIMNEY MOUNTS

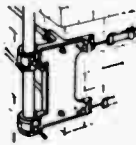
U.S. Pat. #2482575, Can. Pat. #463261

**CAST ALUMINUM**

MODEL	LIST
(B) (E) SR-10A	\$ 8.45
(A) (E) SR-10A-ST	10.65

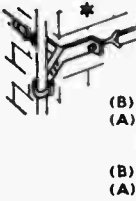
**(D) TWO PIECE TYPE**

(B) (E) SP-12A	8.45
(A) (E) SP-12A-ST	10.65



**"Y" TYPE HOT DIP GALV. STEEL**

MODEL	LIST
(B) (E) DM-36	\$4.10
(A) (E) DM-36-ST	5.80
(B) DMLKK	3.80
(A) DMLKK-ST	5.50
(B) (C) "Y" Special	3.25
(A) (C) "Y" ST Special	4.05




**COMPLETELY ALL STAINLESS**

(A) ST-DM	8.05
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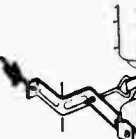
**SNAP-IN TYPE**

MODEL	LIST
(B) SN-50	\$3.75
(A) SN-50-ST	5.10
(B) (C) CM-20	3.20
(A) (C) CM-20-ST	4.05



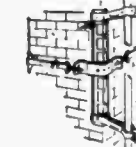
**"Z" TYPE**

MODEL	LIST
(B) T-15	\$3.10
(A) T-15-ST	4.65
(B) (C) ZM	2.60
(A) (C) ZM-ST	3.65




**ONE PIECE TYPE**

MODEL	LIST
(E) (A) (One Strap)	UM-1 \$7.00
(E)(A)(D) (Two Straps)	UM-2 7.90



**RATCHET TYPE**

MODEL	LIST
(B) RT	\$4.85
(A) RT-ST	5.95

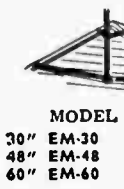


### EAVE MOUNTS

MODEL	LIST
EM-1	\$5.45



MODEL	LIST
30" EM-30	\$4.75
48" EM-48	6.40
60" EM-60	8.00



**CODE:**

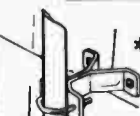
- \* TWO TO A SET
- (A) Stainless Steel Banding
- (B) Galv. Steel Banding
- (C) Economy Model
- (D) Not Illustrated
- (E) With Kwik Klip
- (F) U.S. Pat. # 2734708
- (G) Fits Masts Up To 1 1/2"
- (H) Fits Masts Up To 2"

Complete descriptions and list of South River Products available in latest catalog. Write for your copy.

### WALL BRACKETS

**"U" BOLT TYPE**

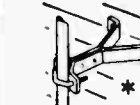
MODEL	LIST
3" Alum. WB-3	\$2.20



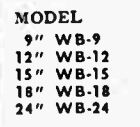
MODEL	LIST
3" NT-3	\$1.45
4" NT-4	1.60



MODEL	LIST
6" WB-6	\$2.45



MODEL	LIST
9" WB-9	\$3.95
12" WB-12	4.60
15" WB-15	5.50
18" WB-18	6.15
24" WB-24	7.60

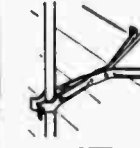


**SNAP-IN TYPE**

MODEL	LIST
6" SN-6	\$2.45

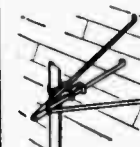


MODEL	LIST
9" SN-9	\$3.95
12" SN-12	4.60
15" SN-15	5.50
18" SN-18	6.15
24" SN-24	7.60



**ADJUSTABLE**


MODEL	LIST
18" Alum. WB-18A	\$7.50



MODEL	LIST
Combination WB-3-18A	\$5.45

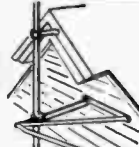


MODEL	LIST
ST-18A	\$9.25
Unassembled ADJ-18	7.25




### WALL BRACKETS

MODEL	LIST
Combination ST-3-18A	\$5.80
Unassembled ADJ-3-18A	5.45




**EXTRA HEAVY GROUND UP TYPE (Fits Masts Up To 3 3/4" O.D.)**

MODEL	LIST
GU-3	\$6.15 Pr.

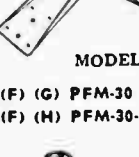


### ROOF MOUNTS

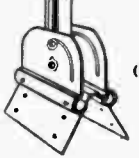
MODEL	LIST
(F) (G) PFM-1	\$3.95
(F) (H) PFM-1-LM	4.70



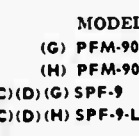
MODEL	LIST
(F) (G) PFM-30	\$3.60
(F) (H) PFM-30-LM	4.45



MODEL	LIST
(F) (G) All Alum. PFM-1	\$7.30

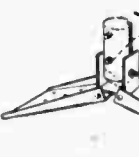


MODEL	LIST
(G) PFM-90	\$2.25
(H) PFM-90-LM	3.45
(C)(D)(G) SPF-9	\$2.00
(C)(D)(H) SPF-9-LM	2.40




MODEL	LIST
PFM-XL	\$6.10

(Fits Masts Up to 2 1/4" O.D.)



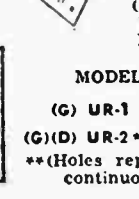
MODEL	LIST
(F) (G) PM-10	\$4.95
(F) (H) PM-10-LM	5.60
(D) (G) PM-12	2.95
(D) (H) PM-12-LM	3.60



MODEL	LIST
(G) UR-1	\$.59
(G)(D) UR-2**	.59

(Without Patented Walk-Up - Drop-Lock Feature)

\*\* (Holes replaced by continuous slot)



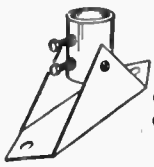
**SOUTH RIVER METAL PRODUCTS CO., INC., South River, New Jersey**



# South River

## THE COMPLETE QUALITY LINE OF ANTENNA MOUNTING ACCESSORIES

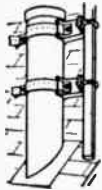
### ROOF MOUNTS



MODEL	LIST
(G) RM-80	\$ 1.35
(H) RM-80-LM	2.45
(C) (G) SRM-8	1.05
(C) (H) SRM-8-LM	1.55
(D) RM-XL*	3.75

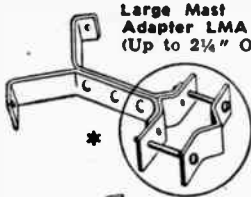
\*(Fits Masts Up To 2 1/4" O.D.)

### PIPE MOUNT

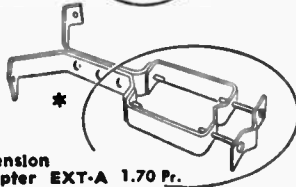


MODEL	LIST
(B) P-1	\$3.05
(A) P-1-ST	3.40

### ACCESSORIES



Large Mast Adapter LMA \$1.35 Pr.  
(Up to 2 1/4" O.D.)

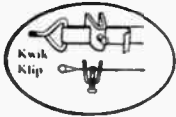
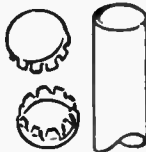


Extension Adapter EXT-A 1.70 Pr.  
(Extends Mast 3")



Mast Coupler MC .95

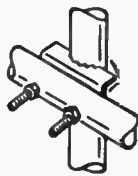
Mast Plug MP .20



KWIK KLIP  
MODEL LIST  
KK \$ .28

Complete descriptions and list of South River Products available in latest catalog. Write for your copy.

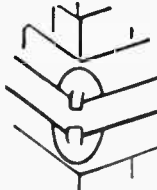
### ACCESSORIES



MODEL LIST  
"U" Bolt & Saddle UBS \$ .45

### CORNER GUARD

MODEL LIST  
CG \$ .49



### STRAP CLAMPS

MODEL LIST  
(C)-Q Galv. Steel \$ .08  
(C)-QS Stainless Steel .15



### U.H.F. ANTENNA MAST ADAPTERS



Model UMB-15  
List \$2.10

### U.H.F. ANTENNA MAST ADAPTER

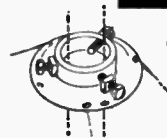


Model UHM-1  
List \$3.70

### U.H.F. ANTENNA MAST ADAPTER

Model UHM-2 List \$3.70

### GUY RINGS



(Universal Type Fits Masts up to 2")  
Model GR-1  
List \$1.60

MODEL	LIST
1 1/4" MASTS GR-5	\$ .20
1 1/2" MASTS GR-6	.30
1 1/2" MASTS GR-7	.30
(D) Guy Ring Support RS-5	.25

(For 1 1/4" Masts)



RATCHET GUY WIRE TIGHTENER  
Model GW-RT  
List \$ .75

### GROUND RODS

MODEL	LIST
(D) 4 Ft. GND-4 CP	\$1.10
(D) 6 Ft. GND-6 CP	1.55
(D) Gnd. Rod GRC Clamp	.35
(D) Gnd. Rod Clamp GRC-2	.18

### GUY WIRE CLAMPS



(G) Model GC-1 List \$ .40



(G) Model GC-2  
List \$ .45



(H) Model GC-3  
List \$ .60



Model GC-4  
List \$ .80  
(For Masts Up to 3")



### MAST TUBING

ALUMINUM  
1 1/4" - 1 1/2" - 1 1/2' O.D., .055 W  
5' - 10' - 12' LENGTHS

STEEL  
1 1/4" O.D. - 10' Lengths  
20, 18 and 16 Gauge

### GUY WIRE

#### STRANDED ALUMINUM

500# TEST - 7 STRAND 17 Gauge  
50' INTERCONNECTED COILS,  
100' INTERCONNECTED COILS,  
1000' CONTINUOUS LENGTHS

### REPLACEMENT BANDING KITS

"A" 12 Ft. Straps	1.90
AT 10 Ft. Straps	1.55
C 12 Ft. S.S. Straps	3.45
CT 10 Ft. S.S. Straps	2.75
XLG 18 Ft. Straps	2.60
XLST 18 Ft. S.S. Straps	4.95
New Items	

### SOUTH RIVER SUPERLIGHT MAGNESIUM LADDERS

Magnesium: 1/3 Lighter than Aluminum. Strongest Metal Lb. for Lb. in existence.

#### EXTENSION LADDERS

Size	Weight	List Price
40'	57 Lbs.	\$142.40
36'	51 "	128.20
32'	46 "	113.95
28'	32 "	87.95
24'	28 "	75.35
20'	23 "	62.80
Rubber Safety Feet		3.65

#### STRAIGHT LADDERS

Size	Weight	List Price
16'	18 Lbs.	46.70
12'	13 "	35.00
10'	11 "	29.20
Roof Hooks		3.65

#### STEPLADDERS

Size	Weight	List Price
8'	16 Lbs.	39.10
6'	11 1/2 "	28.15
4'	8 1/2 "	21.35
26"	3 1/2 "	10.40

These ladders furnished immediately from complete warehouse stocks in South River, N. J.

**SOUTH RIVER METAL PRODUCTS CO., INC., South River, New Jersey**

# JERROLD

## TV RECEPTION AIDS for the Home



### "DE-SNOWER" PRE-AMPLIFIERS

Produce "snow-free" pictures from extremely weak signals. Overcome noise pick-up and line losses in antenna lead-ins. Will deliver high fidelity pictures to receivers up to one-half mile from antenna.

#### MODEL DSA-132

COVERS CHANNELS 2 TO 13

Input: One low band and one high band or one all band.

Gain: 25 db

Frequency response:  $\pm 1$  db Channels 2 to 6 and 7 to 13.

Noise Figure: 6 db low band; 7.5 db high band

Output: 72 ohms or 300 ohms 0.1 volt/channel, 0.5 v composite.

Tube Complement: 3-6BQ7-A, 1-6AK5, 1-6CB6

Size: Pre-amplifier 5" x 5" x 10 1/4" x 7 1/4" overall.

Power Supply 2 1/2" x 5 1/2" x 7 1/4" overall.

Shipping Weight: 12 3/4 lbs. \$109.50 List †

#### MODEL DSA-62

COVERS CHANNELS 2 TO 6

Gain: 25 db.

Frequency Response:  $\pm 1$  db Channels 2 to 6.

Noise Figure: 6 db.

Outputs: 72 or 300 ohms 0.1 volt/channel, 0.5 v composite.

Tube Complement: 1-6BQ7-A, 1-6CB6

Size: Pre-amplifier 2 1/2" x 5" x 10 1/4" overall.

Power Supply 2 1/2" x 5 1/2" x 7 1/4" overall.

Shipping Weight: 8 1/4 lbs. \$90.00 List †

#### MODEL DSA-\*

COVERS ANY SINGLE CHANNEL FROM 2 TO 13

Gain: 20 db

Bandwidth: 6 mc  $\pm 1/2$  db

Rated Output (Max.): .6v RMS Lo Band, .5v RMS Hi Band.

Noise Figure: 6 db Lo Band, 7.5 db Hi Band.

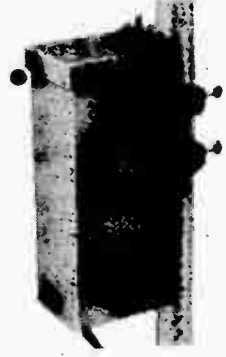
Output Impedance: 72 ohms or 300 ohms.

Tube Complement: Lo band, 1-6BQ7A, 1-6CB6, Hi band, 1-6BQ7A, 1-6AK5.

Size: Pre-amplifier 2 1/2" x 5" x 10 1/4" overall.

Power Supply 2 1/2" x 5 1/2" x 7 1/4" overall.

Shipping Weight: 8 1/4 lbs. Power Consumption: 15 Watts \$90.00 List †



All De-Snowers shipped complete with fittings, mounting bracket and remote power supply.

\* Specify channel desired.

"DeSnowers" are also recommended for use where mast mounted preamplification is required for Jerrold Distribution Systems.

### "TRAP-EASE"

#### TUNABLE INTERFERENCE TRAPS

Eliminate adjacent channel interference, permit reception of weak, distant stations normally blocked by a strong local channel.



BEFORE



AFTER

TRAP-EASE "KNOCKS OUT ADJACENT CHANNEL INTERFERENCE". This tunable "deep notch" antenna trap (greater than 50 db) permits TV viewers to remove "beat" or "herringbone" patterns caused by adjacent channel sound or video carriers. Permits clear reception of even weak distant stations.

Works with any TV receiver and any 300 ohm antenna that would normally bring in pictures from the distant stations if the interfering adjacent channel was not on the air. Does not affect reception of regularly viewed channels.

#### TWO MODELS AVAILABLE

LOW TRAP-EASE (Model HQ-91) covers Channels 2 to 6.

HIGH TRAP-EASE (Model HQ-92) covers Channels 7 to 13



\$19.95 List

### LOW LOSS MULTI-SET COUPLERS



Jerrold Multi-Set Couplers provide the best method of connecting 2, 3 or 4 television receivers to a common antenna array. Units feature positive matching, extremely low forward loss and high isolation between receivers.

**INDOOR MOUNTING** — on the baseboard for a neat and attractive appearance, with connectors concealed and protected. For attic or basement use, the unit mounts with terminals exposed for ease of servicing.

**OUTDOOR MOUNTING** — a bracket is supplied utilizing keyhole perforation for screw heads, or for strapping to antenna mast. The unit is weather resistant.

#### THREE MODELS AVAILABLE

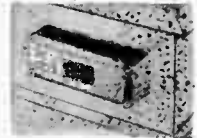
**M-2 TWO SET COUPLER FOR STRONG SIGNAL AREAS** — inductively compensated with emphasis on positive matching for reduction of ghosting and smear. Color: blue grey. List \$3.50

**MF-2 TWO SET COUPLER FOR FRINGE AREAS** — for use wherever extremely low forward losses are mandatory. Featuring a highly efficient transformer design and positive matching. Provides complete isolation between receivers. Color: ivory. List \$4.50

**MF-4 FOUR SET COUPLER FOR ALL AREAS** — designed with the same basic circuit as MF-2, but for use in feeding 3 or 4 sets from one antenna. Color: ivory. List \$5.75

(Each unit packed with special bracket, for outdoor mounting, and necessary hardware.)

\* Best for UHF.



Baseboard



Attic & Basement



Mast



Outside

TECH DATA SHEETS AVAILABLE FOR PRODUCTS LISTED ON THIS PAGE

ALL JERROLD EQUIPMENT DESIGNED FOR COLOR

# JERROLD TEST EQUIPMENT

## VHF FIELD STRENGTH METER

MODEL 704-B



A calibrated direct reading Instrument for TV and FM Signal Measurements — A must for Color!

The JERROLD Model 704B Field Strength Meter is a portable service instrument, designed and built to precision standards normally found only in laboratory equipment at three to four times the price.

**Sensitive:** Reads down to 5 microvolts and up to 3 volts.

**Selective:** 0.6 mc bandwidth. Separates audio from adjacent video.

**Accurate:** Precise readings in db or microvolts  $\pm 2$  db over entire range.

**Versatile:** Reads % amplitude modulation on FM signals. Audio output jack. Video output jack for critical observation of composite video signal.  
**Portable:** Only 19 pounds.

### APPLICATIONS

1. Field Intensity surveys.
2. Balancing Television Distribution Systems.
3. Testing Color Response of antenna systems.
4. Determining overload (sync clipping) in RF amplifiers.
5. Checking % amplitude modulation of FM carriers.
6. Checking % AM of RF signal generators.
7. Studying antenna patterns.
8. Measuring radiation.
9. Measuring attenuation of coaxial cables.
10. Checking random noise levels.
11. Locating and orienting antennas.
12. Measuring and locating interference.
13. Measuring individual video and audio carrier levels.
14. Checking output of signal generators.
15. Comparative testing of antennas or boosters.
16. Adjusting traps or filters.

### SPECIFICATIONS

**Frequency Range:** 54 to 220 mc/sec covered in one band.

**Accuracy:**  $\pm 2$  db over entire range.

**Sensitivity:** 5 microvolts.

**Ranges:** 6 fundamental ranges — 0-100 $\mu$ v, 0-300 $\mu$ v, 0-1000 $\mu$ v, 0-10,000 $\mu$ v, 0-30,000 $\mu$ v. Four additional ranges through the use of the built-in precision attenuator — 0-100,000 $\mu$ v, 0-300,000 $\mu$ v, 0-1 volt, 0-3.0 volt.

**Selectivity:** Bandwidth at 3 db down is 0.6 mc.

**Image Rejection:** 90 db below signal level.

**Power Requirement:** AC: 55 watts, 105-125 volts 50/60 cycles.

**Tube Complement:** 2-5654, 1-6AB4, 1-6T8, 1-OD3 (VR 150), 3-5749, 1-5V4, 1-12AU7.

**Physical Specifications:** Height 12" — Width 12 $\frac{3}{4}$ ".

**Depth:** 8".

**Shipping Weight:** 24 lbs.

**Finish —** gray crackle finish on sturdy aluminum case.  
**\$365.00 net**

### VARIABLE ATTENUATORS

Models A-72 and A-21



A-21 — \$11.70 net

Switch type, Variable RF Attenuators providing precise attenuation over the frequency range of 0 to 250 megacycles. The units are matched to 75 ohms with a VSWR of less than 1.05 and are capable of handling 500 milliwatts of power. Model A-72 attenuates from 0 to 82 db in 1 db steps. Model A-21 attenuates from 0 to 21 db in 3 db steps.



A-72  
\$54.50 net

### ALIGNMENT JIG Model AJ-106

Capacity coupling alignment jig used where an RF signal must be inserted between stages of amplifiers or similar equipment. The AJ-106 is placed over a cold (dummy) tube and the alignment or test signal from the signal generator is connected to the jig.

\$4.50 net

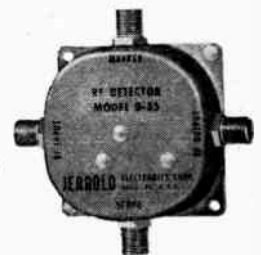


### SPLIT RF DETECTOR

Model D-86

Model D-86 Detector removes the modulation envelope from an RF carrier and applies it to the vertical input of an oscilloscope. Terminals are "RF Input", "RF Output", "Scope", and "External Marker Input".

\$25.00 Net



Incorporates germanium diode and voltage doubler circuit permitting output up to 1 volt DC. For testing and alignment of RF amplifiers, VSWR measurements, checking impedance and impedance match of RF devices. Complete with four F-59 connectors for RG-59/U.

**Frequency Response:** Flat within 1 db, 1.5-250 mc

**Impedance:** 75 ohm VSWR less than 1.06.

TECH DATA SHEETS AVAILABLE FOR PRODUCTS LISTED ON THIS PAGE

LOOK TO JERROLD FOR THE BEST IN EVERY TEST

# JERROLD

# JERROLD

## TV DISTRIBUTION SYSTEMS

as simple as A-B-C



### AMPLIFYING

Amplify the signals, one channel or all channels. Achieve undistorted reproduction of TV signals over long distances of coaxial cable with simplicity of installation and continuous 24-hour maintenance-free operation. Each Jerrold amplifier is designed with:

- Flat Response over entire band
- Matched 300 ohm or 72 ohm input
- Matched 72 ohm output
- High Overload Characteristics

#### MODEL 2300

COVERS CHANNELS 2 TO 6 AND 7 TO 13

The Jerrold high gain, high output TV distribution amplifier for large motels, hotels, apartment buildings and "neighborhood cable" systems.

\$164.00 List

#### FEATURES:

- Hi and Lo band locking gain controls.
- Hi and Lo band "tilt" controls for cable compensation. (No external line equalizers needed.)
- Ground clamp for lightning protection.



#### SPECIFICATIONS

Gain: 38 db min.

Gain Controls: 16 db range Hi and Lo bands.

Tilt Controls: Hi and Lo bands.

Rated Output (Max.): .3v/channel for 9 channel operation

Rated Input (Max.): 26000  $\mu$ v

Tube Complement: 4-6BQ7-A, 2-12BY7A, 1-6CB6.

Cable Fittings: 72 ohms — (3) F-61; 300 ohms — screw terminals

Fuses: Primary — 1 amp.

Finish: Gray hammertone.

Dimensions: 11" x 7 1/4" x 5 1/4"

Shipping Weight: 10 lbs.

Power Requirements: 117 volts AC .58 amps.; 63 watts

#### MODELS ABD-1, ABD-8 and 406A

Provide the key to superior television distribution for small economical systems. Combining latest cascode circuitry and superior mechanical design, these amplifiers deliver strong, snow-free pictures and keep installation costs to a minimum.

#### SPECIFICATIONS: MODEL ABD-1

COVERS CHANNELS 2 TO 6 and 7 TO 13

Gain: 25 db

Rated Output (Max.): 0.1 v/channel (7 channel operation)

Rated Input (Max.): 5500  $\mu$ v

Noise Figure: 6 db low band, 7.5 db high band

Tube Complement: 3-6BQ7A, 1-6AK5, 1-6CB6

Cable Fittings: 72 ohms-(3) F-61; 300 ohms — screw terminals

Fuses: B+, 1/10 amp. Slo Blo; Pri. 1/2 amp. Slo Blo

Dimensions: 11" x 4" x 5"



Shipping Weight: 7 lbs. 7 ozs.

Power Requirements: 117 v AC, 50-60 cps, 35 Watts

\$99.50 List

#### SPECIFICATIONS: MODEL ABD-8

COVERS CHANNELS 2 TO 13

Same circuitry as ABD-1 except output circuit, which delivers 15 db gain to each of eight F-61 output terminals.

\$99.50 List



#### SPECIFICATIONS:

#### MODEL 406A\*

COVERS ANY SINGLE CHANNEL FROM 2 TO 13

Gain: 28 db

Bandwidth: 6 mc.  $\pm$ 1/2 db

Rated Output (Max.): .6v RMS Lo band, .5 v RMS Hi band

Noise Figure: 6 db Lo band, 8 db Hi band

Tube Complement: Lo band, 1-6CB6, 1-6BQ7A; Hi band, 1-6BQ7A, 1-6AK5

Housing: Gray hammertone finish

Dimensions: 3" x 4" x 10 1/2" overall

Shipping Weight: 4 1/4 lbs.

Power Consumption: 15 Watts

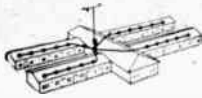


\* Specify channel desired

\$64.25 List

TECHNICAL DATA SHEETS AVAILABLE FOR PRODUCTS LISTED ON THIS PAGE

ALL JERROLD EQUIPMENT DESIGNED FOR COLOR



## B BRANCHING

## C CONNECTING

Branch amplifier outputs into 2 or more trunks with minimum loss, no distortion, no overload and high isolation between legs.

### TWO-WAY SPLITTER Model 1562

Hybrid two way splitter with only 3 db forward loss in each leg. Isolation between outputs is 15-20 db. B-59 coax bushings do not require cable connectors.

\$7.50 List



### FOUR-WAY SPLITTER Model 1514



Four-way reactive splitter with only 6 db forward loss to each output. Isolation between outputs, 12 db. Complete with five F-59 cable connectors. (Unused outputs must be terminated with TR-72F terminating resistors.)

\$14.50 List

## TERMINATORS



### Model TR-72B

Inexpensive 72 ohm terminator for easy connection to B-59 type bushings.

\$1.50 List



### Model TR-72

Close tolerance 72 ohm resistor for line or equipment termination. Mates with C-61, C-81 or C-5911.

\$1.50 List



### Model TR-72F

Similar to TR-72. Mates with F-61, F-81, A-61 or F-101-59.

\$1.50 List

Connect the signal to TV receivers quickly and efficiently — using simple and rapidly installed Jerrold tap-off units. Designed for high isolation between receivers. Compensates for cable characteristics.

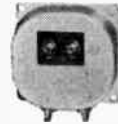
### FOR INDOOR USE

#### Surface Mounting

#### Model LT-310 — 300 ohm output

Taps RG-59/U line to 300 ohm receivers. Full RF and AC isolation. B-59 coax bushings do not require cable connectors. Surface mounting, ivory radiation-proof steel case. Three color-coded attenuation values (specify R, Y or G). Terminate the last tap on feeder line with model TR-72B terminator.

\$5.00 List



#### Model LT-77 — 72 ohm output

Taps RG-59/U line to 72 ohm receiver or to 300 ohm in direct pick-up locations. Full RF isolation. B-59 coax bushings do not require cable connectors. Surface mounting, ivory radiation-proof steel case. Three color-coded attenuation values (specify R, Y or G). Terminate the last tap on a feeder line with model TR-72B terminator.

\$5.00 List



#### Flush Mounting

#### Model 1431 — 300 ohm output

Electrically identical to LT-310. Mounts in 2" x 4" electrical outlet box or 4" x 4" outlet box with single gang plaster ring. Specify R, Y or G. Terminate the last tap on a feeder line with model TR-72B terminator.

\$5.00 List



#### Model 1477 — 72 ohm output

Electrically identical to Model LT-77. Mounts in 2" x 4" electrical outlet box or 4" x 4" outlet box with single gang plaster ring. Specify R, Y or G. Complete with 72 ohm output plug. Terminate the last tap on a feeder line with model TR-72B terminator.

\$5.00 List

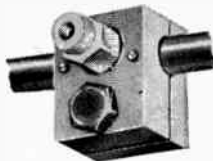


### FOR OUTDOOR USE

#### Model PT 1461 — For RG-11/U

Pressure tap for RG-11/U type feeders. Surface mounting. Removable color coded isolation units. (Specify R, Y or GR.) Unique design minimizes shunt capacity. (Requires use of CD-11 Cutting Punch.) Complete with F-59 cable connector. Terminate the last tap on a feeder line with TR-72 terminator. (Use F101-59 cable adaptor.)

\$7.50 List



#### Model 1401 — For RG-59/U, RG-6/U

Surface mounting non-resistive line tap for RG-59/U type feeders. Color coded attenuation values permit use with highest gain amplifiers. Specify R, Y, GR. Complete with mounting bracket and three C-52 cable connectors. (Use C-56 connectors for RG-6 type feeders.) Terminate the last tap on a feeder line with TR-72 terminator.

\$7.50 List



TECH DATA SHEETS AVAILABLE FOR PRODUCTS LISTED ON THIS PAGE

LOOK TO JERROLD FOR AIDS TO BETTER TELEVIEWING

# JERROLD

# JERROLD TV SYSTEM ACCESSORIES

## ANTENNA MIXING NETWORKS

### ANTENNA MIXING NETWORKS

For mixing single channel antennas or amplifiers into a common line. Provide individual channel control by permitting insertion of pads at the inputs. May be used in reverse as channel splitters. AMN series has F-61 connectors for 72 ohm line. DMN series has terminal strips for 300 ohm line.

### INDOOR MOUNTING 72Ω

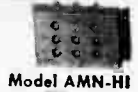
AMN-HI Indoor mounting, gray hammertone finish, 72 ohm input and output. For four channels, 7 to 13. \$27.50 list

AMN-LO Indoor mounting, gray hammertone finish, 72 ohm input and output. For three channels, 2 to 6. \$27.50 list

### MAST MOUNTING 300Ω

DMN-HI - Mast mounting Iridite finish, 300 ohm input and output. For four channels 7 to 13. \$42.50 list

DMN-LO Mast mounting Iridite finish, 300 ohms input and output. Includes Hi-Lo mixer for combining with DMN-HI. For three channels, 2 to 6. \$42.50 list



Model AMN-HI



Model DMN-HI

## UHF CONVERTER MODEL U2V

### UHF Converter Model U2V

Pulling UHF pictures out of the snow where other converters haven't a chance, the U2V mast mounting mixer head converts right at the antenna. The UHF oscillator is mounted at the amplifier location (or at the TV receiver for individual home installation) and sends conversion signals up to the mixer, (a technique developed in radar installations). Signals leave the mixer as VHF so coaxial cable may be used. The U2V will convert any UHF channel to any VHF channel. Order by specifying UHF channel to be converted to a specific VHF channel. \$124.50 list



### MIXER HEAD

UHF Input: double cavity tuned, 10 mc bandwidth, 72 ohms  
VHF Output: 72 ohms  
Mixer Crystal: CK 710 or CK 731  
Dimensions: 4 1/4" x 4 3/4" x 2 1/8"  
Weight: 1 lb. 13 oz.  
Mounting: Mast mounted, brackets and straps supplied

Oscillator Output: 1.0 v RMS

Power Requirements: 117v AC, 50-60 cps, 25 watts

Dimensions: 4 1/2" x 5 1/2" x 7"

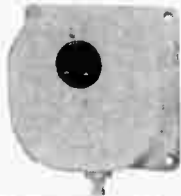
Weight: 3 1/2 lbs.

Mounting: May be mounted higher horizontally on a shelf or vertically on a wall.

Shipping Weight: 7 lbs. (Head & Oscillator).



## WALL TERMINAL UNITS



### Model ST 1611

Features quick-disconnect receptacle. Matches receiver to 72 ohm line. Terminates top line. Isolates line from AC-DC receivers. Metal construction, minimizes radiation. Male plug not included. \$3.75 list

### MODEL 1201

Matches receiver to 72 ohm line. Terminates line. Isolates line from AC-DC receivers. Molded plastic economy model. Surface mounting. \$2.40 list

### MODEL 1202

Same as model 1201 but mounts flush in 2 x 4 electric outlet box. Requires one Model 1202-P Cover Plate. 1202 \$2.40 list 1202P \$ .25 list



## MATCHING TRANSFORMERS

### Model T-372

Surface mounting. 6 db gain between 72 ohm line and 300 ohm line. Flat response 50-250 mc. VSWR 1.26. Isolates line from AC-DC receivers. C-52 male connector included. \$6.00 list



### Model T-375

Receiver mounting. Economy version of T-372. Has B-59 crimp-on bushing in place of C-61 female 72 ohm connector, pre-connected 6" 300 ohm lead instead of terminal strip for mounting directly to receiver. \$4.85 list



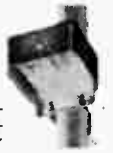
### Model T-373

Flush mounting. Transformer type terminal unit. Mounts flush in 2" x 4" electric outlet box. Steps up signal 6 db between 72 ohm line and 300 ohm output. Isolates line from AC-DC receivers. \$6.00 list



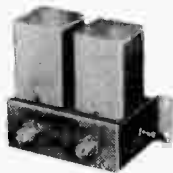
### Model TO-374

Antenna mounting. Outdoor version of T-372. Bypasses AC for using open line in long runs between De-Snow preamplifier and power supply. Matches 300 ohm broad-band or yagi antennas to 72 ohm line. Complete with mounting strap and cable connector (F-59). \$10.00 list



## HIGH Q TRAPS

Each trap consists of two tunable L-C circuits in a modified bridged-tee network. Tuning is by Teflon-dielectric trimmers with screwdriver adjustment. With both circuits tuned to an interfering signal, rejection is 40 db minimum with insertion loss only 1 db at 1 mc off the interfering frequency. Complete with two F-59 connectors for RG-59/U cable. \$58.50 list



Model TLB-1 59.75 - 83.75 mc  
Model TFM-1 88-108 mc  
Model THB-1 179.75 - 211.25 mc

## MATCHED T PADS

### Model MTP

Model MTP is a T pad presenting outstanding 72 ohm match to both line and tap. VSWR is better than 1.2. Available in attenuation values of 8, 10, 12, 14, 17, and 20 db. (Insertion loss varies inversely with tap attenuation, 5.5, 5.0, 4.5, 3.3, 2.5 and 2.0 db). Specify value desired. Complete with three F-59 cable connectors for RG-59/U cable. \$10.83 list



Model MTP-8, 10, 12, 14, 17 or 20. \$10.83 list

## FIXED RF PADS

Model PDC—Coaxial chassis mounting attenuator pads. F-59 connector on one end mates with F-61 connector on chassis. F-61 connector at other end mates with F-59 male cable connector. Available in attenuation values of 3, 6, 10 and 20 db. Specify value desired. \$5.85 list



Model PDC-3, 6, 10 or 20 \$5.85 list

Model PDI — Identical with PDC except that both ends have F-61 female connectors to mate with F-59 cable connectors.

Model PDL-3, 6, 10 or 20 \$5.85 list



TECH DATA SHEETS AVAILABLE FOR PRODUCTS LISTED ON THIS PAGE







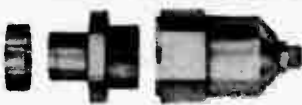



**ALL JERROLD EQUIPMENT DESIGNED FOR COLOR**

# JERROLD

# JERROLD Solderless COAXIAL CABLE CONNECTORS and ADAPTERS

JERROLD solderless connectors can be permanently bonded to all types of RG-59/U, RG-6/U and RG-35/U cables with simple crimping tools. JERROLD connectors are carefully machined of brass and all exposed surfaces are heavily silver plated. All the new JERROLD "F" series connectors are accurately matched to 72 ohm with a V.S.W.R. less than 1.05 up to 200 mc. "F" connectors can be wrench tightened and all sizes will adapt to each other.




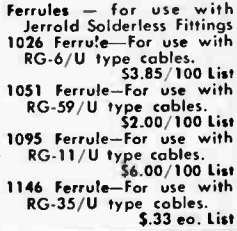
## NEW "F" SERIES

FOR RG-59/U AND RG-6/U			
	F-71 Mole Coupling Adaptor. Mates with F-61, F-81, F-101-59 or A-61. \$1.60 List	F-61 Female Chassis Fitting. Accepts F-59, F-56 and TR-72F. Mounts in 3/8" diameter chassis hole. \$.92 List	A-61 Adaptor. Mates new F-59 or F-56 male connectors to older type C-61 female fittings. \$2.00/25 List
			
	F-59 Mole Connector. Mates with F-81, F-1159, A-61. For RG-59/U type cables. Requires Crimping Tool PL-601 or PL-602. \$.80 List	F-81 Female Coupling. Accepts F-59 or F-56. Mounts in 3/8" diameter panel hole for use as feed-thru. \$1.25 List	
			
	F-56 Mole Connector. Same as F-59, but for RG-6/U type cables. \$1.03 List		
FOR RG-35/U			
	F-100 Adaptor. Connects RG-35/U type cables to F-59, F-56 or TR-72F. Use 8" end cutters for crimping ferrule. \$26.35 List	F-181 Coupler. Couples two lengths of RG-35/U. \$53.35 List	
FOR RG-11/U			
	MODEL F-101-59 ADAPTER ASSEMBLY Connects RG-11/U type cables to F-59, F-56 or TR-72F. Requires Crimping Tool PL-602. \$2.43 List	MODEL AF-101 ADAPTA-FIT MALE CONNECTOR For RG-11/U type cables. Mates with F-81, F-1159, F-61, F-101-59 and A-61. Requires Crimping Tool PL-602. \$2.10 List AF-201. Same as AF-101, but for RG-11 Poly Foam Cables. \$2.10 List	

## "C" SERIES

		
C-52 Male Connector mates with C-61 or C-5911. For RG-59/U type cables requires Crimping Tool PL-601 or PL-602. \$.80 List C-56 Male Connector. Same as C-52 but for RG-6/U type cables. \$1.03 List	C-61 Female Chassis Fitting. Accepts C-52, C-56 or A-61. Mounts in 1/8" diameter chassis hole. \$.80 List	C-81 Female Coupling. Accepts two C-52, C-56 or A-61. Mounts in 1/4" diameter panel hole and feed-thru. \$1.00 List

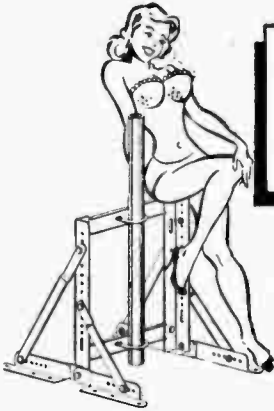
## TOOLS and FERRULES

			
Crimping Tool PL-601 — Crimps type 1051 ferrules. For F-59, F-56 and C-52 connectors and B-59 bushings. Does not distort cable or cause impedance mismatches. \$6.50 List	Crimping Tool PL-602 — Crimps all three ferrules — 1051, 1026 and 1095. For F-59, C-52, F101-59, AF-101 and B-59 bushings. Does not distort cable or cause impedance mismatches. Made of hardened steel. \$8.17 List	Cable Cutting Tool CD-11 — Cuts attenuator opening in coax cable for JERROLD pressure taps. Made of hardened steel. \$3.25 List CT-1. Replacement cutting tip for CD-11. \$1.66 List	Ferrules — for use with Jerrold Solderless Fittings 1026 Ferrule—For use with RG-6/U type cables. \$3.85/100 List 1051 Ferrule—For use with RG-59/U type cables. \$2.00/100 List 1095 Ferrule—For use with RG-11/U type cables. \$6.00/100 List 1146 Ferrule—For use with RG-35/U type cables. \$33 eo. List

TECH DATA SHEETS AVAILABLE FOR PRODUCTS LISTED ON THIS PAGE

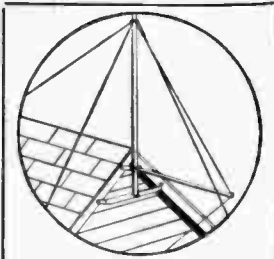
LOOK TO JERROLD FOR AIDS TO BETTER TELEVIEWING

# JERROLD



# KENCO

TELEVISION ANTENNA  
**MOUNTS**  
AND ACCESSORIES



**SKY STRUT**

Made of tubular steel—welded construction, 40" long. Built-in cable clamp on outer end of strut locks guy wire in place giving rigid support to mast. Weather resistant finish.

Model 40S.....List \$3.55



**SPECIAL TV LAG SCREWS**

Full thread, hex-head lag screws, can be run in with any standard ratchet or speed wrench. Full thread for extra holding power. Heavy bright zinc plate. Available in all standard sizes. Special low prices on request.

**EXPANSION SHIELD**

Dia. of Lag	List
3/4"	\$15.00 per 100
1/2"	18.00 per 100

**U-BOLT Mast Joiner**

Easily joins two masts up to 1 1/2" O.D. Heavy zinc plate.

List \$0.25 ea.



**J & L PERMA TUBE Fitted Joints**

- 1 1/4" O.D. x .035 (20 gage) 5' and 10' lengths
- 1 1/4" O.D. x .049 (18 gage) 10' lengths
- 1 3/4" O.D. x .065 (16 gage) 5' and 10' lengths
- 1 1/2" O.D. x .065 (16 gage) 10' lengths



**NEW PARAPET MOUNT**

Gives positive anchorage to apartment house walls without damage to building. Shipped assembled. Hot dip galvanized.

Model	List
106	\$10.75



**ALL POSITION MOUNTS**

A strong, self supporting mount for peak, slope, sidewall corner or flat mountings. Heavy zinc plate.

Model	List
105 Masts up to 1 1/2" o.d.	\$5.26
101 Masts up to 2" o.d.	7.20



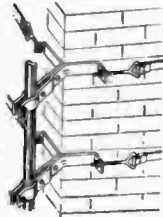
**KENCO EAVE MOUNTS**

Easily mounted on hanging rafters or trim boards of eave. Ideal for buildings with extended roofs. Hot dip galvanized.

Model	List
122 22" eave mount	\$3.15
128 28" eave mount	3.84
148 48" eave mount	4.05

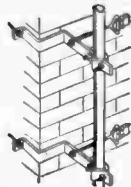
**SNAP-IN CHIMNEY MOUNTS**

Heavy duty Y mount, pre-assembled with solid rivets, hot dip galvanized. Snap-in feature eliminates holding of mast while applying hardware. Front locking carriage bolts for easy one hand tightening. Non-spiralling, straight opening. 12" heavy gage bands.



Model	List
4C Zinc coated hands, E-Z Seals.....	\$2.65
4CG Hot dip galvanized hands, KENCO Quick Seals	2.99
4C-SS Stainless steel hands, KENCO Quick Seals.....	3.99

**CHIMNEY MOUNT (Z TYPE)**



Made of heavy gage steel. One piece construction. Heavy zinc plate. Square corners provide snug fit. Non-spiralling, straight opening, heavy gage bands.

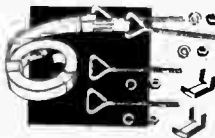
Model	List
3C Zinc coated hands E-Z Seals.....	\$1.99
3C-SS Stainless steel hands KENCO Quick Seals.....	3.20

**MINUTE MOUNT ONE PIECE CHIMNEY MOUNT**

Exclusive Y construction on offsets for maximum strength. Bearing feet top and bottom prevent rocking on irregular chimneys. Snap-in feature holds mast while applying hardware. Carriage bolts throughout. One piece welded construction. Heavy gage steel, hot dipped galvanized. 12 ft. stainless steel band and stainless steel seals. 3-Easy-slide corner guards for uniform tightening and protection of bands. Model 5C-SS List \$4.95



**REPLACEMENT KIT Stainless Steel Strap**

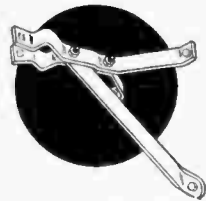


You get: 2-12 ft. stainless steel straps, 2 stainless steel seals, 2 stainless E-Z seals, 4 heavily plated triangular eyebolts, lockwashers & nuts. Model 1RK List \$2.75

**SNAP-IN WALL BRACKETS**

Available in 7" - 12" - 18" - 24" Sizes

Snap-in feature eliminates holding of mast while applying hardware. Carriage bolts throughout. Heavy gage steel, zinc plated.

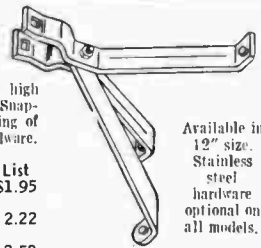


Model	List	Model	List
7W 7" (less tripod legs)	\$1.95	12W-2-12" (2 tripod legs)	\$4.17
7W-1 7" (1 tripod leg)	2.22	18W-1-18" (1 tripod leg)	4.73
7W-2 7" (2 tripod legs)	2.49	18W-2-18" (2 tripod legs)	5.54
12W-1-12" (1 tripod leg)	3.50	24W-2-24" (2 tripod legs)	6.25

**Aluminum SNAP-IN WALL BRACKET**

Made of heavy gage high strength aluminum alloy. Snap-in feature eliminates holding of mast while applying hardware. Carriage bolts throughout.

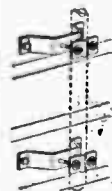
Model	List
6W-AL 6" (less tripod leg)	\$1.95
6W1-AL 6" (1 tripod leg)	2.22
6W2-AL 6" (2 tripod legs)	2.50



Available in 12" size. Stainless steel hardware optional on all models.



**STAINLESS STEEL STRAPPING**  
Heavy 3/4" stainless steel strapping. 100 ft. lengths. (Ind. boxed) List \$9.00



**2" WALL BRACKET**

Heaviest bracket made, 3/8" x 1 1/4" steel. Locking nuts in front of bracket for easy installation. Hot dip galvanized.

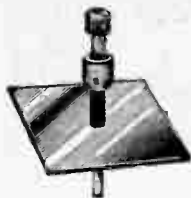
Model	List
2W	\$1.67

ALL KENCO ITEMS AVAILABLE AT COMPETITIVE PRICES!

**KENWOOD ENGINEERING CO., INC.**  
KENILWORTH, NEW JERSEY



### Roof-Thru



Type 624. 8" x 9" copper flashing with polystyrene feed through bushing permits direct weather-proof roof entrance of flat TV line and rotor cable. Easy to install. List \$5.84

Type 623. Similar to No. 624 but for round or oval 300 ohm line only. List \$5.84

### Wall-Thru



Type 625. Neat, low loss wall entrance for all popular oval, round or flat transmission lines. Fits walls up to 13" thick. Type 343 TV Socket mounts on inside plate. Brown or ivory. List \$1.95

Type 625PK. Above, with TV Socket & Plug. List \$3.00

### Wall Feed



Type 626. Install at gable end or under roof overhang to provide weatherproof TV lead-in entrance into attic. Ideal for house trailer installations. Ivory or brown polystyrene plate with weatherhood and 2" tube. In trailer installation cut tube flush with inside wall and install Type 343 TV Socket directly over opening. List \$1.26

Type 626PK. Above, with TV Socket & Plug. List \$2.31

### TV Antenna Switches

Top quality rotary TV Antenna Switches for UHF and VHF. Silver-to-silver contacts and constant impedance design assures low insertion loss. Solderless. Brown or ivory.

Type F-40. 2-Way Switch. List \$1.95

Type F-20. 3-Way Switch. List \$3.75



### Multi-Set Couplers

Type 912. "Tiny-Mite" Multi-set Coupler and plug-in socket with plug. Resistor type tap-off unit will operate two TV sets from one antenna. Neat, compact. In brown or ivory. List \$1.75



Type 902. Dual Match 2-Set Coupler. Efficient resistor type coupler outperforms many coil type units and provides exceptionally good isolation between sets. Solderless. Brown or ivory case. Intended for primary signal areas. List \$2.95



Type 904. 4-Set Coupler. Resistor type coupler designed for metropolitan areas, the major multi-set markets. Ideal for motels, small apartment buildings, etc. Brown or ivory poly case. List \$6.25



See MOSLEY Rotary Beam Antennas and other Amateur Components listed in another section of this book.

### 72-300 Ohm Transformer



Type 90. Balun type transformer matches 72 to 300 ohm or 300 to 72 ohm. Can be installed at set or directly on antenna. Solderless. Weather-sealed poly case. List \$3.59

### Tunable Wave Traps



High Q, series resonant wave traps for eliminating interference patterns and cross-talk on TV and FM. Use on any receiver input, 50 to 600 ohms, balanced or unbalanced. Solderless. Install on set terminal strip. Choose type with range including frequency of interfering station. List \$4.57

Type	Range (mcs)	Type	Range (mcs)
WT-7	6.8 - 8.5	WT-41	27 - 55
WT-14	13.8 - 16	WT-78	47 - 110
WT-21	16 - 28	WT-165	100 - 230

### MOSLEY "Y-TY"



Solderless strain relief connector prevents transmission line from breaking at the antenna. Easy to install, fits all types line. Use type 263-L for antennas with terminals more than 4" apart.

Type 263-S "Y-TY" List \$ .65

Type 263-L "Y-TY" List \$ .65

### Polyethylene TV Conduit

Black polyethylene tubing makes ideal conduit for running TV and FM transmission lines within walls. Simplifies replacement of hidden wires. 1/4" inside diameter. Flexible, easy to install. Many other applications such as intercom and other low voltage cables.

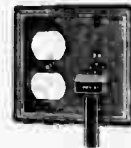
No. 80-25. 25'. List \$6.25

No. 80-100. 100'. List \$25.00

No. 80-50. 50'. List \$12.50

### AC-TV Wall Plate Sockets

Combination TV lead-in outlet and plate for double convenience outlet. Ideal for installation during new construction or remodeling. Metal barrier plate, supplied, separates AC and TV services to comply with electrical codes. Install in ganged electrical boxes. Brown or ivory. With mating plug(s) & mounting screws.



Catalog No	TV Service	List Price
AC-1PK	Single 300 Ohm Lead.	\$ 1.87
AC-11PK	Dual 300 Ohm Lead.	2.49
AC-111PK	Triple 300 Ohm Lead.	3.31
AC-14PK	One 300 Ohm Lead plus 4-Wire Rotor.	3.31
AC-15PK	One 300 Ohm Lead plus 5-Wire Rotor.	3.31
AC-18PK	One 300 Ohm Lead plus 8-Wire Rotor.	3.69
AC-114PK	Two 300 Ohm Leads plus 4-Wire Rotor.	3.98
AC-115PK	Two 300 Ohm Leads plus 5-Wire Rotor.	4.12
AC-118PK	Two 300 Ohm Leads plus 8-Wire Rotor.	4.36

### Flush Mounted TV Sockets



Easy-to-install, attractive wall plate TV sockets for every installation requirement. Ivory or brown plates are styled to harmonize with existing electrical plates. Available in types for single, dual or triple lead-in lines and for single and dual lines plus 4, 5 or 8-wire rotor cable. Packaged with mating plug(s), F-9 mounting brackets and full instructions.

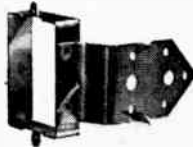
Type No.	Service	List
F-1PK	1 - 300 ohm lead.	\$1.95
F-11PK	2 - 300 ohm leads.	2.67
F-111PK	3 - 300 ohm leads.	2.67
F-14PK	1 - 300 ohm lead & 4-wire rotor.	3.51
F-15PK	1 - 300 ohm lead & 5-wire rotor.	3.51
F-18PK	1 - 300 ohm lead & 8-wire rotor.	3.60
F-114PK	2 - 300 ohm leads & 4-wire rotor.	3.51
F-115PK	2 - 300 ohm leads & 5-wire rotor.	3.51
F-118PK	2 - 300 ohm leads & 8-wire rotor.	3.60

### Mounting Hardware



Type F-9, Mounting Brackets of heavy gauge steel for installing F-Series Sockets in walls of existing buildings. Requires rectangular opening 1 1/2" wide by 4" long. List \$ .35

Type F-8, Plaster Ring for installing F-Series Sockets in new construction. Mounts easily and quickly to wood studding. Adjustable for plaster thicknesses up to 1 1/2". Heavy plated steel. List \$ .40



### Surface Mounted Sockets

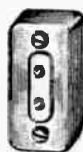
Surface mounted sockets resemble flush wall plate types but may be used for either concealed wiring or where TV line is brought along surface of wall. No wall opening required. In brown or ivory polystyrene. Supplied with mating plug(s) & wood screws.



Type No.	Service	List
SM-1PK	1 - 300 ohm lead.	\$1.65
SM-11PK	2 - 300 ohm leads.	2.14
SM-111PK	3 - 300 ohm leads.	2.39
SM-14PK	1 - 300 ohm lead & 4-wire rotor.	3.51
SM-15PK	1 - 300 ohm lead & 5-wire rotor.	3.51
SM-18PK	1 - 300 ohm lead & 8-wire rotor.	3.60
SM-114PK	2 - 300 ohm leads & 4-wire rotor.	3.14
SM-115PK	2 - 300 ohm leads & 5-wire rotor.	3.20
SM-118PK	2 - 300 ohm leads & 8-wire rotor.	3.55

### Universal TV Socket

Type 343PK. Compact, neat plug-in socket for FM or TV lead-in line. Use as line tap or terminal socket. Low loss polystyrene, constant impedance design for 300 ohm line. In brown or ivory. Complete with mating plug. List \$1.05



### 300 Ohm Connectors

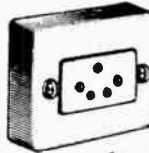


Precision molded low loss 300 ohm connectors for UHF and VHF transmission lines. Constant impedance. Solderless.

Type 301. Line Plug.	List \$ .30
Type 311. Line Socket.	.30
Type 321. Polarized. Pair,	.60
Type 304. Input Adapter.	.30
Type 27-S. Flat-line Splicer.	.18
Type 29-S. Round to flat Splicer.	.20



### Multi-wire Connectors



For rotor cable connections and many other low voltage uses. No set screws in line plugs and line sockets. 8-wire line sockets and plugs are round. Brown or ivory.

#### Base Sockets

Type 354. 4-Wire.	List \$1.37
Type 355. 5-Wire.	1.50
Type 358. 8-Wire.	1.75

#### Line Sockets

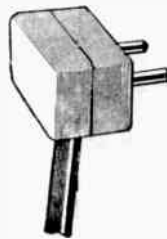
Type 364. 4-Wire.	List \$ .97
Type 365. 5-Wire.	1.03
Type 368. 8-Wire.	1.25

#### Line Plugs

Type 374. 4-Wire.	List \$ .75
Type 375. 5-Wire.	.81
Type 378. 8-Wire.	1.00



### 300 Ohm TV Plug



Type 312. Precision molded ivory or brown polystyrene plugs. 3 pins in polarizing arrangement mate with AC-TV series plates and middle pin may be removed to use with other Mosley sockets. Solderless. No set screws. List \$ .30

Type 303. New 300 ohm Plug, similar in appearance to No. 312 but of one-piece construction and utilizing set-screws to hold line. Supplied with 3 pins to mate with AC-TV series plates but middle pin is removable to use with Mosley 2-pin sockets. Brown or ivory. List \$ .30

### TV Distribution Outlets

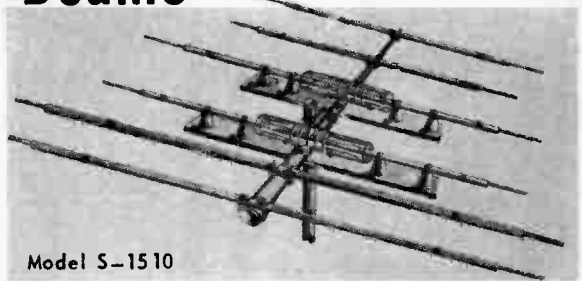
Attractive, easy-to-install wall plate sockets for hotels, hospitals, apartments, etc., with master antenna systems using RG-59/U or equivalent. Provides excellent electrical and mechanical plug-in connections of TV sets to coaxial cable drops. Fits standard electrical outlet boxes or may be installed with Type F-8 or F-9 accessories. In brown or ivory.

Type F-3PK.	300 ohm socket with plug.	List \$2.50
Type F-3BPK.	Above, with balun coil.	List \$4.50
Type F-3CPK.	With MC fitting for RG-59/U cable.	List \$4.80

- 7.9 db forward gain!
- 20 db F/B!
- 1.2/1 SWR!

### "Super" Beams

MOSLEY "Super" Rotary Beam Antennas are full sized beams designed to give *True Beam Performance* on their respective bands, 10 and 15 meters. All director and reflector elements are full length and the radiator element is shortened slightly to permit use of a highly efficient coupling transformer. Element sections and boom are 61ST6 aluminum and, as with all MOSLEY Beams, they are pre-drilled, color coded and pre-tuned to facilitate assembly. Sturdy construction, straight-forward design and field tested to assure optimum performance.



Model S-1510

Model S-1510. Full size, dual band for 15 & 10 meters; 3 ele. each band; max. ele. length 23'10"; boom 12"; rated to 1 kw.; wt. 47 lbs.	Amateur net \$72.85
Model S-103. Full size for 10 meters; 3 ele.; max. ele. length 17'3"; boom 8'4"; rated to 1 kw.; wt. 20 lbs.	Amateur net \$39.50
Model S-153. Full size for 15 meters; 3 ele.; max. ele. length 23'11"; boom 10"; rated to 1 kw.; wt. 22 lbs.	Amateur net \$45.28

### "Vest Pocket" Rotary Beam Antennas

- Pre-tuned • Pre-drilled • Color Coded

"Vest Pocket" design provides rotary arrays approximately 1/2 the size of standard beams...yet the performance is often equal to many full size beams. MOSLEY "Vest Pocket" Beams are available in single, dual or multiband arrays to cover the most popular bands. Multiband beams feature the

*Auto-Lectronic Coupling Yoke* to permit feeding with single 52 ohm coax line. All element sections are 61ST6 aluminum, pre-drilled and color coded for easy assembly. MOSLEY "Vest Pocket" Beams are sturdy—yet lightweight—providing dependable service for many years. Most "VP" models may be turned with a heavy duty TV type rotator.

Model VPA-73. Vest Pocket design, multi-band for 10-15-20 meters; 7 ele. work in comb., 3 ele. each band; max. ele. length 24'6 1/2"; 12' alum. boom; wt. 61 lbs.; rated 1 kw.; 7.5 db gain, 20 db F/B.:	Amateur net \$151.20
Model VPA-73C. Above, with Auto-Lectronic Coupling Yoke.	Amateur net \$178.38
Model VPA20-3. Vest Pocket design for 20 meters; 3 ele.; max. ele. length 23'1 1/4"; 12' alum. boom; wt. 37 lbs. rated to 1 kw.; 7.5 db gain, 28 db F/B, 1.05/1 SWR.	Amateur net \$66.37
Model VPA20-2. Above, with 2 ele., rad. & refl.; 6' alum. boom; 5 db gain, 20 db F/B;	Amateur net \$44.73
Model VPA1015-3. Vest Pocket multi-band, for 10-11-15 meters; 3 ele.; max. ele. length 14'; 10' boom; wt. 24 lbs.; rated 1 kw.; 7.5 db gain; 20 db F/B; 1.2/1 SWR;	Amateur net \$59.68
Model VPA1015-2. Above, with 2 ele.; max. ele. length 14'; 4'6" alum. boom; wt. 18 lbs.; 5 db gain; 15 db F/B; rated to 1 kw.	Amateur net \$39.89
Model VPA-3B. Vest Pocket multi-band, for 15-20-40 meters; 4 ele.; max. ele. length 36'; 15' steel boom; wt. 75 lbs.; rated 1 kw.; 5 db gain; 20 db F/B; 1.1/1 SWR.	Amateur net \$135.00
Model VPA-1020. Vest Pocket dual-band for 10-20 meters; 6 ele.; max. ele. length 22'6"; wt. 57 lbs.; rated 1 kw.; 12' alum. boom; 7.5 db gain; 28 db F/B; 1.5/1 SWR.	Amateur net \$120.79
Model VPA40-2. Vest Pocket 2 ele. beam for 40 meters; max. ele. length 36'1 1/4"; 14'10" boom; wt. 68 lbs. rated 1 kw.; 5 db gain; 19 db F/B; 1.1/1 SWR.	Amateur net \$74.95
Model VPA-1520. Vest Pocket dual-band for 15-20 meters; 6 ele.; max. ele. length 22'6"; 12' boom; wt. 58 lbs.; rated 1 kw.; 7.5 db gain; 20 db F/B; 1.2/1 SWR.	Amateur net \$129.90

#### CRYSTAL HOLDER SOCKETS & ADAPTERS



Single Crystal Holder Socket takes .095 dia. pins spaced 1/2". Molded polystyrene with one piece phosphor bronze contacts and solder lugs.

Cat. No.	Description	Amateur Net
500	Crystal Holder Socket, blk. & br.	\$ .21
53	3-Gang Socket for 1/2" spaced pins	.65
56	6-Gang Socket for 1/2" spaced pins	1.25
5-75	Adapter for small pin 1/2" spaced holder, plugs in 1/4" spaced socket or 5 & 6 prong sockets.	.35
75-5	Above, pins spaced 3/8" plugs in 1/2" spaced or octal sockets.	.35

#### DIPOLE ANTENNA CONNECTORS & INSULATORS



Solderless, strain relief type center connector for constructing your own dipole antenna. Sturdy, low loss acrylic plastic. For standard 300 ohm line.



Antenna end insulator for use with dipole type antenna made with 300 ohm transmission line. Sturdy low loss acrylic plastic.

Cat. 261. Dipole Antenna Connector.	Amateur net \$ .35
262. Above, for heavy duty 300 ohm line.	.50
Cat. 251. Dipole End Insulators.	Amateur net \$ .30
252. Above, for heavy duty 300 ohm line.	.40

# TELEVISION · FM · HI-FI · ACCESSORIES

Only the CLEAR PICTURE Comes Thru!



with the  
NEW and  
AMAZING *Dynamic*  
**FILTER  
TENNA**

with the EXCLUSIVE built-in  
**HI-PASS FILTER**  
T. M. Reg. Pat. Pend.  
THE FIRST TRULY ELECTRONIC  
INDOOR TV ANTENNA TO GIVE  
CLEAR FILTERED RECEPTION.



List  
**\$18.95**

SATIN  
BRASS,  
SATIN  
CHROME,  
SATIN  
COPPER  
FINISHES.

*Beautiful!*



Model  
DB 500

Model DBL1000

List **\$24.95**



Filter-Tenna with Glow-lite  
A Beautiful and Useful Innovation  
Available in Satin Brass and Satin Copper

Model DUF600  
(Not illustrated) List **\$16.95**

Specially designed for UHF Areas  
Available in Satin Brass and Satin Copper

## CHAIRSIDE SPEAKER



Functionally designed remote speaker,  
for use with any TV, HI-FI, radio or phono  
system for individual listening—Excel-  
lent tone quality.

- Dual volume controls to fade out receiver speaker
- Available in Satin Brass, Copper or Chrome

Model DS90 List **\$14.95**



## DYNAMIC TV GOVERNESS

An ingenious new type of inter-com primarily designed for the nursery. Radically new principle makes this unit truly the baby sitter's monitor. Easily connects to any TV set or radio. Completely squelches out the audio of TV receiver on the impulse of the child's voice—you continue to see the entertainer but you hear only the baby—the audio is restored within seconds after the child ceases to cry or call—works with the TV set on or off.

- Separate volume and sensitivity controls
- Complete with 100 ft. dual conductor cable
- Available in satin brass or satin copper

Model TVG-120 List **\$49.50**



## DYNAMIC 2 STATION INTERCOM

Reliable high quality 2 station intercom designed for all general uses in home or office.

- Sturdy satin finish metal enclosures
- Complete with 50 ft. of connector cable.

Model DFC-12 List **\$29.50**

## DYNAMIC "GOLD-DOT" REPLACEMENT SPEAKERS



The finest line of low priced speakers to answer practically every replacement need.

Individually cartoned for shelf display

SIZE	MAGNET	LIST
3 1/4"	.68 oz.	3.40
3 1/4"	1.00 oz.	3.60
3 1/4"	1.47 oz.	3.85
3 1/4" Tweeter	.68 oz.	3.75
3 1/4" Tweeter	1.00 oz.	3.95
3 1/4" Tweeter	1.47 oz.	4.25
4"	.68 oz.	3.40
4"	1.00 oz.	3.60
4"	1.47 oz.	3.85
4" Tweeter	.68 oz.	3.85
4" Tweeter	1.00 oz.	4.00
4" Tweeter	1.47 oz.	4.25
5"	.68 oz.	3.50
5"	1.00 oz.	3.70
5"	1.47 oz.	3.95
6"	.68 oz.	4.50
6"	1.00 oz.	4.70
6"	1.47 oz.	4.95
8"	1.00 oz.	5.40
8"	1.47 oz.	5.85
8"	2.15 oz.	6.85
6" x 9"	1.00 oz.	5.85
6" x 9"	1.47 oz.	5.95
6" x 9"	2.15 oz.	6.95
4" x 6"	.68 oz.	4.50
4" x 6"	1.00 oz.	4.70
4" x 6"	1.47 oz.	4.95
4" x 6"	2.15 oz.	5.65
5" x 7"	1.00 oz.	5.40
5" x 7"	1.47 oz.	5.65
5" x 7"	2.15 oz.	6.65

## ENGINEERED ACCESSORIES BY



ELECTRONICS

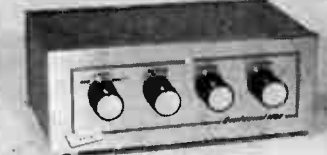
FOR BETTER TV & HI-FI



## DYNAMIC "QUADNAURAL" HI-FI

(Trade Mark Registered)  
The line of high quality but low priced amplifiers and speaker systems to please the budget-minded. Newly designed high fidelity 5 Watt push-pull amplifier with a frequency response from 30 to 15,000 CPS with minimum distortion.

Model Q550 List **\$39.50**



Excellent high fidelity 12 watt amplifier with an undistorted frequency response from 20 to 20,000 CPS—built in auxiliary input for AM-FM or TV tuner or tape recorder to play thru amplifier speaker system.

- Record Compensator Control
- Loudness Control
- Separate Bass & Treble Controls

Model Q1500 List **\$59.50**

## 4 SPEAKER QUADNAURAL SYSTEM



A REMARKABLE  
ACHIEVEMENT IN HI-FI SPEAKER SYSTEMS  
AT A TRULY LOW PRICE

True Hi-Fi presence—handles outputs up to 15 watts and faithfully reproduces frequencies from 30 to 15,000 cycles. Dimensions 14" H x 10" D x 19 1/2" W

QS45-L Leatherette Covered List **\$39.50**

QS45-W Mahogany or Blond Wood List **\$54.95**

## DE LUXE QUADNAURAL SPEAKER SYSTEM



The ultimate in Hi-Fi Enclosures containing 4 full fidelity matched and phased speakers, 2—8" woofers, 1—5" middle range speaker and 1—3 1/4" hard back tweeter, with an electronic cross over network assuring proper dispersion of all frequencies from 20 to 20,000 cycles. Dimensions: 24" H x 18" W x 10" D.

QS2854-L Leatherette Covered List **\$59.50**

QS2854-W Mahogany or Blond Wood List **\$74.95**

**DYNAMIC ELECTRONICS-NEW YORK INC., FOREST HILLS, LONG ISLAND, NEW YORK**  
ENGINEERS · MANUFACTURERS OF QUALITY IN ELECTRONICS

**ENGINEERED ACCESSORIES BY**



**ELECTRONICS**

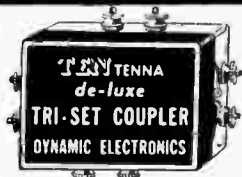
**FOR BETTER TV & HI-FI**



All NEW shielded model GUARANTEED to eliminate electrical disturbances in the antenna circuit — AUTOMATICALLY.

- Passes all frequencies above 40 mc
- Rejects all frequencies below 40 mc

Model T121M List **\$7.50**



Highly efficient coupler to operate any combination of 2 or 3 TV or FM sets off 1 antenna of any type—NO INTERACTION

- Less than 6 db insertion loss
- 40 to 50 db rejection ratio

Model T130 List **\$7.50**



Removes overload in strong signal areas Improves faulty AGC circuits in TV & FM receivers — REGARDLESS OF CAUSE.

- Eliminates Ghosts & Image Tearing
- Reduces Audio & Video Distortion

Model T115 List **\$6.00**



For coupling up to 3 speakers from any audio output — select any 1 of the 3 for comparison checks or remote operation.

- Rotary selector switch

Model DS77 List **\$5.00**



De Luxe unit to couple up to 3 speakers from 1 audio output — Maximum Flexibility selects any of the 3 speakers individually or any combination of speakers as desired.

- 3 separate toggle selector switches

Model DS80 List **\$7.50**

**ELECTRONIC COMPONENTS · HARDWARE**



Antenna Matching "BALUN" Coils

Dual wound on green plastic forms for matching 75 to 300 ohms, impedance ratio 4:1 — replacement for RCA, Philco, Motorola, used in pairs for all types of set couplers.

Model L68 envelope of 2 List **\$1.95**



Guaranteed to eliminate LINE noise caused by motors, industrial RF, neon & appliances on any receiver, recorder, player or TV.

- Automatic Attenuation
- Dual Ferrite Filter Action

Model DF200 List **\$9.50**

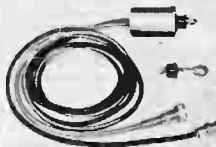


De Luxe ADJUSTABLE Lo-Pass LINE filter completely suppresses & eliminates all noise picked up thru the line AC or DC.

- Exclusive Variable filter control
- Automatic attenuation above 10 KC

Model DAF300 List **\$14.50**

Circuit Resonance Indicator



U.S. Patent #2,784,375

New type measuring instrument that corrects the major deficiencies in commercial grid meters — measures the parallel-resonant frequency of circuits from below 10 MC to above 1,000 MC — accuracy of 1/2% is achieved.

- 2 Cables & 4 Probes cover from 10 to 1,000 MC

Model 60 List **\$15.00**



COMPLETELY INSULATED ALLIGATOR CLIPS

List **\$1.60** Red & Black — positive insulation and shock protection — no soldering needed.  
Model TE911 Pkg. of 2

RECORD COMPENSATOR (not illustrated)

Finest precision accessory to be used to obtain maximum quality from records of all types, European & domestic LP's, old 78's, etc.

Model RC180 List **\$9.50**



Model RF190

List **\$9.50**

Reduces or eliminates all Low Frequency rumble or distortion in Phono circuit to be used for Crystal or Ceramic cartridges.

- Attenuates signals below 50 cycles
- In-Out slide switch



Model DA88

List **\$5.00**

Connects up to 3 antennas of any type to 1 receiver — ideal coupling for Hi-Lo channels and mixed UHF & VHF areas.

- Rotary selector switch
- Selects single antenna desired



TRANSISTOR HIGH "10" FERRITE ANTENNAS

Model DFL710

choice of round or flat tapped loops. Flat 2 3/8" L x 3/4" W x 3/8" thick.

Model DTL700 For use with 365 mmd variable condensers.

Heavy 1/2" Rod 4 1/2" long with mount. List **\$2.50** List **\$2.00**

**DYNAMIC "GOLD-DOT" FLEX-E-COUPLERS**

Stock and display the most distinctive line of "Molded-On" Shielded Jumper Cords, Connecting Cables & Feed Thru Adapters.

Model	Description	List
MM18	—18" Cable-Pin Plug Both Ends	1.25
MM36	—36" Cable-Pin Plug Both Ends	1.50
MM72	—72" Cable-Pin Plug Both Ends	1.75
FM18	—18" Cable-Pin Plug & Pin Jack	1.40
FM36	—36" Cable-Pin Plug & Pin Jack	1.65
FM72	—72" Cable-Pin Plug & Pin Jack	1.90
MS18	—18" Cable-Pin Plug & Tinned Ends	1.00
MS36	—36" Cable-Pin Plug & Tinned Ends	1.25
MS72	—72" Cable-Pin Plug & Tinned Ends	1.50
FT10	—Feed Thru-Pin Jack Both Ends	1.00
FP50	—Phone Plug to Pin Plug Adaptor	1.95
FC20	—72" Shielded Cable—Phono Pin Plug Shielded Phone Plug	2.95
FC25	—12' Shielded Cable—Shielded Phone Plug and Shielded Phone Jack	6.95
FC30	—12' Dual Zip Cord Conductor Cable Pin Plug One End & Alligator Clips	1.95
FC35	—12' Dual Zip Cord Conductor Cable—Phone Plug One End & Alligator Clips	2.95

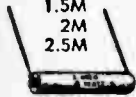


Individually mounted on beautiful 3 color transparent 5" x 6" BLISTER-PAK CARDS.

**DYNAMIC ELECTRONICS-NEW YORK INC., FOREST HILLS, LONG ISLAND, NEW YORK ENGINEERS-MANUFACTURERS-OF QUALITY IN ELECTRONICS**



**Models 1M 1.5M 2M 2.5M**  
**HIGH VOLTAGE FILTER RESISTOR FOR DOUBLER CIRCUITS.**  
 Long life composition carbon bar not a carbon film—non inductive. 4 watts.  
**LIST .95**



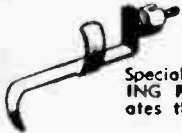
**Exactohm**  
**WIREWOUND RESISTOR 47 VALUES - 10 WATTS**  
 All Values at same price  
**Model 10W LIST .65**



**"WISSH" CONTACT CLEANER**  
 Full quart with three dispensers - Non-Flammable. Does not contain Carbon Tetrachloride.  
**Model H32 LIST 5.42**



**NO SOLDER PHONO PLUG**  
 Special PATENT PENDING Phono Plug eliminates the use of solder.  
**Model PP LIST .65**



**FUSED THERMISTOR**  
 Universal replacement for ANY type of fused resistor.  
**Model FB1 LIST 1.65**



**"WISSH" CONTACT CLEANER**  
 The modern handy AEROSOL Spray applicator. Pin point control of spray from this dispenser. 6 oz. can  
**Model H6 LIST 1.65**



**Exactohm WIREWOUND RESISTOR 10 WATTS**  
 Direct Replacement filament dropping resistors for portable radios.  
**Model E10 LIST 1.40**



**GLO-DROP**  
 For 6 volt Radios and equipment in 12 volt systems.  
**Model GD1 LIST 4.50**



**GLOBAL MINIATURES**  
 1/5 Watt fixed resistors for miniaturized circuitry 40 popular RTMA values.  
**Model GM LIST .65**



**Exactohm WIREWOUND RESISTOR 30 WATTS**  
 Direct replacement 30 watts, wirewound, filament resistors. Values available cover 95% of present TV sets.  
**Model 30W LIST 1.60**



**Model V3 LIST 4.90**  
 New Accessory **VIBRACHEK**  
 Vibrator tester for 3 or 4 prong, 6 or 12 volt standard vibrators.  
**Model V4 LIST 4.90**



**THERMISTOL**  
 Prevents surge in series string TV and AC-DC radios using 400 ma. 7 pin miniature tubes.  
**Model TH1 LIST 3.95**  
**THERMISTOL**  
 For series string TV and AC-DC radios using 600 ma. octal tubes.  
**Model TH2 LIST 3.95**

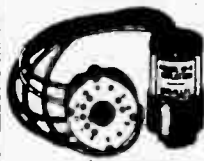


• PICTURE TUBE BRIGHTENERS •

**Model W9**  
 Use slide switch to operate on series or parallel. Heavy duty Transformer corrects low emission in both series and parallel circuits. Full socket with six leads.  
**LIST 6.15**



**Model W4**  
 Corrects low emission and cathode to filament short in parallel circuit. Isolation transformer. Full socket with 6 leads.  
**LIST 3.70**



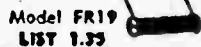
**Model W3 LIST 2.90**  
 Corrects low emission in series circuit. Auto transformer. Full socket - 6 leads.  
**Model W2 LIST 2.65**  
 Corrects low emission in parallel circuit. Auto transformer. Full socket - 6 leads.



**Model 051 LIST 1.35**



**Model FR19 LIST 1.35**



**Model 041 LIST 1.25**



**Model FR9 LIST 1.85**



**Model 054 LIST 1.43**



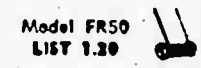
**Model FR11 LIST 1.35**



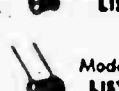
**Model FR31 LIST 1.43**



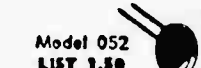
**Model FR50 LIST 1.30**



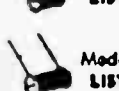
**Model FR35 LIST 1.43**



**Model 052 LIST 1.50**



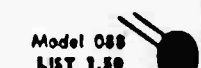
**Model FR43 LIST 1.70**



**Model FR2 LIST 2.40**



**Model 050 LIST 1.50**



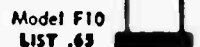
**Model F4.7 LIST .65**



**Model R7 LIST .72**



**Model F10 LIST .65**

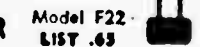


**Model F5 LIST .65**

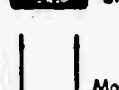


**Exactohm FUSED RESISTOR**

**Model F22 LIST .65**

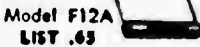


**Model F5.6 LIST .65**

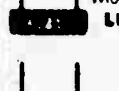


**EXACT REPLACEMENT VALUES FOR ALL TV AND RADIOS FROM ADMIRAL TO ZENITH**

**Model F12A LIST .65**



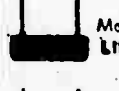
**Model F6 LIST .65**



**Model F LIST 2.50**



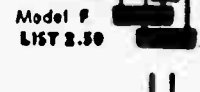
**Model F8 LIST .65**



**Model F9 LIST .65**

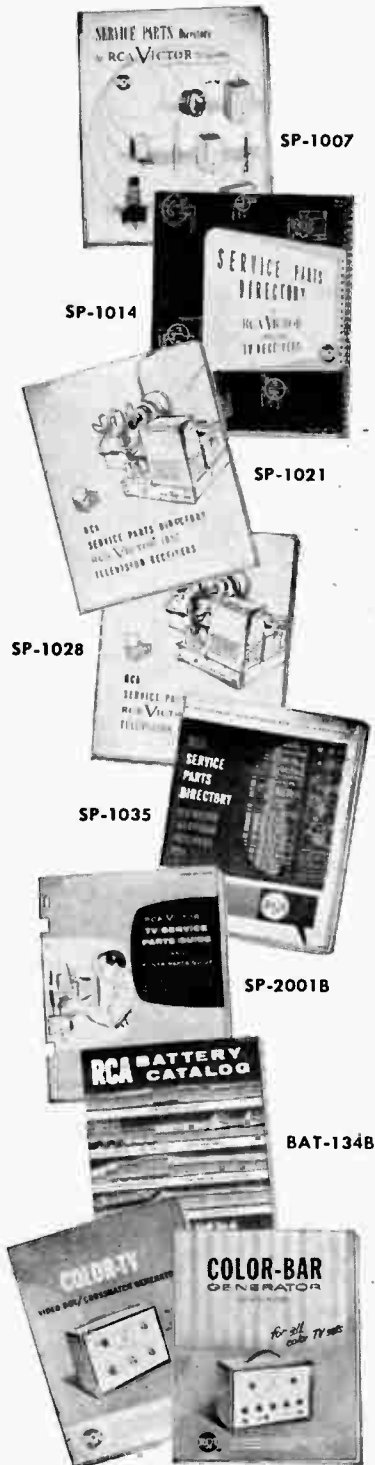


**Model F150 LIST .65**



# RCA TECHNICAL LITERATURE

**CURRENT  
COMPREHENSIVE  
AUTHORITATIVE**



Accurate servicing information at your fingertips when you need it means a better, faster service job. Here is detailed, authoritative data for servicing RCA Victor products you can't get anywhere else. Keep your service accurate by keeping your service files up-to-date... the RCA way!

## SERVICE PARTS DIRECTORIES FOR RCA VICTOR TV RECEIVERS

**SP-1007** (10 $\frac{1}{8}$ " x 16 $\frac{3}{4}$ ") 80 pages. Schematic diagrams and replacement parts lists for all RCA Victor TV receivers manufactured from 1946 through June 1950 (56 models). Each schematic diagram faces its corresponding parts list for quick reference. Price, 75 cents per copy.

**SP-1014** (10 $\frac{1}{8}$ " x 16 $\frac{3}{4}$ ") 142 pages. Schematic diagrams, replacement parts lists and top and bottom chassis views for the 71 models of 1950 and 1951 RCA Victor TV receivers. The comprehensive index for model and chassis numbers provides a ready source of reference. Price, \$1.50 per copy.

**SP-1021** (10 $\frac{1}{8}$ " x 16 $\frac{3}{4}$ ") 36 pages. Schematic diagrams, wiring diagrams, replacement parts lists, and top and bottom chassis views for the 27 models of 1952 RCA Victor TV receivers. The comprehensive index cross-references RCA TV model names to model numbers, and model numbers to the publication in which information may be found. Price, 50 cents per copy.

**SP-1028** (10 $\frac{1}{8}$ " x 16 $\frac{3}{4}$ ") 84 pages. Schematic diagrams, wiring diagrams, replacement parts lists and top and bottom chassis views for the 108 models of 1953 RCA Victor TV receivers. Also includes schematic diagrams, replacement parts, and other information for radio chassis used in radio-TV combination receivers. Cross-references model names to model numbers of all RCA TV receivers from 1946 to 1953. Cross-references all model numbers and chassis numbers to the publication in which information may be found. Price, \$1.35 per copy.

**SP-1035** (10 $\frac{1}{8}$ " x 16 $\frac{3}{4}$ ") 72 pages. Schematic diagrams, top and bottom chassis views, replacement parts lists and top and bottom chassis adjustments for the 106 models of 1954 RCA Victor TV receivers. Also included is information on the CT-100 and the 21-CT55 Color Television Receivers, and the RP-197 and RP-198, 3-speed record changers. The comprehensive index references model names to model numbers of all RCA Victor TV receivers from 1946 through 1954, and all model and chassis numbers to the Service Parts Directory in which information may be found. Price, \$1.25 per copy.

## RCA VICTOR TV SERVICE PARTS GUIDE AND TUNER PARTS GUIDE

**SP-2001B** (10 $\frac{1}{8}$ " x 8 $\frac{3}{4}$ ") 16 pages. Lists stock numbers of major replacement parts for RCA Victor TV sets by receiver-model number and corresponding receiver-chassis number. Also lists stock numbers of tuner-replacement parts by tuner-chassis number. Covers period from 1946 through 1955. Price, 25 cents per copy.

## RCA BATTERY CATALOG

**BAT-1348** Contains complete specifications and interchangeability data for portable "A," "B," "A-B" packs, farm packs; and special information on flashlight, lantern, industrial and special-purpose types. Also Battery Interchangeability Directory for leading portable radio models, and Battery Replacement Guide for virtually all portable radios manufactured between 1948 and 1954. Sent upon request, free of charge.

## RCA TEST EQUIPMENT

Individual data bulletins containing complete specifications—electrical and mechanical data, uses, features, etc.—covering the complete line of precision RCA Test Equipment are available and will be sent upon request. No charge for single copies.

Copies of the publications listed above may be obtained from your RCA Tube Distrib. or direct from Commercial Engineering, Radio Corporation of America, Harrison, New Jersey.

\*Prices shown apply in U.S.A. and are subject to change without notice.

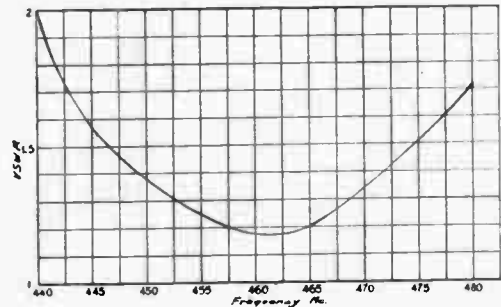
# Shakespeare **WONDEROD**

## fiberglass mobile antennas

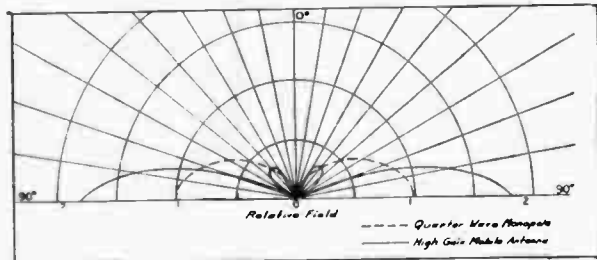
**new high - gain**

**roof - top antenna**

**almost doubles your operating area**



VSWR on 50 ohm Coaxial Line



Vertical Plane Power Pattern

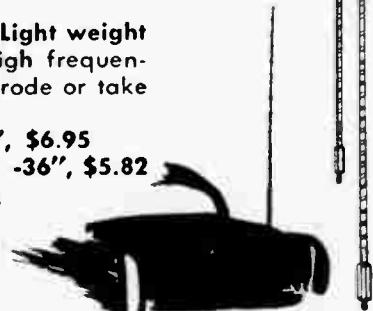
Shakespeare High-Gain antenna for 450 - 470 mc. Increases effective mobile transmitter power nearly 100%. More than 2.8 db' measured gain over standard quarter wave antenna. Mounts in 7/8" hole, extends 19" above car roof. Kit includes fiberglass-encased antenna with flexible base, RG-58/U coaxial cable and connectors. Write for prices.

## fiberglass whip antenna

Shorter resonant length for best impedance match. Light weight reduces road noise. Excellent insulation even at high frequencies. High flexural and impact strength. Won't corrode or take a set. — With 3/8"-24 thd. base fittings:

Standard Whips, -54" — 60", \$5.75 -61" — 90", \$6.95  
 Base Extensions, .500 dia. -18", \$4.80 -27", \$5.48 -36", \$5.82

Special lengths and base fittings priced on request.



We solicit orders for custom-built antennas for industrial application.

Prices amateur net

# COLUMBIA PRODUCTS COMPANY

Columbia, South Carolina • Subsidiary of Shakespeare Co.

look for the spiral markings of genuine Shakespeare Wonderods.



ANTENNAS

# Master Mobile

MOUNTS



MODEL 232



MODEL 232C (COAXIAL TYPE)  
(Coaxial Type Body Mounts Optional)



MODEL 232C



MODEL 321C



232 SERIES



MODEL 140



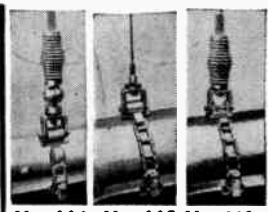
MODEL 142



100 SERIES

SEPARATE SPRINGS FOR BUMPER MOUNTS

100W SERIES



No. 444 Bumper Mount \$17.80  
No. 445 Mount \$7.95  
No. 446 Mount \$13.45

### MOUNT SPECIFICATIONS

(All types are tapped for 3/8" Stud Fitting on Antenna End. Shipping Weight Approx. 3 lbs.)

232	Body Mount—Double Tapered Spring—Swivel Base	\$ 8.75
232C	Body Mount—Double Tapered Spring—Swivel Base Coax Conn.	8.75
232SS	Body Mount—Double Tapered Spring—Spec. Stainless	12.95
232SSC	Body Mount—Double Tapered Spring—Spec. Stainless—Coax Conn.	12.95
232X	Body Mount—Heavy Duty—Double Tapered Spring—Swivel Base	9.85
232XC	Body Mount—Heavy Duty—Double Tapered Spring—Coax Conn.	9.85
232XSSC	Body Mount—Heavy Duty—Double Tapered Spring—Spec. Stainless—Coax Conn.	14.95
232XSS	Body Mount—Heavy Duty—Double Tapered Spring—Spec. Stainless	14.95
232XX	Body Mount—Extra Heavy Duty Spring	14.95
232XXC	Body Mount—Extra Heavy Duty Spring—Double Tapered Spring—Coax Conn.	10.85
232XXSS	Body Mount—Extra Heavy Duty Spring—Double Tapered—Spec. Stainless	15.95
232XXSSC	Body Mount—Extra Heavy Duty Spring—Double Tapered—Spec. Stainless—Coax Conn.	14.95
232XXSSC	Body Mount—Extra Heavy Duty Spring—Double Tapered—Spec. Stainless—Coax Conn.	15.95
321 or 321C	Body Mount—Where no spring desired—with spec. rigid type ball joint	7.95
140	Bumper Mount—Double Tapered Spring	6.95
140X	Bumper Mount—Heavy Duty—Double Tapered Spring	7.95
140SS	Bumper Mount—Special Stainless	9.65
140XSS	Bumper Mount—Special Heavy Duty Stainless	10.95
140XX	Bumper Mount—Extra Heavy Duty—Double Tapered Spring	8.95
140XXSS	Bumper Mount—Extra Heavy Duty—Stainless Steel	11.95
142	Bumper Mount—Less Spring, with Insulators for Direct Mounting by Series 100 Ant. or 92 Ext. and 106 Antenna	3.95
446SS	Bumper Mount—Special Stainless—Chain Mount	14.90
446XSS	Bumper Mount—Heavy Duty—Special Stainless—Chain Mount	15.90
446XXSS	Bumper Mount—Extra Heavy Duty—Special Stainless—Chain Mount	16.90
446	Bumper Mount—Heavy Duty Spring—Chain Mount	13.45
446L	Bumper Mount—Double Tapered Spring—Chain Mount	12.45
446XX	Bumper Mount—Extra Heavy Duty Doubled Tapered Spring—Chain Mount	14.45
444	Bumper Mount—Heavy Duty Spring—Swivel Base—Chain Mount	17.80
444L	Bumper Mount—Double Tapered Spring—Swivel Base—Chain Mount	16.70
444XX	Bumper Mount—Extra Heavy Duty Spring—Swivel Base—Chain Mount	18.80
444SS	Bumper Mount—Special Stainless—Swivel Base—Double Tapered Spring—Chain Mount	20.90
444XSS	Bumper Mount—Special Stainless—Heavy Duty—Swivel Base—Chain Mount	22.90
444XXSS	Bumper Mount—Extra Heavy Duty—Special Stainless—Swivel Base—Chain Mount	23.90
445	Bumper Mount—Threaded, 3/8"-24—Chain Mount	7.95

### SEPARATE SPRINGS FOR BUMPER MOUNTS

	Net
100—Regular	\$4.50
100-X—Heavy Duty	5.50
10088—Stainless Steel	6.95
100X88—Heavy Duty Stain. Steel	7.95
100WX	5.50
100XX—Extra Heavy Duty Spring	6.50
100WXX—Extra Heavy Duty Spring—Male Stud on one end	6.50
100XX88—Extra Heavy Duty Spring—Stainless Steel	8.95

### M SERIES

M-75	\$3.95
M-40	3.95
M-20	3.95
M-160	7.95
61-Shield	2.25

### C.A.P. COILS

M-2374KC	\$6.75
M-2738KC	6.75
M-2768KC	6.75
M-4325KC	5.75
M-4507.5KC	5.75
M-4585KC	5.75
65-Shield	2.62

To Complete All-Band Antennas add—Shield No. 61, Whip 100-60S, Base Section No. 88.

### WHIP ANTENNA SPECIFICATIONS

MODEL	Overall St. Steel Length	Base Specifications	Net Price
100-60S	60"	Threaded 3/8" Stud to fit all Mounts...	\$4.95
100-72S	72"	Threaded 3/8" Stud to fit all Mounts...	4.95
100-78S	78"	Threaded 3/8" Stud to fit all Mounts...	5.00
100-86S	86"	Threaded 3/8" Stud to fit all Mounts...	5.15
100-90S	90"	Threaded 3/8" Stud to fit all Mounts...	5.20
100-96S	96"	Threaded 3/8" Stud to fit all Mounts...	5.25
106-60S		Pl. End 3/16" Dia. (Fits Mod. 92 Ext.)	4.15
106-72S		Pl. End 3/16" Dia. (Fits Mod. 92 Ext.)	4.15
106-78S		Pl. End 3/16" Dia. (Fits Mod. 92 Ext.)	4.20
106-86S		Pl. End 3/16" Dia. (Fits Mod. 92 Ext.)	4.35
106-90S		Pl. End 3/16" Dia. (Fits Mod. 92 Ext.)	4.40
106-96S		Pl. End 3/16" Dia. (Fits Mod. 92 Ext.)	4.50

### SILICON-CHROME WHIP ANT.

New 9 Series—with 3/8" Thr. Studs		
Model No.	Overall Length	Net Price
9-60T	60"	\$2.97
9-72T	72"	3.24
9-84T	84"	3.30
9-96T	96"	3.90
9-96T	96"	3.75

New 8 Series—without Studs		
Model No.	Overall Length	Net Price
8-60	60"	\$2.82
8-72	72"	3.07
8-84	84"	3.13
8-86	86"	3.42
8-96	96"	3.55

**New Model No. 132-J Junior Body Mount**  
—Same design as standard No. 132 Master Mount but smaller size. Built to approved Master spec. for quality, workmanship and finish.

Attractively priced at only \$4.17  
Model No. 132-JC—Same as above with Coax Connector ..... Only \$5.17

**New Model No. 140-J Junior Bumper Mount**  
—Same design as our standard No. 140 Master Mount but smaller size yet of same high quality spring construction and finish. Competitively priced at an attractive Net of only \$4.17

Coaxial Conversion Kit—No. 118 fits No. 132 and No. 118J fits No. 132J Models.  
Net \$1.00

ORDER FROM YOUR JOBBER TODAY!

*Master Mobile Mounts, Inc.*  
LOS ANGELES, CALIFORNIA

ANTENNAS

*Master Mobile*

MOUNTS



**Ultra-Hi "Q" COILS**  
**FOR 80-40-20 & 15, METERS**

After many years of experimentation, here is the coil with the highest "Q" ever obtained. Tested and found to have a "Q" of well over 515. Use with 36" base section, 60" whip.

• Ruggedized construction • Greater efficiency  
 • Precision made • 2 3/4" Diameter

**\$5.25**  
 ANY BAND . . . AMATEUR NET ea.

**ANTENNA COILS**

New! . . .

**Silver-Plated  
 Roller with  
 Positive Action,  
 Stay-Put  
 Contact**

No. 666  
**MASTER  
 ALL-BANDER**  
 For 10-11-15-20-  
 40-75 Meters  
 Net **\$14.95**

No. 333  
**MASTER  
 MIGHTY MIDGET**  
 For 40-20-15-11-10  
 Meters  
 Net **\$9.95**



**THE GREAT NEW ADVANCEMENT IN VARIABLE ANTENNA COILS!**

HY "Q" construction with wider spacing of turns for high frequency bands. Use as center or base loaded antenna with 60" whip.

**No. 750 — MASTER DELUXE ALL-BANDER**

- Covers 10 thru 75 and all intermediate frequencies.
- Silverplated single turn contact, positive spring.
- Eccentric cam contact, easy selection of turn.
- Automatic lock prevents damage to coil.

**No. 775 — MASTER MULTIBANDER**

- Covers all amateur bands thru 75. Select band with slide contact switch to preset taps.
- Seven silverplated contacts on heavy duty slide switch.
- Taps easily set with Grid Dip Oscillator.
- Bandspreeder BS-195 furnished with coil for 100 KC QSY.

No. 750 **\$14.95**      No. 775 Comp. **\$12.95**

Size — Both — 2 3/4" Dia. x 1 3/4" Long



NEW...

..... *Master Mobile*

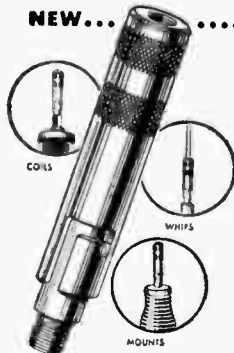
NOISE-FREE

**E-Z-OFF**  
**ANTENNA CONNECTOR**

Connect or remove your loading coils, whips or mounts in a jiffy. No wrenches, pliers or screwdrivers needed. High-grade stainless steel throughout.

- Precision made
- Maximum efficiency
- Positive lock — will not corrode

AMATEUR NET \$2.95  
 Model No. E-Z-295

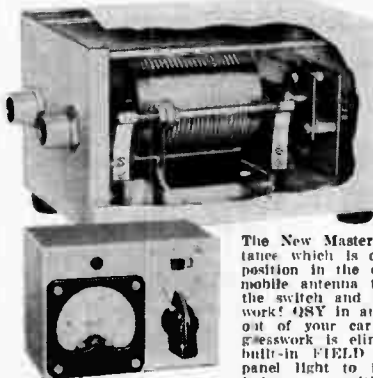


NEW!...

**MASTER MATCHER**  
 WITH BUILT-IN  
 FIELD STRENGTH METER

No. 2495-6 and No. 2495-12

**REMOVELY TUNES THE ANTENNA  
 OVER THE ENTIRE BAND FROM THE  
 DRIVER'S SEAT! . . .**



The New Master-Matcher, a motor driven variable inductance which is controlled by a switch from the operating position in the driver's seat enabling him to tune in the mobile antenna to the exact resonant frequency. Just flip the switch and presto! . . . the Master-Matcher goes to work! QSY in any particular band without jumping in and out of your car to adjust the antenna loading coil. All guesswork is eliminated with the Master-Matcher and the built-in FIELD STRENGTH METER with the automatic panel light to indicate when the roller is at minimum inductance position. With the Master-Matcher, maximum efficiency is possible with a minimum of time and effort.

Available in 6 (2495-6)  
 and 12  
 (2495-12) volt models.

Complete **\$24.95** Amateur Net

HY "Q" C.A.P. COILS	Net
HY "Q" 2374 KC. (Additional HY "Q" C.A.P. Coils to be used with HY "Q" C.A.P. Antennas according to frequency desired. These coils are interchangeable. Other freq. coils priced upon request.)	\$ 8.95
HY "Q" 2730 KC.	8.95
HY "Q" 2768 KC.	7.95
HY "Q" 4507.5 KC.	7.95
HY "Q" 4585 KC.	7.95
HY "Q" 4325 KC.	7.95
HY "Q" 160 Meters	12.95
HY "Q" 2251 KC.	12.95

*Master Mobile Mounts, Inc.*

LOS ANGELES, CALIFORNIA

# ANTENNAS

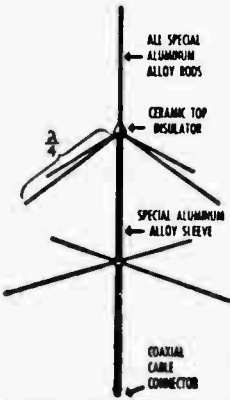
# Master Mobile

# MOUNTS

## 2 METER ANTENNAS — FIXED • MOBILE

### GROUND PLANE ANTENNA

Model 300—Master DeLuxe . . . NEW! . . . brings in that DX. Outperforms any type of vertical dipole. "Drooping" Type Ground Plane plus four straight radials to give a low angle of radiation for general coverage, an almost perfect circle radiation pattern. Ideal for (1) and defense nets. Covers complete Amateur and with Broad Band char. Matches 52 ohm coax cable through threaded coax fitting at end. Straight radials are adjustable (up or down) to eliminate standing waves on trans. lines. For medium or low-powered trans. Sturdily built of finest alloys to withstand corrosion, high winds and extreme icing. With 36" length of 3/4" pipe for mounting purposes.



Model GP-4 — Four "Drooping" Radials for perfect match to 52 ohm coax cable. Complete amateur band coverage. Specify other frequencies. Attaches to Mast with U-Bolts. (U-Bolts and Mounting Brackets furnished). Also attachable to side of building. Sturdy, with special alloys, to withstand corrosion and extreme weather.



MODEL GP-4  
Amateur's Net \$5.95

### TWO METER COAX ANTENNAS

No. 214—MASTER DE-LUXE . . . ruggedly constructed, vertically polarized, frequency range 140 to 170 MC. Completely waterproof. Highly polished chrome enhances appearance of any vehicle. Furnished with 10 ft. of 72 Ohm Coax Cable.

Type 1—On side with 2 brackets furnished. \$15.95  
Type 2—Master Mount (No. 132X or 140X)—Mounts sold separately. Complete \$17.45  
Adjustable mtg.—adjusts to 17".



### 2 METER STANDARD MODEL

No. 114 COAX VHF ANTENNA — At a popular price! For OPEN TYPE VEHICLES using 140 MC to 165 MC. Mounts any convenient place with standard Master Mounts. Baked enamel finish. With 10 ft. Coax Cable and 18" Adjustable Section.  
Net, Only \$9.95



HY  
"Q"  
AB  
232X  
Sugg'd Mtg.

### No. 613



No. 613—NEW IMPROVED MASTER VHF ROOF TOP ANTENNA. This new high performance antenna features an improved type positive-lock coaxial connector. Designed for police, fire, taxi cabs and amateurs using 140 MC to 165 MC. Stainless steel wire with threaded fitting. Easily changed without disturbing mounting. Comes with 10 ft. coax cable. . . . . Net \$4.95

No. 113—MOBILE ROOF TOP ANTENNA without De Luxe Connections . . . . . Net 3.96  
No. 117—Extra Antenna for No. 113 and No. 114 . . . . . Net .97  
No. 116—Extra Antenna for No. 214 and No. 613 . . . . . Net 1.70



Master-Matcher Soldered Separately

Mounts directly on Master-Matcher with Jan M-358 or Amphenol 83-1T "Tee" fitting.

Can be mounted directly on coax fitting on any Master Mobile antenna mount.

Mounts Sold Separately

## MICRO-Z-MATCH

### MICROMETER IMPEDANCE MATCHING INDUCTANCE for MOBILE ANTENNAS

- Used on all bands with any type coaxial cable to match any mobile antenna.
- Roller coil construction with rear cap rotating the inductance within the case. 4 microhenries maximum inductance.
- Silver plated coil and roller contacts for low loss.
- Micrometer type calibration permits infinite adjustment and positive resetting.
- Adjustability — Easily adjustable for minimum standing wave ratio (1:1).

Without coax adapter kit Micro-Z-Match may be connected between antenna connector and ground connection.

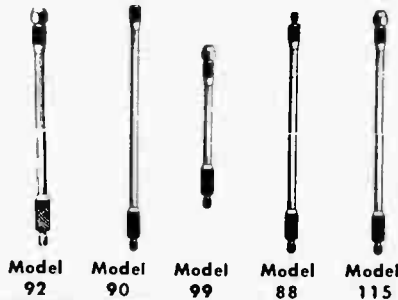


No. 825 Complete with Coax Adp. Kit Net \$7.95

## EXTENSIONS — with 3/8"-24 thread, fits all mounts and coils



No. 10-M Tenohold Net \$1.00



### EXTENSIONS

Model	Length	Description	Net
88	36"	Lower Section for all Band Antennas	\$4.95
88C		In Chrome Plate	5.25
90	26"	Extension for 100 Series Whips	3.95
92	18 1/4"	Extension for 106 Series Whips	3.50
94	36 1/4"	Extension for 106 Series Whips	4.95
99	8"	Tenna-juster—Whip Adj. on AB/W Ant.	1.95
115	36"	Extension for Models No. 114 and No. 214	4.25
12*	12"	Base Section for AB Antenna (baked enamel)	2.95
12C*	12"	Chrome Base Section for AB Antenna	3.50
18*	18"	Base Section for AB Antenna (baked enamel)	3.25
18C*	18"	Chrome Base Section for AB Antenna	3.75
24*	24"	Base Section for AB Antenna (baked enamel)	3.95
24C*	24"	Chrome Base Section for AB Antenna	4.50
88*	36"	Base Section for AB Antenna (baked enamel)	4.95
88C*	36"	Chrome Base Section for AB Antenna	5.25

NOTE: Base Sections for use with ALL-BANDER Antenna Coils.

### THE NEW MASTER-FLEX-R



Now at last! . . . here is a must for all mobile hams! . . . the new heavy-duty Master-Flex-R, designed to relieve the stress and strain and prevent damage that could be transmitted to the loading coil. The Master-Flex-R protects the whip and prevents the loading coil from injury and detuning while driving at high speed, or from overhanging limbs and driving into the garage. It also allows the whip to be fastened down to the front of car, where there is a bumper mount installation on late cars.

- Sturdy spring steel yet flexible enough to absorb all the shock.
- Heavy cadmium finish to withstand all elements.
- Very easy to attach.
- Size—1 1/2" long x 3/8" dia.
- Weight—approx. 7 oz.
- Takes standard 3/8"-24 thread.

Amateur Net \$1.95

### GROUND PLANE (Drooping Type) FOR 6 METERS



No. MGP-6 Aluminum alloy tubing, coax cable connector. For medium or low powered trans.

\$14.95



No. 85-195 Band Spreader (Variable Top-Hat) Permits variation of 100 KC. Chrome plated stainless steel

\$1.95

Master Mobile Mounts, Inc.

LOS ANGELES, CALIFORNIA

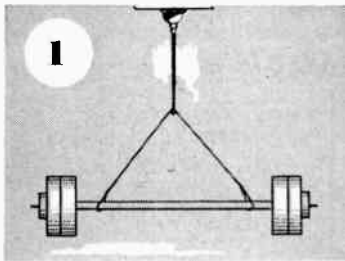
the antenna



specialists co.

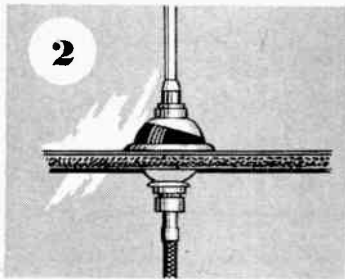
MANUFACTURERS OF RADIO COMMUNICATIONS ANTENNAS

## NEW 3/8" BASEBALL ANTENNA IS THE FIRST TO PASS ALL 5 KILLER TESTS!



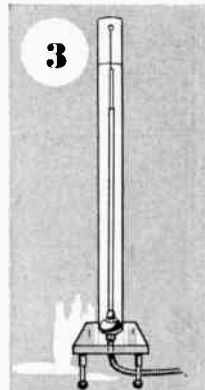
**PULL TEST**

From standard mounting, the "Baseball" antenna withstood 600 lbs. pull without separation of the telescopic joints!



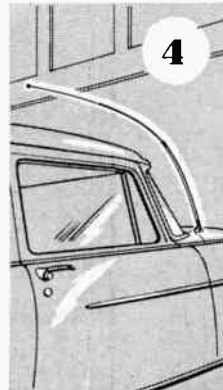
**GROUNDING TEST**

With regular installation pressure, the "Baseball" antenna grounded to bare metal through 10 layers of undercoating.



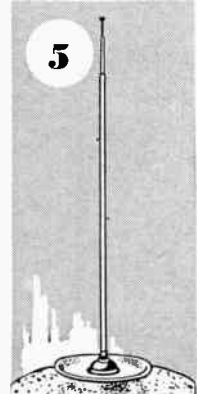
**SUBMERSION TEST**

Though completely submerged in water, the "Baseball" antenna operated successfully with no water shorts!



**IMPACT & BREAK-OFF TEST**

With low clearance, the "Baseball" antenna withstood impact and break-off test with no impairment of reception, or damage to antennal



**RUST RESISTANCE TEST**

After 400 hours of salt spray testing, the "Baseball" antenna had no plating breakdown!

### Antenna Specialists Offer a Complete Line of Automotive Antennas!

MODEL	DESCRIPTION	WEIGHT
AS-1	"Baseball" Antenna, Triple-plated Chrome, 3-Section Telescopic 56" Tube Assembly, 36" Lead	1 lb., 1 oz.
ASA-1	AS-1, with 54" Lead	1-1
DB-12	Display, 12 Chrome	
AS-2	Side Cowl Antenna, 3-Section Tube Assembly, 66" Extended Length with 36" Lead	1-2
ASA-2	Same as above, with 54" Lead	1-3
AS-6	"Double-Header", Twin "Baseball" Antennas for Rear Fender Mounting, Complete with 15 ft. Lead Cable "T" Connector, 6 ft. and 1 ft. Leads to Antennas, 3-Section, 26 1/2" Extended Chrome Tube Assemblies	1-14
ASB-6	Same in Chrome, less Leads	1-0
AS-23	Disappearing Antenna, 3-Section, 3'-54" complete with 36" Lead	1-6
ASA-23	Same with 54" Lead	1-8
AS-20	Twin Streamlined Antennas for Rear Fender Mounting, Complete with 15 ft. Lead-in Cable, T Connector, 6' & 1' Lead-in to Antenna, Packed in attractive display box. 3-Section 29" Chrome Antenna	1-8
K-8	Antenna Booster for Long Lead Antenna	
K-11	Pad for Sharp Radius Fender, Per Set	
EC-1	3-Section, Telescopic Antenna, 56" Extended Length, 22 1/2" Collapsed Length with 1" Stackup. Chrome Plated	1-1
ECA-1	Same with 54" Lead (Replaceable)	1-1
EC-1F	Same as EC-1 except designed to fit 1 1/8" hole in 1952-57 Ford and Mercury	1-1
EC-6	Twin Rear Fender Antennas, Extended Lengths 26 1/2", Replaceable Leads, with 22 ft. Lead-in Cable and fixed "T" Connector. Chrome	1-14
ECD-9	Top Cowl 48" Non-Removable Lead	
ECD-10	Same as above	
M-1	Amateur Mobile Antenna including Base, Spring and 96" Stainless Steel Whip.	3-10 lbs.
M-2	Chain type Bumper Mounting Amateur Mobile Communication Antenna including Bumper Mounting, Spring and 96" Stainless Steel Whip	5-6
M-2A	Chain type Bumper Mtg. for Amateur Mobile Antenna. Accepts M-3A or M-3B Whip	1-1
M-3	Base. Hi-quality Aluminum 2" Diameter Swivel Ball	0-10
M-3A	Spring. Heavy Duty Spring, includes Center Braid for Maximum Electrical Conductivity	2-8
M-3B	Whip. 96" Taper Ground Stainless Steel. Will Bend to 90° and Return to vertical without damage, includes Removable Adaptor	1-8
M-4	Gutter Clamp Clip for M-3B	0-2
M-5	Base Mast section for coil antennas. 6", 12", 18", 24", 30" & 36"	
M-6	Coupling nut for M-5	
M-8A	Extra Heavy Duty Spring for use with Center Loading Coil	
M-9A	Extra Heavy Duty Spring for use with Center Loading Coil ((squared ends)	
LM-144	Mobile Cable for M-1, M-2 above. 12' Long	0-9

All single antennas are individually boxed, 12 boxes to master shipping carton. EC line also available in paper sleeves, packed 25 to carton for bulk orders. All twin antennas packed in display boxes, 6 boxes to shipping carton.

# the antenna specialists co.

MANUFACTURERS OF RADIO COMMUNICATIONS ANTENNAS

## MOBILE COMMUNICATIONS ANTENNAS

America's most complete line; a model for every operating need and weather condition. For 24-50 Mc.

**UNIVERSAL SWIVEL BASE** — Mounts on any surface. **ASP-3:** Painted copper-plated aluminum balls. **ASP-81:** All external hardware stainless steel.

**SHOCK MOUNTING SPRINGS** — Fits on Swivel Base, absorbs blows, prevents damage to antenna rod. **ASP-3A:** Cadmium plated. **ASP-93:** 3 times heavier cadmium plated for salt water areas. **ASP-70:** Stainless steel, for salt water areas.

**BASE LOADING COILS** — Fits on Shock Spring; reduces length of antenna rod without sacrificing performance. **ASP-87:** 3-Turn. **ASPA-87:** 4-Turn. **ASPB-87:** 5-Turn. **ASPC-87:** 6-Turn.

**ANTENNA RODS** — Special stainless steel; 3/8"-24 thread mounting adapters. **ASP-30:** with pressed-on chrome-plated brass adapter. **ASP-38L:** With setscrew-type plated steel adaptors, standard replacement for: Motorola Series P-9553 and P7253; Philco Series 76-3664; Western Electric Series KS-15526; General Electric Series M-7483915; RCA Series MI-31427. **ASP-66 to 69** are standard replacement for Link and DuMont mountings. **ASP-59:** 2-section telescopic rod, adjustable from 85" to 103", with special locking adjustment.

**NOTE:** When ordering, specify model and length.

## TRANSMITTING ANTENNAS

"Disguised" antennas designed to look and mount like ordinary car aerials, on fenders, cowl or rear deck. For detectives, cab spotters, utilities, etc. 25-50 Mc., 144-174 Mc. Exclusive cable receptacle design eliminates electrical discontinuity, corrosion problems, water shorts. Order cable and plug separately.

**ASP-80:** With 56" chrome-plated pseudo-telescopic whip. (Joints permanently connected).

**ASP-85:** With tapered 56" stainless steel whip.

## ROOF TOP ANTENNAS

Small, inconspicuous, economical. Mounts from outside without disturbing upholstery. For 144-174 Mc. or 450-470 Mc. Whip lengths from 16" to 23 1/4" depending on frequency. Specify when ordering. Coaxial lead soldered to antenna. **ASP-1:** For 3/8" mounting hole. Positive 4-point grounding. **ASP-75:** For 1/2" mounting hole. New miniature design provides highest performance in smallest size.

## GROUND PLANE ANTENNAS

All the advantages of high-priced units at almost half the cost. Impedance matched; weather-tight fittings; minimum line loss. **ASP-11:** For all 144-174 Mc. transmitting; up to 3 KW. Vertically polarized. Plated steel radials. **ASP-12:** Used with ASP-11 to modify vertical field pattern. **ASPA-11:** For 30-50 Mc. transmitting. Stainless steel radials. **ASP-38:** For 30-176 Mc. general monitoring. 12-ft. telescoping antenna. **ASP-13, 14, 15:** Adaptors. See price list.

## SUCTION CUP ANTENNAS

**ASP-92:** For civil defense and all temporary installations. 120-176, 450-470 Mc. Five adjustable suction cups permit quick mounting on any vehicle rooftop. Removable 15 3/4" stainless steel radials. Complete with 12 ft. RG-58/U coaxial lead.

**NOTE:**  
When ordering, specify frequency.

## THE ANTENNA SPECIALISTS COMPANY COMMUNICATIONS ANTENNA PRICE LIST

Model	Freq. Mc.	Description	Wt. Lb.-Oz.	Std. Pkg.	Suggested List	Dealer	Model	Freq. Mc.	Description	Wt. Lb.-Oz.	Std. Pkg.	Suggested List	Dealer
*ASP-1	144-174	3/8" Hole Rooftop	0-12	12	\$ 8.50	\$ 5.10	*ASP-59	25-50	2 Sec. Telescopic Whip	2-0	1	24.40	14.64
ASP-3	24-50	Univ. Swivel Mount	3-4	12	11.95	7.17	*ASP-63	25-50	Base Loaded Port. Whip	1-4	1	12.95	7.77
ASP-3A	24-50	Shock Mounting Spring	2-12	12	7.90	4.74	*ASP-66	25-50	Spec. Stnls. Whip (5')	1-6	1	13.75	8.25
*ASP-3B	24-50	Stainless Steel Whip	1-6	12	11.50	6.90	*ASP-67	25-50	Spec. Stnls. Whip (6')	1-6	1	15.00	9.00
*ASP-3BL (96")	24-50	Stainless Steel Whip, Setscrew Type	1-6	12	11.50	6.90	*ASP-68	25-50	Spec. Stnls. Whip (7')	1-6	1	16.25	9.75
ASPA10	144-174	Insulated Pack Set Whip	0 8	1	5.75	3.45	*ASP-69	25-50	Spec. Stnls. Whip (8')	1 6	1	17.50	10.50
*ASP-11	144-174	Ground Plane Antenna	3 0	1	19.99	11.94	*ASP-70	25-50	Stnls. Shock Mtg. Spring	2-12	1	21.60	12.96
*ASPA11	30-50	Ground Plane Antenna	10 0	1	77.43	46.44	*ASP-73	25-50	Rooftop Mount	3-0	1	13.50	8.10
*ASPB11	144-174	Heavy Duty Ground Plane Antenna	4-0	1	36.00	21.60	*ASP-74	25-50	Base Loaded Rooftop	1-0	1	75.00	45.00
*ASP-12	144-174	Isolating Skirt for ASP-11	2-0	1	9.75	5.85	*ASP-75	144-470	3/8" Hole Rooftop	0-10	1	8.50	5.10
*ASPB12	144-174	Isolating Skirt for ASPB11	3-0	1	15.00	9.00	*ASP-77	144-174	Spring Base Pack	0 10	1	21.00	12.60
ASP-13	—	RG-58 U or RG-58 U Adapter	1-0	1	6.60	3.96	*ASP-78	144-174	ASP-77 in ASP-1 Mnt.	0-14	1	27.00	16.20
ASP-14	—	RP-17 U Adapter	1-8	1	29.00	17.40	*ASP-80	25-174	Pseudo Telescopic	1-8	12	22.50	13.50
ASP-15	—	3/8" Airline Adapter	1-0	1	On Application		ASP-81	25-50	Disguise Antenna Hardware, Stainless	3-1	12	20.75	12.45
ASP-16	162-164	Railroad Antenna	5-4	1	69.00	41.40	ASP-85	25-174	Stnls. Whip Disguise Antenna	1-8	12	22.50	13.50
ASP-19 (120")	144-174	RG-58 U Lead, PL-259 Each End	0-12	1	8.65	5.20	ASP-87	25-50	3 Turn Loading Coil	0 8	1	14.05	8.43
*ASP-20 (72")	25-50	RG-58 U Base Loaded Lead	0-8	1	16.00	9.63	ASPA87	25-50	1 Turn Loading Coil	0 8	1	14.05	8.43
ASP-33 (120")	144-174	RG-8 U Lead, PL-259 Each End	1-8	1	11.40	6.82	*ASPB87	25-50	5 Turn Loading Coil	0-8	1	14.05	8.43
*ASP-34 (72")	25-50	RG-8 U Base Loaded Lead	1-0	1	17.00	10.20	ASPC87	25-50	6 Turn Loading Coil	0-8	1	14.05	8.43
ASP-38	25-174	12 ft. Monitor Antenna	4-0	1	34.00	20.40	ASP-91	150-170	Special Rooftop Ant.	0-11	1	29.10	17.46
*ASP-50	25-50	Low Band Industrial Antenna	1-5	1	32.50	19.50	*ASP-92	144-174	Suction Cup Rooftop	1-0	1	14.30	8.58
ASP-58	25-50	Spec. Port. Stnls. Whip	0-5	1	11.50	6.90	*ASP-93	25-50	Special Plated Spring	2-12	12	10.50	6.30
							ASP-157		Auto Gutter Clamp Antenna			11.50	6.90
							19B115		Replacement Whip for ASP-85	1-6	1	11.50	6.90
							19B116		Replacement Whip for ASP-80	1-6	1	11.50	6.90

\*Specify length or exact frequency when ordering.

\* Indicates 8% Federal Tax Applicable

TERMS: 30 Days Net, 2% 10th Prox., F.O.B. Our Plant on Orders Less Than 100#. Freight Prepaid on Orders for 100# or More. PRICES SUBJECT TO CHANGE WITHOUT NOTICE. INDIVIDUAL CATALOG SHEETS ON REQUEST.

# PREMAX

# ANTENNAS--MOUNTINGS--ACCESSORIES

## PREMAX ALUMINUM ANTENNAS

Premax Telescoping Adjustable Aluminum Antennas for marine, mobile, amateur and commercial installations are built up of specially-drawn, seamless, tempered aluminum tubing, engineered to withstand wind velocities up to 60 m.p.h. Secure collet locking device. Polished finish.

No.	Description	Ext'd Lgth.	Col'd Lgth.	Base O.D.	Base I.D.	Wgt. Lbs.
AL-312	2-Sec. Tele.	12'4"	6'4"	.500"	.334"	1 1/2
AL-518	3-Sec. Tele.	18'5"	6'4"	.750"	.564"	3
AL-324	4-Sec. Tele.	24'4"	6'4"	1.000"	.834"	5
AL-530	5-Sec. Tele.	30'0"	6'5"	1.250"	1.084"	7
AL-535	6-Sec. Tele.	35'8"	6'5"	1.500"	1.310"	12

## PREMAX STEEL ANTENNAS

These are low-cost, adjustable Antennas for amateur, commercial, municipal, Civil Defense and other installations. Made of high-tensile, copper-nickel steel tubing, heavily cadmium plated and resistant to corrosion. Fully telescoping and adjustable. In 5 lengths.

No.	Description	Ext'd Lgth.	Col'd Lgth.	Base O.D.	Base I.D.	Wgt. Lbs.
112-M	2-Sec. Tele.	11'8"	6'0"	.656"	.556"	4
318-M	3-Sec. Tele.	17'3"	6'2"	.875"	.775"	7
224-M	4-Sec. Tele.	22'9"	6'3"	1.063"	.963"	11
130-M	5-Sec. Tele.	28'3"	6'4"	1.250"	1.150"	15
136-M	6-Sec. Tele.	33'9"	6'5"	1.500"	1.400"	20

## STAINLESS STEEL ANTENNAS

Stainless Steel Antennas made of a special grade of tubing, hard-drawn for tensile and yield strength. Fully telescoping and adjustable. Polished finish. Secure locking device. Fine for marine use.

No.	Description	Ext'd Lgth.	Col'd Lgth.	Base O.D.	Base I.D.	Wgt. Lbs.
SS-1118	3-Sec.	18'4"	6'3"	.750"	.680"	6
SS-1124	4-Sec.	24'3"	6'3"	1.000"	.900"	9
SS-1130	5-Sec.	30'0"	6'4"	1.250"	1.120"	13
SS-1135	6-Sec.	35'7"	6'4"	1.500"	1.370"	19

## TAPER WHIP ANTENNAS

Type E—1/4" base, taper-ground to 3/32" tip for high flexibility and strength. Easily cut to exact frequency. In Chrome Silicon Steel, cadmium-plated, or in Stainless Steel with polished finish. Fits any Premax Mounting.

Length Overall	Chrome-Silicon Steel	Stainless Steel
60"	EC-660	ES-760
72"	EC-672	ES-772
84"	EC-684	ES-784
96"	EC-696	ES-796

## TYPE A WHIP ANTENNAS

Type A—Made of sections of varying diameters, securely joined into a solid step-tapered Whip 1/4" at the base and 1/4" at the tip. In high-carbon, oil-tempered steel, cadmium-plated, or in polished stainless steel. The finest low-cost antenna you can buy.

Length Overall	Stainless Steel	Cadmium-Plated Steel
60"	AS-160	AC-160
72"	AS-172	AC-172
84"	AS-184	AC-184
96"	AS-196	AC-196

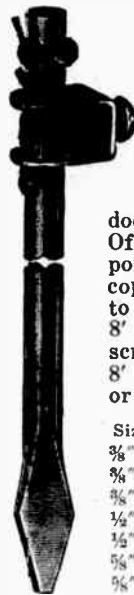
Type E

## GROUND RODS

### For All Radio and Television Installations

Practical and efficient Ground Rods, costing so little that it doesn't pay to fuss with makeshifts! Of smooth, hard-drawn steel, chisel-pointed for easy driving and heavily copper-plated for rust prevention and to insure clean electrical contact. 4' to 8' lengths in 3/8", 1/2" and 5/8" with screw clamp (illustrated) or in 6' and 8' lengths in pigtail wire, drilled hole or plain style, 1/2" and 5/8" only.

Size	Screw Clamp	Hole	Pigtail	Plain
3/8"x4'	J-64	....	....	....
3/8"x6'	J-66	....	....	....
3/8"x8'	J-68	....	....	....
1/2"x6'	G-86	H-86	P-86	X-86
1/2"x8'	G-88	H-88	P-88	X-88
5/8"x6'	G-106	H-106	P-106	X-106
5/8"x8'	G-108	H-108	P-108	X-108



## PREMAX MOUNTINGS

### BASE MOUNTINGS

Type 1—Galvanized malleable iron or chrome plated brass hardware with heavy-duty porcelain cones. 7" to 9" height to post base. Wt. 8 lbs. Available for all Premax Vertical Antennas. Specify antenna number or post diameter. This is also available in hinge post type.

Type 2—Light design with brown glazed porcelain and removable top post. In steel only. Height to post base 6". For Premax Antennas up to 24'. Specify Antenna number or post diameter.



### DECK OR ROOF MOUNTING

Type 6—6" flange in galvanized malleable iron with studs and bolts for 1/2" to 6" deck. Lead-thru construction permits connections below roof or deck. Height to post base 3" to 5". Weight 11 1/2 lbs. Available for all Premax Antennas. Specify Antenna number or post diameter.



### TYPE 10-S STANDOFF INSULATOR

Type 10-S is a heavy-duty insulator in chrome-plated bronze with brown glazed porcelain. Solid or hinged clamp. Height to center about 4 1/2". Wt. 3 lbs. Available in sizes to fit 7/8" to 1 1/2" tube diameter.



### TYPE 13-S STANDOFF INSULATOR

Type 13-S—In heavy cast aluminum or brass, plain or chrome-plated, with brown glazed porcelain. 3" diameter. Height to center 4 3/4". Wt. 2 lbs. In sizes to fit 3/4" to 1 1/2". Specify size and material; also whether solid or hinge cap.



# PREMAX PRODUCTS Div. Chisholm-Ryder Co. Inc., Niagara Falls, N. Y.

## SERIES C CENTER-LOADED MARINE ANTENNAS

Center-Loaded Collapsible Marine Antenna for 2 to 3 mc. with power gain of 6 db. Two telescoping base sections with top whip. Extended length 17 ft., collapsing to 7 ft. In aluminum, and stainless. Fits standard Premax Mountings shown on preceding page.

No.	Type	Base O.D.	Base I.D.	Wt. Lbs.
CLA-619	Aluminum	1.000"	.834"	5
CLS-1119	Stainless	1.000"	.902"	7

## SERIES B LOW-COST CENTER-LOADED ANTENNAS FOR MOBILE AND MARINE

Center-Loaded Whip-Type Antennas consist of a standard base section or spring-type on which is mounted a special Premax coil. The top is a taper-ground stainless steel whip 6 ft. in length, giving a total overall height of 9 ft. Various coils are available or the standard 75-meter coil can be adapted by shorting out turns on the coil. Antennas can be used with any of the Standard Premax Mountings shown below, or will fit any 3/8"x24-thread mounting.

Frequency	Type BX Less Spring	Type BS With Spring	Coil Only
14,000 kc. (20M.)	BXS-14	BSS-14	B-14
2374 kc. (CAP)	BXS-23	BSS-23	B-23
3105 kc. (APT)	BXS-31	BSS-31	B-31
3800 kc. (76M)	BXS-38	BSS-38	B-38
4325 kc. (CAP)	BXS-43	BSS-43	B-43
4585 kc. (CAP)	BXS-46	BSS-46	B-46
2000 to 3000 kc. (Marine)	BXM-25	BSM-25	B-25



## CIVIL DEFENSE, PUBLIC SERVICE, FIRE, POLICE ANTENNAS 100 TO 162 MEGACYCLES

FCDA is insisting on adequate communications in Civil Defense and cities everywhere are installing RACES equipment that calls for outstanding ground plane and UHF Antennas. Premax meets this need with several profitable numbers to cover this new market.

## GROUND PLANE ANTENNAS

For point-to-point installations, Premax has two VHF Antennas: The Style GP-3 which has elements of heavily-plated spring steel with skirt wires that can be bent down to any angle to match coax cable. Mounting is within a water-proof housing that fits standard

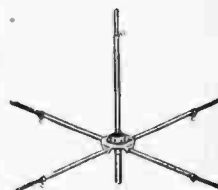


GP-314

1/2" pipe. Cable carries down thru pipe. Style GP-314 for 144 Mc. For 2 meter and CD. Style GP-312 for 108 to 120 Mc. For aircraft and CAP. Style GP-315 for 152 to 162 Mc. For police and taxi.

## ADJUSTABLE GROUND PLANE ANTENNAS

Another low-cost type Ground Plane Antenna is adjustable from 20 to 40 mc. or 40 to 60 mc. Standing wave ratio matching to 52-ohm line is 1.07 to 1.13 and to 72-ohm line is 1.27 to 1.23 depending on type of transformer cable. All-aluminum construction employing adjustable tubular elements. Style GP-430—Adjustable 20 to 40 Mc. Style GP-450—Adjustable 40 to 60 Mc.



GP-430

## CAR-TOP OR MOBILE ANTENNAS

Premax Mobile or Car-Top Antennas are made of heavily-plated, highly-tempered spring steel wire in elements of precise diameters and lengths. Mountings are well insulated and so designed that one man can install them through a single small hole in a car roof.

STYLE CD-114 for 144 mc. For 2-meter amateur and CD. Porcelain insulator. One man installation thru 1/2" rooftop hole.

STYLE CD-112 for 108 to 120 mc. For aircraft and CAP. Similar to CD-114.

STYLE CD-115 for 152 to 162 mc. For police and taxi. Similar to CD-114.



CD-114

## MOBILE

For 1/4" Diam. Whips

SERIES C



TYPE R-2

TYPE R-2 — Universal Mounting. Solid aluminum split-ball can be adjusted to any angle. Has shielded coax connection.



TYPE RS-2

TYPE RS-2—Similar to the above except has spring as shown under Type SA-1.



TYPE S-1

TYPE S-1 — Spring Mounting, heavy-duty spring, phenolic insulation with rubber gasket and steel back-plate with shielded co-ax fitting. Ht. 5".



TYPE SA-1

TYPE SA-1 — Spring Adaptor (similar to Type S-1 and RS-2 which can be attached to Type K, L, XL, RA or NA Mounting. Ht. 4 3/4", Dia. 1 1/8".



TYPE F

TYPE F—30° Adjustable Mounting for fender, cowl or gravel pan. Chrome-plated brass with phenolic insulation.

TYPE XLX — Panel mounting similar to L-1 less bumper bracket and mounting tube. Recommended for marine installation.

## MOUNTINGS

or Any 3/8" - 24 Male Thread



TYPE NA-1

TYPE NA-1 — Bumper Mounting with ceramic cone insulator and steel bracket.



TYPE L-1

TYPE L-1 — Bumper Mounting, 2 pairs ceramic cone insulators with steel bracket. 10" adjustment.



TYPE XL

TYPE XL — Panel Mounting, similar to L-1 less bumper bracket.



TYPE K-1

TYPE K-1 — Bumper Mounting, ceramic cone insulators, cadmium-plated brackets; 10" height adjustment.



TYPE CA

TYPE CA — "Chain Style" Bumper Mounting. Clamps on any bumper with 1" clearance; no drilling; theft-proof.



TYPE K-1



TYPE CA

## EMERGENCY TYPE

STYLE CD-214 for 144 mc. Emergency type with rubber suction cup base. No hole required. Can be installed in matter of seconds. Ideal for CD.

STYLE CD-215 for 152 to 162 mc. For police and taxi. Similar to CD-214.

STYLE CD-212 for 108 to 120 mc. For aircraft and CAP. Similar to CD-214.



CD-214



it's NEW!  
it's DIFFERENT!  
**CANNONBALL "200"**

Top Cowl—Fender: The world's most wanted design, the split-ball, in a universal size to fit the original hole on any car. Replace any standard antenna, Ford or Mercury antenna, or electric antenna with this one model. No adapter pad needed except for high crown fenders. Triple Chrome plated, 3-section, 56" extended length, 54" Radar lead cable.

Model 200 ..... \$5.90 List \$3.54 Net Resale



the most complete

LINE OF AUTO ANTENNAS!

**THE JET**



**Top Cowl—Fender**

Unusual ball and rocker base adjusts from flat to a 35° angle, holds angle permanently. Rocker has positive grounding teeth. Chrome finished, 3-section, 56" extended length, 54" Radar lead cable.

Model 114  
\$3.95 List  
\$2.37 Net Resale

**CANNONBALL "100"**



**Top Cowl—Fender**

Acclaimed the finest by popular demand! Won't shake loose, split-ball design locks insulator and mount together. Installs from top by one man in five minutes! Triple chrome plated, 3-section, 56" extended length, 54" Radar lead cable.

Model 100  
\$4.95 List  
\$2.97 Net Resale

**THE GENIE**

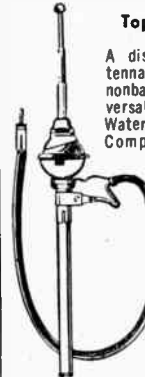


**Top Cowl—Fender**

Installs in a flash! The Genie's unusual design makes it possible to adjust it at an angle to every type of cowl or fender contour.

Model 117—3-sec., 56" lgh, 54" lead  
\$4.75 List  
\$2.85 Net Resale  
Model 190—2-sec., 49" lgh, 36" lead  
\$3.45 List  
\$2.07 Net Resale

**THE SPOOK**



**Top Cowl—Fender**

A disappearing type antenna that includes Cannonball mount with universal mounting bracket. Waterproof construction. Completely shielded against engine noise. Triple chrome plated, 3-section, 54" lead cable, 56" extended; 4½" collapsed.

Model 140  
\$7.95 List  
\$4.77 Net Resale

**SPORTSTER**



**Side Cowl—Fender**

High quality at an attractive price. Chrome-plated tubing with screw-on connector and chrome capped insulators. 3-section, 66" extended length, 36" shielded polyethylene cable.

Model 122  
\$5.45 List  
\$3.27 Net Resale

**ARISTOCRAT**



**Side Cowl—Fender**

Anti-rattle construction. Triple chrome plated brass tubing. A top quality, 4-section side cowl antenna with speedy screw fittings and a 36" Radar lead cable. 92" extended length.

Model 138  
\$7.10 List  
\$4.26 Net Resale

**PYGMY DUET**

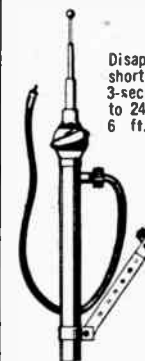


**Short Twin Rear Mounts**

Sweeping back 50° the Pygmy Duet offers new style in rear mounts. Three sections collapse to 11½", extend to 27". 6 ft. Radar lead cable on one antenna and 1 ft. on other. 15 ft. lead extension with built-in capacitor "T" connector and 3 clips.

Model 131  
\$11.85 List  
\$7.10 Net Resale

**PYGMY SPOOK**



**Short Twin Rear Mounts**

Disappearing effect in short twin rear mounts. 3-section masts extend to 24", collapse to 1¾". 6 ft. Radar lead cable on one antenna and 1 ft. on other. 15 ft. lead extension with built-in capacitor "T" connector and 3 clips. Triple chrome plated brass.

Model 151  
\$13.15 List  
\$7.89 Net Resale

**COMMUNICATIONS EQUIPMENT**

**STAINLESS STEEL MASTS**

High tensile strength masts bend to 90° angle, return to vertical position. Fit any standard base. With or without stud. Collet available No. 176.

Model 172.....72" mast.....\$6.60 List  
\$3.96 Net Resale  
Model 173.....84" mast.....\$7.05 List  
\$4.23 Net Resale  
Model 174.....96" mast.....\$7.90 List  
\$4.74 Net Resale  
Model 175.....96" mast  
without stud.....\$7.50 List  
\$4.50 Net Resale



**SWIVEL BASE**

Adjustable split-ball with positive locking feature. Heavy steel backup plate.  
Model 168.....\$4.90 List  
\$2.94 Net Resale



**BASE SPRINGS**

Tightly coiled, oil-tempered heavy spring steel.  
Model 171.....\$3.45 List  
\$2.07 Net Resale



**SWIVEL BASE and SPRINGS**

Flexible cable through center of spring maintains constant electrical impedance. Oil-tempered heavy spring steel.  
Model 169.....standard.....\$7.10 List  
\$4.26 Net Resale  
Model 170.....heavy duty.....\$8.20 List  
\$4.91 Net Resale

**UNIVERSAL REPLACEMENT LEAD PACK**

Handy, see-through display pack includes 54" Radar replacement lead cable plus coupling nuts to fit all popular replacement antennas and original equipment with detachable leads. Ultra-high "Q" coaxial cable.  
Model 214.....\$2.25 List  
\$1.35 Net Resale



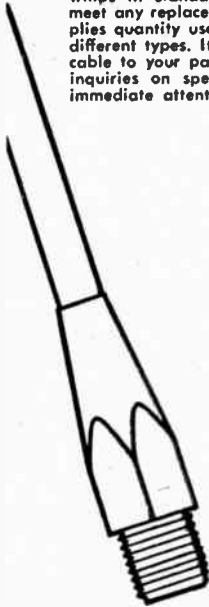


# WEBSTER Web Wip®

# MOBILE ANTENNAS STAINLESS STEEL WHIPS

## STAINLESS STEEL WHIPS

Webster offers high quality, long life, solid stainless steel whips in standard and custom-manufactured lengths to meet any replacement requirement. Webster regularly supplies quantity users with whips and base fittings of many different types. It is therefore possible that designs applicable to your particular purpose may already exist. Your inquiries on special lengths and mounts will be given immediate attention.



### STANDARD MODELS (net prices)

Lengths,	Prices
36" - 46" .....	4.25
46" - 56" .....	4.35
56" - 66" .....	4.45
66" - 76" .....	4.55
76" - 86" .....	4.65
86" - 96" .....	4.75

All prices f.o.b. factory Mill Valley, Calif.

### Quantity discounts.

All listed whips have male-type base fittings threaded 9/8-24 SAE.

## MARINE ANTENNAS

### Webster Standard "Tiare"...

Webster Standard Marine, center loaded antenna is widely accepted as the standard of comparison. This highly effective antenna operates in conjunction with any standard radiotelephone to provide high performance over the marine range of 2000 to 3000 kcs. Completely weatherproof including fiber glass covered top whip, center loading section fully sealed... permanent... weatherproof. Support column is aircraft-type aluminum tubing, anodized and coated for maximum corrosion resistance. Antenna height, (overall) 23 1/2 feet. Whip only, 8 1/2 feet.

Less mounts and hardware .....  
With standard AM-6 mounts and hardware .....

### Webster "Junior" marine....

Performance characteristics identical to Webster Standard, the Junior has a chrome-plated brass support column that telescopes to a fraction of the full extended height, (from 18'3" to 7'8"). It is beautifully built, weatherproof.

Webster Junior... less mounts and hardware ....  
With standard AM-6A mounts and hardware .....

### Webster Model "2700".....

Webster Model 2700 is the ideal, center-loaded antenna for the smaller power cruiser, where streamlining is essential and where space limitations impose definite restrictions on the type of antenna which may be installed practically. Highly effective, Model 2700 covers the range of 2000 to 3000 kcs. It has an overall height of 12 1/2 feet, is completely weatherproof and corrosion proof. Fiber glass top whip is removable, brass fittings are chrome plated.

Less insulated base mounting .....

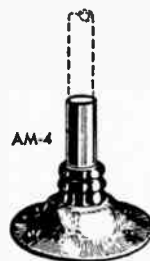
## BANDSPANNER

### multi-band mobile antenna.

An effective antenna for operation on 80-40-20-15 and 10 meter amateur bands. This is an effective, streamlined, center-loaded antenna with loading inductor wound directly on upper portion of the fiber glass support column. Moving top whip in or out, plunger fashion, makes possible exact resonance on these amateur bands. Light weight, sturdy, has stainless steel top whip, fiber glass support column and loading section.

Amateur net price ..... 24.75

## ANTENNA MOUNTS for Model 2700...



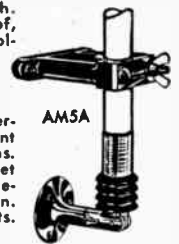
AM-4

Insulated deck mount for Model 2700. Combines excellent insulation with high mechanical strength. Thoroughly weatherproof, beautifully finished in polished chrome.

AM-4 .....

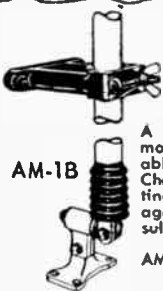
A truly universal mount permitting full 90° movement of antenna in all directions. Also includes upper bracket for quick lock up and release of support column. Chrome plated brass parts.

AM5A, AM5B .....



AM5A

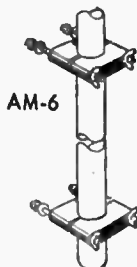
## ANTENNA MOUNTS for Junior and Standard models



AM-1B

A truly universal antenna mounting with every desirable feature. High polished Chrome plated brass fittings, excellent, long leakage path, phenolic base insulator.

AM1-B .....



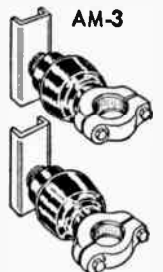
AM-6

Webster standard mounts. High impact phenolic with brass hardware. Simple, strong, sturdy. (AM-6A mounts have chrome plated hardware.)

AM-6 .....(Set)....  
AM-6A .....(Set)....

Ceramic insulated mounts for high power and severe operating conditions. Long leakage path, high strength glazed ceramic. Anodized aluminum castings, holding bolts of stainless steel, brass fittings.

AM3 (Set) .....



AM-3

# WEBSTER MANUFACTURING CO.

# POLYSTYRENE ROD — TUBING — SHEET

For radio and electronic applications, because of its very low loss factor at ultra high frequencies, Polystyrene is the ideal material for insulators, coil forms, shields, etc. It has excellent arc resistance, is non-tracking and has splendid insulating properties. Because its water absorption is practically zero it has excellent dimensional stability.

## POLYSTYRENE ROD — Transparent

Available in 12" or 48" lengths

Catalog Number	Diameter	Net Price	
		12" lgth.	48" lgth.
JB-100	1/8"	\$ .03	\$ .12
JB-101	3/16"	.07	.28
JB-102	1/4"	.12	.48
JB-103	5/16"	.18	.72
JB-104	3/8"	.26	1.04
JB-105	7/16"	.36	1.44
JB-106	1/2"	.48	1.92
JB-107	5/8"	.72	2.88
JB-108	3/4"	1.00	4.00
JB-109	7/8"	1.42	5.68
JB-110	1"	1.90	7.60
JB-111	1 1/8"	2.50	10.00
JB-112	1 1/4"	3.00	12.00
JB-113	1 3/8"	3.60	14.40
JB-114	1 1/2"	4.30	17.20
JB-116	1 3/4"	6.00	24.00
JB-118	2"	7.50	30.00

## POLYSTYRENE TUBING — Satin Finish

Available in 12" or 48" lengths.

Catalog Number	O.D.	I.D.	Net Price	
			12" lgth.	48" lgth.
JB-201	1/4"	1/8"	\$ .10	\$ .40
JB-202	5/16"	3/16"	.14	.56
JB-203	3/8"	1/4"	.18	.72
JB-205	1/2"	3/8"	.26	1.04
JB-206	5/8"	1/2"	.32	1.28
JB-207	3/4"	5/8"	.40	1.60
JB-208	1"	7/8"	.56	2.24
JB-220	1 1/2"	1 1/4"	1.50	6.00
JB-222	2"	1 3/4"	2.20	8.80

## POLYSTYRENE SHEET

The following sheets are all crystal clear with smooth surfaces fully protected against abrasion by masking paper on both sides.

Catalog Number	Thickness	Sheet Size	Net Price
JB-125	1/16"	12" x 12"	\$4.15
JB-126	3/32"	12" x 12"	4.80
JB-127	1/8"	12" x 12"	5.50
JB-128	3/16"	12" x 12"	7.15
JB-129	1/4"	12" x 12"	8.15
JB-245	1/16"	12" x 24"	7.80
JB-246	3/32"	12" x 24"	9.15
JB-247	1/8"	12" x 24"	10.50
JB-248	3/16"	12" x 24"	13.15
JB-249	1/4"	12" x 24"	15.65
JB-315	1/32"	24" x 24"	9.65
JB-301	1/16"	24" x 24"	11.15
JB-302	3/32"	24" x 24"	13.00
JB-303	1/8"	24" x 24"	14.80
JB-304	3/16"	24" x 24"	18.75
JB-305	1/4"	24" x 24"	23.00
JB-316	5/16"	24" x 24"	27.65
JB-309	3/8"	24" x 24"	31.25
JB-311	1/2"	24" x 24"	38.65
JB-317	5/8"	24" x 24"	50.00
JB-318	3/4"	24" x 24"	69.25
JB-319	1"	24" x 24"	94.15

**JULIUS BLUM & CO., INC.**  
CARLSTADT, N. J.

Serving Industry  
Since 1910

# Weller

## SOLDERING GUNS AND KITS

Easton, Penna.

### 4 MODELS FOR PROFESSIONAL USERS

Weller soldering guns save time and current on every job and pay for themselves in a few months.

**Instant Heat** — Full capacity heat in 5 seconds.

**Exclusive Tip Grip** — Assures full, constant heat.

**Shatterproof Housing** — Rugged plastic.

**Longer Reach** — Fits easily into tight places, speeds work and prevents damage to insulation.

**Dual Spotlights** — Prefocussed to give maximum light for work.

**Guaranteed** — Registered and guaranteed for 1 year.

### HEAVY-DUTY MODELS

#### Model S-500

Single heat, 250 watts.  
Individually Packaged. Unit weight in display carton 3½ lbs. Master carton of 12 weighs 44 lbs.

PRICE.....\$13.50 each, list.

#### Model D-550

Dual heat — 200 watts on first trigger position and 275 watts on second position.

Individually Packaged. Unit weight in display carton 3½ lbs. Master carton of 13 weighs 44 lbs.

PRICE.....\$16.25 each, list.



### LIGHT-DUTY MODELS

#### Model S-400

Single heat, 135 watts.  
Individually Packaged. Unit weight in display carton 3 lbs. Master carton of 12 weighs 38 lbs. PRICE.....\$12.15 each, list.

#### Model D-440

Dual heat — 100 watts on first trigger position and 150 watts on second position.

Individually Packaged. Unit weight in display carton 3 lbs. Master carton of 12 weighs 38 lbs.

PRICE.....\$14.90 each, list.



### WELLERTIPS FOR ALL MODELS



For Gun Models 8100, S-400 and D-440

Soldering tip

No. 7135, pkg. of 2...35c list

Smoothing tip

No. 6120, with nuts...50c list

Cutting tip

No. 6110, with nuts...50c list

For Gun Models 8250A, S500 and D-550

Soldering tip

No. 7250, pkg. of 2...50c list

Smoothing tip

No. 6140, with nuts...50c list

Cutting tip

No. 6130, with nuts...50c list

### COMPLETE SOLDERING SET



Model 8100K

Features new gun of compact design. Instant heat, dual spotlights, "triggermatic" control for instant on-off heat. Accommodates smoothing and cutting tips which are available at extra cost. Kit also contains a supply of famous Kester Solder, Wire-Bristle Soldering Brush, Weller Soldering Aid for holding down and twisting wires.

Single heat, over 100 watts — 120V., 60 cy., AC only. Guaranteed for 1 year — Registered, UL approved. Individually packaged in self-display case weighing 3 lbs. Standard carton of 6 weighs 19 lbs.

SPECIAL LOW PRICE.....\$7.95 each, list. (\$8.95 value)

### HEAVY-DUTY SOLDERING KIT

#### Model 8250AK

Kit includes 250-watt Soldering Gun 8250A for heavy-duty work; famous Kester Solder — ample supply, general-purpose type; long-life Soldering Tip and special Cutting Tip and Smoothing Tip; in all-metal carrying case.

**Cutting Tip** — For cutting plastic tile, removing hard putty, etc.

**Smoothing Tip** — For heat-sealing and mending plastics, etc.

**Tip Interchange Wrench**

**Two Instruction Booklets** — Give valuable soldering details. Individually packaged — 6½ lbs. Master carton of 3 weighs 21 lbs.

PRICE.....\$14.95 each, list. (\$17.00 value)



Sturdy Metal Case

### WELLER SOLDERING AID



New soldering aid is useful for opening old joints, holding down and twisting wires, etc. — always handy.

PRICE.....50c each, list



# SOLDERING IRONS

Equipped with Quick, Long-life Heaters

FOR MANUFACTURING AND SERVICE OF  
RADIO AND ELECTRONIC EQUIPMENT

ASK YOUR GENERAL ELECTRIC DISTRIBUTOR FOR A COPY OF BULLETIN GEC-1318.

- **HIGH-SPEED SOLDERING.** You can solder as fast and continuously as the nature of the work will allow.
- **UNIFORM PERFORMANCE.** Operating characteristics remain constant day after day. No appreciable decrease in efficiency, even after months of service.
- **EASY, LOW-COST REPAIR.** Assembling and disassembling are easy.

- **LONG LIFE AND LOW MAINTENANCE.** Life is lengthened, and over-all costs are kept low because sturdy construction eliminates need for frequent repairs.

- **THEY NEED NOT BE RETURNED TO THE FACTORY FOR REPAIR.** Irons can be repaired on the job without special tools or skill.

## LIGHTWEIGHT INDUSTRIAL IRONS

(Listed by Underwriters' Laboratories)



Cat. No. 6A273



Cat. No. 6A283



Disassembled View



3/16-in. Chisel



3/16-in. Pyramid

Cat. No.	Rating		Tip Dia, Inches	List Price, Each†	Standard Package Quantity	Tip and Heater		Tip Only*		
	Volts	Watts				Cat. No.	List Price, Each†	Cat. No.	Size, Inches	List Price, Each†
6A273	120	60	3/16 Chisel	\$13.80	6	6A300	\$6.75	326A964P21	3/16 Chisel	\$1.75
6A283	120	60	3/16 Pyramid	13.80	6	6A301	6.75	326A964P22	3/16 Pyramid	1.75
6A283G23	120	60	3/16 Chisel	13.80	6	6A301G4	6.75	116V707P21	3/16 Chisel	1.75

\*Tips must be brazed on. See instructions included with irons.  
†Mfr's suggested resale price.

## INDUSTRIAL SOLDERING IRONS

(Listed by Underwriters' Laboratories)

For light, high-speed soldering, such as assembly of radios, telephones, switchboards, appliances, meters, and instruments, and installation and repair of wiring and wiring devices and ignition. Also, for medium, intermittent soldering on tinware, wiring, plumbing, and tinsmithing. Excellent general-purpose iron for service and repairmen, for shop and farm.



Fig. 1. Industrial soldering iron, 6A161 and 6A162 series



Fig. 2. Cutaway view of industrial soldering iron, 6A161 and 6A162 series

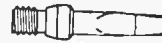
CHISEL TIPS



1/2-in. Short



1/2-in. Long



3/8-in.



13/64-in.

Cat. No.	Rating		List Price, Each†	Standard Package Quantity	Renewal Heater		Interchangeable Tips			
	Volts	Watts			Cat. No.	List Price, Each†	Cat. No.	Size, Inches	Type	List Price, Each†

6A161 and 6A162 Series (Fig. 1 and 2)

6A161	115	75	\$14.50	6	6A31	\$4.45	Note: All of the interchangeable tips listed below will fit any iron in the 6A161 and 6A162 series.			
6A162	115	100	14.50	6	6A32	4.45	6851732P21	3/8	Calorized	\$1.00
6A162G6	115	110	14.50	6	7C342	4.45	6851732P22	3/8	Ironclad	1.80
6A162G3	115	125	14.50	6	8A88	4.45	6808345AAP2	1/2 short	Calorized	1.00
							6851775P21	1/2 short	Ironclad	1.80
							6808345AAP3	1/2 long	Calorized	1.70
							6851775P22	1/2 long	Ironclad	3.45
							9817171P22	13/64	Ironclad	1.80

†Mfr's suggested resale price.



# SOLDERING IRONS

Equipped with Quick, Long-life Heaters  
**FOR MANUFACTURING AND SERVICE  
 OF RADIO AND ELECTRONIC EQUIPMENT**

ASK YOUR GENERAL ELECTRIC DISTRIBUTOR FOR A COPY OF BULLETIN GEC-1318.

## MIDGET SOLDERING IRONS

### APPLICATION

This 8-inch, 1 $\frac{3}{4}$ -ounce featherweight iron for close-quarter soldering with pin-point precision is used where conventional irons might cause damage . . . be clumsy to handle . . . be more expensive to operate. The Midget literally goes places with greater efficiency and less power . . . with no sacrifice in heat or speed. With its fingertip operation, this iron will help make an expert out of any\* solderer in a short time.

The Midget has Ironclad copper tips either  $\frac{1}{4}$ -,  $\frac{3}{16}$ - or  $\frac{1}{8}$ -inch diameter, as desired.

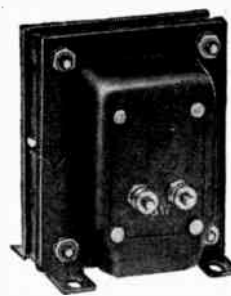


Disassembled view of Midget soldering iron

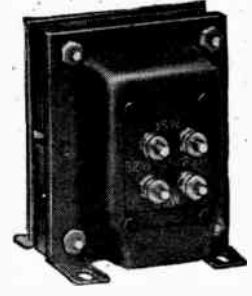


$\frac{1}{4}$ -in. dia tip, Cat. No. 6A210

### SPECIAL TRANSFORMERS (OPTIONAL) FOR MIDGET SOLDERING IRONS



Single-tap



Four-tap

Specially designed transformers are available as optional equipment in two types:

1. Single-tap, 115- or 230-volt primary—for use where only one soldering heat (25 watts) is required
2. Four-tap, 115- or 230-volt primary—gives wide range of heats (from 25 to 35 watts) for close temperature control of tips

Transformers are small, lightweight, but sturdy. Their 6-foot extension cords can be plugged in any 115- or 230-volt outlet.

### THIS MIDGET DOES A BIG JOB IN

- Boosting Production Rates
- Increasing Operator Efficiency
- Cutting Down Employee Fatigue
- Saving on Repair and Maintenance
- Reducing Rejects
- Manufacturing and Repairing:
  - Radios and other electronic equipment
  - Meters
  - Instruments
  - Jewelry
  - Appliances
- . . . and many other products requiring precision soldering

### RATING: 6 VOLTS, 25-35 WATTS

Soldering Iron (Complete)		List Price, Each*	Renewal Tip and Heater Assembly		List Price, Each*
Cat. No.	Tip Dia, Inches		Cat. No.	Tip Dia, Inches	
6A210	$\frac{1}{4}$ Chisel	\$7.60	6A211	$\frac{1}{4}$ Chisel	\$3.95
6A212	$\frac{1}{8}$ Pyramid	7.60	6A213	$\frac{1}{8}$ Pyramid	3.95
6A214	$\frac{3}{16}$ Pyramid	7.60	6A215	$\frac{3}{16}$ Pyramid	3.95
6A216	$\frac{1}{8}$ Chisel	7.60	6A217	$\frac{1}{8}$ Chisel	3.95

All tips are Ironclad copper.  
 Net weight, iron less cord, 1-3/4 oz.  
 Net weight, iron including cord, 5 oz.  
 Shipping weight, complete iron, 8 oz.  
 Standard package consists of 6 units of one size.

Description	Cat. No. 115-volt Primary	Price*	Cat. No. 230-volt Primary	Price*
Single-tap .....	6A362G2	\$6.90	6A362G22	\$12.30
Four-tap .....	6A364G2	9.20	6A364G22	12.95

Publication Reference ..... GEC-1318

## THE MIDGET OFFERS MAJOR ADVANTAGES

**Low-cost soldering**—Solders more efficiently, using only approximately one-fourth wattage normally used.

**Fingertip operation**—Only 8 inches long, weighs but 1 $\frac{3}{4}$  ounces. Styled for fingertip grip.

**Quick, continuous heat**—Famous G-E heater built into Ironclad copper tip for rapid heat transfer and tip temperature recovery.

**Easy renewal**—Ironclad tip and heater assembly are replaced as a unit merely by unscrewing from handle.

**Long life, low maintenance**—Low voltage permits use of heavy, long-lasting nickel-chromium resistance wire. Less maintenance is required with long-lasting Ironclad copper tip.

\*Manufacturer's suggested resale price.

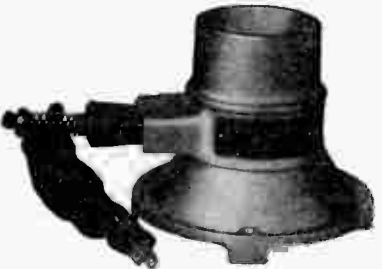
# ESICO Electric Solder Pots



This small pot is used largely for individual dipping of small parts and reaches a temperature of approximately 750°. For higher temperatures, it is possible to use either a #36 or a #60 element. See table below for details.



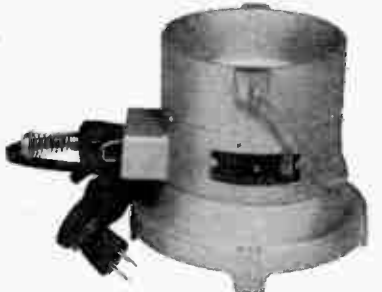
**No. 70T** This is a thermostatically controlled pot, maintaining a temperature of 400/600° to within plus or minus 4°. Adjustable control permits the pot to be used anywhere between these two temperatures. See table below for details.



This pot is used for dip soldering of bundles of lead wires and where a slightly hotter pot is required than the #12. It operates at approximately 750°. If a higher temperature is required, a #60 element may be used. See table below for details.



**No. 75T** This pot is similar in operation to the #70T, but is intended for the dipping of small panels which cannot be accommodated in a round pot. Temperature range is 400/600° plus or minus 4°. The pot is also available without a thermostat but is then catalogued as #75. Without a thermostat, the pot reaches a temperature of 850°. See table below for details.



This pot is used for volume tinning and operates at a temperature of 800°. On occasion where production requires greater heat drain capacity, elements of a higher wattage than the standard 325 watt have been supplied. However, we recommend the use of the #70 600W Pot for this greater heat requirement and higher temperature. See table below for details.

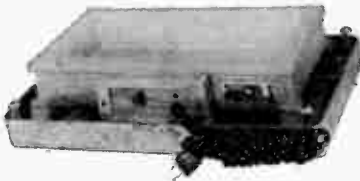


**No. 80** This pot is intended for printed circuit panels and is thermostatically controlled. Temperature range is 400/600°. The pot stands on 4 corner posts in a sand tray, which has screws for leveling. See table below for details.

This is a high heat pot reaching a temperature of approximately 900°, and has considerable heat drain capacity. Where pots are required for 220V operation, longer element life will be secured than in the case of the #60. See table below for details.

**No. 90** This is a high temperature pot intended for silver soldering, and will maintain a temperature of 1300/1500°. See table below for details.

This sand tray will accommodate all of the round base solder pots shown on this sheet. The tray is fitted with leveling screws. See table below for details.



CAT. NO.	WATTS	DIA.	DEPTH	WIDTH	LENGTH	HEIGHT	THERMO-STAT	SOLDER CAP. LBS.	SHIPPING WEIGHT LBS.
12	200	1 1/2"	1 1/2"	---	---	4 1/2"	No	3/4	3 3/4
12T	200	1 1/2"	1 1/2"	---	---	4 1/2"	Yes	3/4	4 1/2
36	250	2 1/4"	1 3/4"	---	---	4 3/4"	No	2 1/4	4
36T	250	2 1/2"	1 3/4"	---	---	4 3/4"	Yes	2 1/4	4 3/4
60	325	3 1/2"	1 1/8"	---	---	4 3/4"	No	3 3/4	5 1/4
60T	325	3 1/2"	1 1/8"	---	---	4 3/4"	Yes	3 3/4	6
70	600	4 3/4"	1 5/8"	---	---	5 1/2"	No	9	6 3/4
70T	600	4 3/4"	1 5/8"	---	---	5 1/2"	Yes	9	8
75	600	---	1 3/4"	4 3/4"	4 3/4"	5 1/2"	No	11 3/4	8
75T	600	---	1 3/4"	4 3/4"	4 3/4"	5 1/2"	Yes	11 3/4	9 3/4
80	1200	---	2"	6"	12"	3 3/4"	Yes	15	28
90	550	1 1/8"	2 7/8"	---	---	5 1/2"	No	3/4	8
1270	---	9 1/4"	1 1/2"	---	---	---	---	---	2

# ESICO

REG. U. S. PAT. OFF.

**ELECTRIC SOLDERING IRONS** FOR HOME, PROFESSIONAL MECHANIC AND FACTORY

● **GREEN LABEL LINE**

For intermittent duty. Meets all requirements of the home craftsman.



No. 415—List \$2.48— $\frac{3}{8}$ " Tip—55 Watts



No. 416—List \$3.75— $\frac{1}{4}$ " Tip—60 Watts



No. 417—List \$5.00— $\frac{3}{8}$ " Tip—100 Watts



No. 418—List \$6.28— $\frac{1}{2}$ " Tip—130 Watts

● **ORANGE LABEL LINE**

For Professional Mechanics—light or heavy soldering where iron must withstand operation for eight hour periods or more on frequent occasions.



No. 62—List \$6.26— $\frac{1}{4}$ " Tip—60 Watts



No. 63—List \$7.53— $\frac{3}{8}$ " Tip—100 Watts



No. 64—List \$8.81— $\frac{1}{2}$ " Tip—130 Watts



No. 65—List \$10.08— $\frac{5}{8}$ " Tip—200 Watts



No. 67—List \$11.30— $\frac{7}{8}$ " Tip—300 Watts



No. 69—List \$13.83— $1\frac{1}{8}$ " Tip—500 Watts

● **RED LABEL LINE**

For Production Line Continuous Operations. These Irons are of most rugged construction.



No. 38—List \$8.81— $\frac{3}{8}$ " Tip—100 Watts



No. 58—List \$11.30— $\frac{5}{8}$ " Tip—200 Watts



No. 78—List \$13.83— $\frac{7}{8}$ " Tip—300 Watts



No. 98—List \$16.36— $1\frac{1}{8}$ " Tip—550 Watts

## ESICO Luger Gun



**SOLDER MELTING CAPACITY:**

The Model "C" is fully equivalent in solder melting capacity to 150 watt professional model guns on the market.

**BALANCE:**

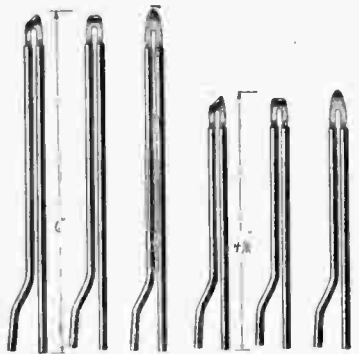
The LUGER, with its transformer built in the handle, has a very much superior balance over conventional soldering guns and there is none of the TIP HEAVINESS experienced with conventional guns.

**TIP SHAPES:**

The design and style of tips available for use in the LUGER fills a long felt need, and many soldered connections inaccessible to the average gun can be reached with LUGER tips. It is also possible to unsolder and pry off wires and components with the Model AB Tip.

**THE LUGER IS BY FAR:**

**The Best Soldering Iron Buy on the Market!**



AB6 AB5 AB4 AB3 AB2 AB

LONG  
AND  
THIN  
FOR  
GETTING  
INTO  
DEEP  
PLACES!

Model  
"C"

List Price  
**\$8.95**

### Kit of Tips

This assortment in a plastic vial, includes tips that are long and short, narrow and broad, straight and bent—for all soldering jobs. They will not anneal, bend, or develop residue, even if left on the circuit beyond the operating cycle.

List Price \$5.75

**ELECTRIC SOLDERING IRON CO., INC.**

**Deep River, Conn.**



# ELECTRIC SOLDERING IRONS



VOLTAGE RANGE: 6 to 250 OPERATES IDENTICALLY ON A.C. OR D.C., ANY CYCLE  
STANDARD VOLTAGES 110/120, 121/130, 220/250 SPECIFY VOLTAGE ON ORDER

Equipped with flexible 6-ft. approved Neoprene rubber heater cord, which is water-proof, kink-free, and resistant to oil, abrasion and heat. Nickel-chromium replaceable heating elements, insulated with finest mica, protected by rugged outer housing. Replaceable tips.

## PLUG-TIP IRONS



No. P-25 25 WATTS TIP DIA.  $\frac{1}{8}$ " SHIP WT.  $\frac{1}{2}$  LB. \$6.00  
SMALLEST FULL-FLEDGED INDUSTRIAL IRON. Weight (less cord) only 3 oz. Length only 8". For extremely light soldering on finest wires, delicate instruments, jewelry, etc. Can also be furnished in higher wattages.

No. P-26 30 WATTS TIP DIA.  $\frac{3}{16}$ " SHIP WT.  $\frac{1}{2}$  LB. \$6.00  
Same size and for same work as P-25A, but where larger tip is required. Can be furnished in higher wattages.



No. P-30 40 WATTS TIP DIA.  $\frac{1}{4}$ " SHIP WT.  $\frac{3}{4}$  LB. \$6.25  
Very light soldering on fine wire and delicate instruments. Extra  $\frac{1}{8}$ " dia. tip furnished with each iron. Also available in 50 or 60 watts. Specify watts when ordering.



- No. P-70 80 WATTS TIP DIA.  $\frac{3}{8}$ " SHIP WT. 1  $\frac{1}{8}$  LB. \$ 9.00
- No. P-100 100 WATTS TIP DIA.  $\frac{3}{8}$ " SHIP WT. 1  $\frac{1}{8}$  LB. \$10.00
- No. P-125 130 WATTS TIP DIA.  $\frac{5}{8}$ " SHIP WT. 1  $\frac{1}{8}$  LB. \$11.75
- No. P-150 150 WATTS TIP DIA.  $\frac{3}{8}$ " SHIP WT. 1  $\frac{1}{2}$  LB. \$10.75
- No. P-151 175 WATTS TIP DIA.  $\frac{1}{2}$ " SHIP WT. 1  $\frac{3}{8}$  LB. \$11.50
- No. P-200 200 WATTS TIP DIA.  $\frac{5}{8}$ " SHIP WT. 2  $\frac{3}{8}$  LB. \$12.00
- No. P-250 250 WATTS TIP DIA.  $\frac{5}{8}$ " SHIP WT. 2  $\frac{3}{8}$  LB. \$13.75



- No. P-300 300 WATTS TIP DIA.  $\frac{7}{8}$ " SHIP WT. 3 LB. \$16.25
- No. P-550 550 WATTS TIP DIA. 1  $\frac{1}{8}$ " SHIP WT. 4  $\frac{3}{8}$  LB. \$21.75

## SCREW TIP IRONS



- No. 50 50 WATTS TIP DIA.  $\frac{1}{8}$ " SHIP WT. 1 LB. \$ 6.50



- No. 60 60 WATTS TIP DIA.  $\frac{1}{4}$ " SHIP WT. 1  $\frac{1}{4}$  LB. \$ 9.00
- No. 85 90 WATTS TIP DIA.  $\frac{1}{2}$ " SHIP WT. 1  $\frac{1}{8}$  LB. \$ 9.75
- No. 120 120 WATTS TIP DIA.  $\frac{3}{8}$ " SHIP WT. 1  $\frac{3}{8}$  LB. \$10.75
- No. 130 130 WATTS TIP DIA.  $\frac{7}{8}$ " SHIP WT. 1  $\frac{1}{2}$  LB. \$12.25
- No. 170 175 WATTS TIP DIA. 1" SHIP WT. 2  $\frac{1}{2}$  LB. \$13.75



- No. 225 250 WATTS TIP DIA. 1  $\frac{1}{4}$ " SHIP WT. 2  $\frac{3}{8}$  LB. \$16.25
- No. 350 350 WATTS TIP DIA. 1  $\frac{3}{8}$ " SHIP WT. 3  $\frac{1}{2}$  LB. \$18.75
- No. 500 500 WATTS TIP DIA. 1  $\frac{3}{8}$ " SHIP WT. 4  $\frac{3}{8}$  LB. \$21.50
- No. 700 700 WATTS TIP DIA. 1  $\frac{3}{8}$ " SHIP WT. 5  $\frac{1}{8}$  LB. \$39.25

## NEW LONG-LIFE HEXCLAD TIPS



Last 10 times or more as long as copper tips with normal use and save maintenance cost. Have a durable coating of Iron Alloy over copper base on all surfaces for long wear. Do not erode or pit and thus deliver uniform heat. Available in all plug and screw tip sizes and shapes. Can also furnish special HEXCLAD tips made to your order.

Ask for Bulletin HT for Further Details and Prices

## HEXACON SPECIAL-PURPOSE FAST-PRODUCTION-LINE SOLDERING IRONS

TYPES LISTED BELOW HAVE BEEN DEVELOPED SPECIFICALLY FOR SOLDERING OF TV SETS, ELECTRONIC AND COMMUNICATION EQUIPMENT, INSTRUMENTS, ETC. — AND ARE POPULAR ON PRODUCTION LINES OF LEADING PRODUCERS (BOTH CONVEYOR BELT LINES AND SUB-ASSEMBLIES).

### SUPER-PENCIL IRONS

HOT TIP (Weights only 2 oz.) COOL HANDLE

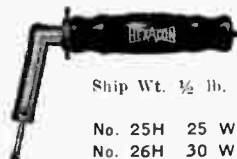


- Length 7  $\frac{3}{4}$ " Ship Wt.  $\frac{1}{2}$  lb.
- No. 25S 25 Watts (higher wattages  $\frac{1}{8}$ " Tip \$6.00
- No. 26S 30 Watts are available)  $\frac{3}{16}$ " Tip \$6.00

All the advantages of a Soldering Pencil, but a full-fledged industrial soldering iron with nickel-chromium mica-wound element. Tiny tips outperform irons with larger tips and higher wattages. See Bulletin 25S for Further Details

### BANTAMWEIGHT HATCHET IRONS

(Weights only 3 oz.)



Smallest Hatchet Soldering Iron. Perfect balance gives effortless soldering at its best. Tiny tips outperform irons with larger tips and higher wattages.

Ship Wt.  $\frac{1}{2}$  lb. See Bulletin 25H for Further Details.

- No. 25H 25 Watts (higher wattages  $\frac{1}{8}$ " Tip \$6.50
- No. 26H 30 Watts are available)  $\frac{3}{16}$ " Tip \$6.50

### FEATHERWEIGHT HATCHET IRON

(Weights only 5 oz.)



More powerful than wattage rating indicates. Hatchet design makes iron effortless to use. Ship Wt.  $\frac{7}{8}$  lb. See Bulletin 30H for Further Details.

- No. 30H 40, 50 or 60 Watts  $\frac{1}{4}$ " Tip \$6.75
- Extra  $\frac{1}{8}$ " dia. tip furnished with each iron.

### SUPER-POWERED IRONS

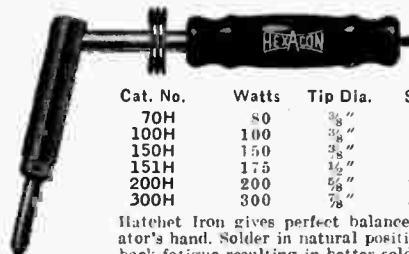
HIGHER SPEED SMALLER TIPS



Tip Dia.	Watts	Cat. No.	Ship Wt.	Price
$\frac{1}{4}$ "	100	P-114	1 $\frac{3}{8}$ lbs.	\$10.00
$\frac{1}{4}$ "	150	P-154	1 $\frac{1}{2}$ lbs.	\$10.75
$\frac{1}{4}$ "	200	P-214 (shown)	2 $\frac{1}{8}$ lbs.	\$12.00
$\frac{3}{8}$ "	200	P-238	2 $\frac{1}{4}$ lbs.	\$12.00
$\frac{1}{2}$ "	200	P-212	2 $\frac{1}{4}$ lbs.	\$12.00
$\frac{3}{8}$ "	300	P-338	2 $\frac{3}{8}$ lbs.	\$16.25

SOLDER FASTER WITH LOWER TIP COST! For example, Cat. No. P-214 has more speed than conventional 200 watt iron, but takes  $\frac{1}{4}$ " tip instead of  $\frac{3}{8}$ " (saves 84% of tip copper). Widely used on production line soldering of TV sets, etc. See Bulletin P-154 for Further Details.

### HATCHET TYPE IRONS



Perfect Balance  
Less Fatigue  
See What You Solder

Cat. No.	Watts	Tip Dia.	Ship Wt.	Price
70H	80	$\frac{3}{8}$ "	1 $\frac{3}{8}$ lbs.	\$11.00
100H	100	$\frac{3}{8}$ "	1 $\frac{1}{2}$ lbs.	\$12.00
150H	150	$\frac{3}{8}$ "	1 $\frac{1}{2}$ lbs.	\$12.75
151H	175	$\frac{1}{2}$ "	1 $\frac{1}{2}$ lbs.	\$13.50
200H	200	$\frac{5}{8}$ "	2 $\frac{1}{4}$ lbs.	\$14.00
300H	300	$\frac{7}{8}$ "	3 lbs.	\$18.25

Hatchet Iron gives perfect balance—"cradles" in operator's hand. Solder in natural position, relieving arm and back fatigue resulting in better soldered joints. For inaccessible places. See Bulletin 70-H for Further Details.

## HEXACON ELECTRIC COMPANY • ROSELLE PARK, N. J.

In Canada: Adlam Tool & Supply Co., 1015 St. Alexander St., Montreal. Export Division: 36 Pearl St., New York 4, N. Y.





# INSTANT SOLDER GUNS

Featuring a new concept in solder gun design. Elimination of transformer reduces weight and lifetime tip assures long trouble-free service. Fully guaranteed; underwriters' approved.



## FEATHERWEIGHT SOLDER GUN

instantaneous, Power Packed — 150 watts

- **SOLDERS IN SECONDS**  
No waiting for warm-up
- **WEIGHS ONLY 8 OZ.**  
No heavy transformer
- **HEAT RIGHT IN TIP**  
Exclusive Hexacon design
- **LIFETIME TIP**  
No wire to bend

The ideal handy soldering tool for hundreds of uses. Just the tool for radio, TV, motors, autos, labs, electronic and telephone equipment, industrial electrical maintenance, hobbies and general home use. Saves space and weight in tool boxes.



OPERATES ON D.C. AS WELL AS A.C. — ANY CYCLE

Model G14 with 1/4" Dia. Tip. Ship. Wt. 1 1/4 lbs. Price \$7.95

Hexacon Guns are compact, light-weight. Hexacon Lifetime Tips require no maintenance, cannot bend or wear and permit longer, thinner reach. Heater-tip assembly and lamp are replaceable; handle is shock-resistant plastic.

Hexacon Guns solder in only seconds. Just press the switch trigger and solder instantly. Trigger control gives any degree of heat required, without danger of overheating. Tiny tips perform finest soldering.

### ALSO AVAILABLE WITH 1/8" DIA. TIP



150-watt gun with 1/8" diameter tip for smaller joints and confined spaces. Same as Model G14 except for tip. Model G148, 120 volts AC-DC. Ship. Wt. 1 1/4 lbs. Price \$7.95

### COMPLETE "DO-IT-YOURSELF" KIT G14K

- 150-WATT HEAVY DUTY SOLDER GUN
- CUTTING TIP AND SMOOTHING TIP
- KESTER TV-RADIO RESIN-CORE SOLDER
- SANDPAPER FOR CLEANING JOINT

Model G14K — Solder Gun Kit. Ship. Wt. 1 1/4 lbs. Price \$8.95

PATENT PENDING



# Popular SOLDERMASTER ELECTRIC SOLDERING IRONS



VOLTAGE RANGE: 6 to 250 OPERATES IDENTICALLY ON A.C. OR D.C., ANY CYCLE  
STANDARD VOLTAGES 110/120, 121/130, 220/250 SPECIFY VOLTAGE ON ORDER

Equipped with 6 ft. approved heater cord with rubber plug. Nickel-chromium replaceable heating elements. All one-piece swaged cases chrome finished. Insulated with finest mica, protected by rugged outer housing. Replaceable tips.

## SCREW TIP IRONS



- No. 55B — For light soldering, radio apparatus, etc. 55 Watts. Tip dia. 1/8". Ship. wt., 13 oz. each \$3.95
- No. 76B — For light work, electrical instruments, etc. 75 Watts. Tip dia., 1/2". Ship. wt., 15 oz. each \$6.00
- No. 100B — Same as No. 76B except used where more speed is required and heavier work is done. For home use. 90 Watts. Tip dia., 1/2". Ship. wt., 16 oz. each \$6.50
- No. 150B — Ideal size for garage and repair work. For home use. 170 Watts. Tip dia., 3/8". Ship. wt., 24 oz. each \$9.75
- No. 300B — For heavy steel metal, auto radiators, etc. 275 Watts. Tip dia., 1 1/8". Ship. wt., 38 oz. each \$13.00

## PLUG TIP IRONS



- No. 71B — For light work, radio repairs, etc. 80 Watts. Tip dia., 3/8". Ship. wt., 16 oz. each \$6.00
- No. 101B — For same work as No. 71B, but where more speed is required or heavier work is done. For home use. 100 Watts. Tip dia., 3/8". Ship. wt., 18 oz. each \$6.50
- No. 121B — High speed iron for radio and electrical repairs. 125 Watts. Tip dia., 3/8". Ship. wt., 1 1/4 lbs. each \$7.75
- No. 201B — For same work as No. 150B, except where plug tip is desired. 200 Watts. Tip dia., 5/8". Ship. wt., 34 oz. each \$10.75
- No. 301B — For same work as No. 300B, except where plug tip is desired. 300 Watts. Tip dia., 3/4". Ship. wt., 46 oz. each \$13.00

## DISPLAYS

Increase your sales with silent salesmen. Irons securely mounted, but readily removable for sale. Individually packed in cartons ready for shipment. Catalog number and wattage shown on front of display. Complete catalog information and price list on back.

### SCROLL TYPE DISPLAY

Striking, Modernistic  
All Metal Panel

No. 1B — Nine Iron with Nos. 55B, 76B, 100B, 150B, 300B, 71B, 101B, 201B, 301B. Ship. Wt. 20 lbs. Price \$75.45

No. 2B — Seven Iron with Nos. 55B, 76B, 100B, 150B, 300B, 71B, 101B. Ship. Wt. 17 lbs. Price \$51.70

No. 3B — Five Iron with Nos. 55B, 76B, 100B, 150B, 300B. Ship. Wt. 15 lbs. Price \$39.20

No. 4B — Five Iron with Nos. 71B, 101B, 121B, 201B, 301B. Ship. Wt. 16 lbs. Price \$44.00

No. 1B DISPLAY Illustrated — Size 15" x 17 1/2" (Nos. 1B, 2B, 3B and 4B also same size).



### ATTRACTIVE THREE COLOR CARDBOARD DISPLAY



No. 5B — Three Iron with Nos. 55B, 76B, 100B. Ship. wt., 4 lbs. Price \$16.45

No. 5DB — Three Iron with Nos. 55B, 100B, 150B. on display and 2 No. 55B and 1 No. 100B for stock. Ship. wt., 8 lbs. Price \$34.60

No. 6B — Three Iron with Nos. 71B, 101B, 121B. Ship. wt., 5 lbs. Price \$20.25

No. 6B DISPLAY Illustrated — Size 12" x 16 1/2". (Nos. 5B, 5DB also same size).

HEXACON ELECTRIC COMPANY • ROSELLE PARK, N. J.

In Canada: Adam Tool & Supply Co., 1015 St. Alexander St., Montreal. Export Division: 36 Pearl St., New York 4, N. Y.

**BEST FOR SERVICE - FASTEST SELLING**

the **WEN** **PRODUCTS, INC.**

complete line of handy, low cost, electric power tools.



**3**  
**"Quick-Hot"**  
**SOLDERING**  
**GUNS**

8 STANDARD & SPECIAL TIPS



**\$7.95**  
LIST

Smaller, light (1½ lbs.). Long nose, long life tips. Hot in 2½ seconds. Automatically spotlights work. Beautifully balanced. Handle and case strong, heat and shock resisting lustrous black plastic. Ideal for soldering wires, light metals.



**\$9.95**  
LIST

Heats in 5 seconds for beyond 200 Watt rating. Light (2¼ lbs.). Has long reach, long life tips, spotlight, strong shatterproof handle and case.



**\$12.95**  
LIST

Famous WEN 250 Watt Heavy Duty Model that set records and standards for the industry. Working hot in 5 seconds. 567 hours continuous operation. Spotlights work. Solders relatively heavy materials. Comes in attractive Self-Display Carton.

**3/8"**  
**1 and 2 SPEED**  
**POWER**  
**DRILLS**



#707

**\$26.95**  
LIST

Fine new 3/8" drill geared down to 800 RPM under load to widen its field of usefulness. Available for price of ordinary 1/4" job. Has genuine 3/8" Jacobs Geared Chuck with key, 115 V. — AC/DC Universal 2 amp. Motor for ample power, Helical Gears for smooth, quiet operation. Size 9"x6". Weight 3½ lbs.



#808

**\$29.95**  
LIST

A 2-SPEED 3/8" Power Drill by WEN — and only WEN. Here in 1 tool is everything needed in an electric drill. Easy to change speeds. 1000 RPM to 3000 RPM. Husky, powerful, but streamlined design. 3/8" Geared Chuck. Universal 115 V. — AC/DC 2 amp. Motor. Overall size 12¼"x4¼"x2½". Weight 4½ lbs.

**8**  
**SAWS**  
**in 1**  
**POWER**  
**SAW**  
**AND SAW TABLE**



#505

**\$29.95**  
LIST

Does work of rip, jig, crosscut, band, hack, coping, scroll, keyhole saws. Cuts 2x4 in seconds; cuts plastics, etc.; cuts 1/2" steel plate. 115 Volt AC/DC 1.8 amp. Motor. 2650 — 3/8" strokes per minute under load. Motor fan keeps guideline free from sawdust. 3 blades included.



#5-T-1

**\$12.95**  
LIST

This sturdy steel Saw Table with WEN Power Saw locked in place constitutes a complete work shop at very low cost. Enables anyone to cut accurately and swiftly any angle, curve, or straight, as desired. Table is 15"x15"x7½". With attachments can serve as T Square or Protractor. Legs can bolt to bench. 5 blades included.

**3**  
**SANDER-**  
**POLISHERS**  
**and**  
**KITS**



#202

**\$13.95**  
LIST

Powerful motor delivers 14,400 straight line action strokes per minute. Ideal for fine finishing and polishing. Strong black plastic case. In Display Carton with 6 abrasives, 2 polishing pads.



#303

**\$16.95**  
LIST

Utility sander. 14,400 straight strokes per minute. Case strong red plastic, "Gold" metal Kit Box, 12 abrasives, 2 polishers.



#404

**\$19.95**  
LIST

Has special motor, amazing power. Drives 3¼"x6¼" sanding pad, 14,400 straight strokes per minute. Strong ebony black plastic case. In metal Kit Box with 15 abrasives, 2 polishing pads, instruction book.

**THEY'RE "NATURALS"**

for professional Service, Repair and Maintenance men and for the tremendous "Do-It-Yourself" market. They make top-notch gift items. Operating on 110-120 V AC—60 cycle, they give speedier, better performance and have longer effective life than similar tools costing much more. Fully guaranteed.

## MINIATURE SOLDERING IRONS

# ORYX

World's finest precision soldering instruments . . . from the famous Oryx Electrical Laboratories of England. Full weight as low as one-fourth ounce . . . length as little as six inches available in a complete line of AC-DC instruments with interchangeable tips.

**MINIATURE** — Full length only 6" . . . ideal for precision lab or production work.

**FEATHER LIGHT** — Full weight just ¼ oz. for most models

**QUICK HEATING** — Low voltage design achieves maximum rated heat in seconds.

**INTERCHANGEABLE TIPS** — Precision plated or solid nickel and solid nickel end.



Shown  
Model 6-A

Model	DESCRIPTION	Volts AC-DC	Watts	Max. Temp. (in °F)	Length	TIP		ALSO TAKES		NET PRICE
						No.	Diam.	No.	Diam.	
6	The smallest, lightest ORYX soldering instrument. Its precision tip greatly simplifies the manufacture and service of electrical measuring instruments, hair-spring movements, r.f. coils, and fine sub-assemblies of all kinds. Particularly recommended for soldering to transistors and diodes! Wt. . . . ¼ oz.	6	6	542	6"	fixed	⅛"	—	—	\$4.95 ea. (12 or more \$4.45 ea.)
6A	The most popular ORYX soldering instrument. Model 6A combines the light weight advantages of Model 6 with the convenience of inexpensive, replaceable tips. Widely used on hearing aids, tuners, printed circuits, and transistor amplifiers. Wt. . . . ¼ oz.	6	6	602	6"	B	⅜"	A	⅜"	\$4.95 ea. (12 or more \$4.45 ea.)
9-6 9-12 9-24	An outstanding recent development! Model 9 is unequaled for use on complex circuitry; radar, color television, missile sub-assemblies, electromedical devices, all applications calling for a precision tool with generous heat capacity. Wt. . . . ¼ oz.	6 12 24	8.3 8.3 8.3	614 614 614	6" 6" 6"	A A A	⅜" ⅜" ⅜"	B B B	⅜" ⅜" ⅜"	\$4.95 ea. (12 or more \$4.45 ea.)
11	<b>NEW!</b> This special high-temperature model develops a searing 813 degrees F. Specifically designed for high-temperature solder alloys and applications requiring a hotter iron. Uses pure nickel tip. Wt. . . . ¼ oz.	6	10	813	6"	D	⅜"	E	⅜"	\$6.95 ea. (12 or more \$6.45 ea.)
12-6 12-12 12-24 12-50	The standard ORYX instrument for radio and television service and manufacture. Model 12 has unbelievable heat capacity and is widely used by production departments, service shops, and radio amateurs. Wt. . . . ¼ oz.	6 12 24 50	12 12 12 12	652 652 652 652	6¼" 6¼" 6¼" 6¼"	C C C C	⅜" ⅜" ⅜" ⅜"	— — — —	— — — —	\$4.95 ea. (12 or more \$4.45 ea.)
18	Now . . . an unbelievably small and light miniature soldering tool for the production line or laboratory. Heat equivalent to a standard 80 watt iron. Feather weight . . . ⅜ ounce . . . virtually eliminates hand fatigue, increases production.	6	18	674	7¼"	F	⅜"	G	⅜"	\$7.50 ea. (12 or more \$7.05 ea.)

PROTECTED BY U. S. PATENTS

6-Volt  
Filament  
Transformer



Designed for all Oryx 6-volt irons. Output 18 watts, 3 amps. Operates on 110 volts AC. Includes 4½ ft. cord and clip-holder for iron.  
MODEL 54203 NET \$4.95  
Shown with Model 18

### REPLACEMENT TIPS

Spare tips available for all irons except Model 6. See instrument specifications for tips available to each model.

Tip	Material	Net Price
A	Nickel plated	\$ .50
B	Nickel plated	.50
C	Nickel plated	.50
D	Solid Nickel	1.80
E	Solid Nickel	1.80
F	Nickel plated	1.25
G	Solid Nickel end	1.85

Prices and specifications subject to change without notice.

**THE ORYX COMPANY** National Sales Agency Beverly Hills, California

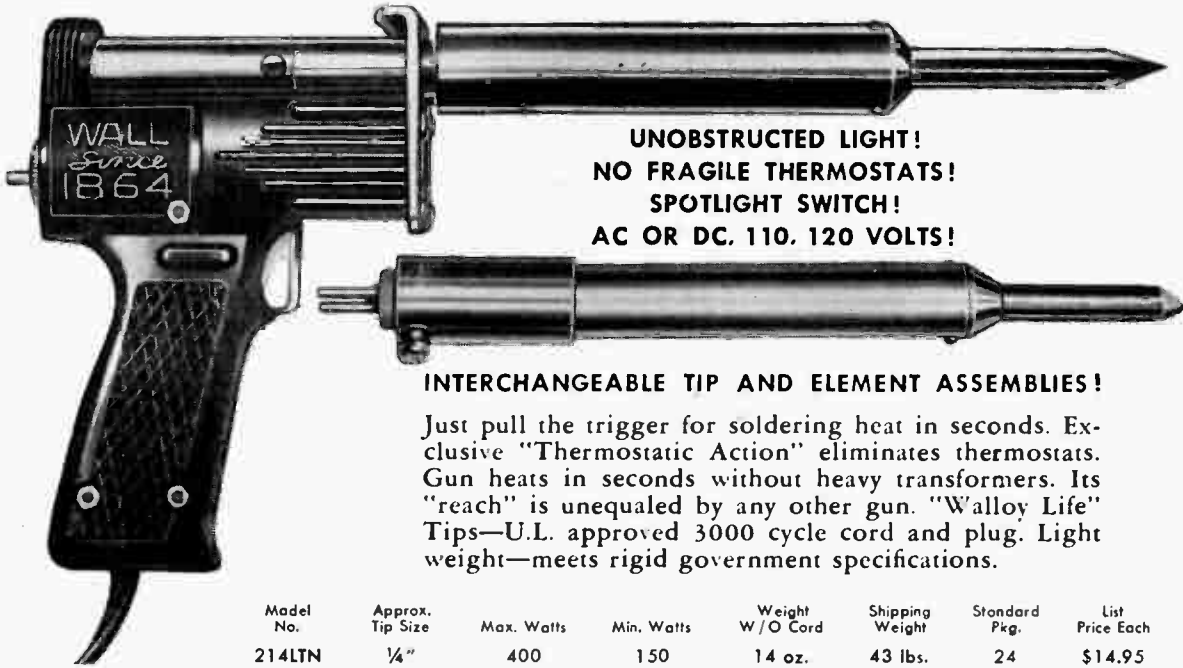


# "TRIG-R-HEAT"

Instant Electric

## SOLDERING GUNS

with "Thermostatic Action"



**UNOBSTRUCTED LIGHT!  
NO FRAGILE THERMOSTATS!  
SPOTLIGHT SWITCH!  
AC OR DC. 110. 120 VOLTS!**

### INTERCHANGEABLE TIP AND ELEMENT ASSEMBLIES!

Just pull the trigger for soldering heat in seconds. Exclusive "Thermostatic Action" eliminates thermostats. Gun heats in seconds without heavy transformers. Its "reach" is unequaled by any other gun. "Walloy Life" Tips—U.L. approved 3000 cycle cord and plug. Light weight—meets rigid government specifications.

MODEL NO. 212LT

Model No.	Approx. Tip Size	Max. Watts	Min. Watts	Weight W/O Cord	Shipping Weight	Standard Pkg.	List Price Each
214LTN	1/4"	400	150	14 oz.	43 lbs.	24	\$14.95
212LT	1/2"	650	300	24 oz.	57 lbs.	24	16.95

Attractively packed 1 to a display carton.



## POPULAR PRICED MODEL

The top instant soldering guns in the popular priced field. "Thermostatic Action"—without thermostats of any kind. No heavy, bulky transformers. Operates on AC or DC, any cycle. Has an unequaled "reach." Extremely light weight. Thermosetting Plastic Handle fits the hand comfortably. 6-ft. Underwriters' approved 3000 cycle cord and plug. Meets rigid government specifications.

MODEL NO. 238LT

Model No.	Light	Approx. Tip Size	Max.—Min. Watts	Cycles	Weight W/O Cord	Standard Package	Shipping Weight	List Price Each
238T	W/O Light	1/4"	150-75	Any Cycle	7 ozs.	50	50 lbs.	6.49
238LT	With Light	1/4"	150-75	Any Cycle	8 ozs.	50	50 lbs.	6.98

Packed 1 to an attractive display carton.



# Industrial SOLDERING IRONS

with "Thermostatic Brain"

## BUILT WITH TRIPLE LIFE, PRECISION-WOUND ELEMENTS



Precision-built to withstand "production-line punishment!" "Thermostatic Action" provides controlled heat without fragile or moving parts to wear out. "Thermostatic Action" is guaranteed for the life of the iron.



1. Built to withstand "Production-Line Punishment!"
2. "Thermostatic Action" prevents tip burning!
3. Heats 4 times faster than most other industrial irons!
4. No radionic interference while iron is in use!
5. Underwriters' Laboratories and Canadian Standards approved!
6. Successfully passed the 65° below zero test!
7. Precision wound on pure mica sheet!
8. More economical in use than others of like wattage!
9. Operates on 110-120 volts, AC or DC!
10. Meets all rigid government specifications!



No. 18 Series—1 ounce\*



No. 14 Series—2 ounces\*

## PENCIL TYPES

### Ideal for Printed Circuits

For delicate, precision work on radio, TV, electronics, small metals, jewelry, light or intricate electrical connections. Recovers faster and reduces fatigue on the production line.

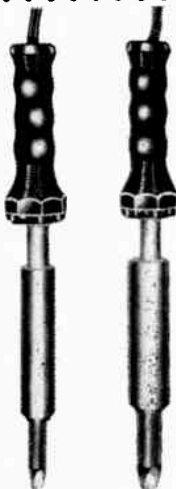
Cat. No.	Max.—Min. Watt Input	Type	Tip Metal	Volts AC-DC	Tip Size	Overall Length	Shipping Case Quantity	Shipping Case Weight
18T	90-25	Regular	Copper	110-120	1/8"	7 1/2"	50	17 lbs.
18TW	90-25	Regular	Walloy	110-120	1/8"	7 1/2"	50	17 lbs.
18HD	25	Heavy Duty	Copper	110-120	1/8"	7 1/2"	50	17 lbs.
18HDW	25	Heavy Duty	Walloy	110-120	1/8"	7 1/2"	50	17 lbs.
14T	125-40	Regular	Copper	110-120	1/4"	8"	50	19 lbs.
14TW	125-40	Regular	Walloy	110-120	1/4"	8"	50	19 lbs.
14HD	40	Heavy Duty	Copper	110-120	1/4"	8"	50	19 lbs.
14HDW	40	Heavy Duty	Walloy	110-120	1/4"	8"	50	19 lbs.

\*Wt. without card

Packed 1 to a box.

## EXTRA HEAVY DUTY PRODUCTION IRONS

Made to withstand uninterrupted soldering service of medium and medium heavy metals. Heavy metal electrical connections. Heavy duty . . . but light in weight.



58T

78T

Cat. No.	Max.—Min. Watt Input	Type	Tip Metal	Volts AC-DC	Tip Size	Overall Length	Shipping Quantity	Case Wt.
38T	225-80	Regular	Copper	110-120	3/8"	12 1/2"	50	61 lbs.
38TW	225-80	Regular	Walloy	110-120	3/8"	12 1/2"	50	61 lbs.
38HD	80	Heavy Duty	Copper	110-120	3/8"	12 1/2"	50	61 lbs.
38HDW	80	Heavy Duty	Walloy	110-120	3/8"	12 1/2"	50	61 lbs.
12T	300-125	Regular	Copper	110-120	1/2"	13"	50	73 lbs.
12TW	300-125	Regular	Walloy	110-120	1/2"	13"	50	73 lbs.
12HD	125	Heavy Duty	Copper	110-120	1/2"	13"	50	73 lbs.
12HDW	125	Heavy Duty	Walloy	110-120	1/2"	13"	50	73 lbs.
58T	500-200	Regular	Copper	110-120	5/8"	13 1/2"	25	50 lbs.
58TW	500-200	Regular	Walloy	110-120	5/8"	13 1/2"	25	50 lbs.
58HD	200	Heavy Duty	Copper	110-120	5/8"	13 1/2"	25	50 lbs.
58HDW	200	Heavy Duty	Walloy	110-120	5/8"	13 1/2"	25	50 lbs.
78T	750-300	Regular	Copper	110-120	7/8"	14"	25	70 lbs.
78TW	750-300	Regular	Walloy	110-120	7/8"	14"	25	70 lbs.
78HD	300	Heavy Duty	Copper	110-120	7/8"	14"	25	70 lbs.
78HDW	300	Heavy Duty	Walloy	110-120	7/8"	14"	25	70 lbs.

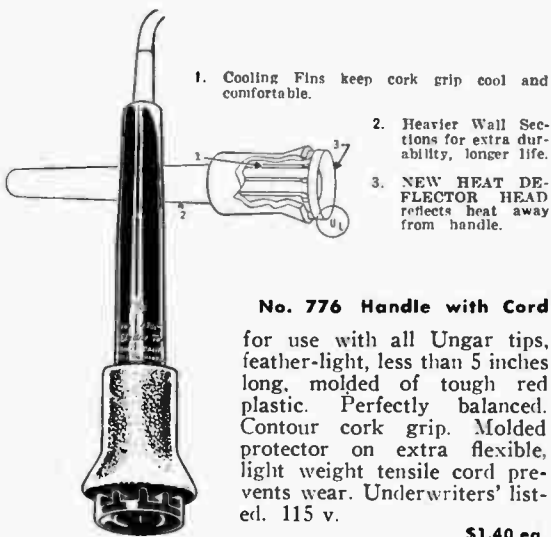
Packed 1 to a box.

# Ungar

## heavy duty soldering iron

WITH INTERCHANGEABLE TIPS AND TIPLETS

The world's most complete line of pencil soldering irons with its series of interchangeable soldering tips has been designed to speed soldering production — reach into those hard-to-get-at soldering points and replace the big bulky irons that promote fatigue and add costly man hours and overhead.



### No. 776 Handle with Cord

for use with all Ungar tips, feather-light, less than 5 inches long, molded of tough red plastic. Perfectly balanced. Contour cork grip. Molded protector on extra flexible, light weight tensile cord prevents wear. Underwriters' listed. 115 v.

\$1.40 ea.

### 1200 HI-HEAT SERIES - 750° to 800° F. - 37½ Watts For general service and light production soldering



#### No. 1236 Pyramid Tip 37½ Watts - 800° F.

Solid Armeo pure iron, silver plated. 1¼" long, 5/16" dia. 115 v. \$1.50 ea.

#### No. 1239 Chisel Tip 37½ Watts - 800° F.

1¼" long, ¾" dia. Requires minimum maintenance. Solid Armeo pure iron, silver plated. 115 v. \$1.50 ea.

#### \*No. 1235 Heating Unit 37½ Watts - 750° F.

For use with No. 300 series (Elkaloy) and PL 300 series (iron plated) tiplets. Also used for printed circuit repair. Triplet ¼" dia., 1" long, threads into heating unit. 115 v. \$1.50 ea.

### SUPER HI-HEAT TIPS No. 4000 SERIES 850° - 900° - 1000° for Heavy Duty - 47½ Watts



#### No. 4033 Chisel Tip 900° F. - 47½ Watts

For large metal parts such as chassis. 1¾" long - ¼" wide - copper base plated with iron and pure silver. 115 v. \$3.00 ea.



#### No. 4036 Pyramid Tip 47½ Watts - 1000° F.

Iron and silver plated for long life. For heavy duty soldering. 1¾" long, ¾" dia. 115 v. \$3.00 ea.



#### No. 4039 Heavy Chisel Tip 47½ Watts - 1000° F.

Plated with iron and silver. Needs no filing or grinding. 1¾" long, ¾" dia. 115 v. \$3.00 ea.



#### \*No. 4035 Heating Unit 47½ Watts - 850° F.

For use with No. 300 series tiplets (Elkaloy) and PL 300 series (iron plated). Tiplets 1" long, ¼" dia. Screw into threaded heating unit. 115 v. \$3.00 ea.

### UNGAR No. 500 SERIES 23½ Watts - 650° to 700° F. for Printed Circuits



#### No. 536 Pyramid Tip 23½ Watts - 700° F.

For use in instrument repair, general purpose repair and maintenance. 1¾" long, 5/16" dia. 115 v. \$1.25 ea.



#### No. 539 Chisel Tip 23½ Watts - 700° F.

For small, broad surface joints. 1¾" long, ¾" dia. 115 v. \$1.25 ea.



#### \*No. 535 Threaded Heating Unit - 23½ Watts - 650° F.

For use with tiplets No. 300 series (Elkaloy) and PL 300 series (iron plated), for smallest miniaturized components. A must for printed circuit repair. 1¾" long, 5/16" dia. Delivers 650° to each of 3 tiplets. \$1.25 ea.



No. 331 No. 332 No. 333

#### \*No. 300 Series Elkaloy "A" Tiplets

Designed especially for use with heating units No. 535, 1235 and 4035, for fine precision work. Made of Elkaloy "A" P. R. Mallory's high temperature copper alloy for perfect tinning. Each triplet interchangeable, making a single heating unit do the work of 3. ¼" dia. x 1" long. 20c ea.

#### New Iron-Plated Tiplets — \*No. PL 300 Series

Tiplets similar to above but iron and silver plated for longer life. Will last ten times as long. PL331 — PL332 — PL333. 60c ea.

All tips and tiplets come packed in plastic vials for ease of handling and cleanliness.

#### HEAVY DUTY—PRECISION SOLDERING AND ELECTRICAL KIT



No. 507—Contains UNGAR Heavy Duty Handle, Heavy Duty Soldering Tip, Precision Heating Unit with triplet, circuit tester, trouble and test light, resin core solder, terminal connectors and tape. Beautifully packed in an easel, blister package. An ideal kit for the electronic trade.

\$4.95 each

# Ungar

## ELECTRIC TOOLS, INC.

LOS ANGELES 66, CALIF.

# KWIKHEAT THERMOSTATIC SOLDERING IRONS

Built-in Vanatta Automatic Thermostat

## KWIKHEAT TYPE NO. 200

**HOT IN 80 SECONDS**  
**150 Watts—115 Volts AC Only**

Weight of Iron with Tip.....7½ oz.  
 Shipping Weight per Iron with ⅜" x ¼" Dia. Tip and resting stand .....1 lb. 2 oz.  
 Length of Iron with ⅜" x ¼" Dia. Tip .....12¾"  
 Length of Heater Cord.....6 ft.

### HOT IN 80 SECONDS

**List Price**  
 Iron complete with tip..... \$9.95  
 Replacement Elements ..... 6.95  
 Tip ⅜" x ¼" Dia. Pyramid Point ..... 1.10

### CHECK THESE ADVANTAGES

KWIKHEAT JR. has been designed to meet the demand by the electronics industry for a lighter and smaller **PRODUCTION** tool. The element is readily replaced in the field by use of screwdriver, pliers, and small punch or nail.

### CORROSION RESISTANT

Core assembly and outer shell are made of **STAINLESS STEEL**.

### HOT IN 80 SECONDS

The watt density of the heating element is very high and completely controlled by the thermostat.

### TEMPERATURE

While the thermostat is preset at the factory, two standard temperatures are available—Standby Irons, used for intermittent bench work, servicing, and engineering, set at 700°F; **PRODUCTION** Irons, used for constant high speed soldering, set at 800°F.

### TIPS

Tips, plunger type ⅜" x ¼" diameter x 4" long, plated to reduce corrosion. It is advisable to keep tips inserted completely in the cavity of the element for complete temperature control.

Tip 2051..... 1.10 Tip 2052..... .80  
 Tip 2053..... .90

## KWIKHEAT TYPE NO. 300

**HOT IN 90 SECONDS**  
**225 Watts—115 or 230 Volts AC Only**

Weight of Iron with Standard No. 1 Tip .....14 oz.  
 Shipping Weight per Iron with No. 1 Tip and resting stand ....1½ lb.  
 Length of Iron with No. 1 Tip...13"  
 Length of Heater Cord .....6 ft.

### HOT IN 90 SECONDS

**List Price**  
 Iron complete with tip .... \$14.95  
 Available in other AC Voltages Available with 3 Conductor Cord add 2.75  
 Replacement Elements .... 10.85  
 Tips, any style ..... \$1.80 to \$2.70

### TEMPERATURE

The Kwikheat Element can be set at the factory to any desired tip temperature between 275° and 875° F. Additional charges for this service:

1 to 49 .....\$1.00 ea.  
 50 to 99 ..... .50 ea.  
 100 or more .....standard price

### CORROSION RESISTANT

Tips and core are forged of tellurium copper alloy and plated for resistance to corrosion.

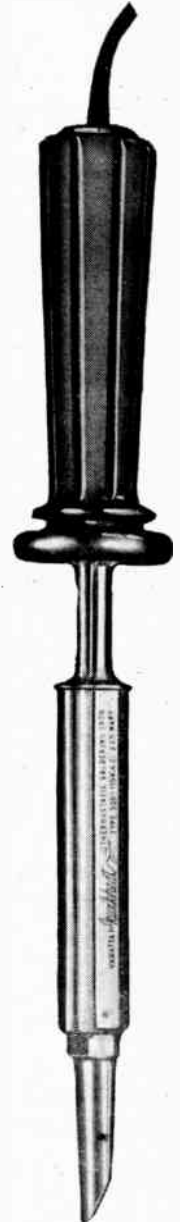
### HOT IN 90 SECONDS

Kwikheat Thermostatically controlled soldering irons are the only irons containing built-in thermostats, allowing a much greater watt density with less radiation of heat.

### TEMPERATURES ARE PRE-SET

The use of recently developed alloys have permitted the increase of thermostat temperatures with reduced creep.

**WHEN IRONS ARE TO BE USED FOR HEAVY OR HIGH SPEED SOLDERING—SPECIFY A PRODUCTION IRON.**

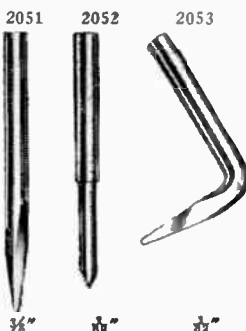


## #20 ANTIFREEZE COMPOUND

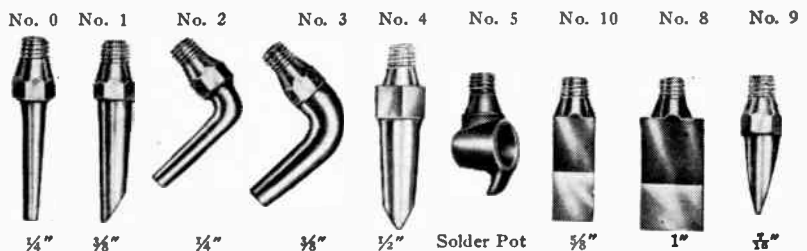
A lubricant for all soldering iron tips. Prevent sticking, increases conductivity between tip and core.

Please contact your jobber for trade discounts.

### TYPE 200 TIPS



### 9 INTERCHANGEABLE TIPS FOR TYPE 300



**KWIKHEAT MFG. CO.**

**Glendale 4, California**

# VULCAN

## ELECTRIC SOLDERING TOOLS

- High-powered Soldering Tools, designed for fast soldering, with low operating cost.
- Tips are of finest forged copper.
- The "Hang" or balance good mechanics appreciate, plus light weight.
- Cool handles of selected birch, shaped to fit the hand.
- 6 ft. heater cord, with unbreakable rubber plug.
- Fireproof terminals.
- Heating elements easily replaced.
- Operate equally well on AC or DC.



SCREW TIP 

### Pygmy PENCIL TYPE

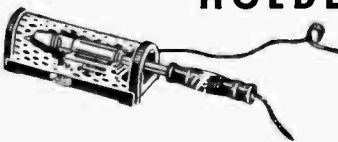


A very efficient tool for fine soldering of instruments, meters, gauges, small radios, etc. or any spots where space is cramped or there is little clearance. The cool,

tapering wood handle permits "writing grip." Flexible coil also assures coolness. Equipped with approved cord and unbreakable rubber plug. Standard tip is 1/4" but 3/16" or 1/8" tips are available, as well as special tips, bent to any angle or in various shapes.

Cat. No.	Watts	Tip	Weight	Length	List
Pygmy	25	1/4"	7 oz.	8 1/4"	\$5.10

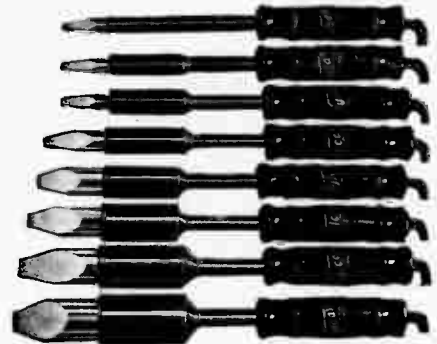
### SOLDERING TOOL HOLDER



Holds and guards the Soldering Tool and keeps the tip at soldering temperature as long as it remains in the holder. Has a cord and attached plug cap for connection to current and a receptacle for plugging in the Tool. A convenient adjusting screw sets the Holder thermostat to maintain proper temperature. AC only

No. 2100	without thermostat	\$4.50 list
No. 2100T	with thermostat	\$7.30 list

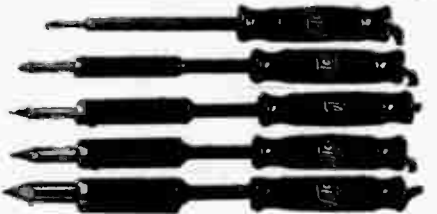
CAT. No.	WATTS	TIP	LIST
20	50	3/16"	\$6.55
30	60	1/2"	8.95
40	90	1/2"	9.80
50	130	3/8"	11.65
60	175	1"	13.35
70	220	1 1/8"	15.50
80	310	1 3/8"	17.70
90	430	1 5/8"	20.15
900	700	1 3/4"	37.30



### PLUG TIP — All parts replaceable

CAT. No.	WATTS	TIP	LIST
* 25	50	1/4"	\$6.25
35	100	3/8"	9.80
453	150	3/8"	10.65
45	150	1/2"	11.15
55	200	3/8"	11.55
* 75	300	3/8"	15.10

\*Heating element replaceable at Factory only.



### ELECTRIC SOLDER POTS

Both single and three-temperature Pots in a variety of sizes and wattages, all with cord and plug approved at Underwriters' Laboratories.

CAT. No.	WATTS			CAPACITY SOLDER APPROXIMATE	LIST
	HIGH	MEDIUM	LOW		
1700	200	120	80	1 1/4 lbs.	\$24.60
1702	250	150	100	5 lbs.	28.45
1704	500	250	125	10 lbs.	32.75
1600	150	Single Heat		14 oz.	9.00
1606	350	Single Heat		3 lbs.	9.95
1701	250	Single Heat		4 lbs.	19.15
1703	200	Single Heat		1 1/2 lbs.	13.95

Other sizes up to 6000 watts, single heat.

"DUREVER" Soldering Tips are pure forged copper, shaped to your favorite style, with a special metal coating that will preserve the original shape of the tip by protecting the copper from corrosion and oxidation. Will outlast copper tips, cannot amalgamate with solder, do away with the necessity for dressing or filing. Can be readily tinned without filing and hold their original shape. Circular on request.



## ELECTRIC COMPANY

DANVERS 30, MASS.

ELECTRIC SOLDERING TOOLS • SOLDER POTS • GLUE POTS • BRANDING IRONS • HEATING UNITS



# VULCAN

## ELECTRIC SOLDERING TOOLS

### LOW PRICE, LONG DISCOUNT

# JACKSON

Jackson "Standard" Electric Soldering Irons are scientifically designed for that "balanced feel" which reduces fatigue. All elements used in Jackson Standard Irons are made of the finest quality nichrome wire, wound on heat conductive cores and insulated with selected high grade amber mica. Equipped with 6 ft. approved heater cards and plugs. Stand included with every iron.



STANDARD SCREW TYPE — Gun Metal Finish

CAT. No.	WATTS	TIP	LIST
141	85	3/16"	\$4.35
142	100	5/16"	5.70
0142	125	3/8"	6.45
144	150	1/2"	7.75
143	225	5/8"	9.30
210	350	7/8"	10.05



STANDARD PLUNGER TYPE (Plug Tip) — Gun Metal Finish

CAT. No.	WATTS	TIP	LIST
149	85	5/16"	\$4.35
145	100	3/8"	5.70
0145	125	3/8"	6.45
146	150	1/2"	7.75
147	225	5/8"	9.30
148	350	7/8"	10.05



DE-LUXE ELECTRIC SOLDERING PENCIL

A soldering pencil for all light work such as Radio, Television, Jewelry, Instruments and Electronics. Handle is cork-filled composition, 100% air cooled: 1/2" steel tubing, perforated for air cooling. Element is wound on a heat conductive core, for efficient heating. High grade mica and nichrome wire. Underwriters approved 6 ft. rubber cord and plug.

CAT. No.	WATTS	VOLTS	TIP	LENGTH	WEIGHT	LIST
230D	25	115	1/4"	7"	3 oz.	\$2.75



STANDARD ELECTRIC SOLDERING PENCIL

Wood handle, rich black finish with cork sleeve. 1/2" steel tubing gun metal finish. Element is wound on heat conductive core. High grade mica and nichrome wire. 6 ft. rubber cord and plug.

CAT. No.	WATTS	VOLTS	TIP	LENGTH	WEIGHT	LIST
230	25	115	1/4"	7"	3 oz.	\$2.30
231	40	115	3/8"	8"	4 oz.	4.10



COMET — SCREW TIP\*

Comet Irons are equipped with a 6 ft. approved Heater Cord and Plug. Heating element is made of high quality Nichrome Wire, wound with mica on a core. Handles are black finish. All irons are packed one in a box, stand included. 50 to a standard shipping container. All irons are made for 115 volts. If higher voltage is desired, there will be a slight extra charge.

CAT. No.	WATTS	TIP	LIST
65 S	65	1/2"	\$3.10
85 S	85	5/8"	3.60
100 S	100	3/4"	4.10
125 S	125	7/8"	4.90



COMET — PLUNGER (PLUG) TIP

CAT. No.	WATTS	TIP	LIST
65 P	65	1/4"	\$2.30
85 P	85	5/16"	2.70
100 P	100	3/8"	3.35
125 P	125	7/8"	4.10

\*Discontinued manufacture of screw-on type comet line. Limited number of irons still available.



## VULCAN **EVEN-DIP** SOLDER POTS

DESIGNED AND DEVELOPED BY SPECIALISTS  
FOR PRINTED CIRCUIT SOLDER OPERATIONS

- 16 Crucible Sizes.
- High Fidelity thermostat control—Adjustable 150-600° F.
- Surface Temperature does not vary beyond ± 2° F.
- Localized "hot spots" completely eliminated.
- Replaceable heavy-duty heating elements.

Send for free, detailed specifications.



## ELECTRIC COMPANY

DANVERS 30, MASS.

ELECTRIC SOLDERING TOOLS • SOLDER POTS • GLUE POTS • BRANDING IRONS • HEATING UNITS

YOU NEED A SPECIAL TOOL...FOR A SPECIAL JOB

*Lenk*  
**"PRINTED CIRCUIT"  
 SOLDERING GUN**  
 for  
**Printed Circuits  
 and Miniaturized  
 Components**



**Fast Soldering**

Exclusive "Controlled Heat" produces proper amount of heat for quick, easy soldering.

**Prevents Damage**

Exclusive "Controlled Heat" reduces possibility of damage to delicate printed circuits or miniaturized components.

**Pin-Points the Work**

Precision-designed tip pin-points the tip onto the work quickly and accurately.

**Lightweight - Comfortable**

Exclusive "Easy Grip" handle and lightweight (only 1 lb. approx.) reduce fatigue.

**MODEL NO. 560**  
 110 volts - AC only  
 Display Carton  
 24 to case - 34 lbs.

**REPLACEMENT TIPS**  
 No. 560-1 - 45° Angle  
 No. 560-2 - Straight

Printed Circuit photograph  
 courtesy of Electricalab, Inc.



*Lenk*  
**"PENCIL TYPE"  
 SOLDERING IRON**  
 for  
**Fast Continuous  
 Precision Work**

**MODEL NO. 251**  
 25 watts  
**MODEL NO. 256**  
 40 watts  
 4 lbs. per doz.



**MINIATURE DESIGN** for fast, continuous production of precision work. TV, Radio, Electronic Components, etc.

2 TIPS 1/8" Tip standard - 1/4" Tip extra!

**FEATHER-LIGHT** - only 2 oz.!

**COMPACT** - only 7 1/2" over-all!

**PLATED TIPS** resist corrosion!

**FAST HEATING** - brass core element!

**EXTRA RUGGED** - stainless steel construction!

**EXTRA COOL** - cooling fins, plastic handle!

**BALANCED** - easy to handle, fatigue-reducing!



*Lenk*

**INSTANT IH HEAT**

**SOLDERING GUN**  
 for  
**Heavy Duty Service**



**MODEL NO. 501**  
 Heavy Duty  
 180 Watts AC Only

Packed in  
 counter display carton.  
 12 cartons to case -  
 35 lbs.

**REPLACEMENT TIPS**

No. 501-1 - Standard  
 No. 501-2 - For Fine Work  
 No. 501-3 - Tile Cutting

**INSTANT SOLDERING** for Radio, TV, Laboratory and Service Men!

**MELTS SOLDER** in 3 1/2 seconds!

**PERFECT BALANCE** for working comfort!

**ADJUSTABLE SWIVEL-TIP** permits any angle soldering!

**SPECIAL ALLOY TIP** for increased resistance to oxidation and wear!

**AUTOMATICALLY FOCUSED LIGHT** always follows work!

Write for Name of Nearest Jobber

**The LENK MANUFACTURING CO.**  
 FRANKLIN, KENTUCKY

# Two famous

## KESTER FLUX-CORE SOLDERS



### KESTER "RESIN-FIVE" CORE SOLDER

Formulated especially for Radio and TV; will easily solder such metals as brass, zinc and ferrous alloys. It is non-corrosive and non-conductive.



### KESTER PLASTIC ROSIN-CORE SOLDER

The most widely used solder in the TV and radio field. All Kester Solders are made from the finest tin and lead available.

- ★ Kester Plastic Rosin-Core Solder
- ★ Kester "Resin-Five" Core Solder
- ★ Kester "44" Resin-Core Solder
- ★ Kester TV-Radio Solder
- ★ Kester Acid-Core Solder
- ★ Kester "A" Flux-Core Solder
- ★ Kester Nospot Flux-Core Solder
- ★ Kester Knorust Flux-Core Solder
- ★ Specialized Flux-Core Solders
- ★ Solid Wire and Bar Solders
- ★ Kester "Solderforms," Rings, Pellets, Washers, Unusual Shapes
- ★ External Rosin Soldering Fluxes
- ★ Other Fluxes
- ★ Kester Soldering Iron Brackets

### For Peak Soldering Efficiency, It's Kester!

Kester offers every conceivable type of Solder product. Strand sizes as small as .008" diameter in Flux-Core Solder, unusual alloys and varying Flux contents or Core sizes.

### A Technical Service for Manufacturers

If you are not getting peak efficiency or have a specific problem in your soldering operations, take advantage of the facilities of Kester's Technical Department. . . . It costs you nothing.

STANDARD FOR THE TV AND RADIO FIELD



KESTER SOLDER COMPANY

Chicago 39, Illinois • Factories Also at Newark, New Jersey - Brantford, Canada



### TECHNICAL ADVANTAGES

#### ERSIN FLUX

Ersin Flux is exclusive to Multicore and will not be found in any other solder. It is a high grade, water white rosin, homogeneously activated.

Ersin Flux has a vigorous fluxing action and possesses the non-corrosive and protective features of the original rosin. Soldered joints made with Ersin Flux do not corrode even after prolonged exposure to any degree of humidity. Ersin Flux reduces the surface tension of molten solder, causing it to wet metals rapidly, increasing speed of operation with resultant production economies.

Free from objectionable odor. Non-toxic in use. Leaves nothing but pure rosin on the work after soldering, and may be used wherever plain rosin is specified.



**ONLY SOLDER MADE WITH  
NON-CORROSIVE, EXTRA-ACTIVE  
ERSIN FLUX!**

#### MULTICORE SOLDER

Five separate cores of flux eliminate possibility of no flux in a portion of the wire, which may occur in single cored solder. Guaranteed continuity of the flux stream prevents "dry" joints, i.e., those having high electrical resistance.

Although there are five cores of flux in Multicore, the total percentage of flux to solder is less than many single cored solders.

Very rapid melting results from the multiple core construction which provides thinner walls of solder than are found in the same gauge single cored solder. Multicore's unique properties make perfect joints possible on difficult metals and alloys, even if oxidized.

Ability to tin rapidly produces perfect joints with less solder. Greater coverage per pound.

Standard Wire Gauge	Diam. in Inches	Diam. in M/ms.	Approximate Number of Feet per lb.					
			ALLOY					
			Tin content is shown first					
			60/40	50/50	45/55	40/60	30/70	20/80
10	.128	3.251	24.5	23.6	23.3	22.7	21.6	20.8
12	.104	2.642	37.2	35.7	35.2	34.6	32.7	31.5
13	.092	2.337	47.5	45.6	45	44	41.9	40.4
*14	.080	2.032	62.8	60.2	59.4	58	55.2	53.2
*16	.064	1.626	98	94.3	93	91	86.5	83.4
*18	.048	1.219	174.5	167	165	161	154	148
19	.040	1.016	251	241	238	232	221	212
20	.036	.914	310	298	294	287	273	263
22	.028	.711	512	492	486	474	452	436

ALLOY Tin/Lead	B.S. Grade	MULTICORE Color Code	MELTING TEMPERATURES		Recommended bit temperature	
			Solidus of all these alloys is 183° C.-361° F.		° C.	° F.
			° C.	Liquidus		
*60/40	K	Red	189	372	229	444
*50/50	F	Yellow	214	417	254	489
*45/55	(M)	Crimson/Buf	225	437	265	509
*40/60	G	Green	232	450	272	522
30/70 (Special Order)	J	White	255	491	295	563
20/80 (Special Order)	—	Purple	275	527	315	599

\*Standard stock items. Other diameters and gauges on special order.

**"GENALEX"**  
Finest Audio Tubes Ever Made

**"GENALEX"**  
2729 TUBE

A low hum low microphonic, voltage amplifying Audio Pentode expressly designed for use in high quality, high gain audio pre-amplifier and equalizer stages. Fits standard 9 pin miniature socket.

"Genalex" KT66 power tetrode may be used in the output stage of an audio-frequency power amplifier, tetrode or triode-connected; or in transmitting circuits using frequencies up to 30 Mc/s as an oscillator or radio frequency amplifier.

New, KT88! Up to 100 watts audio from a pair of KT88 tubes with a plate supply of only 560 volts. Low distortion, Small size.

**S. G. BROWN**  
HI-FI HEADPHONES

Type K—Hi-Fi Headphones of the very highest quality. Available with monaural/binaural wiring. Response—From 50 to over 10,000 cycles. Moving Coil type motor assemblies. Bakelized conical diaphragm. 6,000 lines flux density. 3 standard impedances—52 ohms, 600 ohms and 18,000 ohms. 6½ ft. cord. Rugged construction. Complete with rubber ear cushions. Highly polished headband and cases.



**BRITISH INDUSTRIES CORPORATION • PORT WASHINGTON, N. Y.**

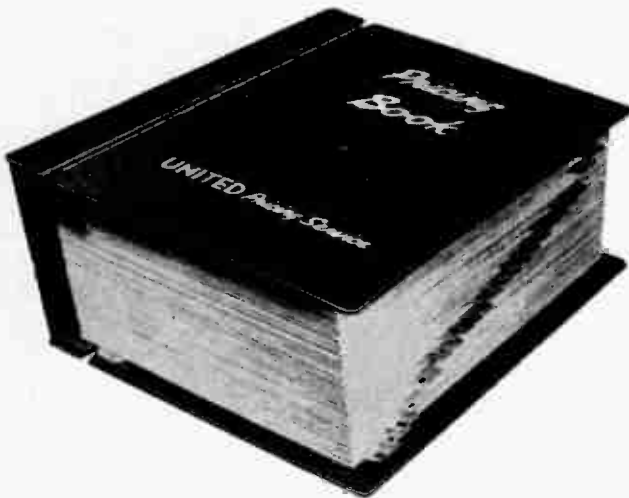
# PRICES

All prices listed in The MASTER are subject to change without notice — they should not be considered final.

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## UNITED PRICING SERVICE

The Perpetual Pricing System for  
Radio-Television-Electronic Parts and Equipment



- Over 750 manufacturers
- Over 400,000 catalog numbers tabulated with current prices
- Revised pages mailed weekly: insert new pages—discard old pages
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60 MADISON AVENUE

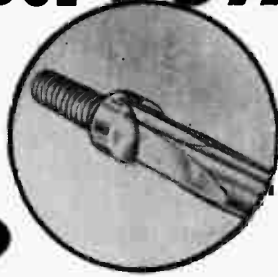
HEMPSTEAD, N. Y.

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# DELIVERY

Delivery is often dependent on availability of raw materials. Check with your distributor for delivery information at the time you place your order.

# QUICK-WEDGE *SCREW-HOLDING* SCREWDRIVER



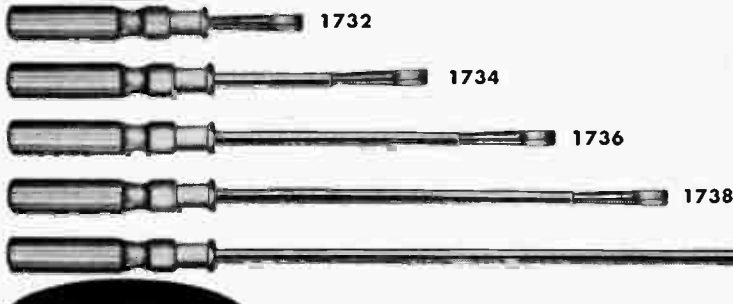
*America's Handiest!*

A Quick-Wedge  
Screw-Holding  
Screwdriver  
for Every Job

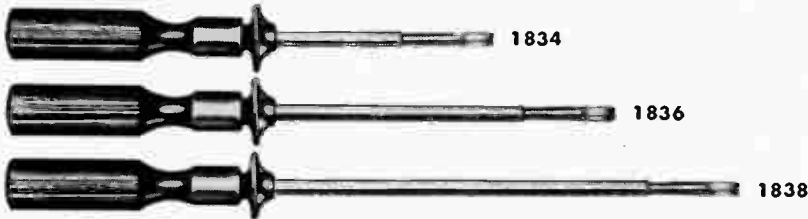
## MIDGET SIZES



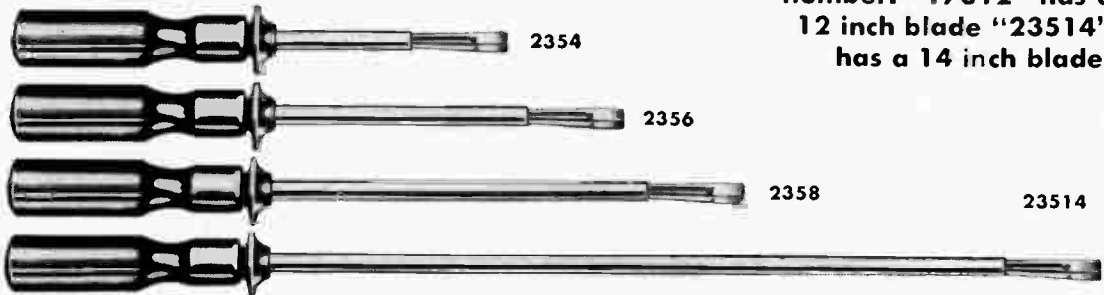
## SMALL SIZES



## MEDIUM SIZES



## HEAVY DUTY SIZES



Blade length is indicated  
by last digit of model  
number. "17312" has a  
12 inch blade "23514"  
has a 14 inch blade.



## ELECTRICAL SIZES

Any of the 14 sizes (except No. 1732) available with shockproof, plastic covered tubing at a cost of 15c additional per screwdriver.

**KEDMAN COMPANY • Salt Lake City, Utah**

*Other Kedman Products--The Famous  
Huntsman Welding Shields and  
Kedman Carrying and Sample Cases*



**Klein Side-Cutting Pliers**

The famous Klein side-cutting plier that has been the standard in the electrical industry from the start. Handles are shaped to the curvature of the hand for added comfort. Powerful leverage and keen reinforced cutting knives make this plier adaptable for every job.



Cat. No.	Size
201-5	5 in.
201-6	6 in.
201-7	7 in.
201-8	8 in.
201-9	9 in.

**Klein Side-Cutting Plier N.E. Type (Streamlined)**

Similar to the 201 shown above except that the nose is rounded to permit working in confined space. All edges are also rounded to prevent any danger of nicking wire.



Cat. No.	Size
201-5 N. E.	5 in.
201-6 N. E.	6 in.
201-7 N. E.	7 in.
201-8 N. E.	8 in.
201-9 N. E.	9 in.

**Klein Kut High-Leverage Plier**

A quality plier that will cut regular wire and also provide easy cutting of weatherproof hard-drawn copper wire up to No. 2. Can be used for A. C. S. R.

Gives necessary high leverage without extra hinging or uncomfortable widespread handles. Weighs no more than regular side-cutting pliers.



Cat. No.	Size
213-9	9 in.

**Klein Kut High-Leverage Plier N. E. Type (Streamlined)**

The same as 213-9 shown above, but with the rounded nose and edges characteristic of all Klein N. E. Streamlined side-cutting pliers. Like the 213-9 this N. E. type has the unique high-leverage characteristics that permit cutting through heavy-duty wire with one-hand operation.

Cat. No.	Size
213-9 N. E.	9 in.

**Klein Long-Nose Plier**

The famous Klein long-nose plier that has become the standard for electricians and general mechanics. The extra-long range of the jaws permits getting into small, difficult places. Ideal for television, radio, telephone work, armature winding, etc. Specially hardened and tempered to assure positive grip at point of nose when pressure is applied. Point 3/32 in. round.



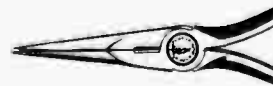
Cat. No.	Size
301-5	5 in.
301-6	6 in.
301-7	7 in.

\*This plier has extra-long nose measuring 2 3/4 inches from center of hinge to point.

Available with Spring

**Klein Long-Nose Side-Cutting Plier**

This plier has the same features as the No. 301 series shown above but in addition, cutting knives are provided at the hinge. These knives are carefully sharpened, hardened, and tempered, assuring true cutting. Point 3/32 in. round. \*This plier has extra-long nose measuring 2 3/4 inches from center of hinge to point.



Cat. No.	Size
203-5	5 in.
203-6	6 in.
203-7	7 in.

Available with Spring

**Klein Long-Nose Plier with Knife at Point**

This plier is designed to permit cutting light wires where it is necessary to reach into confined spaces such as in radio and TV sets. Largely used in manufacturing and servicing radios and TV sets.



Cat. No.	Size
301-6P	6 in.

Available with Spring

**Klein Special Needle-Nose Plier**

This needle-nose plier is designed to reach into extremely small spaces. Tip of nose measures less than 1/16 in. Nose of plier specially tempered to prevent distortion.



Cat. No.	Size
301-6-SCP	6 in.
203-6-SCP with cutters	6 in.

Available with Spring

**Klein Needle-Nose Plier with Stripping Notches**

A needle-nose plier similar to 203 but with two stripping holes in the cutting blades. Designed to strip insulated wire, gauge 19 and 22. Used extensively in telephone and electronics fields.



Cat. No.	Size
203-6-H2	6 in.

**Klein Long-Nose Plier**

A newly designed plier with an extremely slim nose suitable for working in confined places. Jaws are knurled to assure a positive grip.

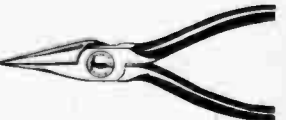


Cat. No.	Size
307-5 1/2	5 1/2 in.

Available with Spring

**Klein Chain-Nose Plier**

Suitable for all types of precision work in close quarters—over-all dimensions smaller than standard Klein chain-nose pliers. Furnished with a very fine knurl that will not damage soft wire. Can be supplied without knurl to order.



Cat. No.	Size
317-5	5 in.

Available with Spring

**Klein Duckbill Plier**

A new, small plier with duckbill jaws sufficient width to hold small springs, yet small enough to form wire in confined places. Furnished standard without knurl.



Cat. No.	Size
306-5 1/2	5 1/2 in.

Available with Spring

**Klein Chain-Nose Plier**

This plier is intended for general use where a shorter nose than that provided in the Klein long-nose plier is desired.



Cat. No.	Size
317-6	6 in.
217-6	6 in. with cutters

**Klein Long Flat-Nose Plier**

The long, flat nose of this plier makes it particularly adaptable to switchboard work, telephone and telegraph work, armature winding, etc. Hardened and tempered so that the jaw will not spring when pressure is applied. Ideal for spring adjusting. Usually furnished with knurled jaws but inside of jaws may be left smooth if desired. With or without cutting knives.



Cat. No.	Size
305-6 without cutting knives	6 in.
206-6 with cutting knives	6 in.



**Klein Traverse End-Cutting Plier**

This is a long-nose plier for reaching into confined spaces with keen-cutting knives at the end. Ideal for switchboard or TV wiring, wherever it is necessary to work in confined space. Particularly useful in precision work where ordinary oblique or end cutters are too large.



Cat. No. 204-6 Size 6 in.

Available with Spring

**Klein "Auto" Oblique-Cutting Plier "Handform" Handles**

Made especially for mechanics who want a high-quality oblique cutter. Knives are close cutting and carefully matched their full length. Useful for pulling cotter pins, etc. "Handform" handles assure greater comfort.



Cat. No. 220-7 Size 7 in.

**Klein Heavy-Cutting Oblique Plier**

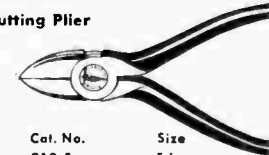
Similar to 220-7 shown above but with 3/8-in. jaw for ease in heavier cutting. This short-nosed plier is particularly useful where extra leverage is required.



Cat. No. 220-7 SN Size 7 in.

**Klein Oblique-Cutting Plier**

For cutting small wires or trimming plastic. Entire length of cutting knives works flush against cutting surface, giving a close, clean trim.

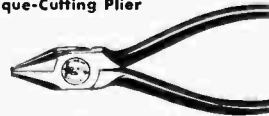


Cat. No. 210-5 Size 5 in.  
 210-6 Size 6 in.

Available with Spring

**Klein Lightweight Oblique-Cutting Plier**

Smaller than 210-5 shown above with an extremely narrow head for cutting in confined places.



Cat. No. 209-5 Size 5 in.

Available with Spring

**Klein Oblique Skinning Plier**

(Bell System Type; "V" Notch Diagonal)

A special plier designed for work on switchboards, amplifiers or wherever small wire must be skinned. "W" Notch is provided to slit acetate. An additional "V" notch is provided at the hinge to crush insulation.



Cat. No. 528 Size 5 in.

**Klein Narrow-Nosed Oblique-Cutting Plier**

A handy tool designed to get into confined places. Cuts close. Knives are fitted to meet accurately at all points.

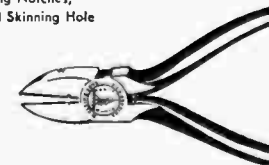


Cat. No. 202-5 Size 5 in. Cat. No. 202-6 Size 6 in. Available with Spring

**Klein Oblique-Cutting Plier**

With "W" Stripping Notches, Sleeve Openings, and Skinning Hole

An all-purpose tool for telephone installation and maintenance work. The "W" notches will slit cellulose acetate and other insulations from wires up to .58 O.D. A stripping hole, .052 diameter, is provided in blades. Sleeve openings in handles.



Cat. No. 202-5-SW Size 5 1/2 in.

**Klein Coil Spring**

The pliers listed below may be had with a coil spring to hold the jaws in open position for immediate use. The sturdy spring is guaranteed for the life of the plier. With this new spring, inside of handles is unobstructed and may be had with Klein dipped-on plastic coated handles.



**LONG NOSE**

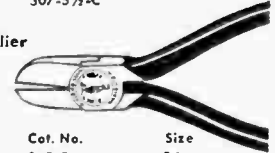
Cat. No. 301-5-C	Cat. No. 317-5-C
301-6-C	306-5 1/2-C
301-7-C	204-6-C
301-6PC	203-5-C
301-6-SCP-C	203-6-C
203-6-SCP-C	203-7-C
307-5 1/2-C	

**OBLIQUE CUTTERS**

Cat. No. 210-5-C	Cat. No. 202-5-C
210-6-C	202-6-C
209-5-C	245-5-C

**Klein Oblique-Cutting Plier**

This plier measures exactly 5 in. in length and is slightly smaller in all dimensions than the 202-5 shown above.

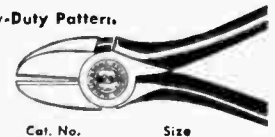


Cat. No. 245-5 Size 5 in.

Available with Spring

**Klein Oblique-Cutting Plier Heavy-Duty Pattern**

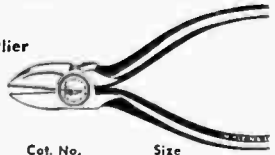
Similar in construction to No. 202 but made heavier to meet the requirements of those desiring a stronger plier for general work.



Cat. No. 242-6 Size 6 in.

**Klein Oblique-Cutting Plier**

Sturdy oblique-cutting plier that is an all-purpose tool for production telephone installation, and maintenance work.

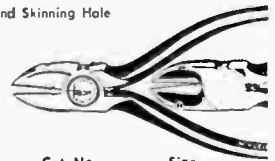


Cat. No. 252-6 Size 6 in.

**Klein Oblique-Cutting Plier**

With Stripping Notches, Sleeve Opening and Skinning Hole (Bell System Type)

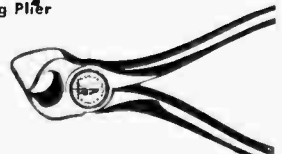
Similar to the 252-6 shown above, but with "W" notches to slit cellulose acetate and other insulation from wires up to .058 O.D. Stripping hole, .052 diameter, is provided in blades. Sleeve openings in handles.



Cat. No. 252-6-SW Size 6 in.

**Klein End-Cutting Plier**

A very useful tool for electricians and mechanics. Permits cutting wire or nails close to the work. Stout jaws and broad, keen-cutting knives. Ample room is provided in the throat of pliers for unusual conditions.



Cat. No. 232-5 1/2 Size 5 1/2 in.  
 \*232-7 Size 7 in.

\*The 7-in. size has "handform" handles as used on our side-cutting pliers.

**Klein Long Curved-Nose Plier**

The curved nose of this plier is ideal for working in confined space. The angle is designed to give full clearance and prevents skinning of knuckles. The jaws will not lose their shape or set when pressure is applied.



Cat. No. 302-6 Size 6 in.

**Klein Cord-Tip Closing Plier**

The sturdy jaws permit using this plier as a press for closing cord tips such as W. E. 101 and 102 (new nos. 120 and 121). The circular openings are correctly sized to insure perfect connections. Diameter of holes are .129 in. and .156 in., respectively.



Cat. No. 039 Size 5 in.





**"Klein-Kord" Nylon Safety Strap**

A strong, high quality safety strap, "Klein-Kord" Nylon possessing excellent dielectric characteristics. Klein Red Center for safety.



Cat. No.	Snaps	Size	Av. Wgt. Per Doz.
5294	Standard	1 3/4" x 5 1/2"	34 lb.
KL5294	"Klein-Lok"	1 3/4" x 5 1/2"	34 lb.
5294-7	Standard	1 3/4" x 7"	38 lb.
KL5294	"Klein-Lok"	1 3/4" x 7"	38 lb.

**Klein Electrician's Waist Belt**

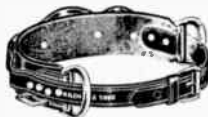
A lightweight belt of genuine harness leather with tool loops and tape thong. May be used with Klein Tool Pockets. Handy for electrician's use. Sizes: 36", 38", 40", 42", 44" and 46".



Cat. No.	Size—Adjustable
5207M	32 to 40 in.
5207L	38 to 46 in.

**Leather Tool Belt**

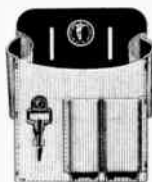
Made of first quality harness leather. "D" rings are solid drop steel forgings tested to 1,500 lb. All rivets are solid copper and sewing is with hot waxed-linen thread, lock stitched.



Cat. No.	Width	Av. Wgt. Per Doz.
5204	3 1/2"	34 lb.

**Klein Combination Tool Pocket**

A high-quality pocket specially designed for electricians and maintenance men. Has large utility pocket, two screw driver pockets, two plier pockets and a handy knife snap. Made of high-grade leather to give finest service. Size overall, 8 1/2 in. high; width, 6 1/2 in. Many other types available.



Cat. No. 5126

**Klein-Koat Plastic Cover for Plier Handles**

These plastic covers provide a non-skid grip and assure greater comfort when used on Klein Pliers.

Made of transparent plastic in a bright maroon. Simple to apply in a matter of seconds to conform to the shape of the handle assuring a tight grip. Does away with the practice of taping handles.



Cat. No.
60 to fit 6-in. pliers
70 to fit 7-in. pliers
89 to fit 8- and 9-in. pliers

**Dipped Handles**

Klein Pliers may now be ordered with dipped-on plastic coating. This provides a heavy, comfortable, plastic coating that cannot come off, and yet may be removed if desired. Prices on request.

**Klein "Xela" Electricians' Scissors**

A scissor designed for the electrician and mechanic. Will stand continued hard service. Made of high-grade steel carefully tempered. Has screw hinge to allow for adjustment. Nickel plated.



Cat. No.	Size
2100-5	5 in.

**Klein "XELA" Electrician's Knife**

This knife is designed especially for the electrician and maintenance man. Has a sharp general utility blade and a screw driver blade which locks automatically in open position.

The blades are of high-grade cutlery steel carefully tempered. Fitted with wrought shackle riveted in handle.



Cat. No.	Length Closed
1550-2	4 in.

**Klein "XELA" Lineman's Knife**

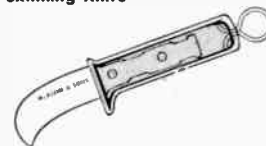
A sturdily constructed knife designed for long, hard service. Single 3-in. blade is of high-grade, carefully tempered cutlery steel. Blade locks automatically in open position. Hard wood handle is rounded and designed for firm, comfortable grip. Fitted with spring shackle.



Cat. No.	Length Closed
1550-4	4 in.

**Klein Plastic Handle Skinning Knife**

A high-quality skinning knife with plastic insulated handle. Handle is red and provides excellent insulation and comfortable grip. Back of blade ground flat for scraping. Handy ring in handle for fastening to snap.



Cat. No.	Length Overall	Blade
1570-3	8 in.	3 in.

**Klein "XELA" Skinning Knife**

A high-quality knife designed for skinning. Particularly used in the telephone field. Hard wood handle with ring for attaching to snap.



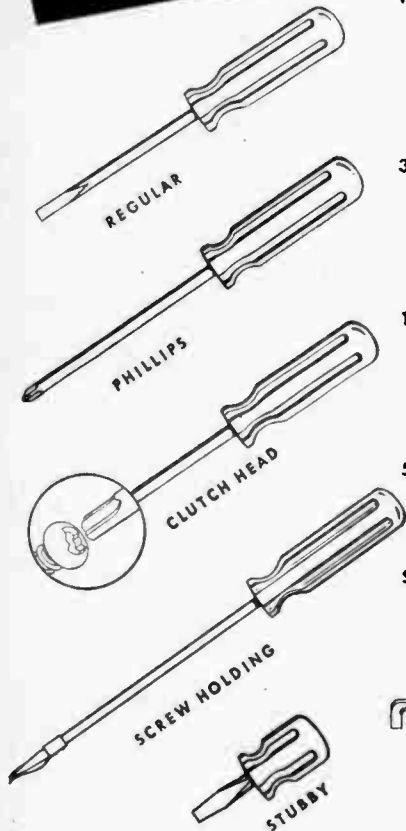
Cat. No.	Size
1550-5	5 in.

# VACO

BREAK-PROOF  
SHOCK-PROOF

## Screw Drivers

- Chrome Vanadium Steel Blades
- Fire-Safe Amberyl Shock and Break-Proof Handles



### 1/8" Cabinet Style—Round Blades

Stock Number	Blade Diameter and Length
A 216-4	1/8"x4"
A 216-6	1/8"x6"
A 216-8	1/8"x8"
A 216-10	1/8"x10"

### 3/16" Cabinet Style—Round Blades

Stock Number	Blade Diameter and Length
A 316-4	3/16"x4"
A 316-5	3/16"x5"
A 316-6	3/16"x6"
A 316-8	3/16"x8"
A 316-10	3/16"x10"

### 1/4" General Service—Round Blades

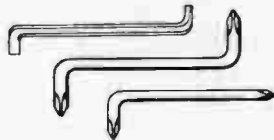
Stock Number	Blade Diameter and Length
A 416-4	1/4"x4"
A 416-5	1/4"x5"
A 416-6	1/4"x6"
A 416-8	1/4"x8"
A 416-10	1/4"x10"

### 5/16" Heavy Duty—Round Blades

Stock Number	Blade Diameter and Length
A 516-6	5/16"x6"
A 516-8	5/16"x8"
A 516-10	5/16"x10"

### Stubbys

A 132	1/4"x1-1/4"
A 135	5/16"x1-3/4"



### Offset Screw Drivers

Stock No.	Type	Blade
VO 1	Regulor	5/32"x3"
VO 2	Regulor	1/4"x4"
P 120	Phillips	#1 point one end, #2 point other end
P 111	Phillips	#1 point both ends
P 222	Phillips	#2 point both ends

### Phillips Drivers

Stock Number	Point No.	Blade Diam. and Length
P 01	0	1/8"x2-1/2"
P 1	1	3/16"x3"
P 2	2	1/4"x4"
P 3	3	5/16"x6"
P 5 (Stub)	2	1/4"x1-3/4"
P 6 (Stub)	1	3/16"x1-1/4"
P 12 (Pocket Clip)	1	1/8"x2-1/2"

### Clutch Head Drivers

Stock Number	Bit Point Diameter and Blade Length
CH 43	1/8"x3"
CH 54	5/32"x4-1/4"
CH 64	3/16"x4-1/4"
CH 86	1/4"x6"
CH 106	5/16"x6"
<b>Stub Styles</b>	
CH 51	5/32"x1-1/2"
CH 61	3/16"x1-1/2"

### Screw Holding Drivers

Stock Number	Blade Diam. & Length
OK 23	1/8"x3"
OK 24	1/8"x4"
OK 26	1/8"x6"
OK 28	1/8"x8"
OK 34	3/16"x4"
OK 36	3/16"x6"
OK 38	3/16"x8"

## Color-Keyed, Insulated, Hollow Shaft NUT DRIVERS



### Standard (3") Lengths

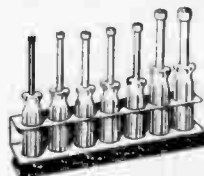
Stock No.	Hex Size	Overall Length	Color Key
N 6-3	3/16"	6 3/8"	Black
N 8-3	1/4"	6 3/8"	Red
N 10-3	5/16"	6 3/8"	Yellow
N 11-3	11/32"	6 3/8"	Green
N 12-3	3/8"	6 3/8"	Blue
N 14-3	7/16"	7"	Brown
N 16-3	1/2"	7"	Orange

### ALSO AVAILABLE

Stubby 1 1/2" out of handle N 6-1 thru N 10-1. Long 5 1/2" out of handle N 6-6 thru N 16-6. Extra Long 8 1/4" out of handle N 6-8 thru N 16-8.



**K-7 Self-Standing Kit**  
Includes 7 nut drivers (3" lengths) each in own holder marked for size and color.



**N-700 Bench Stand**  
All metal for permanent attachment to bench or wall. 7 drivers.

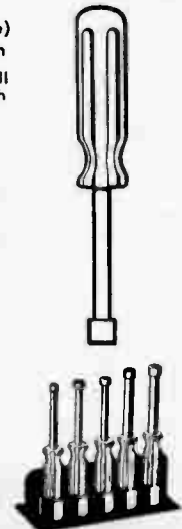
### Hollow Shaft (Standard Line) Nut Drivers — No Insulation

Stock No.	Hex Size	Overall Length
HS 5	3/32"	6 3/4"
HS 6	3/16"	6 3/4"
HS 7	7/32"	6 3/4"
HS 8	1/4"	6 3/4"
HS 9	5/32"	6 3/4"
HS 10	3/16"	6 3/4"
HS 11	11/32"	6 3/4"
HS 12	3/8"	6 3/4"
HS 14	7/16"	6 3/4"
HS 16	1/2"	6 3/4"
HS 18	5/8"	8"
HS 20	3/4"	8"

### Stubby Sizes

HSS 8	1/4"	3 3/4"
HSS 10	3/16"	3 3/4"
HSS 12	3/8"	3 3/4"

**HS-500 Bench Stand**  
All metal for attaching to bench or wall. 5 drivers.



### Beryllium Copper Drivers



Round Blade, Non-Spark, Non-Magnetic

Stock Number	Blade Diameter and Length
VB 26	1/8"x6"
VB 210	1/8"x10"
VB 38	3/16"x8"
VB 46	1/4"x6"
VB 48	1/4"x8"

### Insulated Blade Screw Drivers



VR 241	1/8"x4"
VR 261	1/8"x6"
VR 281	1/8"x8"
VR 361	3/16"x6"
VR 381	3/16"x8"

### Non-Metallic Radio and TV Aligners



Bone Fiber Blade

AT 55	5/32"x5"
AT 510	5/32"x10"

### Non-Magnetic Metal Tip Radio and TV Aligner



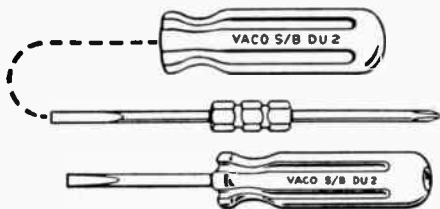
Stock Number	Body Size	Bit Diameter	Capacity
AT 45	3/8"x5-1/2"	3/16"	Slight

### Neon Light Screw Drivers



Stock Number	Blade Diameter and Length
AN 44	1/4"x4"
AN 2 (Pocket Clip)	1/8"x3"

### Duplex "Reversible" Drivers



Stock Number	Blade Size and Type
DU 2	No. 1 Phillips, One End 3/16" Regular, Other End
DUH 4	No. 2 Phillips, One End 1/4" Regular, Other End
DUP 12	No. 1 Phillips, One End No. 2 Phillips, Other End

## VACO RADIO and TV KITS



ZBX 51

### ZBX 51 Screw Driver Kit

A fine, all-purpose kit of interchangeable regular and Phillips blades that fit same handle. 6" extension makes 10 combinations possible. In durable leatherette bag.



ZSX 61

### ZSX 61 Nut Driver Kit

A most versatile and complete hexagon wrench kit for radio, television or any other work requiring speedy nut setting. All sockets are super hard for maximum utility and long life. 6" extension makes 10 blade lengths possible. In handy leatherette tool roll.



ZA 70

### ZA 70 Allen Driver Kit

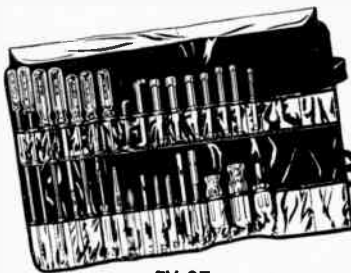
This useful kit consists of 6 hexagon drivers, handle and bag. Will service hexagon recessed opening screws Nos. 4, 5, 6, 8, 10, 1/4", 5/16" and 3/8". Each bit is extra long and may ground back as wear occurs.



ZU 75

### ZU 75 Universal Driver Kit

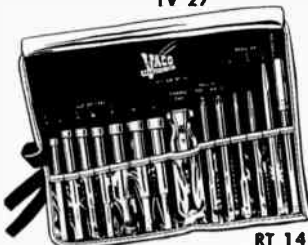
Here is a kit that is universal in its applications since it will serve all three types of the most popular screws in use today—regular slotted, Phillips, and clutch head. All popular size blades are included—3/16" and 1/4" for regular slotted screws; No. 1 and No. 2 Phillips; 5/32" x 3/16" clutch head.



TV 27

### 27-Piece TV and Radio Kit

NO. TV 27 KIT—Contains practically every hand tool necessary for television and radio work, plus extra pockets for pliers and other personal tools according to individual preferences. Contains one each of the following: ZH 1 medium duty handle; ZH 2 heavy duty handle; ZX 56 extension; A 132 1/4" stub; 1/4", 3/16", 1/8" regular bits; No. 1 Phillips and No. 2 Phillips bits; 3/16", 1/4", 5/16", 11/32", 3/8", 7/16" and 1/2" hex. wrenches; AT 45 metal tip aligner; A 116-2 3/32" pocket clip; P 01 #0 Phillips thin blade; OK 24 1/8" screw holding; VR 261 1/8" insulated blade; OK 38 3/16" screw holding; VR 381 3/16" insulated blade; VB 210 1/8" x 10" non-magnetic adjuster; AT 510 5/32" fiber aligner; VO 2 medium offset; VO 1 small offset.



RT 14

### 14-Piece TV and Radio Kit

NO. RT 14 KIT—Here's a handy, convenient kit for radio and TV service men. Contains nut drivers, Phillips and regular drivers, plus ZH 2 heavy duty handle and famous Vaco 6" extension which doubles the usefulness of each driver. In durable leatherette tool roll.

**VACO PRODUCTS CO., Chicago 11, Illinois**

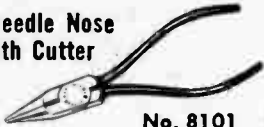
In Canada: Vaco-Lynn Products (of Canada) Ltd.

**NEW**  
**VACO**  
Individually Tested  
**PLIERS**

- Milled jaws for sure grip
- Hand honed side cutters
- Fitted grip handles
- Unconditional factory guarantee

**24 Popular Styles from Which to Choose**

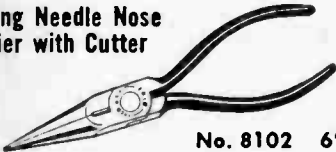
**Short Needle Nose Plier with Cutter**



No. 8101 5"

This plier is intended for general use where a short nose is desired for getting into difficult places.

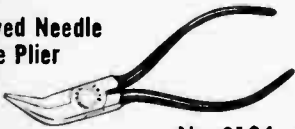
**Long Needle Nose Plier with Cutter**



No. 8102 6"  
No. 8103 7"

An exceptional handy and useful plier, well proportioned with long thin nose, designed for reaching into tight places.

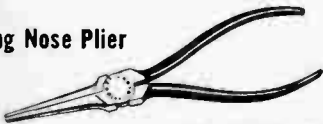
**Curved Needle Nose Plier**



No. 8104 6"

A long, bent, thin nose plier. The angle is arranged to give full clearance and prevent skinning of knuckles.

**Long Nose Plier**



No. 8105 6"

Newly designed long nose plier suitable for working in confined places.

**Long Reach Needle Nose Plier**



No. 8106 7½"

Has long, thin, sure-grip jaws to reach into places where fingers and ordinary pliers will not go.

**Diagonal Cutting Plier**

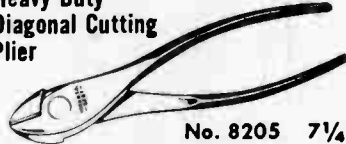


4 Sizes

No. 8201 4½" No. 8203 6"  
No. 8202 5" No. 8204 7½"

Specially designed for electricians, radio and TV service men and automotive mechanics. Powerful jaws cut close and quickly.

**Heavy Duty Diagonal Cutting Plier**



No. 8205 7¼"

One of the most powerful diagonal pliers made. Long handles give a 20 to 1 ratio of leverage to cut with minimum effort.

**Heavy Duty Linemen's Side Cutting Plier**



No. 8301 6¼"

No. 8302 7½" No. 8303 8¾"

One of the most popular pliers in use today. Has extra powerful leverage and reinforced cutting knives.

**Heavy Duty Slip Joint Plier**



No. 8401 6½"

No. 8402 8"

A top quality slip joint combination plier. Has all the quality features of higher priced cutting pliers at modest cost.

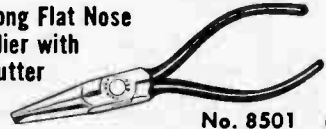
**Heavy Duty Slip Joint Plier with Cutter**



No. 8403 7½"

This plier incorporates the best features of a regular side cutter with the versatility of a slip joint combination plier.

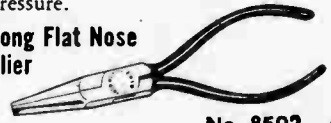
**Long Flat Nose Plier with Cutter**



No. 8501 6"

Extra long, wide, flat nose makes this an especially useful tool. Plier is tempered so jaw will not spring under pressure.

**Long Flat Nose Plier**



No. 8502 6"

Same as No. 8501 except supplied without cutter.

**Long Reach Flat Nose Plier**



No. 8503 7½"

Fitted with duckbill type jaws wider and heavier than those of the ordinary flat nose for firmer gripping service.

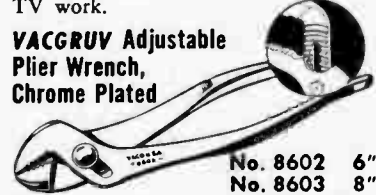
**VACGRUV Adjustable Ignition Plier Wrench, Chrome Plated**



No. 8601 5"

Especially designed 3-position jaws accommodate small to medium large nuts, bolts, etc. Fine for delicate radio and TV work.

**VACGRUV Adjustable Plier Wrench, Chrome Plated**



No. 8602 6"

No. 8603 8"

Built to provide an especially secure grip on medium to large bolts, nuts, pipes, etc. 3-position jaws open to ⅜", ¾", respectively.

**VACGRUV Adjustable Plier Wrench, Chrome Plated**



No. 8604 10"

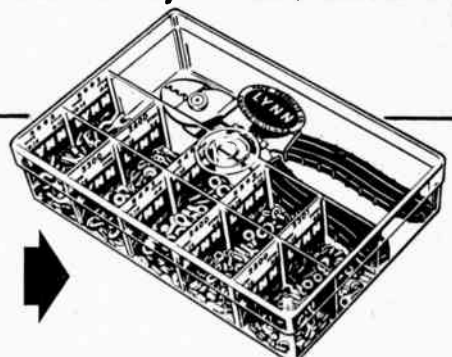
A general purpose, heavy duty tool with 5-position jaws that open to 1⅛". Doubles as pipe wrench, gripping plier and hand vise.

**VACO PRODUCTS CO., Chicago 11, Illinois**

In Canada: Vaco-Lynn Products (of Canada) Ltd.

# LYNN *Lightning* Solderless Terminals by VACO

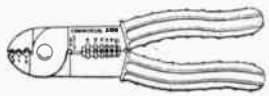
## Wide Assortment of Solderless Terminals for General Use, Radio and TV



### No. 2195 Service Kit

A GENERAL PURPOSE ELECTRICAL, RADIO AND TV KIT containing everything needed for making clean, fast, trouble-free electrical connections. No soldering! No fuss or muss! Kit includes . . . No. 1900 Crimping Tool and Terminals Nos. 2300, 2301, 2302, 2400, 2401, 2402, 2600, 2601, 2602, and 3300 . . . all in a clear plastic box with tight-fitting lid. Individual bins marked with terminal stock number cards.

### No. 1900 Crimping Tool



No solder . . . no iron . . . no heating . . . a perfect connection every time with this tool and Lynn Lightning Solderless Terminals by Vaco! Crimping tool has wire cutters, indenting die, wire-stripping die, shock-proof, slip-proof plastic handle sleeves. For No. 22 to No. 10 gauge wire.

### Only 3 SIMPLE STEPS and Terminal Is On



1. Cut Wire. Use the wire cutter built into the crimping tool to cut wire proper length.
2. Strip Wire. Insert end of wire into proper wire stripping opening, close jaws, rotate tool one-half turn, then pull insulation off wire.
3. Crimp Terminal. Insert stripped portion of wire into terminal barrel, place barrel in proper crimping nest with seam directly opposite crimping tooth and close tool like pliers.

Extra long barrel on terminal provides easy crimp and perfect contact. Only ONE crimp necessary. Barrel always remains round.

### Quick Reference Chart for Easy Terminal Identification

#### RING TONGUE TERMINALS

No. 2300 Hole Dia. — 5/32" Stud Size — 4 - 6 Wire Size — 22 - 16	No. 2301 Hole Dia. — 5/32" Stud Size — 4 - 6 Wire Size — 22 - 16	No. 2302 Hole Dia. — 13/64" Stud Size — 8 - 10 Wire Size — 22 - 16	No. 2303 Hole Dia. — 17/64" Stud Size — 12 - 1/4 Wire Size — 22 - 16	No. 2304 Hole Dia. — 13/32" Stud Size — 3/8 Wire Size — 22 - 16	No. 2400 Hole Dia. — 5/32" Stud Size — 4 - 6 Wire Size — 16 - 14	No. 2401 Hole Dia. — 5/32" Stud Size — 4 - 6 Wire Size — 16 - 14
No. 2402 Hole Dia. — 13/64" Stud Size — 8 - 10 Wire Size — 16 - 14	No. 2403 Hole Dia. — 17/64" Stud Size — 12 - 1/4 Wire Size — 16 - 14	No. 2404 Hole Dia. — 13/32" Stud Size — 3/8 Wire Size — 16 - 14	No. 2502 Hole Dia. — 13/64" Stud Size — 8 - 10 Wire Size — 12 - 10	No. 2503 Hole Dia. — 17/64" Stud Size — 12 - 1/4 Wire Size — 12 - 10	No. 2504 Hole Dia. — 13/32" Stud Size — 3/8 Wire Size — 12 - 10	

#### SPADE TONGUE TERMINALS

No. 2600 Slot Dia. — 5/32" Stud Size — 4 - 6 Wire Size — 22 - 16	No. 2601 Slot Dia. — 5/32" Stud Size — 4 - 6 Wire Size — 16 - 14	No. 2602 Slot Dia. — 13/64" Stud Size — 8 - 10 Wire Size — 16 - 14	No. 2702 Slot Dia. — 13/64" Stud Size — 8 - 10 Wire Size — 12 - 10

#### FLAG TYPE TERMINALS

No. 2802 Hole Dia. — 13/64" Stud Size — 8 - 10 Wire Size — 22 - 16	No. 2902 Hole Dia. — 13/64" Stud Size — 8 - 10 Wire Size — 16 - 14	No. 3002 Hole Dia. — 13/64" Stud Size — 8 - 10 Wire Size — 12 - 10

#### HOOK TYPE TERMINAL

No. 3300 Slot Dia. — 5/32" Stud Size — 4 - 6 Wire Size — 22 - 16

#### BUTT CONNECTORS

No. 3101 Wire Size — 22 - 16	No. 3102 Wire Size — 16 - 14	No. 3103 Wire Size — 12 - 10

### CONVENIENT \$ PAK



All Lynn Lightning Terminals are available in convenient \$ Paks. When any of the "bins" of the service kit are empty, user merely purchases a refill just right for replacing stock. Refill Paks are well marked for trouble-free handling, and designed with "window" for easy identification.

### BULK PAK



Also available in bulk—packed 250 pieces to a package, 4 packages to master carton of 1,000.



# INDUSTRIAL SAFETY BELT

## • TOOL HOLSTERS • TOOL BELTS



No. 24

### No. 24 TOOL HOLSTER

Similar to electrician holster except side pockets not attached, making the overall dimensions 5 x 9 inches.

**No. 24 List  
\$4.00 each**



No. 25

### No. 25 ELECTRICIAN HOLSTER 5 POCKETS

Stitched with seven cord top quality linen hot wax thread, locked to solid leather back with steel rivets. Pockets made of pliable form fitting Russet Leather.

Special designed snap allows knife to be removed by use of a one hand upward motion. Overall dimensions are: 8 x 9 inches.

**No. 25 List Price \$5.00 each** (Without Tools)

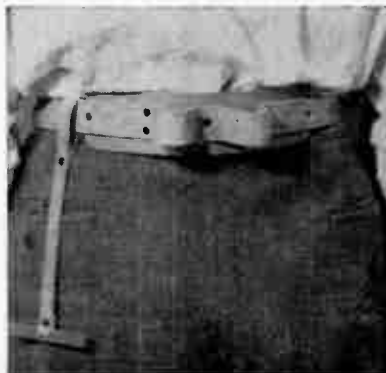


No. 23

### No. 23

Similar to overall dimensions of tool holster No. 24. One pocket. Dimensions are small enough to insert in pocket of trousers.

**No. 23 List  
\$2.50 each**



### No. 175 TOOL BELT

*Extra heavy quality leather. Two strong loops formed for heavy tools. Latigo thong tape carrier attached. Steel rivets anchor tested buckle to belt. Three sizes, No. 1, 30 to 38; No. 2, 40, to 46; No. 3, 46 to 52.*

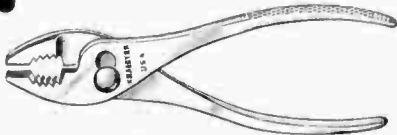
**List Price \$3.50**



# kraeuter

BUY THE FINEST  
BUY KRAEUTER  
BUY AMERICAN

AS MODERN AS TOMORROW - FOR 100 YEARS THE FINEST IN HAND TOOLS 1860-1960



## KRAEUTER BRITE LINE

A new line of fine quality slip joint pliers in 3 different finishes.

- |     |     |   |           |      |
|-----|-----|---|-----------|------|
| 056 | 6"  | Satin Chrome Finish                     | List from | .68  |
| 056 | 8"  | Satin Chrome Finish                     |           |      |
| 156 | 6"  | Brite Chrome Plate Finish               | List from | .86  |
| 156 | 8"  | Brite Chrome Plate Finish               |           |      |
| 156 | 10" | Brite Chrome Plate Finish               |           |      |
| 256 | 6"  | Full Polish Chrome Plated Mirror Finish | List      | 1.19 |
| 256 | 8"  | Full Polish Chrome Plated Mirror Finish |           |      |
| 256 | 10" | Full Polish Chrome Plated Mirror Finish |           |      |



## THIN NOSE COMBINATION PLIERS

Tapered thin jaws for confined areas.

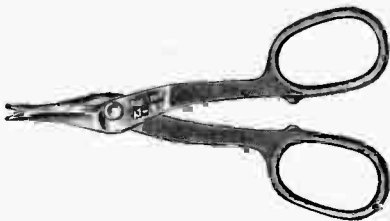
- |    |    |               |      |        |
|----|----|---------------|------|--------|
| 40 | 6" | Chrome Plated | List | \$1.75 |
|----|----|---------------|------|--------|



## ELECTRICIANS' SIDE CUTTING PLIERS

For electric wiring and repair work.

- |      |     |                              |      |        |
|------|-----|------------------------------|------|--------|
| 1830 | 4"  | Polished Head, Blued Handles | List | \$2.60 |
| 1830 | 5"  | Polished Head, Blued Handles |      | 2.70   |
| 1830 | 6½" | Polished Head, Blued Handles |      | 2.90   |
| 1830 | 7"  | Polished Head, Blued Handles |      | 3.25   |
| 1830 | 8"  | Polished Head, Blued Handles |      | 3.70   |



## COMBINATION PATTERN SNIP

Cuts straight, curved shapes in metal, etc.

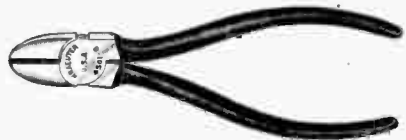
- |    |    |                      |      |        |
|----|----|----------------------|------|--------|
| 13 | 7" | Pocket Size, Cut 1½" | List | \$3.50 |
|----|----|----------------------|------|--------|



## TONGUE-N-GROOVE JOINT PLIERS

Five parallel adjustments from closed to 1½".

- |     |     |          |      |        |
|-----|-----|----------|------|--------|
| 710 | 10" | Polished | List | \$3.00 |
|-----|-----|----------|------|--------|



## DIAGONAL "OBLIQUE" CUTTING PLIERS

For close cutting in radio, TV, telephone work.

- |      |     |                              |      |        |
|------|-----|------------------------------|------|--------|
| 4501 | 4½" | Polished Head, Blued Handles | List | \$2.50 |
| 4501 | 5"  | Polished Head, Blued Handles |      | 2.75   |
| 4501 | 6"  | Polished Head, Blued Handles |      | 3.10   |



## "HIGH POWER" DIAGONAL CUTTING PLIERS

Added leverage for easier cutting.

- |      |    |                              |      |        |
|------|----|------------------------------|------|--------|
| 4610 | 7" | Polished Head, Blued Handles | List | \$3.10 |
|------|----|------------------------------|------|--------|



## 7-IN. DIAGONAL CUTTING PLIERS WITH FULL-FASHIONED HANDLES

High leverage and comfort for continuous cutting.

- |      |    |                              |      |        |
|------|----|------------------------------|------|--------|
| 4502 | 7" | Polished Head, Blued Handles | List | \$3.50 |
|------|----|------------------------------|------|--------|



## WIRE STRIPPING DIAGONAL CUTTING PLIERS

Strips fine wire. Spring return handles.

- |      |     |                              |      |        |
|------|-----|------------------------------|------|--------|
| 2612 | 6½" | Polished Head, Blued Handles | List | \$3.65 |
|------|-----|------------------------------|------|--------|

THIS IS ONLY A PARTIAL LISTING OF KRAEUTER TOOLS . . . . .

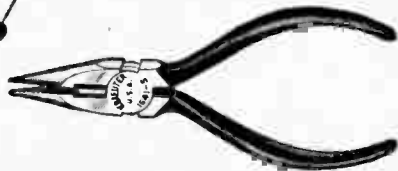
SEND FOR CATALOG



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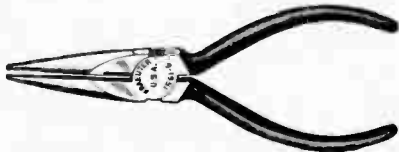
BUY THE FINEST  
BUY KRAEUTER  
BUY AMERICAN

AS MODERN AS TOMORROW · FOR 100 YEARS THE FINEST IN HAND TOOLS 1860-1960



### SHORT CHAIN NEEDLE NOSE PLIERS

Short nose, extra leverage, for open wiring.  
1641 5" Polished Head, Blued Handles ...List \$2.85  
1643 5" Same without cutters ..... 2.45



### LONG CHAIN NEEDLE NOSE PLIERS

Radio and TV's most extensively-used pliers.  
1661 6" Polished Head, Blued Handles ...List \$3.15  
1671 6" Same without cutters ..... 2.60



### EXTRA LONG CHAIN NOSE PLIERS

Jaw length reaches  $2\frac{3}{4}$ ", narrow pointed nose.  
1781 7" Polished Heads, Blued Handles ...List \$3.75  
1771 7" Same without cutters ..... 2.90



### WITH CUTTERS AT TIP OF JAWS

Extra long, narrow handles, cutters in nose.  
71 8" Polished Head, Blued Handles ...List \$3.95

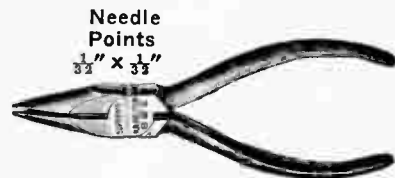


### RADIO AND IGNITION NOSE CUTTING PLIERS

Grips at tip of nose, cutters  $\frac{1}{4}$ " back.  
1663 6" Polished Heads, Blued Handles ...List \$3.25

## PROFESSIONAL LINE

### SPECIAL NEEDLE POINT PLIERS

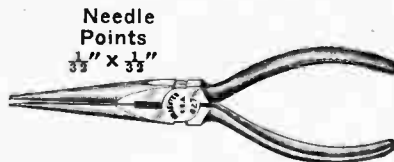


### MEDIUM NOSE NEEDLE POINT PLIERS

825 5" Full Polished .....List \$3.60  
835 5" Same without cutters ..... 3.00

### LONG NOSE NEEDLE POINT PLIERS

826 6" Full Polished .....List \$3.75  
836 6" Same without cutters ..... 3.25



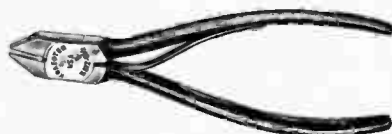
### EXTRA LONG NOSE NEEDLE POINT PLIERS

827 7" Full Polished .....List \$4.20  
837 7" Same without cutters ..... 3.70



### NEEDLE POINT DIAGONAL CUTTING PLIERS

5601  $4\frac{1}{2}$ " Full Polished .....List \$3.30  
5601 5 " Full Polished ..... 3.50  
5601 6 " Full Polished ..... 3.85



### NEEDLE POINT DIAGONAL CUTTING PLIERS

Wire stripping notch, spring return handles.  
5612  $6\frac{1}{2}$ " Full Polished .....List \$4.25

THIS IS ONLY A PARTIAL LISTING OF KRAEUTER TOOLS

SEND FOR CATALOG





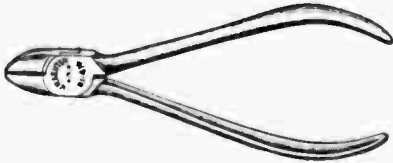
# kraeuter

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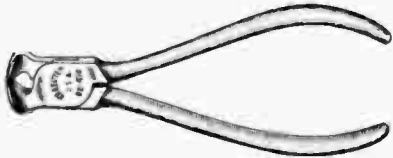
## PRECISION LINE

Fine, small jewelers pliers, matched in size and handle shape for accurate and exacting work. Drop forged from selected tool steel, accurately machined, and carefully heat treated. Extensively used in the manufacture and repair of radio, TV, instruments, etc. FULL POLISHED FINISH.



### JEWELERS' DIAGONAL CUTTING PLIERS

\*81 4½" Full Polished .....List \$3.00



### JEWELERS' END CUTTING NIPPERS

\*82 4½" Full Polished .....List \$3.60

### PLIERS SETS, IN BLACK ZIPPER CASES

\*90 One each Nos. 81, 82, 83, 84, 85.....List ea. \$18.25

\*89 One each Nos. 81, 83, 84 ..... 10.90

### PLIERS WITH SPRING IN HANDLE

Available for most pliers, replaceable leaf spring keeps pliers in open position, ready to work. Can be provided separately or in combination with cushion grips described at right. Effectively used to increase efficiency and reduce wrist fatigue on the production line. Additional, List each \$0.30

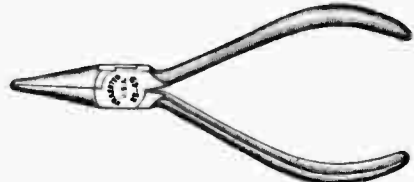


### ALLOY STEEL ADJUSTABLE WRENCH

THIN PATTERN — SMOOTH ACTION

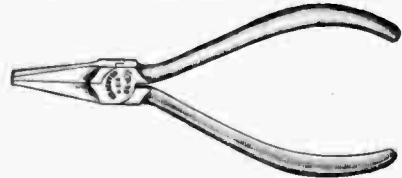
No.	Length	CHROME PLATED		List Each
		Cap.	Wt. per doz.	
31	4"	½"	1¼ lbs.	\$2.20
31	6"	¾"	3½ lbs.	2.25
31	8"	1⅛"	6½ lbs.	2.60
31	10"	1⅝"	11 lbs.	3.30
31	12"	1⅞"	18 lbs.	4.80
31	15"	1¾"	42 lbs.	7.30

\* Prefix with "CG" if you wish cushion grip handles.



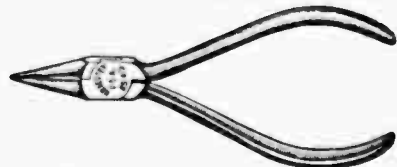
### JEWELERS' CHAIN NOSE PLIERS

\*83 4½" Full Polished .....List \$2.90



### JEWELERS' FLAT NOSE PLIERS

\*84 4½" Full Polished .....List \$3.00



### JEWELERS' ROUND NOSE ROUND JAW PLIERS

\*85 4½" Full Polished .....List \$3.00

### "CG" PLIERS (Cushion Grip), with Molded Red Plastic Handles for Extra Comfort

CG-81 .....\$3.00	CG-825 .....\$3.50	CG-837 .....\$3.60
CG-82 ..... 3.60	CG-826 ..... 3.65	CG-5601-4½" 3.20
CG-83 ..... 2.90	CG-827 ..... 4.10	CG-5601-5" .. 3.40
CG-84 ..... 3.00	CG-835 ..... 3.00	CG-5601-6" .. 3.75
CG-85 ..... 3.00	CG-836 ..... 3.15	CG-5612-6½" 4.00

OTHER PLIERS (Industrial Line only),  
add \$0.40 ea. pr.

### SAFETY GRIPS

Available to fit most pliers. Knurled, easily applied, non-explosive, molded to snugly fit handles.  
List Each Pair for 6" .65, for 7" .70, for 8" .75

### LEATHER TOOL POUCHES

Five pockets, with tape holder. Stitched with 7-cord top quality linen hot wax thread, locked to solid leather back with steel rivets. Pockets made of pliable form-fitting Russet Leather. Designed for the radio and TV serviceman to carry pliers, screwdrivers, tape, and other small tools.  
711 Tool Holster .....List each \$4.65

THIS IS ONLY A PARTIAL LISTING OF KRAEUTER TOOLS

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# XCELITE

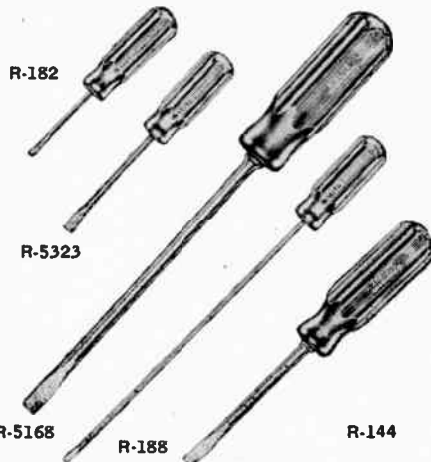
## QUALITY TOOLS

Preferred by the EXPERTS

### ROUND BLADE SCREWDRIVERS

Number	Size Blade	List
R-3322	3/32" x 2"	\$.30
R-3323	3/32" x 3"	.45
R-3324	3/32" x 4"	.45
R-181	1/8" x 2"	.30
R-183	1/8" x 3"	.45
R-184 1/2	1/8" x 4"	.45
R-182	1/8" x 2"	.55
R-184	1/8" x 4"	.60
R-186	1/8" x 6"	.65
R-188	1/8" x 8"	.80
R-1810	1/8" x 10"	.90
R-5323	3/32" x 3"	.70
R-5324	3/32" x 4"	.70
R-5325	3/32" x 5"	.70
R-5328	3/32" x 8"	.90
R-3163	3/16" x 3"	.85

Number	Size Blade	List
R-3164	3/16" x 4"	\$.90
R-3166	3/16" x 6"	1.05
R-3168	3/16" x 8"	1.15
R-31610	3/16" x 10"	1.30
R-142	1/4" x 2"	1.05
R-144	1/4" x 4"	1.15
R-146	1/4" x 6"	1.20
R-148	1/4" x 8"	1.30
R-1410	1/4" x 10"	1.35
R-5164	3/16" x 4"	1.35
R-5166	3/16" x 6"	1.50
R-5168	3/16" x 8"	1.60



### STUBBY SCREWDRIVERS

Number	Size Blade	List
S-3161	3/16" x 1"	\$.70
S-141	1/4" x 1"	.85
S-5161	3/16" x 1"	.85

### COMBINATION-DETACHABLE SCREWDRIVERS

COMPLETE (Regular Type)	List Price
No. CR1	\$2.15
No. CR2	2.15
No. CR3	2.15

BLADES ONLY (Regular Type)	List Price
No. RB1 #1 Phillips and 3/16" Reg.	\$1.20
No. RB2 #2 Phillips and 1/4" Reg.	1.20
No. RB3 #3 Phillips and 3/8" Reg.	1.20

HANDLES ONLY — No. 25 ..... .95

#### STUBBY SIZE

Complete	Blades Only
No. CS1	\$1.90
No. CS2	1.90
No. SB1	\$1.05
No. SB2	1.05

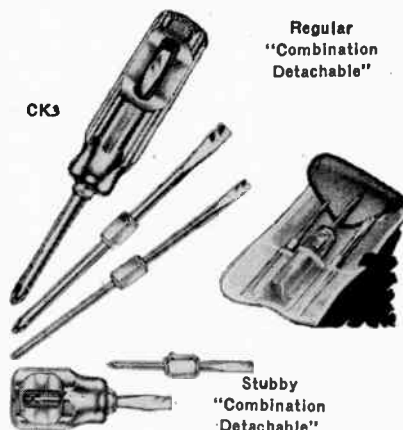
#### HANDLES ONLY

No. 26—Stubby ..... \$.85

#### ROLL KIT COMBINATIONS

No. CK-3 with RB-1, RB-2 and RB-3 blades and combination handle (see "Combination-Detachable", above for sizes) ..... List \$5.45

No. CK-2 with RB-1 and RB-2 reversible blades and combination handles ..... List \$4.25



### PHILLIPS SCREWDRIVERS

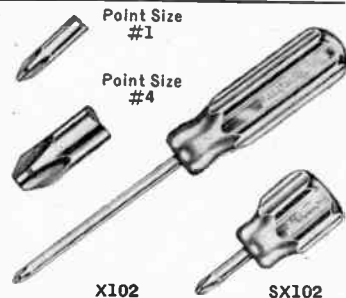
No.	Point Size	Length Blade	Diameter Blade	List Price
X-100	0	2"	1/8"	\$.75
X-108	1	6"	3/16"	1.15
X-101	1	3"	3/16"	1.05
X-102	2	4"	1/4"	1.35
X-103	3	6"	3/8"	1.80
X-104	4	8"	3/8"	2.25
X-1010	1	10"	3/16"	1.60
X-1020	2	10"	1/4"	1.80

#### SHORT STUBBY TYPE

No.	Point Size	Blade	List Price
SX-101	1	3/16" x 1 3/8"	\$1.00
SX-102	2	1/4" x 1 3/8"	1.10

#### POCKET CLIP STYLE

No.	Point Size	Blade	List Price
P12S	0	1/8" x 2"	\$.65



### BERYLLIUM-COPPER SCREWDRIVERS

- Non-sparking
- Non-magnetic
- Better fatigue resistance than steel

Number	Size Blade	List
BR-186	1/8" x 6"	\$1.25
BR-1810	1/8" x 10"	1.35
BR-3168	3/16" x 8"	2.20
BR-146	1/4" x 6"	2.75
BR-148	1/4" x 8"	2.95
BR-1410	1/4" x 10"	3.25



Type G



Friction-Hold Type A

Note: Both types are the same size and price. Order by number.

### CLUTCH HEAD SCREWDRIVERS

Type G No.	Type A No.	Size	Diameter Blade	Length Blade	List Price Each
G-3324	—	3/32"	1/8"	4"	\$1.20
G-183	A-183	1/8"	3/16"	3"	1.20
G-5324	A-5324	3/32"	1/4"	4"	1.35
G-3164	A-3164	3/16"	1/4"	4"	1.35
G-146	A-146	1/4"	3/8"	6"	1.75
G-5166	A-5166	3/16"	3/8"	6"	2.15

YOUR DISTRIBUTOR CARRIES A COMPLETE LINE OF XCELITE TOOLS!

# XCELITE

## QUALITY TOOLS

Preferred by the EXPERTS

### NUTDRIVERS (With Color-Coded Handles)

#### REGULAR

##### 6" Overall Length

No.	Handle Color	Hex Opening	List
5	Amber	3/32"	\$1.10
6	Black	3/16"	1.10
7	Brown	3/32"	1.10
8	Red	1/4"	1.10
9	Orange	3/32"	1.10
10	Amber	3/16"	1.10
11	Green	1/32"	1.10
12	Blue	3/8"	1.10
14	Brown	3/16"	1.40
16	Red	1/2"	1.40



##### 9" Overall Length

No.	Handle Color	Hex Opening	List
A-6	Black	3/16"	\$1.25
A-7	Brown	3/32"	1.25
A-8	Red	1/4"	1.25
A-9	Orange	3/32"	1.25
A-10	Amber	3/16"	1.25
A-11	Green	1/32"	1.25
A-12	Blue	3/8"	1.25

#### HOLLOW SHAFT

No.	Handle Color	Hex Opening	List
HS-8	Red	1/4"	\$1.35
HS-10	Amber	3/16"	1.35
HS-11	Green	1/32"	1.35
HS-12	Blue	3/8"	1.35
HS-14	Brown	3/16"	1.55
HS-16	Red	1/2"	1.60
HS-18	Orange	3/16"	1.65
HS-20	Amber	5/8"	1.90



#### STUBBY

##### NUTDRIVERS

##### 3 1/4" Overall Length

No.	Handle Color	Hex Opening	List
S-8	Red	1/4"	\$ .90
S-10	Amber	3/16"	.90
S-12	Blue	3/8"	.90



"You Wear 'Em!"

Handy, Pocket-Clip

##### NUTDRIVERS

No.	Handle Color	Hex Opening	List
P-8	Red	1/4"	\$ .75
P-10	Amber	3/16"	.75
P-12	Blue	3/8"	.75



ALSO—ask about Xcelite Regular and Phillips Pocket Screwdrivers!

### NUT DRIVER SETS

#### No. 17 SET

NON-TIPPING BENCH RACK OF STURDY STEEL. Contains Nos. 6, 7, 8, 9, 10, 11 and 12 XCELITE Nutdrivers with convenient color-coded handles (size-color table above, left).

No. 17 — Polished Finish ..... **\$8.25** list

No. 17C — Chrome-Plated Blades ..... **\$9.15** list

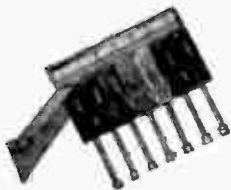


#### No. 127 SET

YOU CAN LOCK 'EM UP! This steel wall set with red wrinkle finish comes with Nos. 6, 7, 8, 9, 10, 11 and 12 XCELITE Nutdrivers with color-coded handles.

No. 127 — Polished Finish ..... **\$8.90** list

No. 127C — Chrome-Plated Blades ..... **\$9.65** list

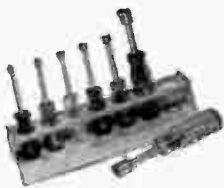


#### No. 137 SET

THEY'RE ALL HANDY — Your Most-Used XCELITE Nutdrivers! Sturdy metal bench set contains Nos. 6, 8, 10, HS-16 and HS-18.

No. 137 — Polished Finish ..... **\$10.25** list

No. 137C — Chrome-Plated Blades ..... **\$11.25** list

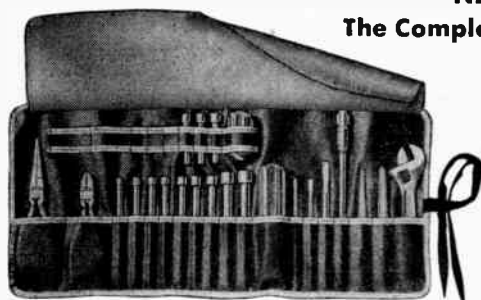


YOUR DISTRIBUTOR CARRIES A COMPLETE LINE OF XCELITE TOOLS!

## KITS and "99" PARTS

### NEW SERVICE MASTER

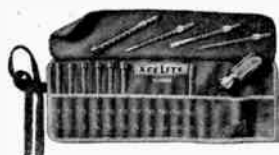
#### The Complete Serviceman's Kit!



Contains: No. 52C Long Nose Pliers, No. 55C Side Cutter, Stubby 99-3 Handle with three Nutdrivers (3/4", 5/8" and 3/8"), No. 46C Chrome-Plated Adjustable Wrench, Regular 99-1 Handle with nine Nutdrivers, one Phillips and two Regular Screwdrivers, 99-X10 Extension Shaft and two Chrome-Plated SUPEREAMERS.

No. 99 SM .....\$33.50 list  
Kit only

(No. 99 SMK) .. \$ 2.95 list



#### No. 99 JR ROLL KIT

Contains: No. 99-6, -7, -8, -9, -10, -11, -12 Nutdrivers; No. 99-811, -812 (Slotted and No. 99-821, -822 (Phillips) Screwdriver Blades; No. 99-2 Handle.

No. 99 JR .....\$11.75 list

Kit only

(No. 99 KJR) ..... \$ 1.50 list



#### No. 99 PR ROLL KIT

Contains: No. 99-6, -7, -8, -9, -10, -11, -12, -14, -16 Nutdrivers; No. 99-81 (Slotted) and -82 (Phillips) Reversible Screwdriver Blades; No. 99-1 Handle (Regular).

No. 99 PR .....\$13.65 list

Kit only

(No. 99 K) ..... \$ 1.50 list

XCELITE Now Offers You the Most Complete selection of quality, quick-change tools available to make the serviceman's job easier. They're yours in any combination you want: the three roll kits shown — or in "custom" kits your distributor can makeup immediately from his replacement stock.

ALL BLADES Fit the No. 99-1 Regular Handle, while all single-end blades fit the No. 99-2 Junior and 99-3 Stubby Handles.

THE NEW No. 99-X10 EXTENSION SHAFT snaps into all "99" Handles — adds a 6" reach to all single-end blades for those "hard-to-reach" jobs. It's one of the most popular additions to the "99" family!

NEW CHROME-PLATED REAMERS . . . Added to the rust-proof, clean-cutting No. 99-38 Detachable Reamer, is the No. 99-39. This 1/4"—1/2" "Reamer with the New Twist" has a .190 shank hole for T-Handle Leverage when you insert a 3/8" round screwdriver blade — either with the Stubby Handle for extra convenience, or the Regular Handle for extra torque on the tough jobs.

ASK YOUR DISTRIBUTOR for Your Choice of the "99" Kits, Handles or Interchangeable Tools Shown on This Page.

### SERIES "99" TOOLS

		LIST
No. 99-1	Handle (Regular) .....	\$1.15
No. 99-2	Handle (Junior) .....	\$1.00
No. 99-3	Handle (Stubby) .....	\$.90
No. 99-6	3/16" Nut Driver .....	\$.85
No. 99-7	7/32" Nut Driver .....	\$.85
No. 99-8	1/4" Nut Driver .....	\$.85
No. 99-9	9/32" Nut Driver .....	\$.85
No. 99-10	5/16" Nut Driver .....	\$.85
No. 99-11	11/32" Nut Driver .....	\$.85
No. 99-12	3/8" Nut Driver .....	\$.85
No. 99-14	7/16" Nut Driver .....	\$1.15
No. 99-16	1/2" Nut Driver .....	\$1.15
No. 99-81	3/16" & 9/32" Slotted, Reversible .....	\$1.40
No. 99-82	#1 & #2 Phillips, Reversible .....	\$1.40
No. 99-83	3/16" & 9/32" Frearson, Reversible .....	\$1.40
No. 99-84	3/16" Clutch "G," Reversible .....	\$1.40
No. 99-811	3/16" Slotted .....	\$.85
No. 99-812	9/32" Slotted .....	\$.85
No. 99-821	#1 Phillips .....	\$.85
No. 99-822	#2 Phillips .....	\$.85
No. 99-38	Reamer (1/8"-3/8") .....	\$2.05
No. 99-39	Reamer (1/4"-1/2") .....	\$2.60
No. 99-X10	Extension .....	\$1.45
No. 99-58	Stubby Nut Drivers	
No. 99-510	Stubby Nut Drivers	
No. 99-512	Stubby Nut Drivers	
List \$ .75	List \$ .75	List \$ .75

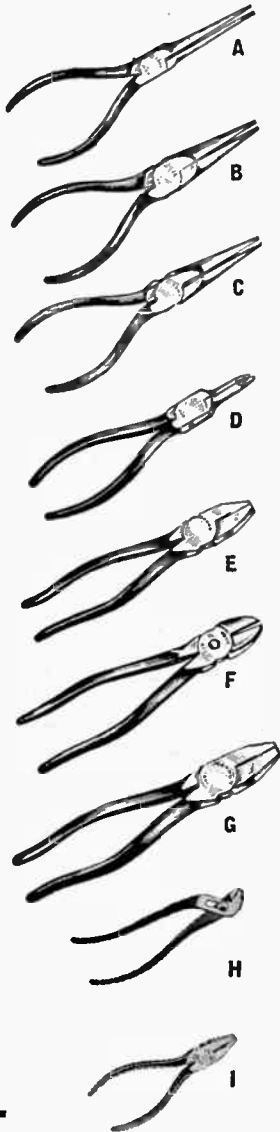
YOUR DISTRIBUTOR CARRIES A COMPLETE LINE OF XCELITE TOOLS!

# XCELITE

# QUALITY TOOLS

Preferred by the EXPERTS

## PLIERS FOR EVERY JOB DROP FORGED OF HIGH GRADE TOOL STEEL



(Fig. A)—No. 56 6-in. Needle Nose Plier—Long slim jaws permit entry of this plier where a regular long nose plier won't work. List Price..... \$3.10  
No. 56C—Chrome plated..... \$3.60

(Fig. B)—No. 52 Long Nose Plier (Without Side Cutters)—Long perfectly matching tips are ideal for gripping and twisting in awkward places. List Price..... \$2.65  
No. 52C—Chrome plated..... \$3.35

(Fig. C)—No. 51 Long Nose Plier (With Side Cutters)—The same rugged strength and long reach as No. 52 Long Nose Plier above plus side cutters. List Price..... \$3.40  
No. 51C—Chrome plated..... \$4.15

(Fig. D)—No. 58 Radio and TV Plier—Designed for radio and TV Servicemen. Extreme tip for gripping with sharp cutting edges  $\frac{1}{4}$  in. back from tip. Invaluable in many applications. List Price..... \$4.10  
No. 58C—Chrome plated..... \$4.85

(Fig. E)—No. 60 6-in. Side Cutting Plier—This plier has the "just right" size required for most side cutting operations. Serrated upper and lower jaws for gripping and hand honed cutting edges. List Price..... \$3.95  
No. 60C—Chrome plated..... \$3.63

(Fig. F)—No. 67 7-in. Diagonal Plier—A rugged plier with all the leverage required for even the heaviest applications. Hand honed cutting edges stand up under tough cutting conditions. List Price..... \$3.75  
No. 67C—Chrome plated..... \$4.35

(Fig. G)—No. 68 8-in. Side Cutting Plier—The big brother to No. 60 above. Designed for the man-sized big job where heavy grip and leverage is needed. Ideal for cutting heavy wire. List Price..... \$3.85  
No. 68C—Chrome plated..... \$4.55

(Fig. H)—No. 50 5-in. Ignition Plier—Narrow head. Three slip joint adjustments. List Price..... \$1.70  
No. 50C—Chrome plated..... \$1.85

(Fig. I)—No. 40 Midget 4" Side Cutting Plier—with serrated jaws and hand-honed blades. List Price..... \$2.80  
No. 40C—Chrome plated..... \$3.50

(Fig. J)—No. 54 Midget 4-in. Diagonal Plier—the ideal plier for close quarter work. For servicemen, electricians and hobbyists. List Price..... \$3.10  
No. 54C—Chrome plated..... \$3.60

(Fig. K)—No. 62 Transverse Cutting Plier—for flush cut-off—Radio and TV Printed Circuits and Miniature Sets. List Price..... \$4.15  
No. 62C..... \$4.65

(Fig. L)—No. 55 5-in. Diagonal Plier—Ideal for most cutting needs. Hand honed cutting edges cut through medium wire with ease. List Price..... \$3.10  
No. 55C—Chrome plated..... \$3.60

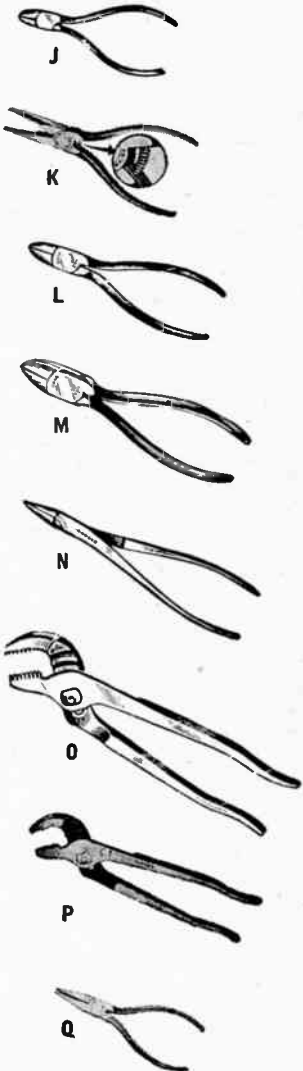
(Fig. M)—No. 66 6-in. Diagonal Plier—An all purpose plier heavier than No. 55 above. Small enough for most jobs, but it has a grip for the tough ones. List Price..... \$3.35  
No. 66C—Chrome plated..... \$3.95

(Fig. N)—No. 59 Chain Nose Electricians Plier—Long reach and high leverage are combined. Slim enough to go into a small space, rugged enough to stand the pressure for tough electrical jobs. List Price..... \$3.25  
No. 59C—Chrome plated..... \$3.85

(Fig. O)—No. 63 10-in. Utility Plier—Forged ribbed lock design for strength plus high leverage. Serrated jaws. List Price..... \$3.15  
No. 63C—Chrome plated..... \$3.95

(Fig. P)—No. 53 6-in. Utility Plier—A husky, all-purpose plier with forged rib-lock design and serrated jaws. List Price..... \$2.30  
No. 53C—Chrome plated..... \$2.50

(Fig. Q)—No. 41—Midget 4" Long-Nose Plier—without side cutter. Perfectly matched tips for gripping and twisting where space is short. List Price..... \$2.40  
No. 41C—Chrome plated..... \$3.10



## ADJUSTABLE WRENCHES

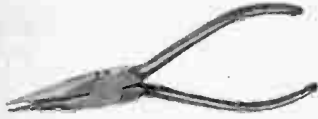


Everything about these XCELITE wrenches is designed from the mechanic's point of view! Extra-wide bearing surface of movable jaws gives better grip. The thin pattern helps you get into close quarters. The adjustment knurl turns EASILY. And it's STRONG, because it's drop forged from chrome alloy steel. Ideal for securing antenna mounts and 1001 other jobs. Order your sizes by number. All in gleaming chrome plated finish.

No.	Size	List
44C	4"	\$2.35
46C	6"	2.40
48C	8"	2.75
40-10C	10"	3.55
40-12C	12"	5.15

YOUR DISTRIBUTOR CARRIES A COMPLETE LINE OF XCELITE TOOLS!

**XCELITE, INC. • ORCHARD PARK, N. Y., U. S. A.**



**RADIO AND TV NOSE CUTTING PLIERS**

Reaches into tight spots to cut small wires, and to grip at the tips. Wgt. Pkg. of Five, 1 1/4 lbs.

- 539-6" List Ea. 3.25 Polished Head, GunMetal Handles
- 939-6" List Ea. 3.65 Cushion-Grip Handles
- 639-6" List Ea. 3.50 Nickel and Chrome Plated



**SIDE TIP NOSE CUTTING PLIERS**

Cuts flush at left side of tips. Turn tool over to cut flush at right side. Wgt. Pkg. of Five, 1 1/4 lbs.

- S539-6" List Ea. 3.60 Polished Head, GunMetal Handles
- 939-6" List Ea. 4.00 Cushion-Grip Handles
- S639-6" List Ea. 3.85 Nickel and Chrome Plated



**SHORT JAW, LONG HANDLE NOSE CUTTING PLIERS**

Longer, narrow handles provide maximum reach of the slender jaws to cut and grip. Wgt. Pkg. of Five, 2 1/2 lbs.

- 579-8" List Ea. 3.75 Polished Head, GunMetal Handles
- 979-8" List Ea. 4.15 Cushion-Grip Handles



**TRANSVERSE END CUTTING PLIERS**

For clean, flush cutting of small wires where ordinary cutters are too bulky. Wgt. Pkg. of Five, 1 1/4 lbs.

- 532-6" List Ea. 3.25 Polished Head, GunMetal Handles
- 932-6" List Ea. 3.65 Cushion-Grip Handles
- 632-6" List Ea. 3.50 Nickel and Chrome Plated



**SHORT CHAIN NEEDLE NOSE PLIERS**

Short jaws, 1 1/2" inside length, provide more positive grip at checker-milled tips. Wgt. Pkg. of Five, 1 lb.

- POLISHED HEAD, GUN METAL HANDLES
- 53-5" List Ea. 2.85 With Side Cutters
- 530-5" List Ea. 2.45 Without Side Cutters
- POLISHED HEAD, CUSHION-GRIP HANDLES
- 93-5" List Ea. 3.25 With Side Cutters
- 930-5" List Ea. 2.85 Without Side Cutters
- FULLY NICKEL AND CHROME PLATED
- 63-5" List Ea. 3.10 With Side Cutters

**DESIGN** IN-DUSTRONIC tools are more streamlined, with slender jaws and fine points, to reach into the tight spots and perform the specific work required of the electronics technician.

**TEST AND INSPECTION** Individually tested for hardness, each tool must maintain highest standards for handle strength and cutting ability. To assure perfect jaw alignment, pliers must cleanly cut single bond paper strips and snip cotton-covered lamp cord without fraying. Each tool is guaranteed against defects in workmanship and materials.

Individually boxed, five boxes to a shipping package



**LONG CHAIN NEEDLE NOSE PLIERS**

Slender, check-milled jaws, 1 3/4" inside length, taper to 1/2" at tips. Wgt. Pkg. of Five, 1 1/2 lbs.

- POLISHED HEAD, GUN METAL HANDLES
- 53-6" List Ea. 3.10 With Side Cutters
- 530-6" List Ea. 2.60 Without Side Cutters
- POLISHED HEAD, CUSHION-GRIP HANDLES
- 93-6" List Ea. 3.50 With Side Cutters
- 930-6" List Ea. 3.00 Without Side Cutters
- FULLY NICKEL AND CHROME PLATED
- 63-6" List Ea. 3.35 With Side Cutters
- 630-6" List Ea. 2.85 Without Side Cutters
- NICKEL AND CHROME PLATED, CUSHION-GRIP HANDLES
- 73-6" List Ea. 3.60 With Side Cutters



**EXTRA LONG CHAIN NOSE PLIERS**

2 3/4" long jaws add extra reach to checker-milled tips. Wgt. Pkg. of Five, 2 1/4 lbs.

- POLISHED HEAD, GUN METAL HANDLES
- 53-7" List Ea. 3.75 With Side Cutters
- 530-7" List Ea. 2.90 Without Side Cutters
- POLISHED HEAD, CUSHION-GRIP HANDLES
- 93-7" List Ea. 4.15 With Side Cutters
- 930-7" List Ea. 3.30 Without Side Cutters
- FULLY NICKEL AND CHROME PLATED
- 63-7" List Ea. 4.00 With Side Cutters
- 630-7" List Ea. 3.15 Without Side Cutters
- NICKEL AND CHROME PLATED, CUSHION-GRIP HANDLES
- 73-7" List Ea. 4.25 With Side Cutters
- 730-7" List Ea. 3.40 Without Side Cutters



**DIAGONAL CUTTING PLIERS**

- POLISHED HEAD, GUN METAL HANDLES
  - 51-4 1/2" List Ea. 2.45 Wgt. Pkg. of 5, 1 1/2 lbs.
  - 51-5" List Ea. 2.75 Wgt. Pkg. of 5, 2 lbs.
  - 51-5 1/2" List Ea. 3.00 Wgt. Pkg. of 5, 2 lbs.
  - 51-6" List Ea. 3.10 Wgt. Pkg. of 5, 2 1/2 lbs.
  - 51-7 1/2" List Ea. 3.30 Wgt. Pkg. of 5, 3 lbs.
  - POLISHED HEAD, CUSHION-GRIP HANDLES
  - 91-4 1/2" List Ea. 2.85 Wgt. Pkg. of 5, 1 3/4 lbs.
  - 91-5" List Ea. 3.15 Wgt. Pkg. of 5, 2 1/4 lbs.
  - 91-5 1/2" List Ea. 3.40 Wgt. Pkg. of 5, 2 3/4 lbs.
  - 91-6" List Ea. 3.50 Wgt. Pkg. of 5, 3 lbs.
  - 91-7 1/2" List Ea. 3.70 Wgt. Pkg. of 5, 3 1/4 lbs.
  - FULLY NICKEL AND CHROME PLATED
  - 61-4 1/2" List Ea. 2.70 Wgt. Pkg. of 5, 1 1/2 lbs.
  - 61-5" List Ea. 3.00 Wgt. Pkg. of 5, 2 lbs.
  - 61-5 1/2" List Ea. 3.25 Wgt. Pkg. of 5, 2 lbs.
  - 61-6" List Ea. 3.35 Wgt. Pkg. of 5, 2 1/2 lbs.
  - NICKEL AND CHROME PLATED, CUSHION-GRIP HANDLES
  - 71-4 1/2" List Ea. 2.95 Wgt. Pkg. of 5, 1 1/2 lbs.
  - 71-5" List Ea. 3.25 Wgt. Pkg. of 5, 2 lbs.
  - 71-5 1/2" List Ea. 3.50 Wgt. Pkg. of 5, 2 lbs.
  - 71-6" List Ea. 3.60 Wgt. Pkg. of 5, 2 1/2 lbs.
- Diagonals are available with stripping notch, "W" notches and insulation crushers, separately or in combination.
- PLIERS WITH SPRING IN HANDLES  
Additional 1 Each .30 List

**WORKMANSHIP** IN-DUSTRONIC tools are hot drop-forged from special analysis alloy steel, machined and finished with the same care and precision which have made world-famous BOKER TREE BRAND Fine Cutlery and surgical instruments for over a century. Individually fitted and adjusted, each is accurately heat-treated by HYDRIZING, which minimizes "carburization" and "decarb". Cutting blades are precision-hardened with electronic controls, and honed by hand for keen edges that retain their sharpness.



**HEAVY DUTY DIAGONAL CUTTING PLIERS**

Added leverage for heavy cutting. Wgt. Pkg. of 5, 3 lbs.

- 591-7" List Ea. 3.00 Polished Head, Gun Metal Handles
- 991-7" List Ea. 3.40 Cushion-Grip Handles
- 691-7" List Ea. 3.25 Nickel and Chrome Plated



**LONG NEEDLE NOSE PLIERS**

Unusual gripping ability without distortion for such long, slender jaws, checker-milled. Wgt. Pkg. of Five, 1 3/4 lbs.

- 533-6" List Ea. 2.80 Polished Head, Gun Metal Handles
- 933-6" List Ea. 3.20 Cushion-Grip Handles
- 633-6" List Ea. 3.05 Nickel and Chrome Plated



**CURVED NEEDLE NOSE PLIERS**

Checker-milled jaws. Wgt. Pkg. of Five, 1 1/4 lbs.

- 538-6" List Ea. 3.00 Polished Head, Gun Metal Handles
- 938-6" List Ea. 3.40 Cushion-Grip Handles
- 638-6" List Ea. 3.25 Nickel and Chrome Plated



**SHORT JAW, LONG HANDLE, NEEDLE NOSE PLIERS**

Checker-milled jaws. Wgt. Pkg. of Five, 2 1/2 lbs.

- 573-8" List Ea. 2.85 Polished Head, Gun Metal Handles
- 973-8" List Ea. 3.25 Cushion-Grip Handles
- 673-8" List Ea. 3.10 Nickel and Chrome Plated

**SHORT JAW, LONG HANDLE, DUCKBILL PLIERS**

- 574-8" List Ea. 2.85 Polished Head, Gun Metal Handles



**ELECTRICIAN'S SIDE CUTTING PLIERS**

- POLISHED HEAD, GUN METAL HANDLES
- 52-6" List Ea. 2.85 Wgt. Pkg. of 2 lbs.
- 52-7" List Ea. 3.25 Wgt. Pkg. of Five, 3 lbs.
- 52-8" List Ea. 3.60 Wgt. Pkg. of Five, 4 lbs.
- FULLY NICKEL AND CHROME PLATED
- 62-7" List Ea. 3.50 Wgt. Pkg. of Five, 3 lbs.

# BOKER IN-DUS-TRONIC TOOLS

PROFESSIONAL TOOLS DESIGNED SPECIFICALLY FOR THE ELECTRONICS INDUSTRY



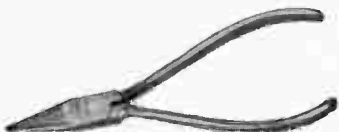
## JEWELERS' 4 1/2" PRECISION PLIERS



**DIAGONAL CUTTING PLIERS**  
481



**END CUTTING NIPPERS**  
482



**NEEDLE NOSE PLIERS**  
483

Fine, small pliers, hot drop-forged from special analysis alloy steel, machined with precision, carefully fitted, accurately heat treated, and tested to exacting specifications.

Matched in size and shape to fit the hand with a snug "feel", they speed delicate work in jewelry and watch-making, electronics and communications, instruments, model making, and other precision work in confined areas.

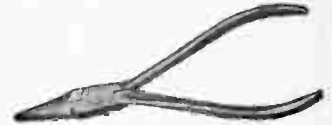
481-4 1/2" Carefully edged for close cutting and trimming of small wires and soft materials. Wgt. Pkg. of Five, 1/2 lb.

482-4 1/2" High leverage for clean cuts, flush or close to the surface, of small wire and fine objects. Wgt. pkg. of Five, 3/4 lb.

483-4 1/2" Slender, smooth jaws taper to a needle point to hold, bend, twist, and pull. Wgt. Pkg. of Five, 1/2 lbs.

484-4 1/2" Flat, wide, smooth jaws for stronger gripping and forming of wire and flat stock. Wgt. Pkg. of Five, 3/4 lb.

485-4 1/2" Both jaws rounded and tapered to form accurate loops, rings, and bends. Wgt. Pkg. of Five, 1/2 lb.



**FLAT NOSE PLIERS**  
484



**ROUND NOSE PLIERS**  
485

Attractive Crystal Case, with lining to nest any assortment of these fine precision pliers, makes ideal gift package and useful tool kit.

C8 List Ea. 1.00 Size 5" x 7"

FULL POLISHED FINISH  
(illustrated)

Tool No.	List Ea.
481	2.90
482	3.50
483	2.90
484	2.90
485	2.90

POLISHED HEAD, GUN  
METAL HANDLES

Tool No.	List Ea.
581	2.25
582	2.85
583	2.25
584	2.25
585	2.25

POLISHED HEAD,  
CUSHION-GRIP HANDLES

Tool No.	List Ea.
981	2.90
982	3.50
983	2.90
984	2.90
985	2.90

FULL NICKEL AND  
CHROME PLATED

Tool No.	List Ea.
681	3.00
682	3.60
683	3.00
684	3.00
685	3.00

NICKEL  
CHROME PLATED,  
CUSHION-GRIP HANDLES

Tool No.	List Ea.
781	3.25
783	3.25



**PROFESSIONAL SLIP-JOINT SIDE CUTTERS**

Flat, serrated nose for gripping, curved inner section to grip round shapes, keen knives to cut. FULLY NICKEL AND CHROME PLATED 6395-7 1/2" List Ea. 3.25 Wgt. Pkg. of 5, 2 1/2 lbs.



**COMBINATION SLIP-JOINT PLIERS**

FULLY NICKEL AND CHROME PLATED  
6040-6 1/2" List Ea. 1.00 Wgt. Pkg. of 5, 2 1/2 lbs.  
6041-8" List Ea. 1.50 Wgt. Pkg. of 5, 3 1/2 lbs.  
6041-10" List Ea. 2.25 Wgt. Pkg. of 5, 5 lbs.



**THIN NOSE COMBINATION PLIERS**

FULLY NICKEL AND CHROME PLATED  
6042-6 1/2" List Ea. 1.25 Wgt. Pkg. of 5, 2 1/2 lbs.



**BENT THIN NOSE COMBINATION PLIERS**

FULLY NICKEL AND CHROME PLATED  
6043-6 1/2" List Ea. 1.50 Wgt. Pkg. of 5, 2 1/2 lbs.



**"GROOVE-GRIP" 5-ADJUSTMENT PLIERS**

FULLY NICKEL AND CHROME PLATED  
6507-6 1/2" List Ea. 2.25 Wgt. Pkg. of 5, 2 lbs.  
6507-8" List Ea. 2.50 Wgt. Pkg. of 5, 3 lbs.  
6507-10" List Ea. 2.85 Wgt. Pkg. of 5, 4 lbs.



**MIDGET "GROOVE-GRIP PLIERS**

Slender and wiry, indispensable for gripping small nuts and other objects in tight spots. Wgt. Pkg. of Five, 3/4 lbs.

6517-5" List Ea. 2.00  
Nickel and Chrome Plated  
P6517-5" List Ea. 2.25  
Plated, With Cushion-Grips



**THIN, ALLOY STEEL ADJUSTABLE WRENCHES**

FULLY NICKEL AND CHROME PLATED  
6W-4" List Ea. 2.38 Wgt. Pkg. of 5, 1 1/2 lb.  
6W-6" List Ea. 2.38 Wgt. Pkg. of 5, 1 1/2 lbs.  
6W-8" List Ea. 2.76 Wgt. Pkg. of 5, 2 1/2 lbs.  
6W-10" List Ea. 3.54 Wgt. Pkg. of 5, 4 1/2 lbs.  
6W-12" List Ea. 5.18 Wgt. Pkg. of 5, 7 1/2 lbs.  
6W-15" List Ea. 7.88 Wgt. Pkg. of 5, 16 lbs.



**ELECTRICIAN'S UTILITY KNIFE**

One Blade, one self-locking Screwdriver and Insulation Scraper Blade.  
9229 3 3/4" List Ea. 2.50 Wgt. per Doz. 3 lbs.



**ELECTRICIAN'S SNIPS**

Scraper, file on back of blade. Nickel plated.  
709-5" List Ea. 2.50 Wgt. per Doz. 1 3/4 lbs.

**LEATHER TOOL HOLSTER**

99 List Ea. 4.65 5-pocket, tape holder



**PROTO PRECISION-MADE ELECTRONICS TOOLS!**  
Only Proto Offers the Complete Line

Proto Electronics Tools are designed and manufactured to exceed the rigid requirements of professional tool users—men who earn their living with tools. Here are a few reasons why experts prefer Proto: 1) User-tested designs provide strength, lightness, balance and ease of handling;

2) Proto-specified alloy steels, properly forged and heat treated, insure extra years of life; 3) Modern manufacturing methods produce accurate-fitting tools for fast, safe use; 4) Long life and high efficiency decrease overall cost; and, 5) The guarantee means what it says, it protects you.

**COMBINATION BOX**

**AND OPEN END WRENCHES**



- 1208 1/4" Openings
- 1210 5/16" Openings
- 1212 3/8" Openings
- 1214 7/16" Openings
- 1216 1/2" Openings

**MIDGET OPEN END WRENCHES —**

**15° - 80° ANGLE HEADS**



- 3314 7/32" Openings
- 3316 1/4" Openings
- 3318 9/32" Openings
- 3320 5/16" Openings
- 3322 11/32" Openings
- 3324 3/8" Openings
- 3328 7/16" Openings

**ADJUSTABLE WRENCHES**



- 704 Adjust. Wrench, 4"
- 706 Adjust. Wrench, 6"
- 708 Adjust. Wrench, 8"

**1/4" SQUARE DRIVE SOCKETS**



- 4706 6-Pt., 3/16" Openings
- 4707 6-Pt., 7/32" Openings
- 4708 6-Pt., 1/4" Openings
- 4709 6-Pt., 9/32" Openings



- 4710 6-Pt., 5/16" Openings
- 4711 6-Pt., 11/32" Openings
- 4712 6-Pt., 3/8" Openings
- 4714 6-Pt., 7/16" Openings
- 4716 12-Pt., 1/2" Openings



- 4708L Deep, 6-Pt., 1/4"
- 4709L Deep, 6-Pt., 9/32"



- 4710L Deep, 6-Pt., 5/16"
- 4711L Deep, 6-Pt., 11/32"
- 4712L Deep, 6-Pt., 3/8"



- 4737L Phillips #1 Bit
- 4738L Phillips #2 Bit


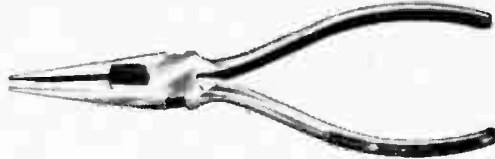
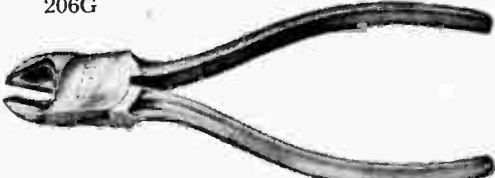



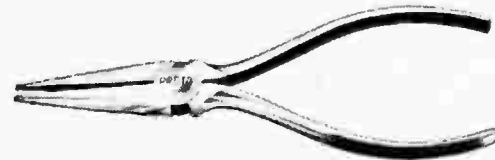



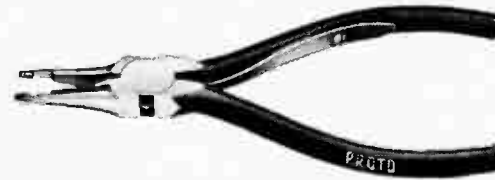

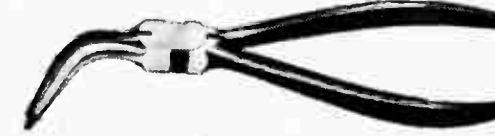




- 4744 Screwdriver, 3/16" Bit



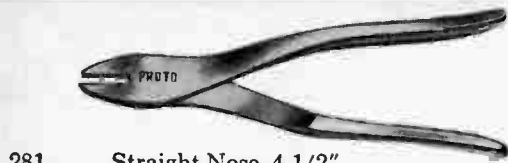
**PROTO PRECISION-MADE ELECTRONICS TOOLS!**  
 Only Proto Offers The Complete Line



PLIERS		PLIERS	
	206 Diagonal, 6" 206G		226 Needle Nose, 6-3/4" 226G
	206T "Snip-Grip" Diagonal, 6"		227 Duck Bill, 7-1/2" 227G
	209 2 Diagonal, 7" 209G With "Handeze" Grip		228 Needle Nose, 8" 228G
	220 Chain Nose, 6-3/4" 220G		230 Slip Joint, 4-1/2"
	222 Needle Nose, 6-3/4" 222G		234 Leverage "Multiplier", 7-3/4"
	224 Needle Nose, 6" 224G		242 Multi-Groove, 7-1/2" 243 Multi-Groove, 10"
	225 Curved Needle Nose, 6" 225G		266 Lineman's, 6" 266G
			276 Slip Joint, 6-1/2" 278 Slip Joint, 8"

**PLIERS**

**PLIERS**



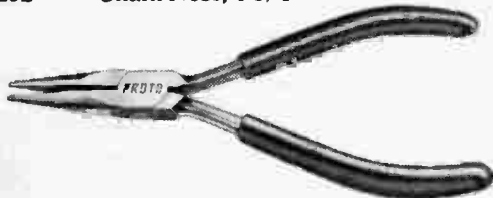
281 Straight Nose, 4-1/2"



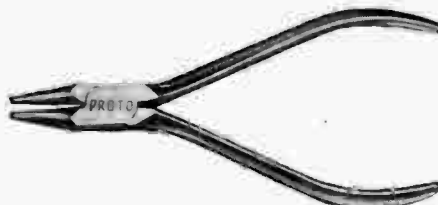
281G No. 281 with "Handeze" Grips



282 Chain Nose, 4-3/4"



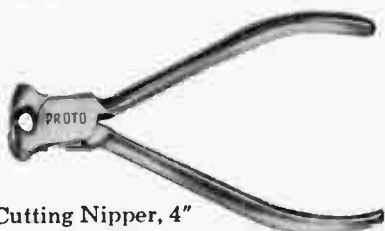
282G No. 282 with "Handeze" Grips



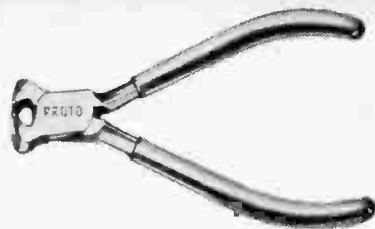
283 Round Nose, 4-1/2"



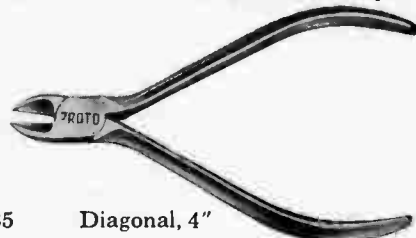
283G No. 283 with "Handeze" Grips



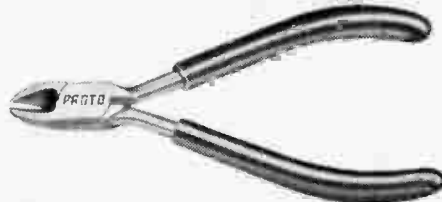
284 Cutting Nipper, 4"



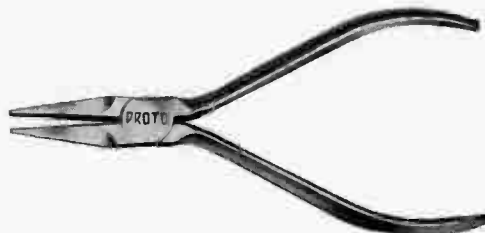
284G No. 284 with "Handeze" Grips



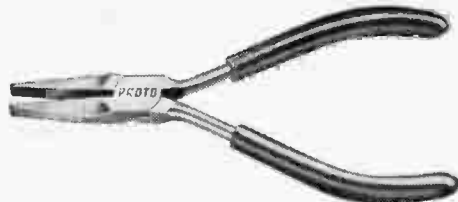
285 Diagonal, 4"



285G No. 285 with "Handeze" Grips



286 Flat Nose, 4-3/4"



286G No. 286 with "Handeze" Grips



299 Wire Stripper, 5"

**PROTO PRECISION-MADE ELECTRONICS TOOLS!**  
Only Proto Offers The Complete Line



**1/4" DR. SOCKET ATTACHMENTS**



4750 Rev. Ratchet, 4-1/2"



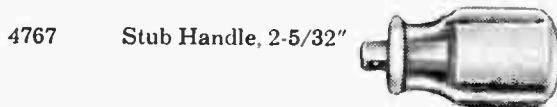
4760 Extension, 3-1/2"



4761 Extension, 6"



4765 Flexible Extension, 6"



4767 Stub Handle, 2-5/32"



4769 Skt. Driver, 5-7/8"

**HEX. NUT DRIVERS**



- 9206 3/16" Opening
- 9207 7/32" Opening
- 9208 1/4" Opening
- 9209 9/32" Opening
- 9210 5/16" Opening
- 9211 11/32" Opening
- 9212 3/8" Opening
- 9214 7/16" Opening
- 9216 1/2" Opening
- 9218 9/16" Opening
- 9220 5/8" Opening

**"RUBY LINE" PLASTIC HANDLE**

**ROUND BLADE SCREWDRIVERS**



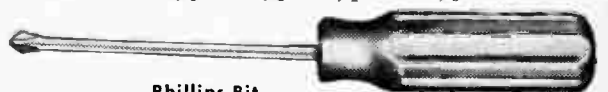
**Regular Type—Keystone Bit**

NO.	SHANK DIAM.	BLADE LENGTH	BIT WIDTH	TOTAL LENGTH	WT., LBS.
9302	1/8"	4 1/8"	1/8"	4 1/8"	.03
9304	1/8"	4 1/8"	1/8"	7"	.07
9306	1/8"	6 1/8"	1/8"	9"	.08
9308	1/8"	8 1/8"	1/8"	11"	.09
9314	3/16"	4"	3/16"	7 1/16"	.14
9316	3/16"	6"	3/16"	9 1/16"	.15
9318	3/16"	8"	3/16"	11 1/16"	.17
9321	1/4"	1 1/2"	1/4"	3 1/4"	.11
9322	1/4"	2"	1/4"	5 7/8"	.18
9324	1/4"	4"	1/4"	7 7/8"	.20
9326	1/4"	6"	1/4"	9 7/8"	.24
9328	1/4"	8"	1/4"	11 7/8"	.27
9330	1/4"	9 3/4"	1/4"	13 5/8"	.29
9334	5/16"	4"	5/16"	8 3/16"	.30
9335	5/16"	5"	5/16"	9 9/16"	.32
9336	5/16"	6"	5/16"	10 3/16"	.35
9338	5/16"	8"	5/16"	12 3/16"	.39



**Cabinet Type—Straight Bit**

NO.	SHANK DIAM.	BLADE LENGTH	BIT WIDTH	TOTAL LENGTH	WT., LBS.
9352	1/8"	1 3/4"	1/8"	4 1/8"	.04
9353	1/8"	3 1/8"	1/8"	6"	.06
9354	1/8"	4 1/8"	1/8"	7"	.07
9355	1/8"	5 1/8"	1/8"	8"	.08
9356	1/8"	6 1/8"	1/8"	9"	.08
9358	1/8"	8 1/8"	1/8"	11"	.09
9360	1/8"	9 3/4"	1/8"	12 5/8"	.09
9362	3/16"	1 1/2"	3/16"	4 1/16"	.11
9364	3/16"	4"	3/16"	7 1/16"	.13
9365	3/16"	5"	3/16"	8 7/16"	.14
9366	3/16"	6"	3/16"	9 7/16"	.15
9368	3/16"	8"	3/16"	11 7/16"	.17
9370	3/32"	9 3/4"	3/32"	13 3/16"	.18
9372	1/4"	2"	1/4"	5 7/8"	.18
9374	1/4"	4"	1/4"	7 5/8"	.21
9375	1/4"	5"	1/4"	8 5/8"	.22
9376	1/4"	6"	1/4"	9 7/8"	.23
9378	1/4"	8"	1/4"	11 7/8"	.26
9380	1/4"	9 3/4"	1/4"	13 3/8"	.28



**Phillips Bit**

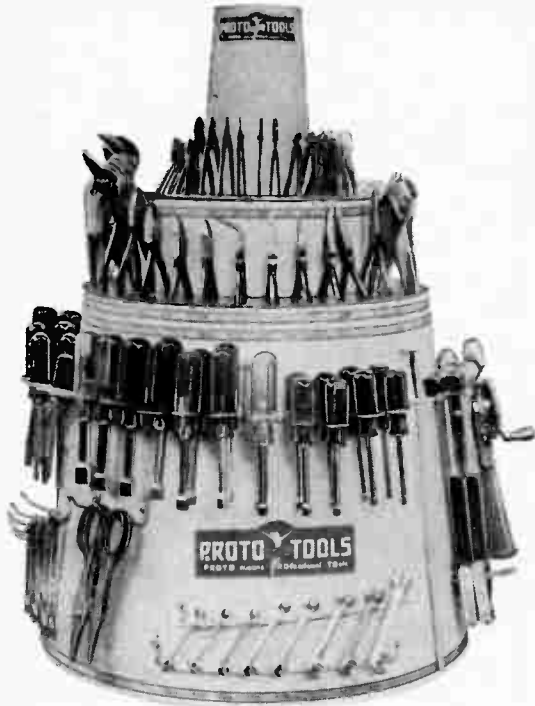
NO.	SHANK DIAM.	BLADE LENGTH	BIT NO.	TOTAL LENGTH	WT., LBS.
9381	1/8"	2 1/4"	#0	4 5/8"	.04
9382	3/16"	2 1/8"	#1	6 3/16"	.12
9384	1/4"	4"	#2	7 7/8"	.21



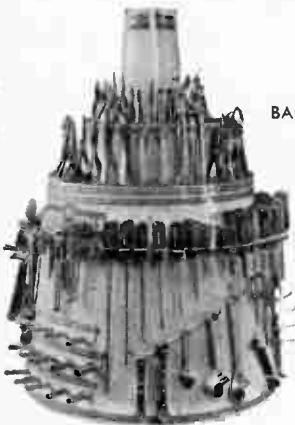
**PROTO PRECISION-MADE ELECTRONICS TOOLS!**  
Only Proto Offers the Complete Line

**SD-19 ELECTRONIC TOOLS**

**MERCHANDISER**



FRONT



BACK

Here's the new Proto Electronics Tool Display that makes it easy to choose exactly the tools you need.

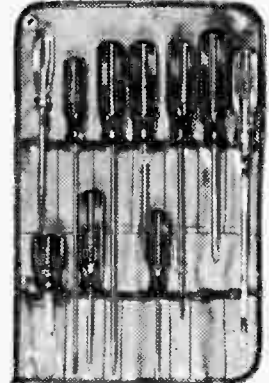
Now you can serve yourself—prices are plainly marked right on the display. You'll find work goes faster, easier with these Proto Professional Tools—including: pliers; all-purpose snips; all-angle drills; adjustable and pipe wrenches; ratcheting box wrenches; combination box and open end wrenches; soft-face hammers; special all-purpose tools; midget open end wrenches; 1/4" square drive sockets, attachments and set; Allen wrench sets; hex nut drivers; and, the "Ruby Line" plastic-handle round blade screwdrivers.

**ELECTRONIC TOOLS**

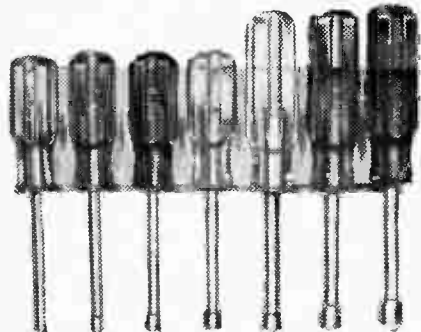
**SERVICE KITS**



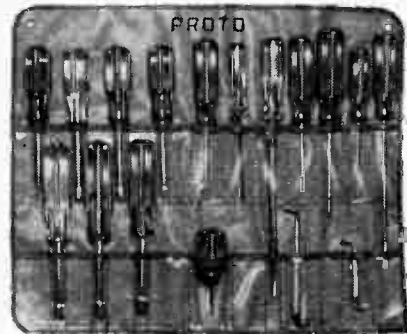
9200C (left) Clear, plastic pockets, plainly marked, contain seven most popular drive sizes. Heavy duty. Snap closure. Grommets for hanging on wall.



9300D (right) Contains ten screwdrivers. Durable, plastic kit features grommets for hanging in shop.



9200A Holds seven most needed sizes of drivers in clearly identified slots. Hang on wall of shop or truck.




9200F Contains 17 tools—seven color-coded hex nut drivers, and ten screwdrivers—including offset and Phillips types.



ALL ITEMS CARRIED IN STOCK  
FOR IMMEDIATE SHIPMENT  
All pliers pocked 1/2 dozen per box

**Diagonal Cutting Pliers**




<b>BOX JOINT</b>				
No. 526	5"	3.25	6"	4.15
<b>SINGLE JOINT</b>				
No. 1525	4 1/2"	5"	5 1/2"	6"
	2.40	2.65	2.80	3.25
<b>With wire stripping hole</b>				
1525-STR	4 1/2"	2.65	5"	2.90

**ANGLE NOSE Diagonal Cutting Pliers**




No. 2528	6 1/2"	3.60	7 1/2"	4.25
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**PIANO WIRE Diagonal Cutting Pliers**




No. 1528	4 1/2"	5 1/2"	6 1/2"	7 1/2"
	2.55	2.95	3.60	4.25

**PIANO WIRE Side Cutting Nippers with replaceable blades**



No. 1518	9"	5.15	10"	5.85
Extra Blades	9"	1.80	10"	1.85

**PIANO WIRE End Cutting Nippers with replaceable blades**



No. 1519	9"	6.40		
Extro Blades		2.00		

**PIANO WIRE End Cutting Nippers**




No. 527	6"	2.65	7"	3.10
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**Slip Joint Pliers with wire cutters**




No. 616	5 1/2"	2.40	7 1/2"	2.90
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**End Cutting Nippers**



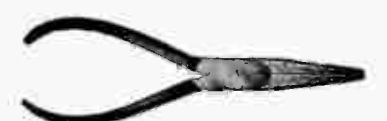
<b>BOX JOINT</b>				
No. 522	6"	3.75		
<b>SINGLE JOINT</b>				
No. 523	5"	3.10		

**Long Nose Pliers with cutters**




<b>BOX JOINT</b>				
No. 590	6"	3.50	7"	4.05
<b>SINGLE JOINT</b>				
No. 1590	5"	2.40	6"	2.85
			7"	3.25

**Long Nose Pliers**



<b>BOX JOINT</b>				
No. 533	5"	2.25	6"	2.80
			7"	3.35
<b>SINGLE JOINT</b>				
No. 2533	6"	2.10	7"	2.55
			8"	3.00

**Snipe Nose Pliers**




No. 1533	6"	2.65		
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**Slender Duck Bill Pliers**



No. 1532	6"	2.65		
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**Special Slender Electronic Duck Bill Pliers with BOX JOINT**




No. 530	5"	2.50	6"	3.05
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**Curved Nose Pliers**




No. 1631	5 1/2"	2.65		
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**Special Bent Nose Pliers**



No. 2533-B	8"	3.50		
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**Lineman's Pliers**



No. 697	8"	4.70		
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**INSTRUMENT MAKERS  
and JEWELERS PLIERS  
Full Polished**

**End Cutting Nippers**



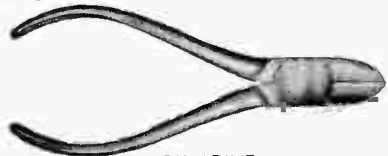
No. 523-P	4"	2.95	4 1/2"	3.25
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**BOX JOINT Duck Bill Pliers**



No. 531-4 1/2P		2.65		
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**Diagonal Cutting Pliers**




<b>BOX JOINT</b>				
No. 526	4 1/2P	3.75		
<b>SINGLE JOINT</b>				
No. 1526-4P		2.95		
No. 1525-4 1/2P		3.25		

**BOX JOINT Snipe Nose Pliers**




No. 533-P	4"	2.40	4 1/2"	2.65
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**Slim Snipe Nose Pliers**



No. 1520-P	4"	2.95	4 1/2"	3.15
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**Slim Round Nose Pliers**



No. 5020-P	4"	2.95	4 1/2"	3.15
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**ERIKSON SPECIALIZED TOOL COMPANY**



# Norseman ELECTRONIC TOOLS

## STICKLE-BACK DRILSAWS

Made in Germany, this tool will drill holes in wood, plaster board, etc. and saw in any direction.



#0-5 x 5/32" dia. ....	\$ .98 net
#1-7 x 3/16" dia. ....	1.85 net
#2-10 x 1/4" dia. ....	2.45 net
#3-13 x 5/16" dia. ....	2.95 net
#4-15 x 3/8" dia. ....	3.25 net
#5-13 x 1/2" dia. ....	(saw rasp) 2.25 net

## REVERSIBLE RATCHETS

A rugged ratcheting box wrench. No buttons, no levers — just turn it over to reverse the ratchet.

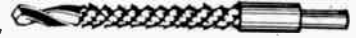


1/4" x 5/16" ..... \$1.95 net	5/8" x 11/16" ..... \$2.65 net
3/8" x 7/16" ..... 2.10 net	3/4" x 3/4" ..... 3.00 net
1/2" x 9/16" ..... 2.35 net	3/4" x 7/8" ..... 3.25 net

## DRILL ROUTERS

Another "Stickle-back" tool, similar to the Drillsaw, but for use in electric drills.

#318-1 2 3/8" x 1/4" dia. ....	\$1.40 net
#318-2 4 1/2" x 1/4" dia. ....	1.60 net



## TIPPY STICKS

Flexible alignment tools of tenite II with a non-magnetic stainless steel tip. Permits snaking around obstructions and still turn screws and slugs.



ST-186 6" long .....	.40 net
ST-1810 10" long .....	.45 net
ST-1814 14" long .....	.50 net

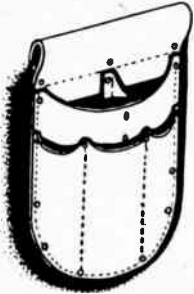
## TRI-TAPS

The original 3-in-1 tool with 6/32", 8/32" and 10/32" taps to clean or cut three of the most common threads used in electronic work.



T-3 .....	\$1.95 net	T-4 tap only for HT-24	1.45 net
		HT-24 with replaceable tap .....	\$2.50 net

## TOOL POUCHES



#14 Telephone lineman's pouch of chrome-tanned cowhide. One large separated pocket with three smaller ones in front. Riveted and stitched with linen thread. 6" x 9 1/4" ..... \$4.95 net



Electrician's Pouch. Bark-tanned top grain cowhide, riveted and stitched with linen thread. 7 pockets, loop for hammer, snap loop for roll of tape.

#17 10" x 9" ..... \$4.00 net

Bark-tanned top grain cowhide, riveted and stitched with linen thread. One large pocket, 1 smaller one in front.

#16 5" x 8 3/4" ..... \$2.15 net



Radio-TV Pouch. Bark-tanned top grain cowhide, riveted and stitched with linen thread. One large pocket, 2 smaller ones in front.

#19 8" x 10 1/4" ..... \$3.60 net

Bark-tanned top grain cowhide, riveted and stitched with linen thread. One large pocket, 2 smaller ones in front.

#15 5 1/2" x 7 3/4" ..... \$2.75 net



#18 Box type pouch of chrome-tanned cowhide. Large 2" wide pocket with two smaller ones in front. Riveted and stitched with linen thread. 6 1/4" x 9" ..... \$3.60 net

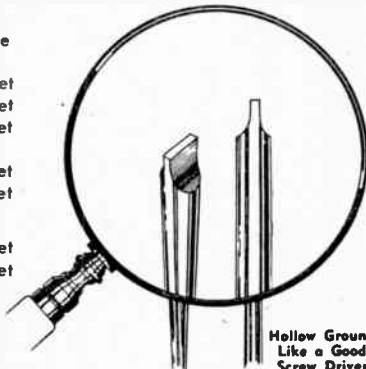
## DIDDLE STICKS

Alignment tools of Lucite 10" long.

LU-1810 1/8" dia. ....	.25 net
LU-53210 5/32" dia. ....	.25 net
LU-31610 3/16" dia. ....	25 net
14" long	
LU-53214 5/32" dia. ....	.35 net
LU-31614 3/16" dia. ....	.35 net

Rigid Vinyl 3/16" dia.  
RV-31610 10" long ..... 25 net  
RV-31614 14" long ..... 35 net

Fibre Glass 1/8" dia.  
FG-1810 10" long ..... 35 net  
FG-1814 14" long ..... 50 net  
FG-1818 18" long ..... 65 net

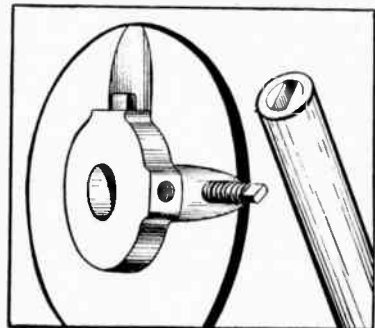


Hollow Ground Like a Good Screw Driver

## SLAB-HEAD DRIVERS

Drivers for SLAB-HEAD screws as used in Delco auto radios, Zenith & Arvin TV and 1956 models of Webcor recorders.

246-P ..... \$1.50 net



Clutch Head Screw and Driver

# ERIKSON SPECIALIZED TOOL COMPANY

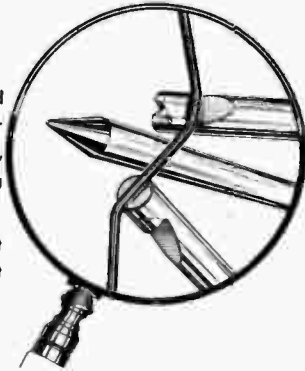


# Norseman ELECTRONIC TOOLS

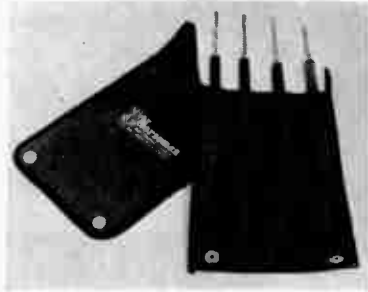
## JIGGLE STICKS

Probes of Lucite, 1 end forked for pushing other end pointed for probing, notched on side for pulling wires.

PR 532-6 5/32" dia. .30 net  
PR 316-8 3/16" dia. .35 net



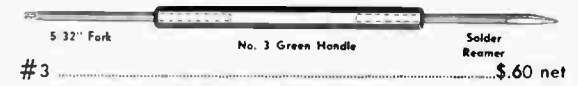
## SOLDERING AID KIT



Red Vinyl Plastic Kit pocked with Four Norseman Soldering Aids as illustrated.

SA-4 Complete Kit .....\$3.75 net

# NORSEMAN SOLDERING AIDS



**HANDLES**—are Hi-Impact Styrene 4" x 3/8" hex—won't roll off the work bench.

**METAL ENDS**—(separated from each other) non-magnetic stainless steel, to which solder won't adhere. Are firmly seated in handles and are twist-proof.

**FORKED END**—straddles the wire and with a slight twist, grips it for easy unwinding and removal, or guides it into another lug for soldering. Since handles act as insulation, there is no danger of shock when working on sets in operation. 1/8" forks are made especially for use on printed circuits and transistors.

**SPADE END**—is a reamer to clean lug holes of solder.

**CURVED END**—can be used as a scriber for marking chassis. As a circuit tracer when looking for loose connections. As a dial cord stringer. Hook can be bent to a 90 degree angle if desired.

**WIRE BRUSH**—has approx. 200 bristles of stainless steel wire .0035 in dia. For use in cleaning connections before soldering, brushing out splattered solder and in repairing printed circuits.

**KNIFE & SCRAPER**—for cutting and repairing printed circuits.

These soldering aids are available in lots of 200 or more with name and address in a two line imprint. Details on request.

PRICES SUBJECT TO CHANGE WITHOUT NOTICE



MADE IN ESKILSTUNA, SWEDEN, BY E. A. BERG MFG. CO. LTD. • EST. 1880

Only the best Swedish Charcoal Steel is used in the manufacture of Berg Pliers. Produced under exacting standards of control, they embody the most modern techniques of heat treatment and manufacture. Each plier is carefully engineered and designed to afford the greatest practical utility; lightness and ease of operation; and strength coupled with durability.

Special Electronic Diagonal Cutting Pliers with extra thin cutting edges, pointed nose and BOX JOINT

High Leverage Diagonal Cutting Pliers.

Straight Cutting Pliers with extended jaws



No. 525 - 5" ..... 4.40

1508 - 7" ..... 2.25

No. 1529 - 6 1/2" ..... 3.25

## ERIKSON SPECIALIZED TOOL COMPANY

# SNAP-ON DRAWER CO. MORROW, OHIO

**YOU** make up your own small parts cabinet to exactly fit **YOUR NEEDS** with . . .

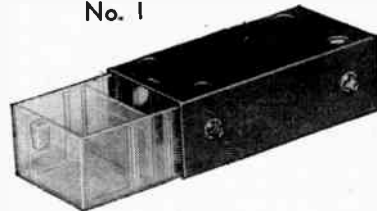
**SNAP-ON**



**DRAWERS**



No. 1



PLASTIC  
& STEEL

**SMALL**— $6\frac{1}{8}$ " x  $3\frac{1}{8}$ " x  $1\frac{7}{8}$ "

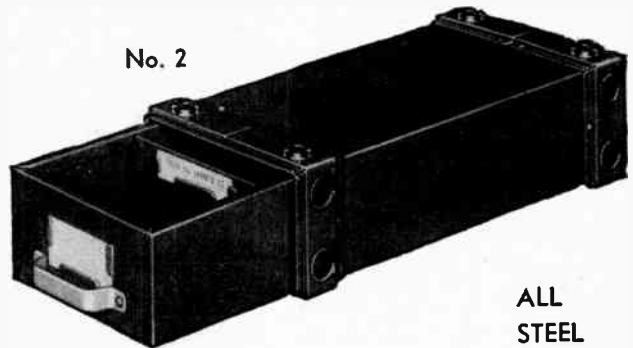
No. 1. "SMALL" Snap-On Drawer, including one No. 1D Divider, net price.....\$0.60  
 No. 1BP. Base Plate, net price......35  
 No. 1D. Divider, net price......03½

- **MODERN** Light weight, functional in design.
- **EFFICIENT** Parts are quickly, easily located.
- **PRACTICAL** You build to suit your needs.
- **SELECTIVE** You have a choice of three sizes.
- **ECONOMICAL** You buy only what you actually need.
- **CONVENIENT** When you need more room.
- **SO SIMPLE** Just snap on another SNAP-ON DRAWER.

• The sturdy, steel shells of the SNAP-ON DRAWER snap together on sides, top and bottom, with duplicate shells to form a strong metal cabinet. No tools required. Just place the metal buttons of one shell directly over the holes in the adjacent shell and snap the buttons into place, one at a time.

If you wish to change the position of a drawer, the shells can be readily pried apart with a knife blade and rearranged. Finished in GUN-METAL GRAY.

No. 2

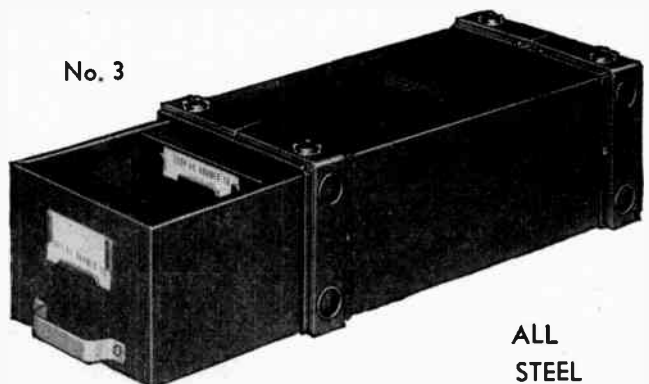


ALL  
STEEL

**JUNIOR**— $11\frac{3}{4}$ " x  $5\frac{1}{8}$ " x  $2\frac{1}{2}$ "

No. 2. "JUNIOR" Snap-On Drawer, including one No. 2D Divider, net price.....\$3.00  
 No. 2D. Divider, net price......13½

No. 3



ALL  
STEEL

**SENIOR**— $11\frac{3}{4}$ " x  $5\frac{1}{8}$ " x  $3\frac{1}{2}$ "

No. 3. "SENIOR" Snap-On Drawer, including one No. 3D Divider, net price.....\$3.30  
 No. 3D. Divider, net price......15



**IDEAL**

# WIRE STRIPPERS

**FOR ALL PRODUCTION JOBS ON ALL KINDS OF FILM INSULATION**

Formex • Formvar • Nylon • Enamel • Fibre Glass • Teflon\*

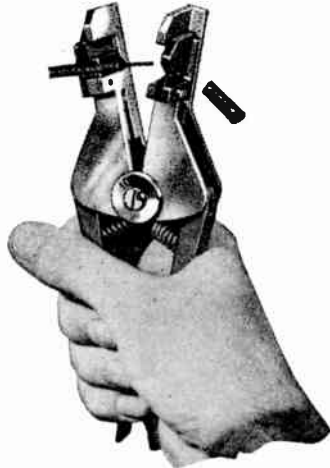
IDEAL Wire Strippers, both hand and production models are engineered with unique design features that speed up and simplify the stripping of ALL types of film insulation.

**IDEAL**

## Stripmaster®

### 2 SECOND "ONE SQUEEZE" OPERATION

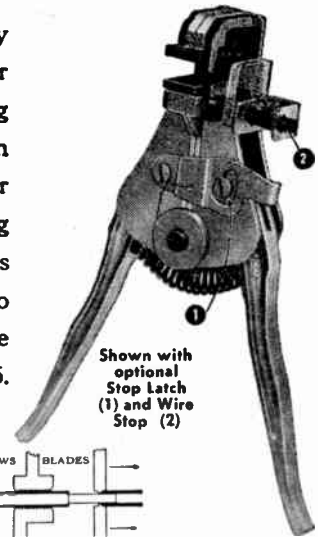
Unexcelled for fast assembly work, this 10 oz. stripper can be used all day without fatigue. Exclusive "automatic" feature holds jaws open after stripping to permit removal of wire and to prevent crushing. No nicking, fraying, or cutting of wire ends possible. 7 models for all wire gauges from 8 to 30.



**IDEAL**

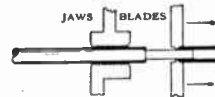
### "CONCENTRIC HOLE" STRIPPER for TEFLON\* WIRE

Makes Teflon as easy to strip as any other insulation. Chucking action on insulation guides the conductor through the stripping hole, preventing nicks and scrapes. Two models strip all wire sizes from 10 to 26.



Shown with optional Stop Latch (1) and Wire Stop (2)

Counterbored stripping hole "chucks" insulation



#### MODELS FOR ALL WIRE GAUGES — FROM 8 TO 30

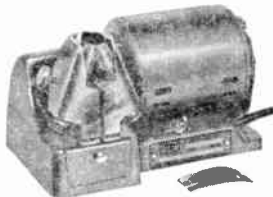
Catalog No.	Wire Gauge	No. of Holes	List Price♦	Suggested Resale
45-090	8 to 12	3	\$9.25	\$5.50
45-091	10 to 18	4	9.25	5.50
45-092	10 to 22	6	9.25	5.50
45-093	14 to 22	4	9.25	5.50
*45-095	16 or 18, and POSJ	-	9.25	5.50
45-097	16 to 26	6	9.25	5.50
45-098	20 to 30	6	9.25	5.50

\*Also strips 2 and 3-conductor low-voltage wire used in G.E. and Touchplate remote control wiring systems.

Catalog No.	Catalog No. (with stop latch & wire stop)	Wire Gauge	No. of Holes
45-170	45-180	10 to 14	3
45-171	45-181	16 to 26	6

Nos. 170 and 171—List \$25.95♦ Suggested Resale \$15.45  
Nos. 180 and 181—List \$32.40♦ Suggested Resale \$19.45  
\*REG. TRADEMARK OF DUPONT

## THREE IDEAL PRODUCTION TYPE STRIPPERS FOR ALL TYPES OF FINE GAUGE FILM INSULATION



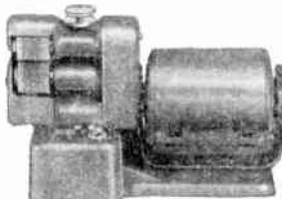
### TWIN-CONE BENCH TYPE

Compact, durable unit with unique fibre glass conical wheels—strips from AWG No. 50 to No. 30 wires faster and easier to within 1/8" of winding.

Cat. No. 45-101

### TWIN-CONE PORTABLE MODEL

with flexible shaft—not shown. Catalog No. 45-104



### TWIN WHEEL BENCH TYPE

For slightly heavier-duty work. Fibre glass cylindrical wheels strip AWG No. 50 to No. 25 wires up to 3/4" from body of winding.

Cat. No. 45-107

Eliminate Wire Breakage—Cut Down Broken Lead Rejects. Strips to within 1/8" From Body of Winding

IDEAL'S Twin-Cone and Twin Wheel models are time and motion engineered for maximum simplicity and efficiency on the highest speed production work. No need to stock different types of wheels . . . ONE PAIR does every job.

Ideal has the most complete line of wire strippers on the market. Ask your Distributor for full information on our line to fill any wire stripping need. ♦ Mfr.'s Suggested List Price

**IDEAL INDUSTRIES Inc.,**

**Sycamore, Illinois**

**IDEAL**

# Thermo-Tip instant heat

## Lightweight Resistance Soldering Tools. Especially Designed for Faster Positive Production Soldering of Miniature and Subminiature Parts

An efficient production tool expressly designed for soldering electronic circuits and parts, aircraft connectors, pin-type plugs, wire-to-wire, terminals, instruments, and printed circuits. Its pencil-small element gets into tight spots and is so much lighter and easier to handle than a soldering iron or gun that a woman can use it all day without fatigue!

### INSTANT RESISTANCE HEATING

Thermo-Tip is so fast that many joints can be soldered in less than 1 second! It heats by passing a high amperage current through wires, terminals, connector pins, etc. For power savings full rated wattage is used only when actually soldering.

### CUTS SOLDER VOID REJECTS

Resistance principle requires that joint being soldered be hot enough to melt the solder. Even an inexperienced person can get sound joints every time. Less solder will be necessary, too. Uniform heat cuts solder void rejects to a minimum.

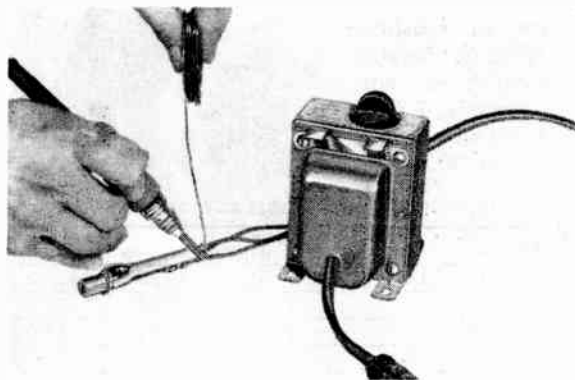
### PREVENTS HEAT DAMAGE TO DELICATE PARTS—"PIN-POINTS" THE HEAT

Only the part being soldered is heated. Surrounding parts are not burned or melted by a hot tip near them. Thermo-Tip heats so fast that leads

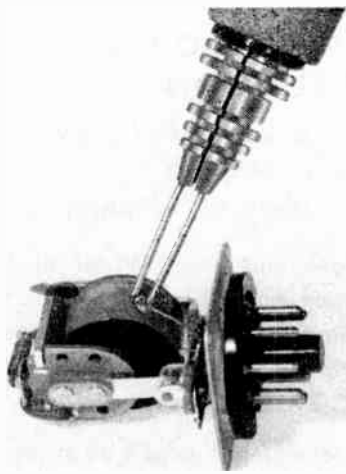
can be soldered before resistors, transistors, diodes, condensers, printed circuits, terminal fibre, etc., are damaged or other connections loosened. Power units permit selection of outputs to meet heat requirements of the job.

### SAFE-LOW SECONDARY VOLTAGE

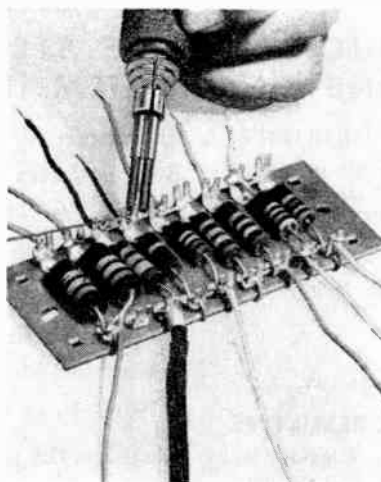
Soldering "pencil" uses harmless low voltage and high amperage from step-down transformer. Fire hazards are reduced, too, because the electrodes heat only when in use. No operator burns because heat is confined to electrodes.



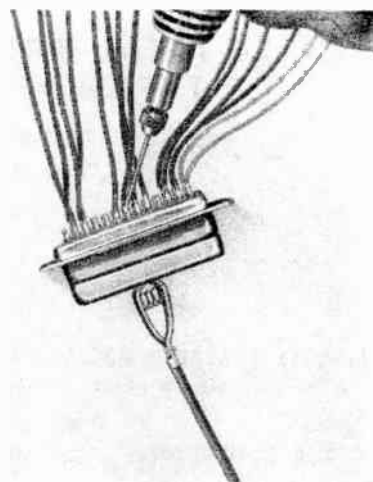
Cat. No. 12-124 Power Unit and Cat. No. 12-157 Double Metal Attachment Tool, shown soldering large telephone jack.



Double Metal Attachment Tool. Cat. No. 12-157, shown soldering miniature relay.



Double Carbon Attachment Tool. Cat. No. 12-155, shown soldering resistor board.



Single Metal Attachment Tool. Cat. No. 12-142, shown soldering Winchester type connector pins.

# RESISTANCE SOLDERING TOOLS **IDEAL**

## COMPLETE THERMO-TIP ATTACHMENT TOOLS AND POWER UNITS

All attachment tools feature lightweight handle with cork insulation—easily replaced electrodes—five-ft. cords with special connector which fits only the connector on the power unit. Heat-dissipating fins provide cooler handle for operator comfort. Shipping weight of all attachment tools—6 oz. each.



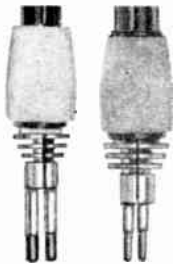
Cat. No. L-5241—Replacement Electrodes—.062" Dia., 3-1/2" long. Packed 6 per tube. Shipping Wt., 2 oz. List Price \$1.35 ♦ Suggested Resale .80 per pkg.

### DOUBLE METAL ATTACHMENT TOOLS

Feed through Metal Electrodes are adjustable for length and locked in place by set screws. Electrode spacing can be adjusted by bending wires.

Cat. No. 12-157 with .062" Double Metal Electrodes. List Price \$13.15 ♦ Suggested Resale \$7.90.

### DOUBLE CARBON ATTACHMENT TOOLS



Carbons are easily replaced at low cost. Replacement Carbon Holders will fit both double carbon attachment tools—providing economical conversion from one size to the other.

Cat. No. 12-155 with 3/16" Dia. Carbons. List Price \$13.15 ♦ Suggested Resale \$7.90.

Cat. No. 12-156 with 1/8" Dia. Carbons. List Price \$13.15 ♦ Suggested Resale \$7.90.

Cat. No. L-4866 3/16" Dia. Replacement Carbon for 12-155. Six per package. Shipping Wt., 2 oz. List Price \$1.75 ♦ Suggested Resale \$1.04 per pkg.

Cat. No. L-4848 1/8" Dia. Replacement Carbons for 12-156. Six per package. Shipping Wt., 2 oz. List Price \$.80 ♦ Suggested Resale \$.48 per pkg.

### SINGLE ELECTRODE ATTACHMENT TOOLS

Cat. No. 12-141 has specially compounded 1/8" Carbon 3" long. Cat. No. 12-142 has .062" Metal Electrode 3-1/2" long. Both attachment tools feature feed-through collet chuck which permits easy adjustment for wear and/or variety of jobs. Attachment tools include ground clamps for jig soldering. Cat. No. 12-141 with 1/8" Dia. Carbons 12-142 with .062" Dia. Metal. List Price \$13.15 ♦ Suggested Resale \$7.90. Cat. No. L-5202 Replacement Carbons for 12-141. Packaged 6 per tube. Shipping Wt., 2 oz. List Price \$3.20 ♦ Suggested Resale \$1.92 per pkg.

Cat. No. L-5241 Replacement Electrodes for 12-142. Packaged 6 per tube. Shipping Wt., 2 oz. List Price \$1.35 ♦ Suggested Resale \$.80 per pkg.



Cat. No. 12-151 Handle and Lead Assembly. List Price \$5.90 ♦ Suggested Resale \$3.55.

### CHISEL TIP IRONS



Cat. No. 12-144—1/4" Chisel-Tip. List Price \$9.20 ♦ Suggested Resale \$5.50.



Cat. No. 12-143—1/8" Chisel-Tip. List Price \$9.20 ♦ Suggested Resale \$5.50.

Rapid heating characteristics and corrosion-resistant special plating provide long life. Irons are locked into handle

with set screws. Resistance element in the iron provides continuous, controlled heat.

NOTE: Handle assembly and Irons are sold separately.

### FOOT SWITCH



Used to eliminate arcing at point of electrode contact. Also permits the use of electrodes to position or hold work after heat has been applied. Small and convenient to use (3-5/8" Dia. x 1-1/8" high).

Wired normally open (with series plug). Rated 5 amps., 115 V.

Cat. No. 12-146 List Price \$10.35 ♦ Suggested Resale \$6.20.



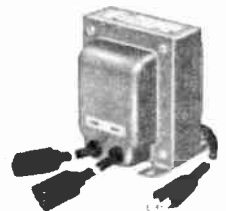
### Thermo-Tip Power Units

125-Watt Power Unit  
Cat. No. 12-124 List Price \$23.65 ♦ Suggested Resale \$14.20.

Includes primary and secondary leads, on-off switch and heat control knob. 115 volt, 60 cy. only. Spring clips provide for pencil storage or holding of pencil during soldering.

250-Watt Power Unit  
Cat. No. 12-123 List Price \$34.90 ♦ Suggested Resale \$20.95.

Includes primary lead and secondary leads. Primary 115 V., 60 cy. only. This higher watt unit will handle all the work listed for the 125 watt unit at a faster rate and will solder larger components. Power is supplied to attachments by high and low secondary leads.



### How to Select Proper Attachment Tools

In selecting the proper soldering attachment tools, consideration must be given to the following:

- Size of wires and terminals.
- Available working space.
- Production speed required.
- Adaptability to jig soldering.
- Sensitivity of components to heat.

The 12-157 Double Metal Attachment with the 12-124 Power Unit is the most generally useful combination—

handling the widest variety of work.

On large work, the 12-155 or 12-156 Double Carbon Attachments are used, depending on space available.

The 12-141 and 12-142 Single Electrode Attachments are used where work lends itself to jig soldering (as in aircraft connectors). Ground wire clamped to jig makes jig part of circuit. Ground wire and clamp are furnished as part of the attachment tools.

Chisel-Tip Irons 12-143 and 12-144 are available for those few applications where irons are necessary.

♦ Mfr.'s Suggested List Prices

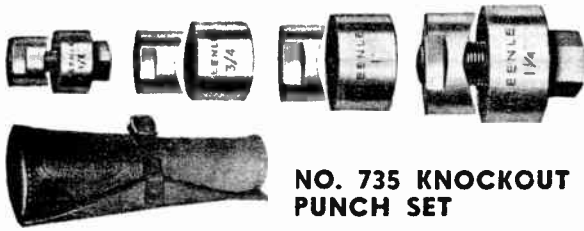
**IDEAL INDUSTRIES Inc.,**

**Sycamore, Illinois**



# KNOCKOUT PUNCHES AND CUTTERS

Greenlee Tool Co., Rockford, Illinois



**NO. 735 KNOCKOUT PUNCH SET**

Designed primarily for the electrical trade to permit fast, easy enlarging of knockouts and cutting of holes for conduit in metal boxes and cabinets. Also excellent for automobile work where holes are needed for heater pipes and other accessories. Simply insert the tool in a knockout or small drilled hole and give the screw a few turns with an ordinary wrench. No. 735 set has four punches for cutting  $\frac{7}{8}$ ,  $1\frac{1}{2}$ ,  $1\frac{3}{4}$ ,  $1\frac{1}{2}$ -inch holes for  $\frac{1}{2}$ ,  $\frac{3}{4}$ , 1,  $1\frac{1}{4}$ -inch conduit. Set is neatly packed in leather case illustrated. The  $\frac{1}{2}$ -inch punch will cut a  $\frac{7}{8}$ -inch hole for  $\frac{1}{2}$ -inch conduit where no standard knockout is provided when a  $\frac{1}{4}$ " hole is drilled.

## Heavy Duty Drive for $\frac{1}{2}$ " Punch

To increase length of service of the  $\frac{1}{2}$ -inch Knockout Punch in cutting  $\frac{7}{8}$ -inch holes in heavier-gauge sheet metals, the No. KR5 Drive Screw with No. KR4 Drive Nut illustrated is recommended.



## NO. 737 KNOCKOUT PUNCH SET

Similar to the No. 735 set, but consists of only two punches for cutting holes to accommodate  $1\frac{1}{2}$ " and 2" conduit. Packed in leather case.

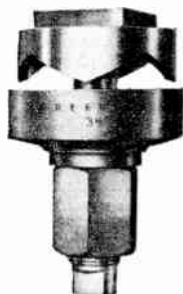


**NOS. 738 AND 739 KNOCKOUT PUNCHES**

For cutting holes to accommodate  $2\frac{1}{2}$ " and 3" conduit. Design is similar to that of smaller GREENLEE Knockout Punches: insert in a knockout or drilled hole and turn drive nut with an ordinary wrench. Packed and sold individually.

## NOS. 741, 742 and 743 KNOCKOUT PUNCHES

For quickly making smooth openings for  $3\frac{1}{2}$ ", 4" and 5" conduit. Hole is clean, no filing of burrs necessary. Operation is similar to that of other GREENLEE Knockout Punches. Simply insert in hole for 1" conduit and turn drive nut with an ordinary wrench.



**No. 740 Knockout Cutter**

Companion tool to GREENLEE Knockout Punches. Enlarges knockouts to take  $1\frac{1}{2}$ , 2,  $2\frac{1}{2}$  and 3-inch conduit. Operation is simple since an ordinary wrench drives the tool. Cutting is done by the drive action of two wheel cutters. Special discs

can be furnished for cutting odd sizes of holes from  $1\frac{1}{8}$  to  $3\frac{1}{2}$ -inch diameter. Packed in leather case.



**NO. 7646 HYDRAULIC KNOCKOUT PUNCH DRIVER**

A powerful portable hydraulic unit for driving all GREENLEE Knockout Punches. Also drives GREENLEE Radio Chassis Punches using  $\frac{3}{8}$ " or larger drive screws. Quickly, easily cuts holes in 10-gauge metal. Excellent for use in tight places. Packed in metal case. List price complete, \$100.00. Weight, 20 lbs.

## KNOCKOUT PUNCHES — LIST PRICES AND WEIGHTS (WTS. IN LBS.)

	Hole Size	Price	Weight
No. 735 Knockout Punch Set		\$11.60	$2\frac{1}{2}$
KR1 $\frac{1}{2}$ " Conduit Punch	$1\frac{1}{8}$ "	1.50	$\frac{7}{8}$
KR2 $\frac{1}{2}$ " Conduit Die	$1\frac{1}{8}$ "	.80	$\frac{7}{8}$
KR3 $\frac{3}{4}$ " x $1\frac{1}{2}$ " Drive Screw		.30	$\frac{7}{8}$
K11 $\frac{3}{4}$ " Conduit Punch	$1\frac{3}{8}$ "	1.70	$\frac{1}{2}$
K12 $\frac{3}{4}$ " Conduit Die	$1-11/32$ "	.95	$\frac{7}{8}$
K13 1" Conduit Punch	$1-11/32$ "	1.95	$\frac{7}{8}$
K14 1" Conduit Die	$\frac{3}{4}$ "	1.10	$\frac{3}{4}$
K15 $1\frac{1}{4}$ " Conduit Punch	$\frac{3}{4}$ "	2.20	$\frac{7}{8}$
K16 $1\frac{1}{4}$ " Conduit Die		1.20	$\frac{7}{8}$
KR17 $\frac{3}{4}$ " x $2\frac{3}{4}$ " Drive Screw	$1\frac{3}{8}$ "	.45	$\frac{3}{4}$
KR4 Heavy Duty Drive Nut		.45	$\frac{1}{2}$
KR5 Heavy Duty Drive Screw		.90	$\frac{1}{2}$
No. 737 Knockout Punch Set Complete		\$12.00	$3\frac{1}{2}$
K21 $1\frac{1}{2}$ " Conduit Punch	$1\frac{1}{8}$ "	2.80	$\frac{1}{2}$
K22 $1\frac{1}{2}$ " Conduit Die	$1\frac{1}{8}$ "	2.40	$\frac{3}{4}$
K23 2" Conduit Punch	$2\frac{1}{8}$ "	3.85	$\frac{7}{8}$
K24 2" Conduit Die	$2\frac{3}{8}$ "	3.00	1
KR25 $\frac{3}{4}$ " x 3" Drive Screw		.60	$\frac{7}{8}$
No. 738 Knockout Punch Complete		\$16.25	$4\frac{1}{2}$
K31 $2\frac{1}{2}$ " Conduit Punch	$2\frac{3}{8}$ "	6.30	$1\frac{3}{4}$
K32 $2\frac{1}{2}$ " Conduit Die	$2\frac{3}{8}$ "	5.75	$1\frac{1}{2}$
K34 Drive Nut		1.60	$\frac{1}{2}$
K35 $\frac{3}{4}$ " x $5\frac{1}{4}$ " Drive Screw		3.15	$\frac{7}{8}$
No. 739 Knockout Punch Complete		\$22.00	$6\frac{1}{2}$
K34 Drive Nut		1.60	$\frac{1}{2}$
K35 $\frac{3}{4}$ " x $5\frac{3}{4}$ " Drive Screw		3.15	$\frac{7}{8}$
K37 3" Conduit Punch	$3\frac{1}{2}$ "	9.35	$2\frac{1}{2}$
K38 3" Conduit Die	$3\frac{1}{2}$ "	8.65	$2\frac{1}{2}$
No. 741 Knockout Punch Complete		\$43.00	$10\frac{3}{4}$
K41 $3\frac{1}{2}$ " Conduit Die	4"	15.50	$3\frac{1}{4}$
K42 $3\frac{1}{2}$ " Conduit Punch	4"	20.00	3
K44 Drive Nut		2.20	$1\frac{1}{4}$
K45 $1\frac{1}{4}$ " x $6\frac{3}{4}$ " Drive Screw		6.60	$2\frac{1}{4}$
K46 Bushing		2.50	$\frac{3}{4}$
No. 742 Knockout Punch Complete		\$53.00	$12\frac{1}{4}$
K44 Drive Nut		2.20	$1\frac{1}{4}$
K45 $1\frac{1}{4}$ " x $6\frac{3}{4}$ " Drive Screw		6.60	$2\frac{1}{4}$
K46 Bushing		2.50	$\frac{3}{4}$
K47 4" Conduit Punch	$4\frac{1}{2}$ "	26.50	$4\frac{1}{2}$
K48 4" Conduit Die	$4\frac{1}{2}$ "	20.00	$3\frac{1}{2}$
No. 740 Knockout Cutter Complete		\$17.50	$4\frac{3}{4}$
K51 Lock Screw (2)		.35	$\frac{7}{8}$
K52 Wheel Cutter (2)		.65	$\frac{7}{8}$
K53 Feed Nut		.30	$\frac{7}{8}$
K54 $1\frac{1}{8}$ " dia. Disc		.80	$\frac{7}{8}$
K55 $2\frac{3}{8}$ " dia. Disc		.95	$\frac{7}{8}$
K56 $2\frac{7}{8}$ " dia. Disc		1.20	$\frac{7}{8}$
K57 $3\frac{1}{2}$ " dia. Disc		1.40	$\frac{1}{2}$
K58 Body		6.35	$1\frac{3}{4}$
K59 Center Shaft		1.00	$\frac{1}{2}$
K60 Drive Nut		.95	$\frac{7}{8}$
K61 Retainer Screw (2)		.50	$\frac{7}{8}$
K62 Cutter Bushing (2)		.35	$\frac{7}{8}$
K63 Cutter Support (2)		.75	$\frac{7}{8}$
K64 Key Washer		.30	$\frac{7}{8}$
K65 Woodruff Key		.10	$\frac{7}{8}$



# RADIO CHASSIS PUNCHES

## ROUND, SQUARE, "KEY" AND "D" TYPES

Greenlee Tool Co., Rockford, Illinois



No. 730

### No. 730 ROUND PUNCH

Swiftly cuts clean, accurate holes in radio chassis for sockets, switches, controls and other equipment. Operates simply with an ordinary wrench for drive power. . . . just insert in a small drilled hole and turn drive screw. No reaming or filing. . . . hole is smooth, perfect. Twenty sizes from 1/2 to 2-25/32" diameter.



No. 731

### No. 731 SQUARE PUNCH

Cuts square or oblong openings as desired. Available in four sizes for making 1/2", 3/8", 3/4" and 1" square holes. Drive screw fits into 1/2" hole, which can be drilled or made with 1/2" No. 730 Greenlee Round Punch. Operates with an ordinary wrench for drive power. Individually packed.

### No. 732 "KEY" PUNCH

Quickly, easily cuts holes for keyed radio sockets. Operates on same principle as other Greenlee Radio Chassis Punches. . . . an ordinary wrench supplies the drive power. In five sizes to make openings of 15/32", 15/16", 1-1/64", 1-17/64", 1-21/64". Drive screw fits into 1/2" hole. Individually packed.



No. 732

### No. 733 "D" PUNCH

Simplifies and speeds the work of making "D" shaped openings for high-frequency, miniature tube sockets and other equipment using this type opening. Available in 1/2" and 3/8" sizes. Operates on same principle as other Greenlee Radio Chassis Punches with an ordinary wrench supplying the drive power. Drive screw fits into 3/8" drilled hole. Individually packed.



No. 733

#### NO. 730 ROUND RADIO PUNCHES — LIST PRICES

	Price
1/2" Punch Complete	2.60
R1 1/2" Punch	1.50
R2 1/2" Die	.80
R3 1/2" Screw	.30
3/8" Punch Complete	2.60
R5 3/8" Punch	1.50
R6 3/8" Die	.80
R3 3/8" Screw	.30
11/16" Punch Complete	2.60
R98 11/16" Punch	1.50
R99 11/16" Die	.80
KR3 3/8" Screw	.30
3/4" Punch Complete	2.60
R7 3/4" Punch	1.50
R8 3/4" Die	.80
KR3 3/8"x1 1/2" Screw	.30
13/16" Punch Complete	2.60
R100 13/16" Punch	1.50
R101 13/16" Die	.80
KR3 3/8" Screw	.30
7/8" Punch Complete	2.60
KR1 7/8" Punch	1.50
KR2 7/8" Die	.80
KR3 3/8" Screw	.30
1" Punch Complete	2.85
R11 1" Punch	1.60
R12 1" Die	.90
R13 3/8"x2" Screw	.35
1-1/16" Punch Complete	3.00
R15 1-1/16" Punch	1.70
R16 1-1/16" Die	.95
R13 3/8"x2" Screw	.35
1 1/8" Punch Complete	3.00
R17 1 1/8" Punch	1.70
R18 1 1/8" Die	.95
R13 3/8"x2" Screw	.35
1-5/32" Punch Complete	3.00
R19 1-5/32" Punch	1.70
R20 1-5/32" Die	.95
R13 3/8"x2" Screw	.35
1-3/16" Punch Complete	3.00
R21 1-3/16" Punch	1.70
R22 1-3/16" Die	.95
R13 3/8"x2" Screw	.35

	Price
1 1/4" Punch Complete	3.00
R23 1 1/4" Punch	1.70
R24 1 1/4" Die	.95
R13 3/8"x2" Screw	.35
1 3/8" Punch Complete	3.40
R25 1 3/8" Punch	1.95
R26 1 3/8" Die	1.10
R13 3/8"x2" Screw	.35
1 1/2" Punch Complete	3.85
R27 1 1/2" Punch	2.25
R28 1 1/2" Die	1.25
R13 3/8"x2" Screw	.35
1 5/8" Punch Complete	4.50
R29 1 5/8" Punch	2.65
R30 1 5/8" Die	1.40
KR17 3/4"x2 3/4" Screw	.45
1 3/4" Punch Complete	5.10
R31 1 3/4" Punch	2.95
R32 1 3/4" Die	1.70
KR17 3/4"x2 3/4" Screw	.45
1 7/8" Punch Complete	6.35
R33 1 7/8" Punch	3.30
R34 1 7/8" Die	2.45
KR25 3/4"x3" Screw	.60
2" Punch Complete	6.85
R35 2" Punch	3.55
R36 2" Die	2.70
KR25 3/4"x3" Screw	.60
2 1/4" Punch Complete	7.45
R37 2 1/4" Punch	3.85
R38 2 1/4" Die	3.00
KR25 3/4"x3" Screw	.60

#### NO. 730-M RADIO METER PUNCH — LIST PRICES

2-25/32" Punch Complete	12.50
R108 2-25/32" Punch	6.50
R109 2-25/32" Die	5.40
KR25 3/4"x3" Screw	.60

#### NO. 731 SQUARE RADIO PUNCHES — LIST PRICES

3/8" Punch Complete	4.15
R104 3/8" Square Punch	1.75
R105 3/8" Square Die	1.40
R106 3/8" Drive Screw	.75
R107 1/2" Drive Nut	.25

	Price
3/8" Punch Complete	4.25
R51 3/8" Square Punch	1.80
R52 3/8" Square Die	1.45
R53 31/64" Drive Screw	.75
R54 Drive Nut	.25
3/4" Punch Complete	4.75
R55 3/4" Square Punch	2.10
R56 3/4" Square Die	1.65
R57 31/64" Drive Screw	.75
R54 Drive Nut	.25
1" Punch Complete	5.60
R59 1" Square Punch	2.25
R60 1" Square Die	1.85
R61 31/64" Drive Screw	1.25
R54 Drive Nut	.25

#### NO. 732 "KEY" RADIO PUNCHES — LIST PRICES

15/32" Punch Complete	4.90
R110 Key Punch	2.00
R111 Key Die	1.30
R112 1/2" Drive Screw	1.35
R107 Drive Nut	.25
15/16" Punch Complete	4.65
R71 15/16" Key Punch	1.90
R72 15/16" Key Die	1.20
R73 31/64" Drive Screw	1.30
R54 Drive Nut	.25
1-11/64" Punch Complete	5.00
R75 1-11/64" Key Punch	1.95
R76 1-11/64" Key Die	1.35
R77 31/64" Drive Screw	1.45
R54 Drive Nut	.25
1-17/64" Punch Complete	5.30
R79 1-17/64" Key Punch	2.10
R80 1-17/64" Key Die	1.45
R81 31/64" Drive Screw	1.50
R54 Drive Nut	.25
1-21/64" Punch Complete	5.60
R83 1-21/64" Key Punch	2.25
R84 1-21/64" Key Die	1.55
R85 31/64" Drive Screw	1.55
R54 Drive Nut	.25

#### NO. 733 "D" RADIO PUNCHES — LIST PRICES

1/2" Punch Complete	4.35
R91 1/2" "D" Punch	1.85
R92 1/2" "D" Die	1.30
R93 5/16" Drive Screw	.95
R94 Drive Nut	.25
3/8" Punch Complete	4.60
R95 3/8" "D" Punch	1.95
R96 3/8" "D" Die	1.35
R97 5/16" Drive Screw	1.05
R94 Drive Nut	.25

# BEST YET!!! FOR ELECTRONIC PARTS STORAGE

MODEL -  
SC-6  
ILLUST.



## ... "Swing-Bins"

HOLD A LOT IN A LITTLE SPACE IN SIGHT,  
IN PLACE, WITHIN REACH...

Securely attached to wall, tabletop or ceiling with only two screws, handy "Swing-Bins" make ORDER out of the confusion of hundreds of little parts. Screws, nuts, washers, transistors, condensers, jewelry, stamps, coins, model airplanes, boat, auto and train parts and dozens of other items can be quickly stored and labeled for instant accessibility. Made of super-strength, crystal-clear plastic, each drawer is 2-1/2" W. x 1-1/16" D. x 9-1/2" L. Stagger drawers for storing tall items. Movable dividers make 1 to 4 compartments per drawer.

PAT.  
APPLD.  
FOR

### DRAWER DIMENSIONS (SAME ON ALL MODELS OF SWING-BINS)

2-1/2" WIDE x 1-1/16" DEEP x 9-1/2" LONG

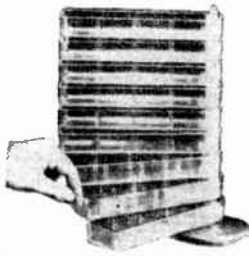
MODEL	NO. OF DRAWERS	NO. OF COMPARTMENTS	HEIGHT	SHIPPING WEIGHT	PRICE
SC-4-C	6	24	8 1/2"	2 lbs.	\$ 3.98
SC-12	12	48	16"	4 lbs.	7.50
SC-18	18	72	23 1/2"	6 lbs.	10.98
SC-24	24	96	31"	7 lbs.	14.50
SC-36	36	144	33 1/2"	10 lbs.	21.98
SC-48	48	192	31"	12 lbs.	28.98

### PEDESTAL BASE MODEL "SWING-BINS"

MODEL	NO. OF DRAWERS	NO. OF COMPARTMENTS	HEIGHT	DIAMETER OF BASE	SHIPPING WEIGHT	PRICE
SP-6	6	24	8 1/2"	5"	3 lbs.	\$4.75
SP-9	9	36	12 1/2"	6"	6 lbs.	6.50
SP-12	12	48	15 1/2"	8"	7 lbs.	8.50

### PEDESTAL BASE "SWING-BINS"

Ideal for desks, tables, dressers, counters, displays, work benches... in fact, any flat surface. Drawers revolve 360 degrees. Padded, weighted pedestal base will not tip or scratch any surface.



# Portable Cabinets

TAKE CABINETS "RIGHT TO THE JOB" OR WHEREVER NEEDED!

You can be "Johnny-on-the-spot" with everything from screw driver and pliers right down to the tiniest screws, nuts and washers. Carry needed tubes, condensers, transistors and dozens of other parts in one of these handy Portable Cabinets. Welded all-steel cabinet is rigidly constructed and tested to carry a 100 pound load safely. Locking front drawers serve as handy tray. Cabinets have solid steel back with 4 key holes for safe hanging and easy removal. Convenient non-slip handle.

\* Prices F.O.B. Akron, Ohio

### MODEL JC-16-SD

	High	Wide	Deep
8 Jr. Pls. Drws.	1-7/16"	2 3/4"	5 7/8"
1 Jr. Steel Drwr.	3 1/8"	11 1/2"	5 7/8"
Cabinet	8 1/8"	12 1/2"	6 1/2"

Shipping Wt. 9 lbs.

**7.95\***

### MODEL JC-32-SD

	High	Wide	Deep
24 Jr. Pls. Drws.	1-7/16"	2 3/4"	5 7/8"
1 Jr. Steel Drwr.	3 1/8"	11 1/2"	5 7/8"
Cabinet	15 1/4"	12 1/2"	6 1/2"

Shipping Wt. 15 lbs.

**15.95\***

### MODEL JC-32

	High	Wide	Deep
32 Jr. Pls. Drws.	1-7/16"	2 3/4"	5 7/8"
Cabinet	15 1/4"	12 1/2"	6 1/2"

Shipping Wt. 15 lbs.

**15.95\***

### MODEL JC-32-6

	High	Wide	Deep
8 Jr. Plastic Drawers	1-7/16"	2 3/4"	5 7/8"
2 Jr. Steel Drawers ea.	1-7/16"	5 3/4"	5 7/8"
1 Jr. Steel Drawer	1-7/16"	11 1/2"	5 7/8"
2 Jr. Steel Drawers ea.	3 1/8"	5 3/4"	5 7/8"
1 Jr. Steel Drawer	3 1/8"	11 1/2"	5 7/8"
Cabinet	15 1/4"	12 1/2"	6 1/2"

Shipping Wt. 15 lbs.

**16.95\***

# AKRO-MILS, INC.

BOX 989 RM

AKRON 9, OHIO

ORDER FROM YOUR  
ELECTRONIC PARTS JOBBERS  
OR WRITE US FOR SOURCE

# SAVE BIG MONEY on Small Parts!

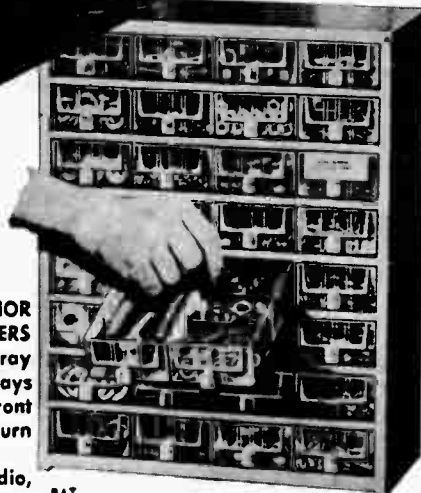
## FILE 'EM WHERE YOU CAN

## FIND 'EM Instantly!

MODEL J-32  
ILLUSTRATED



**NO MORE  
FRANTIC  
SEARCHING  
FOR MISPLACED  
ITEMS**



PAT.  
APPLD.  
FOR

**KNOW where things are, with "HAZ-BINS" — the handiest CABINETS ever made for storing small parts.**

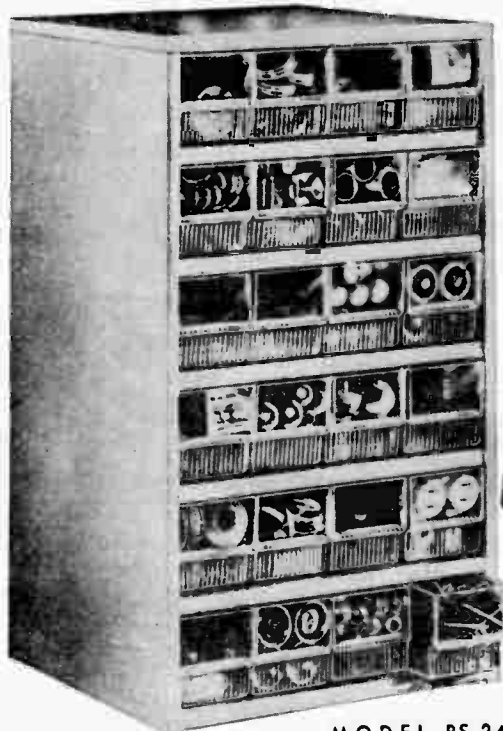
Molded plastic drawers are crystal clear, lifetime guaranteed, spillproof. JUNIOR DRAWERS divide into 2 or 3 compartments lengthwise or crosswise. SENIOR DRAWERS divide into 2, 3, or 4 crosswise compartments. Welded steel cabinet, baked-on gray finish. Stands on bench, stacks-up or hangs on wall. Saves space, contents always fully visible, dust-proof, orderly, indexed. Price includes complete set of drawer-front index labels, drawer dividers, rubber feet. Unconditional 10 day guarantee, return if you're not delighted.

Useful in every shop, lab, office, stockroom, store, home, assembly-line . . . in radio, TV, repair, photographic, hobby or ignition work. provides perfect storage for — small parts, bolts, nuts, drills, tools, carbide tips, buttons, thread, paper clips, labels, pins, rubber bands, stamps, films, photo supplies, negatives, fishing tackle, artist supplies, and anything else you can think of.

### "HAZ-BIN" JR. CABINETS

EACH CRYSTAL-CLEAR JR. PLASTIC DRAWER  
2-3/4" WIDE, 1-7/16" DEEP, 5-7/8" LONG

All models 6" deep. J-8 thru J-48 12-1/2" Wide, J-64 thru J-128, 25-1/8" Wide



MODEL RS-24  
ILLUSTRATED

MODEL No.	NO. OF DRAWERS	NO. OF COMPARTMENTS	HEIGHT	SHIPPING WEIGHT	PRICE *
J-128	128	384	30 1/2"	50 lbs.	\$55.95
J-96	96	288	22 1/2"	40 lbs.	42.95
J-64	64	192	15 1/4"	25 lbs.	24.95
J-48	48	144	22 1/2"	19 lbs.	20.95
J-32	32	96	15 1/4"	13 lbs.	12.95
J-24	24	72	12 1/8"	10 lbs.	9.95
J-20	20	60	10 1/8"	9 lbs.	7.95
J-16	16	48	8 1/8"	8 lbs.	6.95
J-12	12	36	6 1/8"	6 lbs.	5.95
J-8	8	24	4"	4 lbs.	4.25

### "HAZ-BIN" SR. CABINETS

EACH CRYSTAL-CLEAR SR. PLASTIC DRAWER  
2-7/8" WIDE, 2-3/4" DEEP, 10-3/4" LONG

All models 13-5/16" Wide x 11-1/8" Deep.

MODEL No.	NO. OF DRAWERS	NO. OF COMPARTMENTS	HEIGHT	SHIPPING WEIGHT	PRICE *
RS-32	32	128	28 1/2"	31 lbs.	\$42.00
RS-24	24	96	22 1/2"	23 lbs.	32.00
RS-16	16	64	14 1/2"	16 lbs.	21.00
R-12	12	48	11"	12 1/2 lbs.	16.00
RS-8	8	32	8"	9 1/2 lbs.	10.75

\* All Prices F.O.B. Akron, Ohio

# AKRO-MILS, INC.

BOX 939 RM

AKRON 9, OHIO

ORDER FROM YOUR  
ELECTRONIC PARTS JOBBERS  
OR WRITE US FOR SOURCE

# PERMACEL® PLASTIC Electrical TAPE



PERMACEL 29A DISPLAY  
12 rolls— $\frac{1}{2}$ " x 150'



PERMACEL 29D DISPLAY  
12 rolls— $\frac{3}{4}$ " x 66'

## FOR ELECTRICAL REPAIRS

High Dielectric Strength—Flexible—Good Stretch and Conformability—Snug Wrap—Waterproof—Resists Oil, Gasoline, Water, Salt Water, Alkalis and Sunlight. Hundreds of uses!

### PERMACEL 29 PLASTIC ELECTRICAL TAPE

#### TECHNICAL DATA

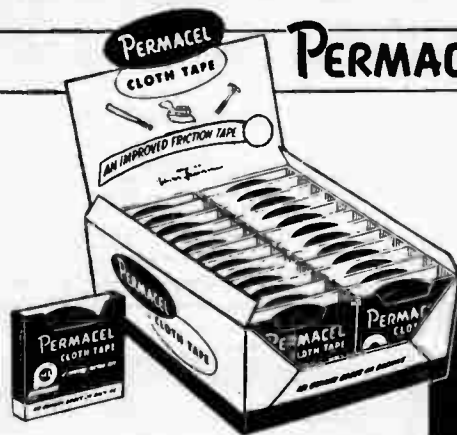
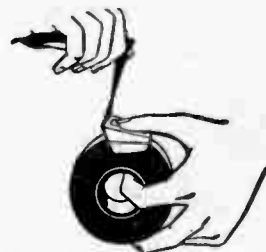
Dielectric Strength . . . . .	10,000 volts
Thickness . . . . .	7 mils
Adhesion (oz./inch) . . . . .	25
Tensile strength (lbs./inch) . . . . .	20
Elongation . . . . .	175%



PERMACEL 29C DISPLAY  
12 rolls— $\frac{3}{4}$ " x 20'

## FREE CUTTER BAR WITH EVERY 66' ROLL!

Eliminates need for scissors, razor blades or penknives. Made of durable plastic—good for thousands of cuts. A non-conductor—safe for all electrical uses. Saves money—prevents tape waste.



PERMACEL 64B DISPLAY  
24 rolls— $\frac{3}{4}$ " x 60'

## PERMACEL® CLOTH TAPE...an improved Friction Tape

No gummy edges or backing—better adhesion to its own backing and other surfaces—easier unwind—thinner, builds up less bulk—excellent insulation—long-aging.

# SELF-STICKING PERMACEL® TAPE

Permacel Tape Corporation—New Brunswick, New Jersey

a Johnson & Johnson company

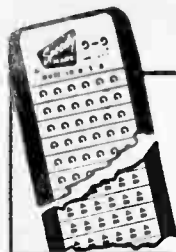




# NORTH SHORE NAMEPLATE INC.

## PRESSURE SENSITIVE WIRE MARKERS WITH THE NEW INSTANT RELEASE DISPENSING CARD

### STOCK ITEMS



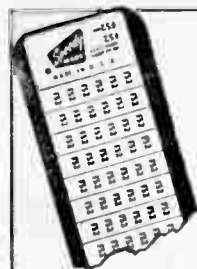
**NUMBERS AND LETTERS**, printed block on white background. All number and letters are the same on each card.

0 to 1000 (1001 different cards)  
Capital Letters: A to Z (26 different cards)  
Lower Case Letters: a to z (26 different cards)

**NUMBERS**, printed block on colored background. All numbers are the same on each card.

Background colors: Red, Yellow, Orange, Blue, Green, Brown.

1 to 50 (50 different cards).



**SYMBOLS**, printed black on white background. All symbols are the same on each card.

A1 to A6 M1 to M6  
B1 to B6 N1 to N4  
C1 to C9 O1 to O4  
D1 to D6 P1 to P6  
E1 to E6 R1 to R10  
F1 to F6 S1 to S6  
G1 to G4 T0 to T10  
H1 to H6 U1 and U2  
J1 to J4 V1 to V4  
K1 to K6 W1 and W2  
L1 to L10 X1 to X4  
Z1 to Z4

A+, A-, B+, B-, 2.5V, 3V, 3.8V, 5V, 6V, 6.3V, 7.5V, 10V, 12V, 24V, 27V, 32V, 36V, 48V, 110V, 115V, 120V, 125V, 127V, 180V, 190V, 208V, 220V, 230V, 240V, 250V, 270V, 280V, 308V, 375V, 380V, 440V, 460V, 480V, 500V, 550V, 575V, 600V, 880V, 2200V, 4000V, 4400V, 8000V, 10,000V, 12000V, 25CY, 35CY, 40C, 50CY, 60CY, 400CY, AA, AC, AL1, AL2, AM, ANT, ARM, BAT, BB, BELL, BF1, BF2, BF3, BF4, BIAS, BR1, BR2, BR3, BR4, BUS, CC, CCW, CLOSE, CM, COM, CT, CUR, CW, DC, DD, DR1, DR2, DR3, DR4, FA, FB, FF, FFA, FFB, FIL, FLD, FM, FMM, FS1, FS2, FS3, FWD, GEN, GND, GRID, HOT, IGN, IN, LINE, LOAD, MM, NEG, NEUT, OFF, ON, OPEN, OUT, PHASE\*, 1 PHASE\*, 2 PHASE\*, 3 PHASE\*, PHASE A\*, PHASE B\*, PHASE C\*, PHONE, POS, POT, PRI, REV, SEC, SIG, SPARE, SS, TRIP, +, -, ±, ∞, ∅, →, ←, ↑, ↓, ∠.

\* These cards supplied in Blue, Red and Yellow backgrounds, specify color desired.

**TV MARKERS**, printed block on white background. All markers are the same on each card.

+H DRIVE, -H DRIVE,  
+V DRIVE, -V DRIVE,  
+BLANKING, -BLANKING,  
+SYNC, -SYNC,  
VIDEO

#### MACHINE TOOL CONTROL IDENTIFICATIONS

printed block on white background. All markers are the same on each card.

1T1 to 1T3 6T1 to 6T3  
2T1 to 2T3 7T1 to 7T3  
3T1 to 3T3 8T1 to 8T3  
4T1 to 4T3 9T1 to 9T3  
5T1 to 5T3

#### NEMA COLOR IDENTIFICATIONS

Colors: Black, Blue,  
Brown, Green, Grey,  
Orange, Purple, Red,  
White, Yellow

#### CONSECUTIVE NUMBERS

printed block on white background. All numbers are in sequence on each card.

Sequences: 1 to 33, 34 to 66,  
67 to 99, 100 to 124, 125  
to 149, 150 to 174, 175 to  
199, similar sequences up  
to 9975 to 9999

#### CONSECUTIVE LETTERS

printed block on white background. All letters are in sequence on each card.

Capital letters: A to Z, plus A to H  
Lower Case letters: a to z, plus a to h

#### CONSECUTIVE NUMBERS

printed block on white background. All numbers are in sequence on each card, sequences repeated.

0 to 9 1 to 6 1 to 12  
0 to 10 1 to 7 1 to 16  
1 to 3 1 to 8 17 to 32  
1 to 4 1 to 9 1 to 18  
1 to 5 1 to 10 19 to 36

#### CONSECUTIVE NUMBERS

printed block on colored backgrounds. All numbers are in sequence on each card.

Colors: Blue, Brown, Green, Grey,  
Orange, Purple, Red, Yellow  
Sequences: Same as above, up to 375 to  
399.

#### CONSECUTIVE LETTERS

printed block on white background. All letters are in sequence on each card, sequences repeated.

A to G, A to E, F to J, K to O,  
P to T, U to Z.

#### CONSECUTIVE SYMBOLS

printed block on white background. All symbols are in sequence on each card, sequences repeated.

A1 to A4 G1 to G4 L1 to L6 R1 to R4 T10 to T13 X1 to X26  
B1 to B4 H1 to H4 M1 to M4 R1 to R26 T10 to T17 Y1 to Y4  
C1 to C4 I1 to I4 N1 to N4 S1 to S4 T14 to T17 Z1 to Z4  
C1 to C26 J1 to J4 O1 to O4 S1 to S26 U1 to U4  
D1 to D4 K1 to K4 P1 to P4 T1 to T4 V1 to V4  
E1 to E4 L1 to L4 Q1 to Q4 T1 to T9 W1 to W4  
F1 to F4 L1 to L4 Q1 to Q4 T1 to T26 X1 to X4

#### CONSECUTIVE MACHINE TOOL CONTROL SYMBOLS

printed block on white background. All symbols are in sequence on each card, sequences repeated.

Sequences: 1T1, 1T2, 1T3, 2T1, 2T2, 2T3, 3T1, 3T2, 3T3,  
Sequences: 4T1, 4T2, 4T3, 5T1, 5T2, 5T3, 6T1, 6T2, 6T3,  
Sequences: 7T1, 7T2, 7T3, 8T1, 8T2, 8T3, 9T1, 9T2, 9T3,  
Sequences: A1, A2, F1, F2, S1, S2 (D.C. Motor and Generator).

**NOW NEW — Instant-Sticking ALUMINUM FOIL Wire Markers — send for samples**  
**MANUFACTURERS OF PRESSURE SENSITIVE ANODIZED & ETCHED ALUMINUM FOIL NAMEPLATES**

### GENERAL ORDERING INFORMATION:

Card Size: 2" x 10". Standard Marker Length 1 1/2".

For wire diameter under 1/4", specify 3/4" markers.

Twice as many markers at no extra cost.

For wire diameters over 1/4", specify the 1 1/2" standard markers.

Speedy Marx are printed in the standard NEMA-ASA colors.

Where markers are printed on a colored background, please specify choice of color.

Stock items can be grouped for maximum quantity minimum price. Minimum order 25 cards. Terms: Net 30 days FOB Bayside, N.Y.

Special Items and Colors Are Available — Send Sketches for Quotation

**NORTH SHORE NAMEPLATE INC., BAYSIDE, N. Y.**

### SPEEDY MARX WIRE MARKERS PRICE LIST

Card Size 1 1/2 x 9

25- 49	\$17.50/C
50- 99	17.45/C
100- 249	14.25/C
250- 499	12.00/C
500- 999	11.50/C
1000-2499	10.94/C
2500-4999	10.68/C
5000 and Up	Write for Quote



①  
VINYL  
COLOR  
TAPE



②  
PLASTIC  
ELECTRICAL TAPE



④



⑤

# DUTCH BRAND PRODUCTS

## for Radio and TV use

### ① VINYL COLOR TAPE

Nine sparkling colors . . . for use wherever color can help in wiring, indexing, and coding. Oil and acid proof . . . conforms to irregular surfaces . . . high dielectric, exceeds 1000 V/mil . . . U.L. listed . . . Red, yellow, green, blue, brown, black, white, gold and silver.  $\frac{1}{2}$ " ,  $\frac{3}{4}$ " and  $1\frac{1}{2}$ " widths in 108 inch long consumer rolls in displays and  $\frac{3}{8}$ " ,  $\frac{1}{2}$ " ,  $\frac{3}{4}$ " and 1" wide by 36 yards long for industrial uses.

### ② PLASTIC ELECTRICAL TAPE

High dielectric where space is limited . . . exceeds 1000 V/mil . . . U.L. listed . . . 150% stretch, conforms to irregular surfaces . . . oil, acid, corrosion and waterproof. No. 120 MASTER SHOP PACKAGE contains 5 rolls— .007" thick,  $\frac{3}{4}$ " wide by 44 ft. long.

③ No. 121 JUNIOR SHOP PACKAGE . . . 5 "tool kit" size rolls—.007" thick,  $\frac{3}{4}$ " wide by 20 ft. long.

④ No. 125 DISPLAY CARTON . . . 24 "consumer" size rolls . . . convenient for small repair jobs—.007" thick,  $\frac{1}{2}$ " wide by 150" long.

⑤ No. 126 DISPLAY CARTON . . . 12 "tool kit" size rolls—.007" thick,  $\frac{3}{4}$ " wide by 20 ft. long . . . convenient size roll for the home workshop or repair trade.

⑥ No. 130 heavy duty .010" tape industrial size 36 yd. rolls . . . cellophane wrapped . . . in  $\frac{1}{2}$ " ,  $\frac{3}{4}$ " , 1" and 2" widths . . . for heavy duty cables and power driven taping machines.

⑦ No. 166 "Professional" size roll . . . .007" thick Plastic Electrical Tape,  $\frac{3}{4}$ " wide by 66 ft. long . . . each roll perfectly protected in its own individual metal can.

### ⑧ FRICTION TAPE

Long life, dependable, high quality Dutch Brand Friction Tape for "extra service" in any climate and under all conditions . . . each layer resists over 1800 volts . . . each roll cellophane wrapped and boxed. Roll sizes: No. 1, 2, 4, and 8.

⑨ "Jumbo" Shop Package—10 rolls No. 8 Dutch Brand Friction Tape in cast saving, tamper proof shop package . . . perfectly protected . . . extra economy for the larger tape user.

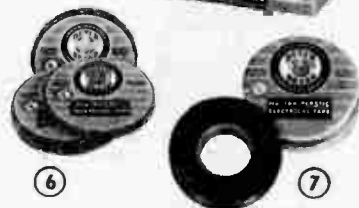
⑩ Dutch Brand 50 series Friction Tape cellophane wrapped and labelled . . . in modern counter display cartons . . . far "supermarket" impulse sales and fast turnover extra profits. Roll sizes: No. 51, 52, 54, and 58.

⑪ "Rhino" Shop Package . . . 10 regular No. 58 rolls Dutch Brand cellophane wrapped friction tape packed in a screw top shop package . . . cost saving economy for industrial users, repair men and electrical contractors.

### ⑫ RUBBER TAPE

Fuses instantly for perfect insulation . . . extra high dielectric 13,500 V./single thickness . . . U.L. listed . . . non-corrosive to electrical conductors . . . assures positive insulation for high tension lines where highest dielectric resistance is needed. Rolls cellophane wrapped and boxed. Roll sizes: No. 4 and 8.

⑬ "Hippo" Shop Package . . . 10 rolls No. 8 Dutch Brand Rubber Tape . . . each individually cellophane wrapped . . . packed in tamper proof shop package for perfect protection and greater economy . . . the "big user" package for big cost savings.



⑥



⑦



⑧

### FRICTION TAPE



⑨



⑩



⑪



⑫

### RUBBER TAPE



⑬



**Johns-Manville**  
**DUTCH BRAND**  
P R O D U C T S

7800 WOODLAWN AVENUE - CHICAGO 19, ILL.

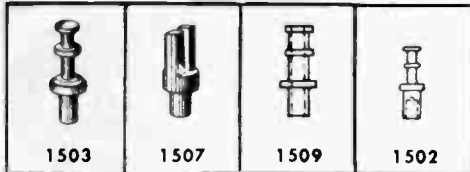
# ELECTRONIC COMPONENTS

**TERMINALS FULL SIZE. MADE OF BRASS. AVAILABLE IN HOT TIN DIP OR SILVER PLATE.**

1579 	1580 	1581 	1578 	1506 	1538 	1558 	1557 	1504 	1554 	1501 
<i>Taper Pin Terminals</i>										
1552 	1529 	1534 	1555 	1559 	1508 	1592 	1526 	1522 	1576 	1520 
<b>MINIATURE TERMINALS</b>										

## STANDARDIZED TURRET TERMINAL BOARDS

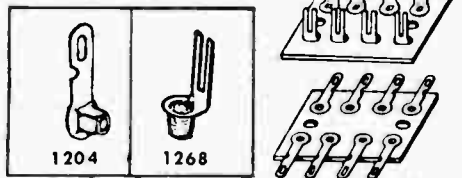
CHOICE OF TERMINALS



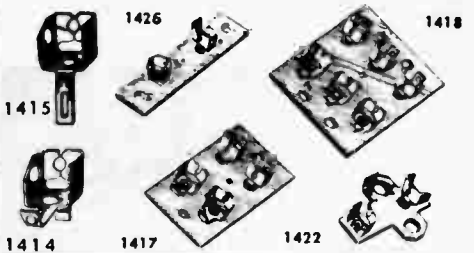
30 SIZES AVAILABLE

## READI-MADE TERMINAL BOARDS

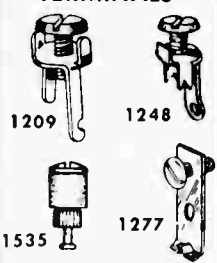
CHOICE OF TERMINALS



## DIODE CLIP MOUNTING BOARDS

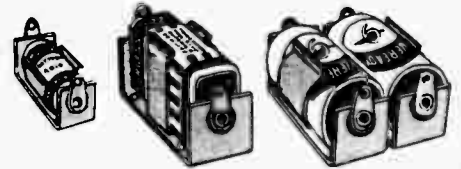


## SCREW TERMINALS



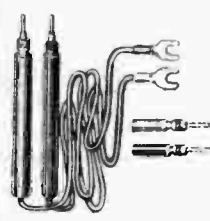
## BATTERY HOLDERS

for TRANSISTOR ASSEMBLIES — RADIOS  
GEIGER COUNTERS — METERS

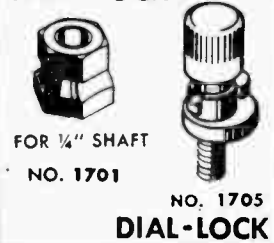


We are prepared to quote on special requirements or design holders to specifications.

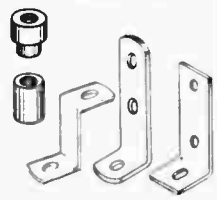
## TEST LEADS



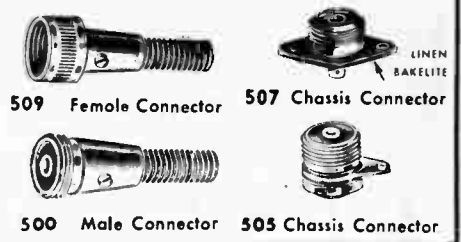
## SHAFTLOCK



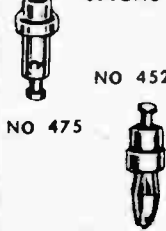
## BRACKETS & BUSHINGS



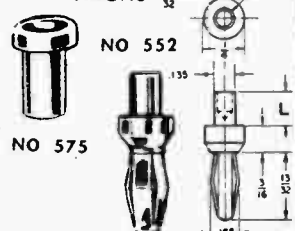
## MICROPHONE CONNECTOR



## MINI-PLUGS AND JACKS



## MEDIUM PLUGS AND JACKS



**SPECIAL ASSEMBLIES** We are equipped to produce economically short runs of special assemblies made to your specifications. Prompt delivery is assured and quotations will be rendered without obligation to you.

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TERMINALS  
ELECTRONIC HARDWARE  
TEST LEADS

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# KEYSTONE ELECTRONICS CORP.

NEW YORK 13, N. Y.

# KRYLON CRYSTAL-CLEAR

## ACRYLIC SPRAY COATING

for Television, Radio, Electronic Use

- prevents corona in high voltage sections
- keeps lead-in connections tight
- prevents rusting and pitting of antennas

Just spray it on — that's all! No special equipment needed. Krylon dries in a few minutes to form a hard, waterproof coating that seals and lasts. Resists climatic conditions, salt spray, etc. . . . doesn't dry out or crack. Krylon, due to its high dielectric strength, prevents many of the causes of picture fading and high-voltage section losses.

"KRYLON-izing" is standard procedure in TV installations! And for one good reason: it pays off in dollars and cents!

### Krylon Characteristics

Dielectric constant of 3.2 to 3.7 (1,000 cycles)

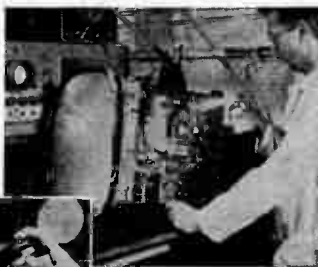
Dielectric strength of 400 to 800 (number of volts necessary to cause an electric arc through a Krylon coat one mil thick)

Electrical resistance of  $10^{10}$  ohms/cm<sup>2</sup>.



Cut down contact service calls—easy with Krylon

- Spray Krylon Crystal-Clear on high voltage coil and insulation; in socket of high-voltage rectifier; on transformer and other component parts . . . to help prevent corona and arcing . . . protect against dampness . . . minimize wire cover fading.



- Use Krylon Crystal-Clear to spray lead-in connections, antenna mast, turnbuckles, stand-off insulators and other hardware, for dependable trouble-free installation.



. . . IN INDUSTRY, TOO!



- Spray Krylon Crystal-Clear or Flat Black on the bell part of metal picture tubes, to repel dust from the tube and prevent arcing.



- Apply Krylon Bright Silver (Alum.) or Crystal-Clear to entire surface of antenna to prevent rust, corrosion, pitting — causes of poor reception.

- Complete protection against moisture, fumes, dilute acids, fungus, corrosion. Krylon protective properties are superior to conventional coatings . . . enable 100% of end-uses for preservation and protection.

THEY'RE READY WHEN YOU'RE READY . . .



- permanent protection prevents rust, tarnish, corrosion . . . waterproof, weatherproof. Goes on clear — stays clear!



- for maintenance and touch-up use . . . wherever paint is required. No fume, muss, bother . . . dries in minutes. 18 colors.



- for metal surfaces where priming is necessary. Spec. Mil-P-6883-A, Type 1; Aviation Supply Stock No. B52 P 20405.



- use on cartons, crates, drums . . . mark equipment, tools, textiles, etc. . . code materials and parts . . . 6 colors.



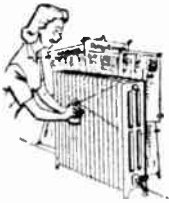
- covers old stencils, crayon markings, etc. . . excellent hiding power . . . makes containers re-usable . . . dries fast.

# PERFECT PAINTING THE "PUSH-BUTTON" WAY

## Beautify in minutes with

# KRYLON SPRAY

... the modern way to paint almost everything!



### No Fuss — No Muss — No Lost Time

... no paint to mix ... no mess to clean up ... just shake the can vigorously, push the button and, presto, the job is done pronto! And so professional, too! Moreover, when you're finished, just store the can away and it's ready for your next touch-up job. Use wherever paint is required — indoors or outdoors.



### AVAILABLE in 6-oz. and 16-oz. DISPENSERS

6-oz. Order No.	16-oz. Order No.	COLOR	LIST PRICES All 6-oz. colors and Crystal-Clear, ea.
1300A	1302	CRYSTAL-CLEAR	<b>98¢</b>
1401A	1401	Bright Silver (Alum.)	
1501A	1501	Glossy White	<b>\$1.79</b>
—	1502	Flat White	
1601A	1601	Glossy Black	<b>\$1.95</b>
1602A	1602	Flat Black	
1603A	1603	Machine Grey	16-oz. Colors, ea.
1604A	1604	Light Grey	
1605A	1605	Dove Grey	Crystal-Clear, ea.
1701A	1701	Bright Gold	
1801A	1801	Chrome Yellow	16-oz.
1901A	1901	Regal Blue	
1902A	1902	Baby Blue	<b>\$1.95</b>
2001A	2001	Hunter Green	
2101A	2101	Cherry Red	16-oz.
2102A	2102	Pink	
2201A	2201	Bright Copper	16-oz.
—	2301	O.D. Khaki	
—	2401	Int'l. Orange	16-oz.



### around the home - - - in the plant!

... a natural for the engineer, foreman, maintenance man, "at home do-it-yourself" ... whatever the color or use ... he carries it in his pocket or kit ... ready at a moment's notice for that paint-up, touch-up job. And, just as fast as it's done — just as fast will it dry! ... with no delay in paint operation or service or home use. (Excellent for color coding and stencilling, too!)

Yes, there are 1000's of practical uses for KRYLON Spray Enamels that will preserve, protect and beautify, so completely, so easily, so economically!

Technical Inquiries Invited

Krylon, Inc., Norristown, Pa.



## FOR INDUSTRIAL, COMMERCIAL, HOUSEHOLD USE



... subdues bothersome highlights ... standard equipment for TV and movie studios and photographers ... easy to remove.



... protects metals from corrosion for long periods ... leaves dry waxy film that resists oxidation ... harmless to surface.



... unusual penetrating and solvent properties ... rusty bolts and nuts and "frozen" parts separate easily, without effort.



... dissolves oil and grease deposits ... very effective in cleaning engines (all types), materials-handling equipment, etc.



... forms a continuous film of lubrication under all speeds and loads ... exceptional adhesiveness ... will not flake or crack.

# "NO NOISE" TUNER RESTORER



## new... Tuner-Tonic

contains PERMA-FILM

non-toxic

non-inflammable

Proved amazingly effective — a new scientific chemical discovery that cleans, lubricates and restores all tuners, including wafer type. This sensational discovery by the makers of famous No-Noise Volume Control and Contact Restorer performs as promised! It's absolutely safe — won't change or affect capacities, inductance or resistance. Won't harm insulations or precious metals, nor attack plastics. Buy it — you'll never be without it!

Ideal for television, radio and FM. Noise, oxidation and dirt are indefinitely eliminated on contact.

6 oz. Aerosol Can \$3.25  
Net To Servicemen

**Extra Economical  
Because A Small  
Amount Does The  
Complete Job!**

FOR YOUR PROTECTION . . . the basic chemical in No-Noise Tuner-Tonic is a carefully guarded scientific discovery known only to the makers of No-Noise. No-Noise Tuner-Tonic contains the amazing Perma-Film for trouble-free performance at all times.

# "NO NOISE" VOLUME CONTROL CONTACT RESTORER



## stops TV Front End Trouble

- \* amazing new chemical formula
- \* contains sensational Perma-Film

The most amazing product you've ever used — No-Noise cleans, lubricates and protects. It positively won't harm precious metals, does not change capacities, won't harm insulations. No-Noise prevents gumming, eliminates binding on automatic record changers. Just one drop on each tube prong eliminates noisy tube sockets. Use it on volume controls, band switches, push button assemblies, electrical contacts. Not a carbon-tet solution.

New 6 oz. Spray Can  
\$2.25  
Net To Servicemen

2 oz. bottle  
\$1.00  
Net To Servicemen

"NO NOISE"

Also available in 8 oz. bottles and quart cans. All No-Noise products sold with a money-back guarantee.



No-Noise Volume Control and Contact Restorer has been used and unconditionally endorsed by leading TV manufacturers and service organizations. Saves YOU time, money and labor. Remember, No-Noise is economical — a little goes a long, long way.

## all "NO NOISE" products sold with a money back guarantee

ELECTRONIC CHEMICAL CORP.

Jersey City N. J.

# "QUIETROLE" . . .

the original  
LUBRICANT  
CLEANER

TRADE MARK REG. U.S. PAT. OFF.

## SPRAY <sup>IT</sup> <sub>or</sub> DROP IT...



### the New QUIETROLE SPRAY-PACK

or the

### QUIETROLE BOTTLE with the Eye Dropper

"QUIETROLE" is the preferred, standard product of the industry! Your guarantee for quieting noisy television and radio controls, switches and other moving parts is QUIETROLE. Here is the original, non-inflammable, most reliable lubricant-cleaner on the market today—developed through years of factual and authentic research.

**There is no substitute for QUALITY . . . try QUIETROLE TODAY!**

Take the noise out of controls and switches with the FIRST . . . the non-conductive, non-inflammable product.

#### QUIETROLE DROPPER BOTTLE

Size	Cat. No.	Min. Order	Min. Re-order	Distr. Net Resale Price
2 oz.	10-2	24	24	\$1.69
4 oz.	10-3	16	8	2.54
8 oz.	10-4	8	6	5.07

Effective Savings on Gross Lot Purchase  
10-2 Size

#### QUIETROLE SPRAY CAN

6 oz.	10-5	12	12	2.79
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## QUIETROLE COMPANY, INC. · SPARTANBURG, S. C.

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COUPLINGS AND AMATEUR EQUIPMENT**

**See Pages J-568 through J-571**

**FOR BUD SHEET METAL PRODUCTS**

**See Pages K-601 through K-613**

**FOR BUD METAL SPEAKER ENCLOSURES**

**See Pages C-162 and C-163**

**BUD RADIO CORP., CLEVELAND 3, OHIO**

## Thank You!

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1. **Manufacturer's Catalog Numbers and Page Numbers.**
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This will avoid confusion and expedite delivery.

**The**  
*Radio-Electronic*  
**MASTER**

# GIANT, STANDARD, MIDGET BANANA PLUGS JACKS and PHONE TIPS

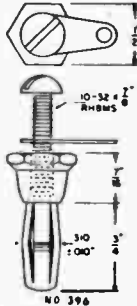
# Birnbach

VARIATIONS OF STANDARD PLUGS AVAILABLE TO ORDER. PLATED TO GOV'T. SPECS.

### GIANT PLUG No. 396

Body is hexed brass, nickel plated. Fits all giant banana jacks. Complete with nickel plated screw and soldering lug. Rated at 25 amps.

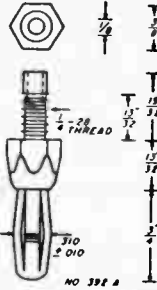
Cat. No. Spring Std. Pkg.  
396 Phos. Brz. .... 25  
396B Beryl. Cop. 25



### GIANT PLUG No. 392A

Body is hexed brass nickel plated. Rated at 25 amps. Has large soldering well in threaded shank. Fits all Giant Banana Jacks.

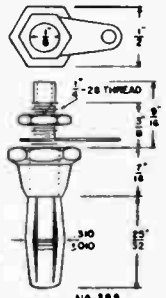
Cat. No. Spring Std. Pkg.  
392A Phos. Brz. 25



### GIANT PLUG No. 398

Body is hexed brass, n.pl. nut and tinned copper lug. Has large soldering well in threaded shank. Used in high amperage circuits rated at 25 amps. Fits all giant banana jacks.

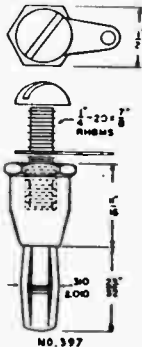
Cat. No. Spring Std. Pkg.  
398 Phos. Brz. .... 25  
398B Beryl. Cop. .... 25



### GIANT PLUG No. 397

Body is hexed brass, nickel plated. Fits all giant banana jacks. Complete with nickel plated screw and soldering lug. Heavy duty, 25 amp. rating.

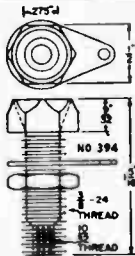
Cat. No. Spring Std. Pkg.  
397 Phos. Brz. .... 25  
397B Beryl. Cop. 25



### GIANT JACK No. 394

Hexed brass nickel plated. Fits all Giant Banana Plugs. Mounts in 3/8" hole in panels up to 3/8" thick. Complete with n.pl. nut and tinned copper lug.

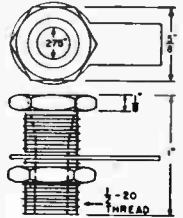
Cat. No. Std. Pkg.  
394 Giant Jack 25



### GIANT JACK No. 399

Hexed brass nickel plated. Complete with hex brass n.pl. nut and tinned copper lug. Fits all giant banana plugs. Mounts in 1/2" hole in panels up to 3/8" thick.

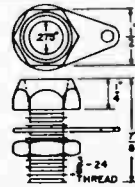
Cat. No. Std. Pkg.  
399 Gt. Jack 25



### GIANT JACK No. 395

Fits all giant banana plugs. Hexed brass nickel plated overall. Mounts in 3/8" hole. Complete with nut and tinned copper lug.

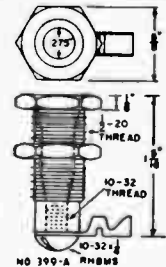
Cat. No. Std. Pkg.  
395 Giant Jack 25



### GIANT JACK No. 399A

Hexed brass nickel plated. Mounts in 1/2" hole. Fits panels up to 3/8" thick. Tapped at end with screw and lug connection. Complete with hex brass n.pl. nut, screw and hot tinned copper lug.

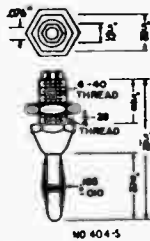
Cat. No. Std. Pkg.  
399A Gt. Jack 25



### BANANA PLUG No. 404S

Hexed brass nickel pl. Complete with hex brass n.pl. nut. Has solderless Scrulok connection. Fits all standard banana plugs. Spring is four-leaved phosphor bronze nickel plated. Rated at 5 amps.

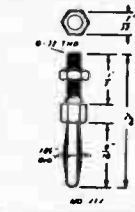
Cat. No. Std. Pkg.  
404S ..... 100  
Scrulok Banana Plug



### BANANA PLUG No. 414

Hexed brass, nickel plated. One-piece construction. Four-leaved phosphor bronze spring. Complete with brass hexed nut n.pl. Rated at 5 amps. Fits all standard banana jacks.

Cat. No. Spring Std. Pkg.  
414 Phos. Brz. .... 100



### BANANA PLUG No. 416

Hexed brass nickel plated. Cross slotted for positive contact. One-piece construction. Fits all standard banana jacks. Complete with hexed brass n.pl. nut.

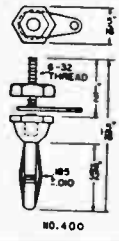
Cat. No. Std. Pkg.  
416 Banana Plug .... 100



### BANANA PLUG No. 400

Hexed brass nickel plated. Fits all standard banana plugs. Complete with hex brass n.pl. nut and tinned copper lug. Spring is four-leaved nickel plated. Rated at 5 amps.

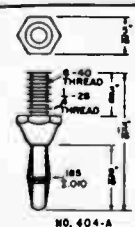
Cat. No. Spring Std. Pkg.  
400 Phos. Brz. .... 100  
400B Beryl. Cop. .... 100



### BANANA PLUG No. 404A

Hexed brass and four-leaved phosphor bronze spring all nickel plated. Rated at 5 amps. Fits all standard banana jacks.

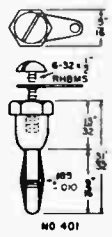
Cat. No. Std. Pkg.  
404A Banana Plug 100



### BANANA PLUG No. 401

Hexed brass nickel plated. One-piece four-leaved spring. Complete with brass n.pl. screw and tinned copper lug. Rated at 5 amps. Fits all standard banana jacks.

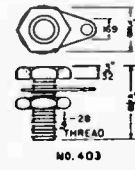
Cat. No. Spring Std. Pkg.  
401 Phos. Brz. .... 100  
401B Beryl. Cop. ... 100



### BANANA JACK No. 403

Hexed brass n.pl., with brass n.pl. hex nut and tinned copper lug. Mounts in 1/4" hole in panels up to 3/8" thick. Fits standard plugs.

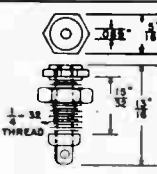
Cat. No. Std. Pkg.  
403 Banana Jack 100



### PHONE TIP JACK No. 26

Brass nickel pl. body. Double phosphor bronze springs, hot tinned. Fits standard phone tip plugs. Mounts in 1/4" hole in panels up to 3/8" thick. Complete with hex n.pl. brass nut.

Cat. No. Std. Pkg.  
26 ..... Phone Tip Jack ..... 100

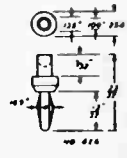


### MIDGET BANANA PLUG RIVET TYPE—No. 426

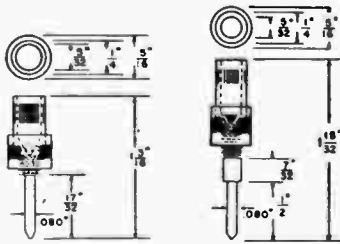
Brass silver plated body. One-piece four-leaved phosphor bronze spring silver plated. Also made to Rigid Jan specs.

Cat. No. Std. Pkg.  
426 ..... 100  
Midget Banana Plug Rivet Type

Additional Midget Plugs & Jacks Available. Also Sub-Minature Plugs & Jacks.

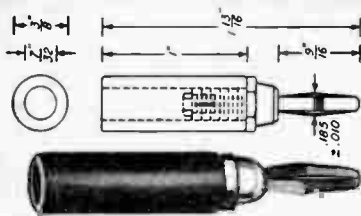


### SOLDERLESS PHONE TIPS No. 23 and No. 24



Brass, nickel plated. Wire fits thru body of tip, tightened around screw with nickel plated knurled nut. Fits all standard phone tip jacks.

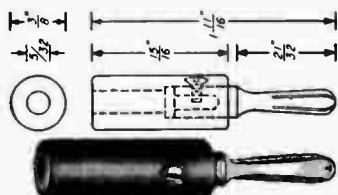
Cat. No. Std. Pkg.  
23—Junior Solderless Phone Tip ..... 100  
24—Senior Solderless Phone Tip ..... 100



**INSULATED BANANA PLUG**

Hexed brass N. Pl. spring type. Fits standard banana jacks. Serulok solderless connection. Molded handle. Colors: Red, Black, Yellow, Blue, Green.

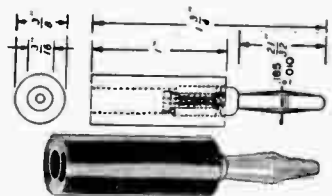
Cat. No.	Spring	Std. Pkg.
404	Phos. Brz.	50
404-CB	Beryl. Cop.	50



**INSULATED BANANA PLUG**

Split type plug brass n. pl. Fits standard banana jacks. Set screw. Solderless connection. Molded handle. Colors: Red, Black, Yellow, Blue, Green.

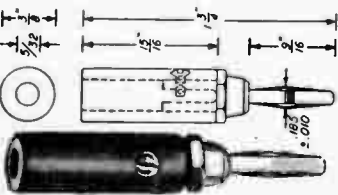
Cat. No.	Std. Pkg.
604	Banana Plug 50



**INSULATED BANANA PLUG**

Brass n.pl. plug. Fits standard banana jacks. Spring type. Serulok solderless connection. Molded handle. Colors: Red, Black, Yellow, Blue, Green.

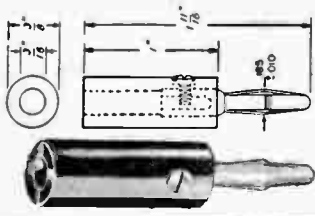
Cat. No.	Spring	Std. Pkg.
465	Phos. Brz.	50
465-B	Beryl. Cop.	50



**SPRING BANANA PLUG**

Hexed brass n.pl. plug. Set screw solderless connection. 404-BC Beryllium springs. Highly resilient. Molded handle. Colors: Red, Black, Yellow, Blue, Green.

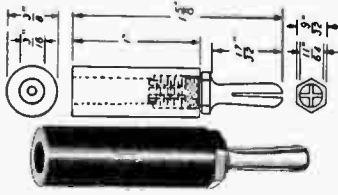
Cat. No.	Spring	Std. Pkg.
404-B	Phos. Brz.	50
404-BC	Beryl. Cop.	50



**INSULATED BANANA PLUG**

Plug brass n.pl. set screw solderless connection. Spring type. Fits standard banana jacks. Molded handle. Colors: Red, Black, Yellow, Blue, Green.

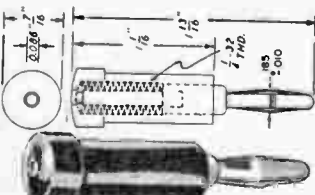
Cat. No.	Hdl.	Spring	Std. Pkg.
466	1"	Ph. Brz.	50
466A	1 1/2"	Ph. Brz.	50



**INSULATED BANANA PLUG**

Split type, brass n.pl. Serulok solderless connection. Fits standard jacks. Molded handle. Colors: Red, Black, Yellow, Blue, Green.

Cat. No.	Std. Pkg.
606	Banana Plug 50



**TIP PLUG TO BANANA PLUG ADAPTER**

Fits standard banana jacks. Adapter for phone tip to banana plug. Molded handle. Colors: Red, Black, Yellow, Blue, Green.

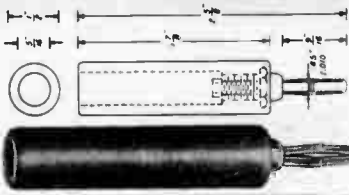
Cat. No.	Spring	Std. Pkg.
467	Phos. Brz.	50
467B	Beryl. Cop.	50

**INSUL. BANANA PLUG**

Plug brass n.pl. Serulok solderless connection. Spring type. Fits standard jacks. Plastic handle.

Colors: Red, Black.

Cat. No.	Spring	Std. Pkg.
341	Phos. Brz.	50
341B	Beryl. Cop.	50



**INSUL. GIANT PLUG**

Plug brass n.pl. Wire can be soldered to plug. Spring type. Fits giant banana jacks. Plastic handle.

Colors: Red, Black.

Cat. No.	Spring	Std. Pkg.
392	Phos. Brz.	50
392B	Beryl. Cop.	50

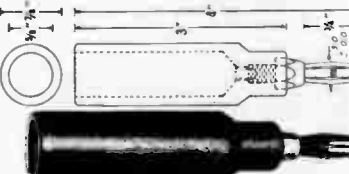


**INSUL. GIANT PLUG**

Plug brass n.pl. Wire can be soldered to plug. Spring type. Fits giant banana jacks. Polished giant hard rubber handle.

Colors: Red, Black.

Cat. No.	Spring	Std. Pkg.
342	Phos. Brz.	50
342B	Beryl. Cop.	50

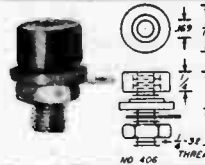


**INSULATED BANANA JACK**

Takes all standard banana plugs. Body is brass n.pl. Mounts in 3/8" hole in panels up to 1/8" thick. Molded head.

Colors: Red, Black, Yellow, Blue, Green.

Cat. No.	Std. Pkg.
406	Insulated Jack 50

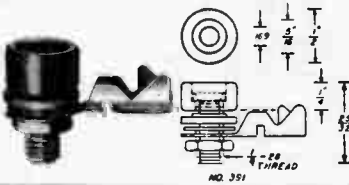


**INSULATED BANANA JACK**

Accommodates all standard banana plugs. Body is brass n.pl. Mounts in 3/8" hole in panels up to 1/8" thick. Complete with all hardware. Molded head.

Colors: Red, Black, Yellow, Blue, Green.

Cat. No.	Std. Pkg.
391	Insulated Jack 50

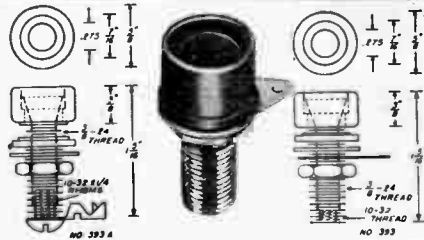


**INSULATED GIANT JACK**

Accommodates all giant plugs. Body is brass n.pl. Mounts in 3/8" hole in panels up to 1/8" thick. Molded plastic head.

Colors: Red, Black.

Cat. No.	Std. Pkg.
393	Insulated Giant Jack 50
393A	Insulated Giant Jack 50

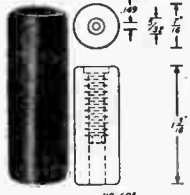


**INSULATED HANDLE JACK**

Jack brass, n.pl. Fits all standard banana plugs. Plastic handle.

Colors: Red, Black, Yellow, Blue, Green.

Cat. No.	Std. Pkg.
605	Insulated Handle Jack 50

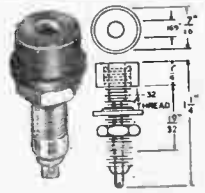


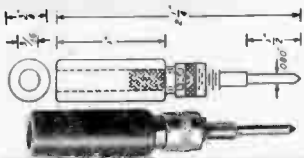
**INSULATED COMBINATION JACK**

Takes standard senior phone tip or banana plugs. Body is brass n.pl. Double Phosphor Bronze spring. Mounts in 3/8" hole in panels up to 1/8" thick. Molded head.

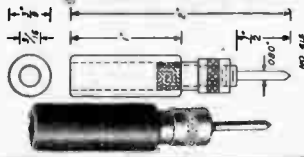
Colors: Red, Black, Yellow, Blue, Green.

Cat. No.	Std. Pkg.
333	Insulated Combination Jack 50

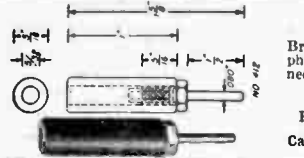




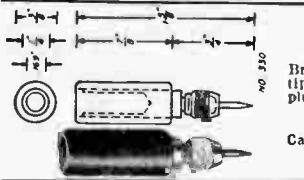
**SENIOR SOLDERLESS PHONE TIP**  
 Brass nickel plated. Fits standard phone tip jacks. Wire fastens under knurled nut. Molded handle.  
 Colors: Red, Black, Yellow, Blue, Green.  
 Cat. No. 409 Sr. . . . Std. Pkg. 50



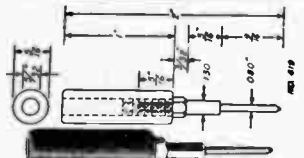
**JUNIOR SOLDERLESS PHONE TIP**  
 Same as above. Specify colors required.  
 Cat. No. 415 Jr. . . . Std. Pkg. 50



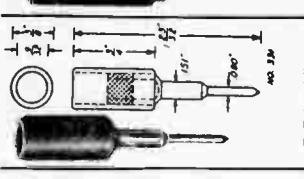
**SCRULOK PHONE TIP**  
 Brass nickel plated. Fits standard phone tip jacks. Scrulok solderless connection. Molded handle.  
 Colors: Red, Black, Yellow, Blue, Green.  
 Cat. No. 412 . . . . . Std. Pkg. 50



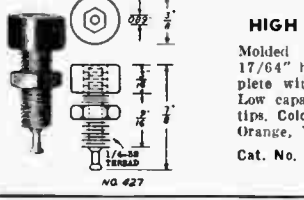
**NEEDLE POINT PLUG**  
 Brass nickel plated body. Needle point tip. Accommodates standard banana plug in molded plastic handle.  
 Colors: Red, Black.  
 Cat. No. 330 . . . . . Std. Pkg. 50



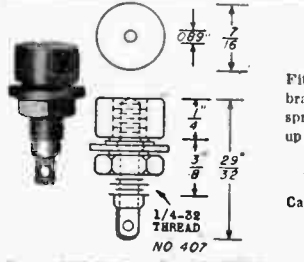
**SCRULOK PHONE TIP**  
 Fits standard phone tip jacks. Plug is brass, nickel plated. Has Scrulok solderless connection. Molded handle.  
 Colors: Red, Black, Yellow, Blue, Green.  
 Cat. No. 419 . . . . . Std. Pkg. 50



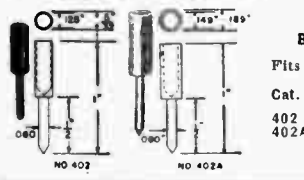
**PHONE TIP**  
 Plugs into standard phone tip jacks. Brass nickel plated plug. Accommodates standard banana plug in molded plastic handle.  
 Colors: Red, Black, Yellow, Green.  
 Cat. No. 331 . . . . . Std. Pkg. 50



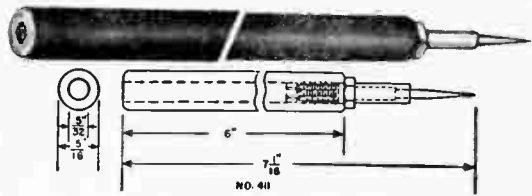
**HIGH VOLTAGE NYLON TIP JACK**  
 Molded low-loss nylon body. Mounts in 17/64" hole in panels up to 3/8" thick. Complete with brass n.p.l. nut. Rugged, tough. Low capacity—Hi-Volt. Fits standard phone tips. Colors: White, Red, Black, Green, Blue, Orange, Yellow, Brown, Ivory.  
 Cat. No. 427 . . . Nylon Tip Jack . . . Std. Pkg. 50



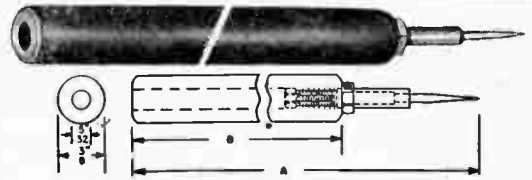
**PHONE TIP JACK**  
 Fits all standard phone tips. Body is brass, n.p.l. Double Phosphor Bronze springs. Mounts in 3/8" hole in panels up to 3/8" thick. Molded head.  
 Colors: Red, Black, Yellow, Blue, Green.  
 Cat. No. 407 . . . . . Std. Pkg. 50



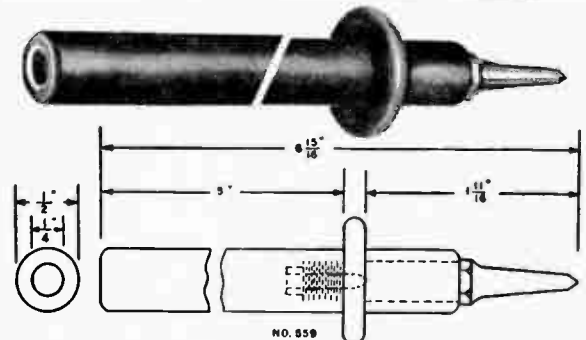
**BRASS NICKEL PLATED TIPS**  
 Fits all standard phone tip jacks.  
 Cat. No. . . . . Std. Pkg.  
 402 — Standard Phone Tip . . . . . 100  
 402A — Phone Tip Larger Diam. . . . . 100



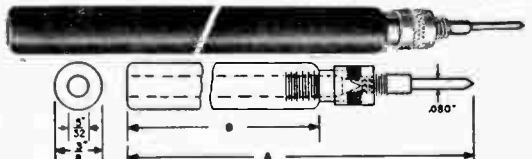
**BAKELITE PENCIL TEST PROD**  
 Body is brass nickel plated with steel n.p.l. needle. Has Scrulok solderless connection. Bakelite handle. Colors: Red, Black.  
 Cat. No. . . . . Std. Pkg.  
 411 . . . . . Bakelite Pencil Test Prod . . . . . 12



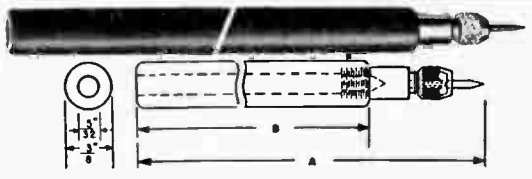
**SCRULOK NEEDLEPOINT TEST PRODS**  
 Phenolic insulated prod, has Scrulok solderless connection. Body is brass, nickel plated with steel n.p.l. needle. Colors: Red, Black.  
 Cat. No. (A) Overall (B) Handle Length Std. Pkg.  
 417 . . . . . 5-3/32" . . . . . 4" . . . . . 50  
 418 . . . . . 6-3/32" . . . . . 5" . . . . . 50



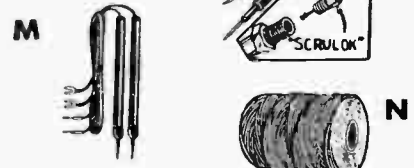
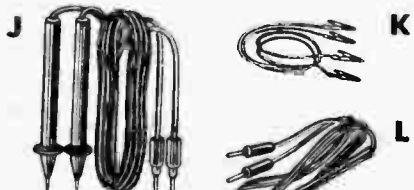
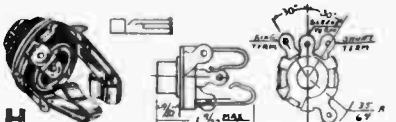
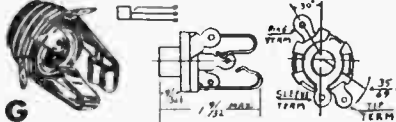
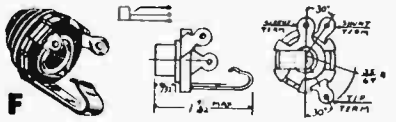
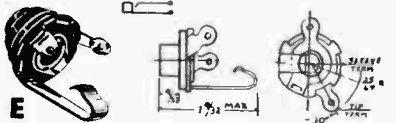
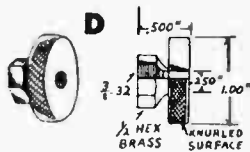
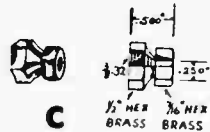
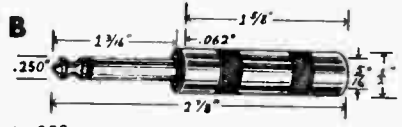
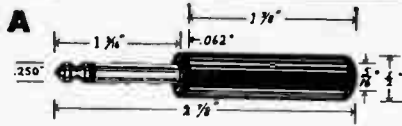
**HEAVY DUTY HI-VOLTAGE TEST PROD HANDLE**  
 Tip is heavy brass nickel plated. Bakelite finger guard. Accommodates IN-34 diode and condenser for use as RF Probe. Colors: Red, Black.  
 Cat. No. . . . . Std. Pkg.  
 559 . . . . . 6" H.V. Test Prod Handles . . . . . 20



**SOLDERLESS TEST PRODS**  
 Body is brass nickel plated with solderless knurled nut connection. Heavy duty needlepoint, nickel plated. Colors: Red, Black.  
 Cat. No. (A) Overall (B) Handle Length Std. Pkg.  
 410 . . . . . 4-5/16" . . . . . 4" . . . . . 50  
 343 . . . . . 6 1/4" . . . . . 5" . . . . . 50



**NEEDLEPOINT TEST PRODS**  
 Brass nickel plated body with steel nickel plated needle. Chuck threaded in end of handle is removable for replacing needles. Polished cast phenolic handle.  
 Cat. No. (A) Overall (B) Handle Length Std. Pkg.  
 344 . . . . . 4-15/16" . . . . . 4" . . . . . 50  
 345 . . . . . 5-15/16" . . . . . 5" . . . . . 50



**TELEPHONE TYPE PLUGS**  
This standard two conductor plug fits all standard jacks. All metal parts brass with nickel plating except for contact screw. Barrel is molded bakelite. Red or Black.

- A — BAKELITE DOUBLE PHONE PLUG**  
Cat. No. 251 ..... Std. Pkg. 25
- B — SHIELDED PHONE PLUG**  
Cat. No. 252 ..... Std. Pkg. 25

### SHAFT LOCKS

- C — WRENCH TYPE**  
Brass, nickel plated. 1/2" length overall. Rear: 1/2" hex brass with 3/8-32 thread. Front: 1/4" hex brass.  
Cat. No. 546 — For 1/4" Shaft ..... Std. Pkg. 25
- D — THUMB TYPE**  
Brass, nickel plated. 1/2" length overall. Rear: 1/2" hex brass with 3/8-32 thread. Front: 1" diam. knurled nut.  
Cat. No. 547 — For 1/4" Shaft ..... Std. Pkg. 25

### TELEPHONE TYPE JACKS

The body is brass nickel plated. Small, rugged and they are designed for long life, with low contact resistance snap springs made specially from nickel silver alloy which is corrosion resistant. Mounts in 3/8" hole.

- E — Cat. No. 257 — Open Circuit Two Conductor** ..... Std. Pkg. 25  
**F — Cat. No. 258 — Single Closed Circuit Two Conductor** ..... Std. Pkg. 25  
**G — Cat. No. 259 — Open Circuit Three Conductor** ..... Std. Pkg. 25  
**H — Cat. No. 260 — Single Closed Circuit Three Conductor** ..... Std. Pkg. 25

### TEST LEADS

#### J — BIRNBACH HEAVY DUTY HIGH VOLTAGE TEST LEADS

Overall length 60". Tips are heavy solid brass nickel plated. Rugged, dependable heavy duty bakelite prods. Color coded Red and Black. Uses our III Volt kinkless test lead wire.

- Cat. No. 562 — Heavy Duty High Voltage Test Leads ..... Std. Pkg. 10

#### L — DELUXE AND BAKELITE PENCIL TYPE TEST LEADS

No. 408 Bakelite pencil test leads, color coded. Red, Black, all with kinkless test lead wire. Overall length 60". #560 and #561 polished cast phenolic resin handles, solderless type tips. 50" long. Color coded Red, Black.

- Cat. No. 408 — Bakelite Pencil Type Test Leads, 6" handles ..... Std. Pkg. 10  
560 — Deluxe Solderless Prod Test Leads, 5" handles ..... 25  
561 — Deluxe Needlepoint Prod Test Leads, 5" handles ..... 25

#### K — ALLIGATOR CLIP TEST LEADS

Black and Red kinkless test lead wire with Alligator Clips at each end.

- | Cat. No. | Wire Length | Std. Pkg. |
|----------|-------------|-----------|
| 675      | 12"         | 25        |
| 676      | 24"         | 25        |
| 677      | 36"         | 25        |
| 678      | 48"         | 25        |

SPECIAL ASSEMBLIES AVAILABLE TO ORDER

#### M — BIRNBACH NEEDLEPOINT TEST LEADS

Have Red and Black 4" fibre handles. Use kinkless lead wire. Overall length 50". Good, dependable low priced leads.

- | Cat. No.                               | Std. Pkg. |
|--|-----------|
| 420 — Needlepoint Phone Tip Test Leads | 25        |
| 421 — Needlepoint Spade Lug Test Leads | 25        |
| 422 — Solderless Phone Tip Test Leads  | 25        |
| 423 — Solderless Spade Lug Test Leads  | 25        |

### N NYLON LACING CORD

This nylon lacing cord manufactured to meet Spec. MIL-T-713A Type P, Composition P, Classes 3, 2, and 1. Available in 1 lb. tubes.

- | Cat. No. 1070          | Cat. No. 1071          | Cat. No. 1072           |
|------------------------|------------------------|-------------------------|
| 70 lb. Test            | 48 lb. Test            | 32 lb. Test             |
| Class 1 ..... 350 Yds. | Class 2 ..... 750 Yds. | Class 3 ..... 1100 Yds. |

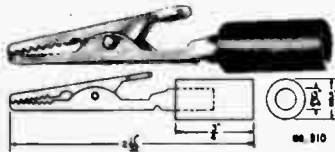
### N LINEN LACING CORD

This linen lacing cord is made from pure flax, waxed and mildew-proofed. The twelve, eight and six ply cord meet Spec. MIL-T-713A Type N Classes 1, 2, and 3, respectively.

	4 oz. tube		8 oz. tube		1 lb. tube	
	Cat. No.	Yds.	Cat. No.	Yds.	Cat. No.	Yds.
Class 3 — 4 ply	1073	210	1074	425	1075	850
Class 3 — 6 ply	1076	150	1077	300	1078	600
Class 2 — 8 ply	1082	115	1083	235	1084	470
Class 2 — 9 ply	1079	100	1080	200	1081	400
Class 1 — 12 ply	1085	75	1086	150	1087	300



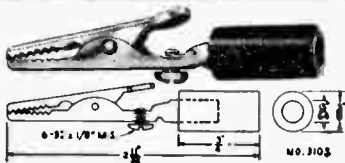
# ALLIGATOR CLIPS — TEST CLIPS — SPADE LUGS — BINDING POSTS



### INSULATED ALLIGATOR CLIP

Made of steel, cadmium plated. Insulated handle allows use of all banana plugs. Has small soldering lip. Colors: Red, Black.

Cat. No.	Std. Pkg.
310.....Insulated Alligator Clip	50
311.....1 1/2" Insulated Alligator Clip	50

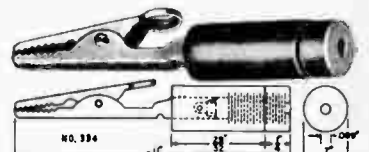


### INSULATED ALLIGATOR CLIP (Screw Type)

Made of steel, cadmium plated. Accurately matching jaws for tight grip. Has screw for solderless connection. Banana plug fits into rear of clip. Insulated handle.

Colors: Red, Black.

Cat. No.	Std. Pkg.
310S.....Insulated Alligator Clip	50



### ALLIGATOR CLIP WITH PHONE TIP JACK

Handle has our No. 31 clip and our No. 407 tip jack in rear for all standard phone tip plugs. Colors: Red, Black.

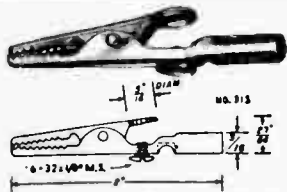
Cat. No.	Std. Pkg.
334—Alligator Clip with Phone Tip Jack	50
336—Same as above except with our #31C screw type Copper Alligator Clip	50

### INSULATED COPPER ALLIGATOR CLIP (SCREW TYPE) — No. 310C

Composed of our No. 31C—Copper Alligator Clip with insulated handle. Has brass screw for solderless connection.

Colors: Red, Black.

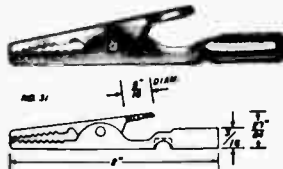
Cat. No.	Std. Pkg.
310C—Insulated Copper Alligator Clip	50



### ALLIGATOR CLIP (Screw Type)

Made of cadmium plated steel. The jaws match accurately, permitting them to grip all kinds of wire securely. Has screw for solderless wire connection. Banana plug fits into rear of clip.

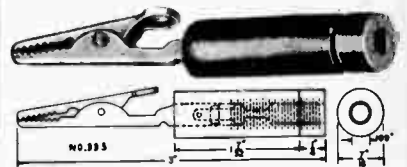
Cat. No.	Std. Pkg.
31S—Alligator Clip	50
31C—Alligator Clip (Copper)	50



### ALLIGATOR CLIP

Made of cadmium plated steel. Banana plug fits into rear of clip. Equipped with soldering lip.

Cat. No.	Std. Pkg.
31—Alligator Clip	50



### ALLIGATOR CLIP COMBINATION JACK

Insulated alligator clip is composed of our #31, steel, cadmium plated Alligator Clip with our #333 Combination Jack in rear allowing the adaption of both standard senior phone tip plugs and banana plugs to Alligator Clips. Colors: Red, Black.

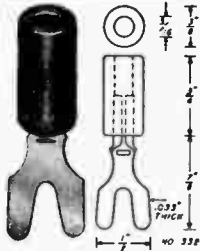
Cat. No.	Std. Pkg.
335—Alligator Clip Combination Jack	50
337—Same as above except with our #31C screw type Copper Alligator Clip	50

### ALLIGATOR CLIP VINYL INSULATOR



Extremely flexible. Made to fit Nos. 31, 31S, 31C. Colors: White, Red, Black, Yellow, Blue.

Cat. No.	Std. Pkg.
31R—Vinyl Insulator	50

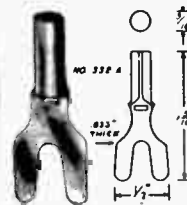


### INSULATED SPADE LUG

Accommodates all standard banana plugs into the rear of lug enabling same to be adapted to a spade lug. Lug is Steel Hot Tinned.

Colors: Red or Black.

Cat. No.	Std. Pkg.
332—Insulated Spade Lug	50



### SPADE LUG

Barrel accommodates all standard banana type plugs. Lug is Steel Hot Tinned.

Cat. No.	Std. Pkg.
332A	50

### BIRNBACH TEST CLIPS

The teeth mesh correctly permitting good contact to be made. The No. 27-C is a solid copper clip with a brass screw designed for high frequency work.



Cat. No.	Length	Jaw Spread	Capacity	Std. Pkg.
27—Pee Wee	1 1/2"	3/8"	5 Amp	50
28—Midget	2"	1/8"	10 Amp	50
29—Medium	2 7/8"	1"	25 Amp	50
30—Large	4"	1 1/4"	50 Amp	50
27C—Pee Wee Copper	1 1/2"	3/8"	10 Amp	50
27R—Rubber Sleeve	—	—	—	50

### BIRNBACH PATCH CORDS

Birnbach No. 465 Banana Plugs connected to our kinkless test lead wire. Used to interconnect circuits. Fits all standard banana jacks.

Cat. No.	Wire Length	Std. Pkg.
607	12"	25
608	24"	25
609	36"	25
610	48"	25

### SHIELDED EXTENSION JACK



Cadmium plated brass shell with black bakelite insert. Length is 2-7/16". Insulates for solder grip contact. Mates with No. 248 Phono Plug.

Cat. No.	Std. Pkg.
246—Inline Extension Jack	100



### NEW! BIRNBACH "MULTI-USE" BINDING POSTS SAFE—POSITIVE—HEAVY DUTY

Rugged, versatile "Multi-Use" binding post made of molded phenolic with molded-in brass inserts in head and washer for complete insulation from panel. For use on panels 1/8" to 1/4" thick. Mounting hole 1/2". Current Capacity: 30 Amps Voltage: 2000 V. A.C. RMS Test

No. 276 CAN BE SOLDERED DIRECTLY TO STUD. WILL PERMIT SIX DIFFERENT METHODS OF CONNECTION ABOVE PANEL AND THREE BELOW PANEL.		
Cat. No.	Color	Std. Packing
274	Red or Black	100
276	Red or Black	100
	Nickel Plated Brass	

### STANDARD DUTY 5-WAY BINDING POST



#278 Cat. No.

Molded-in brass bushings for complete insulation. Useful for standard duty work. Available in Red or Black. Specify color. Body is brass nickel plated.



#279 Std. Pkg.

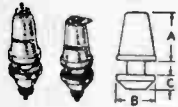
278	Red or Black	100
279	Red or Black	100

\*Same as above, but normally grounded. (Without bottom insulating section.)



# FEEDTHRU — STEATITE PILLARS — CORRUGATED CERAMIC — STANDOFF INSULATORS. TRANSMITTING SOCKETS

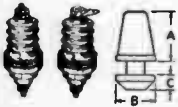
## BIRNBACH FEEDTHRU INSULATORS



Made of highly vitrified, low absorption porcelain smoothly glazed to prevent accumulation of dust or dirt. Maximum strength is achieved by the proper proportions and flat mounting surfaces. Long insulating sleeves on the lower part of the insulator contribute much to their performance on high voltages. Brass nickel plated hardware.

Cat. No.	Height A	Std. Pkg.	Dimensions			Mounting Hole	Hardware
			B	C	D		
458	.5"	50	11/16"	1/2"	5/16"	6-32	
478	.75"	25	13/16"	5/8"	7/16"	10-32	
478J	.75"	25	13/16"	5/8"	7/16"	No. 403 Jack	
4125	1.125"	25	1 3/8"	1 1/4"	7/8"	10-32	
4125J	1.125"	25	1 3/8"	1 1/4"	7/8"	No. 403 Jack	
4234	2.375"	10	2"	1 1/2"	7/8"	No. 399 Jack	
4175	2.375"	10	1 1/2"	1 1/4"	3/4"	1/4-20	
4175J	2.375"	10	1 1/2"	1 1/4"	3/4"	No. 394 Jack	

## CORRUGATED FEEDTHRU INSULATORS



The six new corrugated type feedthru insulators have more than twice the leakage path of the straight type because of increased surface of the corrugations and recommends itself where a straight side insulator of equal height is not satisfactory because of its shorter leakage path. Brass nickel plated hardware and cork mounting washers supplied.

Cat. No.	Height A	Std. Pkg.	Dimensions			Mounting Hole	Hardware
			B	C	D		
479	1.375"	25	1 1/4"	1 1/8"	9/16"	10-32	
479J	1.375"	25	1 1/4"	1 1/8"	9/16"	No. 403 Jack	
4276	2.375"	10	2"	1 1/2"	7/8"	1/4-20	
4276J	2.375"	10	2"	1 1/2"	7/8"	No. 394 Jack	
4452	4.375"	5	3 1/2"	2 3/4"	1 1/2"	1/4-20	
4452J	4.375"	5	3 1/2"	2 3/4"	1 1/2"	No. 394 Jack	

## HIGH VOLTAGE FEEDTHRU INSULATOR



This insulator has been designed to meet the demand for an insulator having high dielectric and mechanical strength. The extra long leakage path is made possible by the corrugations on the top insulator. The bottom sleeve tapers from a base dia. of 1-3/16" where the electric stress is greatest.

Cat. No.	Height A	Std. Pkg.	Base Dia. B	Mounting Hole C	Hardware
4233	1.5"	10	2"	1 1/4"	1/4-20

## STEATITE PILLARS



Have great tensile strength with extremely low losses at very high frequencies. Tapped on both ends; supplied with nickel plated mounting base and top hardware.



Cat. No.	Height A	Std. Pkg.	Dimen.		Base Dia. B	D	Hardware
			C	D			
450	1"	10	1/2"	1/2"	1 1/8"	1/4"	6-32
450J	1"	10	1/2"	1/2"	1 1/8"	1/4"	No. 403 Jack
451	1 1/4"	10	5/8"	5/8"	1 1/4"	3/8"	6-32
451J	1 1/4"	10	5/8"	5/8"	1 1/4"	3/8"	No. 403 Jack
452	2 1/4"	10	1 1/2"	1 1/2"	2 1/4"	3/4"	6-32
452J	2 1/4"	10	1 1/2"	1 1/2"	2 1/4"	3/4"	No. 403 Jack
453	2 3/4"	5	1 3/4"	1 3/4"	1-9/16"	3/4"	1/4-20
453J	2 3/4"	5	1 3/4"	1 3/4"	1-9/16"	3/4"	No. 395 Jack
454	4"	5	2 3/4"	2 3/4"	1-3/16"	1"	1/4-20
454J	4"	5	2 3/4"	2 3/4"	1-3/16"	1"	No. 395 Jack

## BIRNBACH METAL BASE INSULATORS



Corrugated surface provides long leakage path. Made of high tensile strength low absorption porcelain fully glazed. Supplied with nickel plated brass screws and nuts; cadmium plated drawn steel bases.



Cat. No.	Height A	Std. Pkg.	Base Dimension		Mtg. Screw	Hardware
			B	C		
867	1.375"	25	1 1/4"	1 1/4"	2 No. 8	10-32
867J	1.375"	25	1 1/4"	1 1/4"	2 No. 8	No. 403 Jack
4176	2.375"	10	1 3/4"	1 3/4"	4 No. 10	1/4-20
4176J	2.375"	10	1 3/4"	1 3/4"	4 No. 10	No. 395 Jack
4451	4.375"	5	2 3/4"	2 3/4"	4 No. 10	1/4-20
4451J	4.375"	5	2 3/4"	2 3/4"	4 No. 10	No. 395 Jack

## BIRNBACH STANDOFF INSULATORS

Made of highly vitrified low absorption glazed porcelain. No washers necessary mounting surface is ground flat for No. 104. No. 966 it is advisable to use cork washers which are available. All brass nickel plated hardware supplied.



Cat. No.	Height A	Std. Pkg.	Base Dimension			Mounting Holes	Hardware
			B	C	D		
405	.5"	100	1"	1"	1"	5	6-32
965	1"	50	1 1/4"	1 1/4"	1 1/4"	5	8-32
966	1"	50	1 1/4"	1 1/4"	1 1/4"	5	8-32
966J	1"	50	1 1/4"	1 1/4"	1 1/4"	5	No. 403 Jack
866	1 1/2"	25	1 3/4"	1 3/4"	1 3/4"	5	10-32
866J	1 1/2"	25	1 3/4"	1 3/4"	1 3/4"	5	No. 403 Jack
866SJ	1 1/2"	10	1 3/4"	1 3/4"	1 3/4"	5	No. 395 Jack
4275	2.375"	10	2"	2"	2"	5	1/4-20
4275J	2.375"	10	2"	2"	2"	5	No. 399 Jack
4450	4.375"	5	3"	2 3/4"	2 3/4"	5	1/4-20
4450J	4.375"	5	3"	2 3/4"	2 3/4"	5	No. 399 Jack

## STEATITE BUTTONS



This specially designed Steatite button is intended for use to simplify wiring and to be used as a blinding post or a blinding post insulator. Attention is called to the uniqueness of the design which prevents either section of the insulator from turning in respect to the special screw. The specially designed screw locks both sections.

Cat. No.	Height A	Std. Pkg.	Dimensions			
			B	C	D	E
457—Hutton	5/16"	25	1 3/8"	3/4"	1 1/8"	6-32

## "LUCITE" FEEDTHRU INSULATORS



These feedthru insulators are ideal for bringing high frequency leads thru a panel. They are made of genuine Dupont Lucite. Because of its low loss at high frequency, it is well adapted to insulated elements of high frequency circuits. The 1/2" dia. insulators have brass nickel plated 6-32 hardware and the 3/4" dia. insulators, 10-32 hardware.

Cat. No.	Height Above Panel	Insulator Dia.	Mounting Hole	Bottom Height	Std. Pkg.
378	1/2"	3/4"	5/16"	1 1/8"	25
379	1 1/2"	1 1/2"	5/16"	1 1/8"	25
475	1 1/2"	1 1/2"	7/16"	1 1/8"	25
476	2"	3/4"	7/16"	1 1/8"	25

## BIRNBACH LEADIN INSULATORS



Each cone is 2 3/4" high and made of low absorption, highly vitrified glazed porcelain. The Nos. 4237 and 4238 Leadin Insulators have sufficient insulating bushings to insulate the rod that goes through the wall. In addition, 2 bushings are included, 1/4" and 1/2" long, allowing complete insulation of the threaded rod of any length in multiples of 1/4". They come complete with brass nickel plated hardware and lead and cork washers to permit a water-tight seal.

Cat. No.	Description	Std. Pkg.
4235	1.10" Rod	10
4236	1.15" Rod	10
4237	1.10" Rod with bushings	10
4238	1.15" Rod with bushings	10

## BIRNBACH STEATITE PILLARS (Without Hardware)



In many constructions, these unmounted threaded Steatite pillars will facilitate assembly because of the one hole mounting and parallel mounting surfaces. They are made of L5 glazed Steatite with threaded holes on both sides.

Cat. No.	Height	Diam.	Threaded Hole	Std. Pkg.
441A	1/2"	1/2"	6-32	100
442	3/4"	3/4"	6-32	100
442A	3/4"	3/4"	6-32	100
443	1"	1"	6-32	100
444	1 1/4"	1 1/4"	6-32	100
445	1 1/2"	1 1/2"	6-32	100
446	1 3/4"	1 3/4"	6-32	100
447	2"	2"	6-32	100
448	2 1/2"	2 1/2"	1/4-20	50
449	3"	3"	1/4-20	50

## BIRNBACH TRANSMITTING TUBE SOCKETS



Accepted as standard. Widely used in industrial application. No. 435—10 watt socket, has heavy phosphor bronze, cadmium plated side wiping type contacts; white glazed porcelain base; heavy nickel plated brass shell. No. 434—50 watt socket, has heavy double filament phosphor bronze, cadmium plated spring contacts to carry heavy currents; polished nickel plated brass shell set in a white glazed porcelain base. All brass nickel plated screws and milled nuts used.

Cat. No.	Watt Socket	A	B	D	E	Mtg. Holes	Pin	Tube Base	Std. Pkg.
434	50	2 3/8"	3 3/8"	2 1/8"	1.886"	2	4	Std. Jumbo	25
435	10	1 1/4"	2 1/4"	2 1/8"	1.386"	2	4	Med. Bay	25

## BIRNBACH CONE STANDOFF INSULATORS (Steatite)



Made of low absorption high tensile strength Steatite with a smooth glaze. All heights except the No. 430 are available with a Jack or a threaded hole top. Available in a white glaze and are ecopelite with screws, metal and cork washers.

Cat. No.	Height A	Std. Pkg.	Base Dimensions		Threaded Holes	Mtg. Hole
			B	C		
430	.5"	100	1"	1"	6-32	5/8"
431	1"	50	1 1/4"	1 1/4"	8-32	3/4"
431J	1"	50	1 1/4"	1 1/4"	8-32	No. 403 Jack
432	1 1/2"	50	1 3/4"	1 3/4"	10-32	3/4"
432J	1 1/2"	50	1 3/4"	1 3/4"	10-32	No. 403 Jack
433	2"	25	2"	2"	1/4-20	5/8"
433J	2"	25	2"	2"	1/4-20	No. 395 Jack

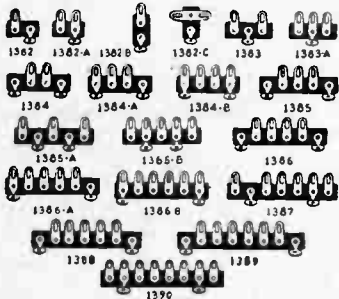


**TERMINAL STRIPS — LUGS — BUSHINGS — SPACERS  
SHAFT COUPLINGS — PANEL BEARINGS —  
TUBE CLAMPS**

*Birnbach*

**BIRNBACH LUG TERMINAL STRIPS**

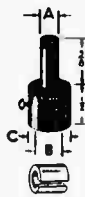
These lug terminals are used in circuit wiring for supporting resistors, condensers, etc. Made of 1/16" x 3/8" wide bakelite with cadmium plated brass lugs. Securely eyeleted in place. Lugs are spaced 7/16" centers with .110 dia. mounting holes.  
Special Combinations Available



Cat. No.	Std. Pkg.	Cat. No.	Std. Pkg.
1362	100	1385B	100
1362A	100	1386	100
1362B	100	1386A	100
1362C	100	1386B	100
1363	100	1387	100
1363A	100	1388	100
1364	100	Ter. 2 grds.	100
1364A	100	6 Ter. 2 grds.	100
1364B	100	1390	100
1365	100		
1365A	100		

**SHAFT COUPLING REDUCERS AND EXTENDERS**

By the use of these units all 1/4" and 3/8" dia. shafts and lugs can be assembled together. The insulated units are for use where electrical isolation is desired. Furnished complete with set screws shown. Be sure to specify whether Brass or Insulated is desired.



**SHAFT COUPLINGS**

Cat. No.	Insul.	Shaft Dia.	Hole Dia.	O.D.	Std. Pkg.
534	634	1/4"	1/4"	1/2"	50
535	635	3/8"	3/8"	1/2"	50
536	636	1/2"	1/2"	1"	50
537	637	3/4"	3/4"	1 1/2"	50

**COUPLINGS**

Cat. No.	Over-Insul.	Shaft Dia.	Hole Dia.	Std. Pkg.
531	631	1/4"	1/4"	50
532	632	3/8"	3/8"	50
533	633	1/2"	1/2"	50



**EXTENDERS**

Cat. No.	Over-Insul.	Shaft Dia.	Hole Dia.	Std. Pkg.
538	638	1/4"	1/4"	50
539	639	1/4"	1/4"	50

**BRASS SHAFTING**

Cat. No.	Std. Pkg.
540	12
541	12
542	12

**FIBRE SHAFTING**

Cat. No.	Std. Pkg.
543	12
544	12
545	12

**BIRNBACH TINNED TERMINAL LUGS**



Cat. No.	Hole for Screw	Material	Thickness	Length
1	6	Tinned Copper	.015"	3/8"
2	10	Tinned Copper	.016"	3/8"
3	252	Tinned Copper	.015"	3/8"
3A	1/4	Tinned Copper	.015"	3/8"
4	3/8	Tinned Copper	.016"	3/8"
5	1/2	Hot Tin. Cop.	.024"	1 1/8"
21	10	Hot Tin. Cop.	.020"	3/8"
22	1/4	Hot Tin. Cop.	.025"	1 1/8"
201	8	Brass Hot Tin.	.020"	3/8"
96	6-8-10	Brass Hot Tin.	.020"	3/8"
97	8	Tinned Copper	.016"	3/8"
98	6-8-10	Brass Hot Tin.	.020"	3/8"
99	4-6-8	Brass Hot Tin.	.020"	3/8"
100	10	Brass Hot Tin.	.020"	3/8"
1017	10	N. Pl. Cop.	.023"	3/8"

Standard Package — 1000

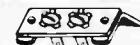
**BIRNBACH LOCKING TYPE TERMINAL LUGS**



Brass Electro Plated

Cat. No.	Hole for Screw	Thickness	Length In.	Std. Pkg.
193	4	.020"	3/8"	1000
194	6	.020"	3/8"	1000
195	8	.020"	3/8"	1000
196	1/4"	.020"	3/8"	1000

**TERMINAL STRIPS 2 POST**



Excellent mounting for twin lead transmission lines. Brass hot tinned lugs spaced 7/16" center to center. 3/16" bakelite. 1 1/16" mounting center.  
Cat. No. T16 ..... Std. Pkg. 50

**BIRNBACH 3 POST**



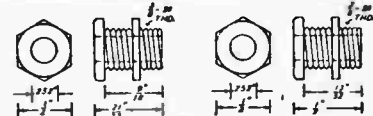
A synchronizing lock strip for RCA type television receivers.  
Brass hot tinned lugs. Spaced 7/16" center to center. Mounting center 1 3/8", 1.18" bakelite.  
Ca. No. T16A ..... Std. Pkg. 50

**BIRNBACH FRONT PANEL BEARING**

Cadmium plated brass for panels up to 3/8" in thickness and for 1/4" dia. shafts. The No. 551 and No. 552 are complete assemblies of the No. 550 and 1/4" dia. brass shaft cadmium plated.



Cat. No.	A	B	C
551	3"	1 1/4"	1 1/2"
552	6"	1 3/4"	1 1/2"



(Same as used on No. 551 and No. 552)

Cat. No.	Std. Pkg.
550	50
550A	50
550-B	50
550-C	50
551	50
552	25

**BIRNBACH BRASS BUSHINGS & SPACERS**



An ideal brass bushing for routing sub panels, chassis, condensers, transformers, etc. Hole will accommodate a No. 6 or No. 8 screw.

For No. 6	1/4" O.D.	For No. 8	
1125	100	1130	100
1126	100	1131	100
1127	100	1132	100
1128	100	1133	100
1129	100	1134	100

For No. 6	3/8" O.D.	For No. 8	
1135	100	1140	100
1136	100	1141	100
1137	100	1142	100
1138	100	1143	100
1139	100	1144	100

**THREADED BRASS SPACERS**

For No. 6-32	1/4" O.D.	For No. 8-32	
1125T	100	1130T	100
1126T	100	1131T	100
1127T	100	1132T	100
1128T	100	1133T	100
1129T	100	1134T	100

**BIRNBACH INSULATED BUSHINGS AND SPACERS**

For No. 6	1/4" O.D.	For No. 8	
1145	100	1149	100
1146	100	1150	100
1147	100	1151	100
1148	100	1152	100

**BIRNBACH CABLE CLAMPS**



Cat. No.	Cable No.	Up to Lth.	Mfg. With.	Std. Hole Pkg.
1153	3	1	4	100
1154	3	1	6	100
1155	3	1	6	100
1156	3	1	8	100
1157	3	1	10	100

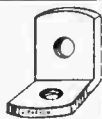
**BIRNBACH THREADED RODS**

These brass nickel plated threaded rods are standard parts of our inductor assemblies.

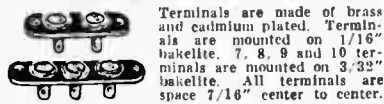
Cat. No.	Length	Thread	Std. Pkg.
16	4"	3/16"-20	1000
17	5 1/2"	3/16"-20	1000
18	10"	3/16"-20	1000
113	15"	3/16"-20	1000
114	1 3/4"	10-32	1000
115	2"	10-32	1000
116	2"	10-32	1000
117	2"	10-32	1000
118	2"	8-32	1000
119	2"	6-32	1000
15	2"	6-32	1000

**BIRNBACH TAPPED ANGLE BRACKETS**

Steel cadmium plated. 1/2" by 1/2". One plain .165 hole and one 8-32 tapped hole.



**BAKELITE TERMINAL STRIPS**



Terminals are made of brass and cadmium plated. Terminals are mounted on 1/16" bakelite. 7, 8, 9 and 10 terminals are mounted on 3/32" bakelite. All terminals are spaced 7/16" center to center.

Cat. No.	Terminals	Mfg. Center	Length	Width	Hole Dia.	Std. Pkg.
1372	2	1 1/2"	3"	1/2"	3/16"	100
1373	3	1 1/2"	3"	1/2"	3/16"	100
1374	4	2"	3"	1/2"	3/16"	100
1375	5	2"	3"	1/2"	3/16"	100
1376	6	3"	3"	1/2"	3/16"	100
1377	7	3"	3"	1/2"	3/16"	100
1378	8	3"	3"	1/2"	3/16"	100
1379	9	4"	3"	1/2"	3/16"	100
1380	10	4"	3"	1/2"	3/16"	100

**PLAIN**

Cat. No.	Terminals	Mfg. Center	Length	Width	Hole Dia.	Std. Pkg.
1260	2	A-G	3"	1/2"	3/16"	100
1261	2	Output	3"	1/2"	3/16"	100
1262	2	Input	3"	1/2"	3/16"	100
1263	3	1-2-3	3"	1/2"	3/16"	100
1264	4	1-2-3-4	3"	1/2"	3/16"	100
1265	5	1-2-3-4-5	3"	1/2"	3/16"	100
1266	6	1-2-3-4-5-6	3"	1/2"	3/16"	100

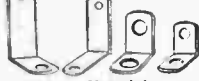
**MARKED**

**SPRING WIRE CLIPS**

They will hold a wire up to No. 10 B&S Gauge in a secure contact. All clips are brass nickel plated.

Cat. No.	Length	Width	Hole Dia.	Std. Pkg.
32A	Spring Clip	3/4"	3/8"	100
32	Spring Clip	3/4"	3/8"	100
33	Twin Clip	1 1/4"	3/8"	100

**BRASS AND STEEL ANGLES**



Cat. No.	Material	Size	Mfg. Holes	Std. Pkg.
1121	Brass N.P.	1 1/2" x 1 1/2"	169	100
1122	Brass N.P.	1 1/2" x 1 1/2"	169	100
1123	Steel H.T.	1 1/2" x 1 1/2"	144	100
1124	Steel H.T.	1 1/2" x 1 1/2"	169	100

**BIRNBACH TUBE CLAMPS**

These Tube Clamps are made of hard drawn aluminum and are found to be extremely desirable when mounting resonant lines or elements of directive beam antennas. The 3/4" clamp has a clearance for No. 10 Screw. The 3/8" to the 1/4" clamps have a clearance for 1/4" bolts.

Cat. No.	To Fit Tube	Width	Length	Thickness	Std. Pkg.
51A	3/8"	1/4"	1 1/2"	.050"	100
51	3/8"	1/4"	1 1/2"	.050"	100
52	3/8"	1/4"	1 1/2"	.030"	100
53	3/8"	1/4"	1 1/2"	.050"	100
54	3/8"	1/4"	1 1/2"	.050"	100
54A	3/8"	1/4"	1 1/2"	.050"	50
55	3/8"	1/4"	1 1/2"	.090"	50
57	3/8"	1/4"	1 1/2"	.090"	50
56	1"	3/8"	1 1/2"	.090"	50
56A	1"	3/8"	1 1/2"	.090"	50
56B	1"	3/8"	2"	.090"	50



# SCREWS & NUTS — WASHERS — STANDOFFS INSULATORS and SPREADERS

**BIRNBACH ROUND HEAD MACHINE SCREWS**  
Standard Package 1000

STEEL NICKEL PLATED			BRASS NICKEL PLATED		
Cat. No.	Size	Std. Pkg.	Cat. No.	Size	Std. Pkg.
6301	2-56 x 1/4	1000	6401	4-36 x 1/4	1000
6302	2-56 x 1/2	1000	6402	4-36 x 1/2	1000
6303	3-48 x 1/4	1000	6403	4-36 x 3/4	1000
6304	4-36 x 1/4	1000	6404	4-36 x 1	1000
6305	4-36 x 1/2	1000	6312	4-40 x 1/4	1000
6306	4-36 x 3/4	1000	6313	4-40 x 1/2	1000
6307	4-40 x 1/4	1000	6314	4-40 x 3/4	1000
6308	4-40 x 1/2	1000	6315	4-40 x 3/4	1000
6309	4-40 x 3/4	1000			
6420	6-32 x 1/4	1000	6405	6-32 x 1/4	1000
6421	6-32 x 1/2	1000	6406	6-32 x 1/2	1000
6422	6-32 x 3/4	1000	6407	6-32 x 3/4	1000
6423	6-32 x 1	1000	6408	6-32 x 1	1000
6424	6-32 x 1 1/4	1000	6409	6-32 x 1 1/4	1000
6425	8-32 x 1/4	1000	6410	6-32 x 1 1/2	1000
6426	8-32 x 1/2	1000	6411	6-32 x 1 3/4	1000
6427	8-32 x 3/4	1000	6412	6-32 x 1 3/4	1000
6428	8-32 x 1	1000	6413	8-32 x 1	1000
6429	8-32 x 1 1/4	1000	6414	8-32 x 1 1/4	1000
6430	8-32 x 1 1/2	1000	6415	8-32 x 1 1/2	1000
6431	8-32 x 1 3/4	1000	6416	8-32 x 1 3/4	1000
6432	10-32 x 1	1000	6417	8-32 x 1 1/2	1000
6433	10-32 x 1 1/4	1000	6418	8-32 x 1 3/4	1000
6434	10-32 x 1 1/2	1000			
6435	10-32 x 1 3/4	1000	6316	10-32 x 1	1000
6436	10-32 x 1 1/2	1000	6317	10-32 x 1 1/4	1000
6437	10-32 x 1 3/4	1000	6318	10-32 x 1 1/2	1000
6438	10-32 x 1 1/2	1000	6319	10-32 x 1 3/4	1000
6439	10-32 x 1 3/4	1000	6320	10-32 x 1 1/2	1000
6310	14-20 x 1 1/4	1000			
6311	14-20 x 1 1/2	1000			

**BIRNBACH BINDING HEAD MACHINE SCREWS**  
Steel Nickel Plated

Cat. No.	Size	Std. Pkg.
6321	6-32 x 1/4	1000
6322	6-32 x 1/2	1000
6323	6-32 x 3/4	1000
6324	8-32 x 1/4	1000
6325	8-32 x 1/2	1000
6326	8-32 x 3/4	1000

**BIRNBACH OVAL HEAD RACK SCREWS**  
Steel Nickel Plated

Widely used for mounting panels on racks and cabinets. Screws are nickel-plated brass.

Cat. No.	Size	Std. Pkg.
6600	6-32 x 1/4	1000
6601	6-32 x 1/2	1000
6602	6-32 x 3/4	1000
6603	6-32 x 1	1000
6604	8-32 x 1/4	1000
6605	8-32 x 1/2	1000
6606	8-32 x 3/4	1000
6607	8-32 x 1	1000
6608	10-32 x 1/4	1000
6609	10-32 x 1/2	1000
6610	10-32 x 3/4	1000
6611	10-32 x 1	1000
6611-A	10-32 x 1 1/4	1000

**BIRNBACH FINISHING RACK WASHERS**  
Brass Nickel Plated

Cat. No.	Size	Std. Pkg.
6612	6-32 Cup Washer	1000
6613	8-32 Cup Washer	1000
6614	10-32 Cup Washer	1000

**BIRNBACH ANTENNA INSULATORS**

These antenna insulators have exceptionally low moisture absorption. The leakage path is long and the cross section is small and is consistent with the strength required. Smooth white glaze overall prevents the accumulation of dirt or ice.

Cat. No.	Std. Pkg.
468—1 1/4" long Center Insulator	10
668—1 1/4" long	25
470—7" long	10
471—12" long	5

**BEE HIVE STANDOFF**

Base measures 2-3/16" diam. with 3 holes on 1-15/16" circle for No. 6 screws. Height of base 1 1/2". Complete with 10-32 brass screw and nut. No. 766J has a No. 403 Jack. Available in white glaze.

Cat. No.	Std. Pkg.
766—Standoff Insulator, 10-32 Screws	10
766J—Jack Type with No. 403 Jack	10

**BIRNBACH AIRPLANE INSULATORS**

They are used on mobile and aircraft and also with guy wire on TV installations. They are shaped for the least air resistance and have very high tensile strength, and low loss. Nos. 473 and 474 are made of white glazed low absorption porcelain. No. 472 is made of wet process glazed brown.

Cat. No.	Std. Pkg.
472—2 1/4" (brown)	25
473—2" (white)	100
474—1 1/2" (white)	100

**ORNAMENTAL HEAD SCREWS**  
Steel—Staturary Bronze Finish

Cat. No.	Size	Std. Pkg.
6327	6-32 x 1/4	1000
6328	6-32 x 1/2	1000
6329	8-32 x 1 1/4	1000

**BRASS AND STEEL WOOD SCREWS**  
Available in round, flat and oval heads.

BRASS NICKEL PLATED			STEEL NICKEL PLATED		
Cat. No.	Size	Std. Pkg.	Cat. No.	Size	Std. Pkg.
6460	3/8 x #4	144	6470	3/8 x #4	144
6461	1/2 x #4	144	6471	1/2 x #4	144
6462	5/8 x #4	144	6472	5/8 x #4	144
6463	3/4 x #5	144	6473	3/4 x #5	144
6464	1 x #5	144	6474	1 x #5	144
6465	1 1/4 x #6	144	6477	1 1/4 x #6	144
6466	1 1/2 x #6	144	6475	1 1/4 x #6	144
			6476	1 1/2 x #6	144
			6478	3/4 x #8	144

**BIRNBACH SHEET METAL SELF TAPPING SCREWS**  
Steel Cadmium Plated

**TYPE A — SHARP POINT**

Cat. No.	Size	Std. Pkg.
6500	#4 x 1/2	144
6501	#6 x 1/2	144
6502	#8 x 1/2	144
6503	#6 x 3/4	144
6504	#8 x 3/4	144
6540	#8 x 1/2	144
6541	#8 x 1/4	144
6505	#8 x 1/2	144
6542	#8 x 1/2	144
6543	#10 x 1/2	144
6506	#10 x 1/2	144
6507	#10 x 1	144

**BIRNBACH HEX HEAD SELF TAPPING SCREWS**  
**TYPE B — BLUNT POINT SLOTTED**  
Steel Cadmium Plated

Cat. No.	Size	Std. Pkg.	Cat. No.	Size	Std. Pkg.
6510	#6 x 3/4	144	6515	#8 x 1/4	144
6511	#6 x 1/2	144	6516	#8 x 3/4	144
6512	#6 x 3/4	144	6517	#8 x 1	144
6513	#8 x 1/4	144	6518	#10 x 1/2	144
6514	#8 x 3/4	144	6519	#10 x 1	144

**BIRNBACH VOLUME CONTROL AND TOGGLE NUTS**  
**STEEL - BRASS - NICKEL PLATED**

No.	Type	Size	Std. Pkg.
6337	Vol. Control Brass	3/8-32 x 1/2	1000
6337A	Vol. Control Steel	3/8-32 x 1/2	1000
6338	Toggle Switch Brass	13-32 x 1/2 x 3/16	1000
6339	Toggle Ring Nut	15-32 x 1/2 x 1/16	1000

**BIRNBACH WING NUTS**  
It is a high quality brass nickel plated wing nut used extensively on portable and test instruments.

Cat. No.	Thread	Std. Pkg.
6	6-32	100
8	8-32	100
10	10-32	100
11	1/4-20	100

**BIRNBACH HEXAGON STEEL MACHINE SCREW NUTS**

Cat. No.	Thread	Width across Flats	Thickness	Std. Pkg.
6330	2-56	3/16"	1/16"	1000
6331	3-48	3/16"	1/16"	1000
6332	4-36	1/4"	3/32"	1000
6333	4-40	1/4"	3/32"	1000
6448	6-32	1/4"	3/32"	1000
6449	6-32	5/16"	7/64"	1000
6334	8-32	1/4"	3/32"	1000
6450	8-32	5/16"	7/64"	1000
6335	10-32	3/8"	1/8"	1000
6336	1/4-20	7/16"	3/16"	1000

**BIRNBACH HEXAGON MACHINE SCREW NUTS**  
**BRASS—NICKEL PLATED**

Cat. No.	Thread	Width across Flats	Thickness	Std. Pkg.
6440	4-36	1/4"	3/32"	1000
6442	4-40	1/4"	3/32"	1000
6441	6-32	1/4"	5/64"	1000
6443	6-32	5/16"	7/64"	1000
6444	8-32	11/32"	7/64"	1000
6445	10-32	5/16"	7/64"	1000
6446	10-32	3/8"	1/8"	1000
6447	1/4-20	7/16"	1/8"	1000

**BIRNBACH BRASS NICKEL PLATED FLAT WASHERS**

Cat. No.	Fits Screw	Hole Size	O.D.	Thickness	Std. Pkg.
6479	4	.118"	9/32"	.025"	1000
6480A	6	.145"	5/16"	.025"	1000
6480	6	.145"	3/8"	.025"	1000
6481	8	.172"	3/8"	.025"	1000
6482	10	.203"	7/16"	.036"	1000
6483	1/4-20	.265"	9/16"	.040"	1000

**BIRNBACH STEEL KANKLINK LOCKWASHERS**

Cat. No.	Screw Size	O.D.	Thickness	Std. Pkg.
6484	4	3/16"	1/32"	1000
6485	6	15/64"	1/32"	1000
6486	8	15/64"	.025"	1000
6487	10	5/16"	.050"	1000
6488	1/4	7/16"	5/64"	1000

**BIRNBACH SHAKEPROOF LOCKWASHERS**  
**EXTERNAL TEETH**

Cat. No.	Screw Size	Std. Pkg.
6358	4	1000
6359	6	1000
6360	8	1000
6361	10	1000
6362	1/4	1000
6363	3/8	1000

**BIRNBACH SHAKEPROOF LOCKWASHERS**  
**INTERNAL TEETH**

Cat. No.	Screw Size	Std. Pkg.
6355	2	1000
6356	3	1000
6357	4	1000
6490	6	1000
6491	8	1000
6492	10	1000
6493	1/4	1000
6494	3/8	1000
6494-1	Narrow Rim Control Shaft Lockwasher	1000
6494-2	Narrow Rim Toggle Switch Lockwasher	1000
15-32		

**BIRNBACH FEEDER SPREADERS**  
They have a cross section of 3/8" x 1/4". Made of highly vitrified, low absorption, high tensile strength porcelain with a smooth white glaze overall.

Cat. No.	Std. Pkg.
462—Spreader, 2" long	25
464—Spreader, 4" long	25
469—Spreader, 6" long	25

**BIRNBACH STEATITE AIRPLANE INSULATORS**  
A very small compression type Steatite insulator with small wind resistance. Fully glazed. It is 1 1/4" in length; 17/32" in diameter; 3/4" line spacing.

Cat. No.	Std. Pkg.
463—Steatite Airplane Insulators	25

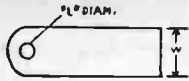
**BIRNBACH FLEXIBLE SHAFTS**  
Modern construction coils for more compact arrangement of parts. At times there is difficulty getting the controls to the proper position on the panel. With couplings and these flexible shafts, locations can be made with ease on an offset and angles up to 90 degrees. The flexible shafts are made of phosphor bronze and fitted into 1/8" dia. hubs.

Cat. No.	Std. Pkg.
553—Flexible Shaft 3" long	25
554—Flexible Shaft 6" long	25

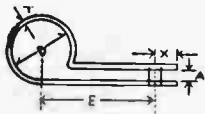


### NYLON CABLE CLAMPS

MADE OF DUPONT NYLON FORMULA FM 10001



Fungus Resistant



Used as a clamp, strain relief, clip hanger, fastener, strap, these nylon cable clamps are light and tough. Have smooth, non-abrasive surfaces, rounded edges will not chafe conductors or cause shorts or grounds in cable. Insoluble in solvents, oils, gasoline, alcohol, hydraulic fluids, alkalies, acids. Temperature resistant from -60°F to +300°F. Do not support combustion. Moisture and heat resistant. Inside matte finish surfaces prevent slippage under vibration and are self aligning when tightened by screw. Snaps onto cable. Meets MIL specs. Fungus resistant.

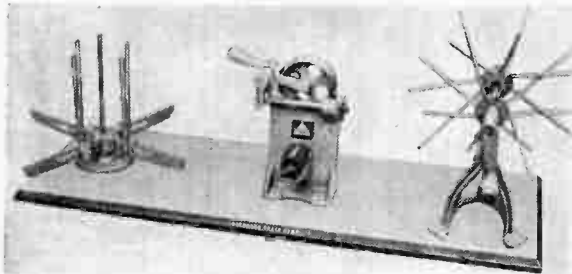
CAT. NO.	PUT-UP SIZE	D	E	W	T	L	X	A
725	100 1/8"	.125	.316	3/8	.050	.177	.227	.062
726	100 3/16"	.187	.378	3/8	.050	.177	.227	.062
727	100 1/4"	.250	.409	3/8	.050	.177	.227	.062
728	100 5/16"	.312	.441	3/8	.050	.177	.227	.062
729	100 3/8"	.375	.471	3/8	.050	.177	.227	.062
730	100 7/16"	.437	.519	3/8	.050	.177	.227	.062
731	100 1/2"	.500	.550	3/8	.050	.177	.227	.062
732	100 5/8"	.625	.684	1/2	.060	.177	.227	.062
733	100 3/4"	.750	.718	1/2	.060	.177	.227	.062
734	100 7/8"	.875	.760	1/2	.060	.177	.227	.062
735	100 1"	1.000	.802	1/2	.060	.177	.227	.062
736	100 1 1/8"	1.125	.968	1/2	.062	.204	.250	.125
737	100 1 1/4"	1.250	1.156	1/2	.062	.204	.250	.125
738	100 1 1/2"	1.500	1.188	5/8	.070	.204	.250	.125

### NEW COMPLETE WIRE MEASURING OUTFIT

ACCURATE • COMPACT • NOISELESS

#### MEASURING MACHINE

Sturdy and compact construction. Has a precision quality built counter with large numbers for easy reading and will register wire up to 9,999 feet for direct accurate reading. Can be easily reset to zero position. Wire passes through two rollers, the upper roller being self-adjusting and the tension of the upper roller can be set by a thumb screw to provide the proper grip for very fine as well as for heavy wire. Two hardened lead bushings with an opening of 5/8" diameter will guide the wire properly through the rollers. Bushings are removable to allow cables up to 1" dia. to pass through. Will measure accurately all electric wires, cables, coaxial cables, rope, tape, etc.



#### PRICES

	MODEL	LIST	NET
COMPLETE WIRE MEASURING OUTFIT	7389	\$235.00	\$117.50
Separately:			
HOLDING REEL	7398-1M	31.00	15.50
MEASURING MACHINE	7398-2M	165.90	82.95
WIRE WINDER	7398-3M	43.00	21.50

#### WIRE WINDER

Has adjustable arms to be set to the desired coil size and the arms will open to a flat position for easy removal of the coil. Simply open thumb screw which holds the front collar tight on the shaft, push the collar in any direction to

the desired position and tighten the thumb screw again.

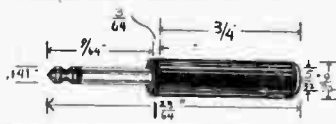
#### HOLDING REEL

Compact, adjustable to size of coil and folding. Will hold spools or coils of wire.

### MINIATURE PLUGS & JACKS

#### MINIATURE PHONE PLUG

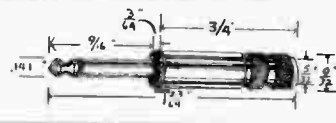
Insulated type. Solder terminals. Two conductor mini. phone plug. Ideal for hearing aids, portable receivers, small instruments, etc. Rated 500 volts.



No. 130 Std. pkg. 50  
130 Red or Black

#### SHIELDED MINIATURE PHONE PLUG

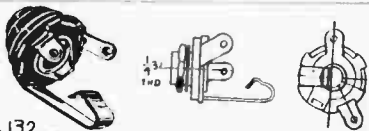
Same as No. 130 except with brass, bright nickel plated barrel with insulating tube inside.



No. 131 Std. pkg. 50

#### MINIATURE TELEPHONE TYPE JACK

Hugged construction, smaller than standard type jacks. Mount in 1/4" dia. hole in panels up to 1/8" thick.



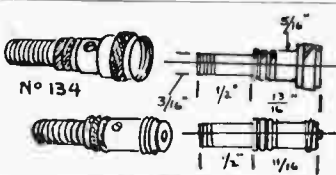
No. 132

No. 132 Open circuit type Std. pkg. 50

No. 133 Single closed circuit type Std. pkg. 50

#### MINIATURE MICROPHONE CONNECTOR

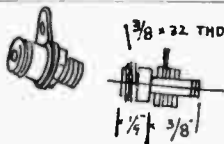
Single contact female. Std. pkg. 50  
No. 134 Miniature Female Conn.  
Single Contact Male  
No. 135 Miniature Male Conn. Std. pkg. 50



No. 134

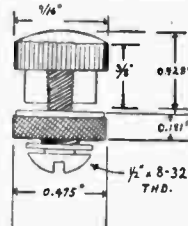
#### MINIATURE CHASSIS CONNECTOR

Complete with insulating washer and lug. Mounts in 1/4" hole. Mates with No. 134. Std. pkg. 50  
No. 136 Miniature Chassis Conn.



### INSULATED BINDING POST

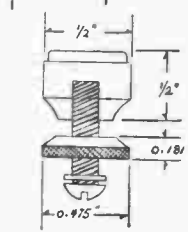
Molded bakelite head with brass insert molded-in. Supplied complete with 8/32 x 1/2" screw, lock washer. Has brass insert molded-in. Supplied with washer. Available in black.



No. 184

Cat. No. 184. Binding Post Std. pkg. 50

Molded bakelite head with brass insert molded-in. Supplied complete with 8/32 x 1/2" screw and lock washer. Has brass nickel-plated retaining washer. Colors: Red, Black.



No. 185

Cat. No. 185. Binding Post Std. pkg. 50

Brass, heavily nickel-plated overall. Complete with screw and lock washer. Designed for high amperage, low resistance connections.

Cat. No. 186. Metal Binding Post Std. pkg. 50

### PHONE TIP PLUG SPLICE



Takes all standard phone tip plugs excellent for quick connections or test, lead extensions.

Colors: Red, Black, Yellow, Green.

Cat. No. 619 — Insulated Banana Plug Splice Std. pkg. 25

### IN-LINE PHONE TIP JACK



Takes all standard phone tip plugs. Can be used as lead extension.

Colors: Red, Black, Yellow, Green.

Cat. No. 621 — Insulated-In-Line Tip Jack Std. pkg. 25

# Birnback PRICE LIST

SEE BIRNBACH PAGES  
L-704, S-1365 THRU 1379, U-1549 THRU 1557  
NUMERICALLY ARRANGED BY CATALOG NUMBER

Cat. No.	List Price	Cat. No.	List Price	Cat. No.	List Price	Cat. No.	List Price	Cat. No.	List Price	Cat. No.	List Price	Cat. No.	List Price	Cat. No.	List Price		
00	\$18.50/C	114	11.00/C	278	55.00/C	362-BC-50'	22.50/Ea.	478	.45/Ea.	681-C	1.70/Ea.	814	16.75/C	932-E	18.00/Ea.	1137	12.00/C
1-50	.66/Ea.	113	12.00/C	279	45.00/C	363-BC-50'	30.00/Ea.	479	.34/Ea.	700-C	1.34/Ea.	813	15.00/C	932-M	35.00/Ea.	1138	13.75/C
1-100	1.32/Ea.	116	13.00/C	280-25'	.80/Ea.	364-BC	127.50/Ea.	479-J	.78/Ea.	701-D	28.00/Ea.	815	.80/Ea.	933-E	19.00/Ea.	1139	15.50/C
1-1000	10.73/M	117	27.50/C	281-25'	.90/Ea.	365-BC	138.00/Ea.	479-J	.95/Ea.	702-D	33.75/Ea.	816	.70/Ea.	933-M	37.50/Ea.	1140	8.20/C
2-50	.66/Ea.	118	25.00/C	282-25'	.90/Ea.	366	17.00/C	480-E	7.05/Ea.	703-D	64.50/Ea.	817	.80/Ea.	933-C	3.95/Ea.	1141	10.50/C
2-100	1.32/Ea.	119	22.00/C	283-25'	1.00/Ea.	367	22.00/C	481-E	19.15/Ea.	704-D	102.00/Ea.	818-E	14.60/Ea.	934-E	28.00/Ea.	1142	12.00/C
2-1000	10.73/M	120	27.50/Ea.	287	.49/Ea.	368	2.50/C	482-E	19.15/Ea.	703-D	140.00/Ea.	818-E	73.00/Ea.	934-M	55.00/Ea.	1143	13.75/C
3-50	.75/Ea.	123	23.75/Ea.	288	12.25/Ea.	369	2.50/C	483-E	21.20/Ea.	706-D	192.00/Ea.	818-M	145.50/Ea.	935-E	15.00/Ea.	1144	23.50/C
3-100	1.32/Ea.	126	23.00/C	289-VC	6.00/C	370	5.00/C	484-E	33.65/Ea.	710-C	9.79/Ea.	819-10'	.75/Ea.	935-M	30.00/Ea.	1145	6.50/C
3-1000	10.73/M	127	2.75/Ea.	290-VC	6.00/C	371	3.00/C	485-E	26.00/Ea.	710-D	24.20/Ea.	820-C	12.65/Ea.	936-E	15.00/Ea.	1146	8.25/C
3A-1000	10.73/M	128	3.35/Ea.	291	.19/Ea.	372	2.50/C	486-E	29.05/Ea.	710-E	48.40/Ea.	820-E	63.25/Ea.	936-M	30.00/Ea.	1147	10.00/C
4-1000	41.25/M	130	27.00/Ea.	291-V-25'	1.70/Ea.	373	6.50/C	487-E	30.25/Ea.	710-M	32.40/Ea.	820-M	126.00/Ea.	936-C	97.00/Ea.	1148	42.00/C
5-1000	55.00/M	131	.85/Ea.	291-VC-2'	6.00/Ea.	377	.48/Ea.	488-E	48.40/Ea.	710-F	226.88/Ea.	822-E	44.00/Ea.	938-E	42.00/Ea.	1149	6.50/C
6	13.20/C	132	.40/Ea.	293	.19/Ea.	378	.63/Ea.	489-E	63.35/Ea.	712-C	6.35/Ea.	824-E	52.25/Ea.	938-M	84.00/Ea.	1150	8.25/C
8	13.75/C	133	.45/Ea.	293-V-25'	1.75/Ea.	379	.68/Ea.	490-E	5.30/Ea.	712-D	15.20/Ea.	825-E	30.60/Ea.	938-Q	2.75/Ea.	1151	10.00/C
10	13.75/C	134	.60/Ea.	293-VC-2'	6.40/Ea.	380-C	3.46/Ea.	490-M	35.00/Ea.	715-E	30.36/Ea.	826-M	75.00/Ea.	939-E	9.25/Ea.	1152	12.00/C
11	19.25/C	135	.80/Ea.	294-V-15'	1.50/Ea.	381-C	3.85/Ea.	490-A-150'	5.25/Ea.	715-E	82.75/Ea.	827-E	14.00/Ea.	939-E	9.25/Ea.	1153	13.50/C
13	7.70/C	136	.35/Ea.	294-V-25'	1.80/Ea.	382-C	3.80/Ea.	490-B-200'	7.00/Ea.	712-F	146.75/Ea.	828-E	74.00/Ea.	939-M	82.00/Ea.	1154	1.80/C
16	27.50/C	140	6.75/Ea.	294-VC-2'	6.70/Ea.	383-C	4.25/Ea.	492-C	5.30/Ea.	714-C	3.85/Ea.	828-E	91.00/Ea.	939-Q	2.95/Ea.	1155	2.00/C
17	60.00/C	141	.60/Ea.	295	.19/Ea.	384-C	4.35/Ea.	492-M	4.35/Ea.	714-D	53.00/Ea.	840-D	48.00/Ea.	939-Q	37.50/Ea.	1156	8.25/C
18	100.00/C	145-M	45.00/Ea.	295-V-25'	1.80/Ea.	385-C	5.25/Ea.	492-A-150'	7.95/Ea.	714-E	7.25/Ea.	840-E	91.00/Ea.	941-C	40.50/Ea.	1157	2.50/C
19	.45/Ea.	156-E	19.00/Ea.	295-VC-2'	7.00/Ea.	386-C	6.40/Ea.	492-B-200'	10.60/Ea.	714-M	36.70/Ea.	831-E	35.00/Ea.	941-E	33.50/Ea.	1120-A	16.60/Ea.
20	.90/Ea.	157-E	20.00/Ea.	296	.75/Ea.	387-C	6.50/Ea.	493-E	4.95/Ea.	714-F	89.80/Ea.	831-M	70.00/Ea.	941-I	29.50/Ea.	1220-A	12.50/Ea.
21	1.40/Ea.	158-E	26.25/Ea.	296-VC-2'	80.49/Ea.	388-C	5.96/Ea.	494-E	3.80/Ea.	715-M	88.00/Ea.	831-M	145.50/Ea.	941-I	37.50/Ea.	1220-B	11.00/Ea.
21-33	.66/Ea.	159-E	33.00/Ea.	297	.50/Ea.	389-C	10.90/Ea.	497-C	8.75/Ea.	726	7.50/C	832-E	38.50/Ea.	943-E	55.00/Ea.	1281	23.00/C
21-100	1.65/Ea.	160-E	50.00/Ea.	298	.45/Ea.	391	25.00/C	497-M	86.00/Ea.	727	8.50/C	832-M	77.00/Ea.	944-E	83.50/Ea.	1282	25.00/C
21-1000	13.75/M	161-E	58.25/Ea.	299	1.45/Ea.	392	77.00/C	499-C	13.25/Ea.	728	8.95/C	833-C	9.00/Ea.	947-E	46.70/Ea.	1283	44.00/C
22-15	1.85/Ea.	162-D	32.00/Ea.	300-VC-C	42.50/Ea.	392-A	92.00/C	501-M	9.35/Ea.	729	9.35/C	833-E	43.75/Ea.	947-E	35.00/Ea.	1264	50.00/C
22-100	3.52/Ea.	163	34.40/Ea.	300-VC-2'	1.95/Ea.	393	110.00/C	501	3.60/Ea.	730	9.50/C	833-M	9.63	963	14.00/Ea.	1265	6.50/C
22-1000	32.45/M	164-D	39.40/Ea.	300-V-25'	1.95/Ea.	393	70.00/C	503	3.35/Ea.	731	10.50/C	834-C	11.00/Ea.	964	19.50/C	1266	69.00/C
23	16.00/C	165-D	46.15/Ea.	300-VC-2'	7.65/Ea.	393-A	59.00/C	509	2.90/Ea.	732	12.00/C	834-E	52.50/Ea.	966	.20/Ea.	1372	13.00/C
24	17.00/C	166	2.00/Ea.	301	.35/Ea.	395	50.00/C	524-M	10.25/Ea.	733	13.00/C	834-M	105.00/Ea.	963	.20/Ea.	1373	18.00/C
25	17.00/C	167	1.90/Ea.	301-V-15'	1.50/Ea.	395	50.00/C	524-M	14.25/Ea.	734-M	83.25/Ea.	836-J	44.25/C	967	37.00/Ea.	1374	26.00/C
26	17.00/C	168	43.75/Ea.	301-VC-2'	10.00/Ea.	396	50.00/C	526-C	6.75/Ea.	735	15.00/C	835-E	66.00/Ea.	967	45.00/C	1375	30.00/C
27-C	21.00/C	172-M	87.50/Ea.	302	.35/Ea.	396-B	90.00/C	526-M	65.00/Ea.	736	28.00/C	835-M	132.00/Ea.	972-C	15.75/Ea.	1376	33.00/C
27-R	19.50/C	173-C	12.10/Ea.	302-V-10'	1.25/Ea.	397	53.00/C	527	11.00/Ea.	737	32.00/C	835-C	5.50/Ea.	972-A	15.50/Ea.	1377	38.00/C
28	17.00/C	173-E	11.00/Ea.	302-VC-2'	11.00/Ea.	397-B	60.00/C	527-M	29.00/Ea.	737	25.00/C	835-M	48.97/Ea.	972-B	15.50/Ea.	1378	42.00/C
29	17.00/C	173-M	12.50/Ea.	303	.65/Ea.	398	50.00/C	528-C	30.00/Ea.	740-C	1.10/Ea.	853-M	50.00/Ea.	972-M	152.00/Ea.	1379	44.00/C
30	30.00/C	174-C	16.50/Ea.	303-VC-C	25.00/Ea.	398-B	50.00/C	528-M	29.00/Ea.	749-C	41.25/Ea.	854-C	6.00/Ea.	972-B	15.25/Ea.	1380	48.00/C
31	15.00/C	174-E	82.25/Ea.	304	.35/Ea.	399	50.00/C	529-M	42.50/Ea.	749-E	205.00/Ea.	854-M	25.00/Ea.	972-E	14.00/Ea.	1382	3.00/C
31-C	21.00/C	174-M	154.50/Ea.	304-VC-2'	30.00/Ea.	399-A	55.00/C	529-M	45.00/Ea.	749-E	410.00/Ea.	854-M	35.50/Ea.	972-M	150.00/Ea.	1382	3.00/C
31-R	11.00/C	175-E	18.25/Ea.	305-V-10'	1.50/Ea.	400	29.00/C	531	27.00/C	756-C	22.50/C	855-50'	3.10/Ea.	972-C	12.50/Ea.	1383-B	3.25/C
31-S	16.00/C	175-E	98.00/Ea.	305-VC-2'	14.00/Ea.	400-B	40.00/C	532	27.00/C	756-E	110.00/Ea.	855-C	6.10/Ea.	972-E	55.00/Ea.	1382-C	3.75/C
31-100	17.50/C	176	192.00/Ea.	306-VC-C	1.70/Ea.	401	40.00/C	533	27.00/C	756-E	210.00/Ea.	855-C	27.50/Ea.	972-E	55.00/Ea.	1382-C	4.00/C
32-A	2.25/C	176-C	22.00/Ea.	306-VC-2'	16.60/Ea.	401-B	40.00/C	534	27.00/C	762	20.00/C	855-M	55.50/Ea.	972-Q	3.25/Ea.	1383-A	3.25/C
33	10.50/C	176-E	109.50/Ea.	307	.30/Ea.	402	4.40/C	535	27.00/C	763-C	30.00/C	856-50'	27.00/Ea.	973-C	16.00/Ea.	1384	5.50/C
34	1.40/Ea.	176-M	219.00/Ea.	307-V-20'	1.80/Ea.	402-A	4.50/C	536	27.00/C	763-E	38.00/C	856-C	54.00/Ea.	973-C	14.00/Ea.	1384-A	5.90/C
35	1.40/Ea.	177-C	27.50/Ea.	307-VC-C	9.00/Ea.	403	33.00/C	537	27.00/C	763-E	85.00/C	856-E	285.00/Ea.	973-M	132.00/Ea.	1384-B	6.10/C
36	1.40/Ea.	177-E	33.00/Ea.	308	.25/Ea.	404	35.00/C	538	27.00/C	763-E	85.00/C	856-E	38.50/Ea.	973-M	132.00/Ea.	1384-B	6.10/C
37	1.40/Ea.	177-C	36.50/Ea.	308-BC	2.75/Ea.	404-A	30.00/C	539	23.00/C	765	38.00/C	856-M	31.50/Ea.	973-M	4.90/Ea.	1385-A	6.50/C
38	1.40/Ea.	180-C	41.25/Ea.	309	1.70/Ea.	404-B	45.00/C	540	.33/Ea.	766	.39/Ea.	856-I	62.00/Ea.	974-C	20.00/Ea.	1385-B	7.25/C
39	1.40/Ea.	182-C	49.50/Ea.	310	18.00/C	404-BC	50.00/C	542	56.00/Ea.	766-J	.58/Ea.	856-I	30.75/Ea.	974-C	20.00/Ea.	1385-B	8.25/C
40	1.40/Ea.	183	20.00/C	310-S	19.00/C	404-S	40.00/C	543	.25/Ea.	769	1.40/Ea.	856-J	47.00/Ea.	977-C	36.85/Ea.	1386-B	10.75/C
42	7.00/C	186	25.00/C	311	35.00/C	405	30.00/C	544	.50/Ea.	770	2.50/Ea.	856-J	90.50/Ea.	979-C	41.25/Ea.	1387	10.75/C
43	8.00/C	193	15.00/M	311-B-25'	.75/Ea.	406	60.00/C	545	.60/Ea.	771	16.75/Ea.	856-J	360.00/Ea.	980-C	38.50/M	1388	9.75/C
44	10.00/C	194	15.00/M	312-BC-C	2.00/Ea.	407	12.00/C	546	42.00/C	772	40.00/C	857-C	72.00/Ea.	982-M	84.50/C	1389	9.75/C
45	1.40/Ea.	195	15.00/M	312	2.00/Ea.	408	3.15/Ea.	547	35.00/C	772-D	42.15/Ea.	857-50'	25.50/Ea.	983-M	51.50/C	1389	9.75/C
46	14.00/C	196	18.00/M	313	1.75/Ea.	409	32.00/C	548	25.00/C	772-E	84.25/Ea.	857-C	31.00/Ea.	984-M	67.75/Ea.	1402-C	9.00/Ea.
47	1.40/Ea.	201-35	60.35/Ea.	313-BC-2'	7.75/Ea.	410	.55/Ea.	550-A	.25/Ea.	772-F	168.50/Ea.	857-C	245.00/Ea.	985-M	45.00/C	1403-M	80.00/Ea.
48	33.50/C	201-100	1.54/Ea.	313-BC-2'	1.75/Ea.	411	1.32/Ea.	550-B	.30/Ea.	772/18-C	22.50/Ea.	857-C	490.00/Ea.	986-M	55.75/Ea.	1406-C	5.50/Ea.
49	1.40/Ea.	201-1000	13.75/M	314	2.75/Ea.	412	33.00/C	550-C	.30/Ea.	772/18-E	55.75/Ea.	858-50'	3.25/Ea.	987-M	66.50/Ea.	1406-C	5.50/Ea.
51	17.50/C	203	.65/Ea.	314-B-25'	.75/Ea.	413	1.50/Ea.	551	.35/Ea.	772/18-E	110.50/Ea.	858-C	8.50/Ea.	988-M	77.50/Ea.	1410-C	3.75/Ea.
51-A	203-A	203-A	3.75/Ea.	314-BC-2'	2.75/Ea.	414	1.50/Ea.	552	27.00/C	772/18-M	221.00/Ea.	858-M	11.75/Ea.	988-M	77.50/Ea.	1410-C	3.75/Ea.
52	17.50/C	203-M	3.75/Ea.	315	.19/Ea.	415	25.00/C	553	.90/Ea.	772-C	4.50/Ea.	858-M	61.00/Ea.	1014-50'	5.25/Ea.	1411	34.00/Ea.
53	17.50/C	204	.65/Ea.	315-B-25'	.75/Ea.	416	22.00/C	554	1.30/Ea.	773-C	20.00/Ea.	859-50'	4.15/Ea.	1015-C	10.00/Ea.	1415-M	21.05/E



PRICE LIST NUMERICALLY ARRANGED BY CATALOG NUMBER

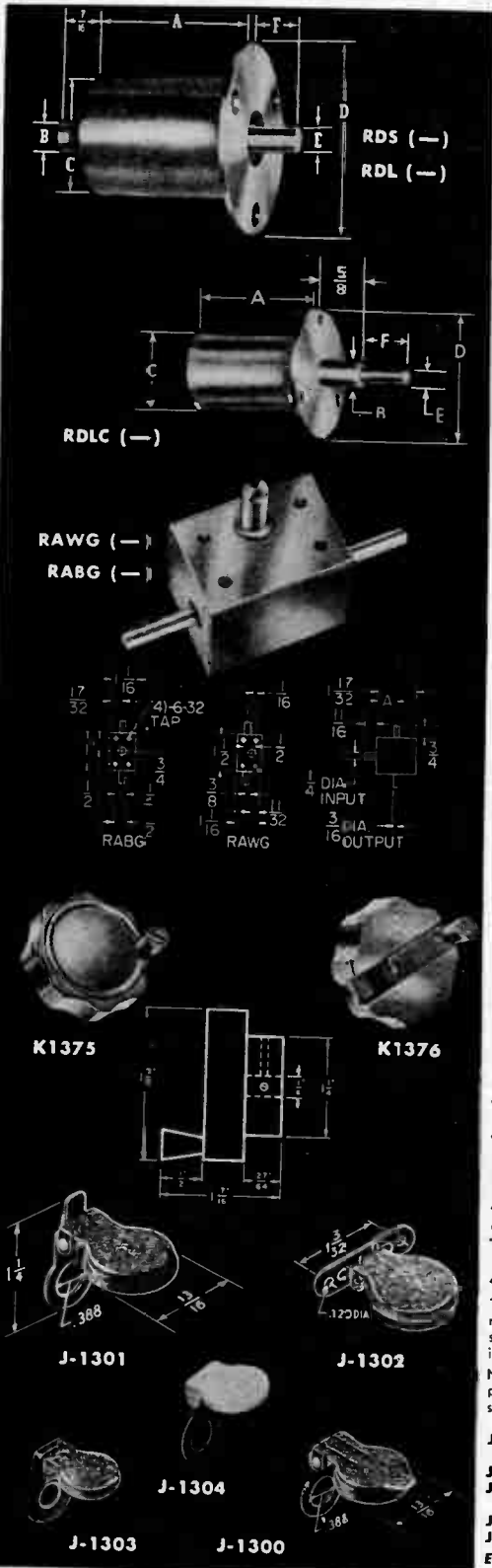
Table with columns for Cat. No., List Price, and various wire specifications. Includes sections for HEAVY FORMVAR MAGNET WIRE, SOLID TINNED WIRE, DOUBLE NYLON MAGNET WIRE, FLAT ENAMEL MAGNET WIRE, and DOUBLE COTTON MAGNET WIRE.

C = 100 ft. - D = 250 ft. - E = 500 ft. - M = 1000 ft. - F = 2500 ft. NOTE: For STRIPED SPIRAL TRACERS, ADD \$1.88 TO LIST PRICE. PRICE PER 1000'. Where wire is shipped on returnable spools or reels a deposit covering same will be required. No credit will be allowed for returned spools unless returned prepaid within 12 months from date of shipment. All deposit spools and reels are billed separately on invoice and not included in price of materials sold.

ALL PRICES SUBJECT TO CHANGE WITHOUT NOTICE



**HARDWARE MANUFACTURING CO., INC.**  
**BROOKLYN 11, N. Y.**



**RATIO DRIVES—SPEED REDUCERS**

JAN ratio drives employing precision ball bearings are used for the smooth control of components in instruments or in speed reduction applications where miniaturization is essential. Ruggedly built and permanently lubricated, these units render a smooth rotary control between input and output shafts which rotate in the same direction. Type RDL and RDS are supplied with "in-line" output-input shafts. Type RDLC is supplied with concentric type input-output shafts. Torque rating is 2 in. 1b max.

CAT No.	RATIO	Output Shaft				Input Shaft		Bolt Mtg Dia
		A	B	C	D	E	F	
RDL-1	2.66-1	1 <sup>3</sup> / <sub>32</sub>	3/8	1 <sup>1</sup> / <sub>8</sub>	1 <sup>13</sup> / <sub>16</sub>	1/4		1 <sup>11</sup> / <sub>32</sub>
RDL-2	7.08-1	1 <sup>1</sup> / <sub>2</sub>	3/8	1 <sup>1</sup> / <sub>8</sub>	1 <sup>13</sup> / <sub>16</sub>	1/4		1 <sup>11</sup> / <sub>32</sub>
RDL-3	18.80-1	1 <sup>7</sup> / <sub>32</sub>	3/8	1 <sup>1</sup> / <sub>8</sub>	1 <sup>13</sup> / <sub>16</sub>	1/4		1 <sup>11</sup> / <sub>32</sub>
RDLC-1	2.66-1	1 <sup>3</sup> / <sub>32</sub>	3/8	1 <sup>1</sup> / <sub>8</sub>	1 <sup>13</sup> / <sub>16</sub>	1/4	1 <sup>1</sup> / <sub>16</sub>	1 <sup>11</sup> / <sub>32</sub>
RDLC-2	7.08-1	1 <sup>3</sup> / <sub>32</sub>	3/8	1 <sup>1</sup> / <sub>8</sub>	1 <sup>13</sup> / <sub>16</sub>	1/4		1 <sup>11</sup> / <sub>32</sub>
RDLC-3	18.80-1	1 <sup>7</sup> / <sub>32</sub>	3/8	1 <sup>1</sup> / <sub>8</sub>	1 <sup>13</sup> / <sub>16</sub>	1/4	1 <sup>11</sup> / <sub>16</sub>	1 <sup>11</sup> / <sub>32</sub>
RDS-1	2.70-1	3/4		5/8	1 <sup>9</sup> / <sub>16</sub>			31/32
RDS-2	7.28-1	31/32		5/8	1 <sup>9</sup> / <sub>16</sub>			31/32
RDS-3	19.65-1	1 <sup>7</sup> / <sub>32</sub>		5/8	1 <sup>9</sup> / <sub>16</sub>			31/32

**RIGHT ANGLE RATIO DRIVES**

Featuring dual output shafts, at right angles to input shafts, this series of miniature drives provide an ideal type instrument control and are available with matched BEVEL or WORM GEARS covering a wide range of ratios.

JAN'S WORM GEAR RIGHT ANGLE DRIVES are especially suited for handling spring or gravity loaded components since the output shaft automatically locks in any desired position and is controlled only by the input shaft which remains free for smooth drive in either direction.

Assembled in dust-proof housings, the gears are permanently pinned in place on stainless steel shafts, mounted in oilite bearings and held under constant pressure.



**BEVEL GEAR RIGHT ANGLE DRIVES**

CAT NO.	RATIO	"A"
RABG-1	1:1	7/8
RABG-2	2:1	7/8
RABG-3	3:1	7/8



**WORM GEAR RIGHT ANGLE DRIVES**

RAWG-1	5:1	3/4
RAWG-2	10:1	3/4
RAWG-3	20:1	3/4

**SLIP-CLUTCH KNOBS** Cat. Nos. K-1375, K-1376

**Fixed or Retractable Spinner**

Designed for driving devices such as variable capacitors, inductors, potentiometers, etc., these knobs work on the principle of a "slip-clutch," automatically disengaging and slipping when a predetermined torque is exceeded. JAN'S SAFETY KNOBS are fluted to aid in sensitive adjustment and also have either a fixed or a retractable spinner for fast turning. Made from single unit construction, milled bakelite-to-metal inserts, these knobs safeguard delicate and costly instruments against careless or inadvertent cranking beyond their normal stops. Note: Model K-1376 is identical to Model K-1375 but has the additional feature of a retractable spinner. It has a positive toggle type action, being spring loaded in either open or closed position and thus is useful where equipment must fit into small spaces. Designed for 1/4" shafts.

**SPINNER KNOBS** Cat. Nos. K-1275, K-1276

Models K-1275 and 1276 are spinner knobs having an identical appearance to K1375 and K1376 respectively and are available without the slip-clutch mechanism. Designed for 1/4 inch shafts, these knobs are made from single unit construction, milled black bakelite-to-brass insert. Supplied with two set screws for firm attachment to the shaft.

**JACK COVERS (TRIMMER COVERS)**

These sturdy Jack Covers fit jack or panel bushings and are used to keep out dust and moisture as well as to prevent inadvertent disturbance of control settings. Jack Covers are supplied with stainless steel spring, hinge pin and neoprene pad. Outer surfaces are finished in standard colors of baked enamel.

NOTE: No. J-1300 (SNAP-JACK) is made with toggle action. It snaps to open or shut position and will remain open until snapped shut. No. J-1304 is a miniaturized Jack Cover similar to a No. J-1301 but without thumb lift.

- J-1300 ( ) SNAP-JACK COVER (toggle type)
- J-1301 ( ) STANDARD JACK COVER
- J-1302 ( ) PANEL MOUNT JACK COVER
- J-1303 ( ) WATERPROOF JACK COVER
- J-1304 ( ) MINI-JACK COVER

**To Order Colors**  
 Black Wrinkle, specify: (1)  
 Navy Gray Smooth, specify: (2)  
 Sig. Corps Olive Smooth, specify: (3)  
 Black Enamel Smooth, specify: (4)  
 Available in other colors on request

Example: Waterproof Jack Cover, color black wrinkle, order as J-1303(1).



# HARDWARE MANUFACTURING CO., INC.

BROOKLYN 11, N. Y.

## HI-VOLTAGE INSULATED COUPLINGS

JAN's insulated high voltage couplings are used to adjust high voltage controls without danger to operating personnel. They are also used to reduce ground capacitance on other types of sensitive controls. All units are supplied with a stainless steel screw driver tip which fits all standard slotted shafts (potentiometer, etc.) without further machining.

### 30KV Rating—for TV and Industrial Application **Cat. No. AK 4160**

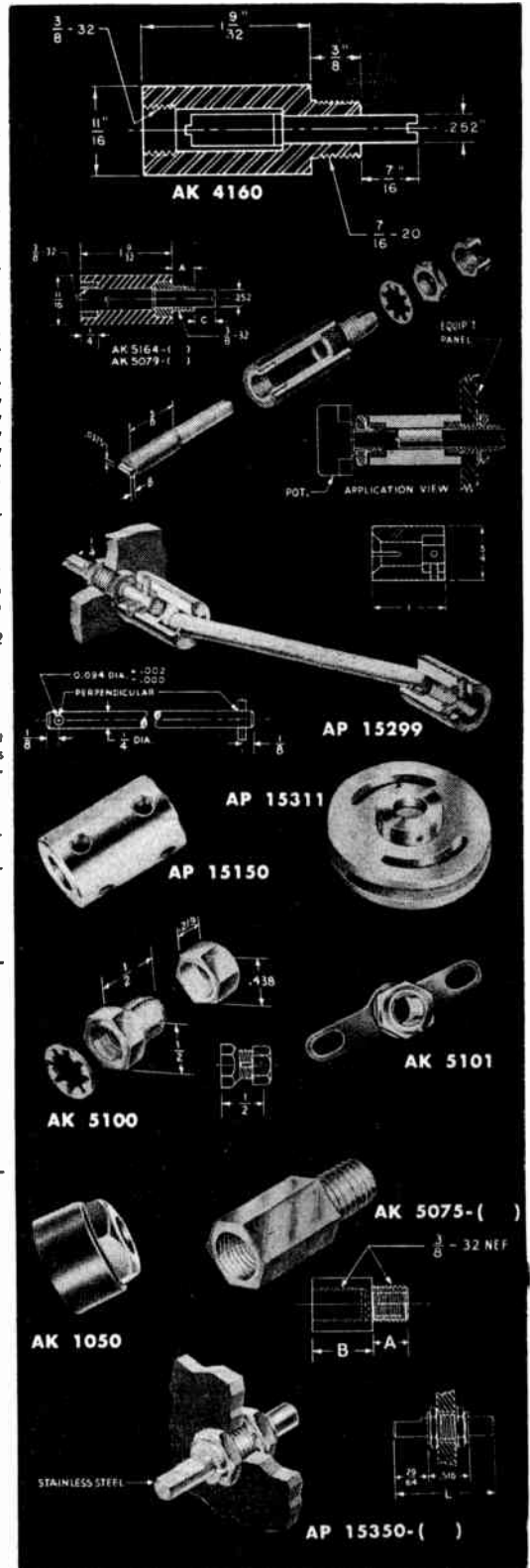
This coupling, capable of withstanding 30KV breakdown, is made of high grade Bakelite throughout except for the stainless steel screw driver tip on the shaft. Mounting hardware supplied.

### 15KV Rating—for Military and Quality Instrumentation

An engineered, high voltage coupling fabricated of stainless steel shaft and precision screw driver tip molded into a single unit with mineral filled melamine per M.I.L. spec. Completely shock, vibration and fungus proof. Operates with ease over an ambient temperature range of -75 degrees C. to +175 degrees C. Supplied complete with nickel plated hardware.

CAT. NO.	"A"	LOCKING TYPE	"B"	"C"
AK-5079-X-1	9/16"	STANDARD TYPE	3/16"	1/8"
AK-5079-B-1	9/16"	STANDARD TYPE	1/16"	1/8"
AK-5164-X-2	3/8"	LOCKING TYPE	3/16"	7/16"
AK-5164-B-2	3/8"	LOCKING TYPE	1/16"	7/16"
AK-5164-X-3	3/8"	STANDARD TYPE	3/16"	15/16"
AK-5164-B-3	3/8"	STANDARD TYPE	1/16"	15/16"
AK-5164-X-4	3/8"	LOCKING TYPE	3/16"	1-7/16"
AK-5164-B-4	3/8"	LOCKING TYPE	1/16"	1-7/16"

NOTE: Specify "X" type for use with "pots" having 1/8" long shafts and type "B" where "pot" shaft is 1/4" long.



## SHAFT COUPLINGS

### Offset Extension Shaft Couplings ±30° offset **Cat. No. AP15299**

This versatile and extremely durable insulated nylon coupling makes it possible to join two parallel drive shafts offset from each other plus or minus 30 degrees in any direction and at separations greater than 3 inches.

Secures firmly to the drive shaft through a nickel plated brass, molded insert and 2 set screws.

- Used with 1/4" coupling shaft of any length (NOT FURNISHED).
- Shaft is keyed to the coupler by zinc plated steel drive pins supplied by JAN.

### Flexible Shaft Coupling **Cat. No. AP15311**

This Nylon flexible coupling is completely vibration-proof by virtue of its single unit molded metal insert to plastic construction. Adequate insulation to 5 KV in addition to its wide flexibility provide a practical means for efficiently joining 1/4" shafts slightly misaligned. Four cup pointed set screws supplied permit firm attachment of joining shafts.

### Shaft Coupling **Cat. No. AP15150**

A rugged, nickel plated brass coupling for joining two 1/4" shafts. Supplied with four set screws.

## NYLON SHAFT LOCK **Cat. No. AK1050**

A one-piece single unit shaft lock. Fits 3/8"-32 thread of shaft bushing. Grasps 1/4" shaft with adjustable friction grip to prevent accidental or vibrational disturbance of controls. May be adjusted for semi-permanent locking of control shaft.

## SHAFT LOCKS — Split Bushing Type **Cat. Nos. AK5100 thru AK5103**

These shaft locks securely hold in position the shaft of volume controls, capacitors, switches, etc. Body and lock nut of nickel plated brass. Supplied with cadmium plated and iridized steel lock washer.

### Split Bushing Type

AK5100	Standard JAN LOCK NUT
AK5101	PANEL MOUNT TYPE
AK5102	Knurled Lock Nut Type (Not shown)
AK5103	Miniature for 1/8" shafts (Not shown)

## BUSHING EXTENDER **Cat. Nos. AK5075-1 thru AK5075-9**

This special bushing extender permits staggered mounting of components (having 1/4" dia. shafts) behind a panel. Supplied in nickel plated brass in 8 sizes.

Note: Cat. No. AK5075-9 is of the locking type and is supplied with lock nut.

Cat. No.	"B"	"A"	Cat. No.	"B"	"A"
AK5075-1	5/8"	3/8"	AK5075-5	2-1/4"	1/4"
AK5075-2	5/8"	1/4"	AK5075-6	1-5/8"	1/4"
AK5075-3	5/8"	3/16"	AK5075-7	1-7/16"	3/16"
AK5075-4	3/4"	1/4"	AK5075-8	1-1/16"	1/4"
			AK5075-9	11/16"	1/2"

## PANEL BEARING & SHAFT ASSEMBLY

This versatile Panel Bearing and Shaft Assembly is used for control of a remote component. Passivated stainless steel shaft is 1/4" dia. with one end flattened for attaching to control knob by set screws. Supplied completely assembled with two retaining rings, jam nut with lock washer, and brass panel bearing, nickel plated. Fits all panels up to 3/16" thick; mounts in 13.32" dia. hole.

Item	Cat. No.	"L" Shaft Length
Panel Bearing	AP 15350	—
Panel Bearing & Shaft Assembly	AP 15350-1	1-5/16"
	AP 15350-2	3"
	AP 15350-3	6"



# HARDWARE MANUFACTURING CO., INC.

BROOKLYN 11, N. Y.

## MAGNETIC SHIELDS FOR CATHODE RAY TUBES

JAN MAGNETIC SHIELDS are made of Mu-metal and are hydrogen annealed by a special process to assure optimum orientation of the molecular structure of the alloy for best magnetic shielding. JAN MAGNETIC SHIELDS prevent distortion and intensity modulation of the electron beam due to stray magnetic fields. In addition, the use of these shields protects personnel against the dangers of accidental tube breakage. Mounting holes are tapped for No. 6-32 screws as shown. These shields are designed to fit JAN's standard bezels as listed below. See following pages for specifications on JAN BEZEL ASSEMBLIES.

SHIELD CAT. NO.	FOR USE WITH C.R.T. NO.	MATCHING JAN BEZEL	DIMENSIONAL OUTLINE	
S2001-1 S2001	2AP1 2BP1 902	-- -- --		
S3001 adaptable for edge-lighting graticule	3RP1	CP1328-P-1 CP1329-1 CP1328-P-2 CP1329-2		
S3005 adaptable for edge-lighting graticule	3WP	Same as S3007	Same as S3001 except A=10 5/8"	
S3003 adaptable for edge-lighting graticule	3AP1 3KP1 908A	Same as S3001	Same as S3001 except A=10 1/4"	
S3004 adaptable for edge-lighting graticule	3BP1A 3JP1 3ACP	Same as S3001	Same as S3001 except A=8 5/8"	
S3007 adaptable for edge-lighting graticule	3WP	CP1428-2 CP1328-P-2 CP1329-2		
S5001	SUP1	CP1465 CP13584-1 CP13549-1 CP19495-1 CP19636-1		
S5002 adaptable for edge-lighting graticule	5BP1A SCP1A 5ABP1 SADP	CP1465 CP13584-1 CP13549-1 CP19495-1 CP19636-1 CP1465 CP13584-2 CP13549-2 CP19495-2 CP19636-2		
S5003	SUP1 SUP7 SUP11	Same as S5001		
S5004	5BP1A, 5CP1A SADP, 5ABP1	Same as S5002	Same as S5003 except length=15 3/4"	
S5005 adaptable for edge-lighting graticule	Same as S5002	Same as S5002		

NOTE CAREFULLY: When ordering, please specify CRT type number. Anode openings provided, where required.





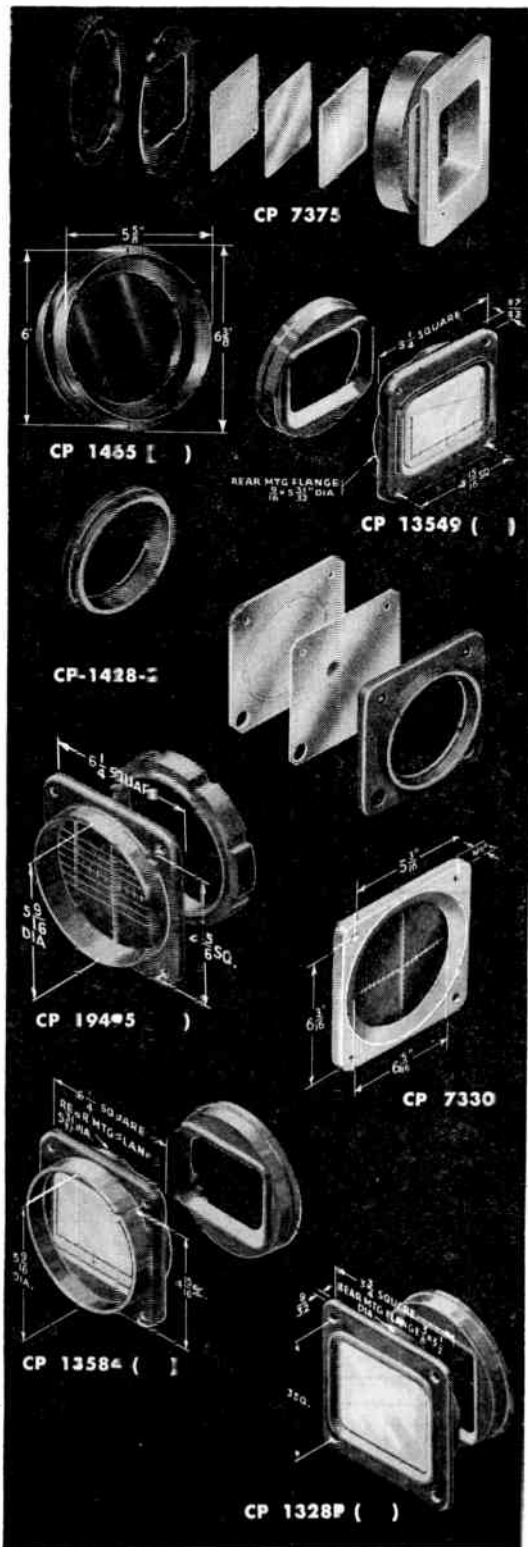
# HARDWARE MANUFACTURING CO., INC.

BROOKLYN 11, N. Y.

## MAGNETIC SHIELDS FOR CATHODE RAY TUBES

SHIELD CAT. NO.	FOR USE WITH C.R.T. NO.	MATCHING JAN BEZEL	DIMENSIONAL OUTLINE
55006	SRP1	CP19636-2 CP13584-2 CP13549-2 CP19495-2 CP1465	
55007	SBP1A SCP1A SABP1 SADP	Same as 55002	
55008	SAMP	Same as 55006	
55009	SSP7	Same as 55006	
57001	7GP4 7JP4 7JP1 7VP1	CP7330 CP7375	
57002	7CP1	Same as 57001	Same as 57001 except anode opening provided.
57003	7YP3	Same as 57001	





**BEZEL ASSEMBLIES**

JAN's Bezels enhance the appearance of the instrument on which they are used. These units are functionally designed to provide OPTIMUM UTILIZATION OF THE CRT SCREEN, and safety against tube breakage and danger to operating personnel.

JAN Bezel assemblies are supplied with a bezel, calibrated graticule, green-light filter and CRT cushion. Bezels are finished in a smooth dull black non-reflecting surface. These units fit JAN Shields.

Bezel assemblies for use with flat-faced CRT are designated as -2; for curved face: -1.

**Edge-lit Bezels**

These Bezels are designed to provide edge lighting of the engraved scale-calibrated graticule by means of pilot lights.

**Camera Mount Bezel**

These units provide an integral cast mounting flange that fits all standard 5" CRT cameras.

**Summary of Features:**

- Engineered for 3", 5" and 7" CRT
- Maximum display area
- Precision engraved, scale-calibrated graticules
- Materials and finish to "Mil Spec"
- Heavy buna-S shock cushion
- Models for edge-lighting
- Phosphor-matched light filters
- Non-reflecting matte surfaces
- Rugged camera mounts
- Models for curved and flat-faced CRT

Catalog No.	Material	Type	CRT Face	Panel Hole
<b>BEZELS FOR 3" C.R.T.</b>				
CP-1328-P-2	Shock resistant Plastic	Standard	Curved	3 1/2"
CP-1328-P-1		Standard	Flat	3 1/2"
CP-1428-1	Aluminum	Standard	Curved	3 1/4"
CP-1428-2	Aluminum	Standard	Flat	3 1/4"
CP-1429-1**	Aluminum	Camera Mount	Curved	3 1/4"
CP-1429-2**	Aluminum	E.L.B.A.**	Flat	3 1/4"
<b>BEZELS FOR 5" C.R.T.</b>				
CP-13549-1	Aluminum	Standard	Curved	6.0"
CP-13549-2	Aluminum	Standard	Flat	6.0"
CP-13584-1	Aluminum	Camera Mount	Curved	6.0"
CP-13584-2	Aluminum	Camera Mount	Flat	6.0"
CP-19495-1**	Aluminum	Camera Mount	Curved	5-5/16"
		E.L.B.A.**		
CP-19495-2**	Aluminum	Camera Mount	Flat	5-5/16"
		E.L.B.A.**		
CP-1465	Steel	Camera Mount	Curved or Flat	5-5/8"
CP-19636-2**	Aluminum	Camera Mount	Flat	5-5/16"
<b>BEZELS FOR 7" C.R.T.</b>				
CP-7330	Aluminum	Standard	Curved or Flat	7-7/16"
CP-7375**	Aluminum	E.L.B.A.**	Curved or Flat	7-1/2"

NOTE: Bezels designated \*\*[E.L.B.A.] accommodate edge lighting of scale-engraved graticules by means of pilot bulbs.



# HARDWARE MANUFACTURING CO., INC.

BROOKLYN 11, N. Y.

## PACKAGED BEZEL-SHIELD ASSEMBLIES

JAN PACKAGED UNITS are designed to save time and money for the user by assembling in one package all items needed for CRT BEZEL AND MAGNETIC-SHIELD applications. The package consists of: JAN MAGNETIC SHIELD, JAN BEZEL, CRT RUBBER CUSHION, calibrated graticule, a green-light filter, 4 bayonet sockets, pilot lamps (for use with edge-lit bezel-shield assemblies), and hardware.

When Ordering Specify:

JAN PACKAGED UNIT giving JAN Shield No., JAN Bezel No. and CRT tube type with which it is to be used.



PACKAGED UNIT NO. CIS 5002, FOR CRT 5ABP7; JAN SHIELD NO. 5-5002, JAN BEZEL NO. CP-19495-2

## "JOLTA" SHOCK TESTING MACHINES

JAN'S "Jolta" shock testers for small components provide for rapid and precise testing of anticipated shock stresses. Designed for laboratory and production testing of instruments such as relays, electric meters, clocks, transistors and other electrical and electronic devices, they are accurately calibrated for direct readings in accord with specifications now required in most military and commercial contracts. The testers are ruggedly built and accommodate all shapes of test specimens. Specimens may be tested while in actual operation and under electrical load. Each machine is individually calibrated and computation charts are supplied, thus insuring accurate interpretation of test results. JOLTA SHOCK TESTERS feature the exclusive JAN INERTIA BRAKE which automatically captures the carriage at the summit of its first rebound eliminating secondary (irrelevant) shocks and dangerous manual grasping.

### JOLTA # 1001

- Test range 30 to 120g.
- Bench model, only 10" x 8" x 32" high.
- Accepts specimens up to 4" x 5" x 7 1/2".
- Manufactured and finished strictly in accord with: JAN-S-44, MIL-STD-202, METHOD-202.
- Shipping weight 290 lbs.

Replacement Plate Springs for medium and high impact shock tests to 500g available as optional equipment.

### JOLTA "M" # 500

- Shocks to 500g.
- Bench model per JAN-254.
- High impact testing to meet MIL-T-12679-A (Sig. C), MIL-T-19500A.

JOLTA "M"-500 is designed for testing extremely lightweight components such as diodes, transistors, etc. The carriage is machined from magnesium castings and the anvil is made from a specially formulated synthetic rubber. JOLTA "M"-500 will consistently reproduce shocks up to 500 g. at an amplitude of 1 millisecond in accordance with the requirements of MIL-T-12679A, JAN 254 and MIL-T-19500A.

### JOLTA "F" # 3003

High Impact Shock Tester

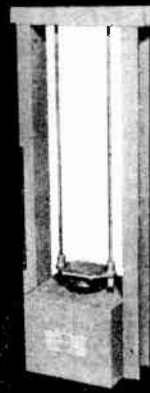
- 250 to over 2000g at 1 to 3 milliseconds.
- Heavy duty floor model machine; 10" x 8" x 60" high.
- Takes specimens up to 5 lbs.
- Fixed plate spring to eliminate extraneous harmonic oscillations.
- Standard model supplied with 60,000 "k" spring for shocks in the range of 1.4 to 1.6 milliseconds.
- New design permits fast replacement of plate springs of different stiffness for alternate g. ranges and time durations.
- Supplied with JAN INERTIA BRAKE and calibration chart.

### JOLTA "A" # 130

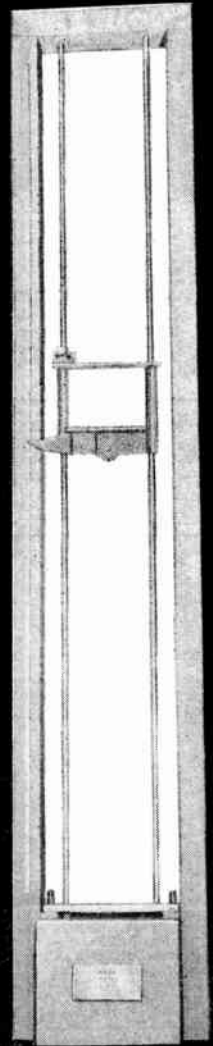
(NEW MODEL, NOT ILLUSTRATED)

Heavy duty shock testers. Range 10g-200g. For objects up to 150 lbs, volumes not exceeding 2 cu. ft.

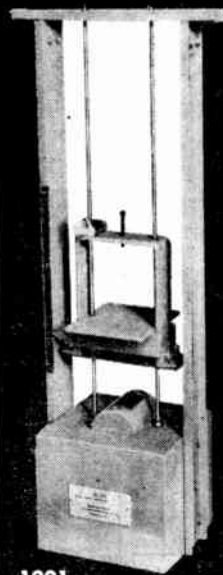
JOLTA SHOCK TESTERS



M 500



F 3003



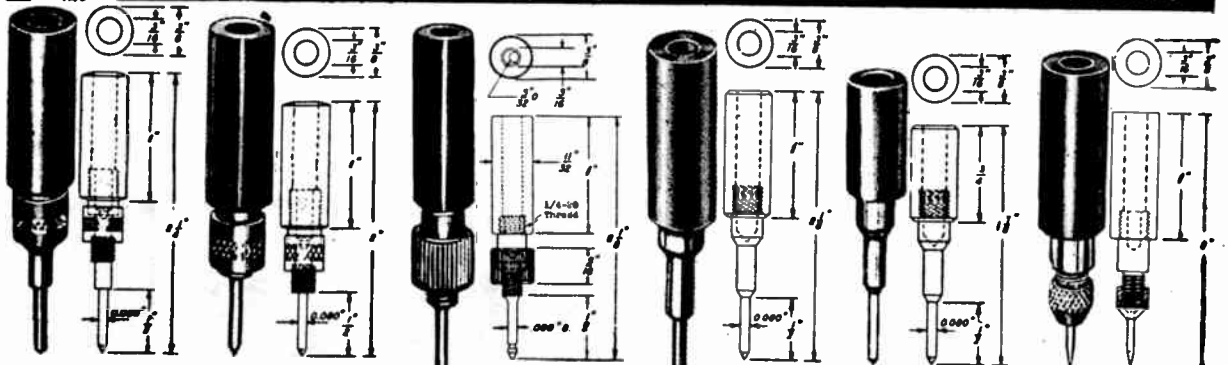
1001

Specifications indicated subject to change.



# HERMAN H. SMITH, INC.

"It's Sound Planning to Specify SMITH for ELECTRONIC COMPONENTS"



### 200 201 INSULATED SOLDERLESS TIP PLUGS

Plug portion brass, nickel plated. Fits all standard phone tip jacks. Wire is wrapped around screw portion and tightened with knurled nut. Molded plastic handle available in Red, Black, Yellow, Green, Blue or White. Specify color. Std. pkg. 100

No. 200	Senior Type	\$25.00 Per C
No. 201	Junior Type	\$25.00 Per C

### 250 229 SOLDERLESS PHONE TIP PLUG

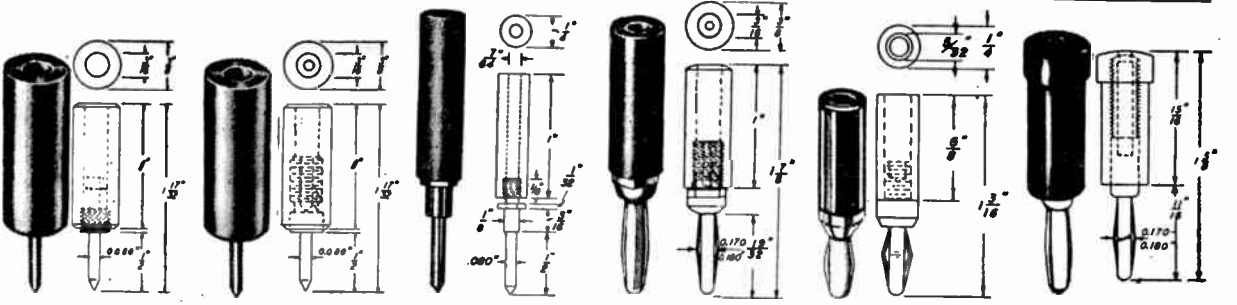
Signal Corps Approved. Steel. Case hardened phone tip made to Signal Corps drawing and specs. Supplied with Rigid Thermoplastic handle to JAN specs. Available in Red or Black. Specify color. No. 250 Std. pkg. 25 \$90.00 Per C

**HEAVY DUTY INSULATED PHONE TIP PLUG**  
Plug portion brass, nickel plated. Fits all standard phone tip jacks. Molded plastic handle available in Red, Black, Yellow, Green, Blue or White. Specify color. No. 229 Std. pkg. 100 \$25.00 Per C

### 215 216 BANANA PLUG TO TIP PLUG ADAPTER

Banana plug inserts in rear to adapt to phone tip plug. Plug portion brass, nickel plated. Fits all standard phone tip jacks. Plastic handle in Red, Black, Yellow or Green. Specify color. No. 215 Std. pkg. 50 \$25.00 Per C

**INSULATED PHONO NEEDLE TIP PLUG**  
Brass, nickel plated. Removable chuck. Molded handle. Red, Black, Yellow, Green, Blue or White. Specify color. Std. pkg. 50 No. 216 \$25.00 Per C



**203 283  
INSULATED SHORT PHONE TIP PLUG**  
Plug portion brass, nickel plated. Fits all standard phone tip jacks. Tip inserts right up to handle. Molded plastic handle available in Red, Black, Yellow, Green, Blue or White. Specify color. No. 203 Std. pkg. 100 \$20.00 Per C

**270 295  
SUB-MINIATURE PHONE TIP**  
Fits standard tip jacks. For checking all types of subminiature equipment. Brass, nickel plated tip. Handle Red or Black bone flure. Specify color. No. 270 \$22.00 Per C

**291 214  
INSULATED MIDGET BANANA PLUG**  
Fits all standard Banana Jacks. Beryllium spring retains resiliency after thousands of insertions. Wire soldered directly into Plug. Available in Red or Black only. Specify color. Std. pkg. 50

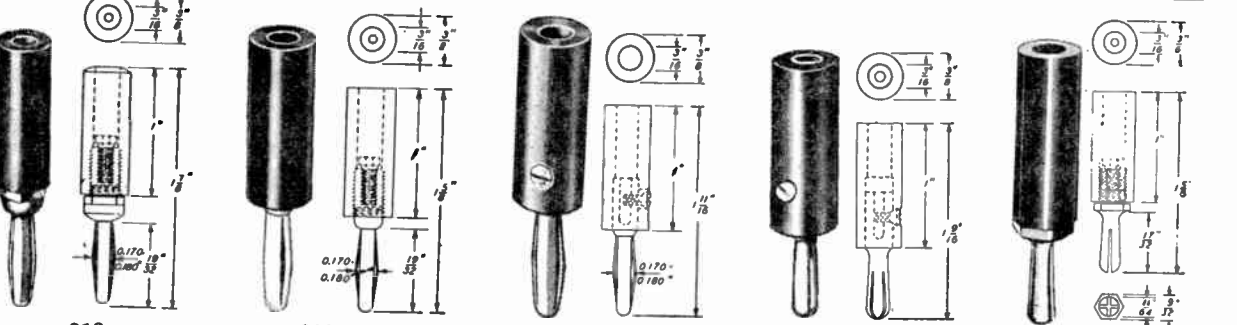
No.	Spring Material	Plating	Per C
291	Phosphor Bronze	Nickel	\$30.00
292	Phosphor Bronze	Silver	35.00
293	Beryllium Copper	Nickel	40.00
294	Beryllium Copper	Silver	45.00

**INSULATED SOLDERLESS SHORT TIP PLUG**  
Plug portion brass, nickel plated. Fits all standard phone tip jacks. Tip inserts right up to handle. No soldering necessary. Molded bakelite handle available in Red, Black, Yellow, Green, Blue or White. Specify Color. Std. pkg. 50 No. 283 \$22.00 Per C

**INSULATED SOLDERLESS BANANA PLUG**  
Plug portion Hexed Brass, Nickel Plated. Fits all standard Banana Jacks. Beryllium spring retains resiliency after thousands of insertions. No soldering necessary. Molded bakelite handle available in Red, Black, Yellow, Green, Blue or White. Specify color. Std. pkg. 50

No.	Spring Material	Plating	Per C
295	Phosphor Bronze	Nickel	\$30.00
296	Phosphor Bronze	Silver	35.00
297	Beryllium Copper	Nickel	40.00
298	Beryllium Copper	Silver	45.00

**TIP PLUG TO BANANA PLUG ADAPTER**  
Fits all standard banana jacks. Plug portion four leaved phosphor bronze nickel plated. Tip jack in rear enables adapting tip plug to banana plug. Phosphor bronze tip jack spring. Available in Red, Black, Yellow or Green. Specify color. No. 214 Std. pkg. 50 \$50.00 per C



**212 211  
INSULATED BANANA PLUGS**  
Plug portion hexed brass, nickel plated. Fits all standard Banana Jacks. Solder to stud or plug. Beryllium spring retains resiliency after thousands of insertions. No soldering necessary. Molded bakelite handle available in Red, Black, Yellow, Green, Blue or White. Specify color.

No.	Spring Material	Plating	Std. Pkg.	Per C
212	Phosphor Bronze	Nickel	100	\$35.00
213	Phosphor Bronze	Silver	50	40.00
242	Beryllium Copper	Nickel	50	50.00
262	Beryllium Copper	Silver	50	55.00

**204  
INSULATED BANANA PLUG**  
Spring Type. Plug portion brass, nickel plated. Fits all standard banana jacks. Four leaved phosphor bronze spring. Set screw provided for solderless connection. Molded plastic handle available in Red, Black, Yellow, Green, Blue or White. Specify color. Std. pkg. 100 No. 204 \$30.00 Per C

**213 253  
INSULATED BANANA PLUG**  
Split Type. Plug portion brass, nickel plated; cross slotted. Set screw for solderless connection. Molded plastic handle available in Red, Black, Yellow, Green, Blue or White. specify color. Std. pkg. 100 No. 213 \$30.00 Per C

**INSULATED BANANA PLUG**  
Spring Type. Plug portion brass, nickel plated. Fits all standard banana jacks. Four leaved phosphor bronze spring. Wire can be soldered to stud or plug. Molded plastic handle available in Red, Black, Yellow, Green, Blue or White. Specify color.

Same as above, supplied with nickel plated Beryllium Copper Spring, which maintains its resiliency after thousands of insertions. No. 214 Std. pkg. 50 \$45.00 Per C

Same as 204 except supplied with 1/4" machined

Same as above except supplied with 1/4" machined plastic handle in Red, Black, Yellow or Green. Specify Color. Std. pkg. 50 No. 244 \$40.00 Per C

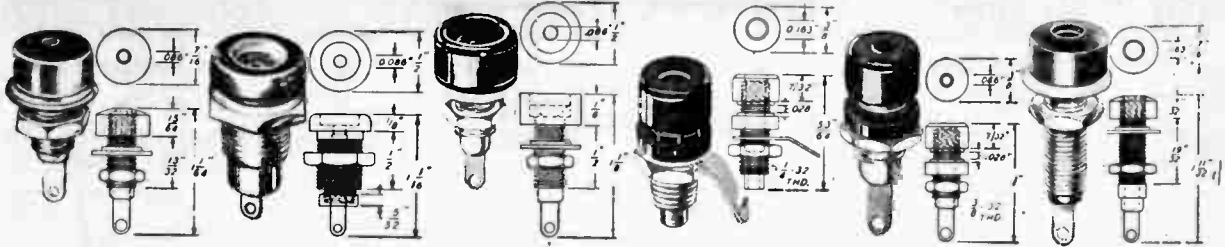
Same as above except supplied with 1/4" machined plastic handle in Red, Black, Yellow or Green. Specify Color. Std. pkg. 50 No. 243 \$40.00 Per C

**INSULATED BANANA PLUG**  
Plug portion brass, nickel plated. Wire can be soldered to stud or plug. Molded plastic handle. Red, Black, Yellow, Green, Blue or White. Specify color. No. 253 Std. pkg. 100 \$30.00 Per C

# HERMAN H. SMITH, INC.



"It's Sound Planning to Specify SMITH for ELECTRONIC COMPONENTS"



**202 INSULATED PHONE TIP JACKS**  
Accommodates all standard Phone Tip Plugs. Body is brass nickel plated. Sturdy phosphor bronze spring. Mounts in 5/16" hole in panels up to 3/8" thick. Molded bakelite head available in Red, Black, Yellow, Green, Blue or White. Std. pkg. 100 \$22.00 Per C

Same as above with 1/4" o.d. machined plastic head. Available in Red, Black, Yellow or Green. No. 223 Std. pkg. 50 \$35.00 Per C

**240 MOLDED NYLON ALL INSULATED TIP JACK**  
Rated at 4000 Volts AC  
This completely insulated phone tip jack accommodates all standard phone tips. Sturdy phosphor bronze contact. Mounts in 5/16" hole in panels up to 5/16" thick. Available in Red, Black, Yellow, Green or Blue. Specify color. Std. pkg. 50 No. 240 \$30.00 Per C

**282 METER TYPE INSULATED TIP JACK**  
Recessed Head  
Accommodates all standard Phone Tip Plugs. Body is brass nickel plated. Sturdy phosphor bronze spring. Mounts in 5/16" hole in panels up to 3/8" thick. Jack body recessed to prevent shock or grinding. Molded bakelite head available in Red, Black, Yellow, Green or Blue. No. 282 Std. pkg. 50 \$25.00 Per C

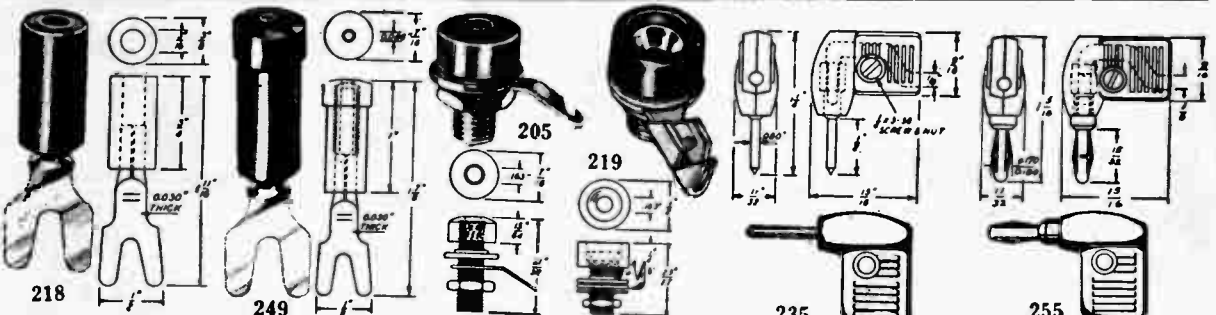
**221 INSULATED MIDGET BANANA JACK**  
Molded Nylon Head & Insulating Washer  
Extruded portion of head and washer provide excellent insulation from panel. Accommodates all standard banana plugs. Brass nickel plated body. Mounts in 5/16" hole in panels up to 1/4" thick. Available in Red, Black, Yellow, Green, or Blue. Specify color. Std. pkg. 50 No. 221 \$30.00 Per C

**241 INSULATED PHONE TIP JACK**  
Moulded Nylon Head & Insulating Washer  
Extruded portion head and washer provides excellent insulation from panel. Accommodates all standard phone tip plugs. Body is brass nickel plated. Sturdy phosphor bronze spring. Mounts in 5/16" hole in panels up to 3/8" thick. Red, Black, Yellow, Green or Blue. Specify color. No. 241 Std. pkg. 50 \$30.00 Per C

**218 INSULATED SPADE LUG**  
Adapts banana plug to a spade lug. Steel hot tinned lug .030" thick for extra durability. Molded plastic handle in Red or Black. Specify color. Std. pkg. 100 No. 218 Complete \$18.00 Per C  
No. 129 Lug Only \$20.00 Per M

**219 INSULATED BANANA JACK**  
Accommodates all standard banana plugs. Body is brass, nickel plated. Mounts in 5/16" hole in panels up to 3/8" thick. Molded plastic head. Red, Black, Yellow, Blue, White or Green. Specify color. Std. pkg. 100 No. 205 \$22.00 Per C

**206 INSULATED COMBINATION JACK**  
Accommodates all standard phone tip or banana plugs. Body is brass, nickel plated; contact is a sturdy phosphor bronze spring. Molded plastic head. Red, Black, Yellow, Green, Blue or White. Specify color. Std. pkg. 50 No. 206 \$27.00 Per C

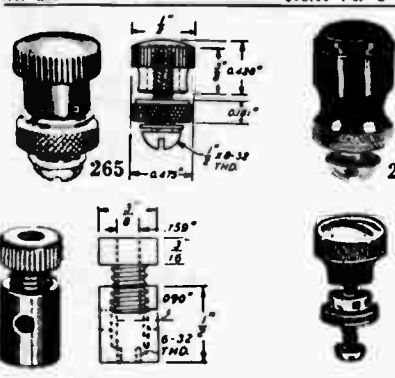


**249 PHONE TIP TO SPADE LUG ADAPTER**  
Tip jack in rear of handle enables insertion of a standard phone tip so that tip can be adapted to spade lug. Steel hot tinned lug .030 thick for extra durability. Available in Red or Black. Specify color. Std. pkg. 50 No. 249 \$55.00 Per C

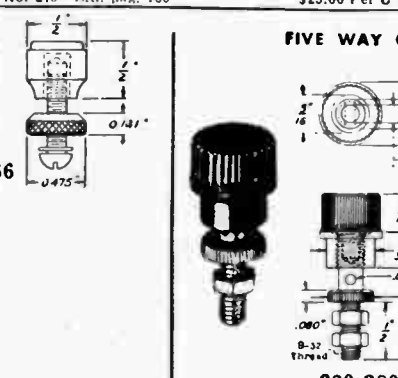
**205 INSULATED BANANA JACK**  
Accommodates all standard banana plugs. Body is brass, nickel plated. Mounts in 5/16" hole in panels up to 3/8" thick. Molded plastic head. Red, Black, Yellow, Blue, White or Green. Specify color. Std. pkg. 100 No. 205 \$22.00 Per C

**235 MOLDED METER TIP AND BANANA PLUGS**  
Molded meter type plug molded in two halves for easy assembling with screw and nut. Brass nickel plated tips fit in all standard tip and banana jacks. Available in Red and Black. Specify color. Std. pkg. 50

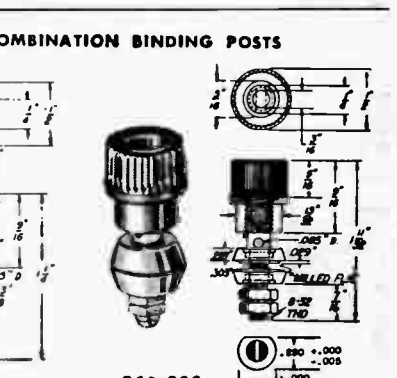
No.	Description	Each
235	Meter Tip Plug, Phone Tip Type	\$ .45
235D	Display of 24 Pairs	\$21.60
255	Meter Tip Plug, Banana Tip Type	\$ .60
255D	Display of 24 Pairs	\$28.80



**136 BINDING POST**  
Molded-in brass insert in molded bakelite head supplied only in black. Brass nickel plated retaining washer. Supplied complete with 3/32" x 1/4" screw and lockwasher. Black only. No. 265 Std. pkg. 50 \$27.00 Per C



**110 METAL BINDING POST**  
Made of brass, heavily nickel plated overall. Supplied complete with screw and lockwasher. No. 110 Std. pkg. 50 \$25.00 Per C



**260-290 FIVE WAY COMBINATION BINDING POSTS**  
brass, nickel plated. Available in Red or Black. Specify color. Std. pkg. 100  
No. 220 Type Per C \$30.00  
280 Same as above with Metal Insert in Head \$40.00

**BINDING POST**  
Molded-in brass insert in molded bakelite head. Brass nickel plated retaining washer. Supplied complete with 3/32" x 1/4" screw and lock washer. Red or Black. Specify color. No. 266 Std. pkg. 50 \$27.00 Per C

**METAL COMBINATION BINDING POST**  
This two piece brass nickel plated all metal binding post accepts all standard phone tip or

**FIVE-WAY COMBINATION BINDING POSTS**  
Grounding Type  
Molded plastic non-removable head. Can be completely insulated from panel with our No. 2153 shoulder washer and No. 2163 flat washer. Body

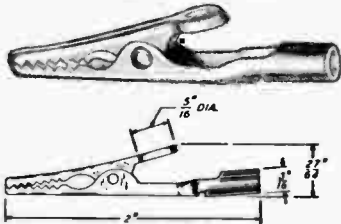
**All Insulated Type**  
Molded plastic non-removable head. Molded insulated washers completely insulate this post from panel. Mounts in 5/16" panel with mill slot for locking available in Red or Black. Specify color. Std. pkg. 100  
No. 260 Type Per C \$40.00  
290 Same as above with Metal Insert in Head \$50.00



# HERMAN H. SMITH, INC.

"It's Sound Planning to Specify SMITH for ELECTRONIC COMPONENTS"

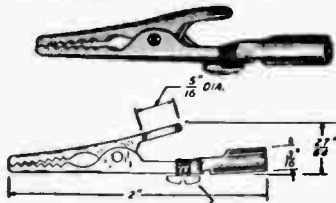
## ALLIGATOR CLIP



300

Steel, cadmium plated. Jaws match accurately for firm grip. Banana plug fits in rear of alligator clip. Std. pkg. 100  
No. 300 \$8.50 Per C

## ALLIGATOR CLIP—Screw Type

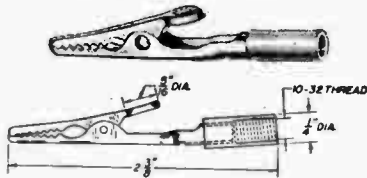


350

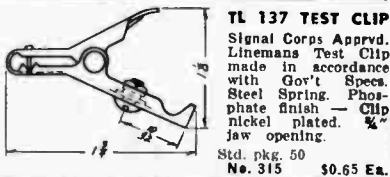
360

Steel, cadmium plated. Jaws match accurately for firm grip. Supplied with screw for solderless connection. Std. pkg. 100  
No. 350 Steel Cad. Pl. \$ 9.50 Per C  
No. 360 Copper \$15.00 Per C

## ALLIGATOR CLIP ADAPTER



Adapts standard solderless tips to Alligator Clip. This novel quick adapter is a must for all types of bench work! Std. pkg. 50  
No. 310 \$25.00 Per C

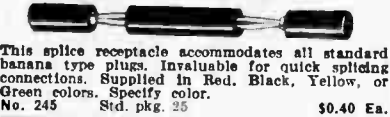


## TL 137 TEST CLIP

Signal Corps Apprvd. Linemans Test Clip made in accordance with Gov't Specs. Steel Spring. Phosphate finish — Clip nickel plated. 1/4" jaw opening.

Std. pkg. 50  
No. 315 \$0.65 Ea.

## BANANA PLUG SPlice



This splice receptacle accommodates all standard banana type plugs. Invaluable for quick splicing connections. Supplied in Red, Black, Yellow, or Green colors. Specify color.  
No. 245 Std. pkg. 25 \$0.40 Ea.

## PHONE TIP PLUG SPlice



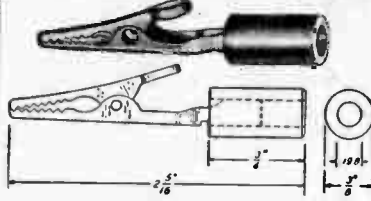
Accommodates all standard phone tip plugs. Invaluable for quick splicing connections or for test lead extension. Supplied in Red, Black, Yellow or Green. Specify color.  
No. 246 Std. pkg. 25 \$0.45 Ea.

## IN-LINE PHONE TIP JACK



Accommodates all standard phone tip plugs. Suitable for test lead extension where long leads are required. Supplied in Red, Black, Yellow or Green. Specify color.  
No. 248 Std. Pkg. 25 \$0.35 Ea.

## INSULATED ALLIGATOR CLIP

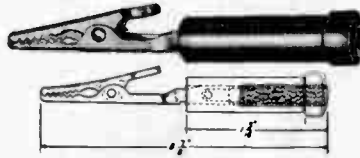


301 306

Embodies our No. 300 steel cadmium plated alligator clip with molded plastic Red or Black handle. Specify color.

No. 301	3/4" Handle	100	\$14.00 Per C
No. 306	1 1/2" Handle	50	\$35.00 Per C

## PHONE TIP OR BANANA PLUG TO ALLIGATOR CLIP ADAPTER



No. 300 alligator clip with No. 206 comb. phone tip and banana plug jack in rear of handle. Adapts phone tips and banana plugs to alligator clips. Red or Black. Specify color.

No. 305 Std. pkg. 50 \$65.00 Per C

Same, except with No. 360 screw type copper alligator clip. Std. pkg. 25  
No. 335 \$70.00 Per C

## ALL INSULATED ALLIGATOR CLIP



Steel Cadmium plated alligator clip. All metal parts covered with vinyl plastic insuring against shock. Solder Type connection. Red or Black. Specify color. Std. pkg. 25  
No. 337 \$0.80 Ea.

## ALL INSULATED PHONE TIP TO ALLIGATOR CLIP ADAPTER

Steel Cadmium plated Alligator clip with spring in rear of handle enabling the adapting of standard phone tip plugs to alligator clips. All metal parts covered with molded plastic insuring against shock. Red or Black. Specify color.

No. 338 Std. pkg. 25 \$1.00 Ea.

## ALLIGATOR CLIP INSULATOR



Flexible vinyl plastic insulator for all Alligator Clips. Complete insulation against shock or grounding. Supplied in Red or Black. Specify color.  
No. 331 Std. pkg. 50 \$12.00 per C

## HEX AND SPLINE KEY KITS

Attractive tearproof vinyl plastic kit with individual pockets for each of six keys in kit.

Kit of 6 keys for screws from No. 3 to 1/8". Std. pkg. 25  
No. 355 \$1.00 Ea.

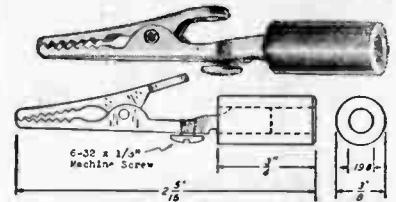
Kit of 6 spline keys for screws from No. 5 to 1/8". Std. pkg. 25  
No. 385 \$1.00 Ea.

Combination Kit of 3 hex and 3 spline keys for No. 6-8-10 screws. Std. pkg. 25  
No. 390 \$1.00 Ea.

Combination Kit of 7 hex keys for screws from No. 3 to 1/8" and 4 spline keys from No. 4 to No. 10. Std. pkg. 25  
No. 395 \$2.00 Ea.

No.	DISPLAY CARDS	Each
355D	24 Hex Kits No. 355	\$24.00
385D	24 Spline Kits No. 385	24.00
390D	24 Combination Kits No. 390	24.00
395D	20 Combination Kits No. 395	40.00

## INSULATED ALLIGATOR CLIP Screw Type

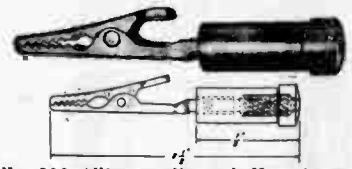


351

Screw type. Embodies our No. 350 steel, cadmium plated screw type alligator clip with molded plastic Red or Black handle. Specify color. Std. pkg. 100

No. 351	Steel	\$16.00 Per C
No. 361	Copper	\$21.00 Per C

## PHONE TIP TO ALLIGATOR CLIP ADAPTER



No. 300 Alligator clip with No. 202 tip jack in rear of handle, adapts phone tip plugs to alligator clips. Red or Black. Specify color.

No. 304 Std. pkg. 50 \$55.00 Per C

Same, except with No. 360 screw type copper alligator clip.  
No. 334 Std. pkg. 25 \$60.00 Per C



365

366

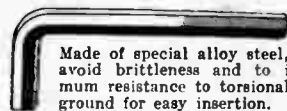
## BATTERY TEST CLIP — Midget Size

Steel, cadmium plated, for radio and ignition work, etc. Jaws have meshing teeth. Jaw spread 1/2", 7 lb. spring, 1 1/2" long, 5 amp. capacity. Std. pkg. 100  
No. 365 \$10.50 Per C

## BATTERY TEST CLIP — Small Size

For general testing and radio use. Steel, Electroplated. Jaws have meshing teeth. Jaw spread 3/8", 10 lb. spring, 2" long, 10 amp. capacity. Std. pkg. 100  
No. 366 \$11.00 Per C

## HEX AND SPLINE KEYS



Made of special alloy steel, tempered to avoid brittleness and to impose maximum resistance to torsional strain. Ends ground for easy insertion. Std. pkg. 100

### HEX KEYS

No.	Screw Size	Per C
340	No. 2	\$13.00
341	No. 3, 4	13.00
342	No. 5, 6	13.00
343	No. 8	13.00
344	No. 10	15.00
345	1/4"	15.00
346	3/8"	15.00

### SPLINE KEYS

No.	Screw Size	Per C
370	No. 4	\$13.00
371	No. 5	13.00
372	No. 6	13.00
373	No. 8	13.00
374	No. 10	15.00
375	1/4"	15.00
376	3/8"	15.00

## TEST LEAD INTERCHANGE KIT

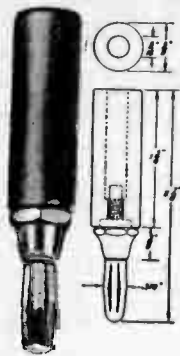


Permits use of Alligator Clips, Banana Plugs, Spade Lugs or Phone Tips interchangeably. One each red and black solderless phone tips with banana jack rear, spade lugs with banana jack rear, combination alligator clip jack, and banana plugs with phone tip jack rear. Durable vinyl kit.  
No. 640 \$3.75 Ea.

# HERMAN H. SMITH, INC.



"It's Sound Planning to Specify SMITH for ELECTRONIC COMPONENTS"

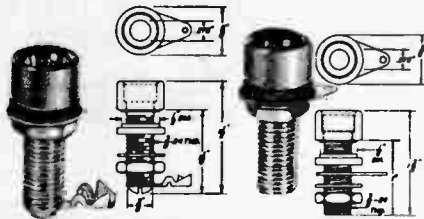


### INSULATED GIANT BANANA PLUG

Large deep internal well for soldering heavy wire. Phosphor Bronze Spring. Entire plug portion nickel plated. Red or Black. Specify Color.

Std. pkg. 25

No. 285 \$77.00 Per C

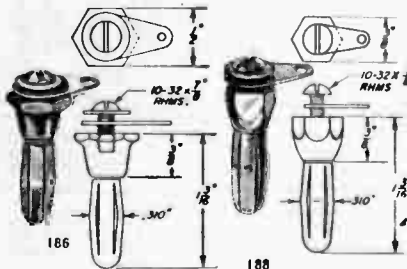


286

287

Recessed head for assembly from rear of panel. Mounts in 1/8" hole. Brass nickel plated body. Red or black. Specify Color. Std. pkg. 25

No.	Description	Per C
286	Lug at End	\$70.00
287	Lug Under Head	70.00



186

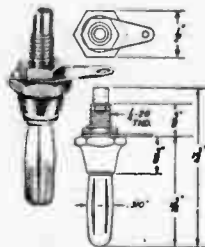
188

### GIANT BANANA PLUGS

Internal Screw-Spring Type. Phosphor Bronze Spring-Nickel Plated Overall. Std. pkg. 25

No. 186 \$50.00 Per C

No. 188 \$50.00 Per C

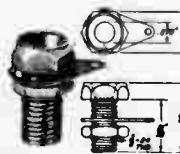


### GIANT BANANA PLUG

Plug portion of No. 285. Large deep internal well for soldering heavy wire. Phosphor Bronze Spring. Brass nickel plated overall.

Std. pkg. 25

No. 185 \$50.00 Per C



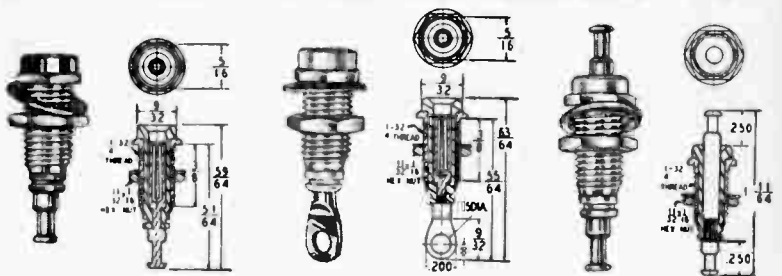
### GIANT BANANA JACK

Hexed Brass Head. Mounts in 1/8" hole. Brass nickel plated overall.

Std. pkg. 25

No. 187 \$50.00 Per C

### NYLON TIP JACK WITH METAL SHELL



#### WRAP-AROUND

#### SPADE TERMINAL

#### FEED-THRU

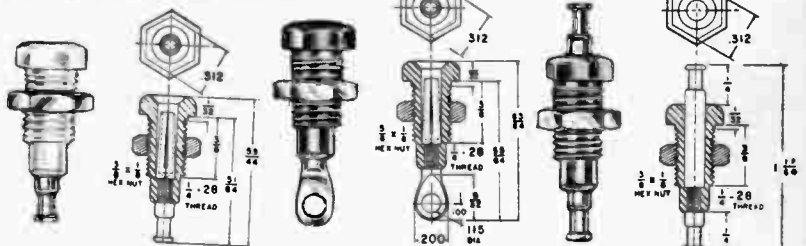
Molded Nylon Tip Jack. Metal shell eliminates possibility of stripping threads during assembly. Meets following requirements:

1. Salt Spray Test—Withstands 100 hours
2. Rated Voltage & Current—1000 volt peak @ 5 amps. maximum
3. Test Voltage—2500 peak
4. Insulation Resistance—5000 megohms
5. Operating Conditions—
  - A. Continuous: 23 hours on, 1 hour off
  - B. Elevation: Up to 15,000 feet
  - C. Temperature: -55 to +85 C
  - D. Humidity: Up to 95%
6. Material Specifications—
  - A. Insulator: Nylon, Grade FM 10001
  - B. Shell & Nut: Brass Nickel Plated Per Spec 72-53

7. Non-Operating Conditions—
  - A. Elevation: Up to 50,000 feet
  - B. Temperature: Continuous exposure for 72 hours @ -160 F and 240 hours @ -80 F
  - C. Humidity: Up to 100%
8. Colors — Red, Black, Orange, Green, Blue, White, Brown, Yellow, Grey & Purple. Specify Color.

No.	Type	Std. Pkg.	Per C
1501	Wrap Around	25	65.00
1502	Spade Terminal	25	90.00
1503	Feed Through	25	70.00

### ALL NYLON TIP JACK



#### WRAP-AROUND

#### SPADE TERMINAL

#### FEED-THRU

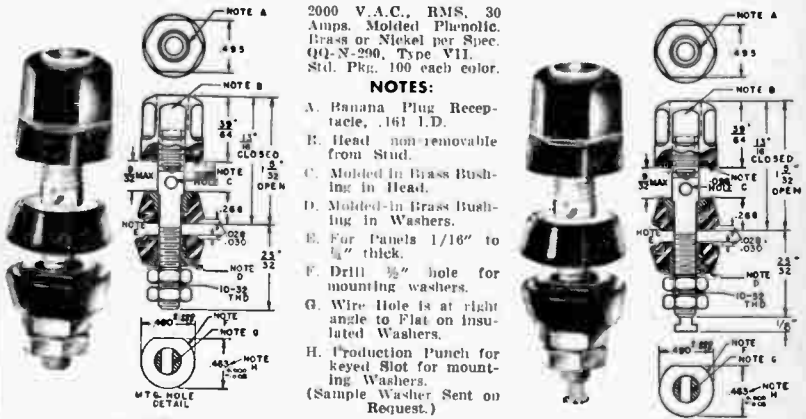
Completely Molded Nylon Jack. Fits all standard phone tip plugs. Contact recessed in head for safe contact. Hexagon head for grip in tightening. Mounts in 1/8" hole in panels up to 1/8" thick. Meets following requirements:

1. Salt Spray Test—Withstands 100 hours
2. Rated Voltage & Current—1000 volts peak at 5 amps. max.
3. Test Voltage—3000 volts DC peak
4. Insulation Resistance—5000 megohms
5. Operating Temperature—-55 to +150 C
6. Nominal Capacity—2.0 mmf

7. Material Specifications—
  - A. Body: Nylon, Grade FM 10001
  - B. Center Contact: Numbers 1505 and 1506 Heat Treated Beryllium Copper Silver plated per Spec 72-53. Number 1507 Brass, Tin Pl.
  - C. Hex Nut: Brass Nickel Plated.
8. Colors — Red, Black, Orange, Green, Blue, White, Brown, Yellow, Grey & Purple. Specify Color.

No.	Type	Std. Pkg.	Per C
1505	Wrap Around	25	50.00
1506	Spade Terminal	25	60.00
1507	Feed Through	25	55.00

### SMITH MULTI-PURPOSE BINDING POSTS



#### NOTES:

- A. Banana Plug Receptacle, .161 I.D.
- B. Head non-removable from Stud.
- C. Molded in Brass Bushing in Head.
- D. Molded-in Brass Bushing in Washers.
- E. For Panels 1/16" to 1/8" thick.
- F. Drill 1/8" hole for mounting washers.
- G. Wire Hole is at right angle to Flat on Insulated Washers.
- H. Production Punch for keyed Slot for mounting Washers. (Sample Washer Sent on Request.)

#### "STANDARD" TYPE

No.	Color	Description	Per C
267R	Red	Plain Brass	\$60.00
267B	Black	Plain Brass	60.00
268R	Red	Nickel Plated	70.00
268B	Black	Nickel Plated	70.00

Std. pkg. 100  
\*Use SMITH #1485-10 or 1486-10 phosphor bronze thinned solder lugs for solder connection to standard type post. See page U-1377.

#### "WRAP-AROUND" TYPE

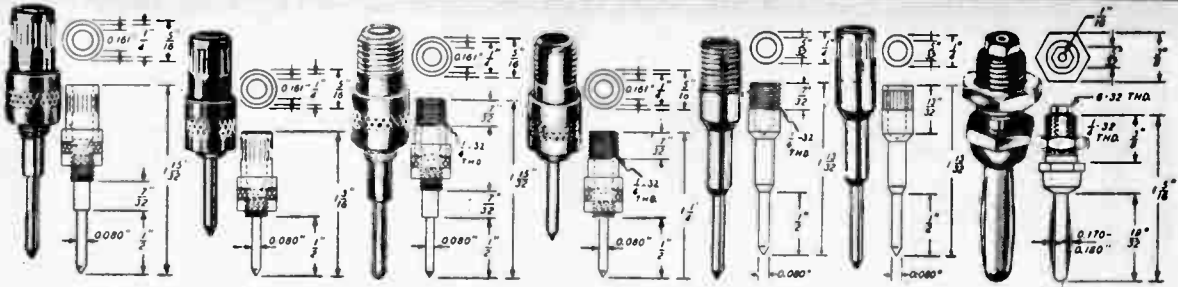
No.	Color	Description	Per C
257R	Red	Plain Brass	\$60.00
257B	Black	Plain Brass	60.00
258R	Red	Nickel Plated	70.00
258B	Black	Nickel Plated	70.00

Std. pkg. 100



# HERMAN H. SMITH, INC.

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### 105 106 SOLDERLESS PHONE TIP PLUGS

Brass, nickel plated. Wire is wrapped around screw portion, and tightened with knurled nut. Fits standard phone tip jacks. Std. pkg. 100

No. 105	Senior Type	\$17.00 Per C
No. 106	Junior Type	\$16.00 Per C

### 124 127 125 THREADED SOLDERLESS PHONE TIPS

Brass, nickel plated. Wire is wrapped around screw portion and tightened with knurled nut. Threaded for easy insertion in plastic handles. Fits standard phone tip jacks. Std. pkg. 100

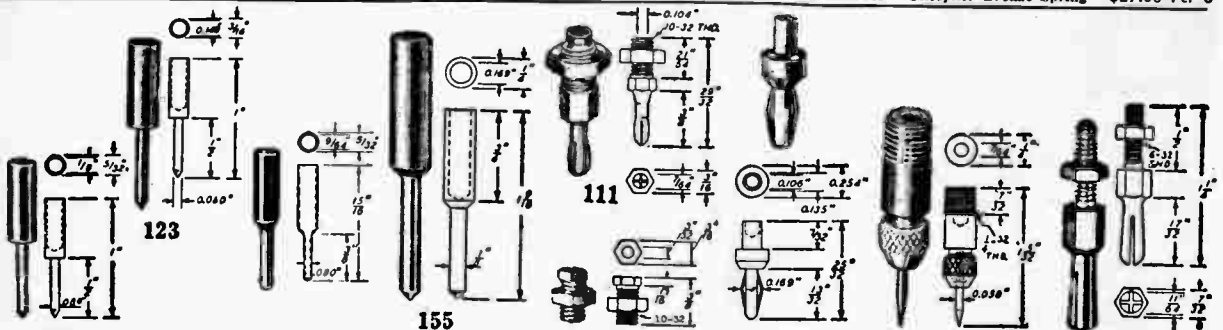
No. 124	Senior Type	\$20.00 Per C
No. 127	Junior Type	\$19.00 Per C

### 156 135 - 145 HEAVY DUTY PHONE TIP PLUGS

Brass nickel plated, extra sturdy construction; fit all standard phone tip jacks. Rear of plug also accepts standard banana plugs.

No.	Type	Std. Pkg.	Per C.
125	Threaded	100	\$17.00
156	Force Fit	25	\$17.00

**BANANA PLUGS — Spring Type**  
Hexed brass, nickel plated. Beryllium spring retains resiliency after thousands of insertions. Wire can be soldered to stud or plug. Supplied with hex nut. Std. pkg. 50  
No. 135 Beryllium Copper Spring \$45.00 Per C  
No. 145 Phosphor Bronze Spring \$27.00 Per C



### 108 123 158 155 SOLDER TYPE PHONE TIPS

Brass nickel plated. Std. pkg. 100	
No. 108	Standard Type \$ 35.00 Per M
No. 123	Large I.D. Type \$ 44.00 Per M
No. 155	Heavy Duty Type \$110.00 Per M

### DRAWN HOLLOW SOLDER TIP

Designed to insure maximum solder deep well contact. Brass, nickel plated. Extra sturdy construction. Std. pkg. 100  
No. 158 \$25.00 Per C

### 111 112 121 MIDGET BANANA PLUG AND JACK Rivet Type

For use in minimum of space. The plug is cross slotted. Plug and jack are brass, nickel plated. Std. pkg. 100  
No. 111 Plug \$17.00 Per C  
No. 112 Jack \$13.00 Per C

### MIDGET BANANA PLUG Rivet Type

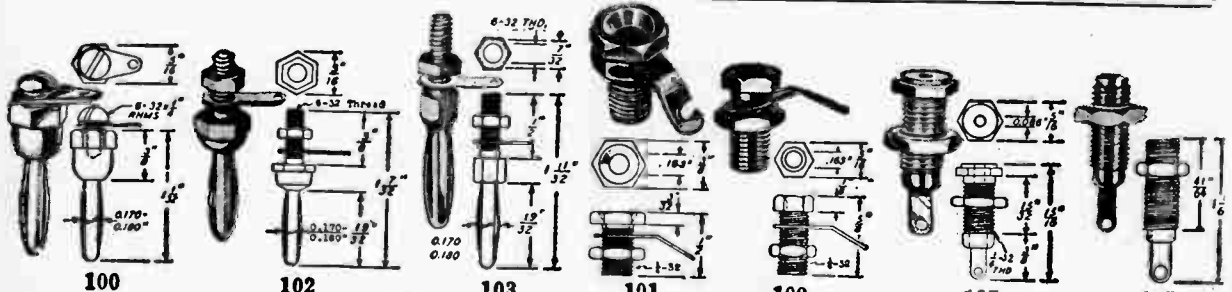
Brass, silver plated. Four leaved phosphor bronze spring. Fits all standard banana jacks. Also made to rigid JAN specs. Std. pkg. 100  
No. 121 \$27.00 Per C

### 128 104 NEEDLE TIP AND CHUCK

Brass nickel plated body, with steel nickel plated needle. Removable chuck. Threaded for easy insertion in plastic handles. Std. pkg. 100  
No. 128 \$22.00 Per C

### BANANA PLUG — Split Type

Hexed brass, nickel plated. Cross slotted for positive and lasting contact. Fits all standard banana jacks. One-piece construction. 6-32 hex nut. Std. pkg. 100  
No. 104 \$22.00 Per C



### 100 102 BANANA PLUG

Hexed brass, nickel plated. Spring is four-leave phosphor bronze, nickel plated. Plug supplied with screw and phosphor bronze tinned lug. Internal female permits use of this plug on all size panels. Std. pkg. 100  
No. 100 \$25.00 Per C

### BANANA PLUG

Hexed brass, nickel plated. Four-leaved phosphor bronze spring, nickel plated. 6-32 hex nut. Std. pkg. 100  
No. 102 \$25.00 Per C

### 103 101 109 BANANA PLUG

Hexed brass, nickel plated. Four-leaved phosphor bronze spring, nickel plated. 6-32 hex nut. Std. pkg. 100  
No. 103 \$25.00 Per C

### BANANA JACK

Hexed brass, nickel plated jack with recessed head. Recommended for use with No. 100 banana plug but accommodates all standard banana plugs. Std. pkg. 100  
No. 101 \$17.00 Per C

### 107 147 BANANA JACK

Hexed brass, nickel plated. Mounts in 1/4" hole and fits panels up to 3/8" thick. Accommodates all standard banana plugs. Std. pkg. 100  
No. 109 \$17.00 Per C

### PHONE TIP JACK

Body is brass, nickel plated, with internal phosphor bronze spring for positive contact. Mounts in 1/4" hole in panels up to 3/8" thick. 1/4-32 hex nut. Std. pkg. 100  
No. 107 \$17.00 Per C

### HEADLESS PHONE TIP JACK

Jack body is screwed into instrument body. Nickel plated. Phosphor bronze spring. Supplied with hex nut. Std. pkg. 100  
No. 147 \$10.00 Per C



# HERMAN H. SMITH, INC.

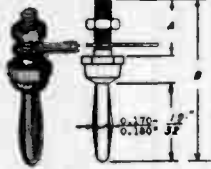


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## BANANA PLUGS

Fits all standard banana jacks. Hexed brass body, one piece construction with threaded stud for panel mounting. Four leaved phosphor bronze or beryllium copper spring. Plated to Govt. Specs. Std. pkg. 50

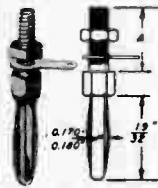


PHOS. BR. SPRING Nickel Plated Overall				BERYL. COP. SPRING Nickel Plated Overall			
No.	Per C	A	B	No.	Per C	A	B
431	\$25.00	6-32 x 3/8"	1-3/32"	443	\$30.00	6-32 x 3/8"	1-3/32"
432	25.00	6-32 x 3/8"	1-7/32"	444	30.00	6-32 x 3/8"	1-7/32"
433	25.00	6-32 x 3/8"	1-11/32"	445	30.00	6-32 x 3/8"	1-11/32"
434	25.00	6-32 x 3/8"	1-3/32"	446	30.00	6-32 x 3/8"	1-3/32"
435	25.00	8-32 x 3/8"	1-7/32"	447	30.00	8-32 x 3/8"	1-7/32"
436	25.00	8-32 x 3/8"	1-11/32"	448	30.00	8-32 x 3/8"	1-11/32"

PHOS. BR. SPRING Silver Plated Overall				BERYL. COP. SPRING Silver Plated Overall			
No.	Per C	A	B	No.	Per C	A	B
437	\$30.00	6-32 x 3/8"	1-3/32"	449	\$35.00	6-32 x 3/8"	1-3/32"
438	30.00	6-32 x 3/8"	1-7/32"	450	35.00	6-32 x 3/8"	1-7/32"
439	30.00	6-32 x 3/8"	1-11/32"	451	35.00	6-32 x 3/8"	1-11/32"
440	30.00	8-32 x 3/8"	1-3/32"	452	35.00	8-32 x 3/8"	1-3/32"
441	30.00	8-32 x 3/8"	1-7/32"	453	35.00	8-32 x 3/8"	1-7/32"
442	30.00	8-32 x 3/8"	1-11/32"	454	35.00	8-32 x 3/8"	1-11/32"

## BANANA PLUGS

Fits all standard banana jacks. Hexed brass body, one piece construction with threaded stud for panel mounting. Four leaved phosphor bronze or beryllium copper spring. Plated to Govt. Specs. Std. pkg. 50

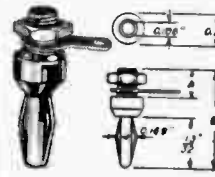


PHOS. BR. SPRING Nickel Plated Overall				BERYL. COP. SPRING Nickel Plated Overall			
No.	Per C	A	B	No.	Per C	A	B
401	\$25.00	6-32 x 3/8"	1-7/32"	414	\$30.00	6-32 x 3/8"	1-7/32"
403	25.00	6-32 x 3/8"	1-11/32"	415	30.00	6-32 x 3/8"	1-11/32"
404	25.00	6-32 x 3/8"	1-15/32"	416	30.00	6-32 x 3/8"	1-15/32"
405	25.00	8-32 x 3/8"	1-7/32"	417	30.00	8-32 x 3/8"	1-7/32"
406	25.00	8-32 x 3/8"	1-11/32"	418	30.00	8-32 x 3/8"	1-11/32"
407	25.00	8-32 x 3/8"	1-15/32"	419	30.00	8-32 x 3/8"	1-15/32"

PHOS. BR. SPRING Silver Plated Overall				BERYL. COP. SPRING Silver Plated Overall			
No.	Per C	A	B	No.	Per C	A	B
408	\$30.00	6-32 x 3/8"	1-7/32"	420	\$35.00	6-32 x 3/8"	1-7/32"
409	30.00	6-32 x 3/8"	1-11/32"	421	35.00	6-32 x 3/8"	1-11/32"
410	30.00	6-32 x 3/8"	1-15/32"	422	35.00	6-32 x 3/8"	1-15/32"
411	30.00	8-32 x 3/8"	1-7/32"	423	35.00	8-32 x 3/8"	1-7/32"
412	30.00	8-32 x 3/8"	1-11/32"	424	35.00	8-32 x 3/8"	1-11/32"
413	30.00	8-32 x 3/8"	1-15/32"	425	35.00	8-32 x 3/8"	1-15/32"

## MIDGET BANANA PLUG

Fits all standard banana jacks. One piece construction with threaded stud for panel mounting. Supplied with phosphor bronze or beryllium copper spring. Plated to Govt. Specs.

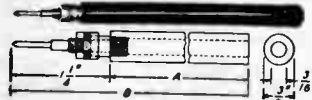


Std. pkg. 50

PHOS. BR. SPRING Nickel Plated Overall				BERYL. COP. SPRING Nickel Plated Overall			
No.	Per C	A	B	No.	Per C	A	B
460	\$25.00	4-40 x 3/8"	15/16"	468	\$30.00	4-40 x 3/8"	15/16"
461	25.00	4-40 x 3/8"	1-1/16"	469	30.00	4-40 x 3/8"	1-1/16"
462	25.00	6-32 x 3/8"	15/16"	470	30.00	6-32 x 3/8"	15/16"
463	25.00	6-32 x 3/8"	1-1/16"	471	30.00	6-32 x 3/8"	1-1/16"

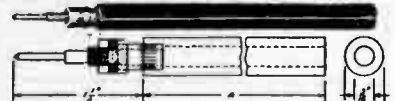
PHOS. BR. SPRING Silver Plated Overall				BERYL. COP. SPRING Silver Plated Overall			
No.	Per C	A	B	No.	Per C	A	B
464	\$30.00	4-40 x 3/8"	15/16"	472	\$35.00	4-40 x 3/8"	15/16"
465	30.00	4-40 x 3/8"	1-1/16"	473	35.00	4-40 x 3/8"	1-1/16"
466	30.00	6-32 x 3/8"	15/16"	474	35.00	6-32 x 3/8"	15/16"
467	30.00	6-32 x 3/8"	1-1/16"	475	35.00	6-32 x 3/8"	1-1/16"

## SOLDERLESS TEST PRODS



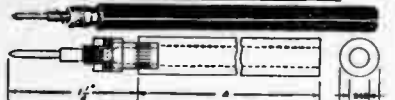
Threaded Type. Wire fits through handle and body of plug then wrapped around screw portion and tightened with knurled nut provided. Brass, nickel plated tip with Red or Black Molded plastic handle. Specify color.

No.	Handle (A)	Overall (B)	Std. Pkg.	Each
302	4" (Molded)	5 1/4"	50	\$0.50
303	5 1/2" (Machined)	6 3/8"	25	.55



Force Fit Type. Wire fits through handle and body of plug then wrapped around screw portion and tightened with knurled nut provided. Brass, nickel plated tip with Red or Black MOLDED Plastic handle. Specify color.

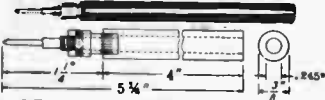
No.	Handle (A)	Overall (B)	Std. Pkg.	Each
382	4" (Molded)	5 1/4"	50	\$0.40
383	5 1/2" (Machined)	6 3/8"	25	.45



Force Fit Type. Extra Large I.D. Wire fits through handle and body of plug then wrapped around screw portion and tightened with knurled nut provided. Brass, nickel plated tip with extra large I.D. Red or Black Tenite Plastic Handle. Specify color.

No.	Handle (A)	Overall (B)	Std. Pkg.	Each
352	4"	5 1/4"	50	\$0.40
353	5 1/2"	6 3/8"	25	.45

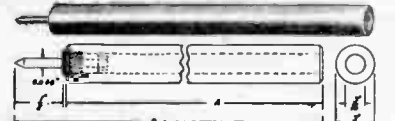
## SOLDERLESS FIBRE TEST PROD



Large I.D. of prod permits use of heavy duty wire. Brass, nickel plated tip with Red or Black handle. Specify color.

No. 323 Std. Pkg. 50 \$0.50 Each

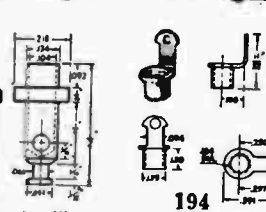
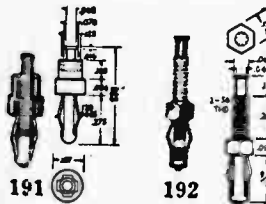
## SHORT TIP TEST PROD



Metal tip has no shoulder with minimum amount of metal exposed lessening possibility of shock or grounding. Brass, nickel plated tip with Red or Black MOLDED Plastic handle. Specify color.

No.	Handle (A)	Overall (B)	Std. Pkg.	Each
363	4" (Molded)	4 3/4"	50	\$0.35
364	5 1/2" (Machined)	6"	25	.40

## SUB-MINIATURE BANANA PLUGS AND JACKS



One piece beryllium copper springs insure positive and lasting contact. Silver plated overall.

No.	Description	Per C.
191	Insert Type Plug	\$30.00
192	Screw Type Plug	35.00
193	Force Fit Jack	30.00
194	Insert Type Jack	1.50

Std. pkg. 50

## PHONO NEEDLE TEST PROD



Brass, nickel plated body with steel, nickel plated needle. Removable chuck for replacing broken needles. Red or Black MOLDED Plastic handle. Specify color.

No.	Handle (A)	Overall (B)	Std. Pkg.	Each
317	4" (Molded)	4 3/4"	50	\$0.50
318	5 1/2" (Machined)	6 1/8"	25	.55

## SOLDERLESS PHONO NEEDLE TEST PROD



Double XX Bakelite lacquered handles. Sharp pointed needle steel, nickel plated. Body brass, nickel plated. Wire can be wrapped around or soldered to internal brass stud provided. Red or Black. Specify color.

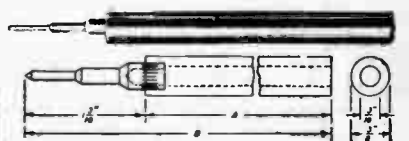
No.	Handle (A)	Overall (B)	Std. Pkg.	Each
314	4"	5-3/32"	25	\$0.75
313	5"	7-3/32"	25	.90

## HEAVY DUTY TEST PRODS



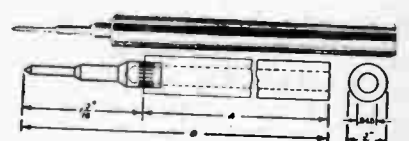
Threaded Type. Extra sturdy brass, nickel plated tip with Red or Black Molded plastic handle. Specify color.

No.	Handle (A)	Overall (B)	Std. Pkg.	Each
319	4" (Molded)	5 1/4"	50	\$0.50
329	5 1/2" (Machined)	6 3/8"	25	.55



Force Fit Type. Extra sturdy brass, nickel plated tip with extra large I.D. Red or Black Tenite Plastic Handle. Specify color.

No.	Handle (A)	Overall (B)	Std. Pkg.	Each
388	4" (Molded)	5-3/16"	50	\$0.40
389	5 1/2" (Machined)	6-11/16"	25	.45



Force Fit Type. Extra sturdy brass, nickel plated tip with extra large I.D. Red or Black Tenite Plastic Handle. Specify color.

No.	Handle (A)	Overall (B)	Std. Pkg.	Each
358	4"	5-3/16"	50	\$0.40
359	5 1/2"	6-11/16"	25	.45

## SUBMINIATURE TEST PROD



Brass, nickel plated phone tip. Small 1/4" O.D. handle. Ideally suited for checking sub-miniature equipment. Red or Black bone fibre. Specify color.

No.	Std. Pkg.	Each
322	50	\$0.40 Each



# HERMAN H. SMITH, INC.

"It's Sound Planning to Specify SMITH for ELECTRONIC COMPONENTS"



**METER TIP TEST LEAD**  
50" rubber covered kinkless wire. Molded plastic fingerrip tips and 4" plastic test prod handles. Std. pkg. 10

No. 625	Solderless Prods	\$2.25 Per Pr.
No. 626	Needle Tip Prods	\$2.25 Per Pr.

**PHONO NEEDLE TEST LEADS**  
Handles 4" long x 3/8" diameter. Tips are very sharp phonograph needles. Flexible kinkless rubber covered wires 50". Std. pkg. 10

No. 613	Phone Tips	\$1.45 Per Pr.
No. 614	Spade Lugs	\$1.45 Per Pr.
No. 615	Alligator Clips	\$1.55 Per Pr.

No. 670—**SLIM HANDLE TEST LEADS**—Fine, low-cost test leads; slender pencil type tenite handles. 3/8" O.D. 50" of hi-quality kinkless, extra flexible, rubber covered test lead wire. Heavy duty standard phone tips. Std. pkg. 10 \$1.10 Per Pr.

**SOLDERLESS TIP TEST LEADS**  
Handles 4" long x 3/8" diameter. Flexible kinkless rubber covered wire, 50" long. Std. pkg. 10

No. 600	Phone Tips	\$1.45 Per Pr.
No. 601	Spade Lugs	\$1.45 Per Pr.
No. 602	Alligator Clips	\$1.55 Per Pr.

**SHORT TIP TEST LEADS**  
Short brass nickel plated tips leaving minimum amount of metal exposed, lessening possibility of shock or grounding. 4" plastic test prod handles with 50" rubber covered kinkless test lead wire.

No. 624	Std. pkg. 10	\$1.75 Per Pr.
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**ALLIGATOR CLIP TEST LEADS**  
No. 672—Solderless red and black tenite handles (our No. 302) with alligator clips and insulators on other end. Flexible, kinkless rubber covered wire 50" long. Std. pkg. 10 \$2.10 Per Pr.

**BANANA METER TEST LEAD**  
Supplied with 50" rubber covered kinkless test lead wire. Molded Plastic fingerrip tips on end. 4" plastic test prod handles other end. Supplied in two types. Solderless Tip or needle Tip prod handles. St. pkg. 10

No.	Type	Per Pr.
685	Solderless Prods	\$2.50
686	Needle Tip Prods	2.50

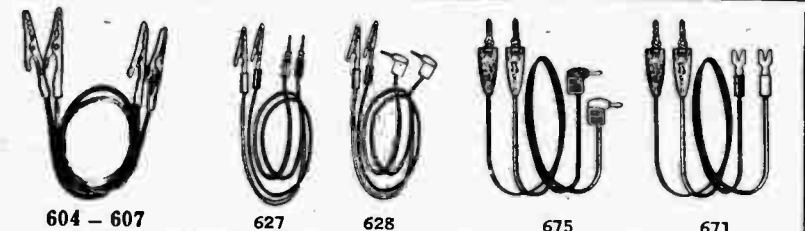
**ALL SOLDERLESS TEST LEADS**  
No. 302 handles and No. 200 plugs. Flexible kinkless rubber covered leads 50" long.

No. 603	Std. pkg. 10	\$2.10 Per Pr.
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**SUBMINIATURE TEST LEADS**  
No. 678—Extra long, extra thin fibre handles, 3/4" O.D. x 4 3/4" long. Insulated phone tips at other end. Flexible, kinkless, rubber covered wire, 50". Std. pkg. 10 \$2.10 Per Pr.

**HIGH TENSION TEST LEADS**  
Heavy duty probes, 48" high tension kinkless rubber covered wire .248" O.D. 22,000 volt breakdown (60 cycles).

No. 620	Phone Tips	\$3.30 Per Pr.
No. 621	Spade Lugs	\$3.30 Per Pr.
No. 622	Alligator Clips	\$4.00 Per Pr.



**ALLIGATOR CLIP TEST LEADS**  
Very flexible kinkless Red and Black wire with alligator clips at each end. Std. pkg. 10

No. 604	12" Wire Length	\$0.95 Per Pr.
No. 605	24" Wire Length	\$1.05 Per Pr.
No. 606	36" Wire Length	\$1.20 Per Pr.
No. 607	48" Wire Length	\$1.35 Per Pr.

No. 627—**ALLIGATOR CLIP LEAD** with solderless tips and 50" flexible rubber covered test lead wire. Std. pkg. 10 \$1.50 Per Pr.

No. 628—**ALLIGATOR CLIP LEAD** with meter tips and 50" flexible rubber covered test lead wire. Std. Pkg. 10 \$2.00 Per Pr.

No. 675—**CROCODILE CLIP LEAD** with meter tips and 50" flexible rubber covered test lead wire. Std. pkg. 10 \$1.90 Per Pr.

No. 671—**CROCODILE CLIP LEAD** with insulated lug and 50" flexible rubber covered test lead wire. Std. pkg. 10 \$2.00 Per Pr.

**Alligator Clip Test Leads with Rubber Insulators**

No.	Wire Length	Per Pr.
629	12"	\$1.35
657	24"	1.45
659	36"	1.60
659	48"	1.70

Std. pkg. 10

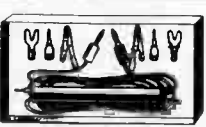
**Banana Plug Test Lead**  
Test Leads with 50" rubber covered kinkless test lead wire. Solderless test prod with 4" handle one end, banana plugs other end. Std. pkg. 10

No. 623	\$2.50 Per Pr.
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**"UNIVERSAL" TEST LEADS COMPLETELY INTERCHANGEABLE SENSATIONAL INNOVATION—FIFTY TEST LEADS IN ONE!**

One lead can make any required test lead combination. All parts adapt into prod handle or tip handle. Supplied in Vinyl Case.

No. 699	\$4.00 Each
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**ALL PURPOSE TEST LEAD KIT**

48" rubber covered kinkless test lead wire. Plastic handles with solderless or needle tips. Other end supplied with standard #204 banana plugs, which are interchangeable with the phone tips, alligator clips, or spade lugs included. Std. pkg. 10

No.	Description	Each
610	Kit W/Solderless prods	\$3.00
611	Kit W/Needle point prods	\$3.00
609	Banana Lead W/Solderless prod	\$2.50

**NEW! "SLIM JIM" TEST LEADS**  
Long slim probe tips fully insulated with vinyl tubing to prevent shocks or shorting. Perfect for those hard to get at spots. Supplied with molded meter tip plugs.

No. 698	Std. pkg. 10	\$1.90 Per Pr.
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**"CROSS-PATCH" PATCH CORD**  
Provides a never-ending banana plug receptacle to interconnect an unlimited amount of multiple circuits. The cross hole is designed for positive contact of all standard banana plugs. Fits all standard banana jacks. Four-leaved phosphor bronze nickel plated spring. Red or Black assemblies. Specify color. Std. pkg. 5

No. 680	8" Wire Length	\$1.45 Each
No. 681	12" Wire Length	\$1.55 Each
No. 682	24" Wire Length	\$1.65 Each
No. 683	36" Wire Length	\$1.75 Each

**PATCH CORD**  
Embodies No. 211 banana plug and is used to interconnect circuits. Molded plastic handle. Plug portion brass, nickel plated. Fits all standard banana jacks. Four-leaved phosphor bronze nickel plated spring. Red or Black assemblies. Specify color. Std. pkg. 5

No. 690	8" Wire Length	\$ .80 Each
No. 691	12" Wire Length	\$ .90 Each
No. 692	24" Wire Length	\$1.00 Each
No. 693	36" Wire Length	\$1.10 Each

**"KANT-SLIP" TEST LEAD**  
Replaceable chuck and collar holds "U" type tip which is insulated right up to point of use. Solderless phone tips (our No. 200) at other end. Flexible kinkless rubber-covered test lead wire, 50" long.

No. 695	Std. pkg. 10	\$2.25 Per Pr.
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**TEST LEAD WIRE**  
Heavy duty kinkless, rubber covered test lead wire, with extra heavy insulation. 42 strands No. 34 tinned copper wire with cotton separator. .040" wall, high temperature heat resisting. Specify Red or Black.

No. 660	100-Ft. Coll	\$7.75 Ea.
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# HERMAN H. SMITH, INC.



**"It's Sound Planning to Specify SMITH for ELECTRONIC COMPONENTS"**

HIGH FIDELITY CONNECTOR CABLES WITH MOLDED FINGER GRIP PLUGS. New SMITH design bonds wire and plug together with chrome gray plastic finger grip. Makes neat, compact, durable plug that's a pleasure to look at and to use! MANUFACTURERS' INQUIRIES INVITED.

### JUMPER CORDS

Male Phono Plug (our No. 1201) with finger-grip handle on each end. Std. pkg. 10

No. 631	18 inches	\$0.85 Ea.
No. 632	24 inches	.90 Ea.
No. 633	36 inches	.95 Ea.
No. 634	48 inches	1.05 Ea.
No. 635	72 inches	1.15 Ea.
No. 636	120 inches	1.45 Ea.

### EXTENSION CORDS

Male Phono Plug (our No. 1201) with finger-grip handle on end. Female In-Line Jack (our No. 1237) other end. Std. pkg. 10

No. 641	18 inches	\$1.25 Ea.
No. 642	24 inches	1.30 Ea.
No. 643	36 inches	1.35 Ea.
No. 644	48 inches	1.40 Ea.
No. 645	72 inches	1.50 Ea.
No. 646	120 inches	1.80 Ea.

### PHONO PLUG CONNECTOR CORDS

Male Phono Plug (our No. 1201) with finger-grip handle, one end. Spade lugs other end. Std. pkg. 10

No. 668	72 inches	\$1.00 Ea.
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Male Phono Plug (our No. 1201) with finger-grip handle, one end. Other end stripped and tinned. Std. pkg. 10

No. 637	36 inches	\$0.75 Ea.
No. 638	72 inches	.90 Ea.

Male Phono Plug (our No. 1201) with finger-grip handle, one end. Insulated alligator clips other end. Std. pkg. 10

No. 673	36 inches	\$1.20 Ea.
No. 674	72 inches	1.50 Ea.

### EXTENSION CORD

Male Phono Plug (our No. 1201) one end, In-Line Jack (our No. 274) other end. Std. pkg. 10

No. 639	72 inches	\$2.05 Ea.
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### COAXIAL EXTENSION CABLE

No. 687	36 inches	\$2.00 Ea.
No. 688	72 inches	2.50 Ea.
No. 689	144 inches	3.80 Ea.

### INPUT-OUTPUT CORDS

Male Phono Plug (our No. 1201) with finger-grip handle, one end. Male Phono Plug (our No. 225) other end. Std. pkg. 10

No. 662	72 inches	\$1.50 Ea.
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Male Phono Plug (our No. 225) one end. Female In-Line Jack (our No. 1237) other end. Std. pkg. 10

No. 663	72 inches	\$2.20 Ea.
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### EXTENSION CORD

Male Phono Plug (our No. 225) one end. In-Line Jack (our No. 274) other end. Std. pkg. 10

No. 669	72 inches	\$2.70 Ea.
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### PHONE PLUG CONNECTOR CORDS

Male Phono Plug (our No. 225) one end. Spade Lugs other end. Std. pkg. 10

No. 665	72 inches	\$1.65 Ea.
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Male Phono Plug (our No. 225) one end. Other end stripped and tinned. Std. pkg. 10

No. 667	72 inches	\$1.45 Ea.
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Male Phono Plug (our No. 225) one end. Insulated alligator clips other end. Std. pkg. 10

No. 664	72 inches	\$1.80 Ea.
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### FEED THRU

Accepts Phono Plug on Each End. Std. pkg. 10

No. 661		\$1.60 Ea.
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### PHONO PLUG TO PHONE PLUG ADAPTER

Adapts standard phono plug to phone plug with built in resistor to adapt either crystal or magnetic pickups. Std. pkg. 10

No. 707		\$1.75 Ea.
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### COAXIAL JUMPER CABLE

No. 694	36 inches	\$2.25 Ea.
No. 696	72 inches	2.75 Ea.
No. 697	144 inches	3.85 Ea.

### HI-FI CORDS FOR REVERE EQUIPMENT

These cords are designed for use exclusively with Revere Tape Recorders and Hi-Fi equipment all using the special type phone plug 3/16" O.D. necessary for use with this type equipment.

### CONNECTOR CORDS

3/16" O.D. phone plug one end, other end stripped and tinned. Std. pkg. 5

No. 700	120 inches	\$2.90 Ea.
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3/16" O.D. phone plug one end, other end spade lugs. Std. pkg. 5

No. 701	120 inches	\$3.10 Ea.
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3/16" O.D. phone plug one end, insulated alligator clips other end. Std. pkg. 5

No. 702	120 inches	\$3.35 Ea.
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### EXTENSION CORDS

3/16" phone plug one end, Revere type in-line jack other end. Std. pkg. 5

No. 703	120 inches	\$5.25 Ea.
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3/16" O.D. phone plug one end, Standard in-line jack other end. Std. pkg. 5

No. 704	120 inches	\$4.00 Ea.
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3/16" O.D. phone plug one end, Phono in-line jack other end. Std. pkg. 5

No. 705	120 inches	\$3.65 Ea.
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### INPUT-OUTPUT

3/16" O.D. phone plug one end, Standard phono plug other end. Std. pkg. 5

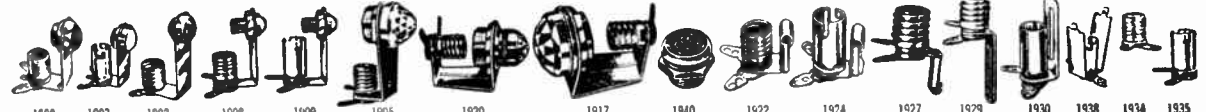
No. 706	120 inches	\$3.65 Ea.
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### CONNECTOR CORD FOR WEBCOR TAPE RECORDER

Three way phone plug with built in resistor to cut down on audio one end, insulated alligator clips other end. Std. pkg. 10

No. 676	120 inches	\$3.25 Ea.
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## PANEL INDICATORS AND JEWELS—SUPPLIED IN RED, GREEN, AMBER, BLUE, OPAL AND CLEAR



#### 1/2" JEWEL MOUNTS IN 1/16" DIA. HOLE

No.	Type	Each
1900	Miniature Screw Base	\$0.45
1901	Candelabra Base	.55
1902	Candelabra Base with Univ. Bracket	.58
1903	Bayonet Base	.45
1904	Bayonet Base with Univ. Bracket	.50
Std. Pkg. 25		

#### 3/8" JEWEL MOUNTS IN 1/8" DIA. HOLE

No.	Type	Each
1908	Miniature Screw Base	\$0.45
1909	Miniature Bayonet Base	.50
Std. Pkg. 25		

#### 3/4" JEWEL MOUNTS IN 1/4" DIA. HOLE

No.	Type	Each
1905	Miniature Screw Base	\$0.95
1906	Miniature Bayonet Base	1.00
1907	Candelabra Base	1.00
Std. Pkg. 25		

#### 1/2" OPEN TYPE MOUNTS IN 1/8" HOLE

No.	Type	Each
1920	Miniature Screw Base	\$0.70
1921	Miniature Bayonet Base	.75
Std. Pkg. 25		

#### 1" OPEN TYPE

No.	Type	Each
1917	Miniature Screw Base	\$1.60
1918	Miniature Bayonet Base	1.60
1919	Candelabra Base	1.70
Std. Pkg. 10		

#### JEWELS WITH MOUNTING NUT

3/8 Inch Jewel MOUNTS IN 1/8" HOLE			1/2 Inch Jewel MOUNTS IN 1/4" HOLE		
No.	Type	Each	No.	Type	Each
1940	Smooth	\$0.35	1911	Smooth	\$0.35
1941	Facetted	0.35	1912	Facetted	0.35

3/4 Inch Jewel MOUNTS IN 1/4" HOLE			1 Inch Jewel MOUNTS IN 1" HOLE		
No.	Type	Each	No.	Type	Each
1913	Smooth	\$0.70	1915	Smooth	\$1.25
1914	Facetted	0.70	1916	Facetted	1.25
Std. Pkg. 25					

#### CLIP-ON TYPE SOCKETS

No.	Type	Per C
1922	Min. Screw Up Clip	\$15.50
1923	Min. Screw Down Clip	15.50
1924	Min. Bayonet Up Clip	15.50
1925	Min. Bayonet Down Clip	15.50
1926	Candelabra Up Clip	17.00
1927	Candelabra Down Clip	17.00
Std. Pkg. 50		

#### BRACKET TYPE SOCKETS

No.	Type	Per C
1928	Min. Screw Up Bracket	\$15.50
1929	Min. Screw Down Bracket	15.50
1930	Min. Bayonet Up Bracket	15.50
1931	Min. Bayonet Down Bracket	15.50
1932	Candelabra Up Bracket	17.00
1933	Candelabra Down Bracket	17.00
Std. Pkg. 50		

#### UNMOUNTED TYPE SOCKETS

No.	Type	Per C
1934	Miniature Screw Base	\$15.50
1935	Miniature Bayonet Base	15.50
1936	Candelabra Base	17.00
Std. Pkg. 50		

#### CLIP-IN TYPE

No. 1938		\$15.50 Per C
Std. Pkg. 50		



# HERMAN H. SMITH, INC.

"It's Sound Planning to Specify SMITH for ELECTRONIC COMPONENTS"

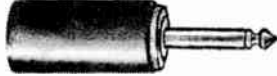
## TELEPHONE TYPE PLUGS

### SLIM BARREL BAKELITE PHONE PLUG



Std. Pkg. 25  
 No. 225 Red or Black \$65.00 Per C  
 No. 226 Shielded \$100.00 Per C

### BAKELITE DOUBLE PHONE PLUG



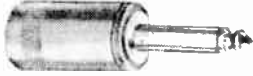
Std. Pkg. 25  
 No. 222 Red or Black \$65.00 Per C  
 No. 227 3-Way Bakelite Barrel Mike Plug \$140.00 Per C

### SHIELDED PHONE PLUG



Std. Pkg. 25  
 No. 272 2-Way Phone Plug \$110.00 Per C  
 No. 278 3-Way Mike Plug \$185.00 Per C

### JR. SHIELDED PHONE PLUG



Std. Pkg. 25  
 No. 252 2-Way Phone Plug \$90.00 Per C  
 No. 228 Jr. 3-Way Mike Plug \$150.00 Per C

## TELEPHONE TYPE JACKS



### OPEN CIRCUIT TWO CONDUCTOR

Std. Pkg. 50  
 No. 275 \$45.00 Per C



### CLOSED CIRCUIT TWO CONDUCTOR

Std. Pkg. 50  
 No. 276 \$50.00 Per C



### OPEN CIRCUIT THREE CONDUCTOR

Std. Pkg. 25  
 No. 277 \$60.00 Per C



### CLOSED CIRCUIT THREE CONDUCTOR

Std. Pkg. 25  
 No. 278 \$75.00 Per C

### PJ-055B and PJ-068 PLUGS JAN APPROVED



Std. Pkg. 10  
 No. 217 Type PJ-055B \$1.35 Ea.  
 No. 247 Type PJ-068 \$3.65 Ea.

### IN-LINE PHONE JACK

Std. Pkg. 25  
 No. 274 \$140.00 Per C

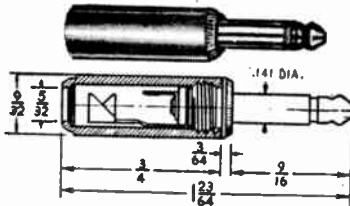
### SHIELDED IN-LINE JACK



Single Open Circuit  
 No. 273 Std. Pkg. 25 \$155.00 Per C

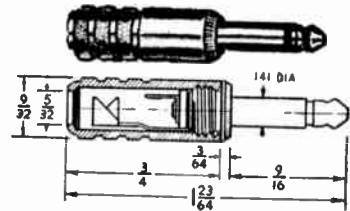
## MINIATURE PLUGS & JACKS

### MINIATURE PHONE PLUG



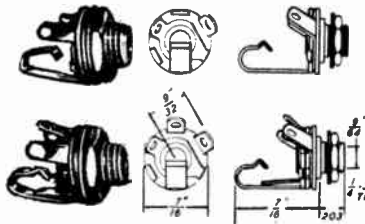
Two-conductor phone plug designed for use with hearing aids, small meters, etc. Solder terminals. 500 volt breakdown. Available in Red or Black. Specify color. Std. Pkg. 50  
 No. 480 \$0.70 Ea.

### SHIELDED MINIATURE PHONE PLUG



Same as above except with brass, bright nickel plated body insulated from contacts with paper tube. Std. Pkg. 50  
 No. 481 \$0.85 Ea.

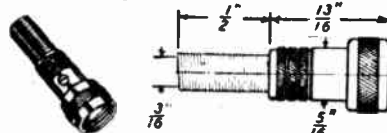
### MINIATURE TELEPHONE TYPE JACK



These miniaturized jacks are constructed with the same long life features of standard jacks. Mounts in 1/4" dia. hole in panels up to 3/8" thick. Std. Pkg. 50

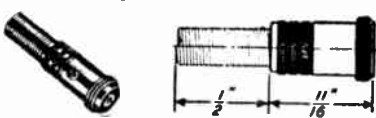
No.	Type	Each
482	Open Circuit Two Conductor	\$0.40
483	Closed Circuit Two Conductor	.45

### MINIATURE MICROPHONE CONNECTOR Single Contact Female



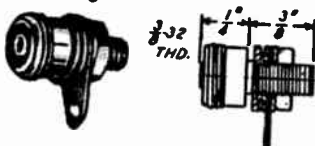
No. 484 Std. Pkg. 50 \$0.60 Ea.

### MINIATURE MICROPHONE CONNECTOR Single Contact Male



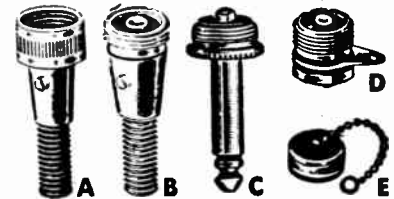
No. 485 Std. Pkg. 50 \$0.45 Ea.

### MINIATURE CHASSIS CONNECTOR Single Contact Male



Mates with No. 184 Mike Connector. Mounts in 3/8" hole. Supplied complete with insulating washers, soldering lug and nut.  
 No. 486 Std. Pkg. 50 \$0.35 Ea.

## STANDARD MICROPHONE CONNECTORS



A. MICROPHONE CONNECTOR Std. Pkg. 25  
 No. 116 Single Contact Female \$0.53 Ea.

B. MICROPHONE CONNECTOR  
 No. 115 Single Contact Male \$0.35 Ea.

C. PHONE PLUG ADAPTOR  
 For Mike Cables, Fits Standard Jack.  
 No. 113 \$0.50 Ea.

D. CHASSIS CONNECTOR  
 No. 117 Single Contact Male \$0.35 Ea.

E. CAP & CHAIN  
 No. 118 Std. Pkg. 10 \$0.60 Ea.

### CLOSED CIRCUIT CHASSIS CONNECTOR



Same as No. 117 Connector except that circuit closes when female microphone connector (our No. 116) is removed. Supplied complete with washers, soldering lug and nut.  
 No. 114 Std. Pkg. 25 \$0.50 Ea.

### SNAP-IN BULB CONNECTOR



For use with new Two Pin Baseless Miniature Lamps (G.E. #10-2.5 volts, #12-6.3 volts, or #15-7.0 volts). Withstands excessive temperatures. Snaps into a .500 x .296 rectangular hole in panels .052 to .062 thick. Bezel—brass, cad. plated; contacts—brass, silver plated. Std. Pkg. 25  
 No. 1504 \$17.00 Per C

### MINIATURE WAFER SOCKETS



Miniature bakelite sockets with brass cadmium plated contacts. XP bakelite top plate 1/16" thick, bottom plate 3/64" thick; high grade spring brass cadmium plated contact; .095 dia. mounting holes. Std. Pkg. 50

### SEVEN PIN

No.	Description	MTG. Cen.	Per C
880	Eyelet only	7/8"	\$11.00
881	Eyelet and Shield	7/8"	11.50
882	Grd Strap and Shield	7/8"	12.00
887	Eyelet only	1"	11.00
888	Eyelet and Shield	1"	11.50
889	Grd Strap and Shield	1"	12.00

### NINE PIN

890	Eyelet only	1 1/8"	\$14.25
891	Eyelet and Shield	1 1/8"	14.75
892	Grd Strap and Shield	1 1/8"	15.50

### MOLDED MINIATURE SOCKETS Saddle Type



Molded from either high dielectric black general purpose bakelite or low loss mica-filled bakelite. Both types supplied with center pin. .098 dia. mtg. holes. Std. Pkg. 50

### GENERAL PURPOSE BLACK BAKELITE

No.	Type	Pin	Mtg. Ctrs.	Mtg. Hole	Per C
895	Bottom Mount	7	7/8"	5/8"	\$15.00
896	Top Mount	7	7/8"	5/8"	15.00
897	Bottom Mount	9	1 1/4"	3/4"	18.00
898	Top Mount	9	1 1/4"	3/4"	18.00

### LOW LOSS MICA-FILLED BAKELITE

883	Bottom Mount	7	7/8"	5/8"	19.00
884	Top Mount	7	7/8"	5/8"	19.00
885	Bottom Mount	9	1 1/4"	3/4"	22.00
886	Top Mount	9	1 1/4"	3/4"	22.00

### CRYSTAL SOCKET

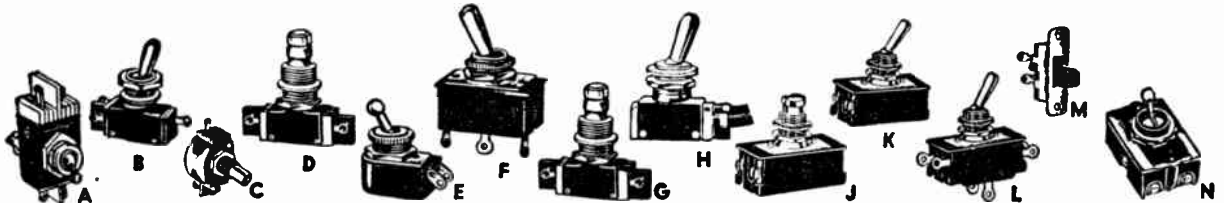


Glazed ceramic base. Phosphor bronze silver plated contacts spaced .186". Pin diameter .051. mtg. hole .125. Std. Pkg. 25  
 No. 1945 \$25.00 Per C

# HERMAN H. SMITH, INC.

"It's Sound Planning to Specify SMITH for ELECTRONIC COMPONENTS"

## ARROW, H & H SWITCHES



### (A) BALL HANDLE TOGGLE SWITCHES

No.	Type	Current Rating		Shaft	Each
		125 Volts	250 Volts		
500	SPST	3 Amps	3 Amps	1/8"	\$1.28
501	SPST	3 Amps	3 Amps	5/16"	1.53
502	SPDT	3 Amps	1 Amp	1/8"	1.59
503	SPDT	3 Amps	1 Amp	5/16"	1.92
504	DPST	3 Amps	1 Amp	1/8"	2.28
505	DPST	3 Amps	1 Amp	5/16"	2.53
506	DPST	3 Amps	1 Amp	1/8"	2.58
507	DPDT	3 Amps	1 Amp	1/8"	2.83
508	NAMEPLATE ON-OFF			Std. Pkg. 50	.11
509	NAMEPLATE HI-LOW			Std. Pkg. 50	.11

### (B) BAT HANDLE TOGGLE SWITCHES

No.	Type	Current Rating		Shaft	Each
		125 Volts	250 Volts		
*510	SPST	3 Amps	3 Amps	1/8"	\$1.28
*511	SPDT	3 Amps	1 Amp	1/8"	1.59
*512	DPST	3 Amps	1 Amp	1/8"	2.28
*513	DPDT	3 Amps	1 Amp	1/8"	2.58

\*Std. Pkg. 25    \*Std. Pkg. 10

### (C) ROTARY SWITCHES—1/2" LG. SHAFT

Made by H. & H. Switches nickel plated; supplied with mounting nut. Threaded shank 1/8" O.D. x 3/8" long. Overall length of sh. ft. 1 1/2". Std. Pkg. 10

No.	Type	Current Rating		Each
		125 Volts	250 Volts	
570	SPST	3 Amps	3 Amps	\$1.56
571	SPDT	3 Amps	1 Amp	1.89
572	DPST	3 Amps	1 Amp	2.56
573	DPDT	3 Amps	1 Amp	2.92

### (D) PUSH BUTTON MOMENTARY SWITCH

Normally off. Quick make and break. Rated at 3 amps, 250 volts, except SPST rated at 3 amps, 250 volts, 6 amps, 125 volts. Std. Pkg. 10

No.	Type	Each
555	SPST	\$2.44
556	SPDT	2.75
557	2 Circuit	2.81
558	DPST	3.39
559	DPDT	3.69

### (E) SMALL TOGGLE SWITCHES

No.	Type	Current Rating	Std. Pkg. 10
590	SPST Ball Handle	3 Amps	Each \$1.44
591	SPST Bat Handle	3 Amps	1.44

### (F) MOLDED BAKELITE SWITCHES

Made by H. & H. Bat handle. Back connected silver plated contacts, slotted sleeve. Std. Pkg. 10

No.	Type	Current Rating		Shaft	Each
		125 Volts	250 Volts		
520	SPST	6 Amps	3 Amps	1/8"	\$1.67
521	SPDT	6 Amps	1 Amp	1/8"	1.97
522	DPST	6 Amps	3 Amps	1/8"	2.42
523	DPDT	6 Amps	3 Amps	1/8"	2.87

### MOLDED BAKELITE MOMENTARY SWITCHES

Same as above except switches are momentary type. SPST normally "OFF."

No.	Type	Current Rating		Shaft	Each
		125 Volts	250 Volts		
524	SPST	6 Amps	3 Amps	1/8"	\$2.36
525	DPDT	6 Amps	3 Amps	1/8"	3.69

### BAT HANDLE TOGGLE SWITCHES

Meets Joint Army-Navy Specs. JAN-8-23 Molded Type. Made by H. & H. Terminals in rear. Maintained contact type. Silver plated contacts, slotted sleeve.

No.	A.W.S. No.	Type	Current Rating		Each
			125 Volts	250 Volts	
545	ST-12-A	SPST	6 Amps	3 Amps	\$2.14
546	ST-12-D	SPDT	6 Amps	3 Amps	2.42
547	ST-22-K	DPST	6 Amps	3 Amps	3.00
548	ST-22-N	DPDT	6 Amps	3 Amps	3.69

### (G) PUSH BUTTON MOMENTARY SWITCH

Slow make and break switch made by H. & H. Laminated type, solder lug. Circuit normally "OFF." push to make. 1/8" slotted sleeve, rated at 1 amp, 125 volts. The two circuit switch has one circuit normally on, one circuit normally off. Std. Pkg. 10

No.	Type	Each
579	SPST less button	\$1.39
580	Two Circuit less button	1.78
*581	1/2" Ired nr Black Button	.47
582	SPST Refrigerator Switch, Normally On	1.36

\*Std. Pkg. 25

### (H) SMALL TOGGLE SWITCH w/Wire Leads

Midsize type bakelite case with 6" wire leads. Made by H. & H. rated at 3 amps, 250 volts. 3/8" shank. Supplied with hex and ring nuts. Std. Pkg. 10

No.	Type	Each
526	SPST Ball Handle	\$1.59
527	SPST Bat Handle	1.61

### (J) HEAVY DUTY MOMENTARY SWITCH

6 amps, 250 volts — 12 amps, 125 volts, 1 HP at 250 volts. Std. Pkg. 10

No.	Type	Each
No. 595	DPST	\$3.50

### (K) HEAVY DUTY BAT HANDLE SWITCH

6 amps, 250 volts — 12 amps, 125 volts, 1 HP at 250 volts. Std. Pkg. 10

No.	Type	Each
No. 596	DPST	\$2.39

### (L) CENTER OFF SWITCH

Std. Pkg. 10

No.	Type	Current Rating		Each
		125 Volts	250 Volts	
566	SPDT	6 Amps	8 Amps	\$3.00
567	DPDT	6 Amps	3 Amps	3.69

### (M) SLIDE LEVER SWITCHES

Size 1 1/2" x 3/4". Mtg. Ctrs 1 1/2". Rated at 125 V. AC-DC. U.L. APPROVED. Std. Pkg. 25

No.	Type	Rating	Each
515	SPST	.75 Amps	\$0.25
516	SPDT	.75 Amps	.25
517	DPST	.50 Amps	.36
518	DPDT	.50 Amps	.36

SPRING RETURN

568	SPST	.75 Amps	.33
569	SPDT	.75 Amps	.36

CENTER-OFF

577	SPDT	.75 Amps	.31	
578	DPDT	.75 Amps	.36	
519	Shield for all slide Switches			.11

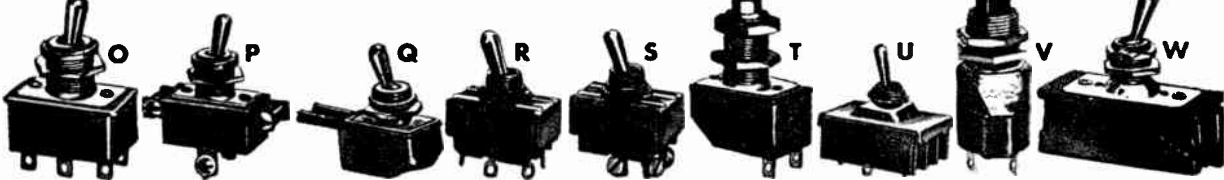
### (N) HEAVY DUTY POWER SWITCHES

Made by H. & H. Neutral off in center position. Rated at 10A., 125V.; 5A., 250V. Mtg. Sleeve Diam. 3/4" x 5/8" long.

No.	Type	Size	Power Rating	Each
574	DPDT	2x1 1/4 x 3/4"	1/2 HP 250V.	\$ 9.25
575	DPDT	2x2 1/4 x 1"	1/2 HP 3-ph.	14.06
576	DPDT	2x2 1/4 x 1"	1/2 HP 2-ph.	18.72

\*115-230 V.A.C.

## CUTLER-HAMMER SWITCHES



### LIGHT DUTY TOGGLE SWITCHES

AC-DC, U.L. Approved; 15/32" shank; quick make — quick break; bakelite case. Usually small size for electrical capacity. Std. Pkg. 10

### (O) BACK CONNECTED LUG TERMINALS

No.	C-H No.	Type	Current Rating		Ea.
			125 Volts	250 Volts	
950	8280K16	SPST	3 Amps	3 Amps	\$1.10
951	8381K8	SPST	6 Amps	3 Amps	1.25
952	8282K14	SPDT	3 Amps	1 Amp.	1.35
953	8283K14	2 Circ.	3 Amps	1 Amp.	1.45
954	8360K7	DPST	3 Amps	3 Amps	1.85
955	8370K7	DPST	6 Amps	3 Amps	2.10
956	8363K7	DPDT	3 Amps	3 Amps	2.25
957	8373K7	DPDT	6 Amps	3 Amps	2.40

### (P) SIDE CONNECTED SCREW TERMINALS

No.	C-H No.	Type	Current Rating		Ea.
			125 Volts	250 Volts	
958	8285K8	SPST	3 Amps	3 Amps	\$1.30
959	8396K8	SPST	6 Amps	3 Amps	1.45
960	8297K8	SPDT	3 Amps	1 Amp.	1.70
961	8377K7	DPST	6 Amps	3 Amps	2.35
962	8365K7	DPDT	3 Amps	3 Amps	2.90
963	8375K7	DPDT	6 Amps	3 Amps	3.10

### (Q) WIRE LEADS—SIX INCHES LONG

No.	C-H No.	Type	Current Rating		Ea.
			125 Volts	250 Volts	
964	8286K16	SPST	3 Amps	3 Amps	\$1.30
965	8391K8	SPST	6 Amps	3 Amps	1.45

### STANDARD DUTY TOGGLE SWITCHES

15 Amps, 125 Volts — 10 Amps, 250 Volts AC, U.L. Approved; 15/32" shank; slow-make and break; bakelite case. AC rated only for longer life and greater capacity. Std. Pkg. 10

### (R) BACK CONNECTED LUG TERMINALS

No.	C-H No.	Type	Each
966	7501K13	SPST	\$1.05
967	7505K4	SPDT	1.20
968	7506K4	DPST	1.60
969	7507K5	DPDT	1.80
970	7611K2	TPST	3.10
971	7615K2	TPDT	4.30

### (S) BACK CONNECTED SCREW TERMINALS

No.	C-H No.	Type	Each
972	7508K14	SPST	\$1.25
973	7504K4	SPDT	1.45
974	7560K5	DPST	1.95
975	7564K6	DPDT	2.35
976	7610K2	TPST	3.90
977	7614K2	TPDT	4.95

### (T) PUSH BUTTON SWITCHES

Push to make — Push to break AC-DC, U.L. Approved; 11/16" shank; bakelite case. Pushing the button once closes the contacts. Pushing it again opens the contacts. Rated at 6 Amps, 125 Volts—3 Amps, 250 Volts. Std. Pkg. 10

No.	C-H No.	Type	Terminals	Each
989	7206K1	SPST	Lug	\$1.50
990	7208K4	SPST	Screw	1.70
991	7207K4	SPST	Wire	1.70

### (U) CENTER OFF STANDARD DUTY TOGGLE SWITCHES

Back connected lug terminals. Std. Pkg. 10

No.	C-H No.	Type	Each
978	7503K13	SPDT	\$1.20
979	7503K4	DPDT	1.80
980	7613K2	TPDT	4.10

### BACK CONNECTED SCREW TERMINALS

No.	C-H No.	Type	Each
981	7502K13	SPDT	\$1.45
982	7562K4	DPDT	2.35
983	7612K2	TPDT	4.95

### (V) PUSH BUTTON MOMENTARY SWITCHES

AC-DC, U.L. Approved; 15/32" shank; rate at 1/2 Amp, 125 volts—1/4 Amp, 250 volts.

No.	C-H No.	Type	Terminals	Ea.
992	8111K4	SP Norm. Open	Lug	\$0.80
993	8411K3	SP Norm. Open	Screw	.90
954	8411K8	SP Norm. Closed	Lug	.60
995	8411K7	SP Norm. Closed	Screw	.70

### (W) HEAVY DUTY TOGGLE SWITCHES

AC-DC, U.L. Approved; 15/32" shank; quick make — quick break; bakelite case. Screw Terminals. Std. Pkg. 10

No.	C-H No.	Type	Current Rating		Ea.
			125 Volts	250 Volts	
984	7321K3	SPST	12 Amps	6 Amps	\$2.05
985	7324K3	DPST	12 Amps	6 Amps	2.05
986	7361K3	SPST	15 Amps	10 Amps	3.55
987	7360K8	DPST	15 Amps	10 Amps	3.55
988	7407K4	DPST	20 Amps		5.00

\* 1 Hp—125/250V.    † 1 1/2 Hp—125/250V.  
§ 1 1/2 Hp—125V.    ‡ 2 Hp—250V.

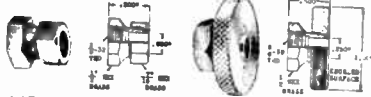


# HERMAN H. SMITH, INC.

"It's Sound Planning to Specify SMITH for ELECTRONIC COMPONENTS"

### SHAFT LOCKS.

Brass Nickel Plated—For 1/4" Shaft



**WRENCH TYPE**  
No. 181 \$0.40 Ea.  
Std. Pkg. 100

**THUMB TYPE**  
No. 182 \$0.55 Ea.  
Std. Pkg. 25

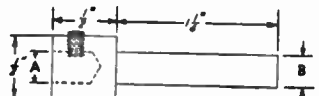
### BRASS AND INSULATED COUPLINGS



Available in both brass and insulated material. Overall length 3/4". Set screws are provided in coupling for tightening to shaft.

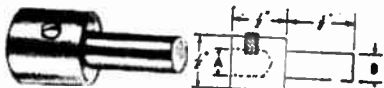
No.	Type	O.D.	Material	Std. Pkg.	Each	
120	1/4"	1/8"	Brass	50	\$0.27	
140	3/8"	1/4"	Fibre	25	0.25	
131	3/8"	1/4"	Brass	25	0.27	
141	3/8"	1/4"	Fibre	25	0.25	
133	3/8"	1/4"	Brass	25	0.27	
142	3/8"	1/4"	Fibre	25	0.25	
143	Reducing Bushing 1/4 to 3/16"					0.05

### BRASS AND INSULATED EXTENDERS Long Shaft Type



No.	A	B	Material	Std. Pkg.	Ea.
150	1/4"	3/8"	Brass N. P.	25	\$0.33
130	1/4"	3/8"	Fibre	25	.33
132	3/8"	1/2"	Brass N. P.	25	.33
134	3/8"	1/2"	Fibre	25	.33

### Short Shaft Type



No.	A	B	Material	Std. Pkg.	Ea.
160	1/4"	3/8"	Brass N. P.	25	\$0.30
161	1/4"	3/8"	Fibre	25	.30
162	3/8"	1/2"	Brass N. P.	25	.30
163	3/8"	1/2"	Fibre	25	.30

### FLEXIBLE SHAFTS



High quality phosphor bronze non-magnetic, non-rusting flexible shafts. Remote control when necessary to mount condensers and potentiometers away from panel at unusual angles. Turns at any angle up to 90°; free from back lash.

No.	Size	Description	Std. Pkg.	Each
151	3"	with 3/4" hub	25	\$0.75
152	6"	with 3/4" hub	25	1.00
153	3"	with 3/4" coupler	25	1.50
154	6"	with 3/4" coupler	25	1.75

### BEARING FOR PANEL ASSEMBLY



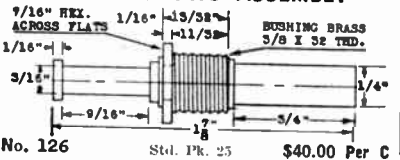
Made of brass, and fits in 3/8" dia. hole in panels up to 5/16" thick. Bearing is made to accommodate 1/4" shafts. Overall length 3/4". No. 119 Std. Pk. 100 \$0.25 Ea.

### PANEL BEARING ASSEMBLY

This assembly combines either 8" or 6" brass rod, 1/4" O.D. with our standard No. 119 Panel Bearing. Nickel plated overall. Std. Pkg. 25

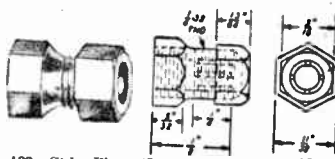
No.	Size	Each
148	8"	\$0.55
149	6"	0.65

### PANEL BEARING ASSEMBLY



### MINIATURE SHAFT ACCESSORIES

Brass Nickel Plated, for 1/8" Shafts  
MINIATURE SHAFT LOCK—WRENCH TYPE



No. 183 Std. Pkg. 25 \$0.40 Ea.

### MINIATURE BRASS COUPLER



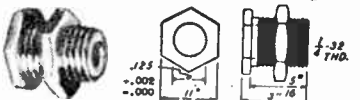
With allen head set screws. No. 180 Std. Pkg. 25 \$0.40 Ea.

### MINIATURE SHAFT EXTENDER



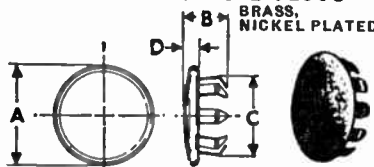
With allen head set screws. No. 189 Std. Pkg. 25 \$0.30 Ea.

### MINIATURE PANEL BEARING



No. 184 Std. Pkg. 25 \$0.25 Ea.

### SNAP BUTTON HOLE PLUGS



Metal plugs for covering punched or drilled holes in metal, plastic or wood.

No.	Hole	A	B	C	D	Prongs	Per-C
650	1/8"	13/32	1/4	17/64	5/64	6	\$3.20
651	1/8"	7/16	1/4	21/64	1/16	6	3.20
652	3/16"	17/32	3/8	25/64	5/64	6	3.20
653	3/16"	21/32	17/64	17/32	5/64	8	4.60
654	3/16"	51/64	9/32	41/64	5/64	8	4.60
655	3/16"	15/16	19/64	49/64	3/32	12	4.60
*656	1"	1 1/8	19/64	1 1/8	5/64	12	18.00

\*Std. Pkg. 50

### THREADED BRASS RODS

Rods ordinarily supplied in one foot lengths; if two foot length is required, please specify. Std. Pkg. 25

I-FT. LENGTH	THREAD	2-FT. LENGTH
No. Per Length		No. Per Length
1400-1 \$ .40	6-32	1400-2 .80
1401-1 .40	8-32	1401-2 .80
1402-1 .60	10-32	1402-2 1.20
1403-1 .90	1/4-20	1403-2 1.80

### BRASS AND INSULATED RODS

No.	Type	Length	Dia.	Each
1404	Brass	6"	3/8"	\$0.33
1405	Brass	12"	3/8"	.66
1406	Insulated	6"	3/8"	.25
1407	Insulated	12"	3/8"	.50

### FAHNESTOCK SPRING BATTERY CLIPS



Brass, nickel plated. Std. Pkg. 100

No.	Type	Length	Per C
539	Single	3/8"	\$ 2.00
533	Single	3/4"	2.40
534	Single	1"	2.80
535	Double	1 1/4"	14.00
536	Double	2 1/8"	16.00

### BRASS SPACERS CADMIUM PLATED

Ideal for use in raising sub panels, chassis, condensers, transformers, etc. Hole in bushing to accommodate a No. 6 or No. 8 screw.

FOR NO. 6 SCREW			FOR NO. 8 SCREW		
No.	Per C	1/4" O.D. Length	No.	Per C	1/4" O.D. Length
2100	\$5.50	3/8"	2105	\$5.50	3/8"
2101	7.25	1/2"	2108	7.25	1/2"
2102	8.80	5/8"	2107	8.80	5/8"
2103	10.50	3/4"	2108	10.50	3/4"
2104	12.00	1"	2109	12.00	1"

### THREADED BRASS SPACERS CADMIUM PLATED

THREADED 8-32		THREADED 8-32		
No.	Per C	Length	No.	Per C
2120	\$6.50	3/8"	2125	\$8.50
2121	8.25	1/2"	2126	8.25
2122	10.00	5/8"	2127	10.00
2123	12.00	3/4"	2128	12.00
2124	13.75	1"	2129	13.75

### INSULATED SPACERS

FOR NO. 6 SCREW			FOR NO. 8 SCREW		
No.	Per C	1/4" O.D. Length	No.	Per C	1/4" O.D. Length
2130	\$6.50	3/8"	2140	\$8.50	3/8"
2131	8.25	1/2"	2141	8.25	1/2"
2132	10.00	5/8"	2142	10.00	5/8"
2133	12.00	3/4"	2143	12.00	3/4"
2134	13.75	1"	2144	13.75	1"

### HEX BRASS SPACERS

FOR NO. 6 SCREW			FOR NO. 8 SCREW		
No.	Per C	1/4" HEX Length	No.	Per C	1/4" HEX Length
2300	\$ 6.00	3/8"	2305	\$ 6.00	3/8"
2301	7.75	1/2"	2306	7.75	1/2"
2302	9.30	5/8"	2307	9.30	5/8"
*2303	11.25	3/4"	2308	11.25	3/4"
2304	13.00	1"	2309	13.00	1"

No.	Per C	3/8" HEX Length	No.	Per C	3/8" HEX Length
2310	\$10.30	3/8"	2315	\$10.30	3/8"
2311	12.00	1/2"	2316	12.00	1/2"
2312	13.75	5/8"	2317	13.75	5/8"
2313	16.50	3/4"	2318	16.50	3/4"
2314	17.50	1"	2319	17.50	1"

### THREADED HEX BRASS SPACERS

Cadmium Plated — Std. Pkg. 100				
Threaded 6-32		Threaded 8-32		
No.	Per C	1/4" HEX Length	No.	Per C
2320	\$ 7.00	3/8"	2325	\$ 7.00
2321	8.75	1/2"	2326	8.75
2322	10.50	5/8"	2327	10.50
2323	12.75	3/4"	2328	12.75
2324	14.75	1"	2329	14.75



### FIBRE SHOULDER WASHERS

A. Inside Diameter  
B. Outside Diameter  
C. Thickness Over-all  
D. Height of Shoulder  
E. Diameter of Shoulder

No.	A	B	C	D	E	Per M
2150	#6-1.40	.375	.098	.031	.237	\$11.50
2151	#4-1.10	.250	.062	.031	.187	9.50
2152	#6-1.36	.250	.098	.031	.187	10.00
2153	#6-1.30	.312	.098	.031	.187	11.00
2154	#6-1.250	.500	.068	.028	.312	12.00
2155	#8-1.72	.375	.093	.031	.246	11.00
2156	#10-1.96	.375	.093	.031	.246	11.00
2157	#8-1.375	.750	.093	.031	.500	14.50
2158	#8-1.385	.625	.093	.031	.500	14.00
2159	#8-1.265	.500	.097	.031	.365	12.00

### FLAT FIBRE WASHERS

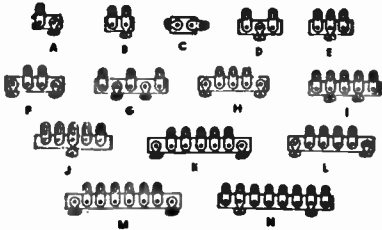
No.	For Screw-(I.D.)	O.D.	Thickness	Per M
2160	#6-1.36	.250	**	\$ 9.50
2161	#4-1.10	.250	**	8.50
2162	#6-1.40	.375	**	8.50
2163	#8-1.72	.375	**	8.50
2164	#10-1.96	.375	**	8.50
2165	1/4"-1.250	.500	**	9.00
2166	5/16"-1.250	.500	**	9.50
2167	3/8"-1.312	.500	**	9.00
2168	1/2"-1.385	.625	**	11.00
2169	3/4"-1.375	.750	**	14.00

# HERMAN H. SMITH, INC.



"It's Sound Planning to Specify SMITH for ELECTRONIC COMPONENTS"

### TIE DOWN TERMINAL STRIPS



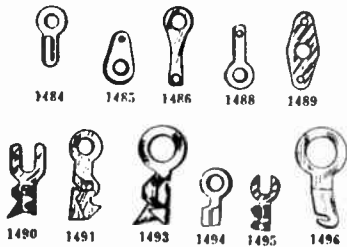
**STANDARD TYPE**—Brass cadmium plated lugs, mounted on  $\frac{1}{8}$ " wide x .062 thick XP bakelite. Lugs are  $\frac{1}{8}$ " centers; .140 dia. mtg. hole clearance for No. 6 screw. Combinations shown are standard; special combinations on request.

**MINIATURE TYPE**—Brass cadmium plated lugs, mounted on  $\frac{1}{16}$ " wide x .062 thick XP bakelite. Lugs are  $\frac{1}{8}$ " centers; .096 dia. mtg. hole clearance for  $\frac{1}{32}$ " rivet or No. 3 screw. Combinations shown are standard; special combinations on request.

Standard Type	Per C	Illustration	Miniature Type	Per C
861	\$ 3.00	A	1061	\$ 4.00
862	3.25	B	1062	4.50
869	3.00	C	—	—
863	4.00	D	1063	5.50
864	4.00	E	1064	6.00
867	5.50	F	1067	6.50
865	6.75	G	1065	8.75
863	6.25	H	1073	8.75
868	7.25	I	1068	9.50
866	6.50	J	1066	9.00
860	9.00	K	1060	11.00
869	8.25	L	1069	10.00
848	10.75	M	1078	13.00
870	10.00	N	1070	13.50

Standard Package 100

### SOLDER TYPE LUGS—Hot Tinned



No.	Material	Std. Pkg.	Thick.	Hole	Per M
1484	Brass	1000	$\frac{1}{8}$ " .020"	No. 6	\$8.50
1485-4	Pl. Br.		$\frac{1}{8}$ " .012"	No. 4	9.00
1485-6	Pl. Br.		$\frac{1}{8}$ " .012"	No. 6	9.00
1485-8	Pl. Br.		$\frac{1}{8}$ " .012"	No. 8	9.00
1485-10	Pl. Br.		$\frac{1}{8}$ " .012"	No. 10	9.00
1486-4	Pl. Br.		$\frac{1}{8}$ " .012"	No. 4	9.00
1486-6	Pl. Br.		$\frac{1}{8}$ " .012"	No. 6	9.00
1486-8	Pl. Br.		$\frac{1}{8}$ " .012"	No. 8	9.00
1486-10	Pl. Br.		$\frac{1}{8}$ " .012"	No. 10	9.00
1488-4	Ph. Br.		$\frac{1}{8}$ " .012"	No. 4	7.25
1488-6	Ph. Br.		$\frac{1}{8}$ " .012"	No. 6	7.25
1488-8	Ph. Br.		$\frac{1}{8}$ " .012"	No. 8	7.25
1489	Brass		$\frac{1}{8}$ " .015"	No. 8	10.00
1490	Brass		$\frac{1}{8}$ " .020"	No. 10	11.00
1491	Copper		$\frac{1}{8}$ " .020"	No. 10	16.50
1493	Brass	1 1/2	$\frac{1}{8}$ " .027"		28.00
1494-6	Brass		$\frac{1}{8}$ " .020"	No. 6	9.00
1494-8	Brass		$\frac{1}{8}$ " .020"	No. 8	9.00
1495	Brass		$\frac{1}{8}$ " .020"	No. 8	8.50
1496	Brass		$\frac{1}{8}$ " .020"	1/4"	11.00

An attractive display card of each lug containing 24 fig. list envelopes can be obtained by specifying the letter "D" after the above catalog numbers.

### LOCKING TYPE TERMINAL LUGS

No.	Hole Size	Thick	Length	Per M
1465	No. 4	.020	47/64"	\$17.00
1466	No. 6	.020	47/64"	17.00
1467	No. 8	.020	7/8"	17.00
1468	1/4"	.020	1 3/16"	20.00

### TERMINAL BOARDS Screw Type

Brass hot tinned lugs mounted on  $\frac{1}{8}$ " bakelite. Lugs are spaced  $\frac{1}{8}$ " center to center.

No.	Terminals	Mtg. Ctr.	Std. Pkg.	Per C
871	2	1 1/8"	50	\$13.00
872	2	1 1/2"	50	13.00
873	3	1 1/8"	50	20.00
874	4	2 1/8"	50	24.00
875	5	2 3/8"	25	30.00
876	6	3 1/8"	25	36.00
877	7	3 3/8"	25	44.00

### INSTRUMENT KNOBS



Molded black bakelite instrument knobs with molded in brass insert for  $\frac{1}{4}$ " shafts. Style B pointer knobs have white vinyl pointer. Style C skirt type have white indicator line. Style D same as Style A except with protruding brass insert for mounting special dials and pointers.

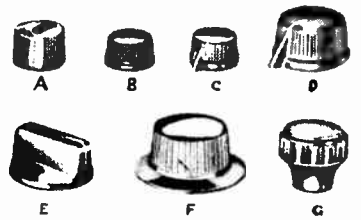
No.	Style	O.D.	Height	Per C
2200	A	1 1/8"	7/8"	\$40.00
2201	A	1 3/8"	7/8"	42.00
2202	A	1 5/8"	7/8"	48.00
2203	A	2 3/8"	7/8"	70.00
2204	B	1 1/8"	3/4" Pointer	61.00
2205	B	1 3/8"	1 1/8" "	64.00
2206	B	1 5/8"	1 1/8" "	70.00
2207	B	2 3/8"	1 1/8" "	90.00
2208	C	1 1/8"	1 1/2" Skirt	75.00
2209	C	1 3/8"	1 1/2" "	80.00
2210	C	1 5/8"	2 1/2" "	95.00
2211	C	2 3/8"	3" "	125.00
2212	D	1 1/8"	1 1/8"	50.00
2213	D	1 3/8"	1 1/8"	51.00
2214	D	1 5/8"	1 1/8"	57.00
2215	D	2 3/8"	1 1/8"	80.00
2216	1 1/8"	Skirt Only		14.00
2217	1 3/8"	Skirt only		18.50
2218	2 3/8"	Skirt only		21.00
2219	1"	Skirt only		25.50

### LEVER KNOBS WITH 1/4" BRASS INSERT



No.	Style	Length	Hgt.	Color	Per C
2232	A	1 1/8"	3/8"	Black	\$33.00
2233	A	1 1/8"	3/8"	Walnut	34.00
2234	B	1 1/8"	3/8"	Black	51.00
2235	B	1 1/8"	3/8"	Walnut	53.00
2236	C	2 1/8"	3/8"	Black	35.00
2237	C	2 1/8"	3/8"	Walnut	36.00
2238	D	2 1/8"	3/8"	Black	56.00
2239	D	2 1/8"	3/8"	Walnut	58.00

### CONTROL KNOBS



Molded bakelite control knobs. Supplied with  $\frac{1}{4}$ " molded hole; complete with set screw. \*Recessed for Locknut.

No.	Style	O.D.	Hgt.	Color	Per C
2240	A	3/4"	1 1/4"	Black	\$18.00
2241	A	3/4"	1 1/4"	Walnut	18.00
2242	B	1"	1 1/4"	Black	15.00
2243	B	1"	1 1/4"	Walnut	15.00
2244	B	1"	1 1/4"	Black	20.00
2245	B	1"	1 1/4"	Walnut	20.00
2246	C	1 1/8"	1 1/4"	Black	15.00
2247	C	1 1/8"	1 1/4"	Walnut	15.00
2248	D	1"	1 1/2"	Black	25.00
2249	D	1"	1 1/2"	Walnut	25.00
2250	E	1 1/8"	1 1/4"	Black	22.00
2251	E	1 1/8"	1 1/4"	Walnut	22.00
2252	F	1 1/4"	1 1/4"	Black	32.00
2253	F	1 1/4"	1 1/4"	Walnut	33.00
2254	F	1 1/2"	1 1/4"	Ivory	34.00
2258	G	1 3/8"	1 1/4"	Black	20.00
2259	G	1 3/8"	1 1/4"	Walnut	20.00

### POINTER KNOBS



No.	Style	Type Hole	Color	Per C
2220	A	1/4" Plain	Black	\$17.00
2221	A	1/4" Plain	Walnut	18.00
2222	A	1/4" Plain	Ivory	20.00
2223	A	1/4" Brass Insert	Black	26.00
2224	A	1/4" Brass Insert	Walnut	27.00
2225	A	1/4" Brass Insert	Red	28.00
2226	B	1/4" Plain	Black	33.00
2227	B	1/4" Plain	Walnut	34.00
2228	B	1/4" Brass Insert	Black	39.00
2229	B	1/4" Brass Insert	Walnut	40.00
2230	C	1/4" Plain	Black	17.00
2231	C	1/4" Plain	Walnut	18.00

### MINIATURE HUM BALANCING CONTROLS

Rheostat rated at 2 watts, grounded rotor, tolerance  $\pm 20\%$ . Screwdriver slot adjustment from front or rear. Useful for hum balancing, centering, hold and locking. Linearity, AGC sensitivity, etc. Standard Package 25

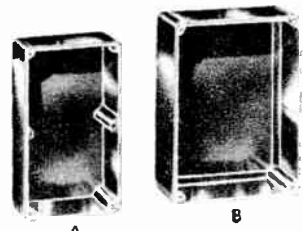
No.	Total Res. Ohms	Per C
2221	50	\$65.00
2292	100	65.00
2293	300	65.00
2294	500	65.00
2295	700	65.00
2296	1000	65.00
2297	2000	65.00
2298	3000	65.00
2299	4000	65.00

### HEAVY DUTY TERMINAL BOARDS

XP Bakelite, 8-32 x A" Brass nickel plated screws. 3/8" wide. 1/2" between terminal centers to mounting hole centers. Std. Pkg. 25

No.	Terminals	Mtg. Center	Per C
901	1	1"	\$17.00
902	2	1 1/2"	23.00
903	3	2"	29.00
904	4	2 1/2"	35.00
905	5	3"	41.00
906	6	3 1/2"	47.00
907	7	4"	53.00
908	8	4 1/2"	59.00
909	9	5"	65.00
910	10	5 1/2"	71.00
911	11	6"	77.00

### METER OR INSTRUMENT CASES



Molded, Black, with four corner brass inserts for corner mounting.

No. 2255 (Illustration A). Case. Inserts have 6-32 tap. Overall: 6 1/4" Long, 3 3/4" Wide, 2" Deep. Each \$1.85

No. 2256 Cover for 2255 Case Each \$1.50

No. 2257 (Illustration B). Case only. Inserts have 4-36 tap. Overall: 6 1/2" Long, 5 3/4" Wide, 2 1/4" Deep. Each \$2.20

No. 2260 Cover for 2257 Each \$1.60

### CONTACT STRIPS

Quick connect and disconnect contact strips. Spring tension contacts for .125 dia. contact pins. Contacts on 3/8" centers. Even number contacts have nut bracket in center; odd number contacts have extra contact on right. Std. Pkg. 50

No.	Contacts	Per C
822	2	\$11.00
823	3	14.00
824	4	17.00
825	5	20.00
826	6	25.00



# HERMAN H. SMITH, INC.

"It's Sound Planning to Specify SMITH for ELECTRONIC COMPONENTS"

## SOLDERLESS CO-AXIAL CONNECTORS

Designed to use inner conductor of co-ax cable for male pin. Brass, silver-plated, solderless.



### MALE CONNECTOR FOR RG-59/U

Mates with 1660 receptacle or cable coupler. Std. Pkg. 25

No.	Each
1650-D	\$ 0.80
Display of 24	19.20



### CABLE JUNCTION FOR RG-59/U

Mates at either end with male #1650 connector. Std. Pkg. 25

No.	Each
1680-D	\$1.00
Display of 24	24.00



### HEAVY DUTY FEMALE RECEPTACLE

Mates with #1450. Threaded stem 1/2" long. Std. Pkg. 25

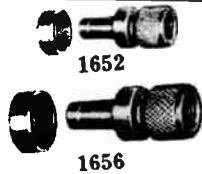
No.	Each
1660-D	\$ 0.80
Display of 24	19.20



### HEAVY DUTY CABLE ADAPTER

For RG-11/U or RG-8/U to RG-59/U cable. Std. Pkg. 10

No.	Each
1700-D	\$ 2.50
Display of 20	50.00



### MALE CONNECTOR

Withstands 350 lbs. pull. Used with #1752 pliers for quick, easy assembly. Std. Pkg. 25

No.	Description	Each
1652	For RG-59/U, JRP-59 Cables	\$ 0.80
1652-D	Display of 24	19.20
1656	For RP-6/U Cable	1.05
1656-D	Display of 24	25.20
1752	Pliers	3.00



### NYLON LACING CORD

The lacing cord meets specification for yardage and tensile strength and is made to meet Spec. MIL-T-713-A, Type S, Composition P, Classes 3, 2 and 1. Supplied in 1-lb. tubes.

CLASS 1 70 Lb. Test			CLASS 2 48 Lb. Test			CLASS 3 32 Lb. Test		
No.	Ydgs.	Each	No.	Ydgs.	Each	No.	Ydgs.	Each
734	600	\$15.00	735	800	\$15.50	736	1140	\$16.00

### LINEN LACING CORD

Made from pure flax, waxed and mildew proofed. Six, Eight and Twelve ply cord meet Spec. MIL-T-713-A, Type N, Classes 3, 2 and 1 respectively.

No.	Tube	Ply	Class	Ydgs.	Each
725	4 oz.	4	—	210	\$2.70
726	8 oz.	4	—	425	4.70
727	1 lb.	4	—	850	9.00
728	4 oz.	6	3	150	2.60
729	8 oz.	6	3	300	4.50
730	1 lb.	6	3	600	8.00
737	4 oz.	8	2	115	2.60
738	8 oz.	8	2	235	4.50
739	1 lb.	8	2	470	8.00
731	4 oz.	9	—	100	2.60
732	8 oz.	9	—	200	4.50
733	1 lb.	9	—	400	8.00
740	4 oz.	12	1	75	2.60
741	8 oz.	12	1	150	4.50
742	1 lb.	12	1	300	8.00



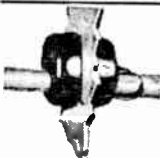
### MINI-SHIELDS FOR MINI-TUBES

No.	Type	Overall Length	Std. Pkg.	Per C
550	for 2" tube	1 3/4"	50	\$13.00
551	for 1 1/2" tube	1 3/4"	50	11.00
553	3 prong base clip		100	5.50
554	single clips		100	3.30



### MINI-SPRING FOR MINI-TUBES

No.	Type	Std. Pkg.	Per C
561	Short	50	\$15.00
562	Medium	50	15.00
563	Long	50	15.00
	Ø Prong	50	15.00



### NYLON STRAIN RELIEF BUSHINGS

One piece construction. Eliminates grommets, wire knots and costly labor. Completely insulates wire from chassis and prevents cord pull push and twist. No. 937 ideal for small mike cables; No. 938 for line cords; No. 939 for Co-Ax Wire. Std. Pkg. 100  
A: Chassis Hole C: Length  
B: Diameter of head D: Chassis Thickness

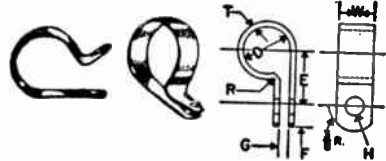
No.	Wire Size	A	B	C	D	Per C
937	3/4-3/16"	.375	.410	.415	to 1/16"	\$6.00
938	SP-1 & SP-T-1	.437	.468	.406	to 1/16"	6.00
939	.235-265	.500	.560	.438	to 3/32"	7.00



### SETTING PLIERS

No. 940	\$13.00 Each
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## PLASTIC CABLE CLIPS



### ETHYL CELLULOSE

These clips are well known for ability to withstand age, moisture, corrosion, shock and vibration. This tough, light weight, durable clip withstands temperatures from -60 to +175 degrees F.

"T"	.062	"F"	.218
"W"	.500	"G"	.062
"H"	.204		

No.	Size	E	Per C
831	3/8"	.328	\$3.90
832	3/16"	.390	4.00
833	1/4"	.421	4.30
834	5/16"	.453	4.75
835	3/8"	.483	5.00
836	7/16"	.531	5.50
837	3/4"	.562	6.00
838	9/16"	.625	7.00
839	5/8"	.810	7.50
840	11/16"	.866	8.00
841	3/4"	.765	6.50
842	7/8"	.812	9.00
843	1"	.906	9.50
844	1 1/8"	.968	10.00
845	1 1/4"	1.156	10.50

Standard Package 100

### NYLON

These strong and tough molded nylon clips hold their shape under severest stress. Do not support combustion. Withstands temperatures from -80 to +250 degrees F.

"W"	.050	"F"	.218
"W"	.375	"G"	.062
"H"	.177		

No.	Size	E	Per C
771	3/8"	.316	\$6.50
772	3/16"	.378	7.50
773	1/4"	.409	6.50
774	5/16"	.441	9.00
775	3/8"	.471	9.35
776	7/16"	.519	9.90
777	3/4"	.550	10.50
778	9/16"	.592	11.50
779	5/8"	.634	12.00
780	11/16"	.676	12.50
781	3/4"	.718	13.00
782	7/8"	.760	14.25
783	1"	.802	15.00

Standard Package 100

## AUTOMATIC WIRE STRIPPERS

For Industrial Production, Electrical and Electronic Servicing, Laboratories. Single Squeeze operation — Easy Grip — Precision Action — Adjustable Blades. FOR WIRE SIZES #8 to #30 STRANDED OR SOLID.



### OPEN-SHUT TYPE

#### For Stripping Solid Wire

Does not have delayed action cam or trigger to hold jaws open after wire is stripped. Designed primarily for solid wire. Overall length of stripper is 6 3/4". Adjustable Stop included.

No.	Wire Size	Each
1320	10 to 22	\$6.60
1321	14 to 30	6.60
1322	16 to 22	6.60
1323	10 to 18	6.60
1324	8 to 10	6.60
1325	1'ONJ-18	6.60
1326	300 ohm	6.60



### TRIGGER TYPE

#### Strips Solid or Stranded Wire

This unique trigger attachment holds jaws open after stripping while wire is removed. Can be set in off position if required. For Stranded or Solid Wire.

No.	Wire Size	Each
1330	10 to 22	\$8.25
1331	14 to 30	8.25
1332	16 to 22	8.25
1333	10 to 18	8.25
1334	8 to 10	8.25
1335	1'ONJ-18	8.25
1336	300 ohm	8.25



### FULLY AUTOMATIC TYPE

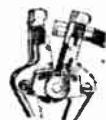
#### Strips Solid or Stranded Wires

Concealed cam causes delayed action which prevents crushing or stranded wires. For Stranded or Solid Wire.

No.	Wire Size	Each
1340	8 to 22	\$8.25
1341	14 to 30	8.25
1342	16 to 22	8.25
1343	10 to 18	8.25
1344	8 to 10	8.25
1345	1'ONJ-18	8.25
1346	300 Ohm	8.25

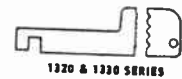
### ADJUSTABLE STOP INCLUDED WITH EACH STRIPPER

- Eliminates Wire Waste
- Speeds Production Stripping

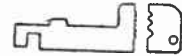


Easy to put on and take off. Ideal for production work where many wires must be stripped to exactly the same length. Max. length of stripping with stop, 3/4". Supplied free with every stripper.

### REPLACEMENT BLADES



1320 & 1320 SERIES



1340 SERIES

Replacement Blades are available for all wire strippers. Add suffix "B" to catalog number of stripper for required replacement blade. 1320 series and 1330 series blades are interchangeable. All Blades.....\$1.75 Each



# HERMAN H. SMITH, INC.



"It's Sound Planning to Specify SMITH for ELECTRONIC COMPONENTS"

## RECESS RUBBER BUMPERS

No. 2192	No. 2193	No. 2194	No. 2194	No. 2194	No. 2194
Per C	Per C	Per C	Per C	Per C	Per C
\$2.50	\$3.25	\$5.00	\$5.00	\$5.00	\$5.00
Std. Pkg. 100					

## RUBBER BUMPERS WITH SCREW

No. 2196	No. 2197	No. 2198	No. 2199
Per C	Per C	Per C	Per C
\$5.00	\$5.00	\$7.50	\$7.50
2197	2199	2199	2199
5.75	6.50	6.50	6.50

Supplied complete with 1/4" screw and hex nut. For panels up to 3/16" thick. Specify larger screw for larger panels. Std. Pkg. 100

## RUBBER TACK BUMPERS

No. 2190	No. 2191
\$2.70 C	\$2.90 C

## FELT FEET

No. 2181	Type	Per C
	With 1/2 x 3/8" Machine Bore	\$11.00
	Std. Pkg. 100	

## RUBBER GROMMETS

A: O.D.  
B: I.D.  
C: PANEL  
D: THICK  
E: P. THICK

No.	A	B	C	D	E	Per C
2185	1/8"	1/8"	1/8"	1/8"	1/8"	\$3.85
2172	1/8"	1/8"	1/8"	1/8"	1/8"	3.30
2170	1/8"	1/8"	1/8"	1/8"	1/8"	3.85
2174	1/8"	1/8"	1/8"	1/8"	1/8"	3.60
2175	1/8"	1/8"	1/8"	1/8"	1/8"	3.85
2177	1/8"	1/8"	1/8"	1/8"	1/8"	3.60
2186	1/8"	1/8"	1/8"	1/8"	1/8"	7.00
2187	1/8"	1/8"	1/8"	1/8"	1/8"	6.50
2188	1/8"	1/8"	1/8"	1/8"	1/8"	7.00
2189	1/8"	1/8"	1/8"	1/8"	1/8"	8.50

## ANTENNA HANK

Cotton covered copper antenna hank. Std. pk. 25  
No. 1222 \$40.00 per C

## INSULATED GROMMET BUSHINGS Black Phenolic — Matte Finish

No.	A	B	C	D	E	G	H	Each
931	1/8"	3/8"	1/4"-32	3/8"	1/4"	1/4"	1/4"	\$0.29
932	3/16"	7/16"	5/16"-32	4/8"	3/8"	3/8"	3/8"	.29
933	1/4"	1/2"	3/8"-32	4/8"	1/2"	1/2"	1/2"	.30
934	5/16"	9/16"	15/32"-32	4/8"	3/4"	3/4"	3/4"	.33
935	3/8"	3/4"	5/8"-27	4/8"	3/4"	3/4"	3/4"	.36

## BATTERY CONNECTORS

No. 1205	No. 1296	No. 1297	No. 1234
Type	Type	Type	Type
67 1/2 Volt	90 Volt	Female	Male
Std. Pkg. 25	Std. Pkg. 25	Std. Pkg. 100	Std. Pkg. 100
Per C \$30.00	Per C 40.00	Per C 6.50	Per C 6.00
1206 90 Volt	1297 Male	1210 67 1/2 V. Small	1234 For Miniature 45V "B"
Std. Pkg. 25	Std. Pkg. 100	Std. Pkg. 25	Std. Pkg. 25
Per C 40.00	Per C 6.50	Per C 30.00	Per C 40.00

## PHONO PLUGS

RCA Type Phono Plug. For use with record players, recording and reproducing equipment, etc. Extra large hole in cap (.175") for coaxial cable. Std. Pkg. 100

No. 1201	Type	Per C
1201	Long Pin (1" overall)	\$8.00
1202	Short Pin (13/16" overall)	\$8.00

## PHONO JACKS

Female for No. 1201 plug. Single prong positive grip jack mounted on 1/16" bakelite with 11/16" mounting centers. Std. Pkg. 100

No. 1203	Type	Per C
1203	Insulating Washer	3.00
1223	Space Saver . . . Rivets and grounds to chassis. Std. Pkg. 50	\$12.00

## PHONO JACKS

Used on recording units, phono players, etc. Std. Pkg. 25

No. 1211	Type	Per C
1211	Single Jack	\$12.00
1214	Double Jack	16.00
1212	Triple Jack	20.00
1214-1	Insulating Washer for No. 1214	4.00

## SHIELDED EXTENSION JACK

Brass shell, cadmium plated, 1 1/2" long, with black bakelite insert. Provides insulation for solder-coated positive grip contact. Uses No. 1201 phono plug. Std. Pkg. 50

No. 1237	Per C
1237	\$40.00

## 3AG FUSE MOUNTING BASES

No. 530	Type	Std. Pkg.	Per C
530	Single	25	\$20.00
531	Double	25	35.00
532	Clip Only	100	25.00

## SPACE SAVER APPLIANCE RECEPTACLES

Mounts from top or bottom of Mtg. bracket, 1 1/4" Mtg. ctrs. U.L. Approved. 15A-125V AC or DC

No. 1299	Type	Std. Pkg.	Per C
1299	With Soldering Terminals. Str. Pkg. 50	25	\$20.00
1279	With 8" Wire Leads. Std. Pkg. 25	25	\$38.00

## BATTERY PLUGS

Std. Pkg. 50

No. 915	Voltage	Per C
915	1 1/2 "A"	\$10.00
916	7 1/2 "A"	11.00
917	6 "A", 90 "B"	10.00
918	6 "A", 90 "B"	11.00

## Auto Radio IGNITION SUPPRESSORS

805	806	807	808	809	810
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Solidly made of molded black bakelite housings with rugged brass metal parts . . . Impervious to heat, oil, moisture and vibration. Resistance of 10,000 ohms, will remain constant over 50,000 miles of operation. Std. Pkg. 50

Cat. No.	Type	Per C
805	Snap-On Type Suppressor	\$38.00
806	Univ. Type with Double Thrd.	38.00
807	Angle Type Suppressor	38.00
808	Distributor Screw Type	38.00
809	Distributor Plug-in Type	38.00
810	Double Screw Type	38.00

1200	1240	1207	1204	1235
Std. Pkg. 50				
No. 1200	Type	Per C		
1200	Motorola Type Plug	\$14.00		
1240	Motorola Type Plug	14.00		
1207	Antenna Connector, Takes 1200 Plug	22.00		
1204	Lead-in Adapter, converts Motorola pin plug to Delco	15.00		
1235	Female for #1200 plug, without flange	12.00		

## ANTENNA CONNECTOR

For use as connection of auto radio antenna lead-in to auto radio receiver. Std. Pkg. 50  
No. 1300 \$17.00 Per C

## FUSE RETAINER

Recommended for use in auto radio power supply cables. Std. Pkg. 50  
No. 1301 \$22.00 Per C

## PARTS FOR CONNECTOR AND RETAINER

No. 1305	Type	Per C
1305	Male Cap for #1300 & #1301	\$3.30
1306	Female Shell for #1300	3.85
1307	Contact for #1300 & #1301	5.50
1308	Spring for #1300 & #1301	1.10
1309	Washer for #1300 & #1301	.55
1310	Insulating Tube for #1301	1.00
1311	Female Shell for #1301	5.50

## JUMBO FUSE HOLDERS

Std. Pkg. 25	No.	Size	Fuse Size	Each
	1302	1/2" x 2 1/2"	9 amp.	\$0.35
	1303	1/2" x 2 5/8"	14 amp.	.35
	1313	1/2" x 2 5/8"	30 amp.	.35

## WIRED FUSE RETAINER

CUT WIRE THRU CENTER  
SPICE INTO LINE

Simply cut wire, strip and put in line. Will accommodate either 3 A.G. 20 amp. or SFE 14 amp. fuse.

No. 1304	Each
1304	\$ 0.50
1304-D—Display of 24	12.00
Std. Pkg. 25	

## DOUBLE END WRENCH

For Toggle Switches Std. Pkg. 25  
For Volume Controls

Specially designed offset wrench for rear of chassis assembly of toggle switches, Volume Controls, etc. Case hardened steel, Cadmium plated.

No. 999	Each
999	\$0.35
No. 99D	Display of 50 No. 999
99D	\$17.50 Each



# HERMAN H. SMITH, INC.

"It's Sound Planning to Specify SMITH for ELECTRONIC COMPONENTS"

## HEAVY DUTY BAKELITE BARRIER TERMINAL STRIPS

Shown below are our popular screw type terminal blocks. Made of molded thermosetting plastics — in high tensile strength bakelite for general commercial use. CFG, MFE, CMG, MMB, and MDG blocks made in strict compliance with latest military specifications MIL-P-14C. Prices available on request. Special flag, spade, hole type lugs, and steel straddle plates available. Manufactured by the KULKA ELECTRIC MANUFACTURING COMPANY, INC. and exclusively distributed by us to the Radio Parts Distributors.



### 600 Series

Height  $\frac{1}{2}$ ", Width  $\frac{3}{8}$ ", Thickness  $\frac{1}{8}$ ", Terminals  $\frac{3}{16}$ " Centers,  $\frac{1}{8}$ " Mtg., 5-40x $\frac{1}{4}$ " Screws.

No.	Each	No.	No.	No.	Each	No.	No.	Each
600-1	\$0.15	600-ST-1	600- $\frac{3}{4}$ ST-1	600-Y-1	\$0.19	600-XY-1	600-Z-1	\$0.23
600-2	0.25	600-ST-2	600- $\frac{3}{4}$ ST-2	600-Y-2	0.32	600-XY-2	600-Z-2	0.40
600-3	0.33	600-ST-3	600- $\frac{3}{4}$ ST-3	600-Y-3	0.44	600-XY-3	600-Z-3	0.60
600-4	0.42	600-ST-4	600- $\frac{3}{4}$ ST-4	600-Y-4	0.57	600-XY-4	600-Z-4	0.73
600-5	0.51	600-ST-5	600- $\frac{3}{4}$ ST-5	600-Y-5	0.69	600-XY-5	600-Z-5	0.93
600-6	0.59	600-ST-6	600- $\frac{3}{4}$ ST-6	600-Y-6	0.83	600-XY-6	600-Z-6	1.07
600-7	0.68	600-ST-7	600- $\frac{3}{4}$ ST-7	600-Y-7	0.95	600-XY-7	600-Z-7	1.23
600-8	0.77	600-ST-8	600- $\frac{3}{4}$ ST-8	600-Y-8	1.08	600-XY-8	600-Z-8	1.40
600-9	0.86	600-ST-9	600- $\frac{3}{4}$ ST-9	600-Y-9	1.21	600-XY-9	600-Z-9	1.57
600-10	0.95	600-ST-10	600- $\frac{3}{4}$ ST-10	600-Y-10	1.33	600-XY-10	600-Z-10	1.73
600-11	1.03	600-ST-11	600- $\frac{3}{4}$ ST-11	600-Y-11	1.45	600-XY-11	600-Z-11	1.89
600-12	1.12	600-ST-12	600- $\frac{3}{4}$ ST-12	600-Y-12	1.58	600-XY-12	600-Z-12	2.06
600-13	1.21	600-ST-13	600- $\frac{3}{4}$ ST-13	600-Y-13	1.71	600-XY-13	600-Z-13	2.23
600-14	1.31	600-ST-14	600- $\frac{3}{4}$ ST-14	600-Y-14	1.84	600-XY-14	600-Z-14	2.40
600-15	1.40	600-ST-15	600- $\frac{3}{4}$ ST-15	600-Y-15	1.96	600-XY-15	600-Z-15	2.56
600-16	1.49	600-ST-16	600- $\frac{3}{4}$ ST-16	600-Y-16	2.09	600-XY-16	600-Z-16	2.73
600-17	1.57	600-ST-17	600- $\frac{3}{4}$ ST-17	600-Y-17	2.21	600-XY-17	600-Z-17	2.89
600-18	1.66	600-ST-18	600- $\frac{3}{4}$ ST-18	600-Y-18	2.34	600-XY-18	600-Z-18	3.06
600-19	1.75	600-ST-19	600- $\frac{3}{4}$ ST-19	600-Y-19	2.46	600-XY-19	600-Z-19	3.22
600-20	1.84	600-ST-20	600- $\frac{3}{4}$ ST-20	600-Y-20	2.60	600-XY-20	600-Z-20	3.40
600-21	1.93	600-ST-21	600- $\frac{3}{4}$ ST-21	600-Y-21	2.72	600-XY-21	600-Z-21	3.56
600-22	2.02	600-ST-22	600- $\frac{3}{4}$ ST-22	600-Y-22	2.86	600-XY-22	600-Z-22	3.74

### 601 Series

Height  $\frac{1}{2}$ ", Width  $1\frac{1}{8}$ ", Thickness  $\frac{1}{8}$ ", Terminals  $\frac{3}{16}$ " Centers, 27/64" Mtg., 6-32x $\frac{1}{4}$ " Screws.

No.	Each	No.	No.	No.	Each	No.	No.	Each
601-1	\$0.20	601-ST-1	601- $\frac{3}{4}$ ST-1	601-Y-1	\$0.24	601-XY-1	601-Z-1	\$0.28
601-2	0.31	601-ST-2	601- $\frac{3}{4}$ ST-2	601-Y-2	0.41	601-XY-2	601-Z-2	0.49
601-3	0.42	601-ST-3	601- $\frac{3}{4}$ ST-3	601-Y-3	0.57	601-XY-3	601-Z-3	0.69
601-4	0.54	601-ST-4	601- $\frac{3}{4}$ ST-4	601-Y-4	0.74	601-XY-4	601-Z-4	0.90
601-5	0.64	601-ST-5	601- $\frac{3}{4}$ ST-5	601-Y-5	0.90	601-XY-5	601-Z-5	1.10
601-6	0.75	601-ST-6	601- $\frac{3}{4}$ ST-6	601-Y-6	1.07	601-XY-6	601-Z-6	1.31
601-7	0.88	601-ST-7	601- $\frac{3}{4}$ ST-7	601-Y-7	1.23	601-XY-7	601-Z-7	1.51
601-8	0.99	601-ST-8	601- $\frac{3}{4}$ ST-8	601-Y-8	1.40	601-XY-8	601-Z-8	1.72
601-9	1.10	601-ST-9	601- $\frac{3}{4}$ ST-9	601-Y-9	1.56	601-XY-9	601-Z-9	1.92
601-10	1.22	601-ST-10	601- $\frac{3}{4}$ ST-10	601-Y-10	1.73	601-XY-10	601-Z-10	2.13
601-11	1.33	601-ST-11	601- $\frac{3}{4}$ ST-11	601-Y-11	1.89	601-XY-11	601-Z-11	2.33
601-12	1.44	601-ST-12	601- $\frac{3}{4}$ ST-12	601-Y-12	2.06	601-XY-12	601-Z-12	2.54
601-13	1.56	601-ST-13	601- $\frac{3}{4}$ ST-13	601-Y-13	2.22	601-XY-13	601-Z-13	2.75
601-14	1.67	601-ST-14	601- $\frac{3}{4}$ ST-14	601-Y-14	2.39	601-XY-14	601-Z-14	2.94
601-15	1.78	601-ST-15	601- $\frac{3}{4}$ ST-15	601-Y-15	2.55	601-XY-15	601-Z-15	3.15
601-16	1.90	601-ST-16	601- $\frac{3}{4}$ ST-16	601-Y-16	2.72	601-XY-16	601-Z-16	3.36
601-17	2.01	601-ST-17	601- $\frac{3}{4}$ ST-17	601-Y-17	2.88	601-XY-17	601-Z-17	3.57
601-18	2.12	601-ST-18	601- $\frac{3}{4}$ ST-18	601-Y-18	3.05	601-XY-18	601-Z-18	3.76
601-19	2.24	601-ST-19	601- $\frac{3}{4}$ ST-19	601-Y-19	3.21	601-XY-19	601-Z-19	3.97
601-20	2.35	601-ST-20	601- $\frac{3}{4}$ ST-20	601-Y-20	3.38	601-XY-20	601-Z-20	4.18
601-21	2.47	601-ST-21	601- $\frac{3}{4}$ ST-21	601-Y-21	3.55	601-XY-21	601-Z-21	4.38
601-22	2.59	601-ST-22	601- $\frac{3}{4}$ ST-22	601-Y-22	3.72	601-XY-22	601-Z-22	4.58
601-23	2.71	601-ST-23	601- $\frac{3}{4}$ ST-23	601-Y-23	3.89	601-XY-23	601-Z-23	4.78

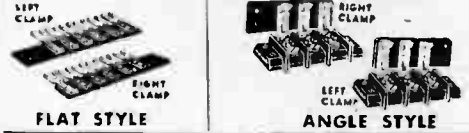
### 602 Series

Height  $\frac{3}{8}$ ", Width  $1\frac{1}{8}$ ", Thickness  $\frac{3}{16}$ ", Terminals  $\frac{1}{8}$ " Centers,  $\frac{1}{2}$ " Mtg., 8-32x $\frac{1}{4}$ " Screws.

No.	Each	No.	No.	No.	Each	No.	No.	Each
602-1	\$0.23	602-ST-1	602- $\frac{3}{4}$ ST-1	602-Y-1	\$0.30	602-XY-1	602-Z-1	\$0.34
602-2	0.36	602-ST-2	602- $\frac{3}{4}$ ST-2	602-Y-2	0.50	602-XY-2	602-Z-2	0.58
602-3	0.51	602-ST-3	602- $\frac{3}{4}$ ST-3	602-Y-3	0.70	602-XY-3	602-Z-3	0.82
602-4	0.65	602-ST-4	602- $\frac{3}{4}$ ST-4	602-Y-4	0.90	602-XY-4	602-Z-4	1.06
602-5	0.78	602-ST-5	602- $\frac{3}{4}$ ST-5	602-Y-5	1.11	602-XY-5	602-Z-5	1.31
602-6	0.92	602-ST-6	602- $\frac{3}{4}$ ST-6	602-Y-6	1.31	602-XY-6	602-Z-6	1.55
602-7	1.07	602-ST-7	602- $\frac{3}{4}$ ST-7	602-Y-7	1.52	602-XY-7	602-Z-7	1.80
602-8	1.20	602-ST-8	602- $\frac{3}{4}$ ST-8	602-Y-8	1.72	602-XY-8	602-Z-8	2.04
602-9	1.34	602-ST-9	602- $\frac{3}{4}$ ST-9	602-Y-9	1.93	602-XY-9	602-Z-9	2.29
602-10	1.49	602-ST-10	602- $\frac{3}{4}$ ST-10	602-Y-10	2.12	602-XY-10	602-Z-10	2.52
602-11	1.62	602-ST-11	602- $\frac{3}{4}$ ST-11	602-Y-11	2.33	602-XY-11	602-Z-11	2.77
602-12	1.76	602-ST-12	602- $\frac{3}{4}$ ST-12	602-Y-12	2.53	602-XY-12	602-Z-12	3.01
602-13	1.90	602-ST-13	602- $\frac{3}{4}$ ST-13	602-Y-12	2.74	602-XY-13	602-Z-13	3.26
602-14	2.04	602-ST-14	602- $\frac{3}{4}$ ST-14	602-Y-14	2.94	602-XY-14	602-Z-14	3.50
602-15	2.18	602-ST-15	602- $\frac{3}{4}$ ST-15	602-Y-15	3.15	602-XY-15	602-Z-15	3.75
602-16	2.32	602-ST-16	602- $\frac{3}{4}$ ST-16	602-Y-16	3.34	602-XY-16	602-Z-16	3.98
602-17	2.45	602-ST-17	602- $\frac{3}{4}$ ST-17	602-Y-17	3.54	602-XY-17	602-Z-17	4.22
602-18	2.58	602-ST-18	602- $\frac{3}{4}$ ST-18	602-Y-18	3.74	602-XY-18	602-Z-18	4.46
602-19	2.76	602-ST-19	602- $\frac{3}{4}$ ST-19	602-Y-19	3.99	602-XY-19	602-Z-19	4.75
602-20	2.90	602-ST-20	602- $\frac{3}{4}$ ST-20	602-Y-20	4.20	602-XY-20	602-Z-20	5.00
602-21	3.04	602-ST-21	602- $\frac{3}{4}$ ST-21	602-Y-21	4.41	602-XY-21	602-Z-21	5.25
602-22	3.19	602-ST-22	602- $\frac{3}{4}$ ST-22	602-Y-22	4.62	602-XY-22	602-Z-22	5.50
602-23	3.33	602-ST-23	602- $\frac{3}{4}$ ST-23	602-Y-23	4.83	602-XY-23	602-Z-23	5.75
602-24	3.48	602-ST-24	602- $\frac{3}{4}$ ST-24	602-Y-24	5.04	602-XY-24	602-Z-24	6.00
602-25	3.62	602-ST-25	602- $\frac{3}{4}$ ST-25	602-Y-25	5.25	602-XY-25	602-Z-25	6.25
602-26	3.76	602-ST-26	602- $\frac{3}{4}$ ST-26	602-Y-26	5.46	602-XY-26	602-Z-26	6.50

\*NOTE: Also available, 600A SERIES (same as 600 Series above, except with 6-32x $\frac{1}{4}$ " screws). See complete list prices in Special Price List.

## TERMINAL CONNECTING STRIPS



### 650 Series

Connecting strip for 600 series terminal block. Strips are 3/32" thick,  $\frac{1}{2}$ " wide,  $\frac{3}{16}$ " centers.

Left Clamp #	Right Clamp #	Price Each	Left Clamp #	Right Clamp #	Price Each
650-L-2	650-R-2	\$0.13	650-AL-2	650-AR-2	\$0.19
650-L-3	650-R-3	0.20	650-AL-3	650-AR-3	0.29
650-L-4	650-R-4	0.25	650-AL-4	650-AR-4	0.37
650-L-5	650-R-5	0.32	650-AL-5	650-AR-5	0.47
650-L-6	650-R-6	0.39	650-AL-6	650-AR-6	0.57
650-L-7	650-R-7	0.45	650-AL-7	650-AR-7	0.66
650-L-8	650-R-8	0.51	650-AL-8	650-AR-8	0.75
650-L-9	650-R-9	0.57	650-AL-9	650-AR-9	0.84
650-L-10	650-R-10	0.64	650-AL-10	650-AR-10	0.94
650-L-11	650-R-11	0.70	650-AL-11	650-AR-11	1.03
650-L-12	650-R-12	0.76	650-AL-12	650-AR-12	1.12
650-L-13	650-R-13	0.83	650-AL-13	650-AR-13	1.22
650-L-14	650-R-14	0.89	650-AL-14	650-AR-14	1.31
650-L-15	650-R-15	0.96	650-AL-15	650-AR-15	1.41
650-L-16	650-R-16	1.01	650-AL-16	650-AR-16	1.49
650-L-17	650-R-17	1.08	650-AL-17	650-AR-17	1.59
650-L-18	650-R-18	1.16	650-AL-18	650-AR-18	1.70
650-L-19	650-R-19	1.21	650-AL-19	650-AR-19	1.78
650-L-20	650-R-20	1.28	650-AL-20	650-AR-20	1.88
650-L-21	650-R-21	1.33	650-AL-21	650-AR-21	1.96
650-L-22	650-R-22	1.38	650-AL-22	650-AR-22	2.08

### 651 Series

Connecting strip for 601 series terminal block. Strips are 3/32" thick,  $\frac{3}{8}$ " wide, 7/16" centers.

Left Clamp #	Right Clamp #	Price Each	Left Clamp #	Right Clamp #	Price Each
651-L-2	651-R-2	\$0.14	651-AL-2	651-AR-2	\$0.20
651-L-3	651-R-3	0.21	651-AL-3	651-AR-3	0.30
651-L-4	651-R-4	0.26	651-AL-4	651-AR-4	0.38
651-L-5	651-R-5	0.33	651-AL-5	651-AR-5	0.48
651-L-6	651-R-6	0.40	651-AL-6	651-AR-6	0.58
651-L-7	651-R-7	0.46	651-AL-7	651-AR-7	0.67
651-L-8	651-R-8	0.52	651-AL-8	651-AR-8	0.76
651-L-9	651-R-9	0.58	651-AL-9	651-AR-9	0.85
651-L-10	651-R-10	0.65	651-AL-10	651-AR-10	0.95
651-L-11	651-R-11	0.72	651-AL-11	651-AR-11	1.05
651-L-12	651-R-12	0.77	651-AL-12	651-AR-12	1.13
651-L-13	651-R-13	0.84	651-AL-13	651-AR-13	1.23
651-L-14	651-R-14	0.91	651-AL-14	651-AR-14	1.33
651-L-15	651-R				

# HERMAN H. SMITH, INC.



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## 603 SERIES



Height  $\frac{3}{16}$ " Width  $1\frac{1}{8}$ " Thickness  $\frac{7}{16}$ " Terminals  $\frac{1}{16}$ " Centers,  $\frac{5}{16}$ " Mtg., 10-32 x  $\frac{3}{16}$ " Screws.

603 Marker Strips											
No.	Each	No.	Each	No.	Each	No.	Each	No.	Each	No.	Each
603-1	\$0.55	603-ST-1	\$0.66	603- $\frac{1}{4}$ -ST-1	\$0.66	MS603-1	\$7.60				
603-2	0.94	603-ST-2	1.13	603- $\frac{1}{4}$ -ST-2	1.13	MS603-2	9.40				
603-3	1.32	603-ST-3	1.60	603- $\frac{1}{4}$ -ST-3	1.60	MS603-3	11.10				
603-4	1.71	603-ST-4	2.07	603- $\frac{1}{4}$ -ST-4	2.07	MS603-4	12.90				
603-5	2.09	603-ST-5	2.53	603- $\frac{1}{4}$ -ST-5	2.53	MS603-5	14.70				
603-6	2.48	603-ST-6	3.00	603- $\frac{1}{4}$ -ST-6	3.00	MS603-6	16.40				
603-7	2.86	603-ST-7	3.46	603- $\frac{1}{4}$ -ST-7	3.46	MS603-7	18.20				
603-8	3.25	603-ST-8	3.92	603- $\frac{1}{4}$ -ST-8	3.92	MS603-8	20.00				
603-9	3.63	603-ST-9	4.40	603- $\frac{1}{4}$ -ST-9	4.40	MS603-9	21.80				
603-10	4.02	603-ST-10	4.80	603- $\frac{1}{4}$ -ST-10	4.80	MS603-10	23.50				

## 604 SERIES



Height  $\frac{1}{4}$ " Width 2" Thickness  $\frac{1}{2}$ " Terminals  $\frac{1}{8}$ " Centers,  $\frac{3}{8}$ " Mtg., 12-32 x  $\frac{3}{8}$ " Screws.

604 Marker Strips											
No.	Each	No.	Each	No.	Each	No.	Each	No.	Each	No.	Each
604-1	\$ .94	604-ST-1	\$1.10	604- $\frac{3}{4}$ -ST-1	\$1.10	MS604-1	\$7.70				
604-2	1.71	604-ST-2	2.04	604- $\frac{3}{4}$ -ST-2	2.04	MS604-2	11.70				
604-3	2.48	604-ST-3	2.97	604- $\frac{3}{4}$ -ST-3	2.97	MS604-3	15.50				
604-4	3.25	604-ST-4	3.91	604- $\frac{3}{4}$ -ST-4	3.91	MS604-4	19.30				
604-5	4.02	604-ST-5	4.84	604- $\frac{3}{4}$ -ST-5	4.84	MS604-5	23.10				
604-6	4.79	604-ST-6	5.78	604- $\frac{3}{4}$ -ST-6	5.78	MS604-6	26.90				
604-7	5.56	604-ST-7	6.71	604- $\frac{3}{4}$ -ST-7	6.71	MS604-7	30.70				
604-8	6.33	604-ST-8	7.65	604- $\frac{3}{4}$ -ST-8	7.65	MS604-8	34.50				

## 605 SERIES



Height  $1\frac{1}{2}$ " Width  $2\frac{1}{4}$ " Thickness  $\frac{5}{8}$ " Terminals  $1\frac{1}{4}$ " Centers,  $\frac{7}{8}$ " Mtg.,  $\frac{1}{4}$ -28 x  $\frac{1}{2}$ " Screws.

605 Marker Strips											
No.	Each	No.	Each	No.	Each	No.	Each	No.	Each	No.	Each
605-1	\$1.27	605-ST-1	\$1.49	605- $\frac{3}{4}$ -ST-1	\$1.49	MS605-1	\$8.20				
605-2	2.42	605-ST-2	2.86	605- $\frac{3}{4}$ -ST-2	2.86	MS605-2	14.50				
605-3	3.58	605-ST-3	4.24	605- $\frac{3}{4}$ -ST-3	4.24	MS605-3	20.90				
605-4	4.73	605-ST-4	5.61	605- $\frac{3}{4}$ -ST-4	5.61	MS605-4	27.20				
605-5	5.89	605-ST-5	6.99	605- $\frac{3}{4}$ -ST-5	6.99	MS605-5	33.50				
605-6	7.04	605-ST-6	8.36	605- $\frac{3}{4}$ -ST-6	8.36	MS605-6	39.80				

## NAVY TERMINAL BOARDS

Made According to BUREAU of SHIPS

Drawings No. 9000-S6505F-73214 Rev. 5 and Spec. MIL-T-16784 (Ships)

Type	Piece No.	Material	No.	Mounting Studs	Spacing	Standard Navy Stock No.	List Price Each
8TB2	68	CFI-5	4	1/2"	17-B-77635-1733	\$1.75	
8TB2M	68	MFG	4	1/2"	17-B-77635-1737	2.00	
8TB6C	16	CFI-5	12	2 3/4"	17-B-77738-8432	3.50	
8TB6M	16	MFG	12	2 3/4"	17-B-77738-8437	4.00	
8TB8C	14	CFI-20	16	3 1/2"	17-B-77840-7053	4.50	
8TB8M	14	MFI-20	16	3 1/2"	17-B-77840-7075	5.00	
8TB10C	9	CFI-20	20	4 1/2"	17-B-77936-7951	5.50	
8TB10M	9	MFI-20	20	4 1/2"	17-B-77936-7955	6.00	

Stud Connectors—\$20.00 per M List.

### WIRE SIZES FOR TERMINAL BLOCKS

600	#18-16	B&S Gauge
601	#16-14	B&S Gauge
602	#14-12	B&S Gauge
603	#12-10	B&S Gauge
604	#10-8	B&S Gauge
605	#8-6	B&S Gauge

SEE LIST PRICE SHEET for all SPECIAL PURPOSE BARRIER STRIP PRICES

### RATINGS FOR TERMINAL BLOCKS

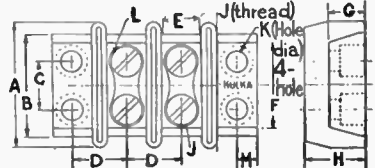
Series	Marker Strips	VOLTAGE		Capacity
		Without	With	
410	1000V. RMS	1100V. RMS	5 Amp.	
599	1100V. RMS	1200V. RMS	15 Amp.	
600	1100V. RMS	1200V. RMS	15 Amp.	
601	1100V. RMS	1600V. RMS	20 Amp.	
602	1600V. RMS	2500V. RMS	30 Amp.	
603	1700V. RMS	2600V. RMS	50 Amp.	
604	1800V. RMS	3400V. RMS	70 Amp.	
605	2100V. RMS	3800V. RMS	90 Amp.	

### SPECIAL MATERIALS FOR TERMINAL BLOCKS

MIL-P-14C	MTS-E-1	JAN-P-14	Phenolic	CODE SUFFIX
CFG	MTS-E-1		Mica	C
MFE	MTS-E-4		Melamine	M
CMG	MTS-G-2		Melamine	G
MME			Acme Resin	GMF
MDG				B

### DIMENSIONAL DRAWING OF TERMINAL BLOCKS

Series	A	B	C	D	E	F	G	H	J	K	L	M	Term's
409	5/16	1/4	—	3/16	9/64	8/16	5/32	17/64	0-80	.093	1/8	1/4	21
410	5/8	5/8	1/4	1/4	3/16	5/8	7/32	5/16	2-56	.125	3/16	1/8	22
411	13/32	13/32	—	1/4	3/16	13/32	7/32	5/16	2-56	.125	3/16	1/8	22
599	9/16	3/8	—	3/8	19/64	9/32	1/4	13/32	5-40	.156	1/4	9/64	22
600	7/8	11/16	5/16	3/8	19/64	9/32	1/4	13/32	5-40	.156	1/4	9/64	22
601	1-1/8	7/8	27/64	7/16	21/64	3/4	5/16	1/2	6-32	.175	1/4	5/32	23
602	1-5/16	1-1/16	1/2	9/16	27/64	7/8	3/8	5/8	8-32	.209	5/16	13/64	26
603	1-13/16	1-5/16	5/8	11/16	15/32	1-1/16	7/16	3/4	10-32	.165	3/8	7/32	10
604	2	1-1/2	3/4	7/8	9/16	1-1/4	1/2	15/16	12-32	.195	3/8	17/64	8
609	3/8	3/8	—	1-1/8	21/32	1-1/2	5/8	1-1/8	1/4-29	.209	1/2	5/16	6
605	2-1/2	1-13/16	7/8	3/8	1/4	3/8	9/32	1/2	4-40	.156	5/16	11/64	13



All Strips shown below are also available in the following materials: CFG, MFE, MME, CMG, MDG.

## 409 Series

### SUBMINIATURE TERMINAL BLOCK Single Screw Terminal



Height .260 Width .312 Thickness 7.16". Terminals .187 Centers, .093 dia. mtg. holes; 0.80 x  $\frac{1}{16}$ " brass silver plated or gold flash screws. Also supplied with "one-sided" (409- $\frac{1}{2}$ -ST) or "two-sided" (409-ST) lug.

No.	Each	No.	Each	No.	Each
409-1	\$0.40	409-8	\$1.80	409-15	\$3.20
409-2	0.60	409-9	2.00	409-16	3.40
409-3	0.80	409-10	2.20	409-17	3.60
409-4	1.00	409-11	2.40	409-18	3.80
409-5	1.20	409-12	2.60	409-19	4.00
409-6	1.40	409-13	2.80	409-20	4.20
409-7	1.60	409-14	3.00	409-21	4.40

## 609 Series

### NARROW WIDTH TERMINAL BLOCK Single Screw Terminal



Height  $\frac{1}{2}$ " Width  $\frac{3}{8}$ ". Thickness  $\frac{5}{16}$ ". Terminals  $\frac{3}{16}$ " Centers, .156 dia. mtg. holes; 4-40x $\frac{1}{8}$ " Pan-head, phillips type semi brass nickel plated screws.

No.	Each	No.	Each	No.	Each
609-1	\$1.00	609-6	\$3.25	609-11	\$5.45
609-2	1.45	609-7	3.70	609-12	5.85
609-3	1.90	609-8	4.15	609-13	6.25
609-4	2.35	609-9	4.60		
609-5	2.80	609-10	5.05		

## 599 Series

### NARROW WIDTH TERMINAL BLOCK Single Screw Terminal



Height  $\frac{1}{2}$ " Width  $\frac{3}{8}$ ". Thickness  $\frac{1}{4}$ ". Terminals  $\frac{3}{16}$ " Centers, .156 dia. mtg. holes; 5-40x $\frac{1}{4}$ " brass nickel plated screws.

No.	Each	No.	Each	No.	Each	No.	Each
599-1	\$0.15	599-7	\$0.68	599-13	\$1.21	599-19	\$1.75
599-2	0.25	599-8	0.77	599-14	1.31	599-20	1.84
599-3	0.33	599-9	0.86	599-15	1.40	599-21	1.93
599-4	0.42	599-10	0.95	599-16	1.49	599-22	2.02
599-5	0.51	599-11	1.03	599-17	1.57		
599-6	0.59	599-12	1.12	599-18	1.66		

## 411 Series

### MINIATURE TERMINAL BLOCK Single Screw Terminal



Height  $\frac{3}{16}$ " Width  $\frac{1}{4}$ ". Thickness  $\frac{1}{16}$ ". Terminals .250 Centers, .125 mtg. holes; 2-56x  $\frac{1}{16}$ " binding head brass nickel plated screws.

No.	Each	No.	Each	No.	Each	No.	Each
411-1	\$0.40	411-7	\$1.06	411-13	\$1.70	411-19	\$2.30
411-2	0.52	411-8	1.18	411-14	1.80	411-20	2.40
411-3	0.62	411-9	1.30	411-15	1.90	411-21	2.50
411-4	0.72	411-10	1.40	411-16	2.00	411-22	2.60
411-5	0.82	411-11	1.50	411-17	2.10		
411-6	0.94	411-12	1.60	411-18	2.20		

## 410 Series

### MINIATURE TERMINAL BLOCK Double Screw Terminal



Height  $\frac{1}{4}$ " Width  $\frac{5}{16}$ ". Thickness  $\frac{3}{16}$ ". Terminals  $\frac{1}{16}$ " Centers, .125 dia. mtg. holes; 2-56x  $\frac{1}{16}$ " binding head brass nickel plated screws.

No.	Each	No.	Each	No.	Each	No.	Each
410-1	\$0.47	410-7	\$2.05	410-12	\$3.33	410-17	\$4.69
410-2	0.74	410-8	2.32	410-13	3.64	410-18	4.96
410-3	0.99	410-9	2.59	410-14	3.90	410-19	5.23
410-4	1.25	410-10	2.83	410-15	4.17	410-20	6.50
410-5	1.53	410-11	3.11	410-16	4.42	410-21	7.77
410-6	1.79						



# HERMAN H. SMITH, INC.

"It's Sound Planning to Specify SMITH for ELECTRONIC COMPONENTS"

## MARKER STRIPS

Black fiber marker strips  $\frac{1}{32}$ " thick imprinted to specs.

Bakelite marker strips are available. Specify X.P. for 410, 410-3/4ST, 411, 599, 599-3/4ST, 600, 600-3/4ST, 600-ST

No.	Per C	No.	Per C
MS600-1	\$2.90	MS600-Y-1	\$6.60
MS600-2	3.80	MS600-Y-2	7.60
MS600-3	4.70	MS600-Y-3	8.50
MS600-4	5.70	MS600-Y-4	9.50
MS600-5	6.60	MS600-Y-5	10.40
MS600-6	7.60	MS600-Y-6	11.40
MS600-7	8.50	MS600-Y-7	12.30
MS600-8	9.50	MS600-Y-8	13.30
MS600-9	10.40	MS600-Y-9	14.20
MS600-10	11.40	MS600-Y-10	15.20
MS600-11	12.30	MS600-Y-11	16.10
MS600-12	13.30	MS600-Y-12	17.10
MS600-13	14.20	MS600-Y-13	18.00
MS600-14	15.20	MS600-Y-14	19.00
MS600-15	16.10	MS600-Y-15	19.90
MS600-16	17.10	MS600-Y-16	20.90
MS600-17	18.00	MS600-Y-17	21.80
MS600-18	19.00	MS600-Y-18	22.80
MS600-19	19.90	MS600-Y-19	23.70
MS600-20	20.90	MS600-Y-20	24.70
MS600-21	21.80	MS600-Y-21	25.60
MS600-22	22.70	MS600-Y-22	26.50

No.	Per C	No.	Per C
MS601-1	\$3.20	MS601-Y-1	\$7.00
MS601-2	4.40	MS601-Y-2	8.20
MS601-3	5.70	MS601-Y-3	9.50
MS601-4	7.00	MS601-Y-4	10.80
MS601-5	8.20	MS601-Y-5	12.00
MS601-6	9.50	MS601-Y-6	13.30
MS601-7	10.80	MS601-Y-7	14.50
MS601-8	12.00	MS601-Y-8	15.80
MS601-9	13.30	MS601-Y-9	17.10
MS601-10	14.50	MS601-Y-10	18.30
MS601-11	15.80	MS601-Y-11	19.60
MS601-12	17.10	MS601-Y-12	20.90
MS601-13	18.30	MS601-Y-13	22.10
MS601-14	19.60	MS601-Y-14	23.40
MS601-15	20.90	MS601-Y-15	24.70
MS601-16	22.10	MS601-Y-16	25.90
MS601-17	23.40	MS601-Y-17	27.20
MS601-18	24.70	MS601-Y-18	28.50
MS601-19	25.90	MS601-Y-19	29.70
MS601-20	27.20	MS601-Y-20	31.10
MS601-21	28.50	MS601-Y-21	32.30
MS601-22	29.80	MS601-Y-22	33.60
MS601-23	31.10	MS601-Y-23	34.90

No.	Per C	No.	Per C
MS602-1	\$3.50	MS602-Y-1	\$7.30
MS602-2	5.10	MS602-Y-2	8.90
MS602-3	6.60	MS602-Y-3	10.40
MS602-4	8.20	MS602-Y-4	12.00
MS602-5	9.80	MS602-Y-5	13.60
MS602-6	11.40	MS602-Y-6	15.20
MS602-7	13.00	MS602-Y-7	16.80
MS602-8	14.50	MS602-Y-8	18.30
MS602-9	16.10	MS602-Y-9	19.90
MS602-10	17.70	MS602-Y-10	21.50
MS602-11	19.30	MS602-Y-11	23.10
MS602-12	20.90	MS602-Y-12	24.70
MS602-13	22.50	MS602-Y-13	26.30
MS602-14	24.00	MS602-Y-14	27.80
MS602-15	25.60	MS602-Y-15	29.40
MS602-16	27.20	MS602-Y-16	31.00
MS602-17	28.80	MS602-Y-17	32.60
MS602-18	30.40	MS602-Y-18	34.20
MS602-19	32.00	MS602-Y-19	35.80
MS602-20	33.60	MS602-Y-20	37.40
MS602-21	35.20	MS602-Y-21	39.00
MS602-22	36.80	MS602-Y-22	40.60
MS602-23	38.40	MS602-Y-23	42.20
MS602-24	40.00	MS602-Y-24	43.80
MS602-25	41.60	MS602-Y-25	45.40
MS602-26	43.20	MS602-Y-26	47.00

Marker strips are supplied to fit each size terminal block — either plain or imprinted — in vulcanized fibre or Bakelite ( $\frac{1}{32}$ " thick). Complete list prices and imprinting charges in special list price sheet.

Series Number	A	B	C	D	E	F	G	H
410	3/4	1/4	3/16	1/4	1/8	.125	1/16	1/16
599	13/16		9/32	3/8	9/64	.180	1/8	3/32
600	1-1/8	5/16	9/32	3/8	1/8	.160	1/8	3/32
601	1-5/16	27/64	11/32	7/16	5/32	.175	1/8	3/32
602	1-1/2	1/2	13/32	9/16	13/64	.209	1/8	1/8
603	1-7/8	5/8	19/32	11/16	7/32	.175	1/8	1/8
604	2-1/8	3/4	5/8	7/8	17/64	.175	1/8	1/8
605	2-11/16	7/8	13/16	1-1/8	5/16	.209	1/8	1/8



### TWO-SIDED LUG

No.	Per C
410-STL	\$4.40
599-STL	4.40
600-STL	4.40
601-STL	5.90
602-STL	7.20
603-STL	10.00
604-STL	18.00
605-STL	26.00



### ONE-SIDED LUG

No.	Per C
410-3/4STL	\$4.40
599-3/4STL	4.40
600-3/4STL	4.40
601-3/4STL	5.90
602-3/4STL	7.20
603-3/4STL	10.00
604-3/4STL	18.00
605-3/4STL	26.00



### BENT LUG

No.	Per C
599-YL	4.40
600-YL	4.40
601-YL	5.90
602-YL	7.20



### FLAG LUG

No.	Per M
599-SLF	\$20.00
600-SLF	20.00
601-SLF	21.00
602-SLF	23.00
603-SLF	45.00



### SPADE LUG

No.	Per M
599-SLS	\$20.00
600-SLS	20.00
601-SLS	21.00
602-SLS	23.00
603-SLS	45.00



### HOLE LUG

No.	Per M
599-SLH	\$20.00
600-SLH	20.00
601-SLH	21.00
602-SLH	23.00
603-SLH	45.00



### LONG BENT LUG

No.	Per C
599-YSYL	44.00M
600-YSYL	44.00M
601-YSYL	60.00M
602-YSYL	72.00M



### COMBINATION Y AND 3/4 ST

No.	Per C
599-XYL	44.00M
600-XYL	44.00M
601-XYL	60.00M
602-XYL	72.00M



### OUTSIDE BENT LUG

No.	Per C
599-ZL	44.00M
600-ZL	44.00M
601-ZL	60.00M
602-ZL	72.00M



### JUMPER

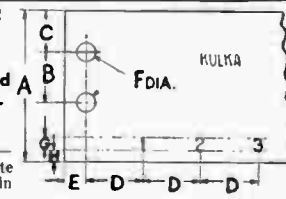
No.	Per M
410-J	\$35.00
600-J	35.00
601-J	40.00
602-J	45.00
603-J	55.00
604-J	65.00
605-J	75.00



### STRADDLE PLATE (SP)

No.	Per M
410-SP	\$35.00
600-SP	35.00
601-SP	40.00
602-SP	45.00

## MARKER STRIPS



Exclusive Distributors of

## KULKA AIRCRAFT TYPE SWITCHES

TO RADIO PARTS JOBBERS ONLY

Made to Joint Army and Navy Specifications No. Jan-S-23 superseded by MIL S-3950

### For Electronic & Communications Use

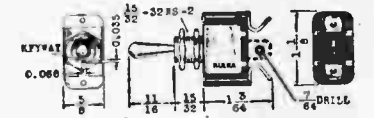
Bakelite housing for DC, or AC circuits up to 1600 cycles, one hole mounting. Two styles available — binding screw terminals (ST-40 Series and ST-50 Series) Solder lugs (ST-42 Series and ST-52 Series) — terminals and screws arranged to prevent corrosion; solder lugs hot-tinned to facilitate soldering. Supplied with 2 mounting nuts, 1 sleeve lock-washer and if needed, locking rings. Terminal screws are Sems type, with external teeth. Std. Pkg. 10

### SINGLE POLE Style 40—With Screw Term.



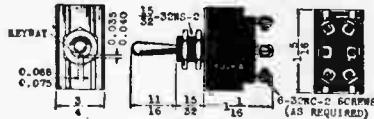
Cat No.	Type	Position	Up	Center	Down	Position	Each
ST-40A	SPST	ON	NONE	OFF	ON	\$1.85	
ST-40B	SPST	ON	NONE	MOM.	OFF	2.00	
ST-40C	SPST	OFF	NONE	MOM.	ON	2.00	
ST-40D	SPDT	ON	NONE	ON	ON	2.15	
ST-40E	SPDT	ON	OFF	ON	ON	2.15	
ST-40F	SPDT	ON	NONE	MOM.	ON	2.30	
ST-40G	SPDT	MOM.	ON	OFF	MOM.	2.30	
ST-40H	SPDT	ON	OFF	MOM.	ON	2.30	

### SINGLE POLE Style 42—With Solder Lugs



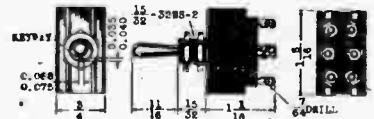
Cat No.	Type	Position	Up	Center	Down	Position	Each
ST-42A	SPST	ON	NONE	OFF	ON	\$1.50	
ST-42B	SPST	ON	NONE	MOM.	OFF	1.65	
ST-42C	SPST	OFF	NONE	MOM.	ON	1.65	
ST-42D	SPDT	ON	NONE	ON	ON	1.80	
ST-42E	SPDT	ON	OFF	ON	ON	1.80	
ST-42F	SPDT	ON	NONE	MOM.	ON	1.95	
ST-42G	SPDT	MOM.	ON	OFF	MOM.	1.95	
ST-42H	SPDT	ON	OFF	MOM.	ON	1.95	

### DOUBLE POLE Style 50—With Screw Term.



Cat No.	Type	Position	Up	Center	Down	Position	Each
ST-50K	DPST	ON	NONE	OFF	ON	\$2.20	
ST-50L	DPST	ON	NONE	MOM.	OFF	2.40	
ST-50M	DPST	OFF	NONE	MOM.	ON	2.40	
ST-50N	DPDT	ON	NONE	ON	ON	2.40	
ST-50P	DPDT	ON	OFF	ON	ON	2.40	
ST-50R	DPDT	ON	NONE	MOM.	ON	2.75	
ST-50S	DPDT	MOM.	ON	OFF	MOM.	2.75	
ST-50T	DPDT	ON	OFF	MOM.	ON	2.75	

### DOUBLE POLE Style 52—With Solder Lugs



Cat No.	Type	Position	Up	Center	Down	Position	Each
ST-52K	DPST	ON	NONE	OFF	ON	\$1.85	
ST-52L	DPST	ON	NONE	MOM.	OFF	2.05	
ST-52M	DPST	OFF	NONE	MOM.	ON	2.05	
ST-52N	DPDT	ON	NONE	ON	ON	2.05	
ST-52P	DPDT	ON	OFF	ON	ON	2.05	
ST-52R	DPDT	ON	NONE	MOM.	ON	2.40	
ST-52S	DPDT	MOM.	ON	OFF	MOM.	2.40	
ST-52T	DPDT	ON	OFF	MOM.	ON	2.40	

# HERMAN H. SMITH, INC.



"It's Sound Planning to Specify SMITH for ELECTRONIC COMPONENTS"

### STEEL MACHINE SCREWS

#### Round Head Cadmium Plated

No.	Per M	Size	No.	Gross
1000M	\$6.25	6-32 x 1/4"	1000G	\$1.05
1001M	6.75	6-32 x 3/8"	1001G	1.15
1002M	7.25	6-32 x 1/2"	1002G	1.20
1006M	8.00	8-32 x 1/4"	1006G	1.35
1007M	8.65	8-32 x 3/8"	1007G	1.50
1008M	9.30	8-32 x 1/2"	1008G	1.55

### BRASS MACHINE SCREWS

#### Round Head Nickel Plated

No.	Per M	Size	No.	Gross
1044M	\$9.00	4-36 x 1/4"	1044G	\$1.50
1045M	10.00	4-36 x 3/8"	1045G	1.60
1046M	11.00	4-36 x 1/2"	1046G	1.70
1047M	9.00	4-40 x 1/4"	1047G	1.50
1048M	10.00	4-40 x 3/8"	1048G	1.60
1049M	11.00	4-40 x 1/2"	1049G	1.70
1050M	12.00	6-32 x 1/4"	1050G	2.00
1051M	13.00	6-32 x 3/8"	1051G	2.10
1052M	13.75	6-32 x 1/2"	1052G	2.30
1056M	16.00	8-32 x 1/4"	1056G	2.65
1057M	18.00	8-32 x 3/8"	1057G	3.25
1058M	22.00	8-32 x 1/2"	1058G	3.70

### VOLUME CONTROL AND TOGGLE SWITCH NUTS



Std. Pkg.	Type	Dimensions	Per M
500	Vol. Cont. Brass	3/8-32 x 1/2 x 3/16	\$25.00
500	Vol. Cont. Steel	3/8-32 x 1/2 x 3/16	20.00
500	Toggle Sw. Hex	15-32 x 3/8 x 3/16	30.00
500	Toggle Sw. Ring	15-32 x 3/8 x 1/16	50.00

### HEXAGON NUTS

#### Brass Nickel Plated

No.	Per M	Size	No.	Gross
1188M	\$10.00	4-36 x 1/4"	1188G	\$1.65
1168M	10.00	4-40 x 1/4"	1168G	1.65
1189M	12.90	6-32 x 1/4"	1189G	2.10
1190M	12.90	6-32 x 3/8"	1190G	2.10
1192M	14.10	8-32 x 1/8"	1192G	2.30

#### Steel, Cadmium Plated

No.	Per M	Size	No.	Gross
1179M	\$8.75	6-32 x 1/4"	1179G	\$1.45
1180M	9.25	6-32 x 3/8"	1180G	1.55
1181M	9.50	8-32 x 1/8"	1181G	1.60

### SELF TAPPING SCREWS

#### CADMIUM PLATED

No.	Per M	Size	No.	Gross
1801M	\$10.00	4 x 1/2"	1801G	\$1.65
1802M	10.00	6 x 3/4"	1802G	1.65
1803M	10.00	6 x 3/8"	1803G	1.65
1804M	13.50	6 x 1/2"	1804G	2.25
1805M	12.50	8 x 3/8"	1805G	2.10
1806M	15.75	8 x 1/2"	1806G	2.65

#### Round Head—Type Z—Blunt Point

No.	Per M	Size	No.	Gross
1807M	\$10.00	4 x 1/2"	1807G	\$1.65
1808M	10.00	6 x 3/4"	1808G	1.65
1809M	10.00	6 x 3/8"	1809G	1.65
1810M	13.50	6 x 1/2"	1810G	2.25
1811M	12.50	8 x 3/8"	1811G	2.10
1812M	15.75	8 x 1/2"	1812G	2.65

No.	Per M	Size	No.	Gross
1830M	\$10.00	6 x 1/4"	1830G	\$1.65
1831M	10.00	6 x 3/8"	1831G	1.65
1832M	13.50	6 x 1/2"	1832G	2.25
1833M	12.50	8 x 3/8"	1833G	2.10
1834M	15.75	8 x 1/2"	1834G	2.65

**STEEL SPADE BOLTS**

Steel, cadmium plated finish, threaded 6-32, thread length 1/2", length overall 3/4". Std. Pkg. 500

No. 1500 \$17.00 Per M

### FLAT WASHERS

#### Brass Nickel Plated

No.	Per M	Size	Material	No.	Per M
1149M	\$4.60	4 x 3/8" "x.037"	Brass	1149G	\$0.70
1150M	4.80	6 x 3/8" "x.012"	Ph. Br.	1150G	0.70
1151M	4.80	8 x 3/8" "x.012"	Ph. Br.	1151G	0.70
1152M	4.80	10 x 3/8" "x.037"	Brass	1152G	0.70

### LOCK WASHERS

#### Steel, Cadmium Plated Internal Teeth

No.	Per M	Type	No.	Gross
1127M	\$5.00	No. 4	1127G	\$0.85
1128M	5.00	No. 6	1128G	.85
1129M	5.75	No. 8	1129G	.95
1130M	6.10	No. 10	1130G	1.00
1132M	7.75	3/4"	1132G	1.30
1131M	13.00	1"	1131G	2.00

#### Narrow Rim Control Shaft Lockwasher Internal Teeth

1145M	\$13.00	3/8"	1145G	\$2.00
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#### Narrow Rim Toggle Switch Lockwasher Internal Teeth

1146M	\$13.00	3/8"	1146G	\$2.00
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#### External Teeth

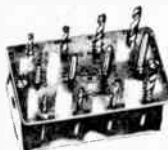
No.	Per M	Type	No.	Gross
1139M	\$5.00	No. 4	1139G	\$0.85
1140M	5.00	No. 6	1140G	.85
1141M	5.75	No. 8	1141G	.95
1141M	6.10	No. 10	1142G	1.00
1144M	7.75	3/4"	1144G	1.30
1143M	13.00	1"	1143G	2.00



### CABLE CLAMPS

No.	Length	Width	Cable	Hole.	Per C
1471	5/8"	3/8"	1/8" to 1/4"		\$1.30
1470	3/4"	3/8"	3/8"		1.40
1472	1"	3/8"	3/8"		1.50

### DRILL & TAP KIT



- for
- Hams
  - Laboratories
  - Servicemen

Specially designed for electronic bench duty, this kit contains the most popular sizes of taps and corresponding tap and body drills for precise and speedy work. Drill and tap size identifications are engraved on the steel cadmium plated drill stand, to facilitate correct replacement as needed. Contains: 4-40, 6-32, 8-32, 10-32 Taps with eight corresponding tap and body drills.

No. 750 Kit \$9.00

Replacement Drills Available—Write for Catalog

### DRILL ADAPTER

#### CASE HARDENED STEEL



Convert 3/4" drill chuck to drill holes up to 1/2". Drills can be quickly inserted and tightened with two set screws provided, located at 90° angle for firm hold on drill.

No.	For Drill	Std. Pkg.	Each
175	3/8"	10	\$0.75
176	1/2"	10	.80
177	3/8"	10	.85
178	1/2"	10	.90
179	Kit of 4 Adapters		3.30
179D	Display of 12		
	No. 179 Kits		39.60

### BINDING HEAD SCREWS

#### Steel Nickel Plated

No.	Per M	Size	No.	Gross
1425M	\$6.25	6-32 x 1/4"	1425G	\$1.05
1426M	6.75	6-32 x 3/8"	1426G	1.15
1427M	7.25	6-32 x 1/2"	1427G	1.20
1428M	8.00	8-32 x 1/4"	1428G	1.35
1429M	8.65	8-32 x 3/8"	1429G	1.50
1430M	9.30	8-32 x 1/2"	1430G	1.55

### "VERI-THIN" ALIGNING TOOL

Fibre aligning tool 7" long x 1/8" O.D. with screw driver on each end.

No.	Each
328	\$ 0.40
328D—Display of 50 No. 328	20.00
328H—With Amber Handle	0.60
328HD—Display of 25 No. 328H	15.00

### EXTRA LONG ALIGNING TOOL

Hard Bone Fibre screw driver 12 inches long by 1/8 inches dia. Extra strong and durable.

No.	Each
333 Std. Pkg. 25	\$ 0.60
333-D—Display of 50 No. 333	30.00
333H—With Amber Handle, Std. Pkg. 25	0.90
333HD—Display of 25 No. 333H	22.50

### "LONG REACH" ALIGNING TOOL

Aligning tool 9" long x .165 O.D. with screw driver on each end. Material of treated clear lucite.

No.	Each
330 Std. Pkg. 25	\$ 0.60
330D—Display of 30 No. 330	21.60



### RACK SCREWS

Oval Head, Steel, Nickel Plated

Specially recommended for mounting panels in racks and cabinets. Available in gross packages or packed 1000 to the box.

No.	Per M	Size	No.	Gross
1111M	\$10.25	10-32 x 1/2"	1111G	\$1.75
1112M	12.00	10-32 x 3/4"	1112G	2.00



### COUNTERSUNK WASHERS

Brass, Nickel Plated

Recommended for use with Rack Screws designated above.

No.	Per M	Size	No.	Gross
1115M	\$4.50	6	1115G	\$0.75
1116M	5.00	8	1116G	.85
1117M	9.00	10	1117G	1.80

### GRID CAPS



No.	Tube	Pkg.	Std. Pkg.	Per M
1450	3/8" Glass Tubes	100		\$18.00
1451	1/2" Glass Tubes	100		27.00
1452	3/8" Glass Tubes	100		15.50
1453	1/2" Glass Tubes	100		15.50
1454	3/4" Mini Tubes	100		15.00

### ANGLES

#### Steel, Cadmium Plated

All holes to clear No. 6 Screw.  
 L1=Length of Leg H1=Hole Location  
 L2=Length of Leg H2=Hole Location  
 T=Thickness W=Width



No.	L1	L2	T	Std. Pkg. 100	H1	H2	W	Per C
1444	7/16"	7/16"	.030		3/8"	1/64"	3/8"	\$1.20
1445	1/2"	1/2"	.051		1/32"	21/64"	5/16"	1.50
1446	25/32"	27/64"	.033		19/32"	11/64"	5/16"	1.50
1447	1-9/64"	31/64"	.032		61/64"	5/16"	5/16"	1.70

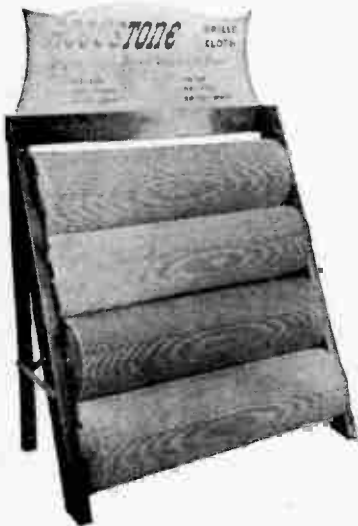
# ACOUSTONE\*

## WORLD'S FINEST LINE ACOUSTIC GRILLE CLOTH

- 36 BRILLIANT DESIGNS
  - TESTED ACOUSTICALLY — U. S. Testing Co.
  - NO SCUFFING or SAGGING
  - DECORATOR COLORS
  - EASILY INSTALLED

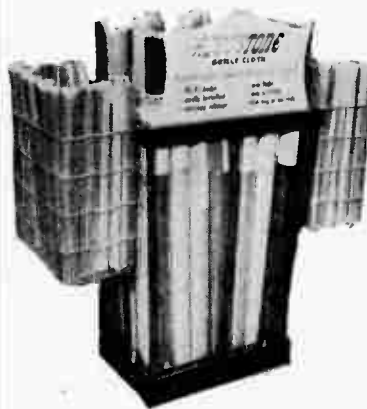
*Look For These Displays At Your Distributor*

### CUSTOM CABINET BUILDERS !



CHOOSE YOUR  
NEEDS FROM  
THIS  
"EQUAL VISION"  
ROLL RACK

### FOR YOUR CONVENIENCE !



- READY TO GO
- CELLOPHANE PACKED
- COMPLETE ASSORTMENT
- SQUARE YARD PACKAGE
- JUNIOR SIZE 18" x 24"

*\*Engineered for Sound-Designed for Beauty*

## NEWCASTLE FABRICS CORP.

# SPECIFY ATLEE PRODUCTS—WHEN YOU WANT THE BEST!

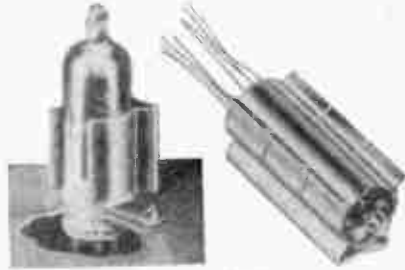


## atlee COMPONENT HOLDERS

Provide firm holding under extreme shock and vibration. For capacitors, resistors, relays, wires, cables, tubing, etc. Withstand vibrations of 10 to 500 cycles and 5 to 20 G's for eight hours without resonant frequencies. Structurally designed to derive maximum grip from the component itself. Made of spring steel which flexes under heavy vibration and temperature changes, automatically increasing holding power when most needed. SPECIFICATIONS: SAE #1065 tempered carbon steel, formed in the annealed state, cadmium plated, per QQ-P-416, Class B Type II iridite #4, able to withstand minimum 50-hour salt spray test, per AN-QQ-S-91. SIZES: 0.175 to 1.125. FIL-O-MATIC REFERENCE: section 19, page 4, for more information.

## atlee SUBMINIATURE TUBE HOLDERS AND SHIELDS

For conditions of extreme shock and vibration, high-rate heat dissipation and minimum-space mounting. Withstand up to 20 G's at 500 cycles without resonant frequencies; average heat reduction over 50° (tests); low center design for minimum space — maximum holding power. Ultimate in convenience — no wrap-around motions in cramped spaces — just clip in or clip out. Tubes can freely be removed and replaced without loss in Holder performance. Holders available in silver alloy and silver-plated beryllium copper as well as cadmium-plated tempered carbon steel. Shields available in silver alloy and silver-plated brass. Vertical and Oval Sub-miniature Tube Holders available in tempered carbon steel. FIL-O-MATIC REFERENCE: section 19, pages 1 and 2, for more information.



## atlee CRYSTAL DIODE CLIPS

For miniature, low-cost support and or connection of crystal diodes. Tiny, compact, yet strong and durable. Assure positive electrical contact under high shock and vibration. Can be dip-soldered or riveted into printed circuits. Afford convenience as well as diode protection — no solder joints to make or melt, just clip diode in or out. 100 insertions and withdrawals reduce gripping force less than 6 ounces. SPECIFICATIONS: silver-plated phosphor bronze, spring temper, grade A, per MIL-B-892; contact resistance: 0.00075 ohms; capacitance: less than 1 mmf between clips,  $\frac{9}{16}$ " spacing; insertion or withdrawal force: 2 lbs. (initial). SIZES: 0.065" to 0.085" (terminal pin), for thru-panel, surface-panel or rear-of-panel mounting. FIL-O-MATIC REFERENCE: section 19, page 3, for more information.



## atlee JAN SHIELD INSERT

Designed to reduce tube failures, the JAN Shield Insert lowers miniature tube bulb temperatures by as much as 100°C. and provides almost perfect electrostatic shielding. It was developed by the Reliability and Standards Branch of the Navy Electronics Laboratory. The JAN Shield Insert is made of corrugated brass shim stock with Ebonol C finish, to withstand 50-hour salt spray test. Bent into circular shape, with the ends fitted together, it is inserted inside the older JAN Shields in all present equipments. The Insert makes contact with the glass bulb on one side and with the Shield on the other, distributing the hot spot on the tube and conducting the heat to the shield with a greater radiating surface. Available in small, medium and large, for both 7 and 9-pin tubes. Send for bulletin for more information.



## atlee LUCITE CAP NUTS

For superior electronic assemblies. Non-corrosive, non-fungi nutrient. Cannot be shaken loose by vibration. Extremely useful as lock nuts over conventional metal nuts. Easy to put on — hard to take off. Due to the microscopic "nap" developed as the Lucite Nut is tightened by hand in one direction, a real force by a wrench is necessary to reverse that "nap" and loosen the Cap Nut. Repeated screwing and unscrewing, however, does not affect this locking quality. Made of clear methyl methacrylate, they are available either clear or dyed. Using standard colors, color coding for circuit identification is possible with dyed Cap Nuts. SIZES: 4-40, 6-32, 8-32, 10-24, 10-32, 12-24,  $\frac{1}{4}$ -20,  $\frac{3}{16}$ -18. Send for bulletin for more information.



**ATLAS E-E CORPORATION**  
Woburn, Mass.—Los Angeles, California

# RCA SERVICE PARTS FOR TELEVISION RECEIVERS

RCA Stock No.	PART DESCRIPTION	Dealer Price*	List Price*	RCA Stock No.	PART DESCRIPTION	Dealer Price*	List Price*
71420	Deflecting Yoke	4.35	7.25	76984	Power Transformer	17.40	29.00
71440	Height Control	.72	1.20	77000	5" Speaker	2.62	4.55
71441	Horizontal-Linearity Control	.72	1.20	77112	IF Transformer	1.90	3.15
71442	Focusing Control	1.08	1.80	77489	Crystal-Diode Rectifier	1.05	1.60
71446	Contrast and Volume Control	1.50	2.50	77641	Brightness Control	1.80	3.00
71449	Horizontal-Linearity Control	.75	1.25	77655	Brightness Control	1.80	3.00
71457	Power Cord	.45	.75	77676	Iron Core Reactor	2.10	3.50
72178	Horizontal-Output and High-Voltage Transformer	21.45	35.75	77697	Deflecting Yoke	7.20	12.00
72743	Detent and Shaft	1.89	3.15	78201	Horizontal-Output and High-Voltage Transformer	7.50	12.50
72845	Knob Spring	.03	.05	78208	Picture and Volume Control	1.80	3.00
73440	Detent and Shaft	1.80	3.00	78210	Vertical-Hold Control	.75	1.25
73576	Synchroguide Transformer	1.50	2.50	78278	Deflecting Yoke	9.00	15.00
73588	Voltage-Divider Resistor—3 Sections	1.05	1.75	78396	Antenna-Matching Transformer	6.00	10.00
73591	Antenna-Matching Coil	.45	.75	79141	IF Transformer	1.90	3.15
74048	Volume Control and On/off Switch	1.95	3.25	79144	Width Coil	.90	1.50
74144	Vertical-Blocking-Oscillator Transformer	1.80	3.00	79145	Horizontal-Output and High-Voltage Transformer	6.00	10.00
74145	Vertical-Oscillator Transformer	11.25	18.75	79161	Horizontal-Oscillator Sinewave Transformer	.60	1.00
74586	Power Transformer	18.00	30.00	79490	Deflecting Yoke	8.95	14.95
74588	Horizontal-Output and High-Voltage Transformer	9.90	16.50	79642A	Horizontal-Output and High-Voltage Transformer	36.00	60.00
74945	Width Control	1.50	2.50	79725	Detent and Shaft	2.20	3.70
74950A	Vertical-Deflection-Output Transformer	3.30	5.50	79733	Antenna—Matching Transformer	3.75	6.25
74951	Horizontal-Output and High-Voltage Transformer	3.75	6.25	79868	Deflecting Yoke	8.25	13.75
74952	Deflecting Yoke	5.88	9.80	79869	Power Transformer	14.25	23.75
74955	Voltage-Divider Resistor—3 Sections	1.20	2.00	79870	Horizontal-Output and High-Voltage Transformer	6.00	10.00
75162	Detent and Shaft	2.16	3.60	79966	Horizontal-Oscillator Transformer	.90	1.50
75212A	IF Transformer	1.50	2.50	79985	Crystal-Diode Rectifier	.65	1.00
75213	Horizontal-Oscillator Coil	1.50	2.50	100117	Resistor, Fuse Type	.30	.50
75215	Horizontal and Vertical Hold Control	1.50	2.50	100118	Temperature Compensating Resistor	.60	1.00
75216	Picture and Brightness Control	1.50	2.50	100285	Horizontal-Output and High-Voltage Transformer	8.40	9.00
75221	Selenium Rectifier—250 MA	1.86	3.10	100290	Height Control	.65	1.05
75508	Power Transformer	14.40	24.00	100292	Volume and Picture Control	1.95	3.25
75509	Antenna—Matching Transformer	4.10	6.80	100300	Horizontal Frequency Coil	.60	1.00
75513	Volume and Tone Control	2.25	3.75	100364	Ratio Detector Transformer	1.50	2.50
75514	Picture and Brightness Control	2.40	4.00	100383	Volume and Brightness Control	2.10	3.50
75516	Width Control	.66	1.10	100391	Screen Control	.42	.70
75519	Horizontal-Output and High-Voltage Transformer	4.50	7.50	100395	Horizontal Centering Control	.77	1.28
75520	Audio Output Transformer	1.44	2.40	100396	Focus Control	.78	1.30
75585	Horizontal-Output and High-Voltage Transformer	4.50	7.50	100449	Crystal Plug-in Type	3.30	5.50
75645	Power Transformer	16.80	28.00	100454	Antenna—Matching Transformer	3.75	6.25
76141	Ion-Trap Magnet	.45	.75	100456	Tuner Fine Tuning Com	.18	.30
76317	Ion-Trap Magnet	.45	.75	100586	Deflecting Yoke	9.00	15.00
76433	IF Transformer	.66	1.10	100853	Width Coil	.90	1.50
76440	Horizontal-Oscillator Transformer	1.80	3.00	100855	Power Transformer	10.50	17.50
76441	Width Control	.90	1.50	100860	Horizontal-Output and High-Voltage Transformer	6.00	10.00
76442	Horizontal-Linearity Control	.66	1.10	100861	Volume Control	1.80	3.00
76444	AGC Control	.75	1.25	100862	AGC Control	.75	1.25
76452	Selenium Rectifier—350 MA	2.28	3.80	100864	Vertical Linearity Control	.75	1.25
76483	Horizontal-Linearity Control	.66	1.10	100867	Vertical Output Transformer	3.30	5.50
76484	Width Control	.90	1.50	100886	Tuning Cam VHF	.45	.75
76501	Horizontal-Output and High-Voltage Transformer	3.78	6.30	101125A	Channel Indicator Belt	.60	1.00
76521	Detent and Shaft	2.16	3.60	101147	Deflecting Yoke	9.00	15.00
76653	Deflecting Yoke	7.50	12.50	101219	Ratio-Detector Transformer	1.50	2.50
76672	Filament Coil for High Voltage Transformer Stk. No. 76501	1.15	1.95	101252	Power Transformer	12.00	20.00
76675	Crystal-Diode Rectifier	.57	.88	101588	IF Transformer	.60	1.00
76702	Ratio Detector Transformer	2.00	3.30	101821	Screen Control	.42	.70
76795	Horizontal-Output and High-Voltage Transformer	6.00	10.00	102045	Horizontal Output Transformer	6.95	11.55
76803	Volume Control and On/off Switch	.93	1.55	102047	Power Transformer	8.40	14.00
76981	IF Transformer	1.50	2.50	102076	Selenium Rectifier Half Wave	3.75	6.25
				103114	Deflecting Yoke	9.00	15.00

\*Optional



# RCA SERVICE PARTS FOR RADIOS · PHONOGRAPHS

## RCA STYLI AND CARTRIDGES

RCA Stock No.	DESCRIPTION	Dealer Price*	List Price*	RCA Stock No.	DESCRIPTION	Dealer Price*	List Price*
9890	78 RPM Cartridge	4.68	7.80	76257	45 RPM Cartridge	4.00	6.75
34225	78 RPM Cartridge	2.94	4.90	76297	45 RPM Cartridge	4.95	8.25
34710	78 RPM Cartridge	3.60	6.00	76323	45 RPM Stylus	.90	1.50
38598	78 RPM Cartridge	4.80	8.00	76374	45 RPM Stylus	.87	1.45
38610	78 RPM Cartridge	3.69	6.15	77779	3-Speed Cartridge	4.50	7.50
39564	78 RPM Stylus	.84	1.40	77899	3-Speed Stylus	1.15	1.95
39919	78 RPM Cartridge	4.80	8.00	78478	3-Speed Cartridge	5.25	8.75
55391	78 RPM Cartridge	4.50	7.50	78479	3-Speed Stylus	.90	1.50
57330	78 RPM Cartridge	13.80	23.00	78480	3-Speed Stylus	.90	1.50
70198	78 RPM Cartridge	4.50	7.50	78769A	3-Speed Cartridge	9.30	15.50
70220	78 RPM Cartridge	3.00	5.00	78770A	3-Speed Stylus	3.55	5.95
70338	78 RPM Cartridge	4.20	7.00	78827	3-Speed Stylus	2.10	3.50
70338A	78 RPM Cartridge	4.35	7.25	79791	45 RPM Cartridge	5.10	8.50
70339	78 RPM Cartridge	4.20	7.00	79849	45 RPM Stylus	1.60	2.65
70915	78 RPM Stylus	1.80	3.00	79895	3-Speed Cartridge	3.60	6.00
72345	78 RPM Stylus	1.20	2.00	79898	3-Speed Stylus	.33	.55
73839	78 RPM Cartridge	5.61	9.35	100329	3-Speed Cartridge	5.55	9.25
73840	78 RPM Stylus	1.35	2.25	100330	3-Speed Stylus	1.95	3.25
74067	45 RPM Cartridge	3.84	6.40	100566	78 RPM Cartridge	14.95	18.00
74068	45 RPM Stylus	.90	1.50	100653	3-Speed Cartridge	5.70	9.50
74466	45 RPM Cartridge	20.35	33.95	100793	3-Speed Cartridge	29.95	36.00
74622	45 RPM Stylus	16.50	27.50	101316	3-Speed Cartridge	5.10	8.50
74985	45 RPM Stylus	1.08	1.80	101318	3-Speed Stylus	.90	1.50
75044	3-Speed Cartridge	5.70	9.50	101671	33 1/3-45 RPM Stylus	2.00	3.35
75045	3-Speed Stylus	.90	1.50	101672	78 RPM Stylus	2.00	3.35
75046	3-Speed Stylus	.90	1.50	102321	3-Speed Cartridge	4.40	7.30
75497	3-Speed Stylus	.90	1.50	102352	3-Speed Stylus	1.50	2.50
75575	45 RPM Cartridge	3.84	6.40	102353	3-Speed Stylus	1.50	2.50
75770	45 RPM Stylus	1.35	2.25	103238A	45 RPM Cartridge	4.20	7.00
75976	78 RPM Cartridge	4.50	7.50				

## RCA SERVICE PARTS FOR RCA VICTOR RADIOS

RCA Stock No.	PART DESCRIPTION	Dealer Price*	List Price*	RCA Stock No.	PART DESCRIPTION	Dealer Price*	List Price*
70342	Volume Control and On/off Switch	1.05	1.75	75773	Volume Control and On/off Switch	.99	1.65
70385	Audia-Output Transformer	1.92	3.20	76373	2" x 3" PM Speaker	2.85	4.75
73036	iF Transformer	.90	1.50	77292	Selenium Rectifier 65 MA	.90	1.50
73037	iF Transformer	.90	1.50	77958	Selenium Rectifier 75 MA	1.11	1.85
75487	iF Transformer	.90	1.50	79300	Timer Knob	.08	.14
75733	Switch On-off, Less Housing	.39	.65	79696A	4" PM Speaker	3.25	5.45

## RCA MINIATURE LAMPS

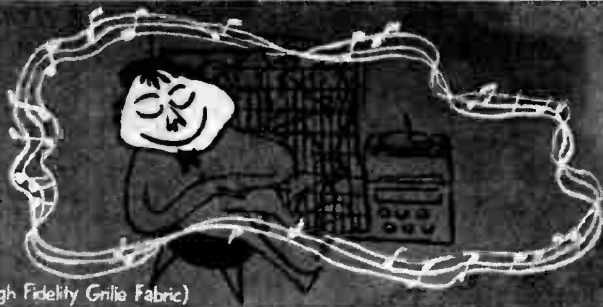
FLASHLIGHT			RADIO PANEL & MISC.		
RCA Type No.	Dealer Price* (Pkg. of 10)	List Price*	RCA Type No.	Dealer Price* (Pkg. of 10)	List Price*
PR-2	1.36	.20	40	1.02	.15
PR-3	1.36	.20	41	1.02	.15
PR-6	1.36	.20	42	1.02	.15
13	1.02	.15	43	1.02	.15
14	1.16	.17	44	1.02	.15
112	1.02	.15	45	1.02	.15
222	1.16	.17	46	1.02	.15
233	1.02	.15	47	1.02	.15
			48	1.02	.15
			49	1.02	.15
			50	1.02	.15
			51	1.02	.15
			55	1.02	.15
			291	1.70	.25
			292	1.70	.25
			1490	1.02	.15
			1891	1.02	.15
			1892	1.36	.20

\*Optional

# Mellotone

designed to attract  
HI-FI bugs\*

(Selective Buyers of Sound Equipment who demand a truly High Fidelity Grille Fabric)



The most perfect High Fidelity Grille Fabric "CREATIVELY MERCHANDISED," to increase distributors sales and profits. STYLED AHEAD with *originality* of design and PROMOTED AHEAD with *originality* of thought.

## Mellotone Originator

Of Free Sq. Yd.  
Display



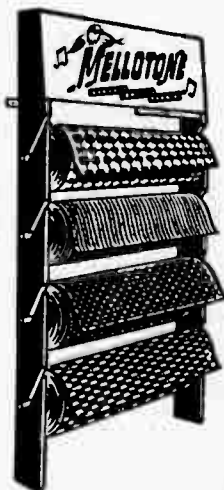
## Mellotone Originator

Of Free 18" x 24"  
Display



## Mellotone Originator

Of Free 25 Yd.  
Roll Display



And Now  
The Newest and Most Sensational *MELLOTONE Original*

## The Free MELLOTONE SAMPLE CARD

Converts your beautiful Mellotone 4 Part Sample Book into an exciting display.



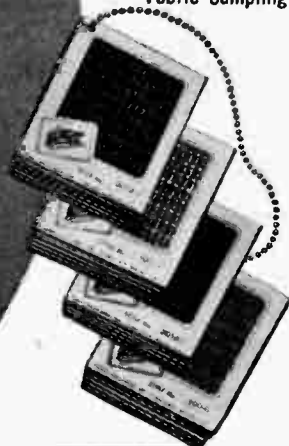
Ask to have one shipped with your next order. It comes complete with fittings. All or part of the (#2) Mellotone patterns can be quickly and easily attached.

Here is another big step forward by Mellotone to further build up distributor grille fabric sales and profits.

Accept only *Mellotone* the truly High Fidelity Grille Fabric.

## Mellotone Originator

4 Part  
Sample Book —  
Elaborate Grille  
Fabric Sampling



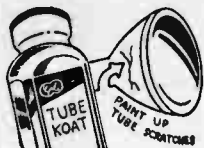
**WENDELL PLASTIC FABRICS CORP.**  
New York 1, N.Y.





# GENERAL CEMENT TV • RADIO CHEMICALS

## G-C TELEVISION TUBE KOAT



A black conductive coating for outside of glass TV tubes and for interior of cabinets to ground high potential, built up for TV tubes.

No. 49-2 2-oz. List \$1.20

## NEW G-C RED-X CORONA DOPE



Prevent corona shorts on high voltage TV circuits with this all-new G-C product. Easy to apply. Air dries faster. Excellent high voltage insulating qualities.

No. 50-2 2-oz. List \$1.20

## G-C MAG-NETIK HEAD CLEANER



Cleans tape and wire recorder head mechanisms. Does not leave scum or film. Should be used regularly for best recordings.

No. 53-1 1-oz. bottle List \$0.95  
53-2 2-oz. bottle List 1.60



## G-C TV SPRA-KLEEN

Pressurized electrical contact cleaner and lubricant. Fast, easy to use, no spillage. Saves removing chassis or parts.

No. 8566 6-oz. List \$1.20

## G-C DE-NOIZ TV CONTACT & DETENT CLEANER



New secret ingredients dissolve corrosion and oxidation on contacts, stops noise on contacts, volume controls, tuners, detents, switches, relays, etc.

No. 51-1 1-oz. bottle List \$0.95  
51-2 2-oz. bottle with Applicator List 1.60



## G-C VINYL PLASTIC FABRIC CEMENT

Made for cementing vinyl plastic sheets together. Ideal for vinyl insulating tubings, patching plastic raincoats, etc. Dries fast.

No. 16-2 2-oz. bottle List \$0.75

## G-C TV TENNA-KOAT



Clear plastic coating to minimize TV antenna corrosion, maintain strong signal. Also coat lead connections, retard moisture. Apply with brush. Fast drying.

No. 24-2 2-oz. List \$0.75

## G-C SILVER PRINT



Same "Pure Silver" compound as used by manufacturers in Printed Circuit design. You need G-C Silver Print to repair those Printed Circuits, to touch up the circuit around eyelets, rivets, parts, etc. Also handy for experimenters, engineers, laboratories, etc.

No. 21-2 1-Troy oz. List \$7.75  
21-1 1/2-Troy oz. List 3.95

## G-C TELEVISION HIGH VOLTAGE CORONA DOPE



Used by manufacturers and servicemen to prevent corona shorts on high voltage circuits in Television sets. Easy to apply, air-drying. It has very excellent high voltage insulating qualities.

No. 47-2 2-oz. List \$1.20

## G-C TV LENS & TUBE CLEANER



Specially prepared for cleaning TV lenses and CR tubes. Eliminates finger marks and spots, restores sharp, clear picture. Good item to sell every TV set owner.

No. 216-2 2-oz. List \$0.60

## DE-OX-ID

Electrical contact cleaner for silver, detent and radar contacts. All electric and electronic contacts.

No. 19-6 — 6 oz. De-Ox-Id ..... List \$ 3.50  
No. 19-6-D — Case of 12 #19-6 ..... List 42.00

## KOLOID K-29 HI VOLTAGE SPRA-KOAT

A clear resin spray where unusually high voltages are encountered. Air dries in a few minutes.

No. 9123 — 16 oz. Koloid K-29 ..... List \$ 2.75  
No. 9123-D — Case of 12 #9123 ..... List 33.00

## SPRA-KLEEN

Spray onto radio and television contacts and eliminate noise due to dust, dirt and corrosion.

No. 8666 — 6 oz. Sprakleen ..... List \$1.20

## KOLOID CLEAR ACRYLIC SPRA-KOAT

For insulating TV antennas, terminals, lines, etc. Prevents corrosion, rusting and oxidation on brass, silver chrome.

No. 8665 — 16 oz. Clear Acrylic ..... List \$ 1.79  
No. 8665-D — Case of 12 #8665 ..... List 21.48

## CORONA DOPE SPRA-KOAT

Used by manufacturers and servicemen to prevent corona shorts on high voltage circuits in TV sets.

No. 47-12 — 16 oz. Corona Dope ..... List \$ 3.25  
No. 47-12-D — Case of 12 #47-12 ..... List 39.00

## K-27 PRINT-KOTE

Original clear silicone resin as used by manufacturers for printed circuits. Insulates, protects and prevents shorts.

No. 14-6 — 6 oz. Print-Kote ..... List \$ 3.25  
No. 14-6-D — Case of 12 #14-6 ..... List 39.00

## RUF-KOAT SPRA-KOAT

Air drying wrinkle varnish. Gives a professional looking job. Can also be baked. Comes in black or gray.

No. 60-12 — 16 oz. Black ..... List \$ 2.75  
No. 60-12-D — Case of 12 #60-12 ..... List 33.00  
No. 60-13 — 16 oz. Gray ..... List 2.75  
No. 60-12-D — Case of 12 #60-13 ..... List 33.00

## TOUCH-UP VARNISH SPRA-KOAT

Fast drying varnish stain that covers nicks and scratches. Easy to apply. Mahogany or Walnut.

No. 161-3 — 16 oz. Mahogany ..... List \$ 2.75  
No. 161-3-D — Case of 12 #161-3 ..... List 33.00  
No. 161-5 — 16 oz. Walnut ..... List 2.75  
No. 161-5-D — Case of 12 #161-5 ..... List 33.00

## APPLIANCE WHITE SPRA-KOAT

A white glossy factory like finish for refrigerators, washers, dryers, ranges, etc. Dries fast.

No. 9113 — 16 oz. Appliance White ..... List \$ 1.79  
No. 9113-D — Case of 12 #9113 ..... List 21.48

# SPRA-KOAT PRODUCTS



## TELEPHONE BLACK and GRAY SPRA-KOAT

A satin finish enamel that dries fast. Excellent for panel work, instrument finish, etc.

No. 62-12 — 16 oz. Black ..... List \$ 2.75  
No. 62-12-D — Case of 12 #62-12 ..... List 33.00  
No. 62-13 — 16 oz. Gray ..... List 2.75  
No. 62-13-D — Case of 12 #62-13 ..... List 33.00

**ALL CHEMICALS AVAILABLE  
IN LARGER SIZE CONTAINERS!**

Ask your distributor  
for large, complete

**G-C CATALOG  
FREE!**

or write direct!



**G-C RADIO-TV SERVICE CEMENT**

For repairing radios, speakers, cones. Waterproof, fast drying. Brush attached.

No.		List
30-2	2-oz.	\$0.75
34-2	Tube	.75

**G-C VINYLITE CEMENT**

For cementing metals, plastics, etc. Clear, air drying. Brush attached.

No. 58-2	2-oz.	List \$0.75
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**G-C WOOD GLUE**

White resin waterproof, extra strong. Will not injure finish. Brush attached.

No. 39-2	2-oz.	List \$0.75
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**G-C ACRYLIC CEMENT**

Cement Lucite, Plexiglas, other acrylics. Strong, fast drying. Brush attached.

No. 40-2	2-oz.	List \$0.75
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**G-C SPIRIT VARNISH**

Walnut spirit varnish for touching nicks, scratches. Fast drying. Brush.

No. 161-2	2-oz.	List \$0.75
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**G-C LACQUER THINNER**

Thin all lacquers, lacquer enamels, telephone black or gray, etc.

No. 29-2	2-oz.	List \$0.60
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**G-C RUBBER-TO-METAL DIAL  
DRIVE CEMENT**

For cementing rubber drives to shafts, etc.

No.		List
35-2	2-oz.	\$0.75
35-3	Tube	.75

**G-C HOUSEHOLD AND MODEL  
CEMENT**

All-purpose cement for home and hobby use. Fast drying, waterproof.

No.		List
45-2	2-oz.	\$0.75
45-3	Tube	.50

**G-C Pli-O-BOND CEMENT**

Cold-setting rubber-like, thermoplastic cement for metal, plastics, cloth, etc.

No. 43-2	2-oz.	List \$0.75
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**G-C CONTROL KLEENER**

Cleans and lubricates volume, tone, tuner, other controls. Use with G-C 9280 Control Gun.

No.		List
65-16	16-oz.	\$3.25
65-6	1 gal.	15.00

**G-C CEMENT THINNER**

Thinner for all cements.

No. 28-2	2-oz.	List \$0.60
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**G-C PAINT THINNER**

For use with Ruf-Koat, Krome-Koat, rubber cements, etc.

No. 67-2	2-oz.	List \$0.60
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**G-C BAKELITE CEMENT**

For cementing, repairing all bakelite materials. Brush attached.

No. 32-2	2-oz.	List \$0.75
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**G-C FABRIC-TO-METAL CEMENT**

For cementing cloth and felt, waterproof.

No. 22-2	2-oz.	List \$0.75
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**G-C ELECTRICAL AND RESISTOR  
CEMENT**

Heatproof cement that hardens like porcelain. Brush attached.

No. 27-2	2-oz.	List \$0.75
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**G-C LABEL CEMENT**

For fastening labels to any surface. Brush attached.

No. 46-2	2-oz.	List \$0.75
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**G-C RADIO SERVICE SOLVENT**

For loosening cement on speaker cones, etc. Brush attached.

No. 31-2	2-oz.	List \$0.60
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**G-C PLASTIC CEMENT**

For cementing broken plastic cabinets, knobs, etc. Brush attached.

No. 32-2A	2-oz.	List \$0.75
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**G-C SILICONE COMPOUND**

A permanent water-proofing material for TV and FM leads.

No. 8100	1-oz.	List \$1.65
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**G-C GRAFOLINE**

Noiseless lubricant. Increases current capacity of switch control. Cleans also.

No. 120-2	2-oz.	List \$0.75
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**G-C LIQUIDOPE**

All wave nitrocellulose base dope for coils. Dries fast to tough film. Use for sealing.

No. 36-2	2-oz.	List \$0.75
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**G-C FUNGUS VARNISH**

To insulate and prevent fungus growth in moist or humid climates.

No. 57-2	2-oz.	List \$0.75
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**G-C INSULTING AND DIPPING  
VARNISH**

For treating field coils, noisy or buzzing transformers and chokes.

No. 56-2	2-oz.	List \$0.75
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**G-C Q-DOPE AND Q-THINNER**

Liquid polystyrene low loss coil dope for RF, UHF, and VHF components.

No. 37-2	2-oz.	List \$0.75
41-2 Thinner	2-oz.	.60

**G-C DE-OX-ID**

Liquid chemical. Television contact and control cleaner.

No.		List
19-1	1-oz.	\$1.10
19-2	2-oz.	1.60

**G-C RED ELECTRONIC CONTACT  
CLEANER**

Dissolves dirt and removes corrosion.

No. 210-2	2-oz.	List \$0.75
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**G-C ELECTRONIC HYPODERMIC  
NEEDLE INJECTOR**

For injecting cleaners and oils into tight places.

No. 8383		List \$0.75
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**NEW G-C PHONO NON-SLIP  
COMPOUND**

Stops turntable slippage. Won't harm rubber drives or rims. Fast drying, easy to apply.

No.		List
86-2	2-oz.	\$1.50
86-2-D	Display of 12	18.00

**NEW RED GLYPTAL**

Overall insulating material. High arc resistance. Resists heat, oils and acid.

No.		List
90-2	2-oz.	\$0.95
90-8	8-oz.	2.75
90-G	1 gal.	20.00

**G-C DIAL OIL**

For lubricating dials, drives, mechanisms.

No. 1245	4-oz.	List \$0.75
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**G-C NON-STICK IRON TIP  
COMPOUND**

Prevents soldering tips from burning into iron.

No. 1201	2-oz.	List \$0.75
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**G-C LIQUID SOLDER FLUX**

Non-corrosive flux. Solders faster, smoother.

No. 42-2	2-oz.	List \$0.75
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**G-C SOLDERING PASTE**

Non-corrosive for radio and electrical work.

No. 1207	2-oz.	List \$0.50
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**G-C STRIP A**

Strip enamel from magnet wire, ready for soldering.

No. 26-2	2-oz.	List \$1.00
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**G-C NON-SLIP COMPOUNDS**

**POWDER COMPOUND** — For dial cords, pulleys, belts.

No. 1210	2-oz.	List \$0.75
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**LIQUID** — Penetrating liquid, prevents slipping.

No. 1215	2-oz.	List \$0.75
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**G-C RECORD-LIFE LUBRICANT**

Wipe on . . . prevents record and needle wear; eliminates noise. Use in making records.

No. 125-2	2-oz.	List \$0.75
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**G-C REK-O-DOPE**

Cools, cleans, lubricates and hardens grooves when recording and cutting records.

No. 162-2	2-oz.	List \$0.75
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**G-C STA-PUT PHONO-GEAR  
LUBRICANT**

Lubricant for phonomotors, gears, shafts, etc. Recommended by RCA, G-E, and others.

No.		List
122-3	tube	\$0.75
122-2	2-oz.	.65

**G-C "RECO" STATIC CHASER**

Eliminates static electricity on vinylite plastic records. Use on any records.

No. 48-2	2-oz.	List \$0.75
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**G-C PORCELAIN GLAZE**

Fills in nicks and dents on porcelain and duco finishes.

No. 911	2-oz.	List \$0.75
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**G-C SPEAKER CONE  
RECONDITIONER**

Restores plasticizer to dried out speaker cones.

No. 25-8	8-oz.	List \$1.00
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**G-C LINE SEAL for UHF and VHF**

Outdoor sealer for TV wires, terminals, etc.

No. 17-2	2-oz.	List \$0.75
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**G-C-POWER SPRAY-KOAT — 16 oz.**

No.		List
8660	Aluminum	\$1.79
8665	Plastic, clear	1.79
8754	Gray	1.79
8755	Black	1.79
8758	Brown	1.79
8757	White	1.79
8758	Gold	1.79
8759	Coppertone	1.79



# GENERAL CEMENT

## TV • RADIO CHEMICALS

### G-C DIAL LITE COLOR KIT



Long lasting coloring for dials, signals, lamps, panels, hobby work, etc. Red, Green, Blue, Amber, Purple and Solvent in kit.

No.		List
66-5	Kit - 5 small bottles	\$1.00
66-6	Kit - 6 small bottles	1.25
66-2	2-oz. (Specify Color)	.75

### G-C DELUXE CHEMICAL LAB



Practical larger laboratory of popular chemicals and cements to fit needs of average shop—2-oz., 4-oz., and 8-oz. bottles. Larger bottles of more popular items. Steel rack is FREE.

No.		List
998	Lab	\$18.25

### G-C LUBE-REX



Lubriplate—white lubricant for push buttons, phonographs, Philco mystery controls, guns, fishing reels, dials, etc. Prevents corrosion, repels water.

No.		List
1206	2-oz. Tube	\$0.75
1209	2-oz. Bottle	.65

### G-C CONTACT & CRYSTAL CLEANER



Extra pure cleaner. Fast drying for cleaning contacts and crystals. Will not injure delicate parts.

No.		List
127-2	2-oz.	\$0.75

### G-C RUF-KOAT WRINKLE VARNISH

Air Dry or Bake



The only finish that will air dry and give professional wrinkle job without baking. Same as used by leading mfrs. Apply and let dry. Colors: Black, Gray, Brown. (Specify Color.)

No.		List
60-2	2-oz.	\$0.75
60-X-4	Ruf-Koat Undercoat 4-oz.	1.10

### G-C ROOF-SEEL COMPOUND



Seals holes in roofs, eliminates call-backs on roof antenna installations. Inexpensive, easy to use.

No.		List
18-16	Pint Can	\$1.10

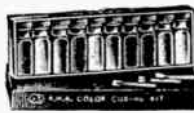
### G-C CHEMICAL LABORATORY



Complete assortment of 20 popular radio chemicals and cements in 2-oz. bottles put up on steel rack. Very neat for radio bench and home work shop. Steel rack FREE.

No.		List
997	Lab	\$13.95

### G-C RMA COLOR CODING KIT



Complete kit of all standard RMA colors to code resistors, condensers, parts, etc. Chart included. Ten bottles.

No.		List
677	Kit	\$2.15

### G-C CARBON CONTROL CLEANER



Fix noisy carbon controls without taking apart. Just squirt cleaner along shaft and job is done. Save money. Applicator supplied.

No.		List
212-2	2-oz.	\$0.75

### G-C CONTACT DOPE



Ideal cleaner and lubricant for switches, controls and contacts. Resists corrosion and oxidation. Eliminates noise.

No.		List
1214	2-oz.	.75

### G-C KRYSAL KOAT CRYSTAL LACQUER



Makes beautiful floral pattern when dry. Strictly air drying. For chassis, panels, decorations on metal, etc. Colors: Black, Gray (Specify Color.)

No.		List
63-2	2-oz.	\$0.75

### G-C TELEPHONE BLACK OR GRAY



High grade lacquer enamel covers well, dries fast. Black is satin ebony finish similar to telephones. Gray is pleasing shade. For panels, racks, parts, etc. (Specify Color.)

No.		List
62-2	2-oz.	\$0.75



### G-C CEMENT SAMPLER KIT

Contains one bottle each of the following items:  
30-2 Service Cement 32-2 Bakelite Cement  
32-2A Plastic Cement 22-2 Grill Cloth Cement  
58-2 Vinylite Cement 40-2 Acrylic Cement  
45-2 Model Cement 52-2 Neoprene Cement  
39-2 Wood Glue 16-2 Vinyl Fabric Cement  
43-2 Pli-O-Rond 46-2 Label Cement  
33-2 Rubber to Metal Cement  
27-2 Electrical and Res. Cement

No. 345	Kit of 14	List \$9.95
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### G-C COIL DOPE KIT



For high frequency coils, ultra low loss. Contains 2-oz. bottle Polystyrene Q-Dope, 2-oz. Thinner, and 2 brushes. The best!

No. 888	Kit	List \$1.25
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### G-C CARBON-X



New improved formula. Fix those old noisy carbon controls, touch up noisy spots on worn controls. Brush in bottle.

No. 1205	2-oz.	List \$1.20
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### G-C CARBON TETRA-CHLORIDE



100% pure for cleaning and degreasing electrical contacts, controls, motors. Absolutely safe—will not burn. Also kills bugs, roaches, etc.

No. 211-2	2-oz.	List \$0.55
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### G-C KROME-KOAT ALUMINUM PAINT



Fast drying, ready mixed, leaves chrome-like finish. For P.A. equipment, speakers, chassis, towers, antennas, etc.

No. 61-2	2-oz.	List \$0.75
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### G-C PENETRATING STAIN



Spirit type stain, penetrates and will not injure finish. Cover scratches, dents, darken corners on cabinets, etc. Walnut and Mahogany. Specify.

No. 162-2	2-oz.	List \$0.60
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**G-C LUMINOUS KITS**



Complete kits of luminous paint that glows in the dark. Many uses in shop and home. See it at night. Easy to use — apply and let dry.

No. List  
184-0 Deluxe Kit contains Powder, Mix-Koat. Top Koat and Brush. \$3.75



**GENERAL CEMENT**

**CABINET REPAIR MATERIALS**



**G-C FRENCH VARNISH**

Used by craftsmen to repair furniture and blend in the finish. Can be applied with pad, brush or spray. Dries fast.  
No. 162-2 2-oz. List \$0.60



**G-C FRENCH EMULSION**

Best pad lubricant to use with French Varnish Polishing Method.  
No. 164-4 4-oz. List \$1.10



**G-C RUBBING OIL**

Rub down newly finished or repaired cabinet to produce rich satin sheen finish.  
No. 163-16 16-oz. List \$2.40



**G-C CREME-O-WAX POLISH**

Hard wax base polish produces a hard glossy finish. For radios, pianos, refrigerators, furniture, etc.  
No. 95-2 Stick List \$0.60



**G-C SHELLAC STICK KIT**

Handy assortment of ten colors to take care of any shade of wood.  
No. 925 Kit List \$2.75



**G-C MAGIC SCRATCH KIT**

Combination of 6 shade fillers. Light and dark scratch fluid. Use on emergency jobs.  
No. 915 Kit List \$2.25



**G-C PORCELAIN PATCH STICK**

For refrigerators, sinks, ranges, fixtures, etc. Melt into nick and smooth off.  
No. 908 Stick List \$0.60



**G-C SCRATCH REMOVER LIQUID**

Removes scratches instantly. Wipe over scratches. Handy to have in tool box.  
No. 917 2-oz. List \$0.60



**NEW G-C DIAL CORD DRESSING STICK**

Rub the stick on cord and job is done. Prevents and stops slipping. Always keep it with you.  
No. 1212 Stick List \$0.25

**G-C SCRATCH REMOVER POLISHES**



Polish contains stains to remove scratches. Sell to housewives.  
No. 92-2 2 oz. List \$0.60  
For light woods; polishes and removes scratches at same time. Popular with housewives.  
No. 93-2 2 oz. List \$0.60



**G-C SHELLACK STICK**

High grade sticks for filling dents and nicks in wood cabinets and furniture.

No.	Color	List	No.	Color	List
929	Lt. Walnut	\$0.60	979	Dk. Oak	\$0.60
930	Dk. Walnut	.60	980	Transparent	.60
933	Black	.60	981	Lt. Transparent	.60
934	White	.60	982	Walnut	.60
935	Maple	.60	983	Mahogany	.60
978	Lt. Oak	.60	984	Bl. Maple	.60

**G-C GENERAL SKRATCH STIK**



Removes scratches. Simply run over scratches and they will disappear. Handy to carry in your pocket or tool box for emergency repairs. Also sell to housewives.  
No. 909-W Walnut List \$0.60  
909-M Mahogany .60  
909-I Ivory .60

**G-C HANDY SKRATCH STIK KIT**

Scratches in television, phonograph and radio cabinets, furniture nicks, mars in woodwork and floors are easily hidden with these scratch stiks. Kit includes 1 each: blond, walnut and mahogany stik.  
No. 909K 3 stiks List \$1.65



**G-C TELEVISION GRILLE CLOTH**



New television metallic grille cloth specially made for TV cabinets.  
Specify "A" or "B" style

No.	Size	List
8656	18" x 24"	\$2.50
8657	24" x 30"	4.75
8658	36" x 36"	7.50
8659	36" wide per yard, bulk	7.25

**G-C METAL FLOCKED GRILLE SCREEN**



Very popular. Both sides flocked with rayon over galvanized metal screen. Used on radios, P.A. speakers, intercoms, auto radios, etc. Waterproof, durable. Colors: Brown, Ivory, Maroon.

No.	Size	Color	List
951-1	8" x 11"	Brown	\$0.95
951-3	8" x 11"	Ivory	.95
951-5	8" x 11"	Maroon	.95
952-1	18" x 24"	Brown	3.20
952-3	18" x 24"	Ivory	3.20
952-5	18" x 24"	Maroon	3.20
953-1	36" x 36"	Brown	9.85
953-3	36" x 36"	Ivory	9.85
953-5	36" x 36"	Maroon	9.85

**G-C TV PLASTIC SARAN WOVEN GRILLE CLOTH**



Beautiful plastic cloth in a beautiful pattern. Ideal material for custom-built cabinets and commercial sound installations.  
No. 8736 List \$1.65  
12" x 18" - Bronze & Gold

No. 8739	36" x 36" - Bronze & Gold	List \$9.25
No. 8737	12" x 18" - Eeru & Ivory	List \$1.65
No. 8740	36" x 36" - Eeru & Ivory	List \$9.25

**G-C CABINET SPEAKER GRILLE CLOTH**



Beautiful modern patterns of Brown, Gold and light colors to match Walnut, Mahogany and Ivory Cabinets. Specify "Ivory" when ivory is wanted.

No.	Size	List
940	18" x 20"	\$1.50
941	9" x 18"	.75
942	12" x 12"	.80
943	14" x 15"	1.00
944	24" x 13"	1.35
945	18" x 13"	.90
949-2R	50" Wide Cont. lgth., per yd.	6.50



# GENERAL CEMENT

## RADIO-TV DIAL CORDS, CABLES and BELTS

### DIAL CABLES

Available in special bulk lengths and quantities

WRITE FOR QUOTATIONS

#### G-C No. 75-A EXTRA THIN NYLON CORD

.027" diam. Used on RCA, GE, Siron-Carl, etc. Braided nylon over fibre glass core. In plastic container.



No.	Spool	List
75A-25	25 ft.	\$1.50
75A-50	50 ft.	2.65
75A-100	100 ft.	4.95
75A-11	Env.	.50
H395-F	Plastic Box	.50

#### G-C No. 73 HEAVY NYLON CORD

.042" diam.; used on Philco, Majestic, Brunswick, etc. Very strong, chemically treated to prevent slipping. In plastic container.



No.	Spool	List
73-25	25 ft.	\$1.90
73-50	50 ft.	3.25
73-100	100 ft.	5.50
73-11	Env.	.50

#### G-C No. 71 42-STRAND BRONZE CABLE

.040" diameter; 42 strands twisted phosphor bronze over fibre glass core. Radio dials, aircraft reel-in antennas, etc. Durable and flexible. In plastic containers.



No.	Spool	List
71-25	25 ft.	\$2.25
71-50	50 ft.	3.50
71-100	100 ft.	6.50
71-11	Env.	.50

#### G-C No. 75 STANDARD THIN NYLON CORD

.028" diam. Most popular; used on 95% of sets. Braided nylon over fibre glass core. In plastic container.



No.	Spool	List
75-25	25 ft.	\$1.50
75-50	50 ft.	2.65
75-100	100 ft.	4.95
75-11	Env.	.50
H396-F	Plastic Box	.50

#### G-C No. 76 BRAIDED BRONZE CABLE

.040" diam.; used on radio dials, instruments and for aircraft reel-in antenna cable. Phosphor bronze braided over fibre glass core for strength. In plastic container.



No.	Spool	List
76-25	25 ft.	\$1.80
76-50	50 ft.	2.65
76-100	100 ft.	5.00
76-11	Env.	.50

#### G-C No. 76 SPECIAL THIN BRONZE CABLE

.025" diam. Braided bronze as used on GE, RCA, and others. Also for flexible connections on speakers, cones, etc. In plastic container.



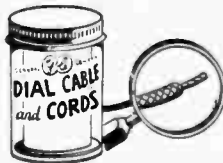
No.	Spool	List
76-25	25 ft.	\$1.80
76-50	50 ft.	2.65
76-100	100 ft.	5.00
76-11	Env.	.50

#### G-C No. 74 MEDIUM NYLON CORD

.040" diam. Very popular; used by RCA, Philco, GE, etc. Braided nylon over fibre glass core. In plastic container.



No.	Spool	List
74-25	25 ft.	\$1.50
74-50	50 ft.	2.65
74-100	100 ft.	4.95
74-11	Env.	.50
H397-F	Plastic Box	.50



#### G-C COLOR TV NO-STRETCH DIAL CORD

Especially developed for color TV set manufacturers who demanded a cord that would not stretch. Made of nylon with fibre glass core and specially coated with no-stretch plastic.

EXTRA FINE		STANDARD		MEDIUM	
No.	List	No.	List	No.	List
87-25	\$1.50	88-25	\$1.50	89-25	\$1.50
25 ft. Spool		25 ft. Spool		25 ft. Spool	
87-25-D	\$18.00	88-25-D	\$18.00	89-25-D	\$18.00
Display of 12 - 25 ft.		Display of 12 - 25 ft.		Display of 12 - 25 ft.	
87-100	\$5.00	88-100	\$5.00	89-100	\$5.00
100 ft. Spool		100 ft. Spool		100 ft. Spool	
87-100-D	\$60.00	88-100-D	\$60.00	89-100-D	\$60.00
Display of 12 - 100 ft.		Display of 12 - 100 ft.		Display of 12 - 100 ft.	

### G-C SERVICEMEN'S DIAL BELT KIT

Will not stretch. Easy to install.



#### BELTS — 50¢ EACH LIST

Servicemen! Have an assortment of belts on hand for prompt replacement. Kits contain only the more popular belt sizes. KIT INCLUDES ATTRACTIVE STEEL BOX — BELT SCALE AND COMPLETE LISTING OF OVER 1100 MODELS.

#### G-C SERVICEMEN'S KITS

No.	List
G-25	\$13.95

Kit of 25 popular belts

General Cement Belts are approved replacements for all sets. Made of best quality material.

#### INSTRUCTIONS — OR MEASURING BELTS

Determine size of belt. Cut the belt and measure for stretched out length. If old belt is not available you may use a thin thread. Make certain you use a thin thread as a large thread will give inaccurate lengths when stretched over pulleys.

### G-C TEST SOCKET ADAPTERS

Designed for easy testing and checking of voltage, resistance, video and audio from top of chassis. Low RF loss phenolic construction, extended test tabs, high insulation resistance.



#### G-C 7-PIN MINIATURE ADAPTER

No. 9247  
List \$2.75



#### G-C 9-PIN MINIATURE ADAPTER

No. 9249  
List \$3.10



#### G-C 8-PIN OCTAL ADAPTER

No. 9248  
List \$2.60



#### G-C DUO-DECAL CRT ADAPTER

No. 9251  
List \$3.25

#### G-C MASTER DELUXE CABINET REPAIR KIT



Complete cabinet repair kit in a permanent metal box. All finishes are spirit soluble and will not cut or damage surrounding finishes on cabinets, etc. Kit contains 10 shellac sticks, alcohol lamp, French varnishes, rubbing felt and fluid, enamels, glue, steel wool, sandpaper, polish, directions, etc.

No.	Kit	List
900	Kit	\$12.95

#### G-C MASTER DELUXE CABINET REPAIR KIT



Complete cabinet repair kit in a permanent metal box. All finishes are spirit soluble and will not cut or damage surrounding finishes on cabinets, etc. Kit contains 10 shellac sticks, alcohol lamp, French varnishes, rubbing felt and fluid, enamels, glue, steel wool, sandpaper, polish, directions, etc.

No.	Kit	List
901	Kit	\$8.50

#### G-C MASTER CABINET TOUCH-UP KIT



A complete, fast touch-up kit for repairing scratches and dents. Works on wood and plastic cabinets. The spirit finishes will not cut into the adjoining surface or injure surrounding finish. Contains French varnish, emulsion, colored enamels, stains, polishes, and filler. Sandpaper, steel wool, rubbing cloth and directions included. Brushes attached to caps of all finish bottles. Put up in metal box.

No.	Kit	List
907	Kit	\$5.75

#### G-C CABINET REPAIR KIT MATERIALS

No.	Material	List
908	Porcelain Patch Stick	\$0.60
992	Shellac Stick Rubbing Fluid 2 oz.	.60
900-11R	Sandpaper, 4/0 Sheet	.15
900-12R	Sandpaper, 7/0 Sheet, very fine	.25
900-14R	Steel Wool Pads, box of 16	2.00
936	Spatula, for Shellac Sticks	.45
937	Alcohol Lamp with Alcohol	.75
938	Lamp Fluid, pint	1.25
161-2	Varnish Stain, Walnut, 2 oz.	.75
162-4	Spirit Stain, Walnut or Mahogany (specify color), 4 oz.	1.10
900-13R	Touch-Up Brush	.75

**G-C DIAL DRIVE SPRING KITS**

**G-C DIAL CORD CLIPS**



Handy assortment for fastening dial cords. Squeeze around cord with pliers. 100 Assorted.  
 No. 6221-C List \$0.70

Assorted, for most requirements.



No. 1056 List \$4.85  
 100 assorted



# GENERAL CEMENT

## RADIO • TV ACCESSORIES

**G-C RCA TELEVISION TUNING BELT**



New belt for RCA Television Tuner. Used on models series numbers 8TC, 8TK, 9TC, etc. (Belt Part No. 73465.)

No. 195 Tuner Belt List \$0.50

**G-C DIAL CABLE TOOL**



Handy tool to aid in stringing new dial cord and replacing cables slipped off pulleys and drums. It's like an extra hand. Speeds up the job.

No. 5096 List \$0.85

**G-C 860 CAP**



Spring action flat brown bakelite cap. App. brass blades.

No. 860 Cap List \$0.25

**G-C 861 CAP**



Spring action, finger grip rubber caps. App., screw terminal br. blade.

No. 861 Cap List \$0.25

**G-C 865 CAP**



Modern flush type rubber cap. Easy to assemble. No exposed screws or wires.

No. 865 Cap List \$0.35

**G-C LONG NOSE PLIERS**



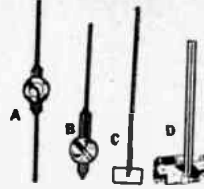
Very handy pliers to reach into places and hold parts. It's very handy for installing radio dial cords. Available in straight nose and curved nose styles.

No. 5192 Straight Nose Pliers List \$1.00  
 No. 5193 Curved Nose Pliers List 1.00

**G-C DIAL POINTERS**

**Popular Replacement Pointers**

No. (a) 6801 List \$0.40  
 3" Rotary Pointer for 1/4" shaft, gold  
 No. (b) 6802 List \$0.40  
 5" 360° Rotary Pointer for 1/4" shaft, gold and red  
 No. (c) 6803 List \$0.40  
 2" Slide Pointer, red translucent  
 No. (d) 6804 List \$0.40  
 2 1/4" Slide Pointer, white enamel



**G-C PHONO SPRING KIT**



Kit contains assorted springs same as are used on phono turntables. With this kit you can replace the broken or weak spring without waiting or delay in service.

No. 6478 Kit of 50 List \$3.05  
 No. 6479 Kit of 100 List 5.35

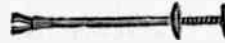
**G-C DIAL POINTER KITS**



A complete kit of assorted dial pointers. Pointers come in a clear transparent plastic case which keeps the pointers in perfect condition.

No. 6810 Kit - 10 pointers List \$3.25  
 No. 6805 Kit - 25 pointers List 5.50

**G-C HANDY PICK-UP TOOL**



Very handy for every one. Picks up pieces in hard-to-get-at places. Will hold and start screws, nuts, etc. Will pay for itself in short time.

No. 5089 List \$1.65

**G-C TV KNOB SPRING KIT**



Contains various types of knob springs and wedges used on TV knobs. Assortment of 100.

No. 9133 List \$2.75

**G-C DUAL TUBE PIN STRAIGHTENER**



Streamlined pocket-size straightener for 7-pin and 9-pin miniature tubes. Accurately machined hardened metal inserts for long life.

No. 9092 List \$1.65

**G-C HIGH-VOLT TEST LEADS**



For high voltage TV testing. Heavy duty wire, flexible even though insulation makes it 1/4" thick. 22,000 volt breakdown at 60 cycles. 48" long. red and black leads.

No. 9100 w. phone tips List \$5.00  
 No. 9101 w. spade lugs List 5.00  
 No. 9102 w. alligator clips List 6.00

**G-C "TEST LINE" TEST LEADS**



Slender pencil-type Tenite 5" long test prods, with 50" kinkless, extra flexible rubber covered wire. Phone tips. Red and black colors.

No. 9190 List \$1.00

**G-C TV-RADIO IRON CORE KIT**



Contains 7 assorted types of iron cores used in TV and radio sets. Covers 90% of replacements.

No. 9141 List \$0.95

**G-C SELENIUM RECTIFIER MOUNTING SCREWS**



Assortment of 24 extra long 6-32 screws and nuts for mounting selenium rectifiers. Round head screws 2 1/2", 3" and 4 1/2" long.

No. 9224 List \$0.70

**G-C TERMINAL STRIPS**



**SCREW TYPE**

Laminated bakelite strips, rigidly constructed, terminals will not turn and short.

No.	Contacts	List \$0.12
1772	2	.12
1773	3	.19
1774	4	.25
1775	5	.28
1776	6	.35
1777	7	.42
1778	8	.50
1779	9	.55
1780	10	.60



**SOLDER TYPE**

Mounted on laminated bakelite strips. Lugs securely fastened and will not turn.

No.	Contacts	List \$0.06
1781	1	.06
1782	2	.06
1783	3	.06
1784	4	.09
1785	5	.12
1786	6	.14
1787	7	.23
1788	8	.26

**G-C PHONO PLUG**

For all types of phono connections on RCA, Zenith, Philco and others. Also for auto radio connector.

No. 1742 Single Plug List \$0.10  
 1742-E Env. 4 .50

**G-C PHONO JACK**

Companion phono jack for No. 1742 plug.

No. 1743 Single Jack List \$0.14  
 1743-E Env. 3 .50







# GENERAL CEMENT

## NEW G-C KLIPZONS



### TEST PROD KIT

Complete, versatile, compact, test outfit. "Klipzon" leads and prods, plus five pairs of adapters.

No. 6037 ..... List \$9.95



### KLIPZON TEST PRODS AND LEADS

No. 5608 ..... List \$3.25  
Test Prods and Leads  
No. 5609 ..... List \$2.50  
Test Leads & Phone Terminals  
No. 5610 ..... List \$3.25  
Test Leads with Banana Plugs



### CRYSTAL PROBES FOR VOM AND VTVM

No. 5611 ..... List \$7.25  
For VOM  
No. 5612 ..... List \$7.25  
For VTVM



### SHIELDED LOW LOSS-LOW CAPACITY LEADS

No. 5613 ..... List \$4.95  
Shielded Low Loss-Low Capacity Leads



### HEAVY DUTY TEST PROBES AND LEADS

No. 5614 ..... List \$4.25  
Heavy Duty Test Prods and Leads



### 12" & 24" JUMPER LEADS

No. 5634 Red 12" ..... List \$1.00  
5635 Black 12" ..... 1.00  
5636 Red 24" ..... 1.10  
5637 Black 24" ..... 1.10



### TEST PROD HANDLES

No. 5615 ..... List \$0.85  
Red Test Prod Handles  
No. 5616 ..... List \$0.85  
Black Test Prod Handles



### JUMBO PROD HANDLES

No. 5617 Red Jumbo ..... List \$0.85  
5618 Black Jumbo ..... .85



### JUMBO ADAPTERS

No. 5619 Red ..... List \$0.75  
5620 Black ..... .75



### MINI-PROD CONNECTORS

No. 5621 Red Mini-Prod ..... List \$0.45  
5622 Black Mini-Prod. .... .45



### MINI-PROD ADAPTERS

No. 5623 Red Mini-Prod ..... List \$0.60  
5624 Black Mini-Prod. .... .60



### LONGIE ADAPTERS

No. 5625 ..... List \$0.75  
Red Longie Adapters  
No. 5626 ..... List \$0.75  
Black Longie Adapters



### KLIPZON PANEL MOUNT

No. 5627 Panel Mount ..... List \$0.60



### KLIPZON BANANA PLUG

No. 5628 ..... List \$0.75  
Red Banana Plug  
No. 5629 ..... List \$0.75  
Black Banana Plug



### ALLIGATOR CLIP ADAPTER

No. 5630 ..... List \$0.60  
Red Alligator Clip  
No. 5631 ..... List \$0.60  
Black Alligator Clip



### BANANA PLUG ADAPTER

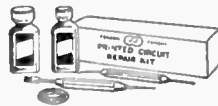
No. 5632 ..... List \$0.60  
Red Banana  
No. 5633 ..... List \$0.60  
Black Banana

# GENERAL CEMENT Printed Circuit Service Aids



### G-C PRINTED CIRCUIT KIT

Here's a kit that makes printed circuit repair easy. No service shop is complete without one.



### G-C No. 680 — PRINTED CIRCUIT SILICONE RESIN SERVICE KIT

1 — 14-2 Print-Kote Silicone Resin  
1 — 13-2 Print-Kote Solvent  
1 — 21-1 1/2-oz. Pure Silver Print  
1 — 9093 Solder Probe Tool  
1 — 9094 Stainless Brush and Scraper  
1 — Quantity of Special Print-Kote Solder  
1 — G-C Printed Circuit Service Manual  
No. 680 Complete Kit ..... List \$9.75

### G-C No. 681 — TV PRINTED CIRCUIT SILICONE RESIN SERVICE KIT

1 — 14-2 Print-Kote Silicone Resin  
1 — 13-2 Print-Kote Solvent  
1 — 9093 Solder Probe Tool  
1 — 9094 Stainless Brush and Scraper  
1 — Quantity of Special Print-Kote Solder  
1 — G-C Printed Circuit Service Manual  
No. 681 Complete Kit ..... List \$5.80



### G-C PRINT-KOTE SILICONE RESIN SPRAY

After repairing printed circuits, spray coat the new soldered connections. Insulates, protects and prevents arcing and shorting.

No. 14-6 6 oz. Spray Can ..... List \$3.25



### G-C PRINT-KOTE SOLDER

Has special flux and low melting solder combined with pure silver.

No. 9131 ..... List \$0.75



### G-C No. 9093 PRINT-KOTE SOLDER AID PROBE

For probing and soldering printed circuits.

No. 9093 ..... List \$1.65



### G-C No. 9094 PRINT-KOTE BRUSH AND SCRAPER

To remove resin from printed circuits.

No. 9094 ..... List \$1.65



### G-C HEAVY DUTY SOLDERING AID TOOL

For cleaning and holding wires while soldering.

No. 9088 ..... List \$1.65



### G-C SILVER PRINT

A pure silver compound for repairing printed circuits. Use to touch up circuits around eyelets, rivets, etc.

No. 21-1 ..... List \$3.95  
21-2 ..... 7.75



### G-C PRINT-KOTE SILICONE RESIN

For the protection of panel joints and parts.

No. 14-2 ..... List \$1.95



### G-C PRINT-KOTE SOLVENT FOR SILICONE RESIN

The only solvent for 14-2 Silicone Resin.

No. 13-2 ..... List \$0.55



### G-C PRINT-KOTE SOLDERING FLUX

Non-corrosive, for easy repairs and soldering of printed circuits.

No. 12-2 ..... List \$0.75



### G-C PRINT-KOTE VARNISH

Forms a protective and insulated coating for printed circuits.

No. 13-2 ..... List \$1.25

**G-C NEW TELEVISION "X 57 PLASTIC LONG SLIM" SCREWDRIVER**



No.	Blade	Overall	List
8987	7"	9 1/4"	\$1.00
8988	12"	14 1/4"	1.50
8989	16"	18 1/4"	2.00



# GENERAL CEMENT

## RADIO-TV ALIGNMENT TOOLS

**G-C "SHORTY" TV ALIGNMENT SCREWDRIVER**



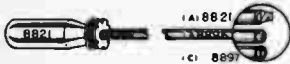
No. 8289 List \$0.70

**G-C TELEVISION 6" DUPLEX ALIGNER**



No. 8276 List \$0.80

**G-C LONG ARM TV TOOL**



No.	Tool Type	List
8821	Tool Type A	\$1.50
8896	Tool Type B	1.50
8897	Tool Type C	1.50

**G-C TELEVISION CHANNEL TUNING TOOL**



No. 8195 List \$1.10

**G-C "SHORTY" TV ALIGNMENT TOOL**



No. 9051 List \$0.75

**G-C TELEVISION ALL-PURPOSE ALIGNER**



No. 8273 List \$1.10

**G-C TELEVISION LONG REACH ALIGNER**



No. 8274 List \$1.20

**G-C TELEVISION TUNING WAND**



No. 8278 List \$0.55

**G-C NYLON TELEVISION LONG REACH ALIGNER**



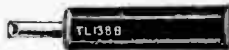
No. 8607 List \$1.80  
No. 8608-E Repl. Tip List .30

**G-C TELEVISION 2-IN-1 9" LONG-REACH DUPLEX ALIGNER**



No. 8721 List \$1.25

**G-C TELEVISION ALIGNMENT TOOL**



No. 5066 List \$0.55

**G-C TELEVISION AND FM TUNING TOOL**



No. 8196 List \$0.60

**G-C TV ALIGNMENT TOOL**



No. 9050-L List \$0.75

**G-C GENERAL ELECTRIC ALIGNMENT TOOL**



No. 8609 List \$1.00

**G-C TELEVISION 2-IN-1 7" DUPLEX ALIGNER**



No. 8722 List \$1.05

**G-C TELEVISION ALIGNING WRENCH**



No. 5080 List \$0.85

**G-C TELEVISION CORE ALIGNER**



No. 8271 List \$0.90

**G-C LONG REACH ALIGNMENT SCREWDRIVERS**



No. 8728A 7" 1. List \$0.45  
No. 8728 12" 1. List .70  
No. 8729 16" 1. List .90

**G-C TELEVISION "SHORTY" DUPLEX ALIGNER**



No. 8277 List \$0.80

**G-C TELEVISION CORE ALIGNER**



No. 8279 List \$1.10

**G-C "STRATO" TUNING WAND**



No. 5002 List \$1.10

**G-C UNIVERSAL SCREW DRIVER ALIGNER**



No. 8290 List \$1.00

**G-C K-TRAN TELEVISION ALIGNER**



No. 8727 List \$0.85

**G-C K-TRAN TOOL**



No. 5097 List \$0.85

**G-C TELEVISION I.F. OSCILLATOR ALIGNER**



No. 8272 List \$1.20

**G-C STANDARD TV ALIGNMENT TOOL KIT**



No. 8455 9 tools List \$7.65

**G-C TELEVISION DUPLEX ALIGNER**



No. 8276 List \$0.80

**G-C TELEVISION 2-IN-1 ALIGNMENT TOOL**



No. 8606 List \$0.55

**G-C NO-METAL INSULATING ADJUSTMENT SCREWDRIVER**



No. 5004 7" 1. List \$0.75  
No. 5008 7" 1. List .45  
for UHF

**It's G-C  
For All  
TV!**



# GENERAL CEMENT

## ALIGNMENT TOOLS • SERVICE AIDS

### G-C SOLDERING IRON TIPS



Best grade hard-drawn copper, bright plated to resist corrosion. Heats fast and holds heat.

No.	Tip	List
724	3/8" x 3"	\$0.60
725	5/8" x 1 1/2"	.75
726	3/4" x 1 1/4"	.85
727	3/4" x 4"	1.00

### G-C INSPECTION MIRROR



Inspection Mirror for hard to see places.

No. 5090	List \$0.60
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### G-C ZENITH PUSH-BUTTON WRENCH



Special wrench necessary to use in adjusting Zenith push button sets.

No. 5094	List \$0.20
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### G-C MINIATURE TUBE PIN STRAIGHTENER



Precision base die straightens prongs and spares them properly for miniature tubes like 1A5, 6AK5, etc.

No. 5191	For 7-pin tubes	List \$1.25
8105	For 9-pin tubes	1.25

### G-C AUTO RADIO TUNER



For adjusting car radios; turn controls when radio is removed from car and cables disconnected. Square tip and V-tip ends for various shafts.

No. 8285	List \$0.45
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### G-C WESTINGHOUSE TV ALIGNMENT TOOL



Specially designed to fit Westinghouse coils, end turned down to fit chassis. 5 1/4" long, with metal tip on end.

No. 9089	List \$0.90
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### G-C PRINT-KOTE SOLDER AID PROBE



Fine point probe for soldering printed circuits. Solder won't stick to stainless steel probe.

No. 9093	List \$1.65
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### G-C PRINT-KOTE BRUSH AND SCRAPER



Stainless steel brush and hardened steel scraper to scrape and clean silicone resin from printed circuits before repairs are made.

No. 9094	List \$1.65
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### G-C NON-MAGNETIC ALIGNING BERYLLIUM TOOL



Specially heat treated beryllium copper for use in loosening difficult alignment screws (prevents damage to plastic alignment tools). 3/16" blade.

No. 9105	6" blade	List \$1.25
9106	10" blade	\$1.35

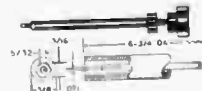
### G-C RCA TV ALIGNMENT TOOL



Double end nylon tool with recessed metal tip on one end, plastic slot on other. For RCA, Zenith, etc.

No. 9150	6" long	List \$1.50
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### G-C TL-597-U SPECIAL ALIGNMENT TOOL



Made to govt. specifications, combination tool with bakelite screwdriver within 1/4" hex socket wrench.

No. 5068	List \$2.85
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### G-C TUBE AND PARTS EXTRACTOR



U. S. Signal Corps No. TL-201

Handy prong tool for extracting tubes and picking up parts. Rubber cushions on prongs.

No. 5092	List \$1.65
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### G-C LONG-REACH TV AND RADIO LUBRICATOR



For hard-to-reach radio and TV controls, bearings, pliono motors, etc.

No. 8690	List \$0.80
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### G-C DUPLEX TUBE PIN STRAIGHTENER



Straightens both miniature and jumbo miniature tubes, both 7- and 9-pin types. Precision steel dies.

No. 8655	List \$2.50
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### G-C STANDARD COIL SLUG TUNER ADJUSTING TOOL



Designed especially for Standard Tuners, tool has blade length sufficient to adjust slug without turning it into coil. Tool 7 3/8" long, .170 dia. shaft ends.

No. 9087	List \$1.05
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### G-C ADJUSTABLE SHORTY



Designed for RCA, Westinghouse, etc. Recessed tip. Adjustable from 1 1/4" to 2" in length. No need to remove chassis from cabinet.

No. 9090	List \$0.70
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### G-C CONTACT ADJUSTER



Ideal tool for adjusting contacts on switches, relays on pin ball machines, radio sets.

No. 5095	List \$0.25
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### G-C SPEEDX SLIM-TYPE SOLDER IRON TIPS



High heat turn-down tip made of copper. Fits 3/8" iron, 4 1/2" tip.

No. 8741	List \$1.00
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### G-C TV "HIGH-VOLT" SAFETY PROBE AND TESTER



Check TV high voltage circuits quickly. Tester glows when okay. Handy for H.V. rectifier tubes, transmitters, etc.

No. 8836	List \$3.05
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### G-C HEAVY DUTY SOLDERING AID TOOL



Stainless steel with hardened probe, solder won't stick. Other end is stiff wire brush for cleaning wire.

No. 9088	List \$1.65
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### G-C NYLON DOUBLE END IRON CORE TOOL



All nylon hex tool made to fit cores with .125 hex opening. One end undercut to reach bottom slug in coil without turning top slug.

No. 9091	5" 1.	List \$0.75
9091-L	11" 1.	\$1.00

### G-C SLUG RETRIEVER TOOL



Precision made tool with hardened steel tips for removing lost tuner slugs in Standard Tuners. Simply slip in, push and retrieve slug.

No. 9096	12" long	List \$3.70
No. 9097	15" long	List \$4.95

**G-C DANDY TEST LITE**



New neon test lite for checking radios, television sets, fuses, circuits, etc. Simple, safe and dependable for tracing all kinds of trouble. Use on voltages of 60 volts AC to 550 volts AC or DC.

No.	List
8585 Dandy Lite	\$1.25



**G-C STANDARD SPEEDEX WIRE STRIPPER**

Fast operating precision made hand tool for stripping insulation from all types of wire. Very easy to operate. Strips 750 to 1000 wires per hour. Used by girls or men. All blades are interchangeable and easily replaced.

Standard Models		No.	Wire	List
733	12 to 20	744	12 to 30	\$6.69
733-A	14 to 30	744-A	14 to 30	6.60
733-B	10 to 18	744-B	10 to 18	6.60
733-C	8 to 10	744-C	8 to 10	6.60
733-D	16, 18, 20, 22	744-D	16, 18, 20, 22	6.60
733-E	14, 16, 18	744-E	14, 16, 18	6.60
733-F	10, 12, 14	744-F	10, 12, 14	6.60
733-G	For #18 P.O. B.J. or parallel wire	744-G	For #18 P.O.S.J. or parallel wire	6.69
733-H	For the new 300-Ohm television and FM transmission line	744-H	For the new 300-Ohm television and FM transmission line	6.60
733-I	For 10, 12, 14, 16, 18, 20, 22 wire	744-I	For 10, 12, 14, 16, 18, 20, 22 wire	6.60



**G-C AUTOMATIC SPEEDEX WIRE STRIPPER**

Similar to standard models except has the "stay open feature" with the new Speedex "Trig-O-Matic Action." Automatically holds jaws open until wire is removed, and prevents bending or crushing of fine wires. Has on-off mechanism so tool can be used as standard model if desired.

Automatic Models		No.	Wire	List
744	12 to 30	766	10 to 20	\$8.25
744-A	14 to 30	766-A	14 to 30	8.25
744-B	10 to 18	766-B	10 to 18	8.25
744-C	8 to 10	766-C	8 to 10	8.25
744-D	16, 18, 20, 22	766-D	16, 18, 20, 22	8.25
744-E	14, 16, 18	766-E	14, 16, 18	8.25
744-F	10, 12, 14	766-F	10, 12, 14	8.25
744-G	For #18 P.O.S.J. or parallel wire	766-G	For #18 P.O.S.J. or parallel wire	8.25
744-H	For the new 300-Ohm television and FM transmission line	766-H	For 300-Ohm TV & FM twin transmission line	8.25
744-I	For 10, 12, 14, 16, 18, 20, 22 wire	766-I	For 10, 12, 14, 16, 18, 20, 22 wires	8.25
		766-M	10 to 20	8.25
		766-N	Straight cutter blades	8.25



**G-C HEAVY DUTY SPEED-O-MATIC WIRE STRIPPER**

Improved version of the "744" series. Ideal for production line. Delayed return action. Will not crush stranded wires. Sturdy, easy to use. Interchangeable blades.

No.	Wire	List
766	10 to 20	\$8.25
766-A	14 to 30	8.25
766-B	10 to 18	8.25
766-C	8 to 10	8.25
766-D	16, 18, 20, 22	8.25
766-E	14, 16, 18	8.25
766-F	10, 12, 14	8.25
766-G	For #18 P.O.S.J. or parallel wire	8.25
766-H	For 300-Ohm TV & FM twin transmission line	8.25
766-I	For 10, 12, 14, 16, 18, 20, 22 wires	8.25
766-M	10 to 20	8.25
766-N	Straight cutter blades	8.25



**G-C SPEEDEX WIRE STRIPPER KIT**

Wire stripper complete with seven different size blades put up in a specially designed permanent steel box. For wires No. 8 to No. 30.

No.	List
733-K Standard Stripper Kit, with blades	\$15.60
744-K DeLuxe Automatic Stripper Kit, with blades	17.25
766-K Speed-O-Matic Kit	17.25



**G-C SPEEDEX REPLACEMENT BLADES**

Fit standard and automatic models. Blades interchangeable.

No.	Wire	List
3W	12 to 20	\$1.65
3W-A	14 to 30	1.65
3W-B	10 to 18	1.65
3W-C	8 to 10	1.65
3W-D	16, 18, 20, 22	1.65
3W-E	14, 16, 18	1.65
3W-F	10, 12, 14	1.65
3W-G	Blades for parallel #18 P.O.S.J. or similar	1.65
3W-H	Blades for the new 300-Ohm television and FM twin transmission line	1.65
3W-I	10, 12, 14, 16, 18, 20, 22 wire	1.65

When Blades for 766 Series Stripper are wanted — specify 2W — instead of 3W.



**G-C SPEEDEX TRIG-O-MATIC PLATE**

Converts any standard Speedex Stripper to an Automatic Model.

No. 756 Trig-O-Matic Plate, only	List \$2.28
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**G-C UNIVERSAL TYPE TEST LEADS**

Heavy duty 6000-volt leads 50" long, made with unbreakable plastic handles 8" long with solderless type tips. Other end comes with standard banana plugs, phone tips, and alligator clips. Supplied complete.

No. 8463 Universal Test Leads	List \$3.00
No. 8464 Same, but supplied with needle point prods	List 3.00



**G-C MASTER TEST LEADS**

The best test leads you can buy. 50" long, 6000-volt, heavy duty test prods, solderless type. Flexible leads run through handles and are fastened under the knurled collar on the tips. Available with either the attached angle tips or the straight solderless type tips.

No.	List
5050 With Solderless type Straight Tips	\$1.85
8459 With Angle type Test Tips	2.10



**G-C THIN TYPE TEST LEADS**

This is a handy pair of test leads for hard-to-reach places. Made with slim, plastic handles with long, slim insulated test rods attached. Made with 50" of 6000-volt test lead wire. Comes equipped with angle type phone tips.

No.	List
8465 Thin Type Test Leads	\$2.10



**G-C "TUX" TOOL KIT**

Made of "Athlon" polyethylene. Tough, flexible. Will not lose shape. Handy for all most needed tools.

No. 8943	List \$3.95
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**G-C NE-O-LITE**

A simple, safe, electrical circuit tester for voltages from 50 volts AC to 550 volts AC or DC. Used for radio, electrical and automotive testing. Molded plastic.

No. 5100 Ne-O-Lite	List \$0.60
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**G-C RESISTOR FOR NEON LAMP**

Required resistor when using No. 717 neon lamp on voltages of 60 to 550 volts AC or DC. Connect in series.

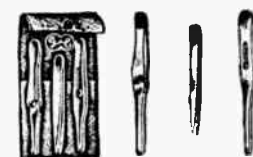
No. 718	List \$0.07
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**G-C NEEDLE POINT TEST LEADS**

Heavy duty 6000-volt test leads, 50" long, made with unbreakable plastic handles 6" long with needle type chuck and needle to penetrate insulation. Available with either the attached angle tips or the straight solderless type tips.

No.	List
8461 With Solderless Straight Tips	\$1.95
8462 With Angle type Test Tips	2.25



**G-C TWEEZERS AND KIT**

For the shop or laboratory to pick up and examine small parts, start screws and nuts, to set in hard-to-get spots, stringing dial cord, etc.

No.	List
7950 Tweezer Kit, beautiful leatherette case and one each tweezers described below.	\$3.80
7946 6 1/2" Self-closing tweezer. Opens when squeezed. Serrated, blunt points.	1.30
7947 6 1/2" Heavy-duty type with slide lock feature. Holds wires or parts tight. Serrated, blunt points.	1.50
7948 4 1/2" Precision Tweezer. Narrow pointed ends for delicate work.	.70



**G-C NEON GLOW LAMPS**

NE-T2 lamp as used in testers, appliances, as pilot light, etc.

No. 717	List \$0.25
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**GET THE BIG FREE G-C CATALOG FROM YOUR DISTRIBUTOR OR WRITE US DIRECT**



**G-C INSPECTION LITE**

Operates on 110-123 volts AC or DC. Cord approximately 6 feet long.

No. 705 Inspection Light	List \$2.25
704 Replacement Bulb for #705	.20
704-S Clear Plastic Shield	.10



# GENERAL CEMENT

## TEST PRODS • PLUGS • TIPS



### G-C LOW-LOSS DELUXE TEST PRODS

New polished low-loss material. Non-breakable. Moisture resistant. Withstands high voltages. Solderless type, brass nickel-plated.

No.	Color	List Price
5045	Red	\$0.50
5046	Black	.50



### G-C TEST LEAD ANGLE TIP

New, attractive, fully insulated, molded plastic angle phone tip plugs. Will take wires up to .110 diameter.

No.	Color	List Price
8149	Red, each	\$0.45
8150	Black, each	.45



### G-C TEST PROD TIPS

Solderless type, brass nickel-plated. Non-insulated. Wire fastens easily.

No.	List Price
5060	\$0.17



### G-C HEAVY DUTY PHONE PLUG

Standard type as used on test prods, leads, etc. Fits snugly in  $\frac{1}{8}$ " hole. Brass nickel-plated.

No.	List Price
7706	\$0.17



### G-C PHONO NEEDLE POINT TEST PROD CHUCK

Push on type fits snugly in  $\frac{1}{8}$ " hole. Brass nickel-plated.

No.	List Price
7703	\$0.22



### G-C INSULATED SPADE LUG

Tapered spade lug fits all screws or terminal strips up to No. 10. Insulated female end fits banana plugs.

No.	Color	List Price
7712	Red	\$0.18
7713	Black	.18



### G-C INSULATED PHONE TIP JACKS

Standard insulated type phosphor bronze spring contacts. Insulated head. Fits  $\frac{1}{8}$ " hole and panels up to  $\frac{1}{4}$ " thick. Brass parts nickel-plated.

No.	Color	List Price
7715	Red	\$0.22
7716	Black	.22



### G-C SET SCREW TYPE BANANA PLUG

Insulated set screw type. Polished insulated plastic handles. Nickel-plated metal parts.

No.	Color	List Price
7732	Red	\$0.30
7733	Black	.30



### G-C SPLIT BANANA PLUG

Standard size with 6-32 threaded shank. Use on plug-in coils, terminal strips, etc. Complete with lug and nut. Brass nickel plated.

No.	List Price
7736	\$0.22



### G-C BANANA JACK

Standard size banana pin jack. Fits  $\frac{1}{8}$ " hole up to  $\frac{1}{4}$ " thick panel. Nut and lug supplied. Brass nickel-plated.

No.	List Price
7740	\$0.17



### G-C NEEDLE POINT TEST PRODS

Adjustable chuck tip for needle. 6" polished plastic handles in Red or Black. Brass Nickel-plated chuck removable. Includes needle. (Specify color.)

No.	List Price
7701	\$0.50



### G-C SHIELDED PHONO PICK-UP WIRE

Handy package of single conductor shielded wire as used on phono pick-ups, etc. Enough wire for several jobs in package.

No.	List Price
1738-E	\$0.50
H675-F	.35

### G-C TELEVISION HIGH-VOLT BAKELITE TEST PROD HANDLE



Heavy duty type test prod with finger ground ring to protect from the high voltage. Protects against the high voltage in a TV Set. Designed so that the minimum of metal is exposed. Made of bakelite.

No.	Color	List Price
8986	Red	\$1.20
8986-1	Black	1.20
8986-2	Red & Black	2.33



### G-C TEST LEAD WIRE

Ideal long-life replacement wire, extra flexible. 6000-volt insulation. Red and Black. (Specify color.)

No.	Env.	List Price
5049	1 Red, 1 Black 50" long	\$0.80
5049-C	100 feet	8.25



### G-C INSULATED TEST PROD TIPS

Unbreakable polished plastic insulated handles. Solderless connectors, brass nickel-plated.

No.	Color	List Price
5061	Red	\$0.25
5061-E	Env. 2	.50
5062	Black	.25
5062-E	Env. 2	.50



### G-C PHONO NEEDLE POINT TEST PROD CHUCK

Threaded chuck fits  $\frac{1}{4}$ -20 threaded hole. Needle removable. Brass nickel-plated. Includes needle.

No.	List Price
7702	\$0.22



### G-C STANDARD PHONE TIP

Standard tip made of drawn brass, bright nickel plated.

No.	Env.	List Price
6320-E	12	\$0.45



### G-C SOLID STANDARD PHONE TIP

Solid brass type made to RMA specifications. Bright nickel-plated.

No.	Env.	List Price
6321-E	8	\$0.45



### G-C INSULATED PHONE TIP PLUG

Fits standard phone tip jacks. Polished non-breakable low-loss plastic insulated handles. Brass, nickel-plated tip. Minimum contact exposure.

No.	Color	List Price
7710	Red	\$0.20
7711	Black	.20



### G-C PHONO TIP JACKS

Standard type with phosphor bronze spring contacts. Fits  $\frac{1}{8}$ " hole and panels up to  $\frac{3}{8}$ " thick. Brass parts nickel-plated.

No.	List Price
7714	\$0.17



### G-C SPLIT BANANA PLUG

Insulated solderless type with polished insulated handles. Metal parts nickel-plated.

No.	Color	List Price
7730	Red	\$0.30
7731	Black	.30



### G-C SMALL BANANA PIN PLUG

Approved silver-plated plugs with straight shank. Can be riveted or soldered. For wires, multiple plugs, etc.

No.	Env.	List Price
6400	10	\$0.45



### G-C SPLIT BANANA PLUG

Standard size with 6-32 female thread on end. Supplied with screw and solder lug. Brass nickel-plated.

No.	List Price
7737	\$0.25



### G-C INSULATED BANANA JACK

Standard size with polished plastic insulators. Fits  $\frac{1}{8}$ " hole up to  $\frac{1}{4}$ " thick panel. Nut, lug, and insulators supplied. Brass, nickel-plated.

No.	Color	List Price
7741	Red	\$0.22
7742	Black	.22



### G-C INSULATED BANANA PLUG OR PHONE TIP JACK

Standard size insulated combination jack. Brass nickel-plated with phosphor bronze spring contacts. Fits  $\frac{1}{8}$ " hole, panels up to  $\frac{1}{4}$ " thick.

No.	Color	List Price
7744	Red	\$0.27
7745	Black	.27



### G-C COMBINATION BINDING POST

Dual purpose insulated head binding post. Banana plug fits in top, phone tips in side. Supplied with 6-32 x  $\frac{1}{2}$ " stud and 2 hex nuts. Red or black.

No.	Color	List Price
7725	Red Binding Post	\$0.45
7726	Black Binding Post	.45



### G-C TELEVISION HIGH-VOLT TEST PROD HANDLE

Has finger ground ring for high volt protection. Minimum of metal exposure for safety in TV servicing.

No.	Color	List
8986	Red	\$1.20
8986-1	Black	1.20



# GENERAL CEMENT PLUGS • JACKS • CLIPS TEST PROD ACCESSORIES

### G-C THIN TYPE TEST PROD

Slim plastic handle test prod. Insulated handle.

No.	Color	List
7755	Red	\$0.36
7756	Black	.36



### G-C LONG REACH TEST PROD 8" LENGTH

Extra long with fully-insulated handle for easier servicing.

No.	Color	List
7757	Red	\$0.41
7758	Black	.41



### G-C KLIPZON CRYSTAL PROD

Same as used in crystal probe for YOM and VTVM.

No.	Color	List
5611 and 5612		\$7.25
5638	Red	3.06
5639	Black	3.06



### G-C INSULATED PHONE NEEDLE TIP PLUG

Chuck is removable for easy tip replacement. Molded plastic handle. Brass, Nickel-plated tips

No.	Color	List
7759	Red	\$0.25
7760	Black	.25



### G-C SUB-MINIATURE PHONE TIP PLUG

Fits all standard phone tip jacks. Brass, nickel-plated tip with horse fibre handle; overall length 1" with 1/4" O.D.

No.	Color	List
7761	Red	\$0.22
7762	Black	.22



### G-C MOLDED GUN TIP

Molded with brass nickel-plated tips. Fits standard tip jacks.

No.	Color	List
7763	Red	\$0.60
7764	Black	.60



### G-C INSULATED SOLID COPPER ALLIGATOR CLIP

Short insulated handle. Has screw type wire connection.

No.	Color	List
7767	Red	\$0.19
7768	Black	.19



### G-C ALL INSULATED ALLIGATOR CLIP

Alligator clip with solder type connection.

No.	Color	List
7769	Black	\$0.80
7770	With phone tip adapter	1.00



### G-C INSULATED ALLIGATOR CLIP

Extra long plastic handle. Solder type alligator clip.

No.	Color	List
7765	Red	\$0.35
7766	Black	.35



### G-C MINIATURE STEEL ALLIGATOR CLIP

Size makes this clip adaptable where alligator clips could not previously be used.

No.	Material	List
7771	Steel	\$0.12
7772	All Copper	.12



### G-C BATTERY TEST CLIP — 5 AMP.

For battery and ignition testing.

No.	Color	List
7774		\$0.11



### G-C BATTERY TEST CLIP — 10 AMP.

With extra strong grip. Really holds.

No.	Color	List
7775		\$0.11



### G-C MIDGET BANANA PLUG

An insulated small type banana plug with plastic body.

No.	Color	List
7819		\$0.40
7820		.40



### G-C PHONE TIP SPlice

Has phone tip jack on either end.

No.	Color	List
7776	Red	\$0.45
7777	Black	.45



### G-C INLINE PHONE TIP SPlice

Adapts wire end to phone tip.

No.	Color	List
7778	Red	\$0.35
7779	Black	.35



### G-C BINDING POST

Brass, nickel-plated insert and screw-on connection.

No.	Color	List
7780	Red	\$0.25
7781	Black	.25



### G-C BINDING POST

Brass nickel-plated insert and retaining washer. Complete with screw and lockwasher.

No.	Color	List
7782	Black	\$0.27



### G-C BINDING POST — FIVE WAY

Will take phone tip plug, spade lug, banana plug, alligator clip or wire.

No.	Color	List
7783	Black	\$0.55



### G-C METAL BINDING POST

Brass nickel-plated, complete with screw and lockwasher.

No.	Color	List
7786		\$0.35



### G-C BINDING POST

Molded plastic five-way binding post for phone tip plug, spade lug or banana plug. Body is brass, nickel-plated.

No.	Color	List
7784	Red	\$0.50
7784-1	Black	.50



### G-C ALL-METAL BINDING POST

Metal two-piece brass, nickel-plated binding post. Can be mounted to chassis with 6-32 screw.

No.	Color	List
7785		\$0.25



### G-C ALL-INSULATED TIP JACK

Accommodates all standard phone tips.

No.	Color	List
7816	Red	\$0.30
7816-1	Black	.30



### G-C INSULATED BANANA JACK

For all standard banana plugs. Plug is complete. Recessed jack for firm contact.

No.	Color	List
7817	Red	\$0.25
7818	Black	.25



### G-C BAKELITE PHONE PLUG

Bakelite barrel phone plug with screw terminals.

No.	Color	List
7787	Red	\$0.75
7788	Black	.75



### G-C ALL-METAL SHIELDED PHONE PLUG

Same as 7787 except all-metal shielded.

No.	Color	List
7789		\$1.05



### G-C SLIM BARREL PHONE PLUG

Extra long type with screw type terminal.

No.	Color	List
7790		\$0.75





# GENERAL CEMENT

## PLUGS • JACKS • CLIPS

### TEST PROD ACCESSORIES

#### G-C 3-WAY BAKELITE PHONE PLUG



Three-way bakelite phone plug with screw-terminals.

No. 7793 Black ..... List \$1.20  
7794 Red ..... 1.20

#### G-C 3-WAY SHIELDED PHONE PLUG



Three-way phone plug. Brass, nickel-plated, with screw terminals.

No. 7795 ..... List \$1.40

#### G-C SLIM BARREL SHIELDED PHONE PLUG



Brass, nickel-plated phone plug, with solder terminals.

No. 7796 ..... List \$1.00

#### G-C MINI-PHONE PLUG



Designed for use with hearing aids, pocket radios, meters and other industrial applications.

No. 7797 ..... List \$0.67

#### G-C MILITARY TYPE PHONE PLUG



Made in accordance with military specifications. A very high quality plug with molded shell.

No. 7798 (PJ 055B) ..... List \$1.40

#### G-C MILITARY TYPE PHONE PLUG



Made in accordance with military specifications. A very high quality plug with molded shell.

No. 7799 (PJ 068) ..... List \$3.80

#### G-C MILITARY JACK — JJ-034



Fits military plug PL-47, PL-48, PL-55, PL-148, PL-155, etc.

No. 7800 ..... List \$0.55

#### G-C MILITARY JACK — JJ-033



Two circuit jack fits Western Electric 109 plug and military plugs PL-46, PL-68, PL-168, etc.

No. 7801 ..... List \$0.65

#### G-C OPEN CIRCUIT TWO CONDUCTOR JACK



A high quality brass, nickel-plated jack with nickel silver materials for long spring life.

No. 7802 ..... List \$0.40

#### G-C SINGLE CLOSED TWO-CIRCUIT JACK



With phenolic spacers and nickel silver contacts. Sleeve terminal brass, hot tinned.

No. 7803 ..... List \$0.45

#### G-C OPEN CIRCUIT THREE-CONDUCTOR JACK



Gives phone plug positive contact with firm spring pressure. Brass, nickel-plated with phenolic spacer.

No. 7804 ..... List \$0.55

#### G-C SINGLE CLOSED CIRCUIT THREE-CONDUCTOR JACK



Springs are nickel silver material to insure long life. Positive locking arrangement holds plug firmly.

No. 7805 ..... List \$0.75

#### G-C SHIELDED EXTENSION PHONE JACK



Ideal for microphone extension cords, has plug receptacle either end. Brass, nickel-plated.

No. 7806 ..... List \$1.55

#### G-C ALL-METAL JUNIOR SHIELDED PHONE PLUG



All brass, nickel-plated.

No. 7791 ..... List \$0.90

#### G-C SHIELDED SMALL PHONE PLUG



All metal completely shielded.

No. 7792 ..... List \$1.50

#### G-C MINI-JACK OPEN CIRCUIT



Open circuit, 2-conductor miniature jack. Brass, nickel-plated with phenolic spacers and nickel silver contact spring.

No. 7807 ..... List \$0.40

#### G-C MINI-JACK CLOSED CIRCUIT



Same as 7807 but closed circuit, 2-conductor type.

No. 7808 ..... List \$0.45

#### G-C PHONO TO PHONE PLUG ADAPTER



Phono jack on opposite end of phone plug barrel for easy conversation.

No. 7809 ..... List \$1.95

#### G-C PHONE PLUG ADAPTER



Converts female microphone or amplifier connectors to standard phone plug. Brass, nickel-plated.

No. 7810 ..... List \$0.45

#### G-C MICROPHONE CONNECTOR — SINGLE



Contact female type. Used with No. 7940, 7941, and 7943 male connectors to make connections to microphones and amplifiers.

No. 7942 ..... List \$0.70

#### G-C MICROPHONE AND CHASSIS CONNECTOR



Same as 7941 except closed circuit type. Prevents open circuit noises when microphone is disconnected.

No. 7943 ..... List \$0.65

#### G-C CONNECTOR COUPLING NUT



Screws on male end for fast connection.

No. 7815 ..... List \$0.45

#### G-C MINI-MIKE CONNECTOR — SHIELDED



Brass, nickel-plated body and high grade phenolic insulation.

No. 7811 ..... List \$0.45

#### G-C MINI-PANEL CONNECTOR



Can be used with any miniature microphone connectors.

No. 7812 ..... List \$0.35

#### G-C MINI-MIKE CONNECTOR



Designed for sub-miniature equipment.

No. 7813 ..... List \$0.60

#### G-C RING FOR MINI-CONNECTOR



Brass nickel-plated connector ring.

No. 7814 ..... List \$0.15

#### G-C MIDGET PHONO PLUG



Used on R.C.A. Zenith, Philco, and others. Also used for auto radio connector.

No. 1742 ..... List \$0.10

#### G-C PHONO JACK



No. 1742 plug will fit this jack.

No. 1743 ..... List \$0.14

#### G-C DUPLEX PHONO CONNECTOR JACK



Made of phenolic material with brass contact. Insulated with ceramic insulators.

No. 9225 Double ..... List \$0.21  
9273 Triple ..... .25

**G-C ONE-INCH JEWEL SIGNAL LIGHT**



For signal devices of all types. Hubs change from the front; for socket bases as listed below. One inch mounting hole. Jewel colors: Red, Green, Amber, and Opal. (Specify Jewel Color.)

No. 7901	100-V Cand. Facet	List \$2.35
No. 7902	110-V. Cand. Smooth	List \$2.25
No. 7903	Min. Bayonet Facet	List \$2.15
No. 7905	Min. Screw Facet	List \$2.05

**G-C PANEL JEWELS**



Complete assemblies in 1", 3/4", and 1/2" diameters. Fit panels up to 1/4" thick. Brass nickel-plated. Colors: Red, Green, Blue, Amber, Opal, Clear. (Specify color.)

No.	Dia.	Jewel	Mtg. Hole	List
7913	1/2"	Facet	7/16"	\$0.40
7914	3/4"	Smooth	7/16"	.30
7915	3/4"	Facet	11/16"	.75
7916	1"	Facet	1"	1.75

**G-C UNMOUNTED PILOT LIGHT SOCKETS**



Cadmium-plated. Ideal for replacements or special assemblies.

No.	Type	List
7932	Min. Screw Base	\$0.15
7933	Min. Bayonet Base	.15
7934	110-V. Candelabra	.15

**G-C FEMALE MICROPHONE CONNECTOR**



Single contact female type used with No. 7940, 7941 and 7943 connectors. Complete, brass chrome-plated.

No.	List
7942 Connector	\$0.70

**G-C INSULATED ALLIGATOR CLIP**



Solder type with Red or Black insulated sleeve. Strong spring. Nickel-plated.

No.	Red Clip	List
5064		\$0.14
5065	Black Clip	.14

**G-C ALLIGATOR CLIP**



Wire fastens under set screw. Handy for all types of connectors. Cadmium-plated.

No.	Clip	List
7752		\$0.095

**G-C 3/4-INCH JEWEL SIGNAL LIGHT**



Signal light with facet jewels in colors of Red, Green, Blue, Amber. 3/4" mounting hole. Jewel removed from front. (Specify color.)

No.	Socket	List
7907	Min. Screw	\$1.10
7908	Min. Bayonet	1.25
7909	110-V. Candel.	1.30



**G-C CLIP-ON PILOT LIGHT SOCKETS**  
Clip up and clip down types for replacements. Cadmium-plated.

No.	Type	List
7920	Min. Screw Clip Up	\$0.17
7921	Min. Screw Clip Down	.17
7922	Min. Bay. Clip Up	.20
7923	Min. Bay. Clip Down	.20
7924	110-V. Cand. Clip Up	.20
7925	110-V. Cand. Clip Down	.20



**G-C PILOT LAMP INSTALLER**  
Makes it easy to install miniature dial bulbs, neon and candelabra lamps in hard-to-get-at places. All rubber.

No.	List
7935 Installer	\$0.65



**G-C MICROPHONE CHASSIS UNIT CONNECTOR**  
Single contact male connector for chassis. Used with Type 7942 female connector. Supplied complete. Brass nickel-plated.

No.	Connector	List
7941		\$0.45
7943	Closed Circuit Type, prevents open circuit noises when mike is disconnected	\$0.65



**G-C ALLIGATOR CLIP**  
Solder type, non-insulated. Strong spring for positive contact. Nickel-plated.

No.	Clip	List
5063		\$0.09

**G-C 1/2-INCH JEWEL SIGNAL LIGHT**



Signal light. Requires 3/8" mounting hole. Facet jewel removed from front. Colors: Red, Green, Blue, Amber, Opal, Clear. (Specify color.)

No.	Socket	List
7910	Min. Screw	\$0.55
7911	Min. Bayonet	.55
7912	110-V. Candel.	.70

**G-C BRACKET-TYPE PILOT LIGHT SOCKETS**



Sturdy bracket-up or bracket-down type. Cadmium-plated.

No.	Miniature Screw Bracket Up	List
7926		\$0.17
7927	Bracket Down	.17
7928	Miniature Bayonet Bracket Up	.19
7929	Bracket Down	.19
7930	110-V. Candelabra Bracket Up	.20
7931	Bracket Down	.20



**G-C MALE MICROPHONE CONNECTOR**  
Completely shielded, sturdy, single contact connector. Brass, bright chrome-plated. Steel spring cord protector.

No.	Connector	List
7940		\$0.50

**G-C MICROPHONE CONNECTOR CAP**



Chrome-plated cap with anchor chain for all connectors. Seal against dirt and prevent thread damage.

No.	Connector Cap	List
7944		\$0.75

**G-C SCREW TYPE INSULATED ALLIGATOR CLIP**



Very popular. Bright polished handles. Set screw for wire.

No.	Black Clip	List
7750		\$0.16
7751	Red Clip	.16

**G-C FAHNESTOCK CLIPS AND PLUGS**

**G-C SMALL CLIP**



1/2" long by 3/8" wide. Handles up to No. 14 wire. No. 4 Mtg. Hole.

No.	Each	List
6301		\$0.05

**G-C DOUBLE CLIP**



1 1/2" long by 3/8" wide. No. 6 Mtg. Hole.

No.	Each	List
6304		\$0.17

**G-C MEDIUM CLIP**



3/4" long by 3/8" wide. Handles up to No. 14 wire. No. 6 Mtg. Hole.

No.	Each	List
6302		\$0.05

**G-C MEDIUM SOLDER LUG CLIP**



3/4" long by 3/8" wide. No. 6 Mtg. Hole.

No.	Each	List
6306		\$0.08

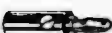
**G-C INSULATED SPRING TYPE BANANA PLUG**



Solderless type, no screws or contacts showing. Length 1 1/8", with 1" handle.

No.	Red Plug	List
8994		\$0.35
8995	Black Plug	.35

**G-C SPRING TYPE BANANA PLUG**



Solderless wire connection with set screw on side. Length 1 1/8", with 3/8" handle.

No.	Red Plug	List
8996		\$0.30
8997	Black Plug	.30

**G-C SPRING TYPE BANANA PLUG**



Hex brass, nickel plated plug. Threads 6-32 x 3/8". Length 1 1/8".

No.	List
8998	\$0.25

**G-C SPRING TYPE BANANA PLUG**



Phosphor bronze contacts. Contact screw 0-32, soldering lug.

No.	List
8999	\$0.25

**G-C COMBINATION ALLIGATOR CLIP PHONE TIP AND BANANA JACK**



Length 3", with 1 1/8" handle.

No.	Red Clip	List
7721		\$0.65
7722	Black Clip	.65

**G-C TEST LEAD PLUG INTERCHANGE KIT**



Handy kit for interchanging alligator clips, banana plugs, spade lugs or phone tips. Includes red and black phone tips, combination jacks and plugs. Fitted plastic case.


No.	Kit	List
7743		\$3.75

**G-C INSULATED BELL STAPLES**

No.	Fig. 1, 3/8" x 1/2"	List
1751	Box 50, No. 1	\$0.30
1752	Box 100, No. 1	.50
1753	Fig. 2, 3/8" x 5/8"	.30
1754	Box 50, No. 2	.50
1755	Box 100, No. 2	.50
1756	Fig. 3, 3/8" x 3/4"	.30
1757	Box 50, No. 3	.50
1758	Box 100, No. 3	.50
1759	Fig. 5, 3/8" x 5/8"	.30
1760	Box 50, No. 5	.50
1761	Box 100, No. 5	.50
	Fig. 6, 3/8" x 3/4"	.50
	Box 100, No. 6	.50
	Fig. 7, 3/8" x 7/8"	.50
	Box 100, No. 7	.50
	Extra Large Cable Size	.85
	Fig. 10, 3/8" x 3/4"	.85
	Box 100, No. 10	.85




# **GENERAL CEMENT** **SIGNAL and PANEL LIGHTS**



**G-C NEON PANEL ASSEMBLY FOR NE-51 PLASTIC CAP JEWEL**

<b>Part No.</b>	<b>Color</b>	<b>Part No.</b>	<b>Color</b>
7953-1.....	Red	7953-5.....	White
7953-3.....	Amber	7953-6.....	Yellow
7953-4.....	Blue	7953-7.....	Clear

List Price Each ..... **\$2.32**



**G-C 1/2" ENCLOSED AVIATION TYPE MIN. BAY. SMOOTH JEWEL**

<b>Part No.</b>	<b>Color</b>	<b>Part No.</b>	<b>Color</b>
7959-1.....	Red	7959-5.....	White
7959-2.....	Green	7959-6.....	Yellow
7959-3.....	Amber	7959-7.....	Clear
7959-4.....	Blue		

List Price Each ..... **\$2.20**



**G-C MINIATURE BAYONET 1" M.T.G. OPEN TYPE**


<b>Part No.</b>	<b>Color</b>	<b>Part No.</b>	<b>Color</b>
7963-1.....	Red	7963-5.....	White
7963-2.....	Green	7963-6.....	Yellow
7963-3.....	Amber	7963-7.....	Clear
7963-4.....	Blue		

List Price Each ..... **\$1.60**

**G-C PILOT LAMP INSTALLER**


Made to remove pilot lamps easily from indicator assemblies. Excellent for hard-to-reach places. Made of rubber. Will take all types of miniature, neon and candelabra lamps.

<b>Part No.</b>	<b>List Price</b>
7935 Pilot Lamp Installer .....	<b>\$0.65</b>
7935-D Display of 12 #7935 .....	<b>7.80</b>



**G-C 1" FOR NE 45-57-58 CAND. SCREW SMOOTH JEWEL**


<b>Part No.</b>	<b>Color</b>	<b>Part No.</b>	<b>Color</b>
7955-1.....	Red	7955-5.....	White
7955-3.....	Amber	7955-6.....	Yellow
7955-4.....	Blue	7955-7.....	Clear



**G-C MINIATURE SCREW 1/2" JEWEL 11/16" M.T.P. HOLE FACETTED JEWEL**

<b>Part No.</b>	<b>Color</b>	<b>Part No.</b>	<b>Color</b>
7961-1.....	Red	7961-5.....	White
7961-2.....	Green	7961-6.....	Yellow
7961-3.....	Amber	7961-7.....	Clear
7961-4.....	Blue		

List Price Each ..... **\$0.74**



**G-C MINIATURE SCREW 1" M.T.G. OPEN TYPE**


<b>Part No.</b>	<b>Color</b>	<b>Part No.</b>	<b>Color</b>
7964-1.....	Red	7964-5.....	White
7964-2.....	Green	7964-6.....	Yellow
7964-3.....	Amber	7964-7.....	Clear
7964-4.....	Blue		

List Price Each ..... **\$1.60**

**G-C PANEL JEWELS**

Complete jewel assemblies available in 1", 3/4" and 1/2" diameter jewels in both smooth and facetted types. Holders are brass, nickel-plated, supplied complete with nuts to fit panels up to 1/4" thick. (Colors: Red, green, blue, amber, opal and clear. (Specify colored desired.)


No.	Diam.	Mounting Hole	List Price
7913	1/2"	7/16" (Facetted Jewel)	<b>\$0.40</b>
7914	3/4"	7/16" (Smooth Jewel)	<b>.40</b>
7915	3/4"	11/16" (Facetted Jewel)	<b>.75</b>
7916	1"	1" (Facetted Jewel)	<b>1.75</b>



**G-C 1/2" OPEN TYPE 11/16" MOUNTING HOLE FACETTED JEWEL**

<b>Part No.</b>	<b>Color</b>	<b>Part No.</b>	<b>Color</b>
7951-1.....	Red	7951-5.....	White
7951-2.....	Green	7951-6.....	Yellow
7951-3.....	Amber	7951-7.....	Clear
7951-4.....	Blue		

List Price Each ..... **\$0.95**




**G-C 1" ENCLOSED 115V FACETTED JEWEL**

<b>Part No.</b>	<b>Color</b>	<b>Part No.</b>	<b>Color</b>
7957-1.....	Red	7957-5.....	White
7957-2.....	*Green	7957-6.....	Yellow
7957-3.....	Amber	7957-7.....	Clear
7957-4.....	Blue		

\* Not recommended with neon lamps.


List Price Each ..... **\$2.95**



**G-C MINIATURE BAYONET 1/2" JEWEL 11/16" M.T.G. HOLE FACETTED JEWEL**

<b>Part No.</b>	<b>Color</b>	<b>Part No.</b>	<b>Color</b>
7962-1.....	Red	7962-5.....	White
7962-2.....	Green	7962-6.....	Yellow
7962-3.....	Amber	7962-7.....	Clear
7962-4.....	Blue		

List Price Each ..... **\$0.74**



**G-C CANDELABRA 1" M.T.G. OPEN TYPE**

<b>Part No.</b>	<b>Color</b>	<b>Part No.</b>	<b>Color</b>
7965-1.....	Red	7965-5.....	White
7965-2.....	Green	7965-6.....	Yellow
7965-3.....	Amber	7965-7.....	Clear
7965-4.....	Blue		


List Price Each ..... **\$1.70**



**FACETTED JEWELS FOR No. 7951, 7961, 7962 ASSEMBLIES**

<b>Part No.</b>	<b>Color</b>	<b>Part No.</b>	<b>Color</b>
7952-1.....	Red	7952-5.....	White
7952-2.....	Green	7952-6.....	Yellow
7952-3.....	Amber	7952-7.....	Clear
7952-4.....	Blue		


List Price Each ..... **\$0.45**



**PLASTIC CAPS FOR No. 7953 NEON ASSEMBLIES**

<b>Part No.</b>	<b>Color</b>
7954-1.....	Red
7954-3.....	Amber
7954-4.....	Blue
7954-5.....	White
7954-6.....	Yellow
7954-7.....	Clear

List Price Each ..... **\$0.40**



**JEWEL CAPS ONLY FOR No. 7955 1" ASSEMBLIES**

<b>Part No.</b>	<b>Color</b>
7956-1.....	Red
7956-3.....	Amber
7956-4.....	Blue
7956-5.....	White
7956-6.....	Yellow
7956-7.....	Clear

List Price Each ..... **\$1.20**



**FACETTED JEWELS FOR Nos. 7957, 7963, 7964, 7965 ASSEMBLIES**

<b>Part No.</b>	<b>Color</b>
7958-1.....	Red
7958-2.....	Green
7958-3.....	Amber
7958-4.....	Blue
7958-5.....	White
7958-6.....	Yellow
7958-7.....	Clear

List Price Each ..... **\$1.20**



**SMOOTH FACED JEWELS FOR No. 7959**

<b>Part No.</b>	<b>Color</b>
7960-1.....	Red
7960-2.....	Green
7960-3.....	Amber
7960-4.....	Blue
7960-5.....	White
7960-6.....	Yellow
7960-7.....	Clear

List Price Each ..... **\$0.45**



### G-C TOGGLE SWITCHES

Ball handle general purpose switch. Made by H & H for G-C. 3 amps., 125 volts. Nickel Plated.

No. 1300	List \$1.28	No. 1304	List \$2.28
S.P.S.T.*		D.P.S.T.*	
No. 1301	List \$1.53	No. 1305	List \$2.53
S.P.S.T.**		D.P.S.T.**	
No. 1302	List \$1.59	No. 1306	List \$2.58
S.P.D.T.*		D.P.D.T.*	
No. 1303	List \$1.92	No. 1307	List \$2.83
S.P.D.T.**		D.P.D.T.**	

\* 1/2" Shank Length \*\* 3/4" Shank Length



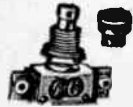
### G-C TOGGLE SWITCH WITH WIRE LEADS

For vacuum cleaners, appliances, radio sets, etc. Made by H & H for G-C. Rated at 3 amps., 125 volts. Nickel Plated.

No.		List
1335	"Bat Handle" S.P.S.T.	\$1.59
1336	"Ball Handle" S.P.S.T.	1.61

### G-C PUSH BUTTON SWITCH

Two circuit, "slow make and quick break" momentary contact switch. One circuit normally on, other off; pushing button reverses circuits in use. Made by H & H for G-C. 3 amps., 125 volts. Shank 5/8" long.



No.	Switch	List
1340		\$1.78

### PUSH BUTTON

For 1340 Switch. Red or Black (Specify).

No.	Button	List
1343		\$0.47

### G-C HEAVY DUTY POWER SWITCH

D.P.S.T. toggle power switch for motors, appliances, projectors, etc. Made by H & H for G-C. 12 amps., 125 volts. Nickel Plated.



No.	D.P.S.T.	List
1350		\$2.39

### G-C MOLDED BAKELITE TOGGLE SWITCHES

Ball handle style, silver plated contacts. Rated 3 amps. at 250 volts, 6 amps., 125 volts. 3/8" shaft. Nickel Plated.



No.	S.P.S.T.	List
1361		\$1.67
1362	S.P.D.T.	1.97
1363	D.P.S.T.	2.42
1364	D.P.D.T.	2.78

### Momentary Switches (circuit normally "off")

1365	S.P.S.T.	\$2.36
1365A	S.D.D.T.	2.72
1366	D.P.D.T.	3.69

### G-C SPAGHETTI ON SPOOLS "Approved by ASTM"

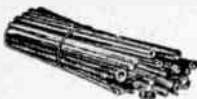
5000-Volt Dielectric Strength. Best grade varnished tubing put on convenient 20-ft. spools. Will fit wire from No. 12 to No. 18. Colors: Black, Red, Yellow, Green, Blue. Specify color.



No.	Spool - 20-ft.	List
499		\$1.85

### G-C ASSORTED SPAGHETTI KIT

An assortment of 7 1/2" lengths of spaghetti sleeving. 26 lengths to the kit. Sizes include from No. 17 wire to 3/8" I.D. A very handy bundle to have for repair jobs.



No.	Kit 26 Lengths	List
550		\$0.60

### G-C SPAGHETTI ASSORTMENT "A Box Full of Spaghetti"

Here's a buy you can't beat on a spaghetti assortment. A variety of sizes and colors are included of high grade varnish tubing. Put up in attractive box.



No.	List
551	\$1.50

### G-C FIBEROID



### "FISH PAPER"

Fish paper has many uses around the shop for repair jobs where electrical insulation is required. .010" - 240 sq. in. roll.

No.	Roll	List
560		\$0.75



# GENERAL CEMENT

## SWITCHES • SPAGHETTI • TUBING



### G-C ON-OFF PLATE

Will fit the G-C. H & H. Cutler-Hammer and other makes of standard switches.

No.	On-Off Plate	List
1329		\$0.11



### G-C ROTARY SWITCHES

Best grade enclosed rotary switches. Made by H & H for G-C. 3 amps., 125 volts. Shafts 1 1/2" long.

No.	List	No.	List
1320 S.P.S.T.*	\$1.56	1324 D.P.S.T.**	\$2.81
1321 S.P.S.T.**	1.89	1325 D.P.D.T.*	2.92
1322 S.P.D.T.*	1.89	1326 D.P.D.T.**	2.92
1323 S.P.D.T.**	2.06		

\* 3/8" Shank Length \*\* 1" Shank Length

### G-C EXTRA HEAVY DUTY POWER SWITCH

Three position for motors, projectors, transmitters, movie equipment, etc. Made by H & H for G-C. 10 amps., 125 volts. Neutral off in center. Size 2" x 1" x 1 1/2", shank 3/4" diameter.

No.	List
1352	D.P.D.T. \$ 9.25
1353	3-P.D.T. 14.06
1354	4-P.D.T. 18.72

### G-C REAR SPEAKER TONE SWITCH

Designed for rear seat auto radio speakers. Permits use of either speaker separately or together.



No.	Switch	List
8891		\$1.00



### G-C STACKPOLE SLIDE SWITCHES

Made by Stackpole for G-C. Used on radios, phonographs, etc. UL approved at .5A-125V. and higher.

No.	List	No.	List
1367	S.P.S.T.* \$0.25	1369	D.P.S.T.** \$0.36
1368	S.P.D.T.* .25	1370	D.P.D.T.** .36
		1370A	D.P.T.D.* .36

\* 3/8" w. x 1 1/2" l. \*\* 3/8" w. x 1-57/64" l.

### G-C GENFLEX PLASTIC TUBING



High grade extremely flexible plastic tubing for Radio and Electronic Insulation work. Resistant to cold or heat. High dielectric strength, average 8,000 volts. (Colors: Black, Red, Green, Clear. (Specify).

No.	Wire	Pkg.	List
603	18	20 ft.	\$1.20
605	16	20 ft.	1.20
607	14	20 ft.	1.20
609	13	20 ft.	1.20
611	10	15 ft.	1.20
613	8	15 ft.	1.20
616	6	10 ft.	1.20
617	4	10 ft.	1.20
620	2	10 ft.	1.20
625	Fits over 300-ohm Twin Line 8 ft.		1.10

### G-C PLASTIC TUBING KITS



Handy kits of assorted colors and sizes. Ideal for experimenters and servicemen.

No. 635	List \$1.20
Kit of 25 ft. Asstd.	

### G-C RADIO FRICTION TAPE



This narrow 3/8" tape was particularly made for radio work. It eliminates waste and tearing of tape. It saves time and is handy to carry with you.

No.	Roll	List
870	65 ft. 3/8"	\$0.65
871	65 ft. 3/8"	1.25

### G-C RADIO SPAGHETTI



Best grade Radio and TV spaghetti. Smooth coated, best varnishes. Very flexible. 5000 volt dielectric. Approved by ASTM. Colors: Black, Red, Yellow, Green, Brown. Specify color. 30" lengths.

No.	Size	List
500	No. 20 ft 20 wire	\$0.20
503	No. 17, ft 18 wire	.22
506	No. 14, ft 14 wire	.24
508	No. 12, ft 12 wire	.26
512	3/8" I.D.	.33
515	1/2" I.D.	.38
518	3/4" I.D.	.55
521	3/8" I.D. (resist. size)	.89
522	1/2" I.D.	1.15
523	3/4" I.D.	1.32

### G-C INSULATING CAMBRIC



10,000 Volts  
Yellow varnished cambric. .010" thick.  
No. 549 List \$1.00  
Roll over 210 sq. in.  
No. 548 List \$3.65  
36" x 36" yd., any length

### G-C LAMINATED BAKELITE PANELS



3/8" thick. Black.  
No. 590 List \$0.70  
6" x 6" x 3/8"  
No. 591 List \$1.35  
6" x 12" x 3/8"  
No. 592 List 2.85  
12" x 12" x 3/8"



# GENERAL CEMENT SERVICE AIDS

## G-C REDUCING BUSHINGS



No. List  
6751-E 1/4" to 3/8" reduction, 8 in Env. \$0.45

## G-C SHAFT EXTENSIONS



No. List  
6755 1/4" x 4 1/2" Long Flat Shaft Ext. \$0.55  
6716 1/4" x 4 1/2" Long Round Shaft Ext. .35

## G-C PLASTIC HARDWARE ASSORTMENT



Approximately 1000 assorted screws, nuts, washers, springs, clamps, eyelets, grommets, terminals, etc. No cast-offs — only regular hardware. Plastic jar with screw cap.

No. List  
6064 1000 Asstd. \$2.00  
6056-E Env. 100 Asstd. .50

## G-C HELL BOX

A grand assortment of useful hardware; screws, nuts, lugs, clips, washers, clamps, etc. Thousands of items needed every day. Metal hinged box.



No. List  
6500 \$4.15

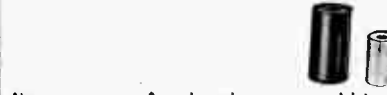
## G-C DUAL SHEET METAL PUNCH

A quick method for punching accurate holes. Made of tool steel. For hand or power operation. May be used in arbor press. Punches holes 7/8" and 1 1/2".



No. List  
9260 — Dual Punch \$ 5.95  
9260-D — Display of 12 71.40

## G-C BRASS AND INSULATED SPACERS AND BUSHINGS



No.	Assortments	List
6617	Hardware Lab. Jar 12 Asstd. Spacers and Bushings	\$0.85
6760-E	Env. 12 Asst. Ins. Spacers	.45
6762	15 Asst. Threaded Brass Bushings 6-32 thread, 1/4" to 3/4" long	1.45
6763	15 Asst. Threaded Brass Bushings 8-32 thread, 1/4" to 3/4" long	1.45
6775-E	Env. 12 1/4" x 1/4" Ins. Spacers	.50
6761-E	Env. 12 Asst. Metal Spacers	.45

No.	INSULATED		List
	O.D.	Length	
6775	1/4"	1/4"	\$0.04
6776	1/4"	3/8"	.05
6777	1/4"	1/2"	.05
6778	1/4"	5/8"	.08
6779	3/8"	1/4"	.05
6780	3/8"	1/2"	.06
6781	3/8"	3/4"	.07

## THREADED BRASS BUSHINGS

No.	O.D.	Thread	Length	List
6785	1/4"	6-32	1/4"	\$0.06
6786	1/4"	6-32	3/8"	.08
6787	1/4"	6-32	1/2"	.09
6788	1/4"	6-32	3/4"	.11
6790	3/8"	8-32	1/4"	.06
6791	3/8"	8-32	3/8"	.08
6792	3/8"	8-32	1/2"	.09
6793	3/8"	8-32	3/4"	.11

No.	O.D.	Length	List
6765	1/4"	1/4"	\$0.05
6767	1/4"	3/8"	.06
6768	1/4"	1/2"	.07
6769	3/8"	1/4"	.06
6770	3/8"	1/2"	.07
6771	3/8"	3/4"	.08

## G-C PLASTIC STOCK BOXES AND TRAYS



Clear Polystyrene boxes for stocking small parts, screws, nuts, bolts, condensers, resistors, etc. Tight fitting covers.

No. List  
8022 4" x 4" x 2 1/4" deep \$0.50  
8023 4" x 8" x 2 1/4" deep 1.00

## G-C PLASTIC CRYSTAL



Unbreakable plastic crystal in flat sheets. Use to replace dials, clocks, dashboard any odd shape difficult to replace with glass.

No. 92 8" x 10" Flat List \$1.25



## G-C SHAFT COUPLINGS, EXTENSIONS AND REDUCERS

No.	BRASS FITTINGS	List
6701	1/4" to 1/4" coupling	\$0.20
6702	1/4" to 3/8" coupling	.30
6703	1/4" to 1/2" coupling	.30
6704	3/8" to 3/8" coupling	.30
6705	3/8" hole to 1/4" shaft extension	.30
6710	3/8" hole to 1/4" shaft extension and reducer	.30
6712	1/4" x 6" brass shaft	.25
6713	1/4" x 12" brass shaft	.45
6716	1/4" hole x 1/4" round shaft x 4" long	.35

No.	INSULATED FITTINGS	List
6721	1/4" to 1/4" coupling	.25
6722	1/4" to 3/8" coupling	.30
6725	3/4" hole to 1/4" shaft extension	.40
6734	3/4" x 6" fibre shaft	.40
6735	3/4" x 12" fibre shaft	.65

## NEW WHIZ WIRE STRIPPER



Precision milled, hardened steel cutters — fast, effortless operation, designed to prevent wire jamming — jaws lock open automatically — quick finger-tip release — strong, durable, light weight — smooth, all steel. Black rust resistant finish — order yours now.

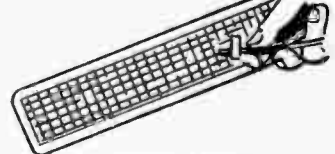
No. List  
788 3 Hole Blade Ga. #12 thru #22 \$6.60  
788-B 3 Hole Blade Ga. #10 thru #16. 6.60  
788-D 4 Hole Blade Ga. #14 thru #24. 6.60  
788-H 300 ohm Blade for twin lead-in. 6.60

## G-C SPEEDX SPRING WINDER



New Speedex Spring Winder that will make any spring you need for any repair job. Is simple to operate. Any diameter spring and any size wire can be used. Makes any type of spring, any number of coils and any pitch desired. Makes both compression and extension springs. Fastens to any bench.

No. List  
5209 — Speedex Spring Winder \$24.95  
5210 — Replacement Kit of Asst. Sizes of Music Wire 2.75



## G-C WIRE MARKERS

Self-sticking, all temperature markers for tracing circuits, identifying wires, harnesses, etc. Pre-cut to exact size, No. 1 to No. 33 (3 full strips to kit).

No. 9229 List \$1.25

## G-C SLUG RETRIEVER TOOL



For removing TV tuner slugs from Standard Coil Tuners. Precision made with hardened steel tips. Comes in 12" and 15" lengths.

No. List  
9096 12" Slug Retriever \$3.70  
9096-D Display of 12 44.40  
9097 15" Slug Retriever 4.95  
9097-D Display of 12 59.40

## G-C DUAL NUT STARTER and HEX HEAD SCREW STARTER



Holds and starts hex nuts and screws in hard to get at places.

No. List  
9147 Dual Nut Starter \$2.50  
9147-D Display of 12 30.00

## G-C SCREW STARTER SCREW DRIVER



A screw holding screw driver for starting screws in hard to get at places. Precision made.

No. List  
9148 12" Screw Starter \$3.50  
9148-D Display of 12 42.00

## G-C ROTARY CANOPY SWITCHES



Replacement canopy switch for appliances, lamps, instruments, etc. Has brass knob, 6" leads, 3/32" shank.

1A - 125 V. T.  
3A - 125 V - 1A - 250V  
No. List  
9204\* Switch \$0.50  
\*Standard Carton 10 switches.



**GENERAL CEMENT**  
MANUFACTURING CO.  
ROCKFORD, ILLINOIS, USA



**HANDY G-C HARDWARE**

In Convenient Packages:

- 1 Plastic Boxes
2. Boxes of 100 or 144 (gross)
3. Bulk Boxes of 1000.

**HINGED COVER PLASTIC BOXES**

50-LINE  
Distributor's Standard Display, 10 Boxes  
List Price Per Box **55c**

**BOXES OF 100**

Distributor's Standard Carton  
10 Boxes of 100

**BOXES OF 144**

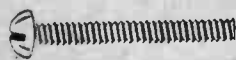
(Gross Packages)  
Distributor's Standard Carton,  
7 Boxes of 144

**BULK HARDWARE**

(Boxes of 1000)  
Supplied only in  
Multiples of 1000

**DESCRIPTION and SPECIFICATIONS**

Part No.	Quantity In Box	Part No.	List Price Per 100	Part No.	List Price Per 144	Part No.	List Price Per 1000 Pcs.
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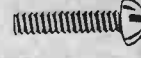
**G-C ROUND HEAD MACHINE SCREWS**  
STEEL - NICKEL PLATED



Assorted Machine Screws	H1000-F	35					
Assorted Screws and Nuts	H1001-F	40					
Assorted No. 2 and No. 4 Screws and Nuts	H1002-F	35					
Assorted 4-36 Screws	H1010-F	40					
Assorted 6-32 Screws	H1012-F	40					
Assorted 8-32 Screws	H1016-F	40					
Assorted 10-32 Screws	H1018-F	25					
Machine Screws, 2-56 x 1/4"	H1022-F	40	7130-C	.74	7130-G	.98	7130-M 5.88
Machine Screws, 2-56 x 1/2"	H1024-F	40	7131-C	.80	7131-G	1.07	7131-M 6.42
Machine Screws, 2-56 x 3/4"	H1026-F	40	7132-C	.92	7132-G	1.23	7132-M 7.38
Machine Screws, 3-48 x 1/4"	H1028-F	40	7124-C	.97	7124-G	1.29	7124-M 7.74
Machine Screws, 4-36 x 1/4"	H1032-F	40	6005-C	.80	6005-G	1.06	6005-M 6.36
Machine Screws, 4-36 x 3/8"	H1033-F	35	7138-C	.83	7138-G	1.10	7138-M 6.60
Machine Screws, 4-36 x 1/2"	H1034-F	35	6006-C	.87	6006-G	1.16	6006-M 6.96
Machine Screws, 4-36 x 5/8"			5651-C	.95	5651-G	1.26	5651-M 7.56
Machine Screws, 4-36 x 3/4"	H1036-F	35	6007-C	1.01	6007-G	1.35	6007-M 8.10
Machine Screws, 4-40 x 1/4"	H1042-F	40	6005-AC	.80	6005-AG	1.06	6005-AM 6.36
Machine Screws, 4-40 x 1/2"	H1044-F	35	6005-BC	.88	6005-BG	1.17	6005-BM 7.02
Machine Screws, 4-40 x 3/8"			5652-C	.95	5652-G	1.26	5652-M 7.56
Machine Screws, 4-40 x 1/2"	H1046-F	35	6005-CC	1.01	6005-CG	1.35	6005-CM 8.10
Machine Screws, 6-32 x 1/4"	H1062-F	40	6008-C	.89	6008-G	1.18	6008-M 7.08
Machine Screws, 6-32 x 1/2"	H1064-F	30	6009-C	1.03	6009-G	1.37	6009-M 8.22
Machine Screws, 6-32 x 3/8"			5653-C	1.13	5653-G	1.50	5653-M 9.00
Machine Screws, 6-32 x 3/4"	H1066-F	30	6010-C	1.21	6010-G	1.61	6010-M 9.66
Machine Screws, 6-32 x 1"	H1068-F	30	6011-C	1.39	6011-G	1.85	6011-M 11.10
Machine Screws, 6-32 x 1 1/4"	H1070-F	30	7141-C	1.67	7141-G	2.22	7141-M 13.32
Machine Screws, 6-32 x 2" (Extra long, handy to mount rectifiers)	H1076-F	20	7148-C	2.51	7148-G	3.35	7148-M 20.10
Machine Screws, 8-32 x 1/4"	H1082-F	30	6013-C	1.16	6013-G	1.54	6013-M 9.24
Machine Screws, 8-32 x 3/8"	H1083-F	25	6014-C	1.25	6014-G	1.66	6014-M 9.96
Machine Screws, 8-32 x 1/2"	H1084-F	25	6015-C	1.35	6015-G	1.80	6015-M 10.80
Machine Screws, 8-32 x 3/4"			5654-C	1.45	5654-G	1.93	5654-M 11.58
Machine Screws, 8-32 x 1"	H1086-F	25	6016-C	1.55	6016-G	2.06	6016-M 12.36
Machine Screws, 8-32 x 1 1/4"	H1088-F	20	6017-C	1.77	6017-G	2.36	6017-M 14.16
Machine Screws, 8-32 x 1 1/2"	H1090-F	20	7142-C	2.06	7142-G	2.74	7142-M 16.44
Machine Screws, 10-32 x 1/2"	H1104-F	20	6020-C	1.59	6020-G	2.12	6020-M 12.72
Machine Screws, 10-32 x 3/8"			5655-C	1.73	5655-G	2.31	5655-M 13.86
Machine Screws, 10-32 x 1"	H1106-F	20	6021-C	1.86	6021-G	2.48	6021-M 14.88
Machine Screws, 10-32 x 1 1/4"	H1108-F	17	6022-C	2.09	6022-G	2.79	6022-M 16.74
Machine Screws, 10-32 x 1 1/2"	H1112-F	15	7143-C	2.75	7143-G	3.67	7143-M 22.02
Machine Screws, 1/4-20 x 1/2"			7144-C	2.65	7144-G	3.53	7144-M 21.18
Machine Screws, 1/4-20 x 3/8"			5656-C	2.86	5656-G	3.81	5656-M 22.86
Machine Screws, 1/4-20 x 3/4"			8061-C	3.07	8061-G	4.09	8061-M 24.54
Machine Screws, 1/4-20 x 1"			8062-C	3.47	8062-G	4.63	8062-M 27.78
Machine Screws, 1/4-20 x 1 1/4"			7145-C	3.94	7145-G	5.25	7145-M 31.50
Machine Screws, 1/4-20 x 1 3/4"			8521-C	4.88	8521-G	6.50	8521-M 39.00
Machine Screws, 1/4-20 x 2 1/2"			7146-C	6.68	7146-G	8.91	7146-M 53.46



**G-C ROUND HEAD MACHINE SCREWS**  
BRASS - NOT PLATED



Assorted Brass Machine Screws	H1210-F	30					
Machine Screws, Brass, 2-56 x 1/4"			5657-C	1.23	5657-G	1.64	5657-M 9.84
Machine Screws, Brass, 2-56 x 1/2"			5658-C	1.44	5658-G	1.92	5658-M 11.52
Machine Screws, Brass, 2-56 x 3/8"			5659-C	1.56	5659-G	2.08	5659-M 12.48
Machine Screws, Brass, 2-56 x 3/4"			5660-C	1.76	5660-G	2.35	5660-M 14.10
Machine Screws, Brass, 3-48 x 3/4"			5661-C	1.99	5661-G	2.65	5661-M 15.90
Machine Screws, Brass, 4-36 x 1/4"			5662-C	1.49	5662-G	1.99	5662-M 11.94
Machine Screws, Brass, 4-36 x 1/2"			5663-C	1.85	5663-G	2.47	5663-M 14.82
Machine Screws, Brass, 4-36 x 3/8"			5664-C	2.08	5664-G	2.77	5664-M 16.62



**HANDY G-C HARDWARE**

- In Convenient Packages:
1. Plastic Boxes
  2. Boxes of 100 or 144 (gross)
  3. Bulk Boxes of 1000.

**HINGED COVER PLASTIC BOXES**  
 — 50-LINE  
 Distributor's Standard Display, 10 Boxes  
 List Price Per Box **55c**

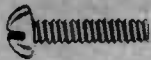
**BOXES OF 100**  
 Distributor's Standard Carton  
 10 Boxes of 100

**BOXES OF 144**  
 (Gross Packages)  
 Distributor's Standard Carton,  
 7 Boxes of 144

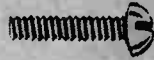
**BULK HARDWARE**  
 (Boxes of 1000)  
 Supplied only in  
 Multiples of 1000

**DESCRIPTION and SPECIFICATIONS**

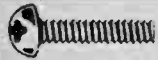
Part No.	Quantity In Box	Part No.	List Price Per 100	Part No.	List Price Per 144	Part No.	List Price Per 1000 Pcs.
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**G-C ROUND HEAD MACHINE SCREWS**  
 BRASS-NICKEL PLATED



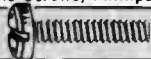
Machine Screws 2-56 x 1/4"		5718C	1.25	5718G	1.66	5718M	9.96
Machine Screws 2-56 x 1/2"		5719C	1.47	5719G	1.96	5719M	11.76
Machine Screws 2-56 x 5/8"		5720C	1.60	5720G	2.13	5720M	12.78
Machine Screws 2-56 x 3/4"		5721C	1.81	5721G	2.41	5721M	14.46
Machine Screws 3-48 x 3/4"		5722C	2.05	5722G	2.73	5722M	16.38
Machine Screws 4-36 x 1/4"		5723C	1.53	5723G	2.04	5723M	12.24
Machine Screws 4-36 x 1/2"		5724C	1.91	5724G	2.55	5724M	15.30
Machine Screws 4-36 x 5/8"		5725C	2.15	5725G	2.86	5725M	17.16
Machine Screws 4-36 x 3/4"		5726C	2.39	5726G	3.18	5726M	19.08
Machine Screws 4-40 x 1/4"		5727C	1.53	5727G	2.04	5727M	12.24
Machine Screws 4-40 x 1/2"		5728C	1.91	5728G	2.55	5728M	15.30
Machine Screws 4-40 x 5/8"		5729C	2.15	5729G	2.86	5729M	17.16
Machine Screws 4-40 x 3/4"		5730C	2.39	5730G	3.18	5730M	19.08
Machine Screws 6-32 x 3/8"		5731C	2.32	5731G	3.09	5731M	18.54
Machine Screws 6-32 x 5/8"		5732C	2.91	5732G	3.88	5732M	23.28
Machine Screws 6-32 x 1 1/4"		5733C	4.60	5733G	6.13	5733M	36.78
Machine Screws 6-32 x 2"		5734C	6.98	5734G	9.31	5734M	55.86
Machine Screws 8-32 x 3/8"		5735C	3.29	5735G	4.39	5735M	26.34
Machine Screws 8-32 x 5/8"		5736C	4.16	5736G	5.55	5736M	33.30
Machine Screws 8-32 x 1 1/4"		5737C	6.47	5737G	8.63	5737M	51.78
Machine Screws 10-32 x 1/2"		5738C	4.82	5738G	6.43	5738M	38.58
Machine Screws 10-32 x 5/8"		5739C	5.37	5739G	7.16	5739M	42.96
Machine Screws 10-32 x 3/4"		5740C	5.93	5740G	7.91	5740M	47.46
Machine Screws 10-32 x 1"		5741C	7.13	5741G	9.51	5741M	57.06
Machine Screws 10-32 x 1 1/2"		5742C	9.76	5742G	13.01	5742M	78.06
Machine Screws 1/4-20 x 1/2"		5743C	8.99	5743G	11.98	5743M	71.88
Machine Screws 1/4-20 x 5/8"		5744C	9.85	5744G	13.13	5744M	78.78
Machine Screws 1/4-20 x 3/4"		5745C	10.73	5745G	14.31	5745M	85.86
Machine Screws 1/4-20 x 1"		5746C	12.65	5746G	16.87	5746M	101.22
Machine Screws 1/4-20 x 1 1/4"		5747C	14.57	5747G	19.43	5747M	116.58
Machine Screws 1/4-20 x 1 3/4"		5748C	18.51	5748G	24.68	5748M	148.08
Machine Screws 1/4-20 x 2 1/2"		5749C	24.89	5749G	33.18	5749M	199.08



**G-C PHILLIPS TYPE ROUND HEAD MACHINE SCREWS**  
 STEEL - NICKEL PLATED



Assorted Phillips Type Machine Screws	H1180-F	25						
Machine Screws, Phillips, 6-32 x 1/4"			8511-C	1.97	8511-G	2.63	8511-M	15.78
Machine Screws, Phillips, 6-32 x 1/2"			8512-C	1.78	8512-G	2.37	8512-M	14.22
Machine Screws, Phillips, 6-32 x 3/4"			5689-C	1.91	5689-G	2.55	5689-M	15.30
Machine Screws, Phillips, 6-32 x 3/4"			8513-C	2.03	8513-G	2.71	8513-M	16.26
Machine Screws, Phillips, 6-32 x 1"			8514-C	2.27	8514-G	3.02	8514-M	18.12
Machine Screws, Phillips, 8-32 x 3/4"			8515-C	1.73	8515-G	2.31	8515-M	13.86
Machine Screws, Phillips, 8-32 x 1/2"			8516-C	1.91	8516-G	2.55	8516-M	15.30
Machine Screws, Phillips, 8-32 x 3/4"			5690-C	2.06	5690-G	2.75	5690-M	16.50
Machine Screws, Phillips, 8-32 x 3/4"			8517-C	2.22	8517-G	2.96	8517-M	17.76
Machine Screws, Phillips, 8-32 x 1"			8518-C	2.55	8518-G	3.40	8518-M	20.40



**G-C BINDING HEAD MACHINE SCREWS**  
 STEEL - NICKEL PLATED



Assorted Binding Head Machine Screws	H1168-F	35						
Machine Screws, 5-36 x 1/4" <small>(Used on many small toggle switches)</small>	H1170-F	35	7154-C	.88	7154-G	1.17	7154-M	7.00
Machine Screws, 6-32 x 3/4"			7151-C	.88	7151-G	1.17	7151-M	7.00
Machine Screws, 6-32 x 1/4"	H1172-F	35	7152-C	.88	7152-G	1.18	7152-M	7.06
Machine Screws, 6-32 x 3/4"			7153-C	.94	7153-G	1.25	7153-M	7.50
Machine Screws, 7-32 x 3/4" <small>(Popular in electrical switches)</small>	H1174-F	30	7155-C	2.60	7155-G	3.47	7155-M	20.81
Machine Screws, 8-32 x 3/4"			7158-C	1.20	7158-G	1.59	7158-M	9.56



<b>HANDY G-C HARDWARE</b> In Convenient Packages: 1. Plastic Boxes 2. Boxes of 100 or 144 (gross) 3. Bulk Boxes of 1000.	<b>HINGED COVER PLASTIC BOXES</b> — 50-LINE Distributor's Standard Display, 10 Boxes List Price Per Box <b>55c</b>	<b>BOXES OF 100</b> Distributor's Standard Carton 10 Boxes of 100	<b>BOXES OF 144</b> (Gross Packages) Distributor's Standard Carton, 7 Boxes of 144	<b>BULK HARDWARE</b> (Boxes of 1000) Supplied only in Multiples of 1000

DESCRIPTION and SPECIFICATIONS	Part No.	Quantity In Box	Part No.	List Price Per 100	Part No.	List Price Per 144	Part No.	List Price Per 1000 Pcs.
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**G-C OVAL HEAD RACK and CABINET SCREWS**
  
**STEEL - NICKEL PLATED**

Assorted Rack Screws and Washers	H1005-F	15						
Machine Screws, 6-32 x 1/2"			6540-C	1.03	6540-G	1.37	6540-M	8.22
Machine Screws, 6-32 x 3/8"			5691-C	1.13	5691-G	1.50	5691-M	9.00
Machine Screws, 6-32 x 3/4"			6541-C	1.21	6541-G	1.61	6541-M	9.66
Machine Screws, 8-32 x 3/8"			5692-C	1.45	5692-G	1.93	5692-M	11.58
Machine Screws, 8-32 x 3/4"			6542-C	1.55	6542-G	2.06	6542-M	12.36
Machine Screws, 10-32 x 1/2"			8848-C	1.58	8848-G	2.11	8848-M	12.66
Machine Screws, 10-32 x 3/8"			5693-C	1.73	5693-G	2.31	5693-M	13.86
Machine Screws, 10-32 x 3/4"			6543-C	1.86	6543-G	2.48	6543-M	14.88

**G-C ORNAMENTAL HEAD SCREWS**
  
**STEEL - STATUARY BRONZE PLATED**

Assorted Ornamental Head Screws	H1250-F	20						
Ornamental Head Screws, 6-32 x 3/4"	H1252-F	25	1097-C	1.78	1097-G	2.38	1097-M	14.25
Ornamental Head Screws, 6-32 x 1"	H1253-F	20	1098-C	1.95	1098-G	2.59	1098-M	15.56
Ornamental Head Screws, 8-32 x 1 1/4"	H1255-F	12	1099-C	2.66	1099-G	3.54	1099-M	21.25

**G-C WOOD SCREWS**
  
**ROUND HEAD - STEEL - NICKEL PLATED**

Assorted Wood Screws	H1502-F	25						
Wood Screws, No 4 x 1/2"			6114-C	1.88	6114-G	2.51	6114-M	15.06
Wood Screws, No 4 x 3/8"			5694-C	1.98	5694-G	2.64	5694-M	15.81
Wood Screws, No 4 x 3/4"			6115-C	2.05	6115-G	2.73	6115-M	16.38
Wood Screws, No 6 x 3/4"			6116-C	2.13	6116-G	2.83	6116-M	17.00
Wood Screws, No 6 x 1"			6117-C	2.51	6117-G	3.34	6117-M	20.06
Wood Screws, No 8 x 3/4"			6118-C	2.42	6118-G	3.23	6118-M	19.38
Wood Screws, No 8 x 1 1/4"			8071-C	3.06	8071-G	4.07	8071-M	24.44
Wood Screws, No 10 x 1 1/2"			8073-C	3.97	8073-G	5.29	8073-M	31.75
Wood Screws, No 12 x 1 1/2"			8075-C	4.75	8075-G	6.33	8075-M	38.00
Wood Screws, No 14 x 1 3/4"			8076-C	6.77	8076-G	9.02	8076-M	54.13

**G-C SPADE BOLTS or MOUNTING SCREWS**
  
**STEEL - NICKEL PLATED**

Assorted Spade Bolts	H1570-F	15						
A 6-32 No. 6 3/32" 1/16" 3/16"			6081-C	2.55	6081-G	3.41	6081-M	20.44
B 6-32 No. 6 1/32" 3/8" 1/16"			6082-C	3.35	6082-G	4.47	6082-M	26.81
C 8-32 No. 8 3/16" 1 3/32" 3/16"			6084-C	6.38	6084-G	8.51	6084-M	51.06

**G-C SHEET METAL SCREWS**
  
**HEX HEAD - SLOTTED - SELF-TAPPING - NICKEL PLATED  
POINTED TYPE "A"**

Assorted Sheet Metal Screws	H1300-F	25						
Assorted No 4 and No 6 Sheet Metal Screws								
Assorted No 8 and No 10 Sheet Metal Screws								
Sheet Metal Screws, No. 4 x 1/2"	H1350-F	35	6090-C	1.61	6090-G	2.15	6090-M	12.88
Sheet Metal Screws, No. 6 x 1/4"	H1362-F	30	6091-C	1.61	6091-G	2.15	6091-M	12.88
Sheet Metal Screws, No. 6 x 3/8"	H1363-F	25	6092-C	1.69	6092-G	2.25	6092-M	13.50
Sheet Metal Screws, No. 6 x 1/2"	H1364-F	25	6093-C	1.78	6093-G	2.38	6093-M	14.25
Sheet Metal Screws, No. 6 x 5/8"			5695-C	1.99	5695-G	2.65	5695-M	15.90
Sheet Metal Screws, No. 6 x 3/4"	H1366-F	20	6094-C	2.17	6094-G	2.90	6094-M	17.38
Sheet Metal Screws, No. 8 x 1/4" (Auto Radio Size)	H1382-F	20	8102-C	1.94	8102-G	2.58	8102-M	15.50
Sheet Metal Screws, No. 8 x 3/8"	H1383-F	20	6095-C	2.02	6095-G	2.70	6095-M	16.19
Sheet Metal Screws, No. 8 x 1/2"	H1384-F	20	6096-C	2.08	6096-G	2.77	6096-M	16.63
Sheet Metal Screws, No. 8 x 5/8"			5696-C	2.07	5696-G	2.76	5696-M	16.58
Sheet Metal Screws, No. 8 x 1"	H1388-F	15	6097-C	2.65	6097-G	3.53	6097-M	21.19
Sheet Metal Screws, No. 10 x 3/8"	H1403-F	15	6098-C	2.38	6098-G	3.18	6098-M	19.06
Sheet Metal Screws, No. 10 x 1/2"	H1404-F	15	6099-C	2.91	6099-G	3.88	6099-M	23.25
Sheet Metal Screws, No. 10 x 3/4"	H1406-F	12	6100-C	3.67	6100-G	4.90	6100-M	29.38



<b>HANDY G-C HARDWARE</b> In Convenient Packages: 1. Plastic Boxes 2. Boxes of 100 or 144 (gross) 3. Bulk Boxes of 1000.	<b>HINGED COVER PLASTIC BOXES</b> 50-LINE Distributor's Standard Display, 10 Boxes List Price Per Box <b>55c</b>	<b>BOXES OF 100</b> Distributor's Standard Carton 10 Boxes of 100	<b>BOXES OF 144</b> (Gross Packages) Distributor's Standard Carton, 7 Boxes of 144	<b>BULK HARDWARE</b> (Boxes of 1000) Supplied only in Multiples of 1000
	Description and Specifications Part No. Quantity In Box	Part No. List Price Per 100	Part No. List Price Per 144	Part No. List Price Per 1000 Pcs.

**G-C ESCUTCHEON PLATE SCREWS**

**ROUND HEAD - SLOTTED - STATUARY BRONZE PLATED**

Assorted Escutcheon Screws	H1500-F	25				
Escutcheon Screws, No. 2 x 1/4"			1091-C	1.63	1091-G	2.18
Escutcheon Screws, No. 2 x 3/8"			1093-C	1.72	1093-G	2.29
					1091-M	13.06
					1093-M	13.75

**G-C RADIO KNOB SET SCREWS**

**SLOTTED - HEADLESS - HARDENED STEEL**

CUP POINT Is Standard

No. 1060 Kit 50 Asst. Set Screws						List Price \$1.10
No. 1061 Kit 100 Asst. Set Screws						List Price \$2.00
Assorted Set Screws	H1605-F	15				
Assorted Set Screws, 6-32						
Assorted Set Screws, 8-32						
Assorted Set Screws, 10-32						
Set Screws, 6-32 x 1/8"			6071-C	3.00	6071-G	4.00
Set Screws, 6-32 x 3/16"	H1623-F	15	6072-C	3.00	6072-G	4.00
Set Screws, 6-32 x 1/4"			6073-C	3.00	6073-G	4.00
Set Screws, 8-32 x 1/8"			6074-C	3.00	6074-G	4.00
Set Screws, 8-32 x 3/16"	H1633-F	15	6075-C	3.00	6075-G	4.00
Set Screws, 8-32 x 1/4"	H1634-F	15	6076-C	3.00	6076-G	4.00
Set Screws, 8-32 x 1/2"			6077-C	3.00	6077-G	4.00
Set Screws, 10-32 x 3/16"			6078-C	3.00	6078-G	4.00
Set Screws, 10-32 x 1/4"	H1644-F	15	6079-C	3.00	6079-G	4.00
					6071-M	24.00
					6072-M	24.00
					6073-M	24.00
					6074-M	24.00
					6075-M	24.00
					6076-M	24.00
					6077-M	24.00
					6078-M	24.00
					6079-M	24.00

**G-C BRISTO SET SCREWS**

**HARDENED STEEL - SPLINE TYPE - HEADLESS**

Bristo Set Screws, 6-32 x 3/16"			7182-C	15.00	7182-G	20.00
Bristo Set Screws, 8-32 x 1/8"			7186-C	15.00	7186-G	20.00
Bristo Set Screws, 8-32 x 3/16"			7187-C	15.00	7187-G	20.00
					7182-M	120.00
					7186-M	120.00
					7187-M	120.00

**G-C ALLEN HEX SET SCREWS**

**STEEL - HARDENED - HEADLESS**

Assorted Lengths, 4-36	H1674-F	5				
Assorted Lengths, 6-32	H1676-F	5				
Assorted Lengths, 8-32	H1678-F	5				
Hex Set Screws, 4-36 x 1/8"			7191-C	11.25	7191-G	15.00
Hex Set Screws, 6-32 x 1/8"			7196-C	11.25	7196-G	15.00
Hex Set Screws, 6-32 x 3/16"			7197-C	11.25	7197-G	15.00
Hex Set Screws, 8-32 x 1/8"			7201-C	11.25	7201-G	15.00
Hex Set Screws, 8-32 x 3/16"			7202-C	11.25	7202-G	15.00
					7191-M	90.00
					7196-M	90.00
					7197-M	90.00
					7201-M	90.00
					7202-M	90.00

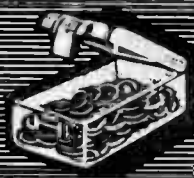
**G-C PHONOGRAPH NEEDLE and STYLUS SET SCREWS**

**STEEL - BRONZE PLATED**

No. 1052 Asst., 15 in Box		List Price \$ .75				
Assorted Phono Needle Screws	H1550-F	12				
No. 1053 Asst., 100 in Box	H1551-F	12				
Phono Needle Screws, 2-56 x 3/16"	H1553-F	12	P1-C	1.10	P1-G	1.47
Phono Needle Screws, 2-64 x 3/8"			P2-C	4.25	P2-G	5.67
Phono Needle Screws, 1-56 x 3/8"			P3-C	6.07	P3-G	8.09
Phono Needle Screws, 1-64 x 1"			P4-C	5.70	P4-G	7.59
Phono Needle Screws, 1-72 x 7/32"			P5-C	2.87	P5-G	3.82
Phono Needle Screws, 1-72 x 23/32"	H1555-F	5	P6-C	2.77	P6-G	3.70
Phono Needle Screws, 0-64 x 23/32"			P7-C	10.84	P7-G	14.45
Phono Needle Screws, 4-48 x 23/32"			P8-C	4.34	P8-G	5.78
Phono Needle Screws, 2-64 x 23/32"			P9-C	7.04	P9-G	9.39
Phono Needle Screws, 1-64 x 3/4"			P10-C	4.24	P10-G	5.66
					P1-M	8.81
					P2-M	34.00
					P3-M	48.56
					P4-M	45.56
					P5-M	22.94
					P6-M	22.19
					P7-M	86.69
					P8-M	34.69
					P9-M	56.31
					P10-M	33.94



**GENERAL CEMENT  
MANUFACTURING CO.**  
ROCKFORD, ILLINOIS, USA



**HANDY G-C HARDWARE**

- In Convenient Packages:  
 1. Plastic Boxes  
 2. Boxes of 100 or 144 (gross)  
 3. Bulk Boxes of 1000.

**HINGED COVER  
PLASTIC BOXES**

50-LINE  
 Distributor's Standard  
 Display, 10 Boxes  
 List Price  
 Per Box **55c**

**BOXES OF  
100**

Distributor's  
 Standard Carton  
 10 Boxes of 100

**BOXES OF  
144**

(Gross Packages)  
 Distributor's  
 Standard Carton,  
 7 Boxes of 144

**BULK  
HARDWARE**

(Boxes of 1000)  
 Supplied only in  
 Multiples of 1000

DESCRIPTION and SPECIFICATIONS

Part No.

Quantity  
 In Box

Part No.

List Price  
 Per 100

Part No.

List Price  
 Per 144

List Price Per  
 1000 Pcs.



**PHONO CARTRIDGE MOUNTING SCREWS**  
**STEEL - NICKEL PLATED**



Assorted Cartridge Mounting Screws  
 Cartridge Screws, 4-36 x 1/4"  
 Cartridge Screws, 4-40 x 1/4"

H1560-F	60					
H1562-F	40	6005-IC	.81	6005-G	1.07	6005-M 6.44
H1564-F	40	6005-AC	.81	6005-AG	1.07	6005-AM 6.44



**G-C HEXAGON NUTS**  
**STEEL - NICKEL PLATED**



Assorted Hex Nuts

H1800-F	30					
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Thread	Width	Thickness	Part No.	Quantity	List Price	Part No.	List Price	Part No.	List Price
2-56	3/16"	1/16"	H1802-F	30	7225-C 1.15	7225-G	1.53	7225-M	9.19
3-48	3/8"	1/8"	H1803-F	30	7226-C 1.15	7226-G	1.53	7226-M	9.19
4-36	1/4"	3/32"	H1805-F	30	6041-C 1.10	6041-G	1.47	6041-M	8.81
4-40	1/4"	3/32"	H1804-F	30	6041-AC 1.10	6041-AG	1.47	6041-AM	8.81
5-40	3/8"	3/64"			6045-BC 1.21	6045-BG	1.62	6045-BM	9.69
6-32	1/4"	3/32"	H1806-F	30	6042-C 1.15	6042-G	1.53	6042-M	9.19
6-32	3/8"	3/64"	H1807-F	30	7230-C 1.21	7230-G	1.62	7230-M	9.69
8-32	1/4"	3/32"	H1808-F	30	6043-C 1.22	6043-G	1.63	6043-M	9.75
8-32	1/2"	1/8"	H1809-F	30	7233-C 1.22	7233-G	1.63	7233-M	9.75
10-32	3/8"	3/64"	H1810-F	30	6044-C 1.60	6044-G	2.14	6044-M	12.81
10-32	3/8"	1/8"			6049-C 1.45	6049-G	1.94	6049-M	11.63
1/4-20	3/8"	3/16"	H1820-F	25	7235-C 2.21	7235-G	2.95	7235-M	17.69
1/2-32	3/8"	1/8"			7236-C 4.65	7236-G	6.20	7236-M	37.19
3/8-32	3/8"	3/32"	H1923-F	15	6050-AC 3.68	6050-AG	4.91	6050-AM	29.44
7/16-27	3/8"	1/4"	H1924-F	10	7238-C 7.68	7238-G	10.24	7238-M	61.44
1/2-32	3/8"	3/64"			6050-BC 5.24	6050-BG	6.98	6050-BM	41.88



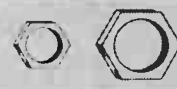
**G-C BRASS HEXAGON NUTS**  
**NOT PLATED**



Thread	Width	Thickness	Part No.	Quantity	List Price	Part No.	List Price	Part No.	List Price
2-56	3/8"	1/16"			7241-C 1.63	7241-G	2.18	7241-M	13.06
3-48	3/8"	1/16"			7242-C 1.49	7242-G	1.98	7242-M	11.88
4-36	1/4"	3/32"	H1842-F	35	7243-C 1.96	7243-G	2.62	7243-M	15.69
4-40	1/4"	3/32"	H1844-F	25	7244-C 1.95	7244-G	2.59	7244-M	15.56
6-32	1/4"	3/32"	H1846-F	25	7245-C 1.94	7245-G	2.58	7245-M	15.50
6-32	3/8"	3/64"			5697-C 2.33	5697-G	3.11	5697-M	18.63
8-32	1/4"	3/32"			5698-C 1.94	5698-G	2.58	5698-M	15.50
8-32	3/8"	3/64"	H1848-F	15	7248-C 2.33	7248-G	3.11	7248-M	18.63
10-32	3/8"	1/8"	H1850-F	15	7249-C 2.56	7249-G	3.41	7249-M	20.44
1/4-20	3/8"	3/16"			5699-C 5.21	5699-G	6.95	5699-M	41.70



**G-C MOUNTING NUTS**  
**STEEL - NICKEL PLATED**



Thread	Width	Thickness	Part No.	Quantity	List Price	Part No.	List Price	Part No.	List Price
1/2-32 (Rotary Switch Size)	3/8"	1/8"	H1920-F	12	7236-C 4.65	7236-G	6.20	7236-M	37.19
3/8-32 (Volume Control Size)	3/8"	3/32"	H1923-F	15	6050-AC 3.68	6050-AG	4.91	6050-AM	29.44
7/16-27 (Pilot Light Size)	3/8"	1/4"			7238-C 7.68	7238-G	10.24	7238-M	61.44
1/2-32 (Toggle Switch Size)	3/8"	3/64"	H1924-F	10	6050-BC 5.24	6050-BG	6.98	6050-BM	41.88
1/2-32 Round Ring Nut (Toggle Switch Size)	3/8"	1/8"	H1926-F	8	6050-CC 5.79	6050-CG	7.72	6050-CM	46.31





**GENERAL CEMENT**  
MANUFACTURING CO.  
ROCKFORD, ILLINOIS, USA



**HANDY G-C HARDWARE**

In Convenient Packages:

- 1 Plastic Boxes
- 2 Boxes of 100 or 144 (gross)
- 3 Bulk Boxes of 1000.

**HINGED COVER PLASTIC BOXES**

— 50-LINE —  
Distributor's Standard Display, 10 Boxes  
List Price Per Box **55c**

**BOXES OF 100**

Distributor's Standard Carton  
10 Boxes of 100

**BOXES OF 144**

(Gross Packages)  
Distributor's Standard Carton,  
7 Boxes of 144

**BULK HARDWARE**

(Boxes of 1000)  
Supplied only in  
Multiples of 1000

DESCRIPTION and SPECIFICATIONS

Part No.	Quantity In Box	Part No.	List Price Per 100	Part No.	List Price Per 144	Part No.	List Price Per 1000 Pcs
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**G-C TINNEMAN SPEED NUTS**



Assorted Speed Nuts	H1960-F	30						
Speed Nuts, No 4			6051-C	1 27	6051-G	1 70	6051-M	10 19
Speed Nuts, No 6			6052-C	1 30	6052-G	1 73	6052-M	10 38
Speed Nuts, No 8			6053-C	1 30	6053-G	1 73	6053-M	10 38



**G-C ACORN NUTS  
SOLID BRASS - NICKEL PLATED**



Assorted Acorn Nuts	H1950-F	10						
Acorn Nuts, 6-32			6031-C	6 31	6031-G	8 41	6031-M	50 44
Acorn Nuts, 8-32			6032-C	6 31	6032-G	8 41	6032-M	50 44
Acorn Nuts, 10-32			6033-C	8 40	6033-G	11 20	6033-M	67 19



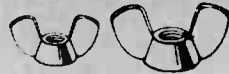
**G-C KNURLED THUMB NUTS  
BRASS - NICKEL PLATED**



Assorted Knurled Thumb Nuts	H1941-F	10						
Knurled Thumb Nuts, 6-32	H1943-F	8	6655-C	5 01	6655-G	6 68	6655-M	40 06
Knurled Thumb Nuts, 8-32	H1944-F	8	6656-C	4 97	6656-G	6 63	6656-M	39 75
Knurled Thumb Nuts, 10-32	H1945-F	5	6657-C	11 71	6657-G	15 62	6657-M	93 69



**G-C WING NUTS  
NICKEL PLATED**



Assorted Wing Nuts	H1931-F	10						
Wing Nuts, 6-32	H1933-F	10	6658-C	5 52	6658-G	7 37	6658-M	44 19
Wing Nuts, 8-32	H1934-F	10	6659-C	4 56	6659-G	6 08	6659-M	36 50
Wing Nuts, 10-32	H1935-F	8	6660-C	4 56	6660-G	6 08	6660-M	36 50



**G-C METAL WASHERS  
NICKEL PLATED**



Assorted Metal Washers				H870-F	80						
Screw Size	Hole Size	O.D.	Thickness								
No 4	1/8"	9/32"	1/32"	H874-F	80	6154-C	42	6154-G	56	6154-M	3 38
No 6	5/32"	7/16"	1/32"	H876-F	80	6155-C	47	6155-G	63	6155-M	3 75
No 8	3/16"	7/16"	1/32"	H878-F	80	6156-C	49	6156-G	66	6156-M	3 94
No 10	13/64"	3/8"	1/32"	H880-F	70	7306-C	53	7306-G	71	7306-M	4 25
No. 10	13/64"	7/16"	1/32"			7307-C	49	7307-G	66	7307-M	3 94
No. 10	13/64"	1/2"	.049			6157-C	66	6157-G	89	6157-M	5 31
No. 12	.228	3/16"	.021			7308-C	58	7308-G	77	7308-M	4 63
No 1/4"	5/32"	5/8"	1/16"	H882-F	50	6158-C	77	6158-G	1 02	6158-M	6 13
No 1/4"	17/64"	1/2"	1/16"			7311-C	1 06	7311-G	1 41	7311-M	8 44
No 3/16"	3/16"	11/16"	1/16"			7312-C	98	7312-G	1 30	7312-M	7 81



**G-C LOCK WASHERS  
INTERNAL LOCK WASHERS  
CADMIUM PLATED**



Assorted Lock Washers, All Types	H918-F	45						
Assorted Internal Lock Washers	H920-F	50						
	Screw Size	O.D.						
Internal Lock Washers, No 2	H922-F	35	7322-C	1 20	7322-G	1 61	7322-M	9 63
Internal Lock Washers, No 3			7323-C	1 05	7323-G	1 40	7323-M	8 38
Internal Lock Washers, No 4	H924-F	50	7324-C	76	7324-G	1 01	7324-M	6 06
Internal Lock Washers, No 6	H926-F	50	7326-C	76	7326-G	1 01	7326-M	6 06
Internal Lock Washers, No 8	H928-F	50	7328-C	83	7328-G	1 11	7328-M	6 63
Internal Lock Washers, No 10	H930-F	45	7330-C	83	7330-G	1 11	7330-M	6 63
Internal Lock Washers, No 1/4"			7332-C	1 09	7332-G	1 46	7332-M	8 75



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**HINGED COVER  
PLASTIC BOXES**

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Distributor's Standard  
Display, 10 Boxes  
List Price  
**55c**

**BOXES OF  
100**

Distributor's  
Standard Carton  
10 Boxes of 100

**BOXES OF  
144**

(Gross Packages)  
Distributor's  
Standard Carton,  
7 Boxes of 144

**BULK  
HARDWARE**

(Boxes of 1000)  
Supplied only in  
Multiples of 1000

**DESCRIPTION and SPECIFICATIONS**

Part No. Quantity In Box Part No. List Price Per 100 Part No. List Price Per 144 Part No. List Price Per 1000 Pcs.

**G-C LOCK WASHERS  
INTERNAL LOCK WASHERS  
CADMIUM PLATED**



Internal Lock Washers, No. $\frac{3}{16}$ "	$\frac{19}{32}$ "			7333-C	1.36	7333-G	1.81	7333-M	10.88
Internal Lock Washers, No. $\frac{1}{8}$ "	$\frac{11}{16}$ "			7334-C	1.83	7334-G	2.44	7334-M	14.63
Internal Lock Washers, No. $\frac{3}{8}$ "	$\frac{3}{16}$ "	H938-F	25	7335-C	2.08	7335-G	2.77	7335-M	16.63
Internal Lock Washers, No. $\frac{15}{32}$ "	$\frac{19}{32}$ "			7338-C	2.63	7338-G	3.51	7338-M	21.06

**EXTERNAL LOCK WASHERS  
CADMIUM PLATED**



Assorted External Lock Washers	H950-F	60							
External Lock Washers, No. 4				7354-C	.76	7354-G	1.01	7354-M	6.06
External Lock Washers, No. 6				7356-C	.76	7356-G	1.01	7356-M	6.06
External Lock Washers, No. 8				7358-C	.83	7358-G	1.11	7358-M	6.63
External Lock Washers, No. 10				7360-C	.81	7360-G	1.07	7360-M	6.44
External Lock Washers, No. $\frac{1}{4}$ "	$\frac{1}{2}$ "			7361-C	1.09	7361-G	1.45	7361-M	8.69
External Lock Washers, No. $\frac{3}{8}$ "	$\frac{1}{16}$ "			7363-C	1.60	7363-G	2.14	7363-M	12.81

**SPLIT TYPE LOCK WASHERS  
CADMIUM PLATED**



Assorted Split Type Lock Washers	H960-F	60							
Screw Size	O.D.	Thickness							
No. 4	$\frac{3}{16}$ "	$\frac{1}{32}$ "		6503-C	.81	6503-G	1.08	6503-M	6.50
No. 6	$\frac{1}{8}$ "	$\frac{1}{32}$ "		6504-C	.76	6504-G	1.01	6504-M	6.06
No. 8	$\frac{1}{16}$ "	.025		6505-C	.63	6505-G	.83	6505-M	5.00
No. 10	$\frac{3}{16}$ "	.050		6506-C	.90	6506-G	1.20	6506-M	7.19
No. $\frac{1}{4}$ "	$\frac{1}{8}$ "	$\frac{3}{4}$ "		6507-C	1.33	6507-G	1.77	6507-M	10.63

**G-C SPRING FRICTION WASHERS**



Assorted Spring Friction Washers	H750-F	12							
A	B	C	Thickness of Metal						
$\frac{3}{4}$ "	$\frac{5}{16}$ "	$\frac{1}{32}$ "	.012	7385-C	4.06	7385-G	5.42	7385-M	32.50
$\frac{3}{16}$ "	$\frac{2}{8}$ "	$\frac{1}{32}$ "	.008	7386-C	3.45	7386-G	4.61	7386-M	27.63
$\frac{3}{16}$ "	$\frac{7}{16}$ "	$\frac{1}{16}$ "	.008	7387-C	3.37	7387-G	4.49	7387-M	26.94
$\frac{1}{4}$ "	$\frac{9}{16}$ "	$\frac{1}{16}$ "	.012	7389-C	3.84	7389-G	5.13	7389-M	30.75

**G-C CUP FINISHING WASHERS  
NICKEL PLATED**



Assorted Screws and Washers	H1005-F	15							
Assorted Cup Washers	H805-F	40							
Cup Washers, No. 6	H806-F	45		6161-C	.66	6161-G	.89	6161-M	5.31
Cup Washers, No. 8	H808-F	45		6162-C	.70	6162-G	.94	6162-M	5.63
Cup Washers, No. 10	H810-F	35		6163-C	.93	6163-G	1.24	6163-M	7.44

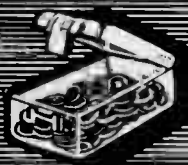
**G-C C-WASHERS and RETAINING RINGS  
STEEL - CADMIUM PLATED**



Assorted C-Washers	H770-F	25										
Shaft Diam	A	B	C	D								
$\frac{3}{16}$ "	.171	.125	.062	.031	H772-F	15	6182-C	1.57	6182-G	2.09	6182-M	12.56
$\frac{1}{4}$ "	.234	.156	.046	.031	H774-F	15	6183-C	1.79	6183-G	2.39	6183-M	14.31
$\frac{1}{4}$ "	.260	.187	.062	.031			6184-C	1.82	6184-G	2.43	6184-M	14.56
$\frac{1}{4}$ "	$\frac{9}{32}$ " O.D.	Wire Ring		.029	H778-F	50	6185-C	.63	6185-G	.83	6185-M	5.00



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**HINGED COVER  
PLASTIC BOXES**

— 50-LINE —  
Distributor's Standard  
Display, 10 Boxes  
List Price **55c**  
Per Box

**BOXES OF  
100**

Distributor's  
Standard Carton  
10 Boxes of 100

**BOXES OF  
144**

(Gross Packages)  
Distributor's  
Standard Carton,  
7 Boxes of 144

**BULK  
HARDWARE**

(Boxes of 1000)  
Supplied only in  
Multiples of 1000

**DESCRIPTION and SPECIFICATIONS**

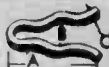
Port No. Quantity In Box Part No. List Price Per 100 Part No. List Price Per 144 Part No. List Price Per 1000 Pcs.



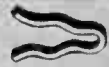
**G-C COTTER PINS  
STEEL - CADMIUM PLATED**



Assorted Cotter Pins		H388-F	60						
Diameter	Length Under Eye								
Cotter Pins, 1/16"	1/2"			7301-C	70	7301-G	.94	7301-M	5.63
Cotter Pins, 1/8"	1"			7303-C	91	7303-G	1.21	7303-M	7.25
Cotter Pins, 3/16"	1 1/4"			7304-C	1.08	7304-G	1.44	7304-M	8.63
Cotter Pins, 1/4"	1 1/2"			7305-C	1.38	7305-G	1.83	7305-M	11.00



**G-C HAIR PIN COTTERS**



Assorted Hair Pin Cotter			H380-F	50						
A	B	C								
9/32"	1/8"	.026			7375-C	.74	7375-G	.98	7375-M	5.88
3/8"	1/4"	.026			7376-C	.69	7376-G	.92	7376-M	5.50
13/32"	3/8"	.026			7377-C	.79	7377-G	1.05	7377-M	6.31
1/2"	1/2"	.026			7378-C	.69	7378-G	.92	7378-M	5.50
21/32"	3/4"	.032			7379-C	.82	7379-G	1.09	7379-M	6.56



**G-C FLAT FIBRE WASHERS**



Assorted Flat Fibre Washers				H820-F	35						
Screw Size	I.D.	O.D.	Thickness								
No. 6	.140	1/4"	1/32"	H824-F	30	6513-C	.56	6513-G	.75	6513-M	4.50
No. 8	1/64"	3/8"	1/32"	H825-F	30	6514-C	.61	6514-G	.81	6514-M	4.88
No. 10	.196	3/8"	1/32"	H826-F	30	6515-C	.61	6515-G	.81	6515-M	4.88
No. 1/4"	1/4"	1/2"	3/64"	H827-F	24	6516-C	.77	6516-G	1.02	6516-M	6.13
No. 3/8"	.390	23/64"	3/64"	H828-F	20	6517-C	1.27	6517-G	1.70	6517-M	10.19
No. 13/32"	13/32"	3/4"	1/32"			6518-C	1.27	6518-G	1.70	6518-M	10.19

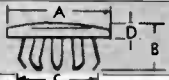
overall thickness .062



**G-C EXTRUDED FIBRE WASHERS**



Assorted Extruded and Flat Fibre Washers					H854-F	30						
Assorted Extruded Fibre Washers					H855-F	30						
A	B	C	D	Screw Size								
3/16"	.187	.140	.039	No. 6		6525-C	1.44	6525-G	1.92	6525-M	11.50	
3/8"	.250	.169	.031	No. 8		6526-C	1.44	6526-G	1.92	6526-M	11.50	
7/16"	.255	.196	.032	No. 10		6527-C	1.57	6527-G	2.09	6527-M	12.56	
1/2"	.375	.250	.032	1/4" Shaft		6528-C	1.57	6528-G	2.09	6528-M	12.56	
3/8"	.437	.380	.031	3/8" Shaft	H864-F	20	6529-C	1.65	6529-G	2.20	6529-M	13.19



**G-C SNAP BUTTON HOLE PLUGS  
NICKEL PLATED**



Assorted Hole Plugs		H300-F	8									
No. 1710 Asst.	50 Plugs in Box	List Price	\$2.75									
For Hole Dia	A	B	C	D								
1/4"	13/32"	1/4"	1/64"	5/64"	H306-F	8	1711-AC	6.58	1711-AG	8.77	1711-AM	52.63
3/16"	7/16"	1/4"	21/64"	1/16"			1711-BC	6.58	1711-BG	8.77	1711-BM	52.63
3/8"	13/32"	3/8"	25/64"	3/64"	H308-F	8	1711-C	6.58	1711-G	8.77	1711-M	52.63
1/2"	21/32"	1/2"	17/32"	3/8"	H310-F	6	1712-C	7.62	1712-G	10.16	1712-M	60.94
5/8"	51/64"	5/8"	41/64"	5/8"	H312-F	6	1713-C	8.68	1713-G	11.57	1713-M	69.44
3/4"	15/16"	3/4"	49/64"	3/4"	H314-F	5	1714-C	10.52	1714-G	14.02	1714-M	84.13
2"							1714-AC	12.09	1714-AG	16.13	1714-AM	96.75
1"	15/32"	11/16"	13/32"	5/8"	H316-F	5	1715-AC	14.19	1715-AG	18.92	1715-AM	113.50
1 1/8"	17/16"	11/32"	1 1/4"	3/2"			1715-BC	14.19	1715-BG	18.92	1715-BM	113.50
1 1/4"	17/16"	5/8"	1 1/2"	3 1/2"			1715-C	15.05	1715-G	20.06	1715-M	120.38
1 3/8"	1 1/16"	1 1/2"	1 13/32"	3 1/2"			5700-C	19.38	5700-G	25.83	5700-M	155.00
1 7/8"	1 3/8"	2 1/4"	1 13/8"	3 1/4"			5701-C	20.63	5701-G	27.50	5701-M	165.00
1 1/2"	1 41/64"	1 1/2"	1 13/32"	3 1/2"			5702-C	22.44	5702-G	29.92	5702-M	179.50



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**BOXES OF  
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**BOXES OF  
144**

(Gross Packages)  
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7 Boxes of 144

**BULK  
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(Boxes of 1000)  
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**DESCRIPTION and SPECIFICATIONS**

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Punched Vent  
Type



**G-C SNAP-IN VENTILATING PLUGS  
NICKEL PLATED**



Screen Vent  
Type

Ventilating Plugs, 1" Hole Size, Punched Holes	H334-F	4	1709-C	15.31	1709-G	20.41	1709-M	122.44
Ventilating Plugs, 1" Hole Size, Screen Vent			1708-C	49.93	1708-G	66.57	1708-M	399.44



**G-C SNAP-IN TRIMOUNTS**



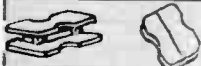
No. 1720 Asst.	100 Trimounts	List Price \$1.35							
Assorted Trimounts			H370-F	20					
To Fit Hole	A	B	Fig. No.						
1/8"	9/32"	3/16"	1	1721-C	1.85	1721-G	2.47	1721-M	14.81
1/8"	9/32"	13/64"	2	H373-F	25	1722-C	1.85	1722-G	2.47
.136	11/32"	17/64"	3			1723-C	1.77	1723-G	2.37
.136	23/64"	9/32"	4	H375-F	20	1724-C	2.42	1724-G	3.23
3/32"	3/16" x 13/32"	25/64"	5	H378-F	17	1726-C	3.24	1726-G	4.31
5/32"	7/16" x 1/32"	21/32"	6	H379-F	15	1727-C	3.16	1727-G	4.21



**G-C DIAL CORD CLIPS  
NICKEL PLATED**



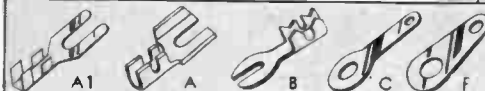
Assorted Dial Cable Clips			H745-F	30					
Used on Cord No.	A	B	C						
75 - 75A	1/8"	7/64"	3/32"	H746-F	40	6221-C	1.13	6221-G	1.51
74 - 74L	1/4"	23/32"	3/32"			6222-C	1.27	6222-G	1.69
73 - 73X	3/16"	9/64"	3/16"			6223-C	1.31	6223-G	1.75



**G-C FUSE CLIPS**



For 1/4" Glass Fuses, No 6 Mounting Hole	B	H600-F	12	6311-C	3.09	6311-G	4.12	6311-M	24.69
Television Fuse Clip (A)	No. 8618			(\$0.41 List)					
Television Fuse Clip	No. 8618-D			(Display 24 No. 8618 - 9.88)					



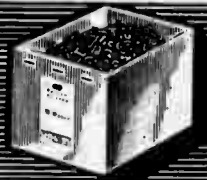
**G-C SOLDERING LUGS  
TINNED**



No. 1020 100 Asst Solder Lugs			List Price \$1.10							
Assorted Soldering Lugs			H100-F	30						
Hole Size	Fig. No.	Length								
Solder Lugs, No. 6	A 1	5/8"			8466-C	2.63	8466-G	3.51	8466-M	21.06
Solder Lugs, No. 6	A	23/32"			8467-C	4.69	8467-G	6.25	8467-M	37.50
Solder Lugs, No. 8	A	23/32"			8468-C	5.06	8468-G	6.74	8468-M	40.44
Solder Lugs, No. 6	B	23/32"	H104-F	25	1021-BC	2.00	1021-BG	2.67	1021-BM	16.00
Solder Lugs, No. 8	B	23/32"	H106-F	25	7445-C	1.99	7445-G	2.66	7445-M	15.94
Solder Lugs, No. 10	B	23/32"			8473-C	2.64	8473-G	3.52	8473-M	21.13
Solder Lugs, No. 6	C	1/2"			5703-C	2.81	5703-G	3.75	5703-M	22.50
Solder Lugs, No. 8	C	13/16"			5704-C	2.81	5704-G	3.75	5704-M	22.50
Solder Lugs, No. 10	C	13/16"			5705-C	2.81	5705-G	3.75	5705-M	22.50
Solder Lugs, No. 6	C	11/16"	H108-F	30	1021-CC	1.15	1021-CG	1.53	1021-CM	9.19
Solder Lugs, No. 6	F	9/16"	H112-F	30	1021-FC	1.54	1021-FG	2.05	1021-FM	12.31
Solder Lugs, No. 8	F	7/8"	H113-F	30	7451-C	1.45	7451-G	1.94	7451-M	11.63
Solder Lugs, No. 6	H	1"	H114-F	25	7454-C	1.11	7454-G	1.48	7454-M	8.88
Solder Lugs, No. 8	H	1"	H117-F	25	7455-C	2.48	7455-G	3.30	7455-M	19.81
Solder Lugs, No. 10	H	1"	H118-F	25	7456-C	1.53	7456-G	2.04	7456-M	12.25
Solder Lugs, No. 4	K	13/16"			7458-C	3.09	7458-G	4.13	7458-M	24.75
Solder Lugs, No. 8	K	13/16"			7460-C	3.10	7460-G	4.14	7460-M	24.81
Solder Lugs, No. 10	K	13/16"			7461-C	3.10	7461-G	4.14	7461-M	24.81
Solder Lugs, No. 6	L	5/8"	H122-F	20	7462-C	1.77	7462-G	2.37	7462-M	14.19
Solder Lugs, No. 8	L	5/8"			7463-C	1.77	7463-G	2.37	7463-M	14.19
Solder Lugs, No. 4	F	7/8"			5706-C	2.81	5706-G	3.75	5706-M	22.50
Solder Lugs, No. 8	F	7/8"			5707-C	2.81	5707-G	3.75	5707-M	22.50
Solder Lugs, No. 6	F	7/8"			5708-C	2.81	5708-G	3.75	5708-M	22.50



**GENERAL CEMENT**  
MANUFACTURING CO.  
ROCKFORD, ILLINOIS, USA



**HANDY G-C HARDWARE**

In Convenient Packages:

1. Plastic Boxes or Envelopes
2. Boxes of 100 or 144 (gross)
3. Bulk Boxes of 1000.

**HINGED COVER PLASTIC BOXES**

— 50-LINE —  
Distributor's Standard Display, 10 Boxes  
List Price Per Box **55c**

**BOXES OF 100**

Distributor's Standard Carton  
10 Boxes of 100

**BOXES OF 144**

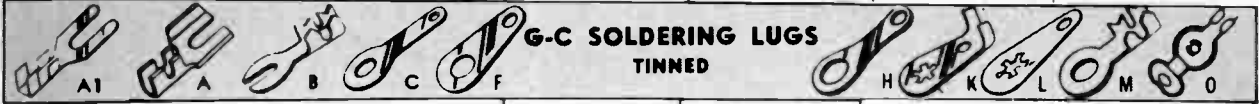
(Gross Packages)  
Distributor's Standard Carton,  
7 Boxes of 144

**BULK HARDWARE**

(Boxes of 1000)  
Supplied only in  
Multiples of 1000

**DESCRIPTION and SPECIFICATIONS**

Part No.	Quantity In Box	Part No.	List Price Per 100	Part No.	List Price Per 144	Part No.	List Price Per 1000 Pcs.
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**G-C SOLDERING LUGS  
TINNED**

Solder Lugs, No. 6	M	1/16"	H124-F	25	7441-C	1.97	7441-G	2.63	7441-M	15.75
Solder Lugs, No. 8	M	1/16"	H134-F	25	7442-C	1.90	7442-G	2.53	7442-M	15.19
Solder Lugs, No. 10	M	1/16"	H102-F	25	1021-AC	2.47	1021-AG	3.29	1021-AM	19.75
Solderless TV Line Lug	O		H225-F	10	8633-C	2.74	8633-G	3.65	8633-M	21.88



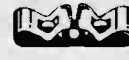
**G-C CABLE HOLDER CLAMPS  
NICKEL PLATED**



Assorted Cable Clamps		H500-F	20						
To Fit Cable	Mounting Hole								
1/8" to 3/8"	No. 6	H502-F	25	6251-C	1.63	6251-G	2.18	6251-M	13.06
3/8" to 1/4"	No. 6	H503-F	20	6252-C	1.85	6252-G	2.47	6252-M	14.81
1/4" to 3/8"	No. 6			7503-C	3.47	7503-G	4.63	7503-M	27.75
3/8" to 1/2"	No. 6	H506-F	15	6253-C	2.11	6253-G	2.81	6253-M	16.88
Baseboard Wire Clips Black Parkerized		H509-F	20	8345-C	3.08	8345-G	4.11	8345-M	24.63



**G-C FAHNESTOCK CLIPS  
NICKEL PLATED**



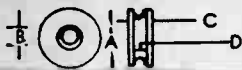
Assorted Fahnestock Clips					H590-F	12				
Fig.	Length	Width	Mtg. Hole	Max. Wire						
A	1/2"	3/32"	4	16	H592-F	15	6301-C	3.09	6301-G	4.12
B	3/4"	3/16"	6	14	H594-F	14	6302-C	3.64	6302-G	4.86
C	1 1/8"	3/8"	8	10			6303-C	6.21	6303-G	8.28
D	1 1/2"	3/8"	6	10			6304-C	22.94	6304-G	30.58
E	3/4"	3/8"	6	14			6306-C	8.41	6306-G	11.21
									6306-M	67.25



**G-C TERMINAL STRIP ASSORTMENT**



Assorted Terminal Strips		H250-F	4				
Terminal Strips, 1 Lug				1781-C	5.63		
Terminal Strips, 2 Lugs				1782-C	5.88		
Terminal Strips, 3 Lugs				1783-C	7.00		
Terminal Strips, 4 Lugs				1784-C	7.50		
Terminal Strips, 5 Lugs				1785-C	8.75		
Terminal Strips, 6 Lugs				1786-C	13.13		
Terminal Strips, 7 Lugs				1787-C	22.63		
Terminal Strips, 8 Lugs				1788-C	25.94		



**G-C DIAL PULLEYS  
BRASS**



Assorted Dial Pulleys				H1966-F	6					
A	B	C	D (Groove Width)							
3/8"	.120	1/8"	3/32"			6057-AC	7.70	6057-AG	10.27	
1/4"	.067	1/16"	1/8"			6057-BC	11.43	6057-BG	15.24	
1/2"	1/8"	3/16"	3/32"			6057-GC	14.15	6057-GG	18.87	
.620	.128	.165	1/8"			6057-CC	15.58	6057-CG	20.77	
.860	.128	3/32"	.050			6057-FC	26.74	6057-FG	35.65	
									6057-FM	213.92



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50-LINE  
Distributor's Standard Display. 10 Boxes  
List Price Per Box **55c**

**BOXES OF 100**

Distributor's Standard Carton  
10 Boxes of 100

**BOXES OF 144**

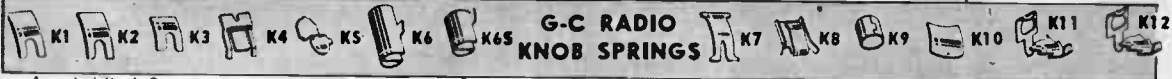
(Gross Packages)  
Distributor's Standard Carton.  
7 Boxes of 144

**BULK HARDWARE**

(Boxes of 1000)  
Supplied only in Multiples of 1000

**DESCRIPTION and SPECIFICATIONS**

Part No. Quantity In Box Part No. List Price Per 100 Part No. List Price Per 144 Part No. List Price Per 1000 Pcs.



**G-C RADIO KNOB SPRINGS**

Assorted Knob Springs	H480-F	18							
TV Knob Spring Assortment	H460-F	12							
No. 1050 Kit of 35 Springs			List Price \$1.10						
No. 1051 Kit of 100 Springs			List Price \$1.95						
Fig. No	Width	Length	For Knob Shaft. Diam.						
K1	3/32" Light	3/16"	1/4"	H482-F	20	6460-C 1.75	6460-G 2.33	6460-M 13.98	
K2	3/32" Heavy	3/16"	1/4"	H484-F	20	6461-C 1.83	6461-G 2.44	6461-M 14.63	
K3	3/32"	3/16"	1/4"	H487-F	20	6462-C 1.48	6462-G 1.97	6462-M 11.83	
K4	3/8"	3/32"	1/4"	H489-F	10	6463-C 1.96	6463-G 2.61	6463-M 15.67	
K5	3/32"	13/32"	1/4"			6464-C 3.08	6464-G 4.11	6464-M 24.64	
K6	3/32"	3/8"	1/4"	H492-F	8	6465-C 3.93	6465-G 5.23	6465-M 31.40	
K6-S	3/32"	1/4"	1/4"			6466-C 4.67	6466-G 6.23	6466-M 37.38	
K7	3/32"	1/2"	1/4"			6467-C 2.11	6467-G 2.81	6467-M 16.84	
K8	3/32"	3/4"	1/4"	H494-F	10	6468-C 2.49	6468-G 3.32	6468-M 19.89	
K9	1/32"	1/4"	1/4"			6469-C 3.93	6469-G 5.23	6469-M 31.40	
K10	3/8"	3/8"	1/4"	H497-F	10	6470-C 2.50	6470-G 3.34	6470-M 20.02	
K11	3/8"	3/8"	1/4"	H498-F	10	6471-C 4.25	6471-G 5.67	6471-M 34.00	
K12	3/8"	3/8"	3/8"	H499-F	10	6472-C 3.89	6472-G 5.19	6472-M 31.14	
TV Knob Spring .202" Shaft	H462-F	10	8541-C 2.11	8541-G 2.81	8541-M 16.84				
TV Knob Spring 3/8" Flat Shaft	H464-F	10	8542-C 2.52	8542-G 3.36	8542-M 20.15				

**G-C DIAL DRIVE TENSION SPRINGS and PHONO SPRINGS**

STEEL - CADMIUM PLATED

Asst. Regular Dial Drive Springs	H401-F	8							
Asst. Small Dial Drive Springs	H400-F	10							
No. 1055 Kit of 25 Asst. Springs			List Price \$1.30						
No. 1056 Kit of 100 Asst. Springs			List Price \$4.85						
Asst. Large Tension Springs	H421-F	10							
Asst. Small Tension Springs	H420-F	10							
A	B	C	Wire Size	Old No	List Price				
1/4"	3/4"	1/4"	.019	T1	\$0.05	H403-F 10	6450-C 8.40	6450-G 11.20	6450-M 67.21
3/8"	1"	3/4"	.019	T2	.06	H406-F 8	6451-C 6.31	6451-G 8.42	6451-M 50.51
3/8"	1"	3/4"	.020	T3	.06	H408-F 8	6452-C 7.05	6452-G 9.39	6452-M 56.36
3/8"	1 1/8"	1"	.020	T4	.06	H410-F 8	6453-C 7.23	6453-G 9.64	6453-M 57.85
1/2"	1 1/2"	1"	.026	T5	.08	H412-F 6	6454-C 9.34	6454-G 12.46	6454-M 74.75
1/2"	2"	1 1/4"	.026	T6	.10		6455-C 11.53	6455-G 15.37	6455-M 92.24

**G-C PHONOGRAPH SPRINGS**

STEEL - CADMIUM PLATED

No. 6478 Kit of 50 Springs			List Price \$2.75						
No. 6479 Kit of 100 Springs			List Price \$4.85						
Asst. Small Phono Turntable Springs	H450-F	8							
Asst. Large Phono Turntable Springs	H452-F	8							
A	B	C	Wire Size						
3/32"	3/4"	1/4"	.008			7535-C 8.86	7535-G 11.81	7535-M 70.85	
3/32"	3/4"	1/2"	.016			7537-C 6.50	7537-G 8.67	7537-M 52.00	
3/16"	1 1/8"	3/4"	.014			7539-C 6.26	7539-G 8.34	7539-M 50.05	
3/16"	1 1/8"	3/4"	.014			7543-C 7.56	7543-G 10.08	7543-M 60.45	
1/8"	1 1/2"	1 1/2"	.006			7544-C 9.02	7544-G 12.03	7544-M 72.15	
3/32"	1 3/4"	3/4"	.010			7545-C 10.17	7545-G 13.55	7545-M 81.32	
3/16"	3/4"	1/4"	.033			7547-C 6.26	7547-G 8.34	7547-M 50.05	

**G-C COMPRESSION SPRINGS**

Asst. Small Compression Springs	H440-F	20							
Asst. Large Compression Springs	H441-F	15							

**G-C PHONO TURNTABLE MOUNTING SPRINGS**

O.D.	Length	Wire Size	No. of Coils						
1" x 1/16"	1 1/16"	.079	4			7497-C 5.28	7497-G 7.04	7497-M 42.25	

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ROCKFORD, ILLINOIS, USA

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Distributor's Standard Display, 10 Boxes  
List Price Per Box **55c**

**BOXES OF 100**  
Distributor's Standard Carton  
10 Boxes of 100

**BOXES OF 144**  
(Gross Packages)  
Distributor's Standard Carton,  
7 Boxes of 144

**BULK HARDWARE**  
(Boxes of 1000)  
Supplied only in Multiples of 1000

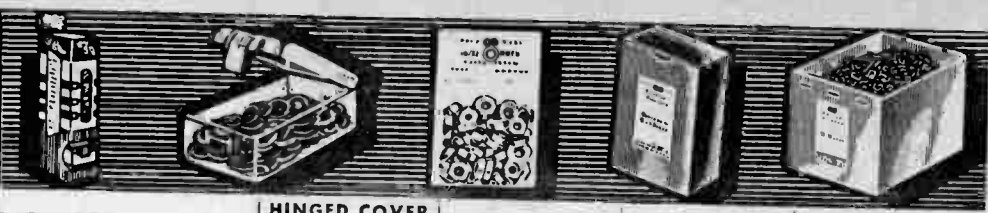
DESCRIPTION and SPECIFICATIONS	Part No.	Quantity In Box	List Price Per 100		List Price Per 144		List Price Per 1000 Pcs.
			Part No.	Part No.	Part No.	Part No.	

G-C BRASS EYELETS							
Asst. Rivets and Eyelets	H526-F	55					
Asst. Eyelets and Clamps	H744-F	60					
Eyelet Assortment	H510-F	50					
Shank Dia.	Length Under Head	Head Dia.					
.087	1/8"	.145	7251-C	.47	7251-G	.63	7251-M 3.77
.087	3/32"	.145	7252-C	.59	7252-G	.79	7252-M 4.75
.087	1/16"	.145	7253-C	.67	7253-G	.89	7253-M 5.33
.087	1/32"	.180	7254-C	1.81	7254-G	2.42	7254-M 14.50
.123	3/32"	.197	7257-C	.83	7257-G	1.11	7257-M 6.63
.123	1/16"	.195	7259-C	.67	7259-G	.89	7259-M 5.33
.123	1/8"	.195	7260-C	.87	7260-G	1.16	7260-M 6.96
.123	3/32"	.195	7261-C	.89	7261-G	1.18	7261-M 7.09
.125	3/16"	.289	7264-C	1.52	7264-G	2.03	7264-M 12.16
.127	15/32"	.222	7265-C	1.86	7265-G	2.48	7265-M 14.89
.182	3/8"	.315	7269-C	.53	7269-G	.71	7269-M 4.23

G-C RIVETS NICKEL PLATED							
Asst. Rivets and Eyelets	H526-F	55					
Rivet Assortment	H525-F	50					
TV Interlock Receptacle Rivets	H527-F	Asst.					
Shank Diameter	Length Under Head						
Rivets .059	3/32"		7276-C	1.46	7276-G	1.94	7276-M 11.64
Rivets .059	3/16"		7277-C	1.46	7277-G	1.94	7277-M 11.64
Rivets .059	1/8"		7278-C	.98	7278-G	1.31	7278-M 7.87
Rivets .088	3/16"		7280-C	1.57	7280-G	2.09	7280-M 12.55
Rivets .098	3/16"		7283-C	1.65	7283-G	2.20	7283-M 13.20
Rivets .121	1/8"		7286-C	1.29	7286-G	1.72	7286-M 10.34
Rivets .121	3/16"		7288-C	.99	7288-G	1.32	7288-M 7.93
Rivets .121	1/4"		7290-C	1.03	7290-G	1.38	7290-M 8.26
Rivets .121	3/16"		7291-C	1.09	7291-G	1.45	7291-M 8.71
Rivets .121	1/2"		7293-C	1.07	7293-G	1.43	7293-M 8.58
Rivets .146	3/8"		7296-C	1.21	7296-G	1.62	7296-M 9.69

G-C GRID CAPS NICKEL PLATED							
Assorted Grid Caps	H609-F	8					
Glass Tube Grid Caps	A		6291-C	2.23	6291-G	2.98	6291-M 17.88
Metal Tube Grid Caps	B		6292-C	2.24	6292-G	2.99	6292-M 17.94
TV Spring Type Grid Caps, Asstd.	H610-F	5					
1/4" High-Voltage Spring Grid Cap			8838 IRC	6.32	8838 IRG	8.43	8838-1RM 50.57
3/8" High-Voltage Spring Grid Cap			8838 2RC	6.61	8838 2RG	8.82	8838-2RM 52.91
1/4" Insulated High-Voltage Grid Cap	H612-F	1	8834-C	47.70	8834-G	63.60	8834-M 381.62
3/8" Insulated High-Voltage Grid Cap	H614-F	1	8835-C	47.70	8835-G	63.60	8835-M 381.62

G-C RUBBER GROMMETS							
Assorted Soft Grommets	H025-F	15					
No. 1040 Kit of 50 Asstd. Grommets List \$1.25							
A	B	C	D	E			
11/32"	1/8"	3/16"	1/16"	1/4"	H030-F	16	1041-2C 1.86 1041-2-G 2.48 1041-2-M 14.88
7/16"	3/16"	7/32"	1/16"	5/16"	H032-F	14	1041-C 2.10 1041-G 2.80 1041-M 16.80
9/16"	1/4"	1/2"	1/16"	3/8"	H034-F	12	1042-C 2.81 1042-G 3.75 1042-M 22.50
5/8"	3/8"	1/2"	1/16"	1/2"	H036-F	10	1043-C 3.16 1043-G 4.21 1043-M 25.25
1/2"	3/8"	1/2"	1/16"	3/8"			5710-C 6.34 5710-G 8.45 5710-M 50.70
1/2"	1/4"	3/8"	1/16"	3/8"			7566-C 4.07 7566-G 5.43 7566-M 32.56
3/8"	3/16"	13/64"	1/16"	3/8"			5711-C 5.89 5711-G 7.85 5711-M 47.10
3/4"	3/8"	1/2"	1/16"	3/8"			5712-C 8.59 5712-G 11.45 5712-M 68.70



**HANDY G-C HARDWARE**

- In Convenient Packages:  
 1. Plastic Boxes  
 2. Boxes of 100 or 144 (gross)  
 3. Bulk Boxes of 1000.

**HINGED COVER  
PLASTIC BOXES**

— 50-LINE —  
 Distributor's Standard  
 Display, 10 Boxes  
 List Price  
 Per Box **55c**

**BOXES OF  
100**

Distributor's  
 Standard Carton  
 10 Boxes of 100

**BOXES OF  
144**

(Gross Packages)  
 Distributor's  
 Standard Carton,  
 7 Boxes of 144

**BULK  
HARDWARE**

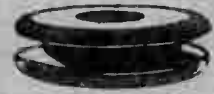
(Boxes of 1000)  
 Supplied only in  
 Multiples of 1000

**DESCRIPTION and SPECIFICATIONS**

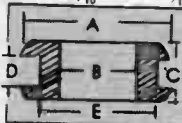
Part No.	Quantity In Box	Part No.	List Price Per 100	Part No.	List Price Per 144	Part No.	List Price Per 1000 Pcs.
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**G-C RUBBER GROMMETS**



A	B	C	D	E	Part No.	Quantity In Box	List Price Per 100	Part No.	List Price Per 144	Part No.	List Price Per 1000 Pcs.		
1 1/16"	1/2"	3/8"	1/16"	5/8"	H038-F	8		1043-1C	4.81	1043-1G	6.42	1043-1M	38.50
1"	3/8"	1/4"	1/16"	7/8"	(For Switch Box Knock-Out)			7569-C	9.57	7569-G	12.76	7569-M	76.56
3/4"	3/16"	1/32"	3/32"	1 1/32"				5715-C	11.33	5715-G	15.10	5715-M	90.60
1 1/8"	5/8"	3/8"	1/16"	1 1/8"				5716-C	9.56	5716-G	12.75	5716-M	76.50
1 3/8"	1 1/16"	3/8"	1/16"	1"				5717-C	19.24	5717-G	25.65	5717-M	153.90

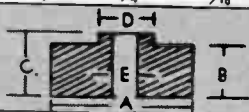


**G-C PURE GUM GROMMETS**

VERY SOFT LIVE RUBBER GROMMETS FOR SHOCK AND VIBRATION DAMPENING.  
 FOR MOUNTING TUNING CONDENSERS, SOCKETS, PHONO MOTORS, CHASSIS, ETC.



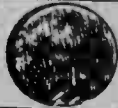
A	B	C	D	E	Part No.	Quantity In Box	List Price Per 100	Part No.	List Price Per 144	Part No.	List Price Per 1000 Pcs.
Assorted Pure Gum Grommets					H040-F	12					
No. 7581 Kit of 100 Asst. Grommets List Price \$2.45											
1/16"	1/16"	1/32"	1/16"	1/16"	H042-F	12	7582-C 2.69	7582-G	3.58	7582-M	21.50
1/16"	1/4"	1/4"	1/16"	1/16"	H043-F	10	7584-C 3.83	7584-G	5.11	7584-M	30.63



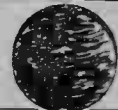
**G-C RUBBER CHASSIS MOUNTS**



A	B	C	D	E	Part No.	Quantity In Box	List Price Per 100	Part No.	List Price Per 144	Part No.	List Price Per 1000 Pcs.		
Assorted Chassis Mounts					H075-F	12							
Rubber Washer and Bumper Asst.					H083-F	12							
No. 1030 Kit of 25 Mounts List Price \$2.00													
3/4"	1/8"	3/8"	1/2"	1/4"				1031-C	10.99	1031-G	14.65	1031-M	87.88
3/4"	3/16"	1/2"	1/16"	1/4"	H076-F	5	1032-C 6.84	1032-G	9.13	1032-M	54.75		



**G-C VOICE COIL DUST FELTS**



Diameter	Part No.	Quantity In Box	List Price Per 100	Part No.	List Price Per 144	Part No.	List Price Per 1000 Pcs.		
Assorted Dust Felts									
	H740-F	15							
Dust Felts 3/4"				1081-C	.84	1081-G	1.13	1081-M	6.75
Dust Felts 1"				1082-C	1.44	1082-G	1.92	1082-M	11.50
Dust Felts 1 1/4"				1083-C	2.69	1083-G	3.58	1083-M	21.50
Dust Felts 1 1/2"				1084-C	2.80	1084-G	3.73	1084-M	22.38
Dust Felts 1 3/4"				1085-C	2.88	1085-G	3.84	1085-M	23.06
Dust Felts 2 1/4"				1085-AC	3.34	1085-AG	4.46	1085-AM	26.75



**G-C RADIO KNOB FELTS**



Part No.	Quantity In Box	List Price Per 100	Part No.	List Price Per 144	Part No.	List Price Per 1000 Pcs.		
3/4" O.D. x 1/4" Hole, Brown								
H760-F	40		1065-C	65	1065-G	.87	1065-M	5.19

G-C can also supply Miniature Printed Circuit and Instrument Hardware - Write for special catalog on Miniature Hardware.

Write for G-C - Master Catalog of over 5000 Electronic Parts, Service and Engineering Aids





### HANDY G-C HARDWARE

In Convenient Packages:

1. Plastic Boxes
2. Boxes of 100 or 144 (gross)
3. Bulk Boxes of 1000.

### HINGED COVER PLASTIC BOXES

50-LINE  
Distributor's Standard Display, 10 Boxes  
List Price Per Box **55c**

### BOXES OF 100

Distributor's Standard Carton  
10 Boxes of 100

### BOXES OF 144

(Gross Packages)  
Distributor's Standard Carton,  
7 Boxes of 144

### BULK HARDWARE

(Boxes of 1000)  
Supplied only in Multiples of 1000

#### DESCRIPTION and SPECIFICATIONS

Part No.	Quantity In Box	Part No.	List Price Per 100	Part No.	List Price Per 144	Part No.	List Price Per 1000 Pcs.
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## G-C CHASSIS FELT FEET SCREW TYPE

Asst. Screw Type Chassis Felt Feet				H085-F	4						
A	B	C	Type of Screw								
1/2"	3/8"	1/2"	No. 6 x 1/2" Sheet Metal Pointed			1086-BC	15.76	1086-BG	21.02	1086-BM	126.10
1/2"	3/8"	1/2"	6-32 Machine	H087-F	4	1087-C	15.04	1087-G	20.05	1087-M	120.32
3/4"	1/4"	1/2"	No. 6 x 1/2" Sheet Metal Pointed			1088-C	18.58	1088-G	24.78	1088-M	148.66
3/4"	1/4"	1/2"	10-32 Machine			1089-C	18.30	1089-G	24.40	1089-M	146.38

## G-C RUBBER FEET — Screw Type

45c ENV. SUPPLIED WITH SCREWS—GROSS and THOUSANDS PKGS. WITHOUT SCREWS

Asst. Screw Type Rubber Feet			H050-F	8						
O.D.	High									
3/8"	3/8"		H052-F	8	1075-BC	1.52	1075-BG	2.03	1075-BM	12.16
1/2"	1/4"		H054-F	8	1075-CC	2.44	1075-CG	3.25	1075-CM	19.50
3/8"	3/8"		H056-F	8	1075-FC	3.70	1075-FG	4.93	1075-FM	29.58

## G-C RUBBER BUTTON BUMPERS

JUST PUT IN HOLE

A	B	C	E								
O.D.	Height	Hole	Height								
3/8"	3/8"	3/8"	3/8"			7596-C	2.40	7596-G	3.20	7596-M	19.18
1/2"	3/8"	1/4"	1/4"	H058-F	8	7597-C	3.51	7597-G	4.68	7597-M	28.08
3/8"	3/8"	3/8"	3/8"			7598-C	5.65	7598-G	7.53	7598-M	45.18

## G-C RUBBER TACK BUMPERS

3/8" O.D. Rubber Tack Bumpers	H071-F	10	1075-C	3.08	1075-G	4.11	1075-M	24.64
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## G-C FELT PADS

Assorted Felt Pads	H074-F	40						
1/8" O.D. x 1/4" Thick Felt Pads			1071-C	.50	1071-G	.66	1071-M	3.97

## G-C CORD STRAIN RELIEFS

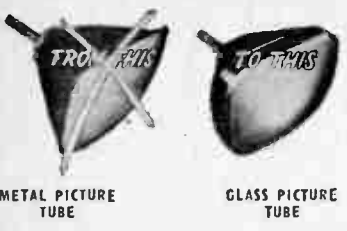
Will Fit P.O.S.J. Cord	H048-F	5	6675-C	8.78	6675-G	11.70	6675-M	70.20
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## G-C ESCUTCHEON PINS

Asst. Escutcheon Pins			H560-F	100						
Length	Diam.	Finish								
1/4"	No. 18	Stat. Bronze			7526-C	.46	7526-G	.62	7526-M	3.71
1/4"	No. 19	Stat. Bronze			7527-C	.49	7527-G	.65	7527-M	3.90
1/4"	No. 20	Stat. Bronze			7528-C	.77	7528-G	1.03	7528-M	6.18
1"	No. 15	Nickel Plated			7529-C	2.05	7529-G	2.73	7529-M	16.38

## G-C ANGLES and BRACKETS

Assorted Angles and Brackets				H570-F	12						
A	B	C	Hole Size								
1/4"	3/8"	3/2"	6			6261-C	1.87	6261-G	2.49	6261-M	14.95
3/8"	1/4"	3/2"	6			6262-C	2.32	6262-G	3.09	6262-M	18.53
1/2"	3/8"	3/8"	6			6263-C	2.64	6263-G	3.52	6263-M	21.13



A complete conversion kit for use in replacing metal picture tubes with glass picture tubes. Nothing else to buy but the new glass picture tube. The average technician can convert any set in less than ONE HOUR.



Get modern new-set reception when converting to aluminized pix-tube by installing a screen filter. Improves contrast and clarity. Eliminates glare. Stock No. 1208.

### METAL-TO-GLASS PICTURE TUBE CONVERSION KITS

- |  |   |  |
|--|---|--|
| <p><b>C-1 KIT fits:</b><br/>RCA 21D305 thru 21D346<br/>21T159 thru 21T324<br/>chassis KCS68 thru<br/>KCS81E, KCS82,<br/>KCS82-B<br/>List Price .....\$5.95</p>                 | <p><b>C-4 KIT fits:</b><br/>Stewart-Warner, Silvertone,<br/>Truetone, Coronado, Halli-<br/>crafters.<br/>(Send for catalog showing<br/>full model listings)<br/>List Price .....\$5.25</p>                      | <p><b>C-7 KIT fits:</b><br/>Arvin models 5210, 5211,<br/>5212, 5213, 5215, 6213,<br/>6215, 7210, 7214, 7218,<br/>8213.<br/>Silvertone models 132.035,<br/>132.035.2, 132.044.<br/>List Price .....\$6.95</p> |
| <p><b>C-2 KIT fits:</b><br/>RCA 21D358 thru 21D380<br/>21S348 thru 21S367<br/>21T356 thru 21T393<br/>chassis KCS81F thru J<br/>all KCS83 series<br/>List Price .....\$5.95</p> | <p><b>C-5 KIT fits:</b><br/>Silvertone, CBS-Columbia,<br/>Firestone.<br/>(Send for catalog showing<br/>full model listings)<br/>List Price .....\$6.25</p>  | <p><b>C-8 KIT fits:</b><br/>RCA 27" models 27-D-282<br/>thru 27-D-384.<br/>Chassis KCS77A thru H<br/>List Price .....\$5.95</p>  |
| <p><b>C-3 KIT fits:</b><br/>Emerson Model 711 thru 795<br/>Chassis 120166 thru 120211<br/>Send for catalog showing<br/>full model listings)<br/>List Price .....\$5.95</p>     | <p><b>C-6 KIT fits:</b><br/>Wells-Gardner, Airline,<br/>Truetone, Firestone, Hudson,<br/>Coronado, Fedway,<br/>Arlington.<br/>(Send for catalog showing<br/>full model listings)<br/>List Price .....\$6.25</p> | <p><b>C-9 KIT fits:</b><br/>Crosley models DU-21,<br/>EU-21, F-21<br/>Chassis 357-1, 386, 387,<br/>393, 402, 403, 403-1.<br/>List Price .....\$5.75</p>  |

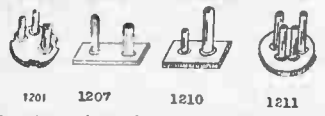
### CLOCK KNOBS



Replacement clock-radio knobs for virtually all needs. Used for kitchen-clock and electric-range controls as well as clock-radios. Available in a wide variety of colors. Brown, Black, Ivory, White, Clear, Fawn, Red, Green, Gold, Rose. Packaged in various assortments to suit all needs, or in bulk by individual type and color.

Stock No.	Application	List Price ea.
1100	Most commonly used push-on type	.15
1100-A	Cross-type. Arvin, RCA	.15
1101	Threaded type RH & LH threads	.20
1109	Westinghouse type	.15
1110	Motorola, Zenith	.15
1111	Motorola, Philco	.15
1112	Philco	.15

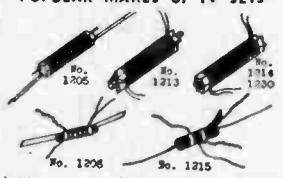
#### AUTO-RADIO SPEAKER PLUGS



Stock No.	Replacement:	List Price
1201	Ford speaker plug	.15
1207	Lincoln Merc. speaker plug	.10
1210	Lincoln-Merc. rear-seat speaker plug	.10
1211	Mapar (Chrysler-made) rear-seat speaker plug	.15

Available in bulk or pkgd. assortments

#### REPLACEMENT BALUN COILS or ANTENNA-INPUT COILS for MOST POPULAR MAKES of TV SETS



Stock No.	Replacement:	List Price
1205	RCA, Motorola, Philco, etc.	1.00
1206	GE, Westinghouse (Sarkes)	1.25
1213	RCA late models	1.00
1214	RCA late models (1 1/8" long)	1.00
1215	GE late models	1.60
1230	RCA late models (1 1/2" long)	1.00

#### 6-VOLT DROPPING RESISTOR



Special wire-wound resistor to be used to install 6-volt auto radios in 12-volt systems. Factory-recommended method. Best for use with auto radios rated 6 to 7 amps.  
List Price .....\$1.50

#### AUTO-RADIO PUSH-BUTTON TUNING REPLACEMENT CLUTCH FACINGS



No. 1216—1 3/8" OD, fits DELCO .....10 ea.  
No. 1217—1 1/4" OD, fits FORD, etc. ....10 ea.  
A self-sticking adhesive-backed long life cork-and-rubber material for replacement of slipping clutch on manual tuner knob. Outlasts original material many times. Quickly and easily installed.

#### REPAIR-SHOP KIT

A complete kit for proper installation of new clutch facings on push-button tuning clutch discs. Contains 2 solvents for cleaning old dried cements off metal clutch plate, cleaning swabs, and 25 assorted replacement facings. In handy plastic box. Dealer net \$1.95



#### UNIVERSAL 6-VOLT RESISTOR



For auto radios and other auto accessories. For installation of 6-volt radios and other 6-volt accessories in 12-volt systems. Three different hook-ups will provide for use with various accessories rated from 2 1/2 to 9 amps.  
List Price .....\$2.50

#### NEW-FLOCK



A soft flock-coated disc with plastic backing to be used for re-covering worn-out phonograph turntables. Tough and long-lasting. The fastest, easiest, and best method of re-flocking turntables. Easily installed with 1 coat of plastic-metal cement. (see below)

Stock No.	Diameter	List Price
1220-8	8"	1.10
1220-9	9"	1.20
1220-9 1/2	9 1/2"	1.25
1220-10	10"	1.30
1220-12	12"	1.50
1220-16	16"	2.65

#### PLASTIC-TO-METAL CEMENT

Used for cementing New-Flock plastic-back discs to worn-out phono turntables.  
No. 1221 2 oz. bottle List price .75



## THE UNIVERSAL KNOB SYSTEM

Can supply the knob you need, in any one of ten colors, from a small basic inventory of precision-fit interchangeable parts. It is the only known knob-stock system which gives you a wide variety of choice with a very small inventory.

Select the size, shape, and color of knob head desired . . .



Then choose the proper stem type and length to fit the control-shaft . . .



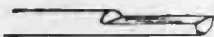
Assemble the 2 parts with a snug push . . .



That's all! The pieces are self-locking and cannot be separated once they are assembled . . .



**Never an obsolete piece! Every knob head fits every stem!**



For 1/4" shaft with flat.



Tension spring furnished with each split stem.



For 1/4" knurled shafts

Since stems are not visible when knobs are in use, stems are stocked in only two colors—black or white. Specify color desired when ordering.

### UNIVERSAL KNOB STOCKS & DEALER ASSORTMENTS



#### Dealer Stock & Cabinet

Contains 200 knob heads in all 10 colors, 100 stems, 50 gold-spot inserts, 16-drawer cabinet.

List price .....\$58.00  
Dealer cost ..... 27.00

Stock No. 1172

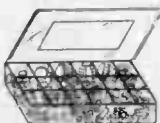
Junior-Size Dealer Stock & Cabinet  
Contains 120 knob heads in 6 popular colors, 60 stems, 30 gold-spot inserts, and 12-drawer cabinet.

List price .....\$35.50  
Dealer cost ..... 16.20



Stock No. 1173

#### Bench-Size Assortment















Contains 40 knob heads in Ivory and Mahogany, 32 stems, 20 gold-spot inserts, plastic compartment cabinet.











List price .....\$13.50  
Dealer cost ..... 5.40

Stock No. 1174

All knob heads available in:  
Black Gray White Ivory Tan  
Ivory Red Brown Dark Green Light Green  
Mahogany

 No. 1 .15 ea. 11/16" dia. x 1/2" high	 No. 2 .15 ea. 15/16" dia. x 3/8" high	 No. 3 .15 ea. 1-3/16" dia. x 5/16" high
 No. 4 .15 ea. 3/16" dia. x 1/2" high	 No. 5 .20 ea. 1 1/2" dia. x 3/8" high	 No. 6 .15 ea. No. 6G with gold-spot .25 ea. 1" dia. x 1/2" high
 No. 7 .20 ea. No. 7G with gold-spot .30 ea. 1 1/4" dia. x 1/2" high	 No. 8 .20 ea. No. 8G with gold-spot .30 ea. 1 1/4" dia. x 1/2" high	 No. 9 .20 ea. No. 9G with gold-spot .30 ea. 7/8" dia. x 1/2" high
 No. 10 .20 ea. No. 10G with gold-spot .30 ea. 13/16" dia. x 11/16" high	 No. 11 .20 ea. No. 11G with gold-spot .30 ea. 13/16" dia. x 11/16" high	 No. 12 .20 ea. No. 12G with gold-spot .30 ea. 13/16" dia. x 11/16" high

Knobs No. 6, 7, 8, 9 and 10 available with gold-spot trim in all standard colors at slightly higher cost.

 No. A .10 ea. Extends 1/2" when assembled	 No. B .10 ea. Extends 1/2" when assembled	 No. C .10 ea. Extends 1/2" when assembled	 No. D .10 ea. Extends 1/2" when assembled
 No. AA .10 ea. Extends 1/2" when assembled	 No. BB .10 ea. Extends 1/2" when assembled	 No. CC .10 ea. Extends 1/2" when assembled	 No. DD .10 ea. Extends 1/2" when assembled
 No. EE .10 ea. Extends 1" when assembled	 No. FF .10 ea. Extends 1 1/2" when assembled		

### Replacement TELEVISION KNOBS for Standard Tuners

All knobs packed one complete set of 4 knobs per box.

All channel-selector knobs have bushings which can easily be re-positioned for proper channel number line-up. Instructions for turning bushing are enclosed with each knob set.

(All prices below are List.)



#### SIDE TUNER KNOBS

Packed 2 knobs per box. One channel-tuner and matching rear knob.

To fit Standard Coil Tuners List  
No. 1158 (Mahogany) 1.40  
No. 1158-B (Blonde) 1.40  
To fit Sorkes-Tarzian Tuners List  
No. 1159 (Mahogany) 1.40  
No. 1159-B (Blonde) 1.40



No. 1151 (Mahogany) 1.65  
No. 1151-G (Gold) 3.40



No. 1152 (Mahogany) 2.80



No. 1153 (Mahogany) 3.10



No. 1154 (Mahogany) 3.65



No. 1155 (Mahogany) 2.95



No. 1156 (Mahogany) 3.00



No. 1157 (Mahogany) 3.85



No. 1160 (Mahogany) 3.50  
No. 1160-B (Blonde) 3.60



No. 1161 (Mahogany) 3.50  
No. 1161-B (Blonde) 3.60

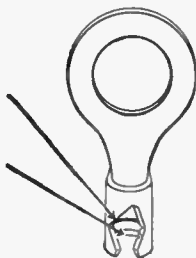


## WALDOM SOLDERLESS TERMINALS—Insulated and Non-Insulated

Smooth tapered edge allows faster, easier insertion of wire. Actually gathers frayed wires.

Multiple deep V-notches provide better contacts and holding power.

Wire ranges plainly imprinted on all Terminals and Connectors.

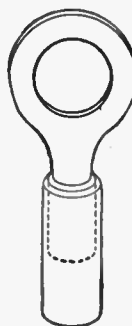


Pure soft copper for highest conductivity.

Electro-Tin plated for maximum corrosion resistance.

One piece construction for greater strength and economy.

Full 1/4" barrel length in all sizes gives wide crimping area for permanent, vibration-proof, and moisture tight connections.



Firmly attached tough plastic insulating sleeve with high di-electric strength withstands crimping pressure. Supporting sleeve vibration-proofs wide range of insulation thicknesses. Color coded for easy identification of wire ranges.

Available in the following Types & Sizes (Insulated — "T" Stock No.; Non-Insulated — "S" Stock No.)

Stock No.	Type	Hole Size	Wire Size	List Per C	Stock No.	Type	Hole Size	Wire Size	List Per C
S-1001	Ring Tongue	#4-#6	22-16	\$3.09	S-1021	Ring Tongue	#8	22-16	\$3.09
T-2001	Ring Tongue	#4-#6	22-16	7.68	T-2021	Ring Tongue	#8	22-16	7.68
S-1002	Ring Tongue	#4-#6	22-16	3.09	S-1024	Ring Tongue	#8	16-14	3.09
T-2002	Ring Tongue	#4-#6	22-16	7.68	T-2024	Ring Tongue	#8	16-14	7.68
S-1003	Ring Tongue	#8-#10	22-16	3.09	S-1029	Spade Tongue	#4-#6	22-16	3.09
T-2003	Ring Tongue	#10	22-16	7.68	T-2029	Spade Tongue	#4-#6	22-16	7.68
S-1006	Ring Tongue	#4-#6	16-14	3.09	S-1030	Spade Tongue	#8	22-16	3.09
T-2006	Ring Tongue	#4-#6	16-14	7.68	T-2030	Spade Tongue	#8	22-16	7.68
S-1007	Ring Tongue	#4-#6	16-14	3.09	S-1031	Spade Tongue	#8	22-16	3.09
T-2007	Ring Tongue	#4-#6	16-14	7.68	T-2031	Spade Tongue	#8	22-16	7.68
S-1008	Ring Tongue	#8-#10	16-14	3.09	S-1032	Spade Tongue	#10	22-16	3.09
T-2008	Ring Tongue	#10	16-14	7.68	T-2032	Spade Tongue	#10	22-16	7.68
S-1014	Spade Tongue	#4-#6	22-16	3.09	S-1033	Spade Tongue	#8	16-14	3.09
T-2014	Spade Tongue	#4-#6	22-16	7.68	T-2033	Spade Tongue	#8	16-14	7.68
S-1015	Spade Tongue	#4-#6	16-14	3.09	S-1036	Hook Tongue	#8	22-16	3.09
T-2015	Spade Tongue	#4-#6	16-14	7.68	T-2036	Hook Tongue	#8	22-16	7.68
S-1016	Spade Tongue	#8-#10	16-14	3.09	S-1037	Hook Tongue	#10	22-10	3.09
T-2016	Spade Tongue	#10	16-14	7.68	T-2037	Hook Tongue	#10	22-10	7.68
S-1018	Hook Type	#4-#6	22-16	3.09	S-1038	Hook Tongue	#4-#6	16-14	3.09
T-2018	Hook Type	#4-#6	22-16	7.68	T-2038	Hook Tongue	#4-#6	16-14	7.68
S-1019	Butt Connector		22-16	3.25	S-1039	Hook Tongue	#8	16-14	3.09
T-2019	Butt Connector		22-16	9.09	T-2039	Hook Tongue	#8	16-14	7.68
S-1020	Butt Connector		16-14	3.25	S-1040	Hook Tongue	#10	16-14	3.09
T-2020	Butt Connector		16-14	9.09	T-2040	Hook Tongue	#10	16-14	7.68

Ask your distributor for WALDOM'S complete catalog of Electronic Components and Crame Products including...

Anode Connectors	Diode Sockets	Jack Covers	Paints (Aerosol Spray)	Tube Shields
Azimuth Dials	Direct Drive Dials	Knobs	Servicemen's Kits	Tube Sockets
Cord Sets	Fasteners	Knob Assemblies	Hardware Kits	Tuner Dials
Crystal Sockets	Fibre Washers	Knob Painters	Shaft Locks	TV Distribution Amplifiers
Dial Assemblies	Metal Washers	Knob Skirts	Terminal Lugs	TV Mask Assemblies
Dial Locks	Hi-Fi Accessories	Rubber Components	Terminal Strips	
Dial Plates	Instrument Cases	Phono Connectors	Title Plates	
Switch Plates	Interlock Sockets	Planetary Drives		

And "Easy" Products — Grid Caps, TV Lead-Wire Splicers, TV Lead-Wire Couplers

Waldom Electronic Components are bulk packaged for Industrial users. See your distributor for quantity prices and listings.

# WALDOM

Buy the Box — Buy the Bag — Buy the Barrel — it's  
ELECTRONICS INC. Chicago 32, Illinois

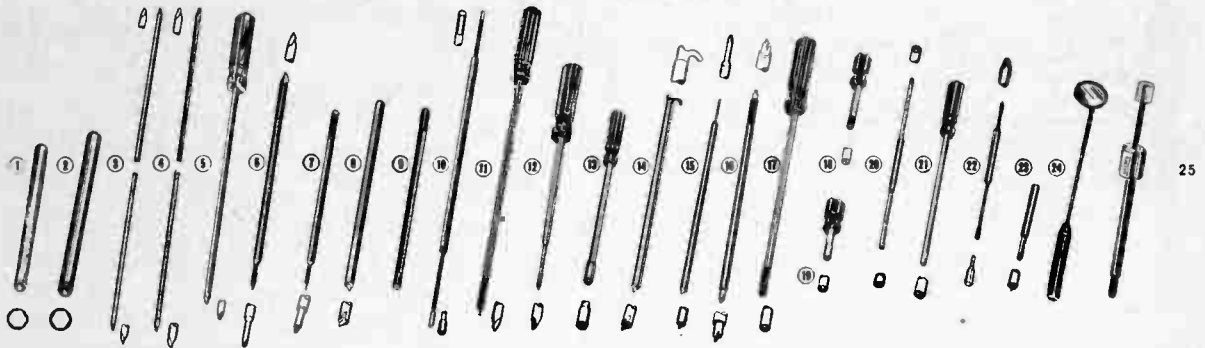
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**WALSCO QUALITY EARNED ITS REPUTATION**

ROCKFORD, ILLINOIS • LOS ANGELES, CALIF.



**WALSCO ALIGNMENT TOOLS**



Picture	Tool Description	Cat. No.	List
1	1/4" Hex Neutralizing Wrench Overall length: 7 1/2", 5/8" O.D. rd.	*2503	\$0.45
2	3/8" Hex Neutralizing Wrench Overall length: 7 1/2", 3/4" O.D. rd.	*2508	0.45
3	"Slim Sticks" — extra thin — tough plastic — high dielectric strength 1/4" diameter — 12" long	*2531	0.45
	1/4" diameter — 18" long	*2532	0.50
4	"Slim Sticks" — similar to above 3/8" diameter — 12" long	*2534	0.45
	3/8" diameter — 16" long	*2535	0.50
5	"Glas-Sticks" — reinforced fiberglass. Tough, non-metallic 1/2" diameter — 7" blade	*2537	1.20
	3/8" diameter — 14" blade	*2538	1.75
6	Duplex Alignment Screwdriver large end: 3/8", small end: 1/8"	*2520	0.85
7	Alignment Tool for Westinghouse	*2541	0.90
8	Metal Tip Alignment Screwdriver 3/8" diameter blade — 6" long	*2525	0.50
9	Tuning Wand — one brass end, other is filled with powdered iron. 6" long	*2540	0.75
10	Double End Nylon HEX IRON CORE TOOLS for .075" - .100" and .125" cores Hex .125" 5" long, Hex handle	*2542	0.75
	Hex .100" 5" long, Hex handle	*2543	0.75
	Hex .100" 11" long, knurled 1/4" handle	*2544	1.00
	Hex .100" 11" long, thin, 3/8" handle	*2545	1.00
	Hex .075" 11" long, knurled 1/4" handle	*2546	1.00
	Hex .075" 11" long, thin, 3/8" handle	*2547	1.00
11	"The Long Ranger" — insulated tuner align- ment tool with molded nylon tip Very slim — 12" overall length	*2523	1.80
	Replacement tip for above tool	*2555	0.30

Picture	Tool Description	Cat. No.	List
12	Turret Tuner Tool — for standard coil tuners. Polyester fiberglass	*2522	\$1.10
13	Philco Tuner Tool — A special tool for 1948-48 front end tuners	*2518	1.75
14	Wire Dressing and Alignment Tool One end has special wire dressing blade, other is screwdriver tip	*2512	0.70
15	K-Tran Alignment Tool — Fits slots on all K- Tran miniature I.F. xfms	*2515	0.95
16	"Slug Saver" Tuner Tool — Ingenious designs prevents losing slugs	*2528	1.05
17	Slotted Stud Driver — Blade fits #6 studs, 8 1/4" long overall	*2516	1.10
18	I.F. Aligner — for RCA, Zenith and others. Molded styrene, 2 1/2" long	*2527	0.70
19	Stubby Stud Driver — Fits #8 studs. Only 2 1/2" long overall	*2517	0.70
20	Standard Alignment Tool — One end fits #8 stud, other fits #4 stud	*2519	1.05
21	Slotted Screwdriver — Fits #8 studs. For use on older TV sets	*2524	1.10
22	Double Ender—Molded nylon. One end fits hex studs, other is a screwdriver. Overall length 6"	*2526	0.55
23	I.F. Aligner Tool — Molded Nylon. Blade length 3/4" — diameter 3/8"	*2521	0.45
24	Inspection Mirror — High visibility in difficult places. Long handle	554	0.75
	Display card of 12 #554	554D	9.00
25	Concentric Color TV Tuning Tool — 2-in-1 tool with screwdriver on inner shaft and spanner end on sleeve tool. Aluminum and plastic const.	2589	1.98

If tools are desired on display cards, add "D" to the part number. Otherwise tools will be boxed.

**ALIGNMENT TOOL KIT**



Contains all tools necessary to align any TV or FM set. All are standard Walco Tuning Tools. Comes in handy Leatherette case or wall rack.

Cat. No. 580 List \$12.00  
In Leatherette Case  
Cat. No. 581 List \$12.00  
In Wall Rack



**NEW TEL-A-TURN ALIGNMENT TOOLS**

Adjust those tricky I.F.'s or trimmers and count the turns as you go — Eliminates errors and permits better "home" service. In 3 styles.  
Cat. No. 2586—Double-ended Standard I.F. Aligner..... Dir Net \$ 0.99  
Cat. No. 2587—Double-ended Screwdriver..... Dir Net .99  
Cat. No. 2588—Double-end .001" & .125" Hex Aligner..... Dir Net .99  
**ALL THREE ABOVE TOOLS..... Dir Net \$ 2.75**

\*Standard Pack: 12

**SLUG RETRIEVING TOOL**



Specially designed to retrieve "lost" TV tuner slugs in standard coil tuners. Precision ground end. Hardened steel.

Cat. No.	Length	List Price
*2565	11"	\$3.72 each
**2566	15"	4.95 each
**2567	19"	6.25 each
*Standard Pack: 12		**Standard Pack: 6

**SMALL SCREW HOLDING SCREWDRIVER**



The only "holding" type screwdriver that fits the very small Nos. 0, 1, 2 and 3 size screws.

Cat. No. 2568	4" long (Standard Pack: 10)	List \$3.30
Cat. No. 2569	7" long (Standard Pack: 10)	List 3.75
		†Standard Pack: 20

**WALSCO QUALITY EARNED ITS REPUTATION**

ROCKFORD, ILLINOIS • LOS ANGELES, CALIF.



**WALSCO SPECIAL TOOLS**



**WALSCO 3-STEP TAP**

Three most popular tap sizes combined in one handy tool. Sizes are 6/32" - 8/32" and 10/32". Oversize, fluted handle is high quality plastic. Overall length: 6".

Cat. No. 2574 — Std. Pack: 12 per card — Dealer Net \$1.95

**NON-MAGNETIC BERYLLIUM SCREWDRIVER**



For use in tuning radio and TV sets where a steel screwdriver cannot be used. Ideal for making adjustments near magnetic fields such as in focalizers of TV sets.

Cat. No.	Blade Dia.	Length	List
2560	1/8"	9"	\$1.25
2561	3/16"	13"	1.35
2562	3/8"	9"	2.25
2564	1/2"	13"	2.75

Standard Pack: 12 per display card.



**TWISTO WIRE STRIPPER**

Designed to strip wire right up next to a solder connection or terminal. Quick micrometer-type adjustment sets instantly for AWG wire sizes 12 to 22. Most compact, precision stripper on the market. Strips plastic, rubber or fabric.

Cat. No.	Description	List
592-00	Twisto Stripper (Std. Pack: 12)	\$4.50
592-03	Replacement Blades (Std. Pack: 12)	per set \$1.00



**ALL-PURPOSE WIRE STRIPPER**

With "Stay-open" feature to prevent crushing fine wires. Blades are replaceable. Completely constructed of steel.

Cat. No.	Description	List Price	Dealer's Net
590-00	Electronic type for wire sizes 12 through 20, plus 300 ohm twin lead. Also cuts wire.	\$9.25	5.55
590-01	Replacement Blade set for No. 590	2.50	1.50
591-00	"Wide-Range" Model. Strips wire from #10 through #22. Will not strip twin lead and has not cutter.	9.25	5.55
591-01	Replacement Blade Set for No. 591	2.50	1.50



**SPEED-O-MATIC WIRE STRIPPERS**

Fully automatic, delayed action return prevents crushing fine wires. Interchangeable blades give greater versatility. A time and money saver.

Cat. No.	For wire sizes	List
594-01	#10 to #22	\$8.25
594-02	#10 to #18	8.25
594-03	#14 to #30	8.25
594-04	#16 to #22	8.25

Blades for above—each \$1.65

Note: To order separate blades for above replace letter "O" with letter "B" in catalog number. Example: 594-B1.



**TRIG-O-MATIC WIRE STRIPPERS**

With Trig-O-Matic action that holds jaws open until released. Especially suitable for stripping fine stranded wire.

Cat. No.	For wire sizes	List
593-01	#10 to #22	\$8.25
593-02	#10 to #18	8.25
593-03	#14 to #30	8.25
593-04	#16 to #22	8.25

Extra blades for above — each \$1.65

Note: To order extra blades for above replace letter "O" with letter "B" in catalog number. Example: 593-B1.

**HEX DRIVER TOOL KIT**

Designed to drive socket head screws in hard-to-reach places. Blades are of high torque, heat treated, alloy steel embedded in shock-proof plastic handles.



Cat. No.	Size of Hex across flat	Overall Length	List
562-01	.050"	3 3/8"	\$0.49
562-02	3/16"	3 3/8"	0.49
562-03	5/16"	4 3/8"	0.49
562-04	3/8"	5 3/8"	0.59
562-05	1/2"	5 3/8"	0.59
562-06	5/8"	6 3/8"	0.75

Standard Pack: 12

COMPLETE KIT containing all six above drivers in attractive plastic case.

563 Standard Pack: 6 \$4.50

**SERVICE TWEEZERS**

Precision made of forged steel with polished nickel-plate finish.

Cat. No.	Description	List
570	Self-closing — 6 1/2" long	\$1.30
570D	Display card of 10	13.00
571	Heavy duty with side lock — 6 1/2" long	1.50
571D	Display card of 10	15.00
572	Precision — narrow points — 4 1/2" long	0.70
570	WALSCO	
571		
572		
572D	Display card of 20	14.00
575	Leatherette Kit with one each above	3.80
575D	Display of 12 kits	45.60

**HEX and SPLINE WRENCH KIT**

11 popular wrenches in durable plastic case with snap cover.



Cat. No.	Description	List
560	Wrench Kit	\$2.25
	Dealer Net	\$1.35
560D	Display card of 25	56.25
	Dealer Net	\$33.75



**KNURL-TITE WRENCH**

Tighten or loosen knurled finish nuts quickly, easily. Has collet-type pressure jaws with hollow collet to slip over long shanks. Unbreakable handle. Overall length 6 1/2".

Cat. No.	For Use On	List
2581	3/8" Dia. nut	\$3.25
2582	1/2" Dia. nut	3.25
2583	5/8" Dia. nut	3.50
2584	3/4" Dia. nut	3.50



**HEX WRENCH POCKET SET**

Contains the six most popular size wrenches from .050 to 3/8". In convenient knife-type handle. Made of the finest tool steel.

Cat. No. 564 Complete wrench set List \$2.40



**KEY WRENCHES**

In two popular assortments of hex (Allen) and spline (Bristol) wrenches. Precision machined.

Cat. No.	Description	List Price
8600-F	Assortment of 4 small HEX wrenches Fits set screws No. 4 to No. 10 and cap screws No. 2 to 6.	\$0.50
8602-F	Assortment of 4 small SPLINE wrenches Fits all set screws up to 3/4" and cap screws up to No. 8.	0.50



**WALSCO WIRE CUTTER & STRIPPER "STRIP-ER-CLIP"**

Strips or clips wires from 14 to 26 gauge. Has special precision safe-guard that prevents "nicking" wires. Made of heat-treated tool steel with specially ground cutting edges and heavily insulated grips. Instant setting, 7-stop gauge.

Cat. No. 595 Dealer Net \$ 1.39  
Cat. No. 595D — Display of 24 Dealer Net \$33.36

\*Special Distributor's Discount Applies

FREE!! Our LATEST CATALOG! 64 Pages — Fully Illustrated — Showing Entire Walsco Line

**WALSCO QUALITY EARNED ITS REPUTATION**  
 ROCKFORD, ILLINOIS • LOS ANGELES, CALIF.



**EASY-ON TOOL GRIPS**



Made of flexible, elastic plastic to give comfort and protection. For pliers, diagonals, etc.

Cat. No.	Description	Per pair	Dealer's Net
521	Small	.....	\$0.20
522	Medium	.....	*0.25
523	Large	.....	*0.30

Available in display box of 36. Add suffix D to part number. Also available in assortment of 12 each size — Cat. No. 520-D.

**SERVICEMANS TOOL POUCH and BELT**

Made of the finest, toughest cowhide available.

Cat. No.	Description	Dealer's Net
510	Pouch	.....\$4.25
512	Belt	.....3.25

**NEW WALSCO VIBRA-PULL**



Pulls auto radio vibrators the quick and easy way. The exclusive Walsco design offers absolute protection against damage to vibrator prongs, sockets and other near-by parts. For standard 1 1/2" diameter vibrators.

Cat. No. 566	Standard Pack: 12	List \$2.49
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**WALSCO OILETTE**



Filled with a high grade Walsco oil. Dispenses accurately one drop at a time. Ideal for electronic devices, clocks, typewriters, camera shutters, etc. Leakproof pocket-clip container.

Cat. No.	Description	List
86	Walsco Pocket Oilette	.....\$ 1.25
86-D	Display Card of 12 #986	.....15.00
86-22	Refill for Oilette (Standard Pack: 12)	.....0.45

**WALSCO CLEAN-O-JET**



With this new type, pressure applicator you can clean and lubricate rotary controls without having to disassemble them. Just remove the knob — attach the Clean-O-Jet and apply simple pressure which forces the liquid into the control between the shaft and bushing. Designed for use with Walsco K-T-K.

Cat. No.	Description	List
2573	.....	each \$ 2.10
2573-D	Display Card of 10	.....21.00
2573-22	SPECIAL ADAPTER KIT for Walsco Clean-O-Jet containing 1 each Adapter for #8-28 and 1/2-28 thread Auto Radio controls, also 1 "extender" for cleaning controls with shaft length up to 7"	.....2.90

**NEW WALSCO CHEM-O-JECTOR**



A new type applicator for lubricants, greases, certain adhesives and many cleaning fluids used in electronics and other fields. Uses the hypodermic plunger principle and reaches the hard-to-get-at places with ease. Made of polyethylene plastic with a neoprene plunger and is unaffected by most chemicals except those using fast solvents. Also see pages U-93, U-94.

Cat. No. 987	Standard Pack: 12	List \$0.50 each
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**PROTECTO TUBE**



Insulates the handles and shanks of your tools. Easy to apply with "expanding solution." Shrinks skin tight, will not crack or peel. Assorted colors.

Cat. No. 18K	List Price \$1.80
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**WALSCO CEMENTS - CLEANERS - SOLVENTS**

**RADIO CEMENT**

A fast drying, elastic adhesive that will not become brittle with age. Ideal for speaker repair. Vibration proof.



Cat. No.	Description	Std. Pack	List
50-01	1 1/4 oz. tube	12	\$ 0.75
50-02	2 oz. bottle	12	0.75
50-04	4 oz. bottle	12	1.10
50-08	8 oz. bottle	12	1.90
50-16	1 pt. can	3	3.45
50-16	1 qt. can	.....	3.45
50-33	1 gal. can	.....	*13.15
50-34	5 gal. can	.....	*49.40
50-07	In Chem-O-Jector	.....	0.70

**VINYLI-TE CEMENT**

Greatest flexibility with unusually strong adhesive qualities. Ideal for porous and non-porous materials. Air-drying. Amazing thermo-plastic properties.

Cat. No. 55-02	2 oz. bottle (Standard Pack: 12)	List \$ 0.75
Cat. No. 55-33	1 gallon can	List *20.65

**FABRIC CEMENT**

Fast drying, moisture proof. Will not shrink fabric. Ideal for grille cloth, burntable felts, etc.

Cat. No. 53-02	2 oz. bottle (Standard Pack: 12)	List \$ 0.75
Cat. No. 53-33	1 gallon can	List *17.00

**WOOD GLUE**

Latest type, improved adhesive for all wood parts. Excellent for repairing cabinets, new construction, etc.

Cat. No.	Description	List
78-02	2 oz. bottle	.....\$ 0.75
78-04	4 oz. bottle	.....1.20
78-07	In Chem-O-Jector	.....0.70

**PLASTIC CEMENT**

A tough, water-proof, fast drying, universal cement. Especially developed for plastic repair.

Cat. No.	Description	List
40-02	2 oz. bottle	.....\$ 0.75
40-04	4 oz. bottle	.....1.20
40-08	8 oz. bottle	.....1.90
40-33	1 gallon can	.....*16.25

**PLIOBOND CEMENT**

Adheres permanently, dries rapidly. Perfect for rubber, wood, plastic, glass, metal, fabrics, etc. Made by Goodyear — packaged by Walsco. Tan in color.

Cat. No.	Description	Std. Pack	List
67-02	2 oz. bottle	12	\$ 0.75
67-08	8 oz. bottle	12	1.90
67-16	16 oz. bottle	3	3.65
67-33	1 gallon can	.....	14.85

\*Special Distributor's Discount Applies

**LUCITE CEMENT**

Lucite, plexiglass and any other acrylic article can be "welded" together with this fast drying cement.

Cat. No. 65-02	2 oz. bottle (Standard Pack: 12)	List \$ 0.75
Cat. No. 65-33	1 gallon can	List *10.95

**POLYSTYRENE CEMENT and COIL DOPE**

Makes coils and other parts moisture-proof with just one coating. Shrinks when dry to hold wire firmly. Also the perfect cement for polystyrene parts.

Cat. No. 57-02	2 oz. bottle (Standard Pack: 12)	List \$ 0.75
Cat. No. 57-04	4 oz. bottle (Standard Pack: 12)	List 1.20
Cat. No. 57-33	1 gallon can	List *13.75

**POLYSTYRENE SOLVENT**

For thinning Polystyrene Cement.

Cat. No.	Description	Std. Pack	List
202-02	2 oz. bottle	12	\$ 0.60
202-04	4 oz. bottle	12	0.95
202-33	1 gallon can	.....	8.10

**RUBBER CEMENT**

Fastens rubber to wood or metal with a strong bond. Forms a watertight, airtight, resilient joint.

Cat. No. 56-02	2 oz. bottle (Standard Pack: 12)	List \$ 0.75
Cat. No. 56-04	4 oz. bottle (Standard Pack: 12)	List 1.20
Cat. No. 56-33	1 gallon can	List *14.35

**SPECIAL THINNER**

For thinning rubber and fabric cement, wrinkle varnish, etc.

Cat. No.	Description	Std. Pack	List
204-04	4 oz. bottle	12	\$ 0.95
204-33	1 gallon can	.....	*3.75

**CEMENT SOLVENT and THINNER**

Strong solvent designed to loosen cemented parts such as speaker cones, etc.

Cat. No.	Description	List
201-02	2 oz. bottle	\$ 0.60
201-04	4 oz. bottle	0.95
201-08	8 oz. bottle	1.25
201-16	16 oz. bottle	2.00
201-33	1 gallon can	7.20

**LACQUER THINNER**

For thinning all lacquer type cements, e.g., Radio, Plastic and Vinylite cement, also various lacquers.

Cat. No.	Description	List
203-02	2 oz. bottle	\$ 0.60
203-08	8 oz. bottle	1.25
203-33	1 gallon can	*7.40
203-34	5 gallon can	*29.60



**CHEMICALS  
IN  
BOTTLES - SPRAY CANS -  
and SYRINGE TYPE  
APPLICATORS**



**Walsco**  
ELECTRONICS MFG. CO.  
Division of Textron, Inc.

**CEMENTS, CLEANERS, SOLVENTS, etc. (cont'd)**

**ELECTRIC and RESISTOR CEMENT**

Replaces or applies a new insulation to such items as wire wound resistors, heating elements, etc. Withstands high temperatures.

Cat. No. 77-02 — 2 oz. bottle (Standard Pack: 12) ..... List \$ 0.75

**BAKELITE CEMENT**

A special adhesive for Phenolics (Bakelite). Excellent also for cementing phenolics to other plastics, wood, metal, etc. Bond will never become brittle and is moisture proof.

Cat. No.	Description	List
66-02	2 oz. bottle (Standard Pack: 12) .....	\$ 0.85
66-18	16 oz. can .....	4.55
68-33	1 gallon can .....	*27.00

**WALSCO CONTACTENE**

Lubricates as it cleans, fast acting, quick drying. Eliminates volume control noise. Removes oxide, grease, dirt and corrosion. Absolutely anti-oxidant.

Cat. No.	Description	List
80-02	2 oz. bottle (Standard Pack: 12) .....	\$ 0.75
80-04	4 oz. bottle (Standard Pack: 12) .....	1.10
80-08	8 oz. bottle (Standard Pack: 12) .....	1.90
80-16	16 oz. can (Standard Pack: 3) .....	2.50
80-33	1 gallon can .....	*6.75
80-34	5 gallon can .....	*27.00

Now available in handy new spray can.

80-06	6 oz. spray can (Standard Pack: 12) .....	*1.40
80-12	12 oz. spray can (Standard Pack: 12) .....	*2.00



**CONTACTENE INJECTOR**

Designed to be inserted into places where ordinary applicators cannot reach. A fine surgical-grade steel needle. Bulb is oil resistant Neoprene.

Cat. No.	Description	List
989	— Contactene Injector .....	\$0.75
989D	— Display of 12 No. 989 .....	9.00

**CARBON TETRACHLORIDE**

Top quality, all-purpose cleaning fluid. Non-explosive, non-inflammable.

111-04	4 oz. bottle (Standard Pack: 12) .....	\$ 0.90
111-16	16 oz. bottle (Standard Pack: 12) .....	2.10
111-33	1 gal. can .....	*8.50
111-34	5 gal. can .....	*34.00

**CHLOROTHENE**

A new chemical, similar to Carbon-Tet, but practically non-toxic. Quickly dissolves grease dirt, oils tar and waxes from any electronic component, switch, chassis, etc.

Cat. No.	Description	List
113-04	4 oz. bottle (Standard Pack: 12) .....	\$ 0.95
113-16	16 oz. bottle (Standard Pack: 3) .....	2.20
113-33	1 gallon can .....	*8.90
113-34	5 gallon can .....	*36.00

**TUNERCLEAN**

The finest U.H.F. and V.H.F. Tuner contact cleaner on the market. It cleans — it prevents corrosion.

Cat. No.	Description	List
105-01	1 oz. bottle (Standard Pack: 12) .....	\$ 0.95
105-02	2 oz. bottle (Standard Pack: 12) .....	1.60
105-16	1 pint (Standard Pack: 3) .....	12.50
105-33	1 gallon can .....	*37.50

**WALSCOCLEAR (Formula 91)**

Neutralizes static electricity in plastics. Ideal for vinyl plastic recordings, TV lenses, optical systems, etc.

Cat. No.	Description	List
91-04	4 oz. bottle (Standard Pack: 12) .....	\$ 0.55

**RH CLEANER**

Cleans and protects tape or wire recording heads. Dissolves scum, loosens lint and dirt.

Cat. No.	Description	List
93-01	1 oz. bottle (Standard Pack: 12) .....	\$ 0.95

\*Special Distributors Discount Applies

**K-T-K (Kon-Trol-Kleen)**

New Walsco formula that protects as it cleans all radio, TV, and similar electronic rotating controls, contacts, switches, etc. For use in Walsco Clean-O-Jet.



Cat. No.	Description	List
107-04	4 oz. bottle (Standard Pack: 12) ..	\$ 1.25
107-18	16 oz. can (Standard Pack: 3) ...	3.25
107-33	1 gallon can .....	*13.50

**WALSCOLUB-B**

Electrically neutral lubricant that prevents corrosion, noise-free operation of contacts, controls, tuners, switches, etc. Clings to metal surfaces, reduces wear. Superior to any graphite compound.

Cat. No.	Description	List
22-01	1 1/2 oz. tube (Standard Pack: 12) .....	\$ 0.90
22-17	1 lb. can .....	*3.65
22-18	5 lb. can .....	*12.90
22-07	In Chem-O-Jector .....	0.70

**WALSCO LUBRICATOR**



Designed for light grease and oil such as Walscolub-B, Lubriplate, etc. Reaches difficult places. Operates by simple thumb pressure.

Cat. No.	Description	List
988	Lubricator .....	\$ 0.80
988D	Display of 12 — No. 988 .....	9.60

**WALSCO "LUBRIPLATE"**

A super lubricant, grease type. Reduces friction loss, prevents rust and corrosion. Ideal for motors, record changers, switches, etc.

Cat. No.	Description	List
23-02	2 oz. tube (Standard Pack: 12) .....	\$ 0.90
23-17	1 lb. can .....	*3.30
23-18	5 lb. can .....	*11.65

**WALSCO DIAL OIL**

A light bodied jewelers-quality lubricating oil. For quiet, free-running dial mechanisms. Absolutely safe.

Cat. No.	Description	List
27-02	2 oz. bottle (Standard Pack: 12) .....	\$ 0.60
27-07	In Chem-O-Jector (Standard Pack: 12) .....	0.70

**WALSCO "NO-SLIP"**

Stops slippage of pulley belts and cords instantly. Gives added friction.

Cat. No.	Description	List
260-01	1 oz. bottle .....	\$ 0.60
260-02	2 oz. bottle .....	0.75

**WALSCO TUNERLUB**

The proper, grease-type lubricant for high frequency contacts particularly T.V. tuners. Gives lasting protection.

Cat. No.	Description	List
26-01	1 1/2 oz. tube (Standard Pack: 12) .....	\$ 0.90
26-17	1 lb. can .....	*3.50
26-07	In Chem-O-Jector .....	0.70

**\*\*\*NO-OX\*\***

A non-gumming chemical that dissolves corrosion instantly. Lubricates and protects contacts long after application. For all volume, tone and similar controls, also switches, etc.

Cat. No.	Description	List
100-01	1 oz. bottle .....	\$ 1.10
100-02	2 oz. bottle .....	1.60
100-16	1 pint bottle (Standard Pack: 3) .....	12.50
100-33	1 gallon can .....	*49.85
100-34	5 gallon can .....	*191.50

Also available in handy spray cans

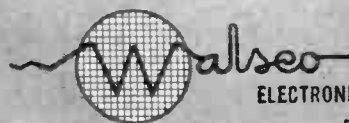
100-06 6 oz. spray can .....

\*\*Manufactured under exclusive licensing agreement with NO-OX Laboratories. Trade Mark registered.





## CHEMICALS IN BOTTLES - SPRAY CANS - and SYRINGE TYPE APPLICATORS



**ELECTRONICS MFG. CO.**  
Division of Textron, Inc.

# WALSCO POLISH - LACQUER - DOPE

### WALSCO SUPER POLISH

A Concentrated white cream wax polish. Rich, durable, lustrous.

Cat. No.	Description	List
230-04	4 oz. bottle (Standard Pack: 12)	\$ 0.65
230-08	8 oz. bottle (Standard Pack: 12)	0.90
230-33	1 gallon can	*7.40

### SCRATCH-REMOVING POLISH

Simple scratches disappear while you polish. Comes in dark and light shades.

Cat. No.	Description	List
231-04	Dark, 4 oz. bottle (Standard Pack: 12)	\$ 0.65
232-04	Light, 4 oz. bottle (Standard Pack: 12)	0.65
231-08	Dark, 8 oz. bottle (Standard Pack: 12)	0.90
232-08	Light, 8 oz. bottle (Standard Pack: 12)	0.90
231-33	Dark, 1 gallon can	*4.80
232-33	Light, 1 gallon can	*4.80

### ANTI-CORONA LACQUER

Prevents arcing up to 15,000 volts. Ideal for use in TV and other high-voltage circuits.

Cat. No.	Description	List
†195-02	2 oz. bottle	\$ 1.20
†195-16	1 pint can	7.50
195-33	1 gallon can	*24.65

Also available in handy Spray Cans.

195-06	6 oz. Spray Can (Standard Pack: 12)	*1.72
195-12	12 oz. Spray Can (Standard Pack: 12)	*3.25

### RED CORONA DOPE

Stops high voltage "Corona." Protects against shorts. Dries instantly.

Cat. No.	Description	List
198-02	2 oz. bottle (Standard Pack: 12)	\$ 1.20
198-16	1 pint can (Standard Pack: 3)	7.50
198-33	1 gallon can	*39.50

### WALSCO GLYPTAL

An overall insulating material. Resists heat, oils and acid. Spray, brush or dip on. Manufactured by G.E. — bottled by Walsco.

Cat. No.	Description	List
134-02	2 oz. bottle (Standard Pack: 12)	\$ 0.95
134-08	8 oz. bottle (Standard Pack: 12)	2.75
134-33	1 gallon can	*20.00

### CR TUBECOAT

A quick-drying coating for TV picture tubes.

Cat. No.	Description	List
†199-02	2 oz. bottle with brush	\$ 1.20
199-33	1 gallon can	*18.25

Also available in handy spray cans.

†199-06	6 oz. spray can	*1.72
†199-12	12 oz. spray can	*3.25

### INSULATING VARNISH

Resistant to heat, acid, oil and grease.

Cat. No.	Description	List
190-02	2 oz. bottle (Standard Pack: 12)	\$ 0.75
190-16	1 pint bottle (Standard Pack: 3)	3.25
190-33	1 gallon can	*19.75

### AIR-DRY WRINKLE VARNISH

For wood or metal. A factory-like wrinkle finish without baking.

Cat. No.	Description	Std. Pack	List
146-02	Gray — 2 oz. jar	12	\$ 0.90
146-16	Gray — 16 oz. can	3	3.95
145-02	Black — 2 oz. jar	12	0.90
145-16	Black — 16 oz. can	3	3.95
145-33	Black — 1 gallon can		*21.25
146-33	Gray — 1 gallon can		*21.25

Also available in handy Spray Cans.

145-06	6 oz. can — Black	12	*2.25
146-06	6 oz. can — Gray	12	2.25
145-12	12 oz. can — Black	12	*2.95
146-12	12 oz. can — Gray	12	*2.95

\*Special Distributor's Discount Applies

### WALSCO STRIPVAR

Instantly softens Formvar, Formex, and similar insulation

Cat. No.	Description	List
251-02	2 oz. bottle, (Standard Pack: 6)	\$ 1.00
251-16	1 pint can	5.50
251-33	1 gallon can	*25.85

### HAM-R-TONE LACQUER

Gives a "factory-like" finish to any metal surface. In handy spray can.

Cat. No.	Description	List
148-06	Gray — 8 oz. Spray Can (Standard Pack: 12)	*\$ 1.65
149-06	Blue — 8 oz. Spray Can (Standard Pack: 12)	*1.65

### FLOCK FINISH SPRAY KIT

Contains brown and ivory felt flock, brown and ivory undercoat, and undercoat thinner and a felt flock spray gun. All the necessary materials to apply a beautiful felt flock finish. Complete instructions supplied.

Cat. No.	Description	List	Net Dealer's
7-K	Complete Flocking Kit	\$15.95	\$9.57

### ANTI-FUNGUS LACQUER

Meets U. S. Government Specifications JAN-C-173.

Cat. No.	Description	List
135-02	2 oz. bottle (Standard Pack: 12)	\$ 0.75
135-16	1 pint can (Standard Pack: 3)	3.25
135-33	1 gallon can	*19.75

### SILICONE RESIN LACQUER

A special formula resin lacquer designed to protect printed circuits after repair or replacement of parts. Fast air drying.

Cat. No.	Description	List
120-02	2 oz. bottle with brush (Standard Pack: 12)	\$ 1.95
120-06	6 oz. spray can (Standard Pack: 12)	*3.25

### RESIN LACQUER SOLVENT

Use as a thinner or as a remover.

Cat. No.	Description	List
205-02	2 oz. bottle (Standard Pack: 12)	\$ 0.55

### ACRY-SPRAY

Weather proofs antenna terminals, lead-in wires, high voltage connections, etc. Excellent for TV masts and towers. Puts rust-resistant finish on all metal surfaces.

Cat. No.	Description	List
140-12	12 oz. spray can, clear	*\$ 1.79
141-12	12 oz. spray can, aluminum (Standard Pack: 12)	*1.79



### RUST-DE-SOLVE

Acts instantly to remove rust and frees "frozen" bolts, nuts, etc.

Cat. No.	Description	List
109-02	2 oz. bottle (Standard Pack: 12)	\$ 0.60
109-07	In Chem-O-Jector (Standard Pack: 12)	0.70

### WALSCOFUX

A non-corrosion, instant-acting soldering flux. Made of pure resin.

Cat. No.	Description	List
220-02	2 oz. bottle with applicator (Standard Pack: 12)	\$ 0.75

### WALSCO ALUMA-FLUX

Makes aluminum soldering simple, easy and permanent.

Cat. No.	Description	List
221-02	2 oz. size (Standard Pack: 12)	\$ 2.48

### STANDARD SOLDERING PASTE

For use in all electrical work, sheet metal work, etc. Very fast acting.

Cat. No.	Description	List
226-02	2 oz. can (Standard Pack: 12 per display box)	\$ 0.45

### SPECIAL ELECTRONIC SOLDERING PASTE

Especially designed for use in Electronic work. Pure resin base.

Cat. No.	Description	List
228-01	1 1/2 oz. can (Standard Pack: 12 per display box)	\$ 0.50

†Standard Pack: 12

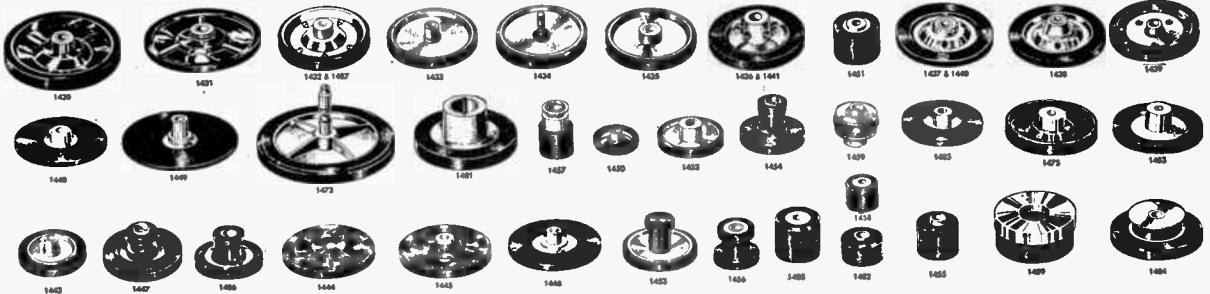
FREE!! Our LATEST CATALOG! 64 Pages — Fully Illustrated — Showing Entire Walsco Line

**WALSCO QUALITY EARNED ITS REPUTATION**

ROCKFORD, ILLINOIS • LOS ANGELES, CALIF.



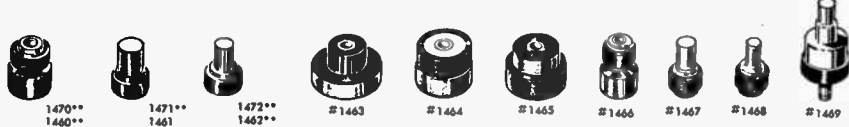
## WALSCO IDLER and DRIVE WHEELS



- Cat. No. 1430 — IDLER WHEEL — 2 1/4" O.D. — Replaces G.I. 22076, Seeburg M232038, Zenith 1118. Standard Pack: 6 ..... List \$1.65
- Cat. No. 1431 — IDLER WHEEL — 2 1/4" O.D. — Used on Webeor Model 110 record player. Standard Pack: 3 ..... List \$1.65
- Cat. No. 1432 — IDLER WHEEL — 2" O.D. — Replaces Admiral G400A59 and 279, Crescent 011882, G.E. RMW-043 and 060, RCA 71411 and 78750 ..... List \$1.00
- Cat. No. 1487 — Similar to above but bushing diameter is 1/8". Used on Silvertone, etc. Standard Pack: 3 ..... List \$4.00
- Cat. No. 1433 — IDLER WHEEL — 2" O.D. — Used on V.M. 400D, 402D, 404, 405, 800D, G.E. P-12 and P-13, etc. Standard Pack: 3 ..... List \$1.10
- Cat. No. 1434 — IDLER WHEEL — 2" O.D. — For Admiral G-400A57, Crescent 01189, Philco 76-2374, RCA 78508, V.M. 3481. Standard Pack: 12 ..... List \$1.20
- Cat. No. 1435 — IDLER WHEEL — 2" O.D. — For Milwaukee Stamp Series 10700, Philco M-22, 24A, 26, 28, etc. Standard Pack: 6 ..... List \$1.10
- Cat. No. 1436 — IDLER WHEEL — 2" O.D. — With hub. For Webeor 7, 18, 78, 79, 80, 81, 178, 180, 181, 228, etc. Standard Pack: 3 ..... List \$2.00
- Cat. No. 1437 — IDLER WHEEL — 2 1/4" O.D. — Replaces G.E. RMW-053, Philco 35-398, Webeor 11X003, 11X368, etc. Standard Pack: 12 ..... List \$1.25
- Cat. No. 1438 — IDLER WHEEL — 2 1/4" O.D. — Replaces G.E. RMW-076, Webeor 11X368, 11X935, etc. Standard Pack: 12 ..... List \$1.50
- Cat. No. 1439 — IDLER WHEEL — 2" O.D. — With Bushing. For use on Webeor 1134, 1136, 1161, etc. Standard Pack: 12 ..... List \$1.25
- Cat. No. 1440 — IDLER WHEEL — 2" O.D. — With Bushing. For Webeor Model 1135 record changer. Standard Pack: 6 ..... List \$1.25
- Cat. No. 1441 — IDLER WHEEL — 2 1/4" O.D. — For most Webeor tape recorders. Standard Pack: 6 ..... List \$2.00
- Cat. No. 1443 — IDLER WHEEL — 1 1/2" O.D. — With Bushing. For Philco M24A, 26, 28, Webeor 135, 136, etc. Standard Pack: 6 ..... List \$1.00
- Cat. No. 1447 — MOLDED IDLER WHEEL — RCA 45 RPM — Molded RCA 74077 for RP-168 and RP-190 Series. Standard Pack: 12 ..... List \$1.10
- Cat. No. 1448 — IDLER WHEEL — 2" O.D. — For Collora changers. Standard Pack: 3 ..... List \$2.00
- Cat. No. 1449 — IDLER WHEEL — 2 1/4" O.D. — For use with Collora changers. Standard Pack: 6 ..... List \$2.00
- Cat. No. 1450 — IDLER WHEEL — 1" O.D. — For use with Crescent. Standard Pack: 6 ..... List \$1.45
- Cat. No. 1452 — IDLER WHEEL — 1 1/2" O.D. — For V.M. and Silvertone. Standard Pack: 12 ..... List \$1.00
- Cat. No. 1454 — IDLER WHEEL — 1 1/2" O.D. — Molded rubber wheel. For use on RCA RP-199 Series. Standard Pack: 6 ..... List \$1.25
- Cat. No. 1459 — IDLER WHEEL — 1" O.D. — Used on Zenith Cobra-Matic record changers, Models S-140-28 thru -64. Standard Pack: 3 ..... List \$1.90

- Cat. No. 1485 — CAPSTAN IDLER — 1 1/4" O.D. — For use with V.M. tape recorders in 700 Series only. Standard Pack: 3 ..... List \$1.25
- Cat. No. 1475 — IDLER WHEEL — 2" O.D. — Used on Elcor recorders and Silvertone 101.744-2 and 101.744-4. Standard Pack: 3 ..... List \$1.65
- Cat. No. 1483 — IDLER WHEEL — 2" O.D. — For use with Pentron tape recorders only. Standard Pack: 3 ..... List \$1.50
- Cat. No. 1481 — CLUTCH HOUSING DRIVE — 2 1/4" O.D. — For use on Webeor tape recorders 2010, 2030, 2110, 2130, 2131, 2132. Standard Pack: 3 ..... List \$2.75
- Cat. No. 1453 — IDLER PULLEY — 1 1/2" O.D. — Molded rubber wheel. For use with V.M. 155, 556, 560, 565, 1200-25, -50, -75, -85. Standard Pack: 3 ..... List \$3.05
- Cat. No. 1456 — IDLER PULLEY — 1 1/2" O.D. — Molded rubber wheel. Used on V.M. changers with 4-pole motors. Standard Pack: 6 ..... List \$3.05
- Cat. No. 1486 — IDLER PULLEY — 1 1/2" O.D. — Molded rubber wheel. Used on V.M. record changers 120, 121, 131, 210 ..... List \$3.05
- Cat. No. 1444 — INTER WHEEL — 2" O.D. — For use with Garrard Model RC-80 record changers. Standard Pack: 6 ..... List \$2.00
- Cat. No. 1445 — INTER WHEEL — 2" O.D. — With ball-bearing hub cap. Used with Garrard T & TA players. Standard Pack: 3 ..... List \$2.00
- Cat. No. 1446 — INTER WHEEL — 2" O.D. — With ball-bearing hub cap. Used on Garrard Model RC-90 changers. Standard Pack: 3 ..... List \$2.00
- Cat. No. 1473 — DRIVE WHEEL — 3" O.D. — Used on Zenith Cobra-matic changers (Replaces No. 16922, S-21754) Standard Pack: 3 ..... List \$3.50
- Cat. No. 1451 — DRIVE WHEEL — 1" O.D. — For use on Crescent record changers of the 550 Series. Standard Pack: 6 ..... List \$1.40
- Cat. No. 1469 — 2-STEP DRIVE SLEEVE — Used on Webeor Model 135, 136 and other record changers. Standard Pack: 6 ..... List \$1.60
- Cat. No. 1455 — PRESSURE ROLLER — 3/4" O.D. — For use with Webeor 210, 2010, 2030, 2110, 2130, 2131, -32, 2611, -12. Standard Pack: 3 ..... List \$2.30
- Cat. No. 1482 — PRESSURE ROLLER — 3/4" O.D. — Used with Webeor tape recorders only, 220 Series 2614, 2615. Standard Pack: 3 ..... List \$1.65
- Cat. No. 1458 — PRESSURE ROLLER 3/4" O.D. — For use with V.M. Model 700 tape recorders. Standard Pack: 3 ..... List \$1.65
- Cat. No. 1457 — PRESSURE ROLLER 3/4" O.D. — For RCA SRT 301, 401, 402, 403, Wilcox-Gay 2A, 3A, 3F, 4A, 4B, 4F and 5 Series. List \$2.50
- Cat. No. 1477 — DRIVE WHEEL 1 1/2" O.D. — Replaces Philco 245-6614. Standard Pack: 6 ..... List \$1.25
- Cat. No. 1478 — IDLER WHEEL 2 1/4" O.D. — For use on Garrard RC-88 and RC-98 3-speed changers. Standard Pack: 3 ..... List \$2.10
- Cat. No. 1479 — IDLER WHEEL 2 1/4" O.D. — For use on Garrard RC-88, RC-98 and RC-121 4-speed changers. Standard Pack: 3 ..... List \$2.25
- Cat. No. 1484 — TAKE-UP DRIVER — For use with V.M. tape recorder Model 700. Standard Pack: 3 ..... List \$2.75
- Cat. No. 1488 — CAPSTAN PRESSURE ROLLER — 1" O.D. — For use on Pentron tape recorders only. Standard Pack: 3 ..... List \$2.00
- Cat. No. 1491 — CYCLE DRIVE WHEEL 2 1/4" O.D. — Used on Collora RC-54. Standard Pack: 3 ..... List \$1.25

## DRIVE PULLEYS



Cat. No.	Speed	List	Cat. No.	Speed	List	Std. Pack
1480-1470	78 rpm	\$1.30	1463	78 rpm	\$1.90	12
1481-1471	45 rpm	1.15	1464	45 rpm	1.90	6
1482-1472	33 1/2 rpm	1.15	1465	33 1/2 rpm	1.90	6

1460, 1461 and 1462 are a Turret Drive group that is used on Crescent, G.E., Motorola, RCA, VM and other record changers. Standard Pack: 12. The 1470 Series is used on RCA, VM, and other record changers. Standard Pack: 6.

Cat. Nos. 1463, 1464, and 1465 are turret drives for G.E. and Webeor record changers.

NOTE: Drives No. 1460, 1461, and 1462 are the same as No. 1470, 1471, and 1472 except that the 1460 series is approximately 1/64" larger in rubber diameter than the 1470 series. Send for FREE Complete Conversion Chart. If model number of changer or manufacturer's part number is not known, use 1460 series. For most purposes, these two series are interchangeable.

Cat. No. 1466, 1467, 1468 for use on Crescent, Motorola, VM, RCA and other record changers.

**RECORD ARM SLEEVE**  
Neoprene rubber. For Garrard record changers. 2 required.  
Cat. No. 1412 — Standard Pack: 12 pair ..... List \$0.25 pair

**RUBBER BUMPERS**  
Used on V.M. Record Changers.  
Cat. No. 1411 — Standard Pack: 12 pair ..... List \$0.30 pair

**INDEX FINGER CUSHION**  
Used on Webeor 100, 121, 1124, 110 and 114 series.  
Cat. No. 1419 — Standard Pack: 6 pair ..... List \$0.30 pair

**VELOCITY TRIP**  
For Webeor record changers. Precision-molded.  
Cat. No. 1413 — Standard Pack: 12 pair ..... List \$0.30 pair

**WALSCO QUALITY EARNED ITS REPUTATION**  
ROCKFORD, ILLINOIS • LOS ANGELES, CALIF.



**WALSCO TIRES and BELTS**



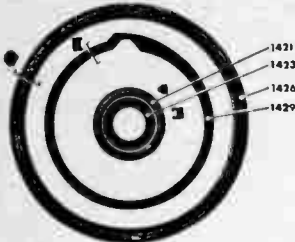
Cat. No.	I.D.	Wall Thickness	Length	Std. Pack:	List
1414	1 1/2"	1/8"	1 1/2"	24	\$0.25 per pair
1415	1 3/4"	1/8"	1 3/4"	24	0.25 per pair
1417	1 7/8"	1/8"	1 7/8"	12	0.25 each
1418	2"	1/8"	2"	12	0.20 each
1422	1 1/2"	1/8"	1 1/2"	6	0.20 each
1424	2"	1/8"	2"	6	0.55 each

**RECORDER DRIVE BELTS**

Cat. No.	Inside Circumf.	Used On	Std. Pack:	List
1410-06	6.2"	Model VM-700 Tape Recorders	6	\$0.60
1410-07	7.4"	RCA SRT 301, 401, 402, 403 Wilcox-Gay 3A10, 3A11	3	0.70
1410-08	8.6"	Pentron, Crestwood and other tape recorders	3	0.70
1410-10	10.6"	Crescent and other tape recorders	6	0.80
1410-12	12.0"	Ampro and most Revere recorders	6	0.80
1410-14	14.5"	Most Revere recorders	3	1.50
1410-15	15.3"	Webcor tape recorders	12	1.50
1410-18	18.1"	Ampro tape recorders	3	2.00
1410-20	20.4"	Ampro tape recorders	3	2.50
1410-21	21.1"	Ampro, Gen. Ind., Webcor and other tape recorders	12	2.50

**FABRIC DRIVE BELTS**

Cat. No.	Width	Inside Circumf.	Used On	List
1409-02	3/8"	17"	Pentron Tape Recorders	\$2.50
1409-03	3/8"	12 1/4"	Pentron, Crescent and other tape recorders	\$2.50
1409-04	3/8"	12 1/2"	VM-700 model tape recorders	\$2.50



**BELTS and CAM TIRES Special Shapes**

These Belts and Tires are made of highest quality abrasion-resistant Neoprene rubber. Illustrations show the cross-section of each tire.

Cat. No.	I.D.	Used On	Std. Pack:	List
1421	1 1/8"	Miracord	6	\$0.70
1423	1 1/4"	RCA 176 & 177	3	0.25
1426	1 1/2"	GE & RCA	3	1.10
1429	3 3/4"	RCA Series 178	3	1.10

**PHONO DRIVE KITS**

**JUNIOR PHONO DRIVE KIT**



A very convenient and handy kit for the small service shop. Contains 36 of our most popular wheels and drives. Comes in a handy plastic box.

Cat. No. 1401 - Junior Kit. List \$16.62  
Standard Pack: 1

**STANDARD PHONO and RECORDER DRIVE KIT**

Replacement Drives covering 85% of all record changers and tape recorders.  
Cat. No. 1400 - Phono Recorder Drive Kit ..... List \$28.95  
Standard Pack: 1

**SENIOR PHONO DRIVE KIT**

Contains 71 of the most popular Idler Wheels, Belts, Pulleys and other parts in 18 different varieties. Here is a big money maker for the busy serviceman.  
Cat. No. 1402 - Phono Drive Kit ..... List \$59.00  
Standard Pack: 1

**PHONO HARDWARE KIT**

A wide assortment of the most often needed phono hardware items. Kit contains over 60 parts, including phono jacks and plugs, assorted screws, spacers, and springs, in transparent plastic box.



Cat. No. 1497 - Phono Hardware Kit ..... List \$2.40  
Standard Pack: 6

**PHONO MOUNTING SPRING KIT**



Assorted conical springs for mounting changers, and turntables. Precision-formed. Selected for uniformity.

Cat. No. 1498 - Phono Mounting Spring Kit. List \$1.40  
Standard Pack: 6

**NYLON DIAL CORDS**

Genuine Nylon, braided over a fibre-glass core. Cords listed below cover 80% of the replacement demand.

Cat. No.	Diam.	Breaking Strength	List Prices		Bulk 3M to 14,999	15M & Up
			25	500		
<b>"SPECIAL THIN"</b>						
656-02	.025"	15 lbs.	\$1.50			
656-10	.025"	15 lbs.	\$4.95			
656-50	.025"	15 lbs.	\$14.30		\$14.70	\$11.68
656-R	.025"					
<b>STANDARD</b>						
654-02	.032"	20 lbs.	\$1.50			
654-10	.032"	20 lbs.	\$4.95			
654-50	.032"	20 lbs.	\$14.30		\$16.30	\$12.98
654-R	.032"					
<b>MEDIUM</b>						
652-02	.040"	35 lbs.	\$1.50			
652-10	.040"	35 lbs.	\$4.95			
652-50	.040"	35 lbs.	\$17.60		\$22.80	\$18.15
652-R	.040"					
Also available in 50 line packages.						
<b>HEAVY</b>						
(Used on many Philco and Majestic sets)						
650-02	.060"		\$1.90			
650-10	.060"		\$5.50		\$31.85	\$25.35
650-R	.060"					

**BRONZE DIAL CABLES**

For control-dial linkage requiring the strength of metal.

**CADMIUM BRONZE CABLE**

16-strand, .039" O.D., 50 lb. breaking strength. Good flexibility. Will not unravel.

Cat. No.	Description	List Price	LIST per 1000 ft.	
			3M - 14,999	15M & Up
660-02	25 ft.	\$1.80		
660-10	100 ft.	5.00		
660-50	500 ft.	20.00		
660-R	Bulk quantities		\$27.20	\$21.62

**PHOSPHOR BRONZE CABLE**

42-strand, .032" diameter, 40 lb. breaking strength. Exceptionally strong and flexible.

Cat. No.	Description	List Price	LIST per 1000 ft.	
			3M - 14,999	15M & Up
662-02	25 ft.	\$2.25		
662-10	100 ft.	6.50		
662-50	500 ft.	27.00		
662-R	Bulk quantities		\$42.45	\$33.80

**THIN BRONZE CABLE**

Only .022" in diameter. Exceptionally strong and flexible. Non-ravelling.

Cat. No.	Description	List Price	LIST per 1000 ft.	
			3M - 14,999	15M & Up
664-02	25 ft.	\$1.80		
664-10	100 ft.	5.00		
664-50	500 ft.	20.00		
664-R	Bulk quantities		\$32.65	\$25.95

**FLAT NYLON LACING CORD**

For tying harnesses, wrapping coils, etc. Waxed and fungus resistant. Breaking strength 50 lbs., width .083", thickness .0125". Type 18.

Cat. No.	Description	Std. Pack	List
			(per spool)
666-15	150 ft. spool	12 per box	\$ 4.50
666-75	750 ft. spool	1 per box	\$13.75

**STANDARD LACING CORD**

Meets specifications JAN-T-713 - Type N - Class 8. .040" diameter, tensile strength, 32 lbs.

Cat. No.	Description	Std. Pack	List
			(per spool)
665-10	100 ft. spool	12 per box	\$ 1.65
665-45	450 ft. spool		\$ 2.35
665-80	1800 ft. spool		\$ 7.20

**DIAL DRIVE BELTS**

A selection of 95 different sizes. For any set manufactured since 1930. Walco guarantees these belts to fit perfectly. Complete reference chart free upon request.

Cat. No.	Description	List Price
1101-1195	Individual Belt (95 sizes available)	\$0.50
1195	for RCA TV Tuner	0.50
8-K	KIT of 25 most popular belts	\$3.50
8-K	KIT of 50 most popular belts	\$6.00

**PHONO KLIP KIT**

Assortment of "E" rings, "O" washers, hair pins, retainers, rings, etc. A minimum of 54 pieces for any replacement need.

Cat. No. 1496 - Complete Kit (Standard Pack: 6) ..... List \$1.10

**45 RPM RECORD ADAPTER**



Made of molded bakelite. Fits all standard 45 RPM records.

Cat. No. 340 - Single Adapter ..... List \$0.25  
Cat. No. 340D - Display ..... List 5.00  
Standard Pack: 20 per display card

\*Special Distributor's Discount Applies

FREE!! Our LATEST CATALOG! 64 Pages - Fully Illustrated - Showing Entire Walsco Line



**WALSCO QUALITY EARNED ITS REPUTATION**

ROCKFORD, ILLINOIS • LOS ANGELES, CALIF.



**WALSCO HAM-R-PRESS**

Ham-R-Press is a precision tool made of strong aluminum alloy and high grade steel. 15 tons of impact pressure may be easily obtained for the punching of chassis, panels or other light sheet metal. Operates simply by striking the ram with a hammer. Punches and dies easily interchanged. Available in 2 models.

Cat. No.	Description	Wt.	Dealer's Net
Model 3007	Depth of throat—7 1/2"	9 lbs.	\$32.95
Model 3008	Depth of throat—12"	12 lbs.	37.95

**HAM-R-PRESS ACCESSORIES**

Cat. No. 3009-01	Shearing Set, 1" high. of cut.	Dir's Net	\$4.50
Cat. No. 3009-02	Die Raiser, 3" high.	Dir's Net	4.50
Cat. No. 3009-03	Adaptor, for dies 1/2" or under.	Dir's Net	1.15

**HAM-R-PRESS PUNCH and DIE SETS**

ROUND				KEYED and "D"			
Cat. No.	Punch Size	Dir.'s Net Each	Cat. No.	Punch Size	Dir.'s Net Each		
3012-H	1/8"	\$2.10	3100-H	1"	2.55		
3025-H	3/16"	2.10	3108-H	1 1/8"	2.60		
3037-H	1/4"	2.10	3112-H	1 1/2"	2.60		
3050-H	5/16"	2.00	3116-H	1 3/8"	2.60		
3062-H	3/8"	2.30	3117-H	1-11/64"	2.60		
3069-H	7/16"	2.35	3119-H	1 1/2"	2.60		
3075-H	1/2"	2.30	3125-H	1 3/4"	2.60		
3087-H	5/8"	2.30					

Cat. No.	Punch Size	Dir.'s Net Each	Cat. No.	Punch Size	Dir.'s Net Each
3062-Q	5/16"	\$2.95	3117-U	1-11/64"	\$3.40
3069-Q	3/8"	2.95			
3071-Q	7/16"	3.40			
3075-Q	1/2"	3.40	3050-E "D"	1/2"	3.15
3087-Q	5/8"	3.40			

All Items Listed Above Carry Special Distributor's Discount.

**WALSCO TEKNI-LABELS**

Easily applied Decals for use with electronic equipment, Hi-fi, radio, TV, etc.

Each package has hundreds of electronic terms, symbols, designs, abbreviations and letters for all uses. Unlimited variety to choose from. Gives professional appearance.

**TRANSMITTER LABELS**

Set contains over 1200 titles including labels 1/4" high. For titling stages.  
 Cat. No. 2100 — White ..... Dealer's Net \$1.35  
 Cat. No. 2108 — Black ..... Dealer's Net 1.35

**INSTRUMENT LABELS**

For the experimenter and builder. Provides labels for all types of test equipment.  
 Cat. No. 2101 — White ..... Dealer's Net \$1.35  
 Cat. No. 2109 — Black ..... Dealer's Net 1.35

**RECEIVER LABELS**

Over 1800 titles, misc. letters, alphabets and marks.  
 Cat. No. 2102 — White ..... Dealer's Net \$1.35  
 Cat. No. 2112 — Black ..... Dealer's Net 1.35

**TV LABELS**

Includes special color experimental TV titles and other valuable labels.  
 Cat. No. 2103 — White ..... Dealer's Net \$1.35  
 Cat. No. 2113 — Black ..... Dealer's Net 1.35

**DIAL LABELS**

For general use to match titles in other Walsco decal sets.  
 Cat. No. 2104 — White ..... Dealer's Net \$1.35  
 Cat. No. 2110 — Black ..... Dealer's Net 1.35

**AUDIO LABELS**

Set contains all necessary titles including recent new HI-FI titles for the Audio and Sound enthusiasts.  
 Cat. No. 2105 — White ..... Dealer's Net \$1.35  
 Cat. No. 2107 — Black ..... Dealer's Net 1.35

**RECEIVING TUBE DECALS**

For identifying all tube sockets. Over 320 different tube labels included.  
 Cat. No. 2106 — White ..... Dealer's Net \$1.35

**PANEL LABELS**

For giving the front panel a finished look. Practical as well as attractive.  
 Cat. No. 2111 — Gold ..... Dealer's Net \$1.35

**ALPHABETS**

Includes 7 complete alphabets in each package of letters from 1/4" high to 1/10" high. Has large block letters as well as Greek and Old English. Provides an endless variety of combinations.

Cat. No.	Color	Dir.'s Net	Cat. No.	Color	Dir.'s Net
2115	White	\$1.35	2135	Gold	\$1.35
2125	Black	1.35	2145	Red	1.85

**TRADEMARKS**

Designed to make possible your own trademark with hundreds of markings of varied designs and shapes.

Cat. No.	Color	Dir.'s Net	Cat. No.	Color	Dir.'s Net
2116	White	\$1.35	2136	Gold	\$1.35
2126	Black	1.35	2146	Red	1.35

**UNIVERSAL DECALS**

Large assortment of titles, numerals and designs for radio, TV, etc.

Cat. No.	Description	Dealer's Net
2201	1 package — White	\$1.35
2201-D	Display box of 10 packages	13.50
2202	1 package — Black	1.35
2202-D	Display box of 10 packages	13.50
2203	1 package — Gold	1.35
2203-D	Display box of 10 packages	13.50

\*Special Distributor's Discount Applies

**ROUND PIONEER CHASSIS PUNCHES**

Made of specially hardened, precision-ground, tool steel. Quick and easy to operate. Saves hours of hard work.



Cat. No.	Punch Size	Bolt Size	Dir.'s Net
3050-R	1/8"	1/4"	\$2.34
3062-R	3/16"	3/8"	2.34
3069-R	1/4"	1/2"	2.34
3075-R	5/16"	5/8"	2.34
3087-R	3/8"	3/4"	2.34
3100-R	1/2"	7/8"	2.57
3106-R	5/8"	1"	2.70
3112-R	3/4"	1 1/8"	2.70
3116-R	7/8"	1 1/4"	2.70
3117-R	1-11/64"	3/4"	2.70
3119-R	1 1/8"	7/8"	2.70
3125-R	1 1/4"	1"	2.70
3137-R	1 3/8"	1 1/8"	3.00
3150-R	1 1/2"	1 1/4"	3.47
3225-R	2"	1 3/4"	6.70

Standard Pack: 3

**SQUAREHOLE PIONEER CHASSIS PUNCHES**

Cat. No.	Punch Size	Bolt Size	Dir.'s Net	Cat. No.	Punch Size	Bolt Size	Dir.'s Net
3062-S	5/16"	1/4"	\$3.83	3087-S	3/8"	3/8"	4.90
3069-S	3/8"	1/2"	4.10	3100-S	1"	1/2"	5.04
3075-S	1/2"	3/4"	4.28				

Standard Pack: 3

**KEY and "D" CHASSIS PUNCHES**

Cat. No.	Punch Size	Bolt Size	Dir.'s Net
3117-K (KEY)	1-11/64"	7/8"	\$4.50
3050-D "D"	1/2"	3/8"	3.95

Standard Pack: 3

**CHASSIS PUNCH KIT**

The most economical way to buy the 10 standard size punches. This complete kit includes one each of the following punches: No. 3075-S, No. 3050-D, and Nos. 3050-R, 3062-R, 3075-R, 3100-R, 3112-R, 3116-R, 3125-R, 3137-R.

Cat. No. 3005 ..... Dealer's Net \$28.50

**BOLT REPLACEMENT KIT**

Contains an ample assortment of bolts and nuts for Walsco Pioneer Chassis Punches.

Cat. No. 3010-01 ..... Dealer's Net \$26.60

**REPLACEMENT BOLTS and NUTS FOR CHASSIS PUNCHES**

BOLT Cat. No.	NUT Cat. No.	FOR USE IN PUNCHES NO.	BOLT Dealer's Net	NUT Dealer's Net
3010-02	3011-02	3050-D (OLD #CD-50)	\$1.25	\$0.20
3010-03	NONE	3050-R (OLD #CR-50)	.25	..
3010-04	NONE	3062-R (OLD #CR-62)	.25	..
3010-05	3011-02	3062-S (OLD #CS-62)	1.25	.20
3010-08	3011-03	3069-R (OLD #CR-69)	.25	.20
		thru 3150-R (OLD #CR-150)	.25	.20
3010-07	3011-03	3075-S (OLD #CS-75)	1.35	.20
3010-08	3011-03	3087-S (OLD #CS-87)	1.35	.20
3010-09	3011-04	3100-S (OLD #CS-100)	1.35	.20
3010-09	3011-04	3117-K (OLD #CKR-117)	1.35	.20
3010-10	NONE	3225-R (OLD #CR-225)	.75	.20



**WIRE MARKERS**

Permanent, legible, foolproof. Made of durable, vinyl cloth with plastic coating. Pre-cut to exact size.

Cat. No.	Description	Dir.'s Net
2210	Numbers 1 to 39	\$0.33
2211	Numbers 34 to 66	.33
2212	Numbers 67 to 99	.33
2213	Letters A to Z	.33

**TV RECEIVER DECALS**

Contains 2 complete sets of decals providing the proper label for every requirement on a TV chassis or a cabinet.

Cat. No. 2551	— 2 complete sets	List \$0.45
Cat. No. 2551D	— Display of 20	List 9.00

STATIONS	VOLUME	ON
TV	RADIO	PHONE OFF
CONTRAST	FINE TUNING	
HORIZONTAL	TONE FOCUS	
PICTURE	CUSTOM MADE	
HORIZ. LIN	VERT. LIN	
HEIGHT	ON OFF	ALL PA
1	2	3 4 5 6 SYNC

**ROLLABOUT TV CASTERS**

Designed for easy installation on any TV set.

Cat. No. 333 ..... List \$8.50



**WALSCO QUALITY EARNED ITS REPUTATION**

ROCKFORD, ILLINOIS • LOS ANGELES, CALIF.



**NEW PRINTED CIRCUIT REPAIR KITS**

These new Walsco Printed Circuit Repair Kits are designed to enable the service man to handle any repair or replacement job on printed circuits. Each kit contains sufficient materials to complete numerous repair jobs.



**STANDARD PRINTED CIRCUIT REPAIR KIT**

Contains foil, solder washers, solder wire, 1 solder-ease tool and fibre-glass brush, resin lacquer and solvent, tweezers and complete instructions.  
Cat. No. 13-K ..... List \$8.25

**MASTER PRINTED CIRCUIT REPAIR KIT**

Contains all items in Standard Kit plus an Ungar soldering iron, a spray can of silicone resin lacquer and a practice wiring board.  
Cat. No. 12-K ..... List \$13.25

**PRINTED CIRCUIT ACCESSORIES**

**PRINTED CIRCUIT REPAIR SOLDER**



With special flux core to make quick joints at lower temperatures for PC work.  
Cat. No. 649 — Approx. 11 ft. solder..... List \$0.55  
(Standard Pack: 10)

**PRINTED CIRCUIT REPAIR FOIL**



Copper, with thermo-plastic backing. Bonds permanently to panel with heat of soldering iron.  
Cat. No. 647 — Approx. 24 sq. in. .... List \$0.80  
(Standard Pack: 10)

**PRINTED CIRCUIT SOLDER WASHERS**

With center layer of special flux for quick bond.  
Cat. No. 648 — Box of 60 (Standard Pack: 10) ..... List \$0.99

**SILICONE RESIN LACQUER**

Fast air drying. Covers repairs or replacements in PC circuits with protective film.  
Cat. No. 120-02 — 3 oz. bottle (Standard Pack: 12) ..... List \$1.95  
Cat. No. 120-06 — 8 oz. spray can (Standard Pack: 12) ..... List \$3.25 each

**RESIN LACQUER SOLVENT**

Acts as a solvent and for removing silicone resin lacquer.  
Cat. No. 205-02 — 2 oz. bottle (Standard Pack: 12) ..... List \$0.55 each

**SOLDER EASE TOOLS**



Two types. Brush end for general work or curved hook for printed circuit work.

†Cat. No. 2529 — Brush end type ..... List \$1.65  
†Cat. No. 2530 — Curved Hook type ..... List 1.65  
(Standard Pack: 12)

**TEST SOCKET ADAPTERS**



1949-07 1949-08 1949-09 1949-01

Permits measurement of voltage, resistance, audio and video with the tube under working conditions in the circuit. Makes testing possible without removing chassis, saving valuable time and work. Handy test tabs are extended for easy use with test prods or alligator clips.

Cat. No.	Description	Dir.'s Net
1949-07	7-pin miniature	\$1.65
1949-08	8-pin octal	1.55
1949-09	9-pin miniature	1.85
1949-01	Duo-Decal for CRT	1.95

Standard Pack: 12 per box

**STRAIGHT'N PULL**



3 tools in one. Pulls the tube and will straighten the pins on 7 and 9 pin miniature tubes. Supplied with handy metal holder.

Cat. No.	List Price
365	\$ 1.65
865D	Display of 24 ..... \$39.60

**WALSCO INSULATING MATERIALS**

**INSULATING CAMBRIC**

Many uses in building transformers, coils, solenoids, etc. Very flexible and durable.

Cat. No.	Description	List Price
645	Roll of approx. 210 sq. in. ....	\$1.00
645D	Display of 10 No. 644 rolls .....	10.00

**SPAGHETTI BARGAIN ASSORTMENT**

Each bundle contains 24, 3" pieces in assorted diameters. Durable varnished tubing in a variety of colors.

Cat. No.	List Price
644	..... List \$0.59
644D	Display of 25—#644 ..... List 14.75

**WALSCO FLEXITUBE**

Has dielectric strength of 15,000 volts (average) before breakdown. Will stand temperatures from -65° F to 185° F. Meets Specifications MIL-I-631. List Price per spool (see below) ..... \$1.20

Cat. No.	Size B&S		Approx. I.D.		Quantity per spool
	Gauge No.	Inches	mm		
600-(color)	18	.042	1		20 ft.
601-(color)	16	.053	1.4		20 ft.
602-(color)	14	.066	1.6		18 ft.
603-(color)	12	.085	2		18 ft.
604-(color)	10	.106	2.7		14 ft.
605-(color)	8	.133	3.5		12 ft.
606-(color)	6	.166	4		10 ft.
607-(color)	4	.208	5		6 ft.
608-(color)	2	.263	6.5		6 ft.

Standard Pack: 12 Spools per package

AVAILABLE IN CLEAR, GREEN, BLACK, RED. To specify COLOR add suffix to above catalog number as follows: -01 for Clear, -02 for Green, -03 for Black and -04 for Red. Example 600-01 for 18 gauge, Clear.

**BULK and INDUSTRIAL QUANTITIES**

Same description as above but requires a different suffix to catalog number when specifying color. Add suffix -R1 for Clear, -R2 for Green, -R3 for Black and -R4 for Red. Example: 600-R1 for 18 gauge, Clear.

Cat. No.	Size B&S	LIST per 1000 ft.	
		100 to 1999 ft.	2000 ft. & up
600-(color)	(same as above)	*\$25.75	*\$19.55
601-(color)		*29.25	*20.65
602-(color)		*30.25	*22.00
603-(color)		*33.50	*23.50
604-(color)		*37.00	*26.40
605-(color)		*43.00	*27.75
606-(color)		*52.50	*39.75
607-(color)		*60.25	*45.95
608-(color)		*74.50	*56.60

\*Special Distributor's Discount Applies

**WALSCO RAYOFLEX**

More flexible and less affected by aging than conventional varnished tubing. Has a dielectric strength of 4,000 to 5,000 volts. Meets MIL-I-3190 Specifications.

List Price per spool (see below) ..... \$1.20

Cat. No.	Size B&S		Approx. I.D.		Quantity per spool
	Gauge No.	Inches	mm		
630-(color)	18	.042	1		10 ft.
631-(color)	15	.059	1.5		8 ft.
632-(color)	12	.085	2		8 ft.
633-(color)	9	.118	3		5 ft.
634-(color)	6	.166	4		5 ft.

Standard Pack: 12 Spools per package

AVAILABLE IN BLACK, RED, BLUE and YELLOW COLORS. To specify COLOR add suffix to above catalog number as follows: -03 for Black, -04 for Red, -05 for Blue and -06 for Yellow. Example: 630-03 is 18 gauge, Black.

**BULK and INDUSTRIAL QUANTITIES**

Same description as above but requires a different suffix to catalog number when specifying color. Add suffix -R3 for Black, -R4 for Red, -R5 for Blue and -R6 for Yellow. Example: 630-R3 is 18 gauge Black.

Cat. No.	Size and Dimensions	LIST per 1000 ft.	
		100 to 1999 ft.	2000 ft. & up
630-(color)		*\$61.50	*\$49.00
631-(color)		*65.60	*52.25
632-(color)		*71.80	*57.15
633-(color)		*84.10	*66.95
634-(color)		*102.50	*81.60

**DRAWER SLIDES**

Heavy-gauge, cold-rolled steel with a corrosion-resistant finish.

Cat. No.	Description	List
331-01	Friction type, 14" long .....	\$3.25/pair
331-03	Ball Bearing type (for heavier equipment or where minimum drag required), 14" long .....	5.50/pair

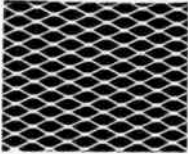
\*Special Distributor's Discount Applies

**WALSCO QUALITY EARNED ITS REPUTATION**

ROCKFORD, ILLINOIS • LOS ANGELES, CALIF.



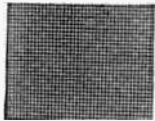
**SPEAKER ACCESSORIES**



**ORNAMENTAL METAL GRILLE**

Heavy metal, richly plated semi-gloss gold.

Cat. No.	Size	List Price
382	12" x 18"	\$ 3.50
384	18" x 24"	6.35
386	24" x 36"	12.00
387	24" x 48"	15.00
388	36" x 48"	22.50



**ACOUSTO-GRILLE**

Perforated phenolic, Gold finish.

Cat. No.	Size	List Price
390	12" x 16"	\$ 2.50
391	16" x 24"	5.00
392	24" x 40"	12.50
393	40" x 48"	25.00

**LUMITE GRILLE CLOTH**

Saran plastic fiber. Modern design. Will not discolor, stain or mildew.

Cat. No.	Size	List Price
366	12" x 18"	\$1.65
367	36" x 36"	6.25

**BULK QUANTITIES**

Cat. No.	Size	List/yd.
368	1 yd. wide (5 to 49 yds.)	\$7.50
368	1 yd. wide (50 yds. & up)	6.35

Add this number to Cat. No. to specify color when ordering

Pattern	Color
-01	Maroon
-02	Bronze & Gold
-03	Ecu (Blonde)



**WALSCO GRILLE CLOTH**

Specially woven to match - Walnut, Mahogany or light cabinet finishes.

Cat. No.	Size	List Price
360	12" x 12"	\$0.80
361	18" x 24"	2.25
362	1 yard x 4 feet (packaged)	7.50

**BULK QUANTITIES**

Cat. No.	Size	List/yd.
363	48" wide (5 to 49 yds.)	\$7.00
363	48" wide (50 yds. & up)	5.90

Color Code	Color
-01	Walnut
-04	Mahogany
-07	Blonde

Add these numbers to Cat. No. to specify color when ordering

**TWIN-LEAD FEED-THRU BUSHING**



A neat, inconspicuous method of bringing lead through a wall. May be cut to size. Fits 300-ohm flatline only.

Cat. No. 1550	Feed-thru bushing	List \$1.30
Cat. No. 1550D	Display of 12 bushings	List \$5.60

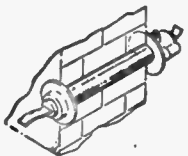


**TV LEAD-IN and ROTOR RECEPTACLE**

Fits flange of bushing #1551 and may be used as wall outlets for any lead-in.

Cat. No.	Description	List
1552-01	2 Cond. Brown, with plug	\$1.05
1552-02	2 Cond. Ivory, with plug	1.05
1553-01	5 Cond. Brown, with plug	1.50
1553-02	5 Cond. Ivory, with plug	1.50

(Standard Pack: 12)



**UNIVERSAL FEED-THRU BUSHING**

Fits all standard types of co-axial or twin-lead wires. Bushing is 15" overall length and requires a 3/8" hole. May be trimmed to any length desired.

Cat. No. 1551-01	Brown	List \$1.95
Cat. No. 1551-02	Ivory	List 1.85

Standard Pack: 12



**WINDOW-THROUGH**

Eliminates drilling holes. Capacitor discs cement to each side of glass. Cement included. Practically no signal loss.

Cat. No. 1555	Standard Pack: 20	List \$0.99
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**ROOF PATCHING COMPOUND**

Finest quality asphalt and asbestos fibre. Assures weatherproof installations. Applicator included.

Cat. No. 1548	16 oz. can (Standard Pack: 24)	List \$1.10
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\*Special Distributor's Discount Applies

**GLOBAL THERMISTORS**

Assortment below covers 95% of replacement of filament resistors in G.E. and many other makes. Made to give dependable long life and maximum efficiency.

Cat. No.	Description	List
1731	Hot: 20 ohms - Cold: 950 ohms - 600 ma. Replaces G.E. part #RRW041	\$1.35 ea.
1732	Hot: 75 ohms @ 300 ma. - Cold: 950 ohms. Replaces G.E. part #RRW041	1.60 ea.
1733	Hot: 31 ohms @ 300 ma. - Cold: 260 ohms. Replaces G.E. part #RRW097	1.40 ea.
1734	Hot: 35 ohms @ 600 ma. - Cold: 460 ohms no load. Replaces G.E. part #RRW054	1.40 ea.
1735	Hot: 43 ohms @ 600 ma. - Replaces part in Crosley, Admiral, CBS, Zenith and others	1.70 ea.

**GLOBAL THERMISTOR for RCA**

1736	Hot: 9 ohms. For replacement in RCA models #17-8-450RU, #17-8-451RU, #17-8-453RU, #21-8-500R, #21-8-500RU	1.85 ea.
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Note: For display card of 20 thermistors, add suffix "D" to part number.

**GLOBAL THERMISTOR KIT**

Singly, in parallel, or in series as-used in 95% of G.E. T.V. sets and many others.

Cat. No. 1730	Bag of 2 thermistors	List \$2.40
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**FUSIBLE RESISTORS**



For TV circuits requiring 7.5 ohm replacement fuse resistors in series wired sets. Comes with or without plug-board on leads.

Cat. No. 1728	Wire and pin leads	List \$0.55
Cat. No. 1725	Plugboard leads	List 0.72

(Standard Pack: 20)

**TWIN-LEAD CONNECTORS**



Matches 300 ohm line. Polarized.

Cat. No. 1584	Standard Pack: 25	List \$0.50 each
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**TWIN-LEAD CONNECTOR PLUG**



For 300 ohm line. Fits Jack 1583.

Cat. No. 1582	Standard Pack: 25	List \$0.50
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**TWIN-LEAD CONNECTOR JACK**



Mates with plug #1582.

Cat. No. 1583	Standard Pack: 25	List \$0.50
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**TWIN-LEAD JOINER**

Set screws hold wires for perfect splice.

Cat. No. 1585	Standard Pack: 25	List \$0.45
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**TWIN-LEAD FLEXITUBE**

Weather-proof. For 300 ohm line. For protection over gutters, etc.

Cat. No. 609-75	75 ft. hank	List \$8.00
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(Standard Pack: 12 hanks)

**TV ANTENNA WALL PLATE**

Fits standard junction boxes. In Brown or Ivory plastic. Takes plug #1582.

Cat. No. 1588	Brown (Standard Pack: 12)	List \$1.50 ea.
Cat. No. 1589	Ivory (Standard Pack: 12)	List 1.50 ea.

**TWIN-LEAD WIRING NAILS**

For better antenna installations. Line impedance on 300 ohm lead-in is not affected.

Cat. No. 7565-F	35 per package	List \$0.50
Cat. No. 7565-N	200 per package	List 1.99
Cat. No. 7565	2500 to 9999 bulk	-
	per 1000	List 3.40
	10M and up-bulk	-
	per 1000	List 2.70

**LEAD-IN WIRING NAILS**

For Tubular, Oval, Coax, "Open" line.

Cat. No. 1547-C	100 per package	List \$1.65
Cat. No. 1547-M	1000 per package	List 12.40



**REEL-EASY**

A wire reel holder to carry and install lead-in wires on the job. Weighs 1 lb. Portable.

Cat. No. 503	(Standard Pack: 6)	List \$4.00
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**TURNBUCKLES**

Length Open	Length Closed	List Price
4 1/2"	3"	\$0.30
7 1/2"	5 3/4"	0.40
10 1/2"	7 3/4"	1.10

Steel with galvanized finish. Rust-proof. (Standard Pack: 1 Doz.)

FREE!! Our LATEST CATALOG! 64 Pages — Fully Illustrated — Showing Entire Walsco Line

**WALSCO QUALITY EARNED ITS REPUTATION**  
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**WALSCO JIFFY COUPLER**

Attach two TV sets to one antenna with this small compact coupler.  
 Cat. No. 1595 — (Standard Pack: 20) .. List \$1.85

**2 and 4 SET COUPLERS**

Uses "taper wound coils" for minimum losses and maximum de-coupling.  
 Cat. No. 1592 — 2-set (Standard Pack: 12) ..... List \$4.95  
 Cat. No. 1594 — 4-set (Standard Pack: 12) ..... List \$7.25

**WATERPROOF COUPLERS**

Same as above for outdoor installations.  
 Cat. No. 1597 — 2-set coupler (Standard Pack: 12) ..... List \$6.25  
 Cat. No. 1598 — 4-set coupler (Standard Pack: 12) ..... List 8.25

**HIGH-PASS FILTERS**

For use with TV having 300 ohm line. Will suppress signal interference below 55 mc. No tuning necessary.  
 Cat. No. 1570 — (Standard Pack: 3) ..... List \$4.95

**TV SIGNAL ATTENUATOR**

Reduces overloading. Minimizes co-channel interference. For use with 300 ohm twin-lead antenna line.  
 Cat. No. 1576 — (Standard Pack: 3) ..... List \$4.95

**ANTENNA GUY WIRE**

Made of high grade steel, stranded, flexible. Heavily galvanized for rust resistance. In 50 ft. connected coils.  
 Cat. No. 1510 — 1 Strand No. 20; 5/64" diameter ..... List \$1.45/C ft.  
 Cat. No. 1512 — 6 Strand No. 20; 7/64" diameter ..... List 1.90 C ft.  
 (Standard Pack: 1000 ft.)



**PERFORATED STEEL STRAP**

Thin steel, galvanized. Very strong and flexible. 1/4" holes, 3/4" apart.  
 Cat. No. 1518 — 10 ft. coil ..... List \$0.80  
 (Standard Pack: 25 coils)

**ALUMINUM GROUND WIRE**

1/4" dia. (#8 B&W gauge) solid, annealed high conductive aluminum. Absolutely rust-proof.  
 Cat. No. 1500 — 1000 ft. coil (Standard Pack: 12) ..... List \$2.20  
 Cat. No. 1505 — 500 ft. coil (Standard Pack: 3) ..... List 10.00



**GROUND CLAMPS**

Adjustable to fit connections from 3/8" to 1 1/4" in diameter. Absolute contact.  
 Cat. No. 4005-10 — (Standard Pack: 25) ..... List \$0.25 ea.



**U-BOLT BRACKET ASSEMBLY**

Cadmium plated steel. Fits masts up to 1 1/2" dia. Weatherproof.  
 Cat. No. 4005-20 (Standard Pack: 25) List \$0.60

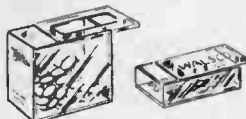
**MAST SWIVEL BASE**

Made of aluminum and heavy steel. Permits installations with slope footing up to 180°.  
 Cat. No. 4005-27 — For 1 1/2" Diam. Masts ..... List 1.05  
 (Standard Pack: 25)



**GUY WIRE RING**

Highly corrosion resistant aluminum alloy. Accommodates 3 guy wires. Easily installed.  
 Cat. No. 4005-26 — For 1 1/4" Diam. .... List 0.55  
 (Standard Pack: 25)



**WALSCO PLASTIC BOXES & GLASS JARS**

See-thru containers provide efficient method for "dipping" small hardware items. Keeps parts clean, rust free, easy-to-find, ready-for-use.

Ca. No. 998-01 — Plastic Box with Sliding Lid (99 Line Size) .. List \$0.35  
 Cat. No. 998-02 — Plastic Box with Sliding Lid (50 Line Size) .. List 0.12  
 Cat. No. 999 — Glass Jar, 2 oz. size (Standard Pack: 36) .. List 0.20

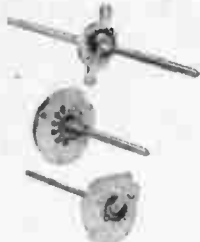


**LOOP ANTENNA**

Has 3 times the "Q" of a regular loop. Adjustable ferrite slug. Non-directional.  
 Cat. No. 975 — (Standard Pack: 50) ..... List \$1.10

**WALSCO TV TUNER DETENTS**

Ball bearing suspension. Spring is phosphor bronze. Shaft is machined phenolic. Precise.



Cat. No.	SHAFT LENGTH*	
	Brass	Phenolic
1210	2 3/8"	3 3/8"
1211	3 3/8"	3 3/8"
1212	3 3/8"	3 3/8"

\*Measured from "O" Washer

Cat. No.	List Price
1210 — replaces RCA part 71463	\$3.20
1211 — replaces RCA part 72743	3.50
1212 — replaces RCA part 201E1 for use with Tuner No. 71531	4.60
1213 — replaces RCA part 73440	5.50
1214 — replaces RCA part 75162	4.60



**DeGAUSSING COIL FOR COLOR TV RECEIVERS**

Eliminates stray magnetic fields to permit purity adjustment.  
 Cat. No. 2590 — (Standard Pack: 3) ..... Dir. Net \$16.90  
 Cat. No. 2591 — Without switch ..... Dir. Net 14.90

**TV INTERLOCK RECEPTACLE**

Interchangeable with part in RCA, GE, Philco, Admiral and other sets.



Cat. No. 1650 ..... List \$0.25  
 (Standard Pack: 25)



**DeLUXE INTERLOCK "CHEATER CORD"**

A universal cheater cord with built-in duplex outlet. Provides all necessary connections for TV servicing. U.L. approved.

Cat. No. 1622 — (Standard Pack: 12) .. List \$2.50

**SERVICEMANS CHEATER CORD**

With special male plug (instead of appliance plug) to mate with interlock plug and a female plug on other end. Makes it unnecessary to disconnect TV from regular wall outlet. Has special built-in receptacle. U.L. approved.



Cat. No. 1621 ..... List \$1.30  
 (Standard Pack: 12)

**TV INTERLOCK or CHEATER CORD**

Has appliance plug at one end with interlock plug at the other end. May be used as "replacement" or as "Cheater" cord. U.L. approved.



Cat. No. 1620 ..... List \$0.75  
 (Standard Pack: 12)

**INSULATED GRID CAPS with LEAD**

In two sizes 1/4" and 3/8" with high voltage, 10" leads attached. Cap is heavy bakelite.

Cat. No. 1630 — 1/4" cap (Standard Pack: 25) ..... List \$0.45  
 Cat. No. 1631 — 3/8" cap (Standard Pack: 25) ..... List 0.45

**TV TUBE ANODE LEAD — (Straight type)**

Tinned stranded copper conductor covered with insulation to stand up to 20 KV. Lead is 18" long with special rubber cap at terminal.

Cat. No. 1628 — (Standard Pack: 12) ..... List \$0.60

**TV TUBE ANODE LEAD — (Offset type)**

Identical to #1628 but terminal end is offset at right angles to lead.

Cat. No. 1629 — (Standard Pack: 12) ..... List \$0.70

**TV TUBE ANODE LEAD EXTENSION CORD**

One end has regular anode terminal, the other end is a high voltage plastic receptacle.

Cat. No. 1625 — (Standard Pack: 12) ..... List \$1.65



**DUO-DECAL SOCKET**

Replacement for TV picture tube socket. Wired with six 18" leads.

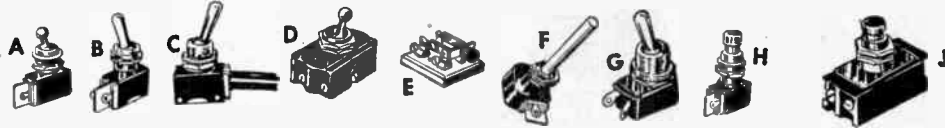
Cat. No. 1627 — (Standard Pack: 12) ..... List \$1.35

\*Special Distributor's Discount Applies

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## WALSCO SWITCHES



### A — BALL HANDLE TOGGLE SWITCHES

Rated at 3A at 125V or 1A at 250 V. Have silver-plated contacts, tinned terminals, nickel-plated handles. U.L. approved. Made by A. H. & H.

Cat. No.	Description	Shank Length	List
2300	S.P.S.T.	1/2"	\$1.28
2301	S.P.S.T.	1"	1.59
2302	S.P.D.T.	1/2"	1.59
2303	S.P.D.T.	1"	1.95
2304	D.P.S.T.	1/2"	2.28
2305	D.P.S.T.	1"	2.58
2306	D.P.D.T.	1/2"	2.58
2307	D.P.D.T.	1"	2.97

Standard Pack: 12

### B — BAT HANDLE TOGGLE SWITCHES

Similar to Ball Handle Switches above but with Bat Handle design. Rated at 3A at 125V. U.L. approved. Made by A. H. & H.

Cat. No.	Description	Shank Length	List
2330	S.P.S.T.	1/2"	\$1.28
2331	S.P.D.T.	1/2"	1.59
2332	D.P.S.T.	1/2"	2.78
2333	D.P.D.T.	1/2"	2.58

Standard Pack: 12

### BAKELITE BAT HANDLE TOGGLE SWITCHES

Has molded bakelite case. Rated at 3A at 250V or at 6A at 125V. Requires a 3/8" mounting hole. Silver-plated contacts. Similar to B.

Cat. No.	Description	Shank Length	List
2361	S.P.S.T.	3/8"	\$1.15
2362	S.P.D.T.	3/8"	1.35
2363	D.P.S.T.	3/8"	1.95
2364	D.P.D.T.	3/8"	2.65

Standard Pack: 12

### C — BAT HANDLE TOGGLE SWITCH with Wire Leads

Rated at 6A at 125V. Comes with 2 built in 6" insulated wire leads. U.L. approved. Made by A. H. & H.

Cat. No.	Description	Shank Length	List
2335	S.P.S.T.	3/8"	\$1.81

Standard Pack: 12

### D — EXTRA HEAVY DUTY POWER SWITCHES

3 Position. These switches have a safety-off position in center. Rated at 5A at 250V or 10A at 125V. Ball type handle, molded bakelite case. Overall size 2" by 1" by 1/2".

Cat. No. 2352	D.P.D.T. (Standard Pack: 3)	List \$11.73
Cat. No. 2353	3 pole, D.T. (Standard Pack: 3)	List 14.06
Cat. No. 2354	4 pole, D.T. (Standard Pack: 3)	List 18.72

### HEAVY DUTY, BAT HANDLE TOGGLE SWITCH

Rated at 6A at 250V or 12A at 125V. Toggle type bat handle. Molded heavy duty plastic body. Similar to D.

Cat. No. 2350	D.P.S.T. (Standard Pack: 12)	List \$2.39
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### ON-OFF PLATE FOR TOGGLE SWITCHES

This nickel-plated marker can be used with any of the toggle switches listed.

Cat. No. 2329	Standard Pack: 24	List \$0.11
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### ROTARY CANOPY SWITCHES

Bakelite body, 3/8" shank. Rated 6A at 125V. 3A at 250V. With 6" leads.

Cat. No. 2394	S.P.T.D. (Standard Pack: 12)	List \$0.53
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### PUSH-ON, PUSH-OFF SWITCH

Similar to above but with push-button. Rated 3A at 125V. 1A at 250V. 3/8" shank.

Cat. No. 2395	S.P. (Standard Pack: 12)	List \$0.64
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### SLIDE SWITCH (STACKPOLE)

For radio, test equipment, phone, and experimental. Rated 5A at 125V. U.L. approved. Standard Pack: 12.

Cat. No.	Type	Mt. Hole Spacing	Width	Length	List
2367	S.P.S.T.	1 1/2"	3/8"	1 3/8"	\$0.25
2368	S.P.D.T.	1 1/2"	3/8"	1 3/8"	0.25
2639	D.P.S.T.	1 1/2"	3/8"	1 3/8"	0.39
2370	D.P.D.T.	1 1/2"	3/8"	1 3/8"	0.39

### BALL HANDLE TOGGLE SWITCH with Wire Leads

Rated at 6A at 125V. Comes with 6" wire leads installed.

Cat. No.	Description	Shank Length	List
2336	S.P.S.T.	3/8"	\$1.72

Standard Pack: 12

### BAT HANDLE SWITCH — NEUTRAL CENTER

Off when handle is in neutral. Operates 2 separate circuits by advancing either direction. Rated at 10A at 250V or 15A at 125V. Molded plastic body, nickel-plated finish, similar to G.

Cat. No.	Description	Shank Length	List
2308	S.P.D.T.	3/8"	\$1.70
2309	D.P.D.T.	3/8"	2.25

Standard Pack: 12

### E — MIDGET KNIFE SWITCHES

Standard knife switches with porcelain base. Available in two styles as listed below.

Cat. No.	Description	List	Cat. No.	Description	List
2390	S.P.S.T.	\$0.58	2392	D.P.S.T.	\$0.89
2391	S.P.D.T.	0.72	2393	D.P.D.T.	1.25

Standard Pack: 12

### F — ROTARY SWITCHES

Has silver-plated contacts. Rated at 3A at 125V. Housing is stamped steel, plated. U.L. approved. Made by A. H. & H.

Cat. No.	Description	Shank Length	Shaft Length	List
2320	S.P.S.T.	3/8"		\$1.64
2321	S.P.S.T.	1"	1 1/2"	1.89
2322	S.P.D.T.	3/8"		1.89
2323	S.P.D.T.	1"	1 1/2"	2.06
2324	D.P.S.T.	1"	1 1/2"	2.84
2325	D.P.D.T.	3/8"		2.95
2326	D.P.D.T.	1"	1 1/2"	2.95

Standard Pack: 12

### G — BAKELITE MOMENTARY SWITCH — Bat Handle

Normally off until handle is operated. Has spring return action. Rated at 6A at 125V or 3A at 250V.

Cat. No. 2365-01	S.P.S.T. (Standard Pack: 12)	List \$2.42
Cat. No. 2365-02	S.P.D.T. (Standard Pack: 12)	List 2.78
Cat. No. 2366	D.P.D.T. (Standard Pack: 12)	List 3.69

### H — PUSH-ON, PUSH-OFF BUTTON SWITCH

Circuit opens and closes with each button action. Rated at 6A at 125V. U.L. Approved. Made by A. H. & H.

Cat. No. 2338	S.P.S.T. (Standard Pack: 12)	List \$2.28
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### PUSH BUTTON DOOR SWITCH

For use in circuits operated by opening or closing a door. Heavy duty type. Rated at 3A at 125V or at 1A at 250 V.

Cat. No. 2372	Normally on — Shank 3/8" (Standard Pack: 12)	List \$1.20
Cat. No. 2374	Normally off — Shank 3/8" (Standard Pack: 12)	List 1.20

### J — PUSH BUTTON, HEAVY DUTY POWER SWITCHES

For use where heavy current is necessary. Rate at 12A at 125V. Ideal for transmitter or high frequency use.

Cat. No. 2351	Push Button (Standard Pack: 12)	List \$3.50
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### 2-CIRCUIT MOMENTARY CONTACT SWITCH

Push button type. One circuit normally on, the other normally off. Reverses when button is pushed and held. Rated 1A at 125V. 3/8" shank. U.L. approved.

Cat. No. 2340	(Standard Pack: 12)	List \$2.10
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### PLASTIC PUSH BUTTON

Made of molded plastic. Slips on #2340.

Cat. No. 2343-01	Black (Standard Pack: 12)	List \$0.47
Cat. No. 2343-02	Red (Standard Pack: 12)	List 0.47

### WALSCO LOCK-SWITCH

Key is removable in closed position. Rated 3A at 250V or 6A at 125V. S.P.S.T. type. Sleeve diameter is 3/8". Overall size: 1 1/2" x 1 1/2". Fits panels to 1 1/2".

Cat. No. 2377	With One Key (Std. Pack: 12)	List \$4.34
Cat. No. 2738	Extra Key	List 0.44





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**WALSCO BATTERY PLUGS**



Plugs for all popular batteries for portable radios, electronic devices, transistor energizers and test equipment.

WALSCO No.	Std. Pack	List Price	WALSCO No.	Std. Pack	List Price
1985-01	100	\$0.08	1987-30	25	\$0.10
1986-02	100	0.08	1987-31	25	0.10
1986-01	10	0.35	1987-32	25	0.10
1986-02	10	0.55	1987-33	25	0.15
1986-03	10	0.55	1987-40	25	0.15
1986-04	10	0.55	1987-50	25	0.15
1987-21	25	0.10	1987-51	25	0.15
1987-22	25	0.10	1987-60	25	0.20
1987-23	25	0.10	1988-40	25	0.15

**MINIATURE PLUGS and JACKS — 2 CONDUCTOR**



Ideal for use with lapel microphones, hearing aids, etc. #790 and #791 housings cement together. #792 and #793 housings are assembled with screws.

Cat. No.	Description	List
790	Plug (Type PJ291)	\$0.80
791	Jack (Type JJ048)	1.10
792	Plug (Type PJ292)	0.80
793	Jack (Type JJ055)	1.35

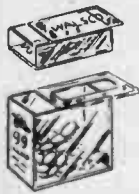
Standard Pack: 20 per Display Card

**BULK, UNASSEMBLED AT DLR. and MFG. NET PRICE**

Cat. No.	Description	100 to 999	1M and UP
7670	2-Conductor Plug (Type PJ291)	*\$303.05	*\$240.35
7671	2-Conductor Jack (Type JJ048)	*455.30	*361.10
7672	2-Conductor Plug (PJ292)	*334.10	*265.00
7673	2-Conductor Jack (JJ055)	*674.25	*534.75

**PACKAGED and BULK HARDWARE**

"50 LINE" ITEMS MARKED "F" LIST PRICE \$0.55 per pkg. "99 LINE" ITEMS MARKED "N" LIST PRICE \$1.99 per pkg. "BULK PACK" PRICES are "LIST PER 1000"



**The "50" LINE**  
Small quantities of popular hardware items packed in handy re-usable plastic boxes. List \$0.55 per package.

**The "99" LINE**  
Same items as "50" line but in larger quantities for larger dealers and industrial users. List \$1.99 per pkg.

**BULK PACK**  
Especially packaged for Industrial and Commercial users. Prices shown are Dealer and Industrial NET.

NOTE: ALL BULK PRICES CARRY SPECIAL DISTRIBUTOR'S DISCOUNT.

**PHONO HARDWARE and RUBBER ITEMS**

**PHONO MOTOR DRIVES**

These friction tires form a positive, non-slipping contact with rim of turntable. Made of highly abrasion and oil-resistant synthetic rubber.

Used on	— DIMENSIONS — I.D. O.D. Thick	50-line Cat. No.	List 55¢/pkg. Quant.
A Most 2 & 3 speed record changers (V.M. G.I. etc.)	5/8" 1 1/8" 3/16"	7014-F	4
B Gen. Indst. Mod. LX & RX	2 2 3/4" 5/8"	7016-F	2
C Alliance, Seeburg, G.E., VM 400	1 1/2" 1 3/4" 3/8"	7017-F	3
D Seeburg, RCA, G.E.	3/4" 1 1/4" 3/8"	7018-F	4
E Philco, RCA, etc.	3/4" 1 1/4" 3/8"	7019-F	4
F Detroit G.I. Recorder/Changer	5/8" 6 3/8" 3/8"	7020-F	1
	1 1/2" 1 3/4" 3/8"	7022-F	3

**PHONO PICKUP SET SCREWS**

Used on	Size	50-line Cat. No.	List 155¢/pkg. Quant.
Various models	Assorted	8550-F	12
Shure and others	2-56 x 3/8"	8552-F	12
Most Astatic & Webster	2-64 x 3/8"	8553-F	12
Most RCA, etc.	1-72 x 1"	8555-F	5

**PHONO CARTRIDGE MOUNTING SCREWS**

50-line Cat. No.	List 55¢/pkg. Quant.	
(not available in "99" line or Bulk)	8560-F	30

**VINYL GROMMETS**

— DIMENSIONS —	A	B	C	D	E
1	3/8"	1/2"	3/8"	3/8"	3/8"
2	3/8"	1/2"	3/8"	3/8"	3/8"
3	3/8"	1/2"	3/8"	3/8"	3/8"
4	3/8"	1/2"	3/8"	3/8"	3/8"
5	3/8"	1/2"	3/8"	3/8"	3/8"

50-line Cat. No.	List 55¢/pkg. Quant.	99-line Cat. No.	List \$1.99/ pkg. Quant.	50-line Cat. No.	List Per 1000
1 7030-F	14	7030-N	85	7030	13.55
2 7032-F	12	7032-N	80	7032	16.68
3 7034-F	12	7034-N	65	7034	18.13
4 7036-F	10	7036-N	55	7036	19.55
5 7038-F	8	7038-N	35	7038	30.35
Asst. 7025-F	12				

**RUBBER WASHER and BUMPER ASSORTMENT**

Consists of round and square pieces of soft rubber. Ideal padding. Cat. No. 1083-F — 12 per pkg. List \$0.55 pkg.

For PLATING other than specified—Add 10% with \$5.00 per item minimum charge.

**CABINET FEET**

Synthetic rubber. Attach with wood or metal screws.

D.	H.	Cat. No.	Approx. Quant. Pkg.	Cat. No.	Approx. Quant. Pkg.	Cat. No.	List Per 1000
3/8"	1/2"	7052-F	8	7052-N	55	7052	\$12.16
1/2"	3/4"	7054-F	8	7054-N	50	7054	19.50
3/4"	1"	7056-F	8	7056-N	30	7056	29.58
1"	1 1/4"	7058-F	8	7058-N	20	7058	37.50
Asst.		7050-F					

**TACK TYPE CABINET FEET**

Asst.	Cat. No.	Approx. Quant. Pkg.	Cat. No.	Approx. Quant. Pkg.	List Per 1000
3/4"	7071-N	50	7071		24.64
1"	7072-N	50	7072		25.95
Asst.	7070-F	8			

50 and 99 Line come with wood screws, Bulk without.

**CHASSIS MOUNTS**

Resilient, synthetic rubber.

— DIMENSIONS —	A	B	C	D	E	List Per 1000
7077-F	3/4"	1"	3/8"	3/8"	3/8"	48.44
Asst. 7075-F	10-12					

**DIAL CORD**

In small packages. Nylon over fiberglass core. These three sizes will fill 80% of all replacement needs.

Size	Cat. No.	Length	List Per 1000
Special Thin	7395-F	10'	See page 1629 for standard spools and bulk listing.
Standard Thin	7396-F	10'	
Medium	7397-F	10'	

**METAL WASHERS**

For Screw Type	Size	— DIMENSIONS — I.D. O.D. Thick	For Screw Type	Size	— DIMENSIONS — I.D. O.D. Thick	List Per 1000
A	#4	.125" 3/8" 3/16"	D	#10	.203" 1 1/8" 3/16"	\$3.38
B	#6	.149" 1/2" 3/16"	E	#12	.265" 1 3/8" 3/16"	3.75
C	#8	.175" 5/8" 3/16"				3.94
A	7874-F	80				3.94
B	7876-F	80	7876-N	500	7876	6.25
C	7878-F	80	7878-N	500	7878	
D	7880-F	70	7880-N	300	7880	
E	7882-F	50	7882-N	300	7882	
Asst.	7870-F	80				

**LOCK WASHERS, STEEL, CAD. PLATE**

Type	Size	FOR SCREW O.D.	Type	Size	FOR SCREW O.D.	List Per 1000
A	#2	.180"	F	3/4"	.470"	\$9.63
B	#4	.280"	G	1"	.500"	6.06
C	#6	.280"	H	1 1/4"	.500"	6.63
D	#8	.330"	J	1 3/4"	.690"	6.63
E	#10	.375"				8.75
A	7922-F	35				16.63
B	7924-F	50				16.63
C	7926-F	50	7926-N	300	7926	
D	7928-F	50	7928-N	275	7928	
E	7930-F	45	7930-N	230	7930	
F			7932-N	180	7932	
G	7933-F	20				
H	7934-F	20				
J			7935-N	125	7935	
K	7920-F	45				

**BROWN FELT KNOB WASHERS**

Hole is 3/8" to fit all standard control and condenser shafts. O.D. approx. 3/4", 1", 1 1/4" thick.

Type	Size	FOR SCREW O.D.	List Per 1000
7760-F	40	7760-N 250	7760 \$5.35

FREE!! Our LATEST CATALOG! 64 Pages - Fully Illustrated - Showing Entire Walsco Line

**WALSCO QUALITY EARNED ITS REPUTATION**

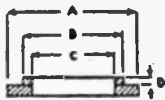
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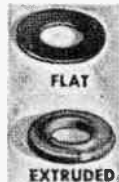
**Walsco**  
ELECTRONICS MFG. CO.  
Division of Textron, Inc.

**PACKAGED and BULK HARDWARE (cont'd)**

"50 LINE" ITEMS MARKED "F" LIST PRICE \$0.55 per pkg. "99 LINE" ITEMS MARKED "N" LIST PRICE \$1.99 per pkg. "BULK PACK" PRICES are "LIST PER 1000"



**WALSCO INSULATING WASHERS**  
Flat and extruded. Precision made from vulcanized phenolic fibre.



Fits Screw Size	DIMENSIONS				Cat. No.	Approx. Quant. Pkg.	Approx. Cat. No.	Approx. Quant. Pkg.	Cat. No.	List Per 1000
	A	B	C	D						
#6	5/16"	1/8"	.138"	5/16"	7824-F	80	7856-N	125	7856	\$11.50
#8	3/8"	1/4"	.165"	3/8"	7825-F	80	7836-N	300	7836	4.50
#10	7/16"	3/8"	.195"	7/16"	7826-F	80	7858-N	125	7858	11.50
1/4"	1/2"	5/8"	.255"	1/2"	7827-F	24	7838-N	300	7838	4.88
5/8"	3/4"	7/8"	.380"	5/8"	7828-F	20	7860-N	100	7860	12.56
			.380"		7820-F	35	7840-N	300	7840	4.88
					7827-F	24	7862-N	100	7862	12.56
					7827-F	24	7842-N	225	7842	6.13
					7828-F	20	7864-N	85	7864	13.19
					7820-F	35	7844-N	175	7844	10.19

Assorted sizes of Flat and Extruded



**RETAINING RING and "C" WASHERS**

Type	Fits Shaft	A	B	C	Thick	Type	Fits Shaft	A	B	C	Thick
1	1/8"	.174"	1/4"	5/16"	5/16"	1	1/8"	.174"	1/4"	5/16"	5/16"
2	3/8"	.360"	5/8"	3/4"	3/4"	2	3/8"	.360"	5/8"	3/4"	3/4"
Asst.	7772-F	15	Not in 99 Line	7772	\$12.56	Asst.	7774-F	15	Not in 99 Line	7774	14.56

**SPRING FRICTION WASHERS**

Assortment of phosphor bronze and steel.

Type	I.D.	O.D.	Thick	Type	I.D.	O.D.	Thick			
A	1/4"	3/8"	.008"	A	1/4"	3/8"	.008"			
B	3/8"	1/2"	.008"	B	3/8"	1/2"	.008"			
C	1/2"	3/4"	.010"	C	1/2"	3/4"	.010"			
Asst.	7750-F	12	Not in 99 Line	Asst.	7751	\$22.75	7752	\$15.13	7754	14.35

**METAL and INSULATING SPACERS**

In "50" Line Only - List \$0.55 per pkg. Assorted Metal Spacers - Cat. No. 7620-F - Quant. per pkg. - 12 Assorted Insulating Spacers - Cat. No. 7630-F - Quant. per pkg. - 12

**FUSE INSULATORS**

Type	Fits all standard 1/4" dia. fuses.	Type A - 1 1/4" long.	Type B - 3/4" long.	
Asst.	7640-F	20	Not in 99 Line	
			7641	\$7.28
			7642	5.50

**FUSE CLIPS**

Spring brass, nickel plated. Type A - for 1/4" fuses. Type B - for 3/8" fuses.

Type	Fits	Type A - for 1/4" fuses.	Type B - for 3/8" fuses.	
Asst.	7600-F	10	Not in 99 Line	
			7601	\$23.15
			7602	61.45

**STEEL SET SCREWS**

Size No.	8623-F	8633-F	8634-F	8644-F	8605-F
6-32x 1/4"	12	12	12	12	12
6-32x 3/8"	12	12	12	12	12
8-32x 1/4"	12	12	12	12	12
8-32x 3/8"	12	12	12	12	12
10-32x 1/4"	12	12	12	12	12
10-32x 3/8"	12	12	12	12	12
Asst.	8605-F	8605-N	85	8644	24.00

**ORNAMENTAL HEAD SCREWS**

Size No.	8252-F	8253-F	8255-F	8250-F
6-32x 1/4"	20	20	20	20
6-32x 3/8"	20	20	20	20
8-32x 1/4"	12	12	12	12
Asst.	8250-F	8252-N	8253-N	8255-N

**SMALL ESCUTCHEON and WOOD SCREW ASSORTMENT**

In "50" Line Only - List \$0.55 per pkg. Cat. No. 8500-F - Quant. per pkg. - 25

**SMALL MACHINE SCREW and NUT ASSORTMENT**

No. 2 and 4 screws available in "50" Line Only - List \$0.55 per pkg. Cat. No. 8002-F - Quant. per pkg. - 35

For PLATING other than specified - Add 10% with \$5.00 per item minimum charge.

**STANDARD WOOD SCREW ASSORTMENT**

Type	Size	Head	Finish
A	#2x 1/4"	Oval Hd.	Statuary Bronze
B	#2x 3/8"	Oval Hd.	Statuary Bronze
C	#2x 1/2"	Round Hd.	Statuary Bronze
D	#2x 5/8"	Round Hd.	Blued
E	#2x 3/4"	Round Hd.	Blued
F	#2x 7/8"	Round Hd.	Blued
Asst.	8302-F	25	8522 \$12.10
			8523 \$2.31
			8524 \$12.81
			8530 \$10.12
			8534 \$12.70
			8545 \$14.80

**STEEL MACHINE SCREWS**

Type	Size No.	Type	Size No.	Type	Size No.
1	2-56x 1/4"	7	4-36x 1/2"	13	6-32x 3/4"
2	2-56x 3/8"	8	4-40x 3/4"	14	6-32x 1"
3	2-56x 1/2"	9	4-40x 1"	15	6-32x 1 1/4"
4	2-56x 3/4"	10	4-40x 1 1/4"	16	6-32x 1 3/4"
5	4-36x 1/4"	11	4-40x 1 3/4"	17	6-32x 2"
6	4-36x 3/8"	12	6-32x 1/4"	18	6-32x 2 1/4"

Type	Approx. Quant. Pkg.	Cat. No.	Approx. Quant. Pkg.	Cat. No.	List Per 1000
1	200	8021-N	200	8021	\$5.75
2	40	8023-F	200	8022	5.88
3	40	8024-F	200	8023	6.25
4	40	8032-F	200	8024	6.42
5	35	8034-F	200	8032	6.36
6	30	8036-F	200	8034	6.96
7	30	8042-F	225	8036	8.10
8	40	8042-N	225	8042	8.10
9	200	8043-N	200	8043	6.36
10	35	8044-F	200	8044	6.55
11	40	8062-F	225	8048	8.10
12	30	8063-F	200	8062	6.36
13	30	8063-N	200	8063	6.55
14	30	8064-F	175	8064	8.10
15	30	8066-F	175	8066	8.15
16	30	8068-N	175	8068	7.08
17	15	8076-F	135	8068	8.24
18	30	8082-N	175	8078	7.05
19	25	8083-N	150	8079	8.22
20	25	8084-F	150	8082	9.66
21	25	8086-F	125	8083	11.10
22	20	8088-N	100	8084	20.10
23	20	8104-N	125	8086	29.50
24	20	8108-F	100	8088	9.24
25	20	8108-N	100	8104	9.96
26	15	8108-F	85	8108	10.80
				8108	12.36

ASSORTED STANDARD MACHINE SCREWS - Various sizes, lengths and styles. Asst. 8000-F 35 8000-N 200

**SHEET METAL and SELF-TAPPING SCREWS**

Type	Size No.	Type	Size No.	Type	Size No.	
1	6x 1/4"	5	6x 1/2"	10	8x 1"	
2	6x 3/8"	6	8x 1/4"	11	10x 3/4"	
3	6x 1/2"	7	8x 3/8"	12	10x 1/2"	
4	6x 3/4"	8	8x 1/2"	13	10x 3/8"	
		9	8x 3/4"			
1	8362-F	30	8362-N	150	8362	\$12.88
2	8363-F	25	8363-N	150	8363	13.50
3	8364-F	25	8364-N	150	8364	14.25
4	8366-F	20	8366-N	125	8366	17.38
5	8368-F	20	8368-N	125	8368	18.15
6	8382-F	20	8382-N	125	8382	15.50
7	8383-F	20	8383-N	125	8383	16.19
8	8384-F	20	8384-N	125	8384	16.63
9	8386-F	15	8386-N	80	8386	17.50
10	8388-F	15	8388-N	80	8388	21.19
11	8403-F	15	8403-N	80	8403	19.06
12	8404-F	15	8404-N	80	8404	23.25
13	8406-F	12	8406-N	80	8406	29.38
Asst.	8300-F	25	8300-N	125		



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**WALSCO QUALITY EARNED ITS REPUTATION**  
ROCKFORD, ILLINOIS • LOS ANGELES, CALIF.



"50 LINE" ITEMS MARKED "F"  
LIST PRICE \$0.55 per pkg.

"99 LINE" ITEMS MARKED "N"  
LIST PRICE \$1.99 per pkg.

"BULK PACK" PRICES are  
"LIST PER 1000"



**PHONO JACKS and PLUGS**

Standard RCA-type for single conductor, shielded cable.

Type	Cat. No.	Approx. Quant. Pkg.	Cat. No.	Approx. Quant. Pkg.	Cat. No.	List Per 1000
B-Plugs	7665-F	4			7665	\$75.00
C-Jacks	7667-F	3	Not in 99 Line		7667	85.00
A-Jacks					7664	111.91

**STANDARD PHONE TIPS**

Nickel-plated brass. Fits standard jacks.



Type	Quant.	Cat. No.	Quant.	Cat. No.	List Per 1000
	10	7645-F	60	7645-N	\$27.50

**TERMINAL LUGS**

Ready tinned. All popular sizes and types listed. Type "J" is the solderless, fold-over type.



All items with "F" designation are assorted for #6 and #8 screws excepting Types G - H & J.

For Screw Size	Type	Quant.	Cat. No.	Quant.	Cat. No.	List Per 1000
A	7110-F	20				
A-#6			7116-N	110	7116	\$16.58
A-#8			7116-N	110	7116	17.05
B	7120-F	30				
B-#6			7126-N	125	7126	12.95
B-#8			7126-N	110	7126	19.60
C	7130-F	25				
C-#6			7136-N	135	7136	11.35
C-#8			7136-N	135	7136	11.35
D	7140-F	15				
D-#6			7146-N	85	7146	17.20
D-#8			7146-N	85	7146	16.50
D-#10			7149-N	100	7149	19.45
E	7150-F	15				
E-#6			7156-N	90	7156	15.75
E-#8			7156-N	90	7156	15.75
F	7160-F	35				
F-#6			7166-N	225	7166	7.95
F-#8			7166-N	225	7166	7.65
F-#10			7169-N	170	7169	11.20
G-#10	7170-F	25				
H-#10	7180-F	15				
Asst.	7100-F	30				22.70
J-#8 & #10	7190-F	8	7199-N	35	7199	31.50

**SPRING CONNECTOR CLIPS**

In plated brass or phosphor bronze.

Type	For Wires	Length	Width	With Hole Size	List Per 1000
1	#16 Ga. & Under	1 1/2"	1/2"	4 & 5	\$24.09
2	#12 to 16 Ga.	1 1/2"	3/8"	6	29.13
1					7592-F 15
2					7594-F 12
Asst.					7590-F 12

**TERMINAL STRIPS**

Solder-coated, riveted to phenolic base.

Cat. No. 7250-F - Quant. per pkg. - 5 assorted. List \$0.55 per pkg.

**GRID CAPS**

Fits all standard metal and glass tubes.

Type	Description	Quant.	Cat. No.	List Per 1000
1	For Glass Tubes			
2	For Metal and "GT" Tubes			
3	For High Voltage TV Rectifier Tube	1/2"		
4	For High Voltage TV Rectifier Tube	3/4"		
5	Assorted High Voltage TV Clips Only			
1			7611	83.00
2			7614	17.85
3			7616	38.70
4			7617	57.40
5				
Asst.			7610-F 5	
			7600-F 8	



**DIAL DRIVE SPRINGS**

Bust-proof cadmium plated. All standard sizes.

Type	Overall Length	Approx. Quant. Pkg.	Approx. Quant. Pkg.	Approx. Quant. Pkg.	List Per 1000
1	1/2"	8			7404-F 8
2	5/8"	8			7405-F 8
3	9/16"	8			7407-F 8
4	3/4"	8			7409-F 8
5	3/4"	8			7411-F 8
6	5/32"	8			
7	18/64"	8			
8	13/64"	8			
9	Assorted Small Springs Assorted (Large and Small)	8			

**RADIO KNOB SPRINGS**

Made of finest grade tempered steel.



Type	Quant.	Cat. No.	Quant.	Cat. No.	1000 to 9999	10M & Up
A	8	7485-F			7485	\$15.50
B	8	7486-F			7486	16.35
C-TV	12	7488-F			7488	10.00
D	12	7489-F			7489	10.00
E	20	7491-F			7491	5.20
F	20	7492-F	Not in 99 Line		7492	8.50
G	20	7493-F			7493	5.70
H	15	7495-F			7495	7.85
J	35	7496-F			7496	4.05
K	8	7497-F			7497	21.45
L	8	7498-F			7498	16.80
Asst.	16	7480-F				14.90
TV Knob Spring Assortment	10	7461-F				

**EXPANSION SPRINGS**

For record changers, dial mechanisms, etc. #7420 is small spring assortment. #7441 is large spring assortment.  
Cat. No. 7420-F - Quant. per pkg. - 10 List \$0.55 per pkg.  
Cat. No. 7421-F - Quant. per pkg. - 10 List 0.55 per pkg.

**COMPRESSION SPRINGS**

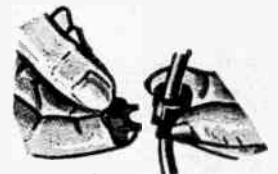
Handy assortment of hard-to-get types. #7440 is small spring assortment. #7441 is large spring assortment.  
Cat. No. 7440-F - Quant. per pkg. - 20 List \$0.55 per pkg.  
Cat. No. 7441-F - Quant. per pkg. - 15 List 0.55 per pkg.

**WALSCO HARDWARE ASSORTMENT**

Contains from 600 to 1000 pieces including nuts, washers, grommets, springs, clamps, eyelets, etc., in handy plastic box. Ideal for "ham" technicians.  
Cat. No. 3003 - Complete Assortment. Dealer's Net \$1.08

**HEYCO STRAIN RELIEF BUSHINGS**

For small and medium size power supply cords. Easily snap into chassis or panel hole. Precision made to give non-slip grip and maximum protection.



Cat. No.	Used On Wire Type	Size	Hole Size	Descrip.	List Per 100
1521-R	SP-1, SPT-1 POSJ, POT	0.120" X 0.320"	3/8"	Bag of 4 small, black	\$0.50 \$7.25
1522-R	SV, Heater Cord & HPN-18	1/4" to 3/8" Round & some oval sizes	1/2"	Bag of 3 med., black	0.50 6.50
1523-R	HPN-16 ST-18/3	1/4" to 3/8"	3/8"	Bag of 2 large, black	0.50 14.50

Standard Pack: Display Card of 20 Bags

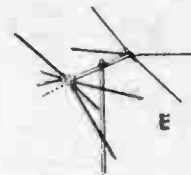
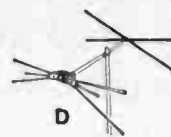
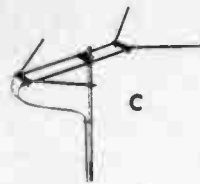
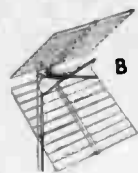
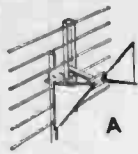
**SELENIUM RECTIFIER MOUNTING KIT**

Contains 4, 2 1/2", 4, 8" and 8, 4 1/4" roundhead machine screws, 12 hex nuts, and 6 brackets.  
Cat. No. 1520 - Complete kit List \$ 0.99  
Cat. No. 1520-D - Display card of 20 kits List 19.80

For PLATING other than specified - Add 10% with \$5.00 per item minimum charge.

**WALSCO QUALITY EARNED ITS REPUTATION**

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**WALSCO REFLECTO FAN (UHF)**

Fig. A — The Father of all "Bow-Tie" UHF Antennas, incorporating the exclusive Walsco "hollow tube" insulator. Picks up all UHF channels 14-83.

Cat. No.	Description	List
4400	Single Bay (less mast)	\$3.50
4402	Dual Stack (less mast)	7.29
4405-1	Stacking Kit to convert two Model #4400 to one Model #4402	.80
4406	U-Install Kit	12.00

**CORNER REFLECTOR (UHF)**

Fig. B — The "original" Corner Reflector Antenna for the best in UHF reception. Has 10-14 db gain. Front to back ratio: 15 to 1. Uni-directional. Completely pre-assembled with famous Walsco "Hollow Tube" insulator.

Cat. No.	Description	List
4450-F	(Without Mast)	\$ 9.95
4452-F	Dual Stack (no mast)	19.95
4456	U-Install Kit	18.95

**WALSCO KWIK-VEE**

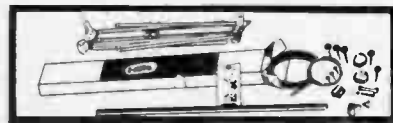
Fig. C — 30 SECONDS SET-UP TIME! Open — Spread — Click and you are ready to mount the rig! No nuts, bolts or parts to assemble. The Gain and Directivity of the Walsco "Kwik-Vee" assures excellent reception on all VHF channels where a "V" type antenna is indicated. Has non-breakable Styron Insulators and heavier type 4SE38 aluminum alloy elements.

Cat. No.	Description	List
4140-F	Single Bay	\$4.10
4142-F	Dual Stack	9.50

**WALSCO IMPERIAL (VHF)**

Fig. E — Unusually high gain with exclusive barrier disc insulation. 2" of air space between terminals. Stainless steel hardware prevents corrosion. 3-year unconditional guarantee.

Cat. No.	Description	List
4060-F	Single Bay	\$ 9.25
4062-F	Dual Stack	19.85
4064-F	Four Bay	44.50
4060-A-1	To Convert two #4060-F to one #4062-F	1.50
4005-5-A	To Convert two #4062-F to one #4064-F	5.60
4066	U-Install Kit	15.75



**"KWIK-CONE" U-INSTALL KIT**

Fig. F — Everything needed for an average conical installation in one easy-to-tote package. Complete with pictorial instructions for assembly. For "Do-It-Yourselfers".

Cat. No.	Description	List
4636	8 Element Kit	\$14.80
4646	10 Element Kit	12.50

**WALSCO KWIK-CONE**

Fig. E — Built to last with many features found only in the highest priced antennas. Can be set up and ready for mounting in less than a minute with the fabulous Walsco "Kwik-Click" method. Completely assembled at the factory. Made with sturdy, high-impact Styron insulators for long path isolation. Stainless steel rivets eliminate corrosion. Heavier type 4SE38 aluminum alloy elements provide rigidity and longer life. Walsco "Kwik-Cone" give unrivalled reception on all black and white channels and has PLUS features that make it ideal for Color TV. Available as listed below.

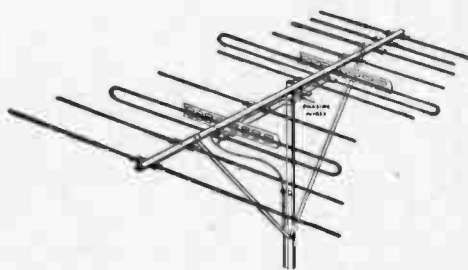
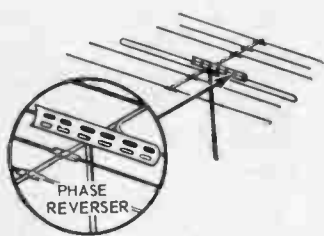
Cat. No.	Description	List
4642	10 Element — Dual Stack	\$13.30
4632	8 Element — Dual Stack	11.90
4005-7	2 Bay Stacking Bars	1.50
4005-8	4 Bay Stacking Bars	5.60
4630	8 Element — Single Bay	\$ 5.50
4640	10 Element — Single Bay	6.25

**WALSCO SKY KING**

Fig. G — Excellent gain, all-channel VHF reception. Light, strong aluminum alloy construction. HI-impact styrene insulator. 1-year guarantee.

Cat. No.	Description	List
4030-F	Single Bay, 8 elements	\$ 4.95
4032-F	Dual Stack, 8 elements	10.80
4040-F	Single Bay, 10 elements	5.50
4042-F	Dual Stack, 10 elements	11.90
4005-7	2-Bay Stacking Kit (for both models)	1.50
4046	U-Install Kit	12.65

**WALSCO WIZARD—Super Sensitive, ALL Channel YAGI**



**3-YEAR UNCONDITIONAL GUARANTEE**

**WALSCO WIZARD**

An unusually sensitive antenna incorporating high gain and sharp directivity thru Walsco's exclusive "Phase Reverser" principle. A dual stacked Wizard will outperform almost any other super-fringe, specialty, or yagi-type antenna. Ideally suited for all fringe and difficult areas. Built with the Walsco "lightening fast umbrella lock and quick rig design. Tested and approved for color and black and white TV.

Cat. No.	Description	List
4220	Single Bay	\$19.50
4222	Dual Stack	42.46
4226	U-Install Kit, Single Bay	25.90

**WALSCO SUPER WIZARD**

The Walsco Super Wizard is not only the last word in extreme fringe antennas, but its rugged construction also guarantees continuous performance for years. The extremely high gain, sharp directivity and excellent side rejection of the Super Wizard brings you the clearest picture even under the most adverse condition. It is made of the finest aluminum alloys, machined to close tolerances and assembled under rigid inspection.

Cat. No.	Description	List
4240	Single Bay	\$37.90
4242	Dual Stack	78.30

## Thank You!

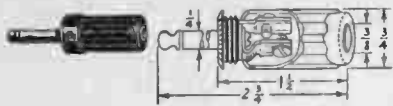
When ordering products shown in this book or writing for additional information, please be sure to specify:

1. **Manufacturer's Catalog Numbers and Page Numbers.**
2. **The Year and Edition of This MASTER.**

This will avoid confusion and expedite delivery.

**The**  
*Radio - Electronic*  
**MASTER**

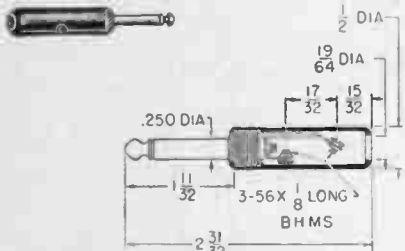
### Telephone Type Plugs



A standard 2 conductor phone plug, featuring sure-grip ribbed barrel for ease of handling. Molded of red and black plastic. Hardware is brass, nickel-plated. Accepts two pairs of cord tips, held firmly in place with two screws. Fits all makes of jacks.

- No. 24B — Complete (Black Barrel)
- No. 24R — Complete (Red Barrel)
- No. 34P — Plug only

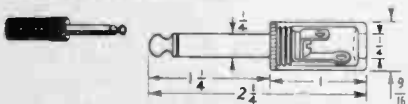
### 2 Conductor Phone Plugs ▲



A compact durable plug with smaller molded plastic barrel (1/2" dia. x 1 9/64" L.) for panel mounting space economy. Has two screw type terminals. Fits standard phone jacks.

- No. 7577 — Black
- No. 7579 — Red

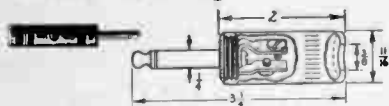
### Midget Phone Plugs



Suitable where minimum space is available and where two or more plugs are used adjacent to each other. Supplied with black or red sure-grip ribbed barrel. All parts are brass, nickel-plated. Two-conductor solder lug terminals.

- No. 29B — Black
- No. 29R — Red

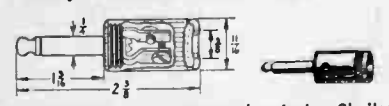
### Shielded Phone Plug



Fits all standard jacks. Brass shell is nickel-plated for shielding purposes.

- No. 25 — Shielded Plug

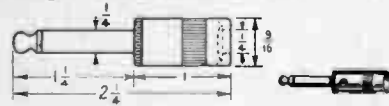
### Stubby Shielded Phone Plugs



For use where space economy is a factor. Similar to No. 25 shielded phone plug except that barrel measures 1/4" diam. x 1 3/8" long. Fits all standard jacks.

- No. 27 — Shielded Plug

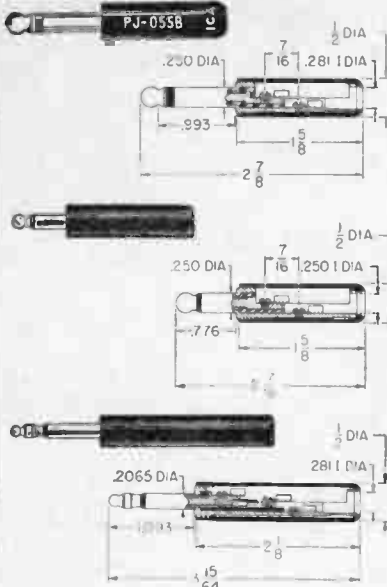
### Midget Shielded Phone Plug



Similar to No. 29 midget phone plug with the exception that it has a nickel-plated brass barrel for shielding purposes.

- No. 30 — Shielded Plug

### U. S. Army-Navy Specification Plugs



Designed to meet the latest specification JAN-P-642. Features durability with low moisture absorption characteristics.

- No. PJ-055B
- No. PJ-054
- No. PJ-068 — 3 Conductor Microphone Plug

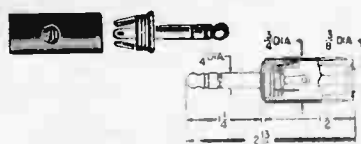
### Strain Relief Clamp ▲



Provides secure attachment of cables to PJO and PL type plugs. Steel; cadmium plated; made to U. S. Army Signal Corps specifications.

- No. 5695

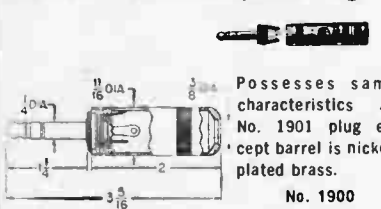
### 3-Wire Microphone Plug



Has solder connections for cable or microphone use. Ribbed barrel molded of plastic; brass parts, nickel-plated. Used with microphone and other applications requiring 3 wires or 2 wires and a shield. Fits standard 3 conductor phone jacks.

- No. 1901

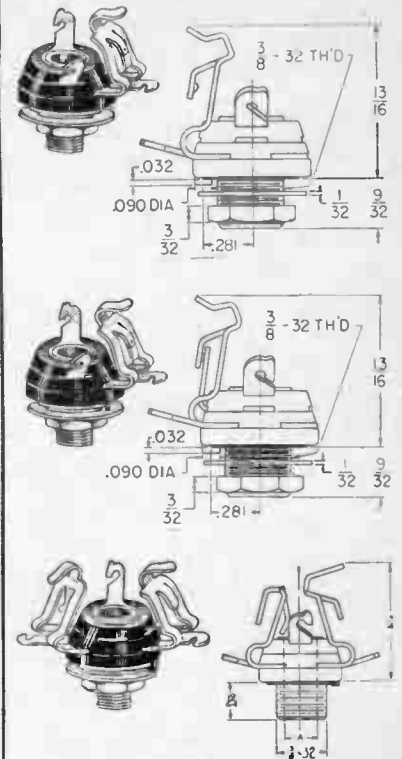
### Shielded 3-Wire Microphone Plug



Possesses same characteristics as No. 1901 plug except barrel is nickel-plated brass.

- No. 1900

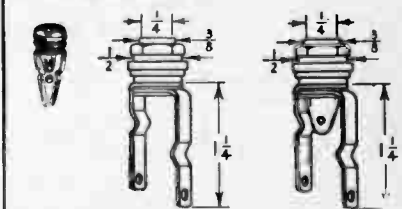
### Deluxe Phone Jacks



No finer jack available. Completely new design that features: practically tireless spring; spring members made of phosphor bronze; bright cadmium plated; streamlined molded insulating sections minimize creepage; component parts are interlocked and cannot turn or short; hook type soldering lugs for easy wiring. For standard 1/4" plugs.

- No. 1920 — Two Conductor Open Circuit
- No. 1921 — Two Conductor Single Circuit
- Transtar
- No. 1922 — Three-Way Microphone Jack

### Panel Mounting Jacks ▲



Improved jacks engineered for compact panel mounting. Sleeve made of high-grade brass. Springs of phosphor-bronze, nickel-plated. Provided with insulated shoulder washers for metal panel mounting.

- No. 325 — Two Conductor Open Circuit
- No. 1905 — 3-Way Microphone Jack

### Shielded Extension Jack



Unique jack housed in nickel-plated brass shielded barrel. Two conductor open circuit. Mates with standard 1/4" plugs.

- No. 1913

▲ To be discontinued from stock. Orders accepted in minimum quantities. Write us.

SINCE  
1921



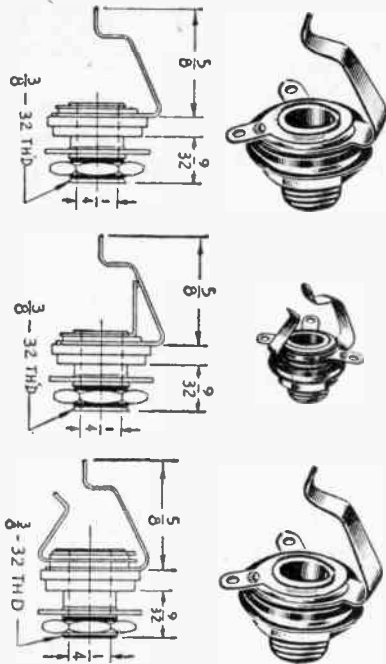
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OVER 3 DECADES OF QUALITY RADIO-TELEVISION PRODUCTS

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Page U-1641

### Phone Jacks



Suitable for limited space. Contacts of phosphor bronze, cadmium plated, to assure firm connections. Fiber contact insulation. Complete with nut and metal washer. For standard 1/4" plugs.

- No. 1870 — Two Conductor Open Circuit
- No. 1871 — Two Conductor Shorting Type
- No. 1872 — 3-Way Mike Jack

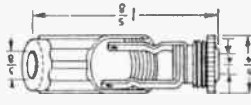
### Shielded 3-Way Extension Microphone Jack



For all types of microphones. Sturdily constructed of brass parts with phosphor bronze springs. Nickel plated and thoroughly insulated.

No. 1904

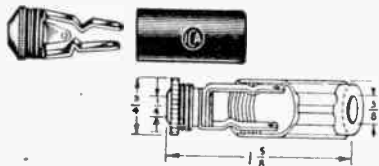
### Extension Jack



Two conductor open circuit. Ribbed barrel molded of black phenolic. Fits all standard plugs.

No. 1911

### 3-Wire Microphone Extension Jack



Sturdy microphone jack encased in black molded phenolic barrel. Fully insulated.

No. 1903

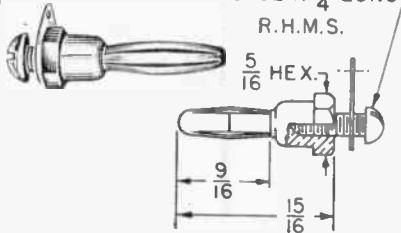
### Spring Type Banana Plug



Has brass body with phosphor bronze spring contacts, nickel plated overall. Extra sturdy. Overall size 1 3/8" long. Threaded shank length 1/2" long; for 6/32 nuts. For complete dimensions, see chart page U122.

No. 7573

### Banana Plug



Nickel-plated brass with snug-fitting one-piece phosphor bronze spring. Includes 6/32 screw and soldering lug; 6/32 tapped hole. Hex base permits firm tightening. Center shaft extends full length of plug.

No. 7584

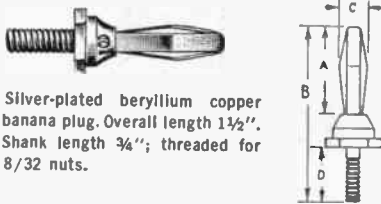
### Threaded Shank Beryllium Banana Plug



Has 1/2" shank, threaded for 6/32 nuts. Overall size measures 1 3/8" long. For complete dimensions, see chart on following page.

No. 421

### Silver-Plated Banana Plugs

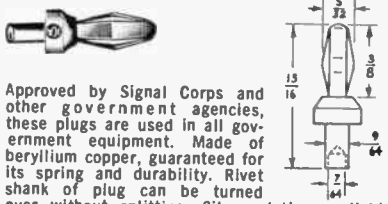


Silver-plated beryllium copper banana plug. Overall length 1 1/2". Shank length 3/4"; threaded for 8/32 nuts.

No.	A	B	C	D
*421	3/8	1 3/8	3/8	1 3/8
424	3/8	1 1/2	3/8	3/4
428	3/8	1 7/8	3/8	1 1/8
429	3/8	1 3/4	3/8	3/4
*7573	3/8	1 3/8	3/8	1 3/8

\*Brass Plated \*\*Beryllium

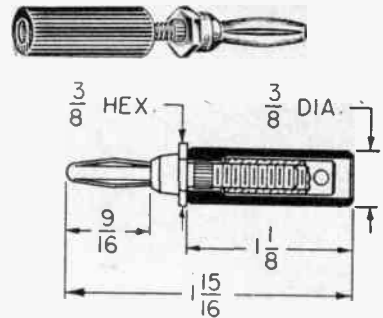
### Beryllium Banana Plug



Approved by Signal Corps and other government agencies, these plugs are used in all government equipment. Made of beryllium copper, guaranteed for its spring and durability. Rivet shank of plug can be turned over without splitting. Silver plating available upon request at extra charge.

No. 419 (.141" shank diam.)

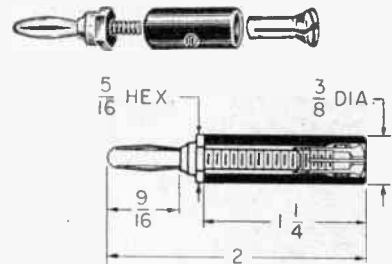
### Insulated Solderless Banana Plug



Features a ribbed insulating (1 1/8" L. x 3/8" diam.) tenite handle. Silver plated beryllium copper springs. Fits standard type banana jacks. Cross drilled holes in plug end for solderless connection. Overall length: 1 3/4".

No. 413B — Black No. 413R — Red

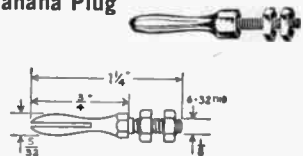
### Pin Vise Banana Plugs



Revolutionary new solderless silver plated beryllium copper spring banana plug with insulating ribbed tenite sleeve. Measures 3/8" in diam.; 1 1/4" long. Features a novel miniature spring collet which serves as receptacle for phone tip or test lead wire ranging from 14 to 20 gauge. May be attached to component leads for a temporary testing connection without bending or mangling.

No. 433B — Black No. 433R — Red

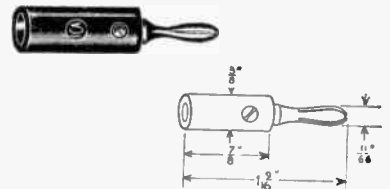
### Split Banana Plug



Has 6/32 threaded stud. Complete with two hex nuts. Machined from solid brass, nickel-plated.

No. 403

### Insulated Solderless Split Banana Plugs



Fits all standard banana jacks. Set screw provided at side of tenite barrel to fasten wire without soldering.

No. 883B — Black

No. 883R — Red

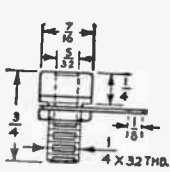
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**Insulated Banana Jacks**

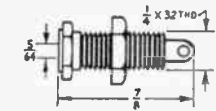


Insulated jacks with receptacle for banana plugs. Insulated top is removable.

No. 888B — Black

No. 888R — Red

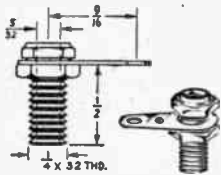
**Brass Tip Jack**



Accommodates any phone tip. Made of brass, nickel plated. Improved type one-piece nickel plated phosphor bronze spring contact loop for easy wiring.

No. 357

**Transmitting Banana Jack**

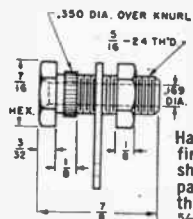


Made of quality brass; nickel plated, standard 1/4-32 thread. Furnished with heavy terminal lugs and plated nut.

Accepts all standard banana plugs.

No. 402

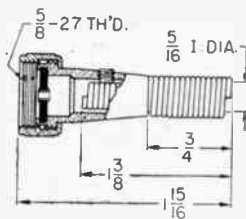
**Silver Plated Brass Banana Jack**



Has knurled shoulder for firm panel fit. Extended shank suitable for heavy panels. Minimum panel thickness: 3/8"; maximum; 5/8". Overall length: 7/8"; shank length: 3/4 x 3/8 hex head dia.: 3/8". Takes Insuline banana plugs No. 410, 421, 428, 429, 7573 and 7584.

No. 431A

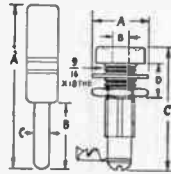
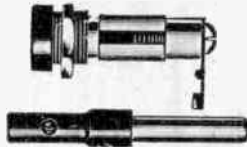
**Universal Microphone Connector**



Mates with all standard microphone connectors including itself. Non-fixed coupling ring permits rapid conversion from male to female. This connector is widely used for microphone cables, test equipment, etc. It provides a fully shielded reliable connection.

No. 1931

**Giant Insulated Transmitting Plugs and Jacks**



A line of heavy duty transmitting plugs and jacks. Plug-in type with positive grip contacts. Suited for use on short wave diathermy apparatus and ultra high frequency transmitters, etc. Supplied with red or black insulation. Equipped with large hex nuts for panel mounting. Rated at 1,000 Volts, 10 Amps.

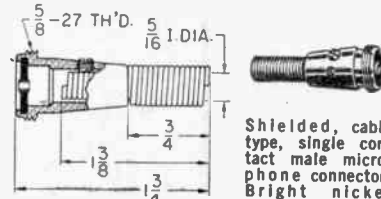
**Giant Insulated Transmitting Plug**

No.	Color	A	B	C
450	Red	3 3/8"	1 3/8"	1/4"
451	Black	3 3/8"	1 3/8"	1/4"
454	Red	3 5/8"	1 5/8"	3/8"
455	Black	3 5/8"	1 5/8"	3/8"

**Giant Insulated Transmitting Jack**

No.	Color	A	B	C	D
452	Red	7/8"	1/4"	1 7/8"	3/16"
453	Black	7/8"	1/4"	1 7/8"	3/16"
456	Red	3/4"	2 3/8"	2 3/8"	3/16"
457	Black	3/4"	2 3/8"	2 3/8"	3/16"

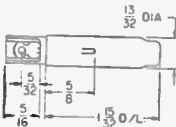
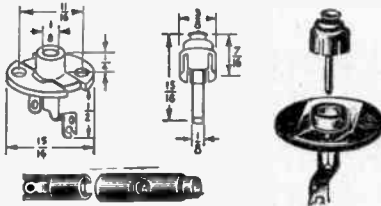
**Microphone Connector**



Shielded, cable type, single contact male microphone connector. Bright nickel plated brass. Similar to No. 1931 but without coupling ring. Mates with No. 1931 or any standard female microphone connector.

No. 1932

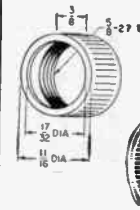
**Phono Plugs and Jacks**



Used for phonograph connections, Hi-Fidelity, inter-connecting cables, etc. Compact and fully shielded.

No. 2383 — Phono Plug  
No. 2385 — Chassis Type Phono Jack

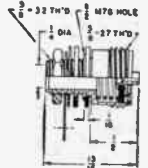
**Connector Coupling Ring**



Microphone connector coupling ring converts No. 1932 male connector to No. 1931 universal microphone connector.

No. 1925

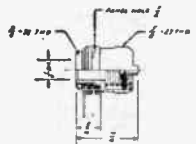
**Chassis Type Microphone Connector**



Single contact male microphone connector. Mates with No. 1931 or any standard female microphone connector. Supplied with nut, soldering lug and fibre washers. For use on public address amplifiers, test equipment, etc. (Use 3/8" hole for grounded mounting or 1/2" hole and fibre washers for insulated mounting.)

No. 1929

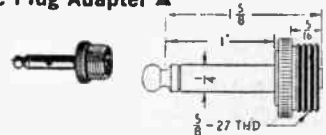
**Closed Circuit Chassis Type Microphone Connector**



For use in eliminating noise and feedback from unused microphone inputs. Similar to No. 1929 but with spring actuated contact.

No. 1930

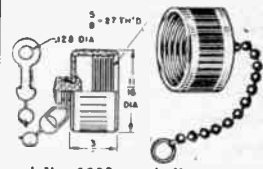
**Phone Plug Adapter**



Fits standard female mike connector such as ICA No. 1931, thus converting it to a phone plug. Soldering or wiring not necessary.

No. 33

**Connector Cap and Chain**



Provides effective protection to unused male microphone connectors against grit and dirt. Chain prevents loss. For use with No. 1929 and No. 1930 or similar connectors.

No. 1918

**All Metal Binding Post**



Designed for high amperage, low resistance connections. Nickel plated brass. Dimensions same as No. 617.

No. 620

▲ To be discontinued from stock. Orders accepted in minimum quantities. Write us.

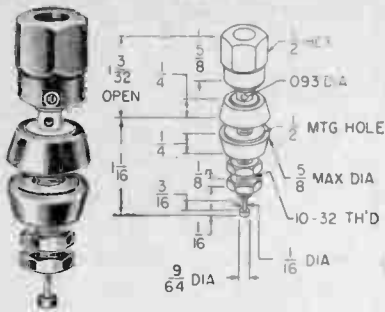
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### New Multi-Way Tenite Binding Post



Permits 6 different methods of connection above panel and 3 below.

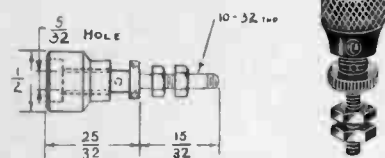
Above 1. Wire or 2. Phone tip thru hole and clamped. 3. Wire wrapped around stem and clamped. 4. Spade lug clamped. 5. Banana plug plug-in or 6. Alligator clip to stem.

Below 1. Wire or 2. Lug clamped between hex nuts. 3. Wire soldered.

Rated at 30 amp, 1000 v. max. diam.  $\frac{5}{8}$ "; height above panel  $2\frac{3}{4}$ " (closed);  $1\frac{3}{4}$ " (open). Mounting hole  $\frac{1}{2}$ ". Panel thickness from  $\frac{1}{4}$ " to  $\frac{1}{4}$ ".

No. 640B — Black No. 640R — Red

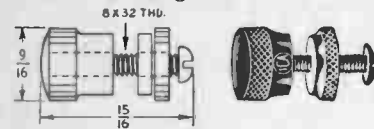
### Insulated Binding Posts with Jack for Banana Type Plug



Knurled grip, non-removable head. Receptacle for standard banana type plug built into stem. Hole provided in stem for wire or phone tip connection. Length  $1\frac{1}{4}$ " overall when fully opened. Extends  $\frac{5}{8}$ " above panel when head is screwed down. Fitted with 8/32 stud ( $\frac{1}{4}$ " long) and two hex nuts.

No. 623 — Black No. 622 — Red

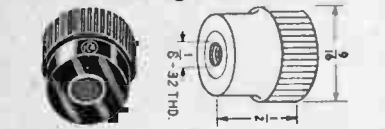
### Insulated Binding Posts



$\frac{5}{8}$ " diameter phenolic head with brass threaded insert, nickel plated screw and knurled nut. Removable head. Available in red and black.

No. 617 — Red No. 618 — Black

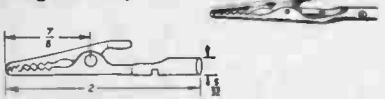
### Insulated Binding Post Heads



Phenolic heads only with brass threaded insert for 8/32 screw.

No. 628 — Red No. 629 — Black

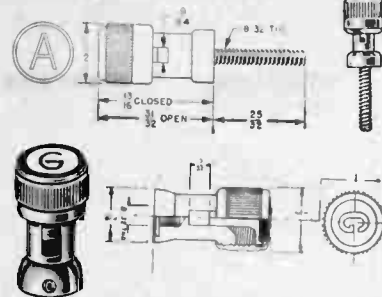
### Alligator Clip



Non-insulated, widely-used type. Cadmium-plated steel. Sturdy spring and hinge assure firm bite. May be soldered to wire or shank. Will accept banana plug.

No. 364

### Visc-Grip Binding Posts ▲

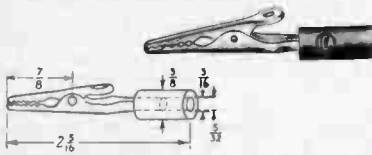


Engineered on the principle of a vise. When mounted, the post cannot be rotated and the wire hole and designating symbol will always be in alignment.

No. 630 Series—Have 8/32 Male Threaded Shank  
No. 690 Series—Have 8/32 Tapped Hole

No.	Marking	No.	Marking
630	ANT	690	ANT
631	GND	691	GND
632	A	692	A
633	G	693	G
634	+	694	+
635	—	695	—
636	Rec.	696	Rec.
637	PLAIN (No Marking)	697	PLAIN (No Marking)

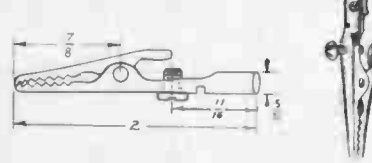
### Insulated Alligator Clips



Cadmium-plated steel with red or black insulating sleeve. Has banana plug receptacle on insulated end.

No. 884B — Black No. 884R — Red

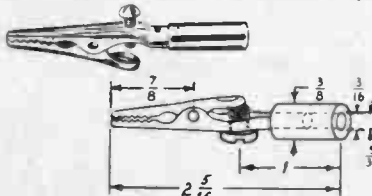
### Screw Type Alligator Clip



Similar to No. 364 alligator clip but with convenient screw connection. Eliminates need for soldering.

No. 376

### Insulated Screw Type Alligator Clips



Includes plastic insulating red or black barrel. Solderless screw connection.

No. 526B — Black No. 526R — Red

### Insulated Alligator Clips With Phone Tip Jack



Has standard phone tip jack in insulated red or black sleeve. Will accommodate any standard phone tip.

No. 525B — Black No. 525R — Red

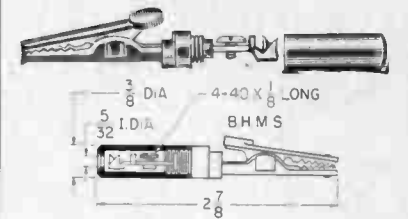
### Insulated Combination Jack Alligator Clips



An insulated alligator clip with a dual purpose jack in plastic sleeve. Accepts either phone tip or banana plug.

No. 520B — Black No. 520R — Red

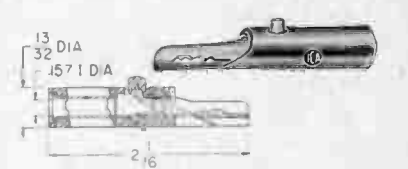
### All-Insulated Alligator Clips



Special plastic molding fully encases clip; molded threaded sleeve covers terminal lug and screw. Combines a strong spring-loaded contact with complete insulation.

No. 522B — Black No. 522R — Red

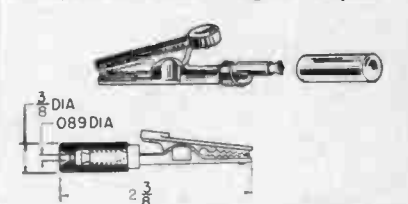
### All-Insulated Alligator Clips ▲



Fully insulated alligator clip. Firm gripping jaws; handy push button release. Takes standard banana plugs.

No. 524B — Black No. 524R — Red

### All-Nylon Insulated Alligator Clip ▲



Spring-loaded alligator clip with high dielectric nylon insulation to prevent "shorts"; shock-free. Nylon barrel accepts standard .080" diam. test prods or phone tips. Metal parts are steel, cadmium plated. Supplied in black or red.

No. 529B — Black No. 529R — Red

### All-Purpose Test Lead Kit ▲



Packed in a convenient leatherette pocket case. Includes one pair of test leads with 48" of red and black kinkless live rubber wire. Leads are equipped with insulated phone tips on one end; other end has long-handled insulated removable banana plugs. The fittings supplied may be added to the banana plugs to provide desired type of test lead. Kit includes: 1 pr. test leads (handle  $3\frac{1}{8}$ " L.); 1 pr. insulated alligator clips—red and black; 1 pr. insulated spade lugs—red and black; 1 pr. insulated needle point phone tips—red and black.

No. 1005

▲ To be discontinued from stock. Orders accepted in minimum quantities. Write us.

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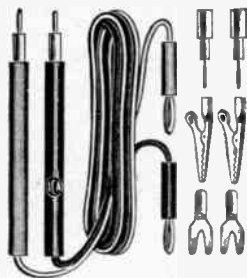
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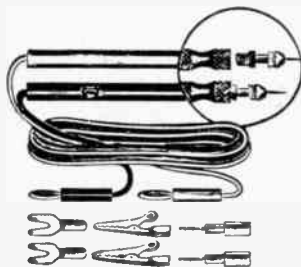
### All-Purpose Test Lead Kit with Interchangeable Tips



The slim test lead handles measure 5" long. Made of sturdy tenite tubing. Overall length: 6". Red and black handles are equipped with sharp point phone tips which fit all standard jacks; the other end equipped with split banana plug. The kinkless live rubber leads are 48" long. The kit includes a pair of spade lugs, alligator clips and phone tips — all interchangeable.

No. 312

### All-Purpose Test Lead Kit with Interchangeable Tips



Similar to No. 312 except handles are equipped with removable phone needle chucks.

No. 311

### Magne-Lead ▲



Features a lead with magnet on one end. Ideal for quick, simple testing. Includes set of interchangeable tips; 48" rubber covered wire; overall length of handle 6".

No. 478

### Nylon Handle Test Leads ▲

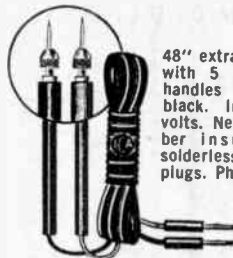


A pair of flexible type test leads made to U. S. Army Signal Corps specification CX-1331/U. Each lead features one red (1" long) and one black (4" long) nylon barrel for high dielectric strength, each with 1" prod tip of silver-plated heat-treated beryllium copper for rugged use. Tip fits standard .080 dia. type jacks; also

insuline No. 529 alligator clip. Uses WS-16/U (black) and WS-17/U (red) single conductor cable, 48" long. Available in other wire lengths upon request.

No. 481

### DeLuxe Phono Needle Test Leads



48" extra flexible test leads with 5 inch slim tenite handles — one red, one black. Insulated for 5000 volts. New non-kinking, rubber insulated wire. Has solderless pointed phone plugs. Phone tip terminals.

No. 355

### Phono Needle Point Test Leads



Extra flexible rubber-covered, kinkless wire, black and red, measures 48" in length. Insulated for 5000 volts. Needle point enables tester to penetrate wire insulation. Slim tenite handles are 5" long, with phone tip terminals.

No. 382

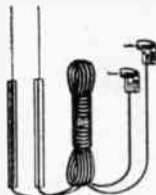
### Pencil Type Test Leads



Streamlined design with finger-grip molded tips. Made of red and black tenite insulating material, with 48 inches of fine flexible soft rubber kinkless wire. Handles are 5" long. Sharp-pointed penetrating tip is threaded, screws into handle and protects one inch. All connections properly soldered providing low resistance connections vital in all precision tests. Insulated for 5,000 volts.

No. 373

### Slim-Line Test Leads



Long vinyl-insulated shaft permits probing in closely spaced circuits without fear of shorting. Black and red tenite handles are 5" long. 48" kinkless wire lead. Supplied with molded phone tip plug.

No. 438

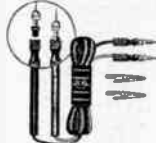
### Extra Long Handled Test Leads



Features special low-loss highly polished hard rubber, high dielectric properties. 8" prod handles with sharp pointed penetrating tips for easier testing of less accessible points. The black and red kinkless wire leads measure 48". Includes molded black and red gun-handle phone tip plugs.

No. 329

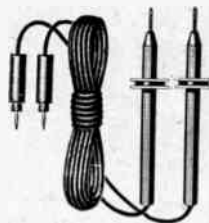
### Heavy Duty Laboratory Test Leads



Extra long (5 inch) slim red and black handles with removable phono needle chucks. Handles knurled for finger-grip ease. The heavy duty kinkless flexible rubber leads measure 48".

No. 400 — With insulated solderless plug  
No. 388 — With alligator clip

### Heavy Duty Test Leads ▲



Safely tests up to 10,000 volts. Bakelite handles with guards. Uses midjet type phone tip. Heavy duty red and black cable of 18 gauge, 65/36 tinned copper, with heavy walled rubber covering. Prods are 6" long with 48" red and black cable; 2" bakelite phone tips on other end.

No. 4317

### Unbreakable Test Leads



Made with long, slim metal prods (overall length: 6 1/2"), nickel-plated, covered with red and black shockproof live rubber sleeves. One end has standard needle point tips; other end supplied with insulated solderless plugs. The kinkless, rubber wire is 48" long.

No. 332 — With phone tips, non-insulated  
No. 331 — With insulated solderless plug ends

### Alligator Clip Test Leads ▲



A handy utility type test lead. The rubber-covered kinkless wire is highly flexible with firm-gripping alligator clips at each end.

No.	Wire Length	No.	Wire Length
486	12"	488	36"
487	24"	489	48"

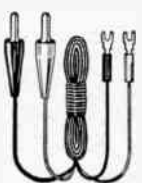
### "Clip-On" Test Leads



A convenient "clip-on" test lead that includes phone tip plugs on one end; sturdy alligator clips on other end. The red and black kinkless wire leads measure 48".

No. 328

### Heavy Duty "Clip-On" Test Leads



Heavy duty test leads of the "clip-on" type. Includes a heavy gauge nickel-plated brass insulated spade terminal which will fit screws or binding posts up to 3/8" dia. The pair consists of a 48" red and black lead with tenite insulation.

No. 327

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### Lucite Handle Test Leads



Features red and black low-loss durable lucite handles (5" L.) for exacting testing requirements. Handles have brass threaded insert. Includes 48" kinkless live red and black rubber wire with molded gun-grip phone tip plugs. Handles have threaded type phono needle chucks.

No. 304

### Non-Kink Flexible Test Lead Wire



Flexible rubber covered wire that will not kink or deteriorate in service. Consists of very fine tinned stranded copper wire with a heavy wall of live rubber insulation.

No. 307 — 100 ft. spool, Black  
No. 309 — 100 ft. spool, Red

### Lucite Prod Set



Has brass threaded insert. Red and black handles (measuring 3/8" x 5" L.) are made of low-loss high-dielectric strength lucite. Have needle chucks on ends. Set includes one black and one red prod.

No. 302

### RF and Signal Tracer Probe

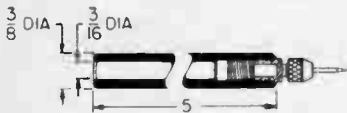


Germanium crystal circuit. Assures accurate analysis of circuit defects. May be used with audio amplifier for audible tracing or with V.T.V.M. for RF and AF measurements. Low input capacitance. The ideal probe for the audio section of television circuits.

The sturdy phenolic barrel (overall length 6 5/8") has sealed tenite ends with solderless phone tip and includes 48" RG59/U coaxial cable with phone plug and 18" rubber covered ground lead with alligator clip.

No. 4310

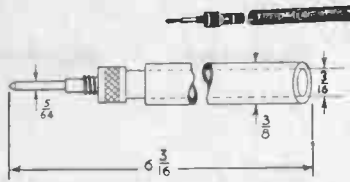
### Tenite Phono Needle Point Test Prods



With removable chuck. Supplied in black or red tenite tapped handles. Needle point chuck is tapped to screw into handle.

No. 389B — Black  
No. 389R — Red

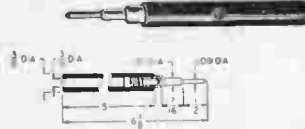
### Solderless Plug Test Prods



With solderless plug chuck. Slim tapped tenite handles in black or red, threaded to take the solderless plug chuck. All brass parts are nickel-plated.

No. 390B — Black  
No. 390R — Red

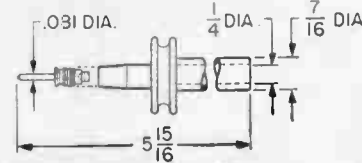
### Heavy Duty Test Prods



Slim tapered tenite handle fitted with threaded heavy duty phone tip.

No. 387B — Black  
No. 387R — Red

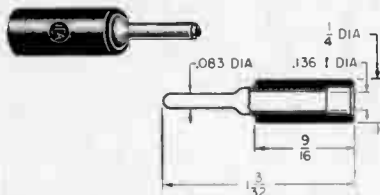
### High Voltage Heavy Duty Tenite Test Prod Handles



High voltage, 10,000 volts. Has midget threaded phone tip. Suitable for all high voltage work. Made of black tenite with finger guard ring. Prods are 6" long overall.

No. 480

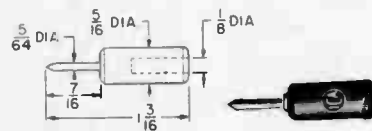
### Phone Tip with Insulating Jacket



Nickel-plated brass with small O.D. insulating sleeve.

No. 341B — Black No. 341R — Red

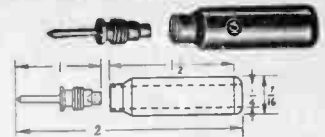
### Insulated Midget Phone Tip Plug



Fits all standard tip jacks. Tip is made of nickel-plated brass, particularly adapted for use where minimum amount of metal can be exposed. Ribbed tenite handle.

No. 876B — Black

### High Voltage Heavy Duty Tenite Test Prods



High voltage, 10,000 volts. Fully insulated with threaded midget sharp pointed phone tips. Measures 2" overall.

No. 485

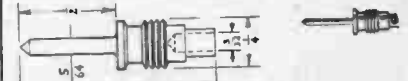
### Phono Needle Chucks



In two styles: push-on type can be forced into handles; threaded type can be screwed into handles. Machined of brass, nickel-plated, with needle point.

No. 508 — Push-on type. Overall size: 1"  
No. 509 — Threaded type. Overall size: 1"

### Midget Sharp Point Threaded Phone Tip



Made of brass, nickel-plated. Threaded to fit all test prods. Serves as replacement for tips in midget plugs listed herein. For use where exposure of minimum amount of metal is desired.

No. 365

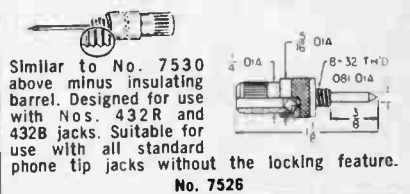
### Locking Type Solderless Phone Tips



Companion piece to Insuline No. 432 locking type tip jack. (May also be used with non-locking type jack). Insulated barrel.

No. 7530B — Black No. 7530R — Red

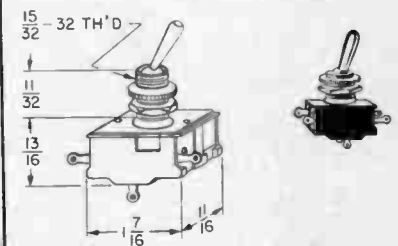
### Locking Type Solderless Phone Tip



Similar to No. 7530 above minus insulating barrel. Designed for use with Nos. 432R and 432B jacks. Suitable for use with all standard phone tip jacks without the locking feature.

No. 7526

### Bat-Handle Double Throw Switch



A sturdy double throw bat-handle toggle switch featuring center "OFF" position. Made by H & H. Rated 3 Amps., 250 Volts; 6 Amps., 125 Volts.

No. 1386 — Single Pole Double Throw  
No. 1387 — Double Pole Double Throw

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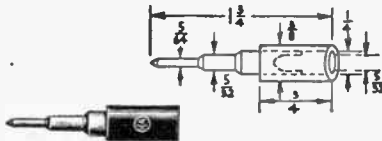
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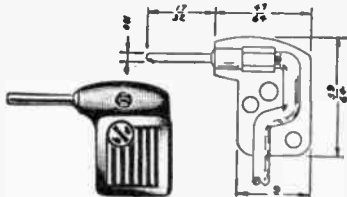
### Insulated Needle Point Tip Plugs ▲



A heavy duty needle point phone tip with a ribbed — red or black — tenite handle. Generous sized solder hole will accept any size wire or a banana plug. Serves dual purpose as adapter permitting leads equipped with banana plugs to be used with instruments having tip jacks.

No. 886B — Black No. 886R — Red

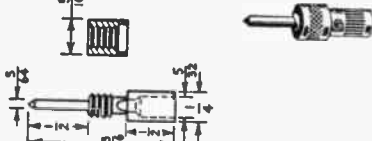
### Grip-Rite Molded Phone Tip Plugs



Made of red and black catalin insulation. Replacement for Insuline and Weston — as well as other make test leads. Phone tip fits all make tip jacks. Supplied with nut and bolt for ease of assembly.

No. 868 — Red No. 869 — Black

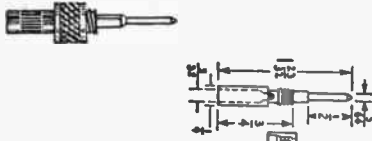
### Junior Solderless Phone Tip Plug



Will fit standard tip jacks. Nickel-plated brass construction. Knurled for easy gripping. Easily attached without soldering or use of tools. Suitable for testing, leads, antenna and ground connections, etc.

No. 359

### Senior Solderless Phone Tip Plug



A heavy duty version of No. 359. Will fit all tip jacks.

No. 358

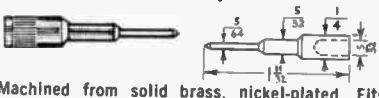
### Standard Phone Tip



Standard phone tip of the most widely used type.

No. 360

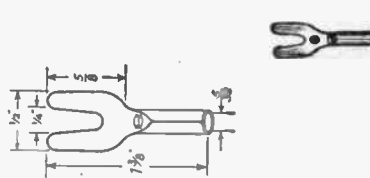
### Heavy Duty Phone Tip



Machined from solid brass, nickel-plated. Fits all standard phone tip jacks. The .161 hole takes a standard banana plug. The knurled portion will be a tight fit in a 1/4" or slightly smaller hole.

No. 361

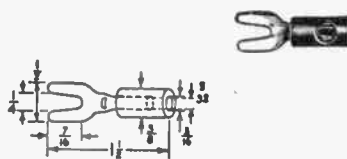
### Spade Lug ▲



May be used on any size screw or terminal up to size 10. Receptacle fits all Insuline and other make banana plugs.

No. 879

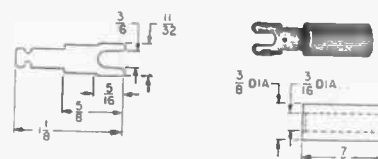
### Insulated Spade Lugs ▲



Insulated spade lug with banana plug receptacle on lead end.

No. 887B — Black No. 887R — Red

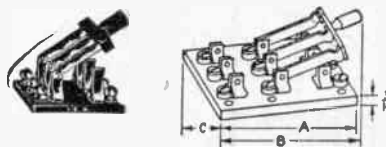
### Heavy Duty Insulated Spade Lugs ▲



Heavy gauge nickel-plated brass spade lug which will fit on screws or binding posts up to 3/16" in diameter. Supplied with tenite sleeve — red or black — unassembled for forced fit after wiring.

No. 867B — Black No. 867R — Red

### Bakelite Knife Switches ▲



Hardware of brass, cadmium plated. Mounted on highly polished bases of Black Bakelite. Firm contact assured.

No.	Description	A	B	C
1216	S.P.S.T.	1 1/16	2 3/4	1
1217	S.P.D.T.	2 3/4	3 1/2	3/4
1218	D.P.S.T.	1 7/8	2 5/8	1 7/8
1219	D.P.D.T.	2 3/4	3 1/2	1 11/16
1360	3.P.S.T.	1 7/8	2 5/8	2 1/2
1220	3.P.D.T.	2 7/8	3 1/2	2 1/2
1221	4.P.S.T.	1 7/8	2 5/8	3 1/4
1222	4.P.D.T.	2 3/4	3 1/2	3 1/4
1364	5.P.D.T.	2 3/4	3 1/2	3 1/16

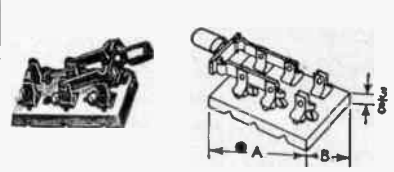
### Rotary Canopy Switch ▲



Single pole switch 3/8-27 shank, 3/16" long with bakelite knob and 6" leads — 3 Amperes, 125 Volts.

No. 1257

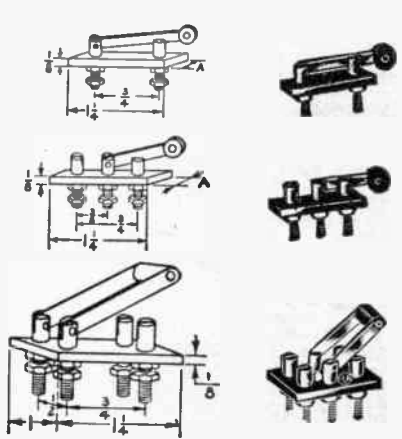
### Porcelain Knife Switches ▲



Moisture-proof base. Recommended for outdoor use. Hardware of brass, heavily nickel plated.

No.	Description	Base Size	
		A	B
235	S.P.S.T.	1 3/4"	1"
236	S.P.D.T.	2 5/8"	1"
237	D.P.S.T.	1 3/4"	1 5/8"
238	D.P.D.T.	2 5/8"	1 1/2"

### Miniature Bakelite Switches ▲



Can be mounted either on the panel or base. Black Bakelite base — cadmium plated brass parts with insulated handles.

No.	Description	A
2223	S.P.S.T.	1/2
2224	S.P.D.T.	1/2
2225	D.P.D.T.	1
2226	D.P.S.T.	1

### FM and Record-Player Switch ▲



Replacement for RCA Switch 9824A

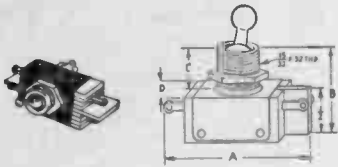
Used for quickly connecting Record Players, F.M. attachments and similar devices into the audio amplifier of existing radio receivers.

No. 1740

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### Toggle Switches ▲

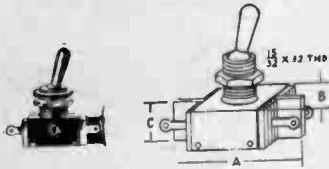


Specially constructed ball joint. Bakelite insulation. Furnished in Nickel or Antique Bronze. Capacity 1 Amp., 250 Volts; 3 Amps., 125 Volts. Mfd. by H & H for ICA. Underwriters approved.

No.	Description	Finish	A	B	C	D
1230*	S.P.S.T.	Nickel	1 1/2	3/8	1 1/2	1/2
1232*	S.P.S.T.	Bronze	1 1/2	3/8	1 1/2	1/2
1233*	S.P.S.T.	Bronze	1 1/2	3/8	1 1/2	1/2
1235*	S.P.S.T.	Nickel	1 1/2	3/8	1 1/2	1/2
1236	S.P.D.T.	Nickel	1 1/2	3/8	1 1/2	1/2
1237	S.P.D.T.	Nickel	1 1/2	3/8	1 1/2	1/2
1238	D.P.S.T.	Nickel	1 1/2	3/8	1 1/2	1/2
1365	D.P.D.T.	Nickel	1 1/2	3/8	1 1/2	1/2
1366	D.P.D.T.	Nickel	1 1/2	3/8	1 1/2	1/2

\* 3 Amps., 250 Volts.

### Bat-Handle Toggle Switch ▲



Made by H & H identical to toggle switches listed above, except that handle is longer and shaped like a baseball bat. Rated 3 Amps., 125 Volts; 1 Amp., 250 Volts.

Less "On and Off" plate  
Nickel plated only — 1/32" shank

No.	Description	A	B	C
1296*	S.P.S.T.	1 1/2	3/8	1 1/2
1297	S.P.D.T.	1 1/2	3/8	1 1/2
1298	D.P.S.T.	1 1/2	3/8	1 1/2
1299	D.P.D.T.	1 1/2	3/8	1 1/2

\* 3 Amps., 250 Volts.

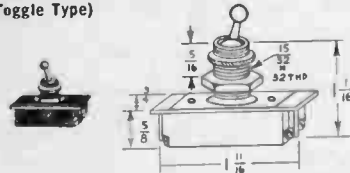
### "On-Off" Plate ▲



No. 1300 — For Toggle Switch — Nickel plated finish

No. 1300-BR — For Toggle Switch — Antique Bronze finish

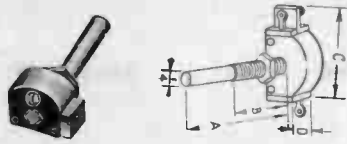
### Power Switch ▲ (Toggle Type)



Characteristics and dimensions same as No. 1280 described above.

No. 1281

### Rotary Switches ▲

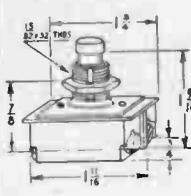


Rated 3 Amps., 125 Volts. Each switch encased in steel jacket. Bakelite insulation. Made by H & H for ICA. Underwriters Approved.

No.	Description	A	B	C	D
*1228	S.P.S.T.	1 1/2	3/8	1 1/2	1/2
*1229	S.P.S.T.	1 1/2	1	1 1/2	1/2
1286	S.P.D.T.	1 1/2	3/8	1 1/2	1/2
1287	S.P.D.T.	2 1/2	1	1 1/2	1/2
1288	D.P.D.T.	1 1/2	3/8	1 1/2	1/2
1289	D.P.D.T.	2 1/2	1	1 1/2	1/2

\* Rated 3 Amps, 250 Volts.

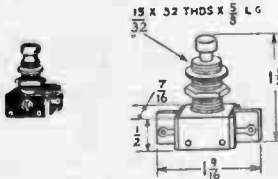
### High Power Switch Push Button Type ▲



A safety switch designed to break primary circuit when door is open. Double pole single throw, made by H & H for ICA. Capacity 12 Amperes, 125 Volts; 6 Amperes, 250 Volts. Requires 1/2" hole for mounting. Underwriters Approved.

No. 1280

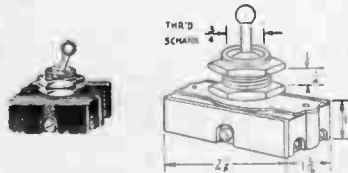
### Push Button Switch ▲



Single pole 2 circuit momentary switch. One circuit is "ON" and the other normally "OFF". 1 Ampere, 125 Volts, made by H & H for ICA. Shank 3/16" long. Underwriters Approved.

No. 1282

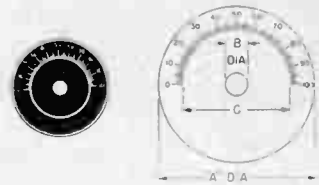
### Extra Heavy Duty Switch D.P.D.T. with Neutral Center ▲



An extra large heavy duty, Double Pole, Double Throw Switch with neutral position in the center for use in heavy current circuits. Rated at 10 Amperes, 125 Volts; 5 Amperes, 250 Volts; 3/4 H. P., 250 Volts. Underwriters Approved.

No. 1283

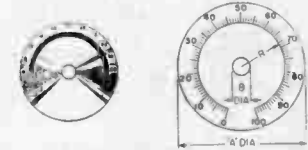
### Brass, Black Satin Finish, Dial Plates with Etched Silver Numerals ▲



Made of brass, black finished, with clear etched silver lines and numerals. Supplied in 2" and 3 1/2" diameters.

No.	Degrees	Calib.	A	B
2231	180	100-0	3 1/2"	1 1/2"
2232	180	0-100	3 1/2"	1 1/2"
2233	180	100-0	2"	1 1/2"
2234	325	0-100	2"	1 1/2"
2235	325	100-0	2"	1 1/2"

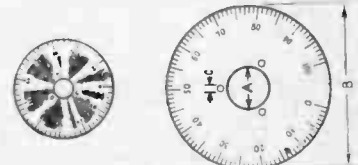
### Chrome Silver Dial Plates ▲



Furnished in three different sizes — 2", 3 1/2", and 4" diameters. Attractive grain satin finish. Black Etcho-Engraving on chrome silver background brass plates.

No.	A	Deg.	R	Calib.	B
2294	2	180	5/8	0-100	1 1/2"
2295	2	325	5/8	0-100	1 1/2"
2296	3 1/2	180	1 1/8	0-100	2 1/4"
2298	4	180	1 3/8	0-100	3 1/4"

### Chrome Silver Dial Plates ▲



2 3/4" and 4" diameter. Two types, calibrated 180 degrees, 0-100 and 325 degrees, 0-100; made of brass.

No.	Degrees	Calib.	A	B	C
2196	325	0-100	5/8	2 3/4	3/4
2197	180	0-100	5/8	2 3/4	3/4
2195	180	0-100	1 1/8	4	3/4

### Miniature Dial Plates



For matching dials on Instruments, receivers, amplifiers, etc. Rich chrome silver dial with clear black etched numbers; made of brass. Finger-grip black knob. Fits 1/4" shaft. Ranges from 0-10 over 180 and also 270 degrees. Only 1 1/8" diameter.

No. 2164 — 10-0-180 degrees  
No. 2165 — 10-0-270 degrees

▲ To be discontinued from stock. Orders accepted in minimum quantities. Write us.



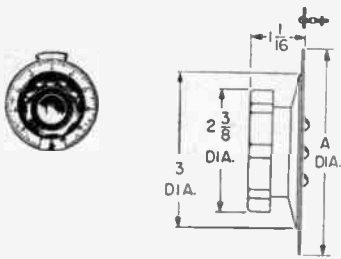
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The MASTER — 22nd Edition

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### Chrome Silver Dials With Finger Grip Flange Knobs



Precision chrome silver finished brass dial plates accurately Etcho-engraved with black numerals and calibrations. Mounted on ICA Finger Grip Flanged Knob. Knob is equipped with brass bushing for 1/4" shaft. Supplied complete with VERNIER MARKER and hardware.

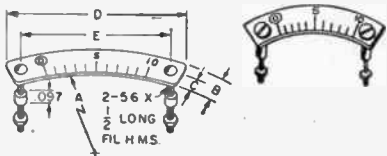
No.	Degrees	Cal.	A
2170	325	0-100	2 3/4"
2171	180	0-100	2 3/4"
2168	325	0-100	4"
2169	180	0-100	4"

### Miniature Chrome Silver Dial Plates A

Same as 2164 and 2165 less knobs.

- No. 2166 — 10-0-180 degrees
- No. 2167 — 10-0-270 degrees

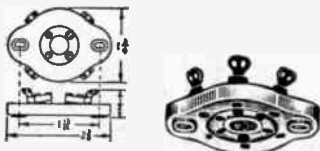
### Vernier Dial Marker A



Brass verniers, supplied complete with screws, nuts, and spacers for mounting on metal, wood, bakelite or brass panels. Permit reading to within 1/10% of full rotation. Made in four types.

No.	For Dial Diam.	Deg.	A	B	C	O	E
2189	2 3/4	325	1 3/4	1/4	1/8	1 1/16	1 3/32
2190	2 3/4	180	1 3/4	1/4	1/8	1 1/32	3/8
2191	4	325	2	3/8	1/8	1 1/16	1 1/32
2192	4	180	2	3/8	1/8	1 1/32	1

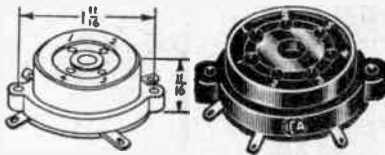
### Wafer Sockets A



Designed for ultra high frequency reception. Made of Insulex — a low loss ceramic compound. Features include: large self-wiping contacts of cadmium plated phosphor bronze; special circular grooves for easy tube inserting; recessed contact rivets to prevent "shorting". For either base board or sub-panel mounting.

- No. 2601 — 5 Prong
- No. 2602 — 6 Prong

### Base Mounting Sockets A

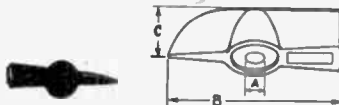


Ideal for radio and testing equipment work. Improved bakelite molded socket with special spring bronze nickel plated contacts. For either base or panel mounting. Two mounting holes 3/4" diam.

#### Base Mounting

- No. 2481 — 5 Prong
- No. 2483 — 7 Prong combination large and small
- No. 2489 — 8 Prong Octal

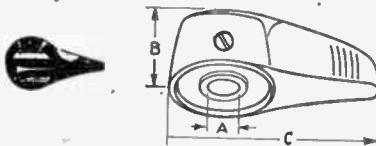
### Pointer Bar Knobs



New type modernistic pointer knobs with set screw mounting. Pointer is filled in white. Firm mounting.

No.	Color	A	B	C
1125	Black	1/4	1 1/4	5/8
1126	Black	1/4	2	5/8

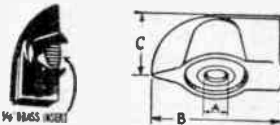
### Instrument Bar Knob A



Used on Test equipment, amplifiers, Inter-office systems, etc. Has 1/4" brass insert with set screw. Black only.

No.	A	B	C
1270	1/4	5/8	1 1/4

### Streamlined Pointer Knobs



Attractive design with brass insert that offers firm grip on shaft for use on amplifiers, test equipment, etc. Has 1/4" brass insert and set screw.

No.	A	B	C
1274	1/4	1 1/4	5/8
1275	1/4	2	5/8

- 1274-S — Same as 1274 but with two set screws
- 1275-S — Same as 1275 but with two set screws

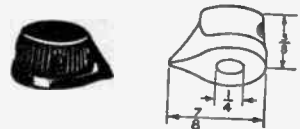
### "Shur-Grip" Arrow Pointer Knob



Suited for receiver replacements as well as instrument knobs. Offers firm mounting and sure grip. Has white engraved arrow marking.

- No. 1147 — Black

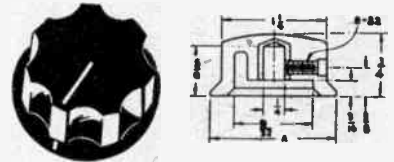
### Modern Plastic Knob



Recent design to blend with latest type instrument housings.

- No. 1081 — Black

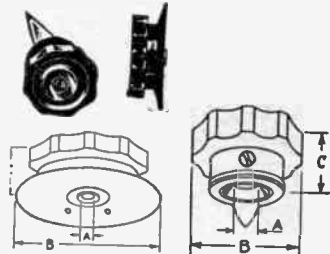
### Instrument Knobs



A compact, firm-gripping knob with well-defined indicating stripe. Black bakelite.

No.	A
244	1 1/4
245	1 1/2

### Finger-Grip Pointer Knobs



Moulded of black phenolic with brass insert and hole for use with ICA dial plates. Pointer type knobs have white plastic indicator.

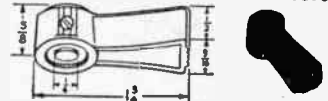
WITH POINTER			
No.	A	B	C
1166	1/4	1 1/4	1 1/4
1168	1/4	1 1/4	1 1/4
1170	1/4	2 3/4	1 1/4

LESS POINTER			
No.	A	B	C
1165	1/4	1 1/4	5/8
1167	1/4	1 1/4	3/4
1169	1/4	2 3/4	3/8

WITH FLANGE			
No.	A	B	C
1171	1/4	2 1/4	3/8
1172	1/4	3	1 1/4

These knobs also supplied with TWO set screws. Order by adding "S" to numbers indicated.

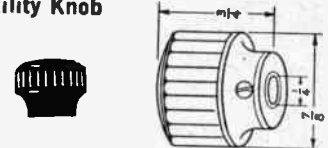
### Pendulum Knob with Brass Insert



An attractive molded plastic handle knob having 1/4" shaft and set screw.

- No. 1153 — Black

### Utility Knob



Easy gripping, firm-mounting knob with knurled rim. Gleaming black finish.

- No. 1174

▲ To be discontinued from stock. Orders accepted in minimum quantities. Write us.

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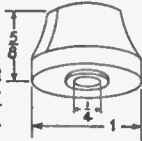
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### Semi Bar Knob



A neatly designed, compact knob that assures firm mounting. Black finish. Excellent for medium size knob requirements.



No. 1088 — Black

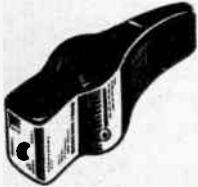
### Deluxe Knob Assortment ▲



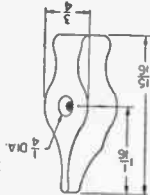
An assortment containing 50 knobs packed in attractive convenient container. Includes a variety of all-purpose modern bakelite knobs equipped with set screw. Fits 1/4" shaft. Suitable for many applications.

No. 1059

### Metal Knob

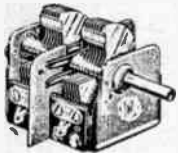


A sturdy knob of die cast aluminum. Fits 1/4" shaft; Includes 2 socket head cup point set screws. This easy-grip knob has black anodized finish.

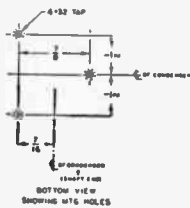


No. 1184

### Midget Precision Condensers ▲



Ball-bearings on both ends of shaft insure long life without wear or side play. Heavy brass springs make direct contact with rotor shaft, insuring a clean wiping contact at all times.



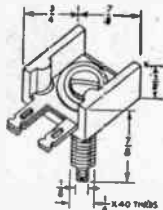
#### TWO GANG CONDENSER

No.	Mmfd.	Overall Width	Overall Height	Overall Length
538	135	1 1/4"	2"	3 3/8"
534	365	1 1/4"	2"	3 3/8"

#### THREE GANG CONDENSER

No.	Mmfd.	Overall Width	Overall Height	Overall Length
532	135	1 1/4"	2"	4 3/8"
531	365	1 1/4"	2"	4 3/8"

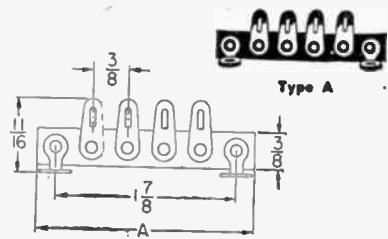
### Ceramic Padding Condensers ▲



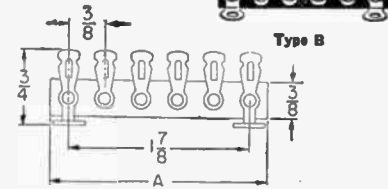
Compact, yet rugged Padding Condensers. Designed for aligning tandem condensers, short wave band switch coils, antenna trimmers, etc. Uses high grade Mica and Phosphor Bronze Nickel-plated Spring contacts.

No.	Min. Cap.	Max. Cap.
611	4.0 mmfd.	40 mmfd.
612	12.0 mmfd.	100 mmfd.
613	70.0 mmfd.	350 mmfd.
614	160.0 mmfd.	500 mmfd.

### Solder Type Terminal Strips ▲



Type A

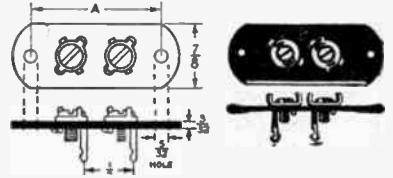


Type B

Bakelite (1/8" thick). Mounting tie strips for fastening Resistors, Condensers, etc. Mounting Lug hole diameter .140". Terminals are made of cadmium plated brass. Type A shows non-ground mounting lug. Type B shows combination grounding-mounting lug:

No.	Type	Terminals	Mounting Centers	Mounting Lugs
2434	A	1		1
2455	B	1	One Hole	1
2435	A	2		1
2456	B	2		1
2436	A	3	1 1/2"	2
2457	B	3	1 1/2"	2
2437	A	4	1 7/8"	2
2458	B	4	1 7/8"	2
2438	A	5	2 1/4"	2
2459	B	5	2 1/4"	2
2439	A	6	1 7/8"	2
2460	B	6	1 7/8"	2
2440	A	7	1 1/2"	2
2461	B	7	1 1/2"	2
2441	A	8	1 7/8"	2
2462	B	8	1 7/8"	2

### Screw Type Terminal Strips ▲

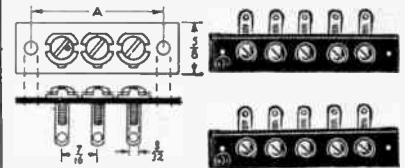


Specially suited for amplifiers, mixers, receivers, etc. Made of 1/8" heavy black Bakelite, engraved in silver. Terminals are brass cadmium plated. Will not turn or short.

No.	Term.	Marking	A	Size
2420	2	Plain	1 1/2"	7/8 x 2
2419	2	A & G	1 1/2"	
2418	2	Output	1 1/2"	
2417	2	Input	1 1/2"	
2414	3	Plain	2"	7/8 x 2 1/2
2415	3	1, 2, 3	2"	
2413	4	Plain	2 1/2"	7/8 x 3
2408	4	1, 2, 3, 4	2 1/2"	
2405	5	Plain	3"	7/8 x 3 1/2
2406	5	1, 2, 3, 4, 5	3"	7/8 x 3 1/2
2404	6	Plain	3 1/2"	7/8 x 4
2402	6	1, 2, 3, 4, 5, 6	3 1/2"	
2412	7	Plain	4"	7/8 x 4 1/2
2411	7	1, 2, 3, 4, 5, 6, 7	4"	
2410	8	Plain	4 1/2"	7/8 x 5
2409	8	7, 2, 3, 4, 5, 6, 7, 8	4 1/2"	
2424	9	Plain	5"	7/8 x 5 1/2
2423	9	1, 2, 3, 4, 5, 6, 7, 8, 9	5"	
2422	10	Plain	5 1/2"	7/8 x 6
2421	10	7, 2, 3, 4, 5, 6, 7, 8, 9, 10	5 1/2"	

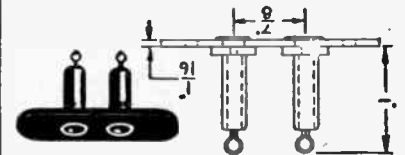
### Screw Type Terminal Strips ▲

Brown bakelite 1/8" thick. Suitable light duty radio work, experimental purposes, etc. Terminals are brass, cadmium-plated.



No.	Terminals	A
2520	2	1 1/8"
2521	3	1 3/8"
2522	4	2 1/8"
2523	5	2 3/8"
2524	6	3 1/8"
2528	Terminal Lug & Screw only	

### Twin Jack Strip ▲



For Headphones, Speakers, etc., where two terminals required for ready contact. Will take standard phone tips. Spun on 1/8" bakelite strip. Base width 1 1/4". Distance between mounting holes 1 1/8".

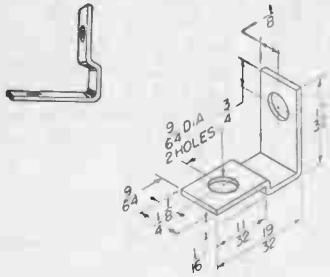
No. 2443

Special Jack strips supplied to manufacturer's specifications in quantity runs.

▲ To be discontinued from stock. Orders accepted in minimum quantities. Write us.

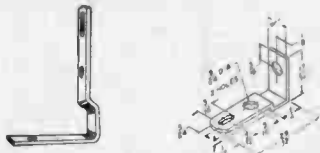
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### Terminal Strip Offset Mounting Bracket ▲



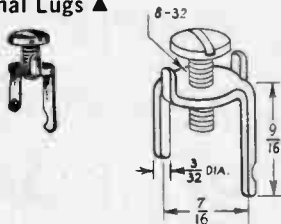
For mounting screw-type terminal strips on breadboards; above chassis, etc. Cadmium-plated steel. Mounting hole for No. 6 screw.  
No. 2430

### Terminal Strip Offset Mounting Bracket and Lug Combination ▲



For sturdy mounting of terminal strips. Features convenient grounding lug which projects above terminal strip. Cadmium-plated steel. Mounting hole for No. 6 screw.  
No. 2431

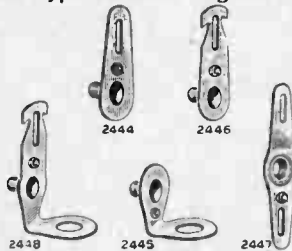
### Terminal Lugs ▲



Sturdy cadmium-plated brass screw type terminal lugs.

No. 2425 — Lugs only (less screws)  
No. 2426 — Terminal Screws,  $\frac{3}{16}$ " L.

### Solder Type Terminal Lugs ▲



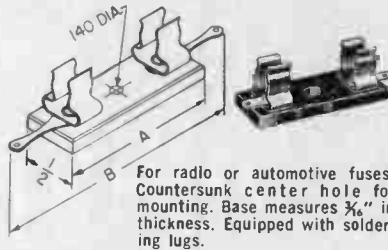
A variety of cadmium plated brass solder type lugs for wide application.

No. 2444 — Terminal Lug  
No. 2445 — Mounting Lug — #6 hole  
No. 2446 — Notched Terminal Lug  
No. 2448 — Combination Term. and Mounting Lug — #6 hole  
No. 2638 — Same as 2448 — #8 hole  
No. 2447 — Double lug with center eyelet  
No. 2463 — Combination lug — eyelet type and bracket

### Special Terminal Strips

Special type terminal strips with terminals in any required position, including offset bracket type. Made to specifications. Send us your print.

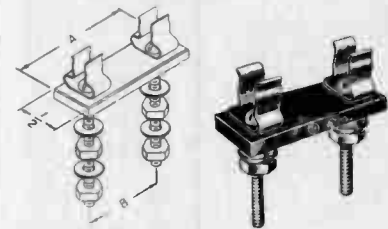
### Phenolic Base Fuse Mountings for 3 AG Type Fuses Flush Type Mounting ▲



For radio or automotive fuses. Countersunk center hole for mounting. Base measures  $\frac{3}{16}$ " in thickness. Equipped with soldering lugs.

No.	Type	A	B
2340	Single Pole	1½"	2¾"
7201	Double Pole	1¾"	2¼"

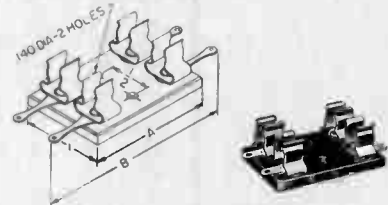
### Panel Type Mounting ▲



Equipped with 6-32 mounting screws.

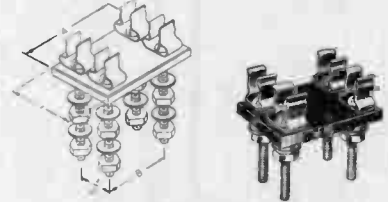
No.	Type	A	B
2341	Single Pole	1½"	1"
7203	Double Pole	1½"	1"

### For 8 AG Type Fuses ▲



FLUSH MOUNT

No.	Type	A	B
7202	Single Pole	1¾"	2¼"
7204	Double Pole	1½"	2¾"



PANEL MOUNT

No.	Type	A	B
7205	Single Pole	1¾"	1¾"
7206	Double Pole	1¾"	1¾"

### Midget Fuse Clips ▲



For ¼" glass fuses; nickel plated.

Cat. No.	Height	Length
5681	¾"	¼"

### Standard Fuse Holders ▲

Top quality fuse holder and parts



No. 2348 — Standard fuse holder complete



No. 2360 — Female sleeve only



No. 2364 — Fibre Insulator only

### Jumbo Fuse Holders ▲

Fuse holders of various needed values



No. 2349 — SFE 30 Amperes (2⅝" L. x ½" d.)

No. 2346 — SFE 20 Amperes (2½" L. x ½" d.)

No. 2345 — SFE 14 Amperes (2¼" L. x ½" d.)

No. 2344 — SFE 9 Amperes (2⅛" L. x ½" d.)



No. 2359 — Male sleeve only

No. 2367 — Bakelite bushing only



No. 2358 — Female sleeve only

### Pre-Wired Jumbo Fuse Holder ▲



Suitable for 3 A.G. 20 amp. or SFE 14 amp. fuse. Eliminates necessity of soldering when changing fuse holder. Wire is merely severed, stripped and placed in line.

No. 2368

### Antenna Connector ▲



A popular, widely used antenna connection. Complete.

No. 2347

### Motorola Plug & Jack ▲



No. 2378 — Motorola Shielded Jack

▲ To be discontinued from stock. Orders accepted in minimum quantities. Write us.

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### Short-Wave and Broadcast Plug-In Coils

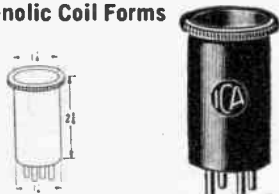


Precision wound on Low-Loss phenolic forms: 4 Prongs . . . 2 Windings. Diam. 1 1/4"; height 2 1/4". Rim handle for easy changing. Uniformly spaced winding. Used with either 140 or 150 mmfd. tuning condenser.

No. 1471 — Set of 4 short wave coils — from 9 1/2 to 217 Meters

No. 1473 — Set of 2 Broadcast coils — 190 to 550 Meters

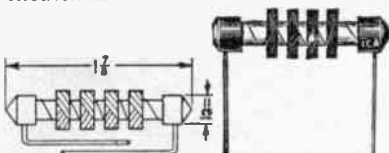
### Small Phenolic Coil Forms



Equipped with special rim on top making it easy to insert and pull out of socket. Black phenolic. Ridge is grooved for color coding.

No. 1108B — 4-Prong  
No. 1113B — 5-Prong  
No. 1114B — 6-Prong

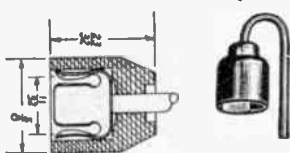
### Insulex R. F. Choke Coil



Designed for high frequency application. Supplied with wire leads for mounting.

No.	Inductance	D.C. Resis.	Current Cap.
277	2.5 M.H.	32 ohms	150 ma.

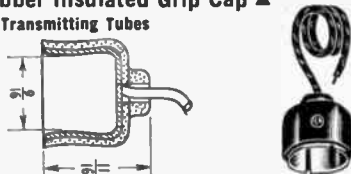
### Phenolic Insulated Grid Caps ▲



Improved type for standard and transmitting tubes. Sturdy cadmium plated brass clip. Furnished with 12" wire.

For 866 Transmitting Tubes  
No. 683 — Black  
For Standard Glass Receiving Tubes with small caps  
No. 680 — Red No. 681 — Black

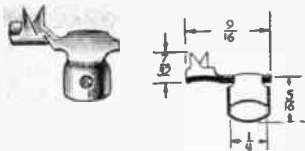
### Rubber Insulated Grip Cap ▲ For Transmitting Tubes



New Improved type. Insulation made of special soft rubber over spring bronze.

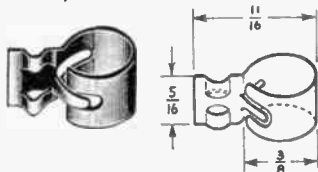
For 866 Type Tubes  
No. 870 — With Leads

### Spring Action Grid Cap ▲



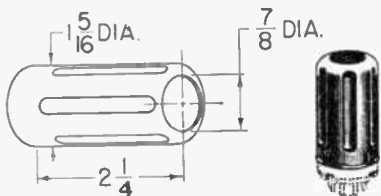
For all types of tubes. Positive contact. All grid caps are hot tinned steel ready for soldering.

No. 1551 — For tubes with miniature caps (.250 dia.)



No. 1554 — For standard glass receiving tubes

### GT and GT/G Type Tube Shields

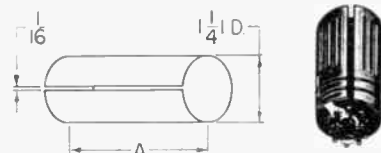


Latest type seamless, drawn shell type. Length 2 1/4".

No. 1744 — Open top\* For tube diam. 1.218"  
No. 1745 — Closed top\* For tube diam. 1.218"  
No. 1746 — Open Top\*\* For tube diam. 1.165"  
No. 1747 — Closed top\*\*† For tube diam. 1.165"

\*For GT and GT/G tubes with large metal base.  
\*\*For GT tubes with small metal base.  
†For Loktal tubes.

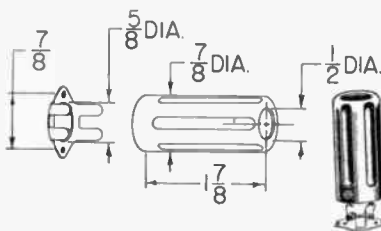
### Form Fit Tube Shields



A tube shield that assures a snug, positive fit. Includes ground clip as illustrated.

No. 1727B — For GT; GT/G and Loktal tubes. Length 2 1/2".  
No. 1729B — For GT and GT/G tubes. Length 2 3/4".

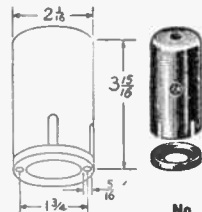
### Miniature Tube Shield and Clip



For miniature tubes with T5 1/2 bulbs. Includes base clip. Length 1 7/8" Mtg. Centers (base clip) 7/8" for standard miniature tubes.

No. 1735

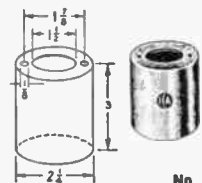
### Aluminum Tube Shield with Detachable Base



Will fit on all standard Screen Grid Tubes. Supplied with base. Measures 2 1/16" diameter x 3 3/16" high.

No. 1541

### 807 Tube Shield



For use with Transmitter Pentodes, and Tetrodes, to prevent oscillation. Can also be used on RK 20, RK 39, 807 and 804 tubes.

No. 1545

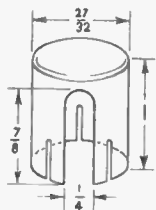
### Coil Shields With Detachable Base



A sturdy coil shield made of aluminum with a detachable base.

Cat. No.	A	B	D
1539	2 1/16	3	1 3/8

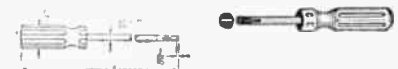
### Grid Cap Shields (For Metal Tubes)



Fits firmly over grid cap, affording complete shielding. Slotted cap permits passage of grid wire. No. 1552

No. 1558 — With Bakelite Insert

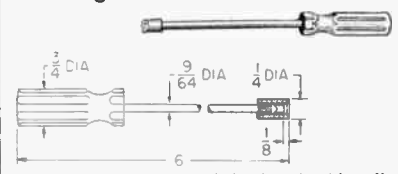
### Deep-Nib "Kleer Aligner" ▲



All-insulated aligner with clear flexible low-loss rod 7/32" dia.; amber plastic handle. Metal nib for No. 6 studs entirely insulated and set within barrel end. For tuning IF and RF shielded coils and trimmers. Overall length: 4".

No. 6846

### Thin Aligner ▲



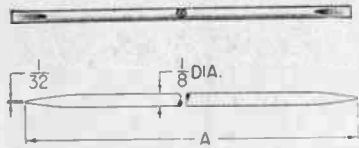
Has extra thin recessed blade; durable slim metal shaft for cramped probing. Amber plastic handle. Especially suitable for Admiral and similar type TV receivers. Measures 6" overall length.

No. 6849

▲ To be discontinued from stock. Orders accepted in minimum quantities. Write us.

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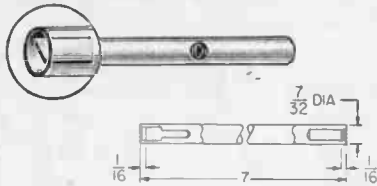
### "Long Stretch" Fibre TV Aligner ▲



A double bladed aligning tool, measuring 12" in length. Made of durable fibre for complete insulation and sturdiness. Narrow shaft is 3/16" in diam.

No. 6159 — 12" Long  
No. 6158 — 7" Long

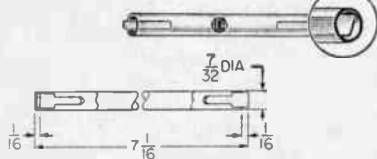
### Double End "Kleer Aligner" ▲



Low-loss CLEAR PLASTIC all-insulated shaft. Has two recessed blades set within rod ends, completely insulated. One blade suitable for No. 6 screw and smaller; other blade for No. 4 screw and smaller. Shaft is 7" long x 7/32" diameter.

No. 6193

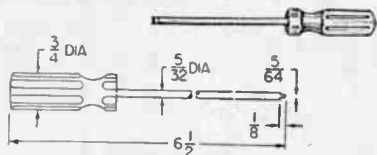
### "Kleer-Aligner" ▲



A low-loss CLEAR PLASTIC all-insulated aligning tool. Narrow shaft. Has recessed insulated blade on one end; extended blade on other end. Measures 7" in length x 7/32" diameter.

No. 6192

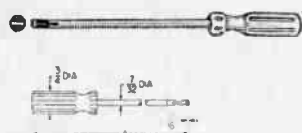
### "Aligner-Tran" ▲



Aligning tool of tough fibre with insulating amber plastic handle for standard IF, RF and "K-Tran" midget transformers. Measures 6 1/2" overall length.

No. 6850

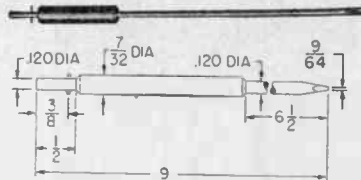
### "Kleer-Tuner" ▲



Low-loss clear plastic rod measures 7/32" in dia. Insulating amber plastic handle. Has recessed blade for No. 6 studs. All-insulated. Measures 8 1/2" overall length.

No. 6848

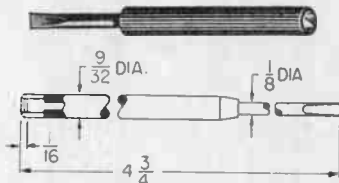
### "Big Stretch" Aligner



Extra thin, extra long (9"), bone fibre aligning tool, 6 1/2" blade. Specially designed for adjustment of nested iron cores of "Admiral," "Zenith" and similar make TV sets. Permits use on RCA front ends and normally inaccessible areas.

No. 6162

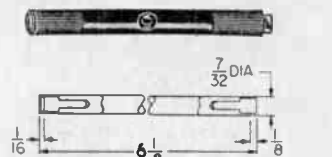
### Tuning Wrench



Insulated fibre tuning wrench with extra thin recessed blade. Extra thin screw driver blade on other end (4 3/4" L). Tenite handle. Especially designed for "Zenith" TV sets, etc.

No. 6164

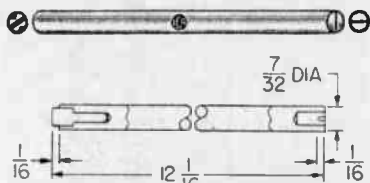
### Dual Aligner



Dual purpose narrow shaft, tenite alignment tool for trimmers, IF transformers, coils, condensers, push-button tuners, etc. Recessed screw nib on one end; metal screw driver on other end. Used on RCA, Bendix, and other type receivers.

No. 6166

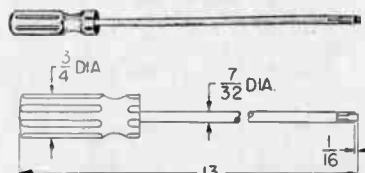
### "Super Stretch Kleer Aligner" ▲



All insulated extra long TV aligner for inaccessible areas. The low-loss CLEAR PLASTIC Rod is 12" long x 7/32" diam. Carries an extended blade at one end; brass slotted insert at other end.

No. 6194

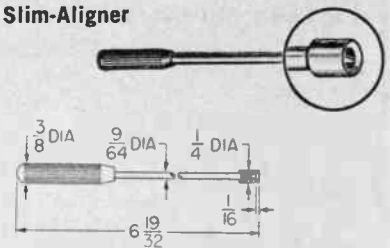
### Long-Rod "Kleer Aligner" ▲



All-insulated extra length tool (measures 13" overall) for hard-to-reach trouble points. Clear plastic rod is 7/32" in diameter. Has amber plastic handle. Extended blade: 3/32" w.

No. 6847

### Slim-Aligner



Alignment tool with extra thin recessed blade and slim metal shaft for cramped probing in television receivers. Tenite handle. Especially suitable for "Admiral" and similar make television sets.

No. 6161

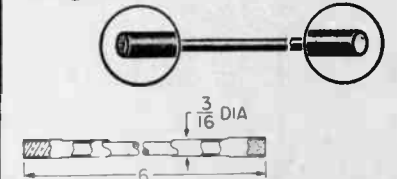
### Deep-Nib Aligner



Made of Tenite. Metal nib entirely insulated and set within barrel end. For tuning IF and RF shielded coils and trimmers. Small enough to fit under television tubes without removing. Length: 2 1/2" x 7/32" diameter.

No. 6156

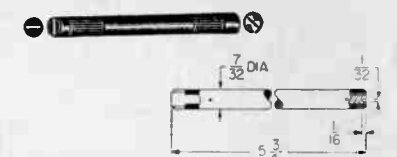
### Tuning Wand



Extra thin diameter to fit small coil openings in television sets. Flexible vinylite. Brass insert in one end; molded powdered iron core in other end. Lowers or increases inductance. Suitable for "Zenith", etc. TV sets.

No. 6163

### Core Aligner



For Stewart-Warner, Belmont and other television receivers employing Stackpole adjustable cores. The 5 3/4" insulated tenite shaft has brass insert at one end for milled end cores; recessed screw driver blade at other end for standard slotted cores.

No. 6170

### Precision Tuning Wand ▲



High-grade phenolic handle (4 3/4" L. & 1/4" D.) has precision molded powdered iron core in one end (permeability tolerance ± 2%; "Q" tolerance ± 10%); silver-plated brass core in other end — both securely threaded and cemented into shaft. Increases or decreases inductance.

No. 6249

▲ To be discontinued from stock. Orders accepted in minimum quantities. Write us.

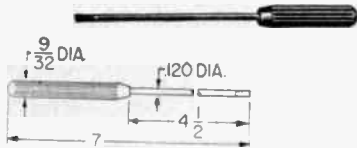


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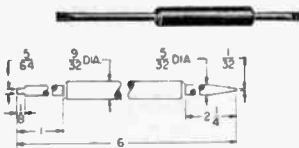
### Television "Channel Tuner"



A narrow all-insulated screw driver of machined fibre. Ideal for deep, inaccessible tuning. Overall: 7" Length.  $\frac{1}{8}$ " blade on  $4\frac{1}{2}$ " shaft.

No. 6157

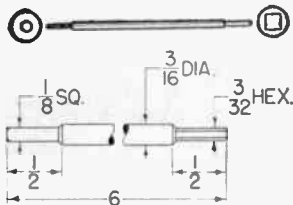
### Tran-Aligner



Newly designed all-insulated aligning tool for standard IF and RF and "K-Tran" midget transformers. Trim fibre; milled at one end, screw driver at other end.  $2\frac{1}{2}$ " length blade; 6" overall.

No. 978

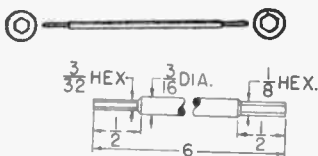
### Hexy-Square Aligner ▲



All bone fibre iron core aligning tool especially designed for Raytheon-Belmont IF transformers and similar type transformers. 6" shaft has  $\frac{3}{16}$ " diam.;  $\frac{3}{32}$ " hex one end;  $\frac{1}{8}$ " square other end.

No. 6171

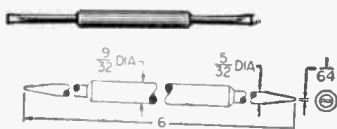
### Hex-Aligner ▲



All bone fibre iron core aligning tool. Has  $\frac{3}{32}$ " hex one end;  $\frac{1}{8}$ " hex other end. Especially designed for Dumont, Raytheon-Belmont receivers and other sets, using similar type iron cores. Shaft 6" long;  $\frac{3}{16}$ " diam.

No. 6199

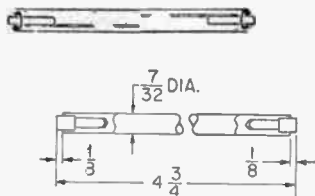
### All-Purpose Aligner ▲



Bone fibre screw driver ends set in red tenite handle. Overall length 6"; blade width  $\frac{3}{32}$ "; tip thickness  $\frac{1}{64}$ ". Designed for general aligning purposes for Motorola and other popular receivers.

No. 6248

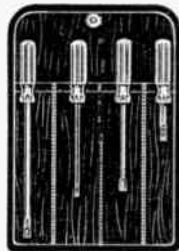
### Dual Bladed "Kleer" Aligner ▲



Low-loss clear plastic;  $4\frac{1}{2}$ " handle,  $\frac{7}{32}$ " diam. Two corrosion-proof extended blades (Govt. "spec" plated ribs) — one thickness .018", the other .025". Designed specifically for ARC-27 but excellent for television and general aligning purposes.

No. 6247

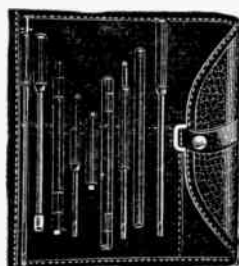
### Television Junior "Handi-Kit" 4 Essential Tools for TV Servicing ▲



A neat, compact kit containing four of the most popular Insuline tools used for a variety of television servicing requirements. The handy, plastic case is pocket-size for convenient carrying. Includes No. 6846 — all insulated aligner for tuning IF and RF shielded coils and trimmers; No. 6848 — all insulated recessed blade tuner; No. 6850 — aligner for IF, RF, and "K-Tran" midget transformers; No. 6849 — extra slim aligner for cramped probing. All tools have amber plastic handles.

No. 6697

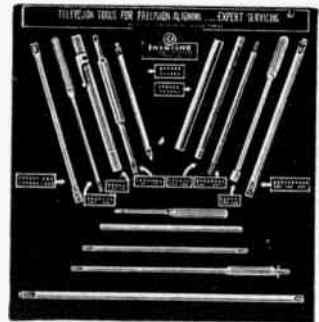
### Television "Handi-Kit"



For television servicing. Contains nine latest tools especially designed for television needs. Includes No. 978 — aligner for IF and RF and "K-Tran" Transformers; No. 6161 — slim alignment tool for cramped spaces; No. 6162 — extra thin long (9") aligner; No. 6163 — thin diameter tuning wand; No. 6164 — tuning wrench; No. 6166 — dual aligner, narrow shaft; No. 6170 — Stackpole core aligner; No. 6156 — deep nib aligner; No. 6157 — narrow insulated screw driver for deep tuning. Packed in attractive leatherette case for easy carrying. A real combination value.

No. 6165

### "E-Z Reach" TV Aligning and Servicing "Pak-Card" ▲



Contains 15 general television servicing and aligning tools. No. 978 — Aligner for IF, RF, and "K-Tran" Transformers; No. 981 — Alignment wrench, hexed full length; No. 1019 — "4-In-1" screw driver wrench aligner; No. 6157 — Narrow insulated screw driver for deep tuning; No. 6158 — Double bladed, narrow shaft fibre TV aligner; No. 6161 — Slim aligning tool for cramped spaces; No. 6162 — Extra thin long (9") aligner; No. 6163 — Thin diameter tuning wand; No. 6164 — Extra-thin recessed blade tuning wrench; No. 6171 — Hex-square aligner; No. 6192 — "Kleer-Aligner", for trimmers, IF transformers, etc.; No. 6193 — Extra thin — brass core . . . iron core tuning wand; No. 6194 — "Super Stretch" aligner, 12" handle; No. 6247 — "Kleer-Aligner", double extended blades; No. 6249 — Tuning Wand, brass core; iron core.

No. 6693

### Super Radio-TV and Aligning Tool Kit ▲



A complete deluxe kit of 19 tools designed for the widest possible use. Contains the following Insuline tools: No. 6193 — Extra thin — brass core . . . iron core tuning wand; No. 6157 — Narrow insulated screw driver for deep tuning; No. 1019 — "4-In-1" screw driver wrench aligner; No. 978 — Aligner for IF, RF, and "K-Tran" Transformers; No. 6247 — "Kleer-Aligner" double extended blades; No. 981 — Alignment wrench, hexed full length; No. 6171 — Hex-square aligner; No. 6161 — Slim aligning tool for cramped spaces; No. 6192 — "Kleer-Aligner", for trimmers, IF transformers, etc.; No. 6164 — Extra-thin recessed blade tuning wrench; No. 6163 — Thin diameter tuning wand; No. 6158 — Double bladed, narrow shaft fibre TV aligner; No. 935 — Flexible screw driver; No. 1039 — Double edge bone fibre screw driver; No. 6248 — All purpose aligner for Motorola, etc. sets; No. 6156 — Deep-nib Aligner for IF and RF shielded coils and trimmers; No. 6249 — Tuning Wand, brass core; iron core; No. 6170 — Core Aligner for Stackpole adjustable cores; No. 6162 — Extra thin long (9") aligner.

No. 6696

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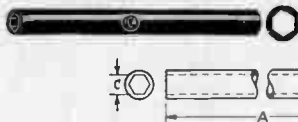
**Bone Fibre Screw Driver ▲**  
Double Edged — No Metal — Fully Insulated



Made of 1/4" rod and machined with two blades. Ideal for neutralizing and adjusting radio sets, coils, condensers, etc.

No. 1039

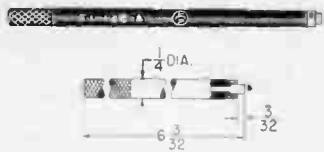
**Insulated Neutralizing Wrenches ▲**  
Hexed Full Length



Made of sturdy insulating fibre and hexed all the way through. Entire length of interior of tube is broached so that worn part may be sawed off and wrench continued in use.

No.	A	B	C
981	5"	3/16"	3/16"

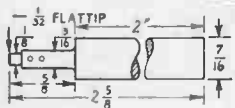
**Neutralizing and Aligning Tool ▲**



Designated by U. S. Army and Navy as tool No. TL-138-A. A handy tool for general tuning and aligning purposes.

No. 1011

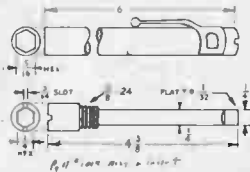
**Insulated Aligning Tool ▲**



Designated by the U. S. Army Signal Corps as tool No. TL-138-B. Stubby all-insulated tool in wide use by government service, R.C.A., Bendix.

No. 1010

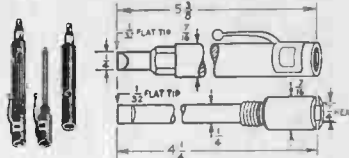
**4-in-1 Neutralizing Tool — Screw Driver and Wrench Combination**



A fully-insulated, fiber combination tool — one of the most widely used for all-round tuning requirements. All the features are shown in the illustration.

No. 1019

**5-in-1 Neutralizing and Compensating Tool**



Has essentially the same features as No. 1019 with the addition of heavy duty all-metal screw driver.

No. 1022

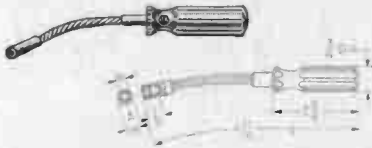
**"Magic Tuning" Alignment Tool ▲**



Consists of a phenolic rod with a brass cylinder at one end, and a special iron core at the other end. Inserting the brass cylinder into a coil lowers its inductance, while inserting the end with the iron core, increases the inductance. Proper adjustment is evidenced by a reduction in output with either end of the alignment tool inserted into the coil.

No. 977

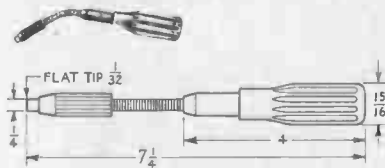
**Flexible Socket Wrench ▲**



Can actually be used around corners or under obstructing objects, or as probe to locate unseen nuts. Flexible, sturdy shaft on unbreakable insulated handle.

No. 913 — 1/4" Hex  
No. 914 — 3/8" Hex

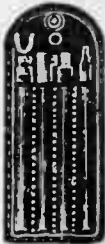
**Flexible Screw Driver ▲**



Allows access to screws in hard to reach and out of the way places. Equipped with flexible, strong and unbreakable shaft, and insulated movable screw locator to locate slots of screws that cannot be seen; helps keep the screw in position.

No. 935

**Neutralizing and Aligning Radio Tool Kit ▲**



Consists of twelve separate and distinct parts, some of which can be employed for several operations. These units telescope into each other, forming 4 separate tools when assembled. Attractive black leatherette carrying case.

No. 998

**Hex Wrench Kit ▲**



Contains an assortment of FIVE frequently used hexagon key wrenches. Made of durable hardened alloy steel. Includes wrenches as follows:

No. 4—Fits Nos. 3 and 4 set screw; Nos. 0 and 1 cap screw.  
No. 6—Fits Nos. 5 and 6 set screw; No. 2 cap screw.  
No. 8—Fits No. 8 set screw; Nos. 3 and 4 cap screw.  
No. 10—Fits No. 10 set screw; Nos. 5 and 6 cap screw.  
1/4"—Fits 1/4" set screw; No. 8 cap screw.

Packed in convenient leatherette-acetate case.

No. 963

**Spline Wrench Kit ▲**



A handy assortment of popular spline type wrenches for a variety of servicing needs. Sturdy hardened alloy steel assures lasting use. Includes SIX wrenches as follows:

No. 4—Fits No. 4 set screw; Nos. 0 and 1 cap screw.  
No. 5—Fits No. 5 set screw.  
No. 6—Fits No. 6 set screw; No. 2 cap screw.

No. 8—Fits No. 8 set screw; Nos. 3 and 4 cap screw.

No. 10—Fits No. 10 set screw; Nos. 5 and 6 cap screw.

1/4"—Fits 1/4" set screw; No. 8 cap screw.

Packed in leatherette-acetate case.

No. 964



**Serviceman's Iron ▲**

60 Watt general utility soldering iron.

No. 1960-A — 105-120 Volts  
No. 1963 — 220 Volts

**General Purpose Iron**

A sturdy 85 Watt iron designed for industrial requirements.

No. 1962-A — 105-120 Volts  
No. 1964 — 220 Volts

**Heavy Duty Iron**

Especially designed for heavy duty soldering. Equipped with a special 3/16" diameter extra heavy duty tip. 115 Watts.

No. 1961-A — 105-120 Volts  
No. 1965 — 220 Volts

**Replacement Elements for Soldering Irons ▲**



Because of the practical design of ICA Soldering Irons, burnt out elements may be easily replaced.

105-120 Volts		220 Volts	
No.	Watts	No.	Watts
1985	60	1990	60
1986	85	1991	85
1987	115	1992	115

▲ To be discontinued from stock. Orders accepted in minimum quantities. Write us.



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OVER 3 DECADES OF QUALITY RADIO-TELEVISION PRODUCTS

### Replacement Tips for Soldering Irons ▲

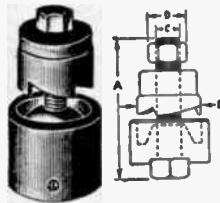
Available in all sizes



Made of a special copper alloy. Electrolytically pure. For replacement in ICA Soldering Irons. Can also be used in American Beauty and Irons of similar construction.

No.	Watts	Tips	Dia.	Length
1970	60	Chisel	3/8"	3"
1972	85	Pyramid	3/8"	3 1/2"
1971	115	Pyramid	3/8"	3 1/2"

### Shearing Punches ▲



All parts made of steel. Unique design of punch and die arrangements assures a clean smooth hole at all times. Complete with cap screw.

No.	A	B	C	D
723	1 3/4	5/8	3/8-24	5/8
725	2	3/4	3/8-24	5/8
724	2	1	7/16-20	5/8
727	2	1 1/2	7/16-20	5/8
726	2	1 3/4	7/16-20	5/8
728	2	1 3/4	7/16-20	5/8
729	2	1 1/4	7/16-20	5/8
730	2 3/4	1 3/8	7/16-20	5/8

### Brass Extension Rods ▲



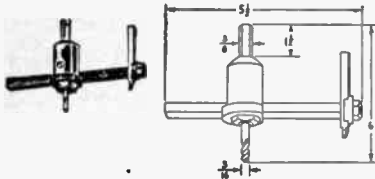
Extension rods made of precision machined brass. Sturdy and durable.

No. 2117 — 6" L., 1/4" O.D.

No. 2118 — 12" L., 1/4" O.D.

### All-Purpose Circle Cutter ▲

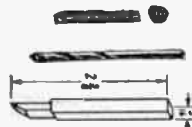
Will Cut Holes from 1 1/2" to 8 Inches



Has a hexagon shank. Fits either hand brace or electric drills. Cutting bar holder is 7/8" in diameter and accommodates a centering drill or any size pilot pin. Cutting bar is 3/8" square and is arranged to hold 3/16" high speed cutting bit.

No. 775

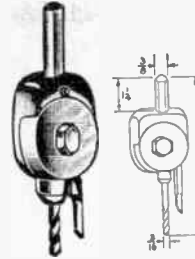
### Replacement Drills & Cutters ▲



Replacement parts for ICA circle cutters. Suitable for other make cutters. Made of hardened steel; replaced easily and quickly.

- No. 776—Replacement drill for No. 775 Circle Cutter.
- No. 777—Replacement cutter for No. 775 Circle Cutter.
- No. 781—Replacement drill for No. 780 Circle Cutter.
- No. 782—Replacement cutter for No. 780 Circle Cutter.

### Universal Multi-Purpose Cutting Tool ▲

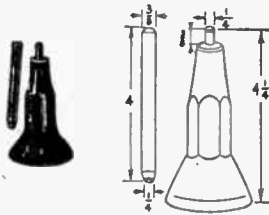


Can be used for counter-sinking, beading, drilling or cutting holes. Equipped with 3/16" drill used as a pilot. Will cut holes from 3/16" diameter up to 3" diameter. Can be used either in drill press or hand brace.

Also acts as a boring tool when used in lathe.

No. 780

### Rivet and Eyelet Punch Set ▲



Designed to make possible the resetting of any size eyelet or rivet. The two setting tools are made of hardened steel. Holder is made of cast iron with hexagonal sides, permitting the tool to be placed in a vise without slipping. Complete with ample assortment of eyelets and rivets.

No. 785

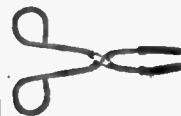
### Rivet and Eyelet Setting Tool ▲



Setting tool as used in Rivet & Eyelet Punch set listed above. Made of hardened steel. Formed to take most sizes of eyelets and rivets used in radio receivers.

No. 786

### Tube Extractor



Originally Designed for U. S. Signal Corps. Made of sturdy zinc plated iridized spring steel. Molded soft neoprene cushion over the two claws offers the maximum in tube protection.

No. 1001

### Vulcanized Fibre Rods ▲



Made of durable vulcanized fibre in variety of sizes for general application. Possesses high electrical insulating properties and great tensile strength. Highly resistant to moisture. Black finish.

No.	Diameter	No.	Size
168	1/4"	2175	12" x 1/4"
206	3/8"	2176	24" x 1/4"
169	3/8"	2179	12" x 3/8"
170	1/2"	2180	24" x 3/8"
		2183	12" x 1/2"
		2184	24" x 1/2"

Approx. Lengths: 3 ft.

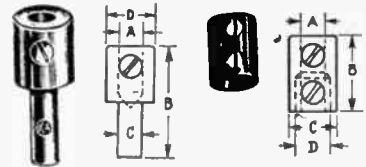
### Insulated Extension Rods ▲



Vulcanized fibre extension rods of excellent electrical insulating properties.

No. 2120 — 6" L., 1/4" O.D.

### Shaft Couplings and Extension Rods ▲

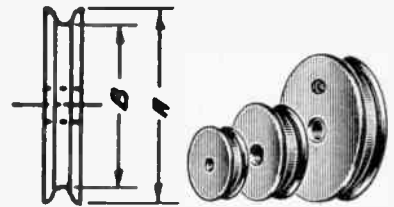


Used to increase the lengths of shafts of different diameters. Made in two types: Insulating Phenolic for cases where it is necessary to insulate one shaft from the other — Nickel-plated Brass where good mechanical strength is of primary importance.

NICKEL-PLATED BRASS COUPLINGS

No.	A	B	C	D
2105	1/4	3/4	7/8	1/4

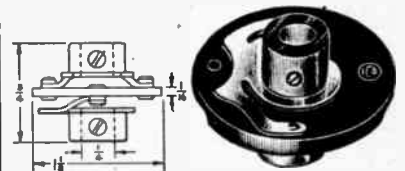
### Aluminum Idler Pulleys



Precision made aluminum idler pulleys. Supplied in any quantity in any type to any desired specifications — with or without shoulders. Listed are typical sizes hole diam. .128".

No.	A	B
501	3/8	1/4
602	7/8	3/8
603	1/2	3/8
604	5/8	1/2
605	3/4	5/8

### Phenolic Flexible Shaft Coupling



Flexible phosphor bronze nickel-plated spring contact mounted on a round phenolic disc. Has 1/4" bushing.

No. 2142

▲ To be discontinued from stock. Orders accepted in minimum quantities. Write us.

SINCE  
1921



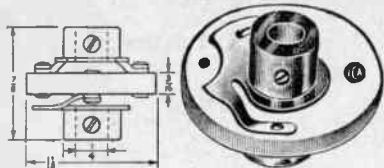
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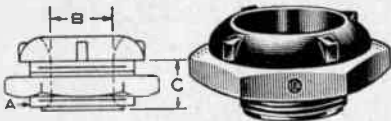
## Insulux Flexible Shaft Coupling



Flexible phosphor bronze nickel-plated contact. Mounted on insulux disc for efficient low-loss coupling. 1 1/8" diam. 1/4" bushing.

No. 2143

## Phenolic Bushings

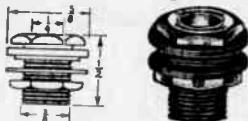


Molded phenolic bushings for complete insulation. Strong seamless threads. Heat resisting to 300° F. Complete with stamped cadmium plated lock nuts.

No.	A Pipe Thread	B Hole Size	C Length Under Head
606	1/8	1/16	1/4
607	1/4	3/16	3/8
608	3/8	1/2	1/2
609	1/2	5/8	3/4
610*	1/2	5/8	1

\* (2 holes)

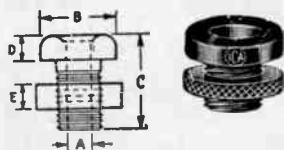
## Universal Panel Bearing



Designed to accommodate 1/4" shaft wherever a panel bushing is desired. Furnished with nut and insulating washers. Made of sturdy brass.

No. 1250

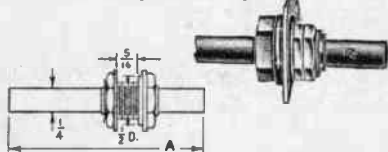
## Molded Plastic Insulating Bushings



Supplied in two sizes — in Red and Black colors.

No.	Color	A	B	C	D	E
670	Black	1/8	3/8	3/8	1/8	1/8
671	Red	1/8	3/8	3/8	1/8	1/8
672	Black	1/4	1/2	1/2	3/16	3/16
673	Red	1/4	1/2	1/2	3/16	3/16

## Panel Bearing Assembly



Can be used with either rigid or flexible couplings. Constructed of brass and so arranged that it is held rigidly in place. Will fit on panels up to 3/16" thickness.

No.	A
1248	3"
1249	6"

## Spacers and Bushings Brass . . . Insulated



Spacers and bushings for a variety of uses. Will fit No. 6 and No. 8 screws. Supplied in brass or high quality insulation.

### Brass Bushings

No.	O. D. Outside Diam.	I. D. Inside Diam.	Length
5760	1/4	.165	1/4
5761	1/4	.165	3/8
5762	1/4	.165	1/2
5763	1/4	.165	3/4
5767	1/4	.166	1
5764	3/8	.209	1/4
5765	3/8	.209	1/2
5766	3/8	.209	3/4
5768	3/8	.209	1

### Insulating Bushings

No.	O. D.	I. D.	Length
5775	1/4	.169	1/4
5776	1/4	.169	3/8
5777	1/4	.169	1/2
5778	1/4	.169	3/4
5782	1/4	.169	1
5779	3/8	1/4	1/4
5780	3/8	1/4	1/2
5781	3/8	1/4	3/4
5783	3/8	1/4	1

### Threaded Brass Bushings

No.	O. D.	I. D.	Length
5785	1/4	for 6/32 tap	1/4
5786	1/4	for 6/32 tap	3/8
5787	1/4	for 6/32 tap	1/2
5788	1/4	for 6/32 tap	3/4
5792	1/4	for 8/32 tap	1/2

Spacers and Bushings Made to Specifications in Large Quantities.

## Molded Plastic Eyelet Bushing



No. 2365 — Suitable for either spacer or bushing. With brass eyelet.

No. 2366 — Same as above, without eyelet.

## Special Length Bakelite Tubing Cut to Order — Wall Thickness to 1/16" Δ

Outside diameters range from 1" to 4". Prices on request. Other diameters and thicknesses quoted on request.

## Flexible Spaghetti Tubing



A high grade vinyl plastic tubing in various colors. Will accommodate from No. 10 to No. 18 wires. FURNISHED IN ONE LENGTH — 20 feet long on handy spools.

No. 210	— Red
No. 211	— Yellow
No. 212	— Brown
No. 213	— Green
No. 214	— Black

## Small Size Spaghetti Tubing Δ

Fits over thin wire from No. 24 to No. 18. Supplied in 30" lengths.

No. 200	— Red
No. 201	— Yellow
No. 202	— Black

## Signa-Tone Classroom Model

Complete with tubes



Designed primarily for class and radio club use. Intended for use with earphones. If desired, however, speakers may be used instead of phones. Features 3-tone audio output, continuously variable volume control, and extra terminals for keys and phones.

Features 3-tone audio output, continuously variable volume control, and extra terminals for keys and phones. Quality is same as Deluxe Signatone. For 110 volts AC-DC. Complete instructions furnished for a classroom set-up for send-receive practice.

No. 4301

## Deluxe Signa-Tone



Audio Oscillator — Code Practice Set — Keying Monitor. Complete with tubes and self-contained speaker, for 110 V. AC-DC.

A perfected Audio-Oscillator, having 3 different output frequencies and continuously variable volume control. Audio notes are similar to those of high quality commercial CW stations. Some of the uses of the Signa-Tone are:

1. CODE PRACTICE SET
2. KEYING MONITOR
3. MOOULATION SIGNAL
4. SIGNAL TRACER

Dimensions: 8" long, 4 1/4" wide, 4 1/2" high. Weight 3 lbs.

No. 4300

## "Triplex" Δ

Radio and Telegraph Code Practice Set

Blinker Light Radio Signal Telegraph

Simple and economical to operate. Requires but two standard flashlight batteries. Legible code instructions mounted on signal box face. Composed of a High Frequency Buzzer — Blinker Light and telegraph output. Individually packed with complete instructions.



No. 70 (Single Unit)

## Dual Triplex Δ



Two No. 70 Triplex Units packed in an attractive carton with 50 feet of Special Wire and full operating instructions. Units can be arranged for both sending and receiving. (Less Batteries)

No. 71

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## Unbreakable Morse Code Record Set



The scientific way to learn International Morse Code quickly and easily. The complete set consists of five double-faced 10" 78 rpm electrically transcribed unbreakable records in a durable album. Contents include 3 Tables; 10 Lessons.

No. 1800 — Complete No. 1800B — Booklet only  
No. \*1800R—Record only \*Specify lesson number

## Simplex Filtrivolt ▲



Eliminates Radio Noises Caused By —

- Electric Shavers
- Refrigerators
- Fans
- Elevators
- Motors, etc.

No. 90

## Universal Voltage Regulator ▲



This regulator protects tubes through scientific regulation of current fluctuations. Nickel plated steel end rings and perforated housing body. For all Radio Sets, AC, DC.

No. 92

## Filtrivolt Noise Filter ▲



An efficient filter for disturbances caused by electrical appliances. For use with any all-wave or broadcast receiver. Rated conservatively at 250 watts for 32, 110 and 220 volt AC or DC circuits. Can be installed either at the radio or at the source of disturbance.

No. 338

## Filtrivolt ▲



Improves extremely noisy radio reception due to interference on power line caused by electrical appliances, lights, etc.

No. 394

## 3-in-1 Radio Tuner ▲



Functions as either an Antenna Tuner, Wave Trap, or Aerial Eliminator.

Easily installed within a few minutes.

No. 93

## Ear Phones

Complete with Head Bands



Extremely sensitive for true reproduction of faint signals from distant stations inaudible through loud speakers, 2000 ohms. Lightweight-molded bakelite and nickel-plated metal.

No. 23

## Brass Terminal Lugs ▲



Cadmium plated brass terminal lugs suitable for all types of lug requirements.

Cat. No.	Length	Hole Size
5645	1 1/32	No. 8
5646	1/2	No. 6
5654	7/8	1/4
5656	1 1/16	No. 6
5647	7/8	No. 10
5649	1 1/16	No. 8
*5648	1	3/16
5655	1 1/16	No. 8
5653	3/16	No. 6
5650	3/4	No. 6
5651	1 1/16	No. 10
5652	1 1/16	1/4

\* Steel, nickel-plated.

## Nickel-Plated Brass Cup Washers ▲



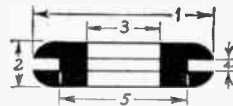
Cat. No.	Hole Size
5713	No. 10

## Nickel-Plated Brass Spring Clip ▲



Cat. No.	Width	Length
5691	3/16	1 1/16
5692	3/16	1 1/2
5693	3/8	1

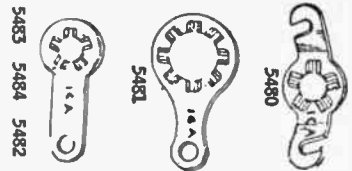
## Flexible Rubber Grommets



Cat. No.	(3) Hole Size	(1) O.O.	(2) Thickness	(4) Slot	(5) Mtg. Width
5633	3/4	1/2	3/32	3/32	1 3/4
5634	3/8	2 1/32	1/4	3/16	1 1/16
5635	1/4	1/2	3/16	3/32	1 1/2
5639	3/32	1/16	3/16	3/16	1 1/2
5637	1/4	3/8	3/8	3/16	1 3/4
5641	1/2	1	3/8	3/32	3/4
5642	3/16	1 1/16	1/4	3/16	1 1/2
5687	3/16	3/8	1/4	3/16	3/8

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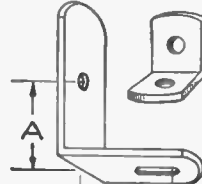
## Everlock Terminal Lugs



Brass cadmium plated terminal lugs.

Cat. No.	Length	Hole Size
5480	1 1/4	No. 6
5481	1 1/4	1/4
5482	3/4	No. 4
5483	3/4	No. 8
5484	7/8	No. 8

## Angles and Brackets ▲



Steel nickel-plated angles and brackets of various sizes.

Cat. No.	A	B	Width
5702	3/32	3/32	3/16
5703	3/8	3/4	3/8
5704	3/32	1 1/8	3/8
5705	3/16	3/16	1/2†
5706	3/8	3/8	3/8†
5707	3/8	1 1/4	3/8†

† One Hole Tapped — One Plain.  
‡ One Slot — One Hole.

## Angle and Bracket Assortment ▲

A complete assortment of 30 popular steel angles and brackets, nickel plated finish.

No. 5800

## Nickel-Plated Steel Oval Head Machine Screws



Cat. No.	Description
5710†	10-32 x 5/8" long

† For Transmitting Racks.

## Cadmium Plated Steel Cable Clamps ▲



Cat. No.	Length	Diam. Bend
5697	3/4	3/16
5698	1 1/8	1/8

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# INSULINE CORPORATION OF AMERICA

## DEALER'S NET COST PRICE LIST FOR CATALOGUE No. 1256\*

Effective March 1, 1957. Prices Subject to Change Without Notice. Prices Indicate  
 "Each" Unless Otherwise Noted. Supersedes All Other Lists of Earlier Dates.

Catalog No.	Dealer Cost	Stand. Pkg.	Catalog No.	Dealer Cost	Stand. Pkg.	Catalog No.	Dealer Cost	Stand. Pkg.	Catalog No.	Dealer Cost	Stand. Pkg.	Catalog No.	Dealer Cost	Stand. Pkg.	Catalog No.	Dealer Cost	Stand. Pkg.
3158			3860			4051			6161	.73	25	29001	1.25	3	29811	1.48	2
3159			3861			4052			6162	.80	25	29002	1.69	3	29812	1.86	2
3175			3862			4053			6163	.38	25	29003	1.90	3	29840	1.25	2
3176			3863			4054			6164	.53	25	29004	2.38	3	29841	1.27	2
3177			3865	48.97	1	4055			6165	4.95	1	29005	1.40	3	29842	1.67	2
3178			3866	60.90	1	4056			6166	.54	25	29006	1.69	3	29843	1.90	2
3183			3867	72.62	1	4057			6170	.61	25	29007	1.82	3	29844	2.50	2
3184			3868			4058			6171			29008	2.01	3	29860	2.90	2
3186			3880	14.90	1	4060			6192			29009	1.92	3	29861	2.90	2
3191			3881	17.97	1	4062			6193			29010	2.85	3	29862	3.62	2
3192			3882	23.33	1	4063			6194			29011	3.16	3	29863	3.62	2
3194			3883	26.83	1	4064			6199			29012	2.39	3			
3209	1.06	10	3884	30	1	4065			6247			29013	2.85	3			
3320			3885	17	1	4066			6248			29014	3.01	3			
3321			3886	19.58	1	4067			6249			29015	2.78	3			
3322			3905	1.13	1	4068			6693			29016	3.37	3			
3397			3906	1.89	1	4069			6696			29017	3.62	3			
3500	.64	10	3910	12.43	1	4070			6697			29018	4.22	3			
3501	.85	10	3911	14.25	1	4072			6865			29019	4.23	3			
3505			3912	23.82	1	4073			6847			29020	4.23	3			
3510			3913	20.43	1	4074			6848			29021	3.80	3			
3513			3914			4075			6849			29022	4.49	3			
3514			3925	3.87	2	4076			6850			29023	3.83	3			
3525	.74	1	3926	5.10	1	4077	1.25	1	7201			29024	4.75	3			
3532			3927	5.81	2	4079	1.81	1	7202			29025	4.17	3			
3570RS			3928	10.50	1	4081	1.64	1	7203			29026	5.27	3			
3571RS			3930	8.18	1	4083	1.92	1	7204			29027	2.68	3			
3572RS			3931	9.19	1	4086	10.84	1	7205			29030	1.27	3			
3573RS			3932	10.80	1	4092	.97	1	7206			29033	1.32	3			
3574RS			3935			4093	1.34	1	7521			29034	2.55	3			
3575RS			3936			4094	1.53	1	7522			29037	3.25	3			
3576RS			3937			4135	3.05	1	7523			29039	3.07	3			
3577RS			3938			4156	.48	1	7524			29043	1.29	3			
3578RS			3942	3.86	2	4300	15.74	1	7525			29044	1.35	3			
3579RS			3943	4.89	2	4301	14.85	1	7526			29047	1.44	3			
3580RS			3944	6.29	2	4310	4.05	10	7530B			29048	1.87	3			
3581RS			3945	8.27	2	4317			7530R			29048	2.96	3			
3600RS	.82	1	3947	2.78	1	5480	12.10M	500	7537			29050	1.64	3			
3601RS	.92	1	3948	5.50	1	5481	9.00M	500	7538			29060	2.83	1			
3602RS	1.10	1	3949	11.05	1	5482	9.00M	500	7539			29061	2.73	1			
3603RS	1.23	1	3950	.90 pr.	1 pr.	5483	9.00M	500	7540			29062	3.01	1			
3604RS	1.47	1	3951	1.04 pr.	1 pr.	5484	9.00M	500	7541			29063	3.45	1			
3605RS	1.81	1	3952	1.24 pr.	1 pr.	5633	3.21C	100	7542			29064	3.93	1			
3606RS	2.10	1	3955	.96 pr.	1 pr.	5634	3.38C	100	7543			29065	4.40	1			
3607RS	2.43	1	3956	1.35 pr.	1 pr.	5635	3.67C	100	7544			29066	4.62	1			
3608RS	2.71	1	3957	1.56 pr.	1 pr.	5637	3.02C	100	7545			29067	5.21	1			
3609RS	3.05	1	3958	1.16 pr.	1 pr.	5639	2.66C	100	7555			29075	.40	3			
3610RS	3.39	1	3962			5641	6.87C	100	7556			29076	.44	3			
3611RS	3.73	1	3963			5642	3.38C	100	7557			29077	.47	3			
3612RS	.82	1	3964			5645			7560			29078	.47	3			
3613RS	.92	1	3965	4.34	2	5646			7561			29079	.47	3			
3614RS	1.10	1	3966	5.64	2	5647			7562			29080	.58	3			
3615RS	1.23	1	3967	6.21	2	5648			7565			29081	.62	3			
3616RS	1.47	1	3968	6.29	2	5649			7566			29082	.47	3			
3617RS	1.81	1	3969	8.06	2	5650			7567			29083	.52	3			
3618RS	2.10	1	3971	4.41	2	5651			7570			29084	.58	3			
3619RS	2.43	1	3972	5.64	2	5652			7571			29085	.62	3			
3620RS	2.71	1	3973	6.21	2	5653			7572			29100	4.37	3			
3621RS	3.05	1	3974	6.29	2	5654			7573			29105	4.75	3			
3622RS	3.39	1	3975	7.10	2	5655			7574			29110	4.53	3			
3623RS	3.73	1	3980	3.04	2	5656			7579			29130	4.58	3			
3641			3981	4.52	2	5681			7584	9.90C	100	29135	4.96	3			
3642			3982	4.89	2	5682			8201	1.65	1	29140	4.75	3			
3643			3983	5.26	2	5684			8202	2.19	1	29200	.91	3			
3644			3984	5.64	2	5687	3.02C	100	8600RS	1.14	1	29200	.91	3			
3651			3986	1.61	2	5691			8601RS	1.39	1	29205	1.27	3			
3652			3987	1.61	2	5692			8602RS	1.92	1	29210	1.39	3			
3653			3988	3.76	2	5693			8603RS	2.40	1	29215	1.18	3			
3654			3990	4.32	2	5695			8604RS	2.88	1	29220	1.30	3			
3662RS			3991	4.79	2	5697			8605RS	3.60	1	29225	2.53	3			
3663RS			3992	5.17	2	5698			8606RS	4.20	1	29300	1.05	3			
3664RS			3993	9.68	2	5702			8607RS	4.83	1	29305	1.43	3			
3665RS			3995	1.08	2	5703			8608RS	5.36	1	29310	1.56	3			
3666RS			3996	1.08	2	5704			8609RS	5.93	1	29315	1.33	3			
3667RS			3997			5705			8610RS	6.51	1	29320	1.52	3			
3668RS			3998			5706			8611RS	6.99	1	29325	2.75	3			
3669RS			3999			5707			8620RS	1.14	1	29335	.69	3			
3670RS			4000			5710			8621RS	1.39	1	29336	.69	3			
3671RS			4001			5713			8622RS	1.92	1	29337	.72	3			
3672RS			4002			5760			8623RS	2.40	1	29338	.94	3			
3673RS			4003			5761			8624RS	2.88	1	29339	1.01	3			
3797			4004			5762			8625RS	3.60	1	29340	1.09	3			
3800	1.47	3	4005			5763			8626RS	4.20	1	29341	1.12	3			
3801	2.11	3	4006			5764			8627RS	4.70	1	29342	1.38	3			
3802	2.05	3	4007			5765			8628RS	5.18	1	29343	1.52	3			
3803	3.06	3	4008			5766			8629RS	5.75	1	29344	2.28	3			
3804	4.06	3	4009			5767			8630RS	6.33	1	29345	2.50	3			
3810	.97	3	4013			5768			8631RS	6.81	1	29346	3.19	3			
3811	1.08	3	4014			5775			8702	.97	1	29347	3.69	3			
3812	1.35	3	4016			5776			8703	.92	1	29400	1.05	3			
3816	1.34	3	4018			5777			8704	1.04	1	29405	1.43	3			
3817	1.48	3	4019			5778			8705	1.12	1	29410	1.56	3			
3818	1.62	3	4020			5779			8706	1.31	1	29415	1.33	3			
3819	1.70	3	4021			5780			8707	1.31	1	29420	1.52	3			
3821	1.92	3	4023			5781			8708	1.37	1	29425	2.75	3			
3822	2.17	3	4024			5782			8712	1.31	1	29435	.84	3			
3823	2																

# CIRCLE F MFG. CO. · ELECTRONICS DIV.



## Porcelain Cleat Receptacle

Medium Base — Two Screw  
660 Watts—250 Volts  
Base Diameter 1 1/8", Overall Diameter 2 1/2"  
Height 1 3/8", Screw Holes Spaced 1 1/8"

CAT. NO.	STD. PKG.	CARTON	PKG. WGT.
226	200	10	49



## Porcelain Cleat Receptacle

Medium Base — Center Supporting Screw  
660 Watts—250 Volts  
Diameter of Base 2", Height 1 3/8"  
Overall Diameter 2 1/2"

CAT. NO.	STD. PKG.	CARTON	PKG. WGT.
223	200	10	48



## Porcelain Cleat Receptacle

Medium Base  
Two Screw Mounting — Shadeholder Groove  
660 Watts—250 Volts  
Base Diameter 2", Overall Diameter 2 1/2"  
Height 1 3/8", Mounting Screw Holes Spaced 1 1/8"

CAT. NO.	STD. PKG.	CARTON	PKG. WGT.
227	200	10	52



## Porcelain Cleat Receptacle

Candelabra Base  
Two Screw Mounting  
75 Watts—125 Volts  
Diameter of Base 1 3/8", Height 7/8"  
Mounting Screw Holes Spaced 1"

CAT. NO.	STD. PKG.	CARTON	PKG. WGT.
*883	200	25	13



## Bakelite Keyless Sign Receptacle

ONE PIECE — MEDIUM BASE  
660 Watts — 600 Volts

Diameter 1 3/4"—Height 1 1/2". Lamp mounting hole size 1 3/4" dia.  
Ear mounting holes spaced 1 1/4". Available with male push-on terminals instead of binding screws. Also available with insulating cover for binding screw terminals only.

CAT. NO.	DESCRIPTION	STD. PKG.	CARTON	PKG. WGT.
266	Lampholder	250	Bulk	14
266-B	Covered Terminals	250	Bulk	15
M-266	With Male Terminals	250	Bulk	14



## Bakelite Fuse Receptacle

SOLID CENTER CONTACT  
30 Amps — 125 Volts

Diameter 1 3/4"—Height 1 1/2". Fuse mounting hole size 1 3/4" dia.  
Ear mounting holes spaced 1 1/4". Available with male push-on terminals instead of binding screws. Also available with insulating cover for binding screw terminals only.

CAT. NO.	DESCRIPTION	STD. PKG.	CARTON	PKG. WGT.
266-A	Fuse Holder	500	Bulk	29
266-AB	Covered Terminals	500	Bulk	30
M-266-A	With Male Terminals	500	Bulk	29



## Porcelain Heater Receptacle

Two Piece  
660 Watts — 250 Volts

Diameter of Ring Body 1 1/4". Height of Ring Body 1 1/2"  
Fits through hole 1 1/4" dia., with 1/8" keyway to prevent rotating.  
Asbestos gasket is furnished.

CAT. NO.	STD. PKG.	CARTON	PKG. WGT.
279	200	Bulk	52



## Bakelite Fixture Socket

with Soldered on Leads of No. 18 Wire  
Medium Base  
660 Watts—250 Volts



## Porcelain Fixture Socket

with Soldered on Leads of No. 18 Wire  
Intermediate Base  
75 Watts—250 Volts  
Diameter: 61/64"—Body Height 1-13/64"  
See chart on next page for other available brackets  
Dimensions shown do not apply to 2400 Series.

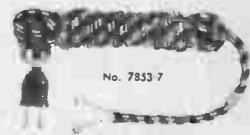
CAT. NO.	STD. PKG.	CARTON	PKG. WGT.
2446	500	Bulk	15



## Porcelain Fixture Socket

with Soldered on Leads of No. 18 Wire  
Medium Base  
660 Watts—250 Volts

CAT. NO.	STD. PKG.	PKG. WGT.
1312-L	500	



## POWER SUPPLY REPLACEMENT CORD SET

7/2" No. 18 10M Cycle H.P.D. Braided Asbestos Heater Cord with Molded Vinyl Cap. Appliance end has 2 eyelets and each leg of the asbestos is wound and wrapped up to and over the braid to prevent fraying.

These Replacement Cord Sets are primarily used on Automatic Irons, Broilers, Stoves and other appliances to which the cord is permanently wired.

CAT. NO.	DESCRIPTION	STD. PKG.	CTN.	PKG. WGT.	CAT. NO.	DESCRIPTION	STD. PKG.	CTN.	PKG. WGT.
7853-6	6' No. 16 H.P.D.	Bulk	100	27	7851-6	6' No. 18 10M Cycle H.P.D.	Bulk	100	24
7853-7	7' No. 16 H.P.D.	Bulk	100	31	7851-7	7' No. 18 10M Cycle H.P.D.	Bulk	100	26
7853-8	8' No. 16 H.P.D.	Bulk	100	35	7851-8	8' No. 18 10M Cycle H.P.D.	Bulk	100	28
7850-6	6' No. 18 3M Cycle H.P.D.	Bulk	100	24	7852-7	7' No. 16 3M Cycle H.P.D.	Bulk	100	31
7850-7	7' No. 18 3M Cycle H.P.D.	Bulk	100	26	7854-7	7' No. 18 H.P.N. Neoprene	Bulk	100	28
7850-8	8' No. 18 3M Cycle H.P.D.	Bulk	100	28	7855-7	7' No. 16 H.P.N. Neoprene	Bulk	100	33

NOTE: Rubber Cops Extra

# ELECTRONICS DIVISION

# CIRCLE F MFG. CO.

TRENTON 4,  
NEW JERSEY



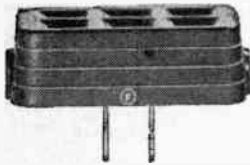
# CIRCLE F MFG. CO. · ELECTRONICS DIV.



**ADAPTER SOCKET**  
Medium Base — Bakelite  
C.S.A. Approval No. 1293

Ideal for nite-lite or work light. Height above blades 1". Fits any standard outlet.  
660 Watts—250 Volts

CAT. NO.	STD. PKG.	CARTON	PKG. WGT.
600 Brown	250	25	19
600-1 Ivory	250	25	19



**TRIPLE PONY CURRENT TAP**  
Bakelite  
C.S.A. Approval No. 1293

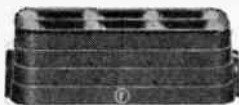
Fits any standard outlet. Will take 3 standard flat or 2 standard round plug caps.  
15A.-125V.—10A.-250V.

CAT. NO.	STD. PKG.	CARTON	PKG. WGT.
634 Brown	200	10	15
634-1 Ivory	200	10	15



**BAKELITE 3-WAY TABLE TAP**  
10 Amperes—250 Volts  
15 Amperes—125 Volts

CAT. NO.	STD. PKG.	CARTON	PKG. WGT.
*638 Brown	200	10	37
*638-1 Ivory	200	10	37



**TRIPLE PONY TABLE TAP**  
Bakelite  
C.S.A. Approval No. 1293

Used for extensions of existing outlets.  
15A.-125V.—10A.-250V.

CAT. NO.	STD. PKG.	CARTON	PKG. WGT.
633 Brown	200	10	13
633-1 Ivory	200	10	13



**BAKELITE PULLCHAIN CURRENT TAP**  
with Two Side Outlets  
250 Watts—250 Volts

CAT. NO.	STD. PKG.	CARTON	PKG. WGT.
625 Brown	250	25	32
625-1 Ivory	250	25	32



**BAKELITE 3-WAY CUBE TAP**  
10 Amperes—250 Volts  
15 Amperes—125 Volts  
C.S.A. Approval No. 1293

CAT. NO.	DESCRIPTION	STD. PKG.	CARTON	PKG. WGT.
604	Brown, Brass Blades	250	25	18
604-I	Ivory, Brass Blades	250	25	18
*604-S	Brown, Steel Blades	250	25	18
*604-SI	Ivory, Steel Blades	250	25	18



**BAKELITE ATTACHMENT PLUG BASE**  
660 Watts—250 Volts

CAT. NO.	STD. PKG.	CARTON	PKG. WGT.
614 Brown	500	25	14
615 Black	500	25	14

**COMPOSITION ARMORED CORD GRIP CAP**  
Cord Hole Diameter 3/8"



CAT. NO.	STD. PKG.	CARTON	PKG. WGT.
114 Brass Blades, Black	250	25	28



**REPLACEMENT CORD WITH MOLDED VINYL CAP — BARE ENDS**  
FOR LAMPS, EXTENSION CORDS, RADIOS, RECORD PLAYERS, TV, SMALL APPLIANCES, CLOCKS, ETC.  
Made of UL Approved No. 18 Type S.P.T.-1 (POT) Plastic Wire with Molded Vinyl Cap.  
Blank End Has 3/4" Strip Ready for Wiring.  
Each Cord Set Individually Banded.

CAT. NO.	DESCRIPTION	STD. PKG.	CTN.	PKG. WGT.
7900-6	6' No. 18 S.P.T.-1 Brown	Bulk	100	13
7900-7	7' No. 18 S.P.T.-1 Brown	Bulk	100	15
7900-8	8' No. 18 S.P.T.-1 Brown	Bulk	100	17
7901-6	6' No. 18 S.P.T.-1 Ivory	Bulk	100	13
7901-7	7' No. 18 S.P.T.-1 Ivory	Bulk	100	15
7901-8	8' No. 18 S.P.T.-1 Ivory	Bulk	100	17



**BAKELITE CUBE TAP EXTENSION CORD SET**  
Blue Donut Label  
Made of UL Approved No. 18 Type S.P.T.-1 (POT) Plastic Wire with Molded Vinyl Cap and No. 632 Cube Tap Extension 15A — 125V

CAT. NO.	DESCRIPTION	STD. PKG.	CTN.	PKG. WGT.
7910-6	6' Extension, Brown	Bulk	100	20
7910-9	9' Extension, Brown	Bulk	100	25
7910-12	12' Extension, Brown	Bulk	100	30
7910-15	15' Extension, Brown	Bulk	100	35
7910-20	20' Extension, Brown	Bulk	100	44
7911-6	6' Extension, Ivory	Bulk	100	20
7911-9	9' Extension, Ivory	Bulk	100	25
7911-12	12' Extension, Ivory	Bulk	100	30
7911-15	15' Extension, Ivory	Bulk	100	35
7911-20	20' Extension, Ivory	Bulk	100	44



**BAKELITE PONY TABLE TAP EXTENSION CORD SET**  
With 3 Outlets  
Blue Donut Label  
Made of UL Approved No. 18 Type S.P.T.-1 (POT) Plastic Wire with Molded Vinyl Cap and No. 633 Pony Table Tap 15A — 125V

CAT. NO.	DESCRIPTION	STD. PKG.	CTN.	PKG. WGT.
7920-6	6' Extension, Brown	Bulk	100	19
7920-9	9' Extension, Brown	Bulk	100	24
7920-12	12' Extension, Brown	Bulk	100	29
7920-15	15' Extension, Brown	Bulk	100	34
7921-6	6' Extension, Ivory	Bulk	100	19
7921-9	9' Extension, Ivory	Bulk	100	24
7921-12	12' Extension, Ivory	Bulk	100	29
7921-15	15' Extension, Ivory	Bulk	100	34



**BAKELITE JUMBO TABLE TAP EXTENSION CORD SET**  
With 3 Outlets  
Made of UL Approved No. 18 Type S.P.T.-1 (POT) Plastic Wire with Molded Vinyl Cap and No. 638 Table Tap 15A — 125V

CAT. NO.	DESCRIPTION	STD. PKG.	CTN.	PKG. WGT.
*7930-6	6' Extension, Brown	Bulk	100	30
*7930-9	9' Extension, Brown	Bulk	100	35
*7930-12	12' Extension, Brown	Bulk	100	40
*7930-15	15' Extension, Brown	Bulk	100	45
*7931-6	6' Extension, Ivory	Bulk	100	30
*7931-9	9' Extension, Ivory	Bulk	100	35
*7931-12	12' Extension, Ivory	Bulk	100	40
*7931-15	15' Extension, Ivory	Bulk	100	45

NOTE: Rubber Caps Extra

**ELECTRONICS DIVISION**  
**CIRCLE F MFG. CO.** TRENTON 4, NEW JERSEY



# Gee-Lar RADIO AND TELEVISION KNOBS



**G-L #1220 FRONT CHANNEL KNOB**  
Plated gold finish inlay. 2 1/4" dia. 3/8" height. Fits .250" dia. shaft with .156" flat. Calibrated for Standard Tuner. No. 1220 List \$1.25



**G-L #1225 REAR KNOB FOR #1220**  
2 5/8" Dia. 3/8" Height. Fits 3/8" Dia. Shaft with .328" flat. No. 1225 List \$0.45



**G-L #1230 FRONT KNOB OFF-ON, ETC.**  
Plated gold finish inlay. 2 1/4" Dia. 3/8" Height. Fits .187" Dia. Shaft with .156" flat. No. 1230 List \$1.10



**G-L #1235 REAR KNOB FOR #1230**  
2 3/8" Dia. 3/8" Height. Fit .256" Dia. Shaft with .234" flat. No. 1235 List \$0.45



**G-L #1240 TV KNOB SET**  
Complete set of four TV knobs at left. Boxed. Color, walnut only. For Standard Tuners. No. 1240 List \$3.00



**G-L #3460 FRONT CHANNEL KNOB**  
Plated gold finish inlay. 2 3/4" Dia. 3/8" Height. Fits .250" Dia. Shaft and .156" flat. Calibrated for Standard Tuner. No. 3460 List \$1.25



**G-L #3465 REAR KNOB FOR #3460**  
2 3/4" Dia. 3/8" Height. Fits 3/8" Dia. Shaft with .328" flat. Finger Tip Tuning. No. 3465 List \$0.45



**G-L #3470 FRONT KNOB OFF-ON, ETC.**  
Plated gold finish inlay. 2 3/4" Dia. 3/8" Height. Fits .187" Dia. Shaft with .156" flat. No. 3470 List \$1.10



**G-L #3475 REAR KNOB FOR #3470**  
2 3/4" Dia. 3/8" Height. Fits .368" Dia. Shaft with .324" flat. Finger Tip Tuning. No. 3475 List \$0.45



**G-L #3480 KNOB SET**  
Complete set of four TV knobs at left. Boxed. Color, walnut only. For Standard Tuners. No. 3480 List \$3.00

## GEE-LAR NEW GOLD METAL INLAY RADIO KNOBS

Beautiful, Modern Knobs — To Replace Knurl Type Knobs



**TENITE PLATED GOLD INLAY**

2 1/2" Dia. 1/2" H. Fits 1/4" Shaft. No. 1540 List \$0.50 Knurl Type



**TENITE PLATED GOLD INLAY**

1 1/2" Dia. 1/2" H. Fits 1/4" Shaft. No. 1541 List \$0.40 Knurl Type No. 1541S List \$0.45 Spring Type Walnut Only



**TENITE PLATED GOLD INLAY**

1 1/2" Dia. 1/2" H. Fits 1/4" Shaft. No. 1542 List \$0.38 Knurl Type No. 1542S List \$0.40 Spring Type Walnut Only



**TENITE PLATED GOLD INLAY**

1 1/4" Dia. 1/2" H. Fits 3/8" Shaft. No. 1543 List \$0.35 Knurl Type No. 1543S List \$0.40 Spring Type Walnut or Ivory



**TENITE PLATED GOLD INLAY**

1" Dia. 3/8" Height. Fits 1/4" Shaft. No. 1544 List \$0.30 Knurl Type No. 1544S List \$0.35 Spring Type Walnut or Ivory



**TENITE PLATED GOLD INLAY**

1" Dia. 1/2" Height. Fits 1/4" Shaft. No. 1545 List \$0.28 Knurl Type No. 1545S List \$0.30 Spring Type Walnut or Ivory



**TENITE PLATED GOLD INLAY**

1" Dia. 3/4" Height. Fits 1/4" Shaft. No. 1546 List \$0.28 Knurl Type No. 1546S List \$0.30 Spring Type Walnut or Ivory



**TENITE PLATED GOLD INLAY**

3/4" Dia. 3/8" Height. Fits 1/4" Shaft. No. 1547 List \$0.26 Knurl Type No. 1547S List \$0.30 Spring Type Walnut or Ivory

## INSTRUMENT KNOBS

All Knobs are Set Screw Type with Brass Inserts for 1/4" Shafts. Black only.



No. 580SS List \$0.70 Dia. 1 1/8", H. 5/8", 3/4" Pointer.

No. 590SS List \$0.77 Dia. 1 3/8", H. 1 1/8", 1 1/8" Pointer.

No. 600SS List \$0.88 Dia. 1 5/8", H. 3/4", 1 1/4" Pointer.

No. 610SS List \$1.10 Dia. 2 3/8", H. 7/8", 1 1/2" Pointer.



No. 620SS List \$0.72 Dia. 1 1/2", H. 1 1/8", 1 1/2" Skirt.

No. 625SS List \$0.72 Dia. 1 1/2", H. 1 1/8", 1 3/4" Skirt.

No. 630SS List \$0.72 Dia. 1 3/4", H. 7/8", 1 3/4" Skirt.

No. 635SS List \$0.72 Dia. 1 3/4", H. 7/8", 1 3/4" Skirt.



No. 660SS List \$0.38 Dia. 1 1/8", H. 5/8".

No. 670SS List \$0.44 Dia. 1 1/8", H. 1 1/8".

No. 680SS List \$0.55 Dia. 1 5/8", H. 3/4".

No. 690SS List \$0.83 Dia. 2 3/8", H. 7/8".



No Brass Inserts

No. 700SS List \$0.28 Skirt Dia. 1 3/4", H. 3/4". Set Screw Type.

No. 710SS List \$0.28 Skirt Dia. 1 1/2", H. 3/4". Set Screw Type.

## Gee-Lar AUTOMOBILE RADIO KNOBS

To fit 1/4" Shafts; 3/16" Bushings to Accommodate 3/16" Shafts Included.



Tenite

No. List  
780SS \$0.40  
Dia. 7/8", H. 1 1/8"  
Set Screw Type



Tenite

No. List  
790SS \$0.40  
Dia. 7/8", H. 1 1/8"  
Set Screw Type



Tenite

No. List  
800SS \$0.40  
D. 7/8", H. 7/8"  
Set Screw Type



Tenite

No. List  
810SS \$0.40  
Dia. 1 1/8", H. 1 1/8"  
Set Screw Type



Tenite

No. List  
820SS \$0.45  
Dia. 1 1/8", H. 1 1/2"  
Set Screw Type



Tenite

No. List  
854SS \$0.45  
Chrome Inlay  
Black Color  
D. 7/8", H. 3/4"  
Set Screw Type



Tenite

No. List  
830SS \$0.40  
D. 1 1/8", H. 7/8"  
Set Screw Type



Tenite

No. List  
840SS \$0.40  
D. 1 1/8", H. 5/8"  
Set Screw Type



Tenite

No. List  
850SS \$0.40  
D. 3/4", H. 1/2"  
Set Screw Type



Chrome Plated Metal Knob

No. List  
851SS \$0.35  
D. 1/2", H. 3/4"  
Set Screw Type



Tenite

No. List  
852SS \$0.35  
D. 1 1/8", H. 7/8"  
Set Screw Type



G-L Reducing Bushings

To reduce from 1/4" to 3/16" size shafts.  
No. List  
853-E \$0.44  
Enr. 8  
853-G \$7.15  
Box 144

All Knobs for 1/4" Shafts. Distributor's Standard Package 12 Knobs of a Type to a Box.

# Gee-Lar TELEVISION KNOBS

Knobs for Sets using dual controls and tuners made by Standard Coil, Sarkis-Tarzian, RCA, Leonard and others. Also TV Sets such as RCA, Leonard, Bendix, Westinghouse, Admiral, Hoffman, Packard-Bell, etc. Walnut pattern knobs with plated gold finish inlay on face of knobs.



**G-L FRONT DUAL CONTROL KNOB**  
 1 1/8" O.D. Used with rear knob No. 1205 and others.  
 No. 1202 List \$0.45  
 Fits 1/4" Knurl Shaft  
 No. 1203 List \$0.50  
 Fits 1/4" Flatted Shaft  
 No. 1204 List \$0.50  
 Fits .202" Flatted Shaft



**G-L REAR DUAL CONTROL KNOB**  
 1 5/8" diameter. For standard .265" diameter rear keyway shaft. Used as mate to front dual control knobs.  
 No. 1205 Rear Knob List \$0.28



**G-L COMBINATION DUAL KNOB**  
 Dual dummy type knob. Front and rear dual knob combined into one for matching on cabinet. 1 5/8" diameter. Fits 1/4" flatted shaft.  
 No. 1206 List \$0.75  
 Combination Dummy Knob



**G-L DUAL TUNER BAR KNOB**  
 Front bar knob for use on dual controls and tuners. 2" length. Can be used in combination with knob No. 1208 and others. Fits 1/4" diameter flat shaft.  
 No. 1207 Bar Knob List \$0.90



**G-L REAR DUAL TUNER KNOB**  
 For dual tuners and controls. Used with No. 1207 knob and others. 1 3/8" diameter. For standard 3/8" diameter rear flat shaft.  
 No. 1208 List \$0.28  
 Rear Dual Knob



**G-L CHANNEL INDICATOR PLATE**  
 Used on sets using radio condenser TV tuner, etc. For Sparton, Farnsworth, Sonora, Meck, etc. Matches knobs listed above. Fits standard 3/8" diameter rear flat shaft.  
 No. 1209 List \$0.75  
 Channel Indicator Plate



**G-L FRONT CHANNEL KNOB**  
 Front dual control knob used on channel tuners and controls for Motorola, Hallcrafters, Stromberg-Carlson, etc., and sets using Chicago Telephone tuner. 1 1/8" diameter. Fits .202" diameter flat shaft.  
 No. 1210 List \$0.22  
 Front Knob



**G-L REAR CHANNEL KNOB**  
 Rear dual control knob. Walnut. Mate to No. 1210. Center hole for .285" rear keyway shaft. 1 1/4" diameter.  
 No. 1211 Rear Knob List \$0.22



**G-L COMBINATION DUAL DUMMY KNOB**  
 A combination of knobs Nos. 1210 and 1211. Used to match cabinet design on single control. 1 1/4" diameter at base. Fits on 3/4" knurled shaft.  
 No. 1213 List \$0.45  
 Combination Knob



**G-L TELEVISION KNOB SPRINGS**  
 Necessary replacement springs for use on television knobs. Special sizes of springs not regularly used on older type radios.  
 No. List  
 Type A - Fits small .202" dia. flat shaft.  
 1214-G Gross \$5.05  
 1214-M 1000 30.25  
 Type B - Fits 3/8" diameter flat shaft.  
 1215-G Gross \$4.10  
 1215-M 1000 24.75

## NEW TV KNOBS TO FIT RCA SETS AND OTHERS

Sturdy and Substantial Knobs Combined with Beauty for Lasting Performance



**G-L FRONT DUAL BAR POINTER CHANNEL KNOB**  
 Push-on type to fit standard 1/4" shaft flatted to .158", complete with spring. Flat adjacent to pointer.  
 No. 3600 List \$0.50  
 Bar Pointer



**G-L REAR CHANNEL KNOB FOR #3600**  
 Push-on type to fit 3/8" shaft flatted to .327". Complete with spring.  
 No. 3601 List \$0.45  
 Rear Knob



**G-L FRONT KNOB OFF-ON-VOLUME, ETC.**  
 Push-on type to fit 3/8" shaft flatted to .156". Complete with spring.  
 No. 3602 List \$0.25  
 Front Knob



**G-L REAR KNOB FOR #3602**  
 Push-on type to fit 17/64" shaft flatted to .237". Complete with spring.  
 No. 3603 List \$0.45  
 Rear Knob



**G-L #3604 TV KNOB SET**  
 Set of 4 TV knobs at left. boxed. Color, brown only.  
 No. 3604 List \$1.65  
 Complete Set

## POINTER KNOBS TO FIT STANDARD 1/4" SHAFTS

Distributors' Standard Package — 12 Knobs of a Type to a Box — Set Screw Type Except Where Noted

 Dia. 1" Ht. 3/8" No. 860 Tenite List \$0.13 860SS \$0.17 Walnut or Ivory	 Dia. 3/4" Ht. 3/8" No. 870 Tenite List \$0.13 870SS \$0.15 Walnut or Ivory	 Dia. 1 1/8" Ht. 3/8" No. 880 Tenite List \$0.13 880S Spring Type \$0.13 Walnut or Ivory	 Dia. 1 1/4" Ht. 3/8" No. 890SS Bakelite List \$0.20 Black, Walnut, Red, Ivory	 Dia. 1 1/4" Ht. 3/8" No. 900SS Bakelite List \$0.17 Walnut or Black	 Dia. 1 1/4" Ht. 3/8" No. 910SS Tenite List \$0.33 Walnut, Bk., Red, White
 Dia. 1 1/4" Ht. 3/8" No. 920SS Bakelite List \$0.33 Walnut or White	 Dia. 1 1/4" Ht. 3/8" No. 930SS Bakelite List \$0.33 Walnut or White	 Dia. 1 1/4" Ht. 3/8" No. 940SS Bakelite List \$0.22 Walnut, Black, Red or Ivory	 Dia. 2 1/4" Ht. 3/8" No. 950SS Bakelite List \$0.30 Walnut, Black, Red or Ivory	 Dia. 1 1/4" Ht. 3/8" No. 960SS Bakelite List \$0.17 Walnut, Black, Red or Ivory	 Dia. 2 1/4" Ht. 3/8" Brass Insert Black or Walnut No. 970SS Bakelite List \$0.28 Plain 1/4" Hole 970ASS \$0.38
 Dia. 1 1/4" Ht. 3/8" No. 980SS Bakelite List \$0.20 Plain 1/4" Hole Black or Walnut	 Dia. 1 1/4" Ht. 3/8" No. 990SS Bakelite List \$0.21 Plain 1/4" Hole Black, Walnut, Red or Ivory	 Dia. 1 1/4" Ht. 3/8" No. 1000SS Bakelite List \$0.22 Black, Walnut, Red or Ivory	 Dia. 2" Ht. 3/8" No. 1010SS Bakelite List \$0.33 1/4" Hole Black, Walnut, Red, Ivory	 Dia. 1 1/4" Ht. 3/8" No. 1020SS Bakelite List \$0.46 1/4" Hole Brass Insert Black, Walnut, Red, Ivory	 Dia. 1 1/4" Ht. 3/8" No. 1030SS Bakelite List \$0.33 Brass Insert Black or Walnut
 Dia. 1 1/4" Ht. 3/8" No. 1040SS Bakelite List \$0.29 Metal Insert Black or Walnut	 Dia. 1 1/4" Ht. 3/8" No. 1050SS Bakelite List \$0.31 Brass Insert Black, Walnut, Red or Ivory				

## Gee-Lar

### RADIO KNOB KITS

No. 1250 Assmt. "A" Contents: 36 Asstd. Knurled Type \$4.35	No. 1254 Assmt. "E" Contents: 30 Asstd. as follows: 10 Set Screw, 10 Spring Type, 10 Knurled Type \$4.35
No. 1251 Assmt. "B" Contents: 30 Asstd. Spring Type 4.35	No. 1255 Assmt. "F" Contents: 50 Asstd. Push Buttons 4.35
No. 1252 Assmt. "C" Contents: 26 Asstd. Set Screw Type 4.35	No. 1256 Assmt. "H" Contents: 24 Asstd. Pointer and Bar Set Screw Knobs ..... 4.35
No. 1253 Assmt. "D" Contents: 12 Asstd. Auto Radio with Brass Bushings and Reducing Bushings for 3/8" Shaft ..... 4.35	

All Knobs for 1/4" Shafts — Distributors' Standard Package—12 Knobs of a Type to a Box.

# Gee-Lar RADIO AND TELEVISION KNOBS

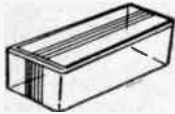
 <p>No. Tenite List 10 Knurl Type \$0.13 10S Spring Type \$0.15 10SS \$0.17 Set Screw Type Walnut or Ivory</p>	 <p>No. Tenite List 20 Knurl Type \$0.13 Walnut or Ivory</p>	 <p>No. Tenite List 30 Knurl Type \$0.13 30S Spring Type \$0.13 30SS \$0.17 Set Screw Type Walnut or Ivory</p>	 <p>No. Tenite List 40 Knurl Type \$0.13 40SS \$0.15 Walnut or Ivory</p>	 <p>No. Tenite List 50 Knurl Type \$0.13 50S Spring Type \$0.13 Walnut or Ivory</p>	 <p>No. Tenite List 60 Knurl Type \$0.13 Walnut or Ivory 1/4" Shank Extension</p>
 <p>No. Tenite List 70 Knurl Type \$0.13 70SS \$0.15 Set Screw Type Walnut or Ivory</p>	 <p>No. Tenite List 80 Knurl Type \$0.13 Walnut or Ivory</p>	 <p>No. Tenite List 90 Knurl Type \$0.13 90S Spring Type \$0.13 Walnut or Ivory</p>	 <p>No. Tenite List 100 Knurl Type \$0.13 1/4" Shank Only Walnut or Ivory</p>	 <p>No. Tenite List 110 Knurl Type \$0.13 110S Spring Type \$0.15 110SS \$0.17 Set Screw Type Walnut or Ivory</p>	 <p>No. Tenite List 120 Knurl Type \$0.13 Walnut or Ivory 1/4" Shank Extension</p>
 <p>No. Tenite List 130 Knurl Type \$0.13 130S Spring Type \$0.15 Walnut or Ivory</p>	 <p>No. Tenite List 140 Knurl Type \$0.15 140S Spring Type \$0.17 140SS \$0.20 Set Screw Type Walnut or Ivory</p>	 <p>No. Tenite List 150 Knurl Type \$0.15 Walnut or Ivory 1/2" Shank Extension</p>	 <p>No. Tenite List 165 Knurl Type \$0.13 Crystal Clear</p>	 <p>No. Bakelite List 170SS \$0.17 Set Screw Type</p>	 <p>No. Bakelite List 175SS \$0.22 Set Screw Type Walnut, Black, Red or Ivory</p>
 <p>No. Bakelite List 180 Knurl Type \$0.13 Walnut Only</p>	 <p>No. Tenite List 200 Knurl Type \$0.13 200SS \$0.15 Set Screw Type Walnut or Ivory</p>	 <p>No. Bakelite List 210SS \$0.15 Set Screw Type Walnut, Black or Ivory</p>	 <p>No. Tenite List 220 Knurl Type \$0.13 Walnut or Ivory 1/4" Shank Extension</p>	 <p>No. Tenite List 230 Knurl Type \$0.13 Walnut or Ivory 1/4" Shank Extension</p>	 <p>No. Tenite List 240 Knurl Type \$0.13 240SS \$0.15 Set Screw Type Walnut or Ivory</p>
 <p>No. Tenite List 250 Knurl Type \$0.13 Walnut or Ivory 1/2" Shank Extension</p>	 <p>No. Tenite List 270 Knurl Type \$0.13 Walnut or Ivory 1/2" Shank Extension</p>	 <p>No. Tenite List 280 Knurl Type \$0.13 Walnut or Ivory</p>	 <p>No. Tenite List 290 Knurl Type \$0.13 Walnut or Ivory 1/4" Shank Extension</p>	 <p>No. Tenite List 300 Knurl Type \$0.13 300S Spring Type \$0.15 Walnut or Ivory</p>	 <p>No. Tenite List 310 Knurl Type \$0.13 Walnut or Ivory</p>
 <p>No. Tenite List 320 Knurl Type \$0.13 Walnut or Ivory</p>	 <p>No. Tenite List 330 Knurl Type \$0.13 Walnut or Ivory</p>	 <p>No. Tenite List 340 Knurl Type \$0.15 Walnut or Ivory</p>	 <p>No. Tenite List 350 Knurl Type \$0.13 350S \$0.15 Spring Type Walnut or Ivory</p>	 <p>No. Bakelite List 360 Knurl Type \$0.13 360S \$0.13 Spring Type 360SS \$0.15 Set Screw Type Walnut, Black or Ivory</p>	 <p>No. Bakelite List 370 Knurl Type \$0.15 370S \$0.15 Spring Type 370SS \$0.17 Walnut, Black or Ivory</p>
 <p>No. Tenite List 390 Knurl Type \$0.13 Walnut or Ivory</p>	 <p>Tenite Needle Cups No. List 400 \$0.11 Per 1000 \$77.00 Walnut</p>	 <p>No. Bakelite List 410SS \$0.33 Set Screw Type Walnut or Ivory</p>	 <p>No. Bakelite List 420SS \$0.33 Molded Hole 420BSS \$0.46 Brass Insert Set Screw Type Black or Walnut</p>	 <p>No. Bakelite List 430SS \$0.33 Molded Hole 430BSS \$0.38 Brass Insert Set Screw Type Black or Walnut</p>	 <p>No. Bakelite List 440BSS \$0.28 Molded Hole 440BSS \$0.38 Brass Insert Set Screw Type Black or Walnut</p>
 <p>No. Bakelite List 460SS \$0.20 Set Screw Type Walnut or Ivory</p>	 <p>No. Bakelite List 470SS \$0.18 Set Screw Type Walnut or Ivory</p>	 <p>No. Bakelite List 480SS \$0.20 Set Screw Type Walnut or Ivory</p>	 <p>No. Bakelite List 490SS \$0.20 Set Screw Type Walnut or Ivory</p>	 <p>No. Tenite List 495 Knurl Type \$0.15 Ivory Only 1/4" Shank Ext.</p>	 <p>No. Tenite List 510 Knurl Type \$0.13 Walnut or Ivory</p>
 <p>No. Tenite List 530 Knurl Type \$0.13 Walnut or Ivory</p>	 <p>No. Bakelite List 531SS \$0.20 Set Screw Type Walnut or Ivory</p>	 <p>No. Bakelite List 532SS \$0.20 Set Screw Type Walnut or Ivory</p>	 <p>Tenite Dial Knob No. Walnut List 560 \$0.22 1/4" Shank Extension to fit 1/4" Knurl Shaft</p>	 <p>No. List 533SS \$0.55 Set Screw Type Black Bakelite with molded white arrow, brass bushing</p>	 <p>No. Bakelite List 534SS \$0.20 Set Screw Type Walnut or Ivory</p>

All knobs for 1/4" shafts — Distributors' Standard Package 12 Knobs of a Type to a Box



# Gee-Lar RADIO AND TELEVISION PRODUCTS

GEE-LAR PLASTIC BOXES — MADE OF CLEAR, TRANSPARENT, RIGID PLASTIC



### GEE-LAR PLASTIC BOX

Handy box for all types of parts, knobs, condensers, controls, etc. Keep everything handy on the shelf. Supplied with cover. Size: 4" x 4" x 2 1/2" deep.

No. 3650	Plastic Box	List \$0.60
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### GEE-LAR STOCK BOX

Handy box for servicemen's bench, shelves. Also used for jobbers' display shelves. Ideal for displaying knobs, resistors, condensers, etc. Supplied with cover. Size: 4" x 8" x 2 1/2" deep.

No. 3651	Plastic Box	List \$1.20
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### GEE-LAR MIDGET BOX

Ideal plastic box for small screws, nuts, springs, grommets and other small essential parts. Hinged cover with snap on lock. Handy to carry in your tool kit or for the work bench. Size: 2 1/2" x 1 1/4" x 3/4" deep.

No. 3693	Plastic Box	List \$0.12
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### GEE-LAR BENCH BOX

Handy round container for holding small parts on the bench while working on the set. Keeps parts from getting lost. Supplied with cover. Size: 5 1/4" dia. x 5 1/2" deep.

No. 3653	Bench Box	List \$1.25
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### GEE-LAR PARTITION BOX

Handy box with 12 sections and a hinged cover. Keeps all small parts such as screws, nuts, springs, etc. just where you can find them. Handy to carry with you. Size: 7" x 3 1/2" x 1 1/4".

No. 3654	Partition Box	List \$1.65
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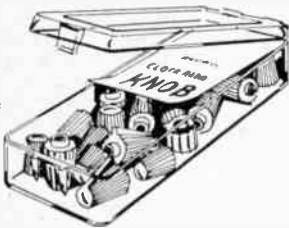
## NEW GEE-LAR CLOCK-RADIO KNOBS

### CLOCK-RADIO KNOB KIT

Assortment of 25 knobs, all colors to fit any type of shaft. Packed in convenient plastic storage box.

Kit No. 1630  
List \$3.75

KEEP A KIT ON HAND FOR ALL REPLACEMENTS.



## INDIVIDUAL CLOCK-RADIO KNOBS



### METAL JACKET GOLD TYPE (Double Barrier)

No. 1585 List \$0.35  
(Packed 10 to Plastic Box)



### Colored Plastic (Single Barrier)

No.	List
1600 25 Asst.	\$3.75
1601 Brown, ea.	.15
1602 Ivory, ea.	.15
1603 Red, ea.	.15
1604 White, ea.	.15
1605 Blue, ea.	.15
1606 Green, ea.	.15



### Colored Plastic (Spring Type)

No.	List
1610 25 Asst.	6.25
1611 Brown, ea.	.25
1612 Ivory, ea.	.25
1613 Red, ea.	.25
1614 White, ea.	.25
1615 Blue, ea.	.25
1616 Green, ea.	.25



### Colored Plastic (Double Barrier)

No.	List
1620 25 Asst.	3.75
1621 Brown, ea.	.15
1622 Ivory, ea.	.15
1623 Red, ea.	.15
1624 White, ea.	.15
1625 Blue, ea.	.15
1626 Green, ea.	.15

Individual colors packed 10 per box.



### ASSORTED RADIO KNOBS

A plastic bag containing 35 assorted popular knobs, knurl, spring and set screw types.

No. 1200	Kit	List \$1.65
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### MARKED RADIO KNOBS

Another plastic bag kit containing 50 assorted marked radio knobs. They include volume, off, tune, etc.

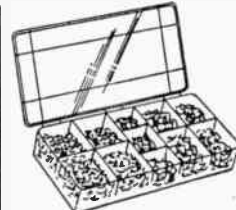
No. 1201	Kit	List \$1.65
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### GEE-LAR PLASTIC TELEVISION PLIERS

Made of high-impact bakelite will stand high voltage. An insulated long nose plier that is absolutely shock proof. Handy in picking up nuts and bolts or parts when set is "hot."

No. 3689	Plastic Pliers	List \$2.25
3689-D	Display of 12	27.00



### GEE-LAR TELEVISION AND RADIO KNOB SPRING KIT

Springs for New TV and Radio Knobs

The right assortment of springs for the serviceman. Over 12 different knob springs for all types of knobs. Plastic box 7" x 3 1/2" x 1 1/4", with hinge covers.  
No. 3658 100 Springs, Plastic Box List \$3.50

## KNOB AND PLATE COMBINATIONS



### JOBBERS' DISPLAY BOARD #905

Display board is made up of modern knob and plate combinations in various colors.

No. 905 List \$16.00  
Knob and Plate Display Board, Complete with Knobs  
**JOBBERS' KNOB AND PLATE — STOCK DEAL WITH DISPLAY BOARD — DEAL #906**

A starting stock deal that gives you a display board and assorted plates and knobs in various colors. All knobs packaged in marked boxes for easy stocking.  
Deal Includes:  
125 Assorted Marked Plates — 55¢ ea. \$ 68.75  
125 Assorted Color Knobs for Plates — 33¢ ea. 41.25  
1 Display Board with 20 Knobs and 20 Plates 16.00  
Deal No. 906 ..... 126.00



### GEE-LAR PLATES ARE AVAILABLE IN THE FOLLOWING MARKINGS:

Permanently Heat-Stamped in Either 180° or 270° — Volume, Treble, Phono, Gain, Mike, Tone, Bass. Special wording available on payment of special stamping die charges.

#### NOT MARKED PLATE ONLY

Bakelite, Dia. 1 1/4", Ht. 3/8".  
Colors: Red, White, Black, Walnut.

No. 1060	Plain Plate (Specify Color)	List \$0.33
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#### 180° MARKED PLATE ONLY

Bakelite, Dia. 1 1/4", Ht. 3/8".  
Colors: Red, White, Black, Walnut.

No. 1070	180° Plate (Specify Color and Marking Wanted)	List \$0.55
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#### 270° MARKED PLATE ONLY

Bakelite, Dia. 1 1/4", Ht. 3/8".  
Colors: Red, White, Black, Walnut.

No. 1080	270° Plate (Specify Color and Marking Wanted)	List \$0.55
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### MATCHING POINTER KNOB FOR PLATES

Bakelite, to fit all plates. Colors: Red, White, Black, Walnut.

No. 9105S	Set Screw Type (Specify Color)	List \$0.33
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### MATCHING TRI-GRIP POINTER FOR PLATES

Bakelite, to fit all plates. Colors: Black and Walnut.

No. 9205S	Set Screw Type (Specify Color)	List \$0.33
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### MATCHING TWO-GRIP POINTER FOR PLATES

Bakelite, to fit all plates. Colors: Black and Walnut.

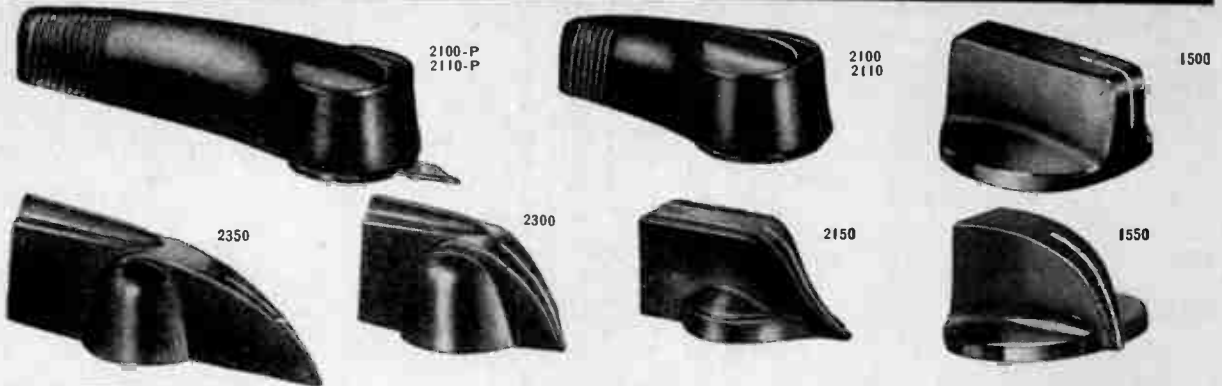
No. 9305S	Set Screw Type (Specify Color)	List \$0.33
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All Knobs for 1/4" Shafts — Distributors' Standard Package 12 Knobs of a Type to a Box

# Harry Davies Molding Co.

Molders of Plastics

## POINTER AND BARK NOBS



No. 1500. Dia. 1 1/8", hgt. 9/16", 1/4" molded hole, set screw or knurled hole mounting, locknut recess, indicator line filled or unfilled.

No. 1550. Dia. 1-3/16", hgt. 5/8", 1/4" molded hole or metal insert, set screw, spring or knurled hole mounting, locknut recess.

No. 2100. Length 2 1/2", hgt. 5/8", width 3/4", 1/4" molded hole or metal insert, set screw mounting, locknut recess.

No. 2110. Length 1 3/4", hgt. 19/32", width 3/4", 1/4" molded hole or metal insert, set screw or knurled hole mounting, locknut recess.

No. 2100-P. Length 2 1/2", hgt. 5/8", width 3/4", metal insert and 5/16" pointer, set screw mounting.

No. 2110-P. Length 1 3/4", hgt. 19/32", width 3/4", metal insert and 5/16" pointer, set screw mounting.

No. 2150. Length 1 1/4", hgt. 9/16", 1/4" molded round or hex hole, set screw mounting, locknut recess.

No. 2300. Length 1 1/4", hgt. 5/8", 1/4" molded hole round, hex or "D" shape, also 1/4" metal insert, set screw or knurled hole mounting, locknut recess.

No. 2350. Length 2", hgt. 5/8", 1/4" molded hole or metal insert, set screw mounting, locknut recess.

## CONTROL KNOBS



No. 1400. Dia. 1 1/16", hgt. 13/32", 1/4" molded hole or brass insert, set screw, spring or knurled hole mounting.

No. 1450. Dia. 1 1/16", hgt. 13/32", 1/4" molded hole or brass insert, set screw, spring or knurled hole mounting.

No. 1470. Dia. 1", hgt. 1/2", 1/4" molded hole or brass insert, set screw, spring or knurled hole mounting, indicator line filled or unfilled, locknut recess.

No. 1475. Dia. 1", hgt. 1/2", 1/4" molded hole or metal insert, set screw, spring or knurled hole mounting, locknut recess.

No. 1600. Dia. 1 1/2", hgt. 1 1/16", 1/4" molded hole or metal insert, set screw mounting, locknut recess, indicator line filled or unfilled.

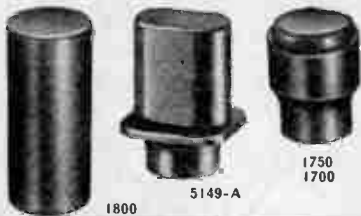
No. 1610. Dia. 1 5/16", hgt. 3/8", 1/4" molded hole or metal insert, set screw mounting, locknut recess, indicator line filled or unfilled.

No. 1700. Dia. 3/4", hgt. 19/32", 1/4" molded hole, set screw, spring or knurled hole mounting.

No. 2500. Dia. 3/4", hgt. 3/4", 1/4" molded hole, set screw, spring or knurled hole mounting.

No. 2600. Dia. 7/8", hgt. 7/8", 1/4" molded hole, set screw, spring or knurled hole mounting.

## PUSH BUTTONS



No. 1800. Dia. 7/16", hgt. 1" to 1 1/4", touch tuning, plain or recessed top, push on, self locating, also with studs of various lengths patented friction fit.

No. 5149-A. Hgt. 51/64", oval touch tuning, push-on, self locating, patented friction fit.

No. 1750. Dia. 31/64", hgt. 9/16" to 15/16", touch tuning, push on, self locating, patented friction fit.

No. 1770. Dia. 31/64", hgt. 1/2" to 7/8", 6-32 or 8-32 male or female metal insert.

## TERMINAL NUTS



No. 2960  
Dia. 7/8", hgt. 1/2", 8-32 or 10-32 female metal insert, 10-24 or 10-32 male stud.

No. 2710  
Dia. 3/4", hgt. 1/2", 8-32, 10-32, 10-24 metal insert with or without metal face on bottom.

## SPINNER KNOBS



No. 99. Dia. 3 3/4", hgt. 1 1/2", 3/8" or 1/2" molded hole or metal insert. Set screw mounting, with or without spinner.

# Harry Davies Molding Co.

Molders of Plastics

## METER CASES

### AND COVER

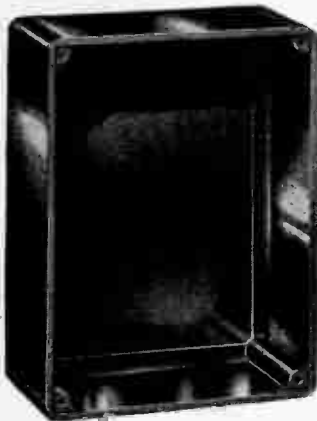
241



240



260



No. 241. Mating cover with interlocking lip for No. 240 series cases.

No. 240. 2" hgt. x 3 3/4" wide x 6 1/4" long. (Outside Dimensions) — 1/2" (Wall Thickness).

No. 260. 2-5/16" height x 5-9/32" wide x 6-13/16" long. (Outside Dimensions) — 5/32" (Wall Thickness).

## INSTRUMENT KNOBS



4100  
4101  
4102  
4103



4100  
4101  
4102  
4103



4104  
4106  
4108  
4109



4104  
4106  
4108  
4109



2965



3008



3009



3000

No. 2965. Dia. 3/8", hgt. 1/2" to 1 1/4", 1/4" molded hole, set screw, spring, knurled hole mounting, also 10-32 male and female inserts.

No. 3000. Dia. 1 1/4", hgt. 3/4", 1", 1 1/4", 1 1/2"; 3/8" molded hole, some male and female metal inserts, set screw or knurled hole mounting, or tapped to order, locknut recess.

No. 3008. Dia. 1 1/4", hgt. 3/4" to 1", 3/8" molded hole, some male and female metal inserts, set screw mounting or tapped to order.

No. 3009. Dia. 1 1/2", hgt. 3/4" to 1", 3/8" molded hole, some male and female metal inserts, set screw mounting or tapped to order.

Knobs shown are only part of our stock on hand. Our stock molds are interchangeable and meet most requirements with only minor tooling variations. Let us quote on your specifications.

WRITE FOR FREE CATALOG

Part No.	Knob Dia.	Knob Hgt.
4100	1 1/4"	3/4"
4101	1 3/8"	11/16"
4102	1 1/2"	3/4"
4103	2 3/8"	3/4"

Entire series available with 3/8" molded hole or metal insert, set screw mounting. White vinylite pointed available. Pointer lengths, 3/8", 1/2", 5/8", 1-1/16", 1-3/16", 1 1/4", 1-9/16".

Part No.	Knob Dia.	Skirt Dia.
4104	1 1/4"	1 1/2"
4106	1 3/8"	1 1/2"
4108	1 1/2"	2-1/16"
4109	2 3/8"	3"

Skirt available with or without indicator line filled. Branding stamps constructed to your specifications.

## Harry Davies Molding Co.

CHICAGO, ILLINOIS

# **KNOBS** FROM STOCK MOLDS

Wide Range of Styles, Sizes and Colors

No Tool Charge . . . No Tooling Wait . . . Low Cost . . . Immediate Delivery



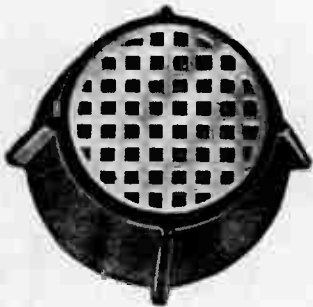
**RB-85-7**



**RE-51 (Branded)**  
(available with Indicator line)



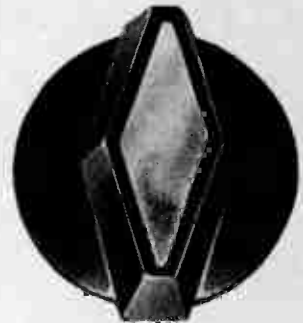
**RB-1000-2 RB-31 COMBINATION**



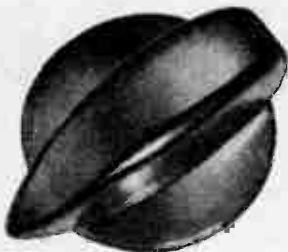
**RB-61**



**RB-175**



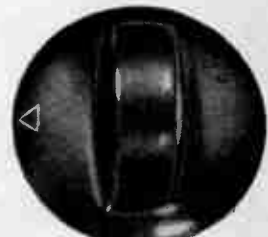
**RB-165**



**RB-131**



**RB-311**  
(with Brass Bushing)



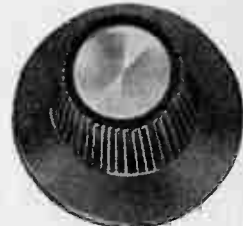
**RB-171-7**



**RB-115**



**RB-90120**



**RB-155**

Shown here are just a few of the many Rogan plastic knobs . . . available promptly from stock molds. Phenolic or urea plastics . . . also high heat-resisting materials. Black, brown or walnut colors in phenolic and light pastel colors in the urea material. Mostly 1/4" shaft holes with set screws. "Specials" supplied at nominal cost. All types of markings, branded from stock dies.

Wide variety of combination knobs (plate and knob sets) in matching or contrasting colors . . . with all types of markings. Write for complete catalog.

**ROGAN BROTHERS**  
SKOKIE, ILLINOIS

# NOTES

# NOTES

## Thank You!

When ordering products shown in this book or writing for additional information, please be sure to specify:

1. **Manufacturer's Catalog Numbers and Page Numbers.**
2. **The Year and Edition of This MASTER.**

This will avoid confusion and expedite delivery.

**The**  
*Radio-Electronic*  
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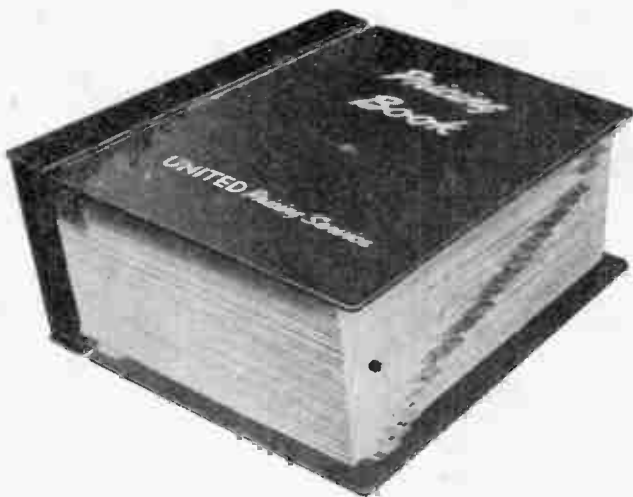
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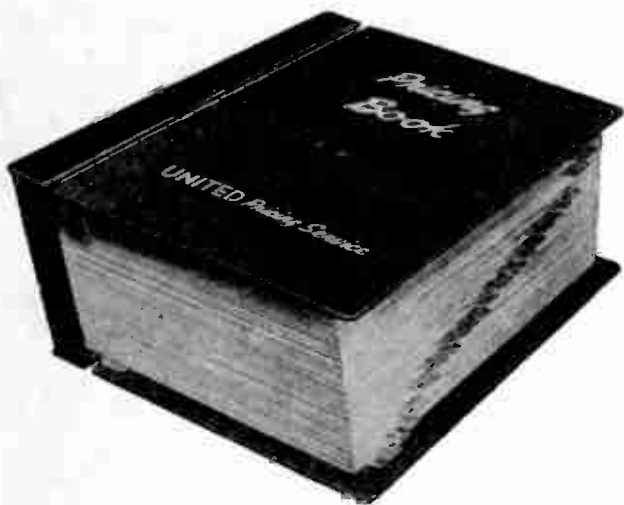
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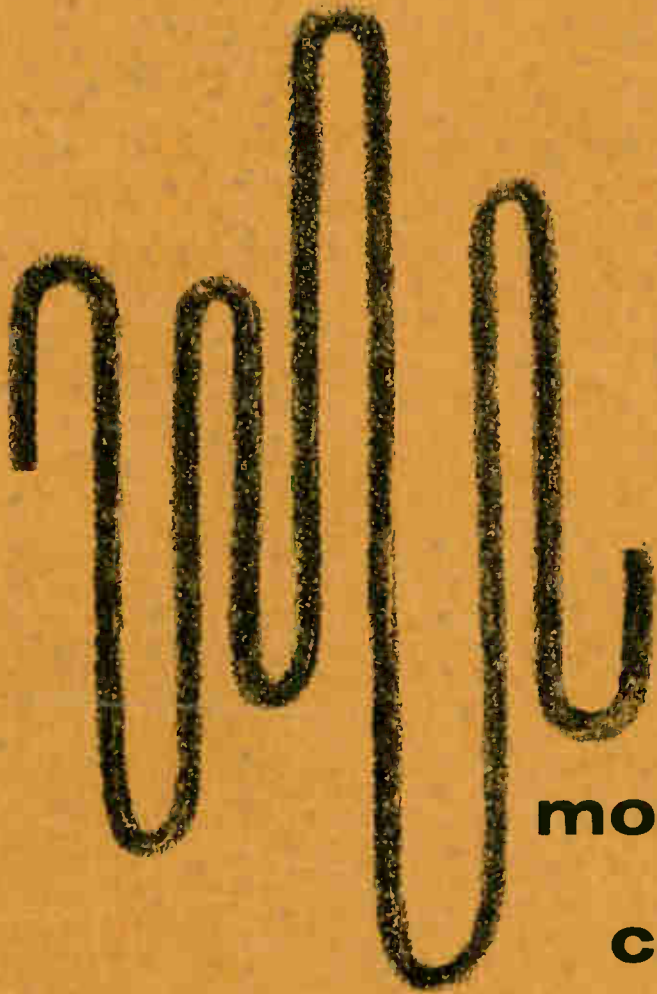
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